

# TEST & MEASUREMENT

2025  
2026

 CHAUVIN  
ARNOUX



# Chauvin Arnoux

## Test & Measurement:

### French expertise at the service of measurement

For over a century, Chauvin Arnoux has embodied French excellence in the field of electrical measurement.

An international benchmark, the Chauvin Arnoux® brand offers a comprehensive range of portable measuring instruments renowned for their reliability and performance.

Our portable measuring instruments, designed and manufactured in France, combine reliability, durability and innovation. Thanks to our in-house production, we guarantee professional quality.

#### A FEW FIGURES

More than  
**130** years of continuity

**10** subsidiaries worldwide

**120** million euros turnover

**1000** employees

**8** production sites

**6** design offices worldwide

3 in Normandy  
1 in Lyon  
1 in Montpellier  
1 in Milan (Italy)  
1 in Dover (USA)  
1 in Shanghai (China)

**11%** of sales invested in R&D

#### Solutions for every need

With hundreds of products, our range covers many sectors: industry, services, residential, laboratories, infrastructure, and education. They are suitable for a wide range of applications, including:

- Preventive and corrective maintenance
- Energy efficiency and audits
- Electrical safety and control
- Environmental monitoring and air conditioning

#### Our flagship ranges of measuring devices

- General electrical measurement: multimeters, testers, clamps, oscilloscopes.
- Electrical safety: insulation, earth and installation testers, micro-ohmmeters.
- Power and energy analysis: recorders, wattmeters, network quality analysers.
- Climate and environmental measurements: temperature, humidity, sound, light, etc.
- Electrochemical measurements: pH, conductivity, oxidation-reduction potential, etc.
- Oscilloscopes.
- Current sensors and accessories.

Innovation in the service of education completes this range, with laboratory instruments and teaching solutions designed for education and training.

Trust Chauvin Arnoux to optimise your performance and meet your technical challenges with measuring instruments that match your ambitions.



Diagnostics & control

To carry out measurement campaigns in compliance with regulations.  
To verify the safety of people and property.



Education

For secondary schools, higher education (universities and engineering schools), continuing education and vocational training centres. To understand and comprehend theoretical phenomena through practical application.



Energy efficiency

For a comprehensive assessment of energy consumption (audit) with a view to proposing solutions aimed at reducing consumption (financial and environmental impacts).



Transport

To ensure continuity of service, proper operation and safety, Chauvin Arnoux offers portable field measuring devices for applications in aeronautics, road and rail.



Tertiary & residential

For electricians, heating engineers, air conditioning engineers and building services engineers Chauvin Arnoux supports you with a range of professional measuring devices for electrical, heating/air conditioning and lighting applications.



Industries

For optimum productivity, implementation of industrial process monitoring plans through inspection and maintenance operations on installations or machines.



Production, transport & distribution

To take measurements in the field, follow the path of electrical energy from the power plant to the distribution points.



Laboratory & metrology

For laboratories, engineers and technicians responsible for the design and qualification of various systems: machines, electrical cabinets, lifts, vehicles, lifting tools, etc.

For technicians responsible for quality control and process systems.



# Test & Measurement Catalogue 2025 / 2026

## Contents

|                                                         |           |                                                     |            |                                               |            |
|---------------------------------------------------------|-----------|-----------------------------------------------------|------------|-----------------------------------------------|------------|
| Applications > production, transport & distribution     | 4         | Continuity tester                                   | 66         | Tachometer                                    | 124        |
| Applications > industry                                 | 6         | Surge arrester tester                               | 67         | Air quality measurement                       | 125        |
| Applications > housing & services                       | 8         | Test adapter for electric vehicle charging stations | 68         | CO detector                                   | 126        |
|                                                         |           | Guide to choosing portable insulation testers       | 69         | Stroboscope                                   | 126        |
| <b>DDT/VAT and testers</b>                              | <b>11</b> | Magneto insulation tester                           | 70         | Rangefinder                                   | 127        |
| Testers                                                 | 12        | Analogue insulation monitors                        | 70         | Field testers                                 | 128        |
| DDT/VAT                                                 | 14        | Insulation and continuity testers                   | 71         | Fieldmeter                                    | 129        |
| Accessories for testers and DDT/VAT                     | 16        | Digital insulation monitors                         | 72         | LAN network tester                            | 129        |
|                                                         |           | Selection guide for field insulation controllers    | 74         |                                               |            |
| <b>Multimeters</b>                                      | <b>18</b> | 1 kV field insulation controllers                   | 75         | <b>Calibrators</b>                            | <b>131</b> |
| Digital multimeter selection guide                      | 19        | 5 kV site insulation controllers                    | 76         | Temperature calibrators                       | 132        |
| Pocket multimeters                                      | 20        | 10/15 kV site insulation controllers                | 78         | Process calibrators                           | 133        |
| Compact multimeters                                     | 21        | Earthing controllers selection guide                | 79         |                                               |            |
| Industrial multimeters                                  | 23        | Earth monitors                                      | 80         | <b>Electrochemistry</b>                       | <b>135</b> |
| Graphic industrial multimeters                          | 25        | Earth controller - pylons                           | 84         | Portable pH meter                             | 136        |
| ATEX multimeter                                         | 26        | Earthing clamps                                     | 85         | Portable conductivity meter                   | 137        |
| Oscilloscope multimeters                                | 28        | Selection guide Switchgear controllers              |            | pH testers                                    | 138        |
| Analogue multimeter selection guide                     | 29        | and switchboards                                    | 86         | Laboratory pH and conductivity meters         | 139        |
| Analogue multimeters                                    | 29        | Switchgear controllers                              | 87         | Electrodes for general use                    | 140        |
| Analogue-digital multimeters                            | 31        | Micro-ohmmeter                                      | 89         | Specific electrodes                           | 142        |
| Multimeter accessories                                  | 32        | Cable locator                                       | 92         | pH and conductivity meters for teaching       | 143        |
|                                                         |           | Phase rotation testers                              | 93         | Buffer and maintenance solutions              | 144        |
| <b>Clamp-on multimeters</b>                             | <b>34</b> | Battery capacity tester                             | 94         |                                               |            |
| Guide de choix                                          | 35        | Ratiometer                                          | 95         | <b>Current measurement</b>                    | <b>145</b> |
| Pince multimètre de fuite                               | 36        | Accessories for multifunction                       | 96         | Flexible sensor ammeters                      | 146        |
| Pinces multimètres pour électriciens                    | 37        | Test leads for insulation testers                   | 97         | AC current clamps                             | 147        |
| Pinces multimètres pour la maintenance générale         | 38        | Earth & resistivity kits                            | 98         | AC/DC current clamps                          | 150        |
| Pinces multimètres industries et énergies               | 41        | Accessories for electrical equipment testers        | 99         | Ampflex® flexible AC current probes           | 151        |
| Pinces multimètres puissances et harmoniques            | 42        | Accessories                                         | 100        |                                               |            |
| Accessoires pour pinces multimètres                     | 43        |                                                     |            | <b>Software</b>                               | <b>153</b> |
|                                                         |           | <b>Oscilloscopes</b>                                | <b>104</b> | DATAVIEW® data processing software            | 154        |
| <b>Power, power quality and installation monitoring</b> | <b>45</b> | Oscilloscope selection guide                        | 105        | CAM REPORT thermogram analysis software       | 158        |
| Power analysers selection guide                         | 46        | Portable oscilloscopes                              | 106        | SX-DMM multimeter software                    | 159        |
| Power and motor maintenance analyser                    | 47        | Probix                                              | 108        | SCOPIX IV oscilloscope software               | 160        |
| Qualistar power and energy analysers                    | 48        | Communication accessories                           | 109        |                                               |            |
| Class A voltage quality analyse                         | 50        |                                                     |            | <b>Accessories</b>                            | <b>161</b> |
| Power and energy and energy recorders                   | 51        | <b>Climate range &amp; environment</b>              | <b>111</b> | Connector accessories                         | 162        |
| Voltage and current recorders                           | 52        | Thermal camera                                      | 112        | Protection, storage and transport accessories | 166        |
| Power and energy loggers                                | 53        | Thermometer selection guide                         | 113        | Fuses                                         | 168        |
| Photovoltaic analyser                                   | 55        | Infrared thermometers                               | 114        |                                               |            |
| Accessories                                             | 56        | Probe thermometers                                  | 115        | <b>Index</b>                                  | <b>169</b> |
|                                                         |           | Accessories for thermometers                        | 117        |                                               |            |
| <b>Electrical control and safety</b>                    | <b>60</b> | Luxmeter                                            | 119        |                                               |            |
| Guide to choosing electrical installation controllers   | 61        | Sound level meters                                  | 120        |                                               |            |
| Electrical installation controllers                     | 62        | Thermo-anemometer                                   | 121        |                                               |            |
| Field electrical safety inspectors                      | 65        | Thermo-hygrometer                                   | 122        |                                               |            |
|                                                         |           | Pressure gauge                                      | 123        |                                               |            |

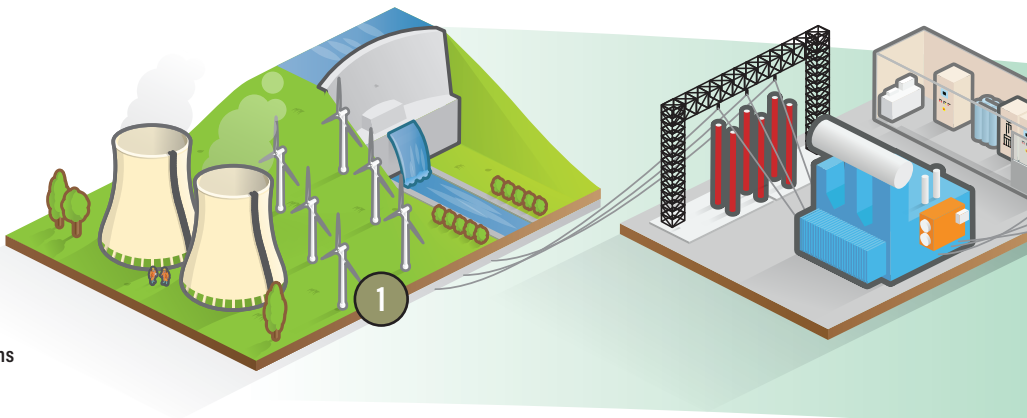


You can also find us at [www.chauvin-arnoux.com](http://www.chauvin-arnoux.com)

## APPLICATIONS: GENERATION, TRANSMISSION & DISTRIBUTION

### EARTHING CONTROL

- 1  Soil resistivity and earth measurement  
CA 6470N
- 2  Measurements on pylons  
CA 6474
- 3  MV/HV lines  
CA 6472



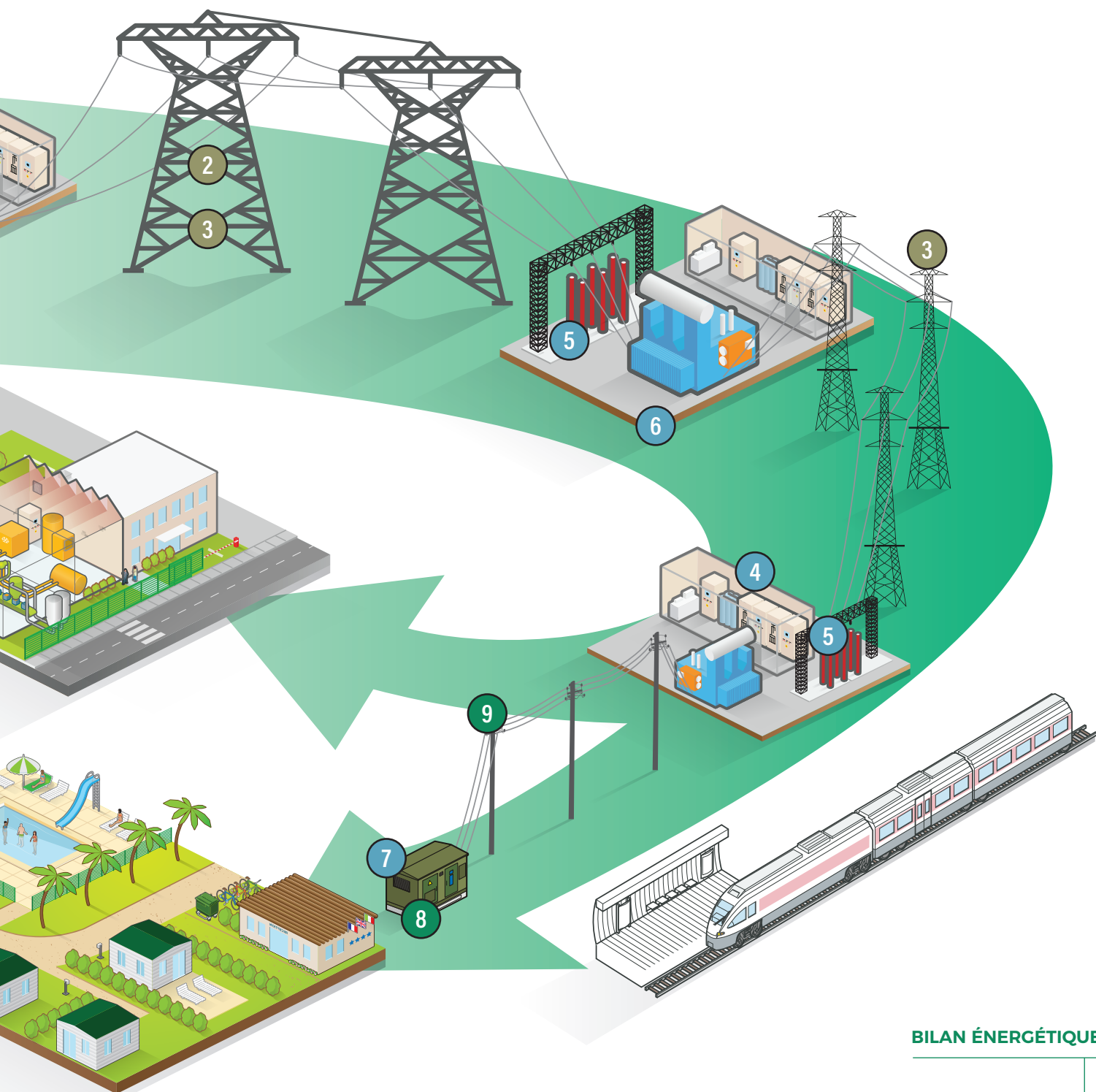
### MAINTENANCE AND INSPECTION OF INSTALLATIONS

- 4  Consignment of installations, checking absence of voltage, checking phase order  
CA 773
- 5  Checking circuit breakers and equipotential bonding  
CA 6240 - CA 6292
- 6  Insulation check 15 kV  
CA 6555

- 7  Current measurements  
MA4000D







Controlling  
electricity  
consumption

PEL115



8

Analysis of electrical network quality  
(flicker, over- and undercurrent/  
voltage/harmonics)

CA 8345



9

## BILAN ÉNERGÉTIQUE

# APPLICATIONS: INDUSTRY

## SEARCH FOR ELECTRICAL DISTURBANCES

1

Power quality analysis

CA 8336

2

Recording of voltage drops and overvoltages

L461

## INDUSTRIAL MAINTENANCE

3

Checking for faults in electrical and/or mechanical installations

CA 1954

## REGULATORY CONTROLS OF THE WORKING ENVIRONMENT

4

Noise

CA 1310

5

Lighting

CA 1110

6

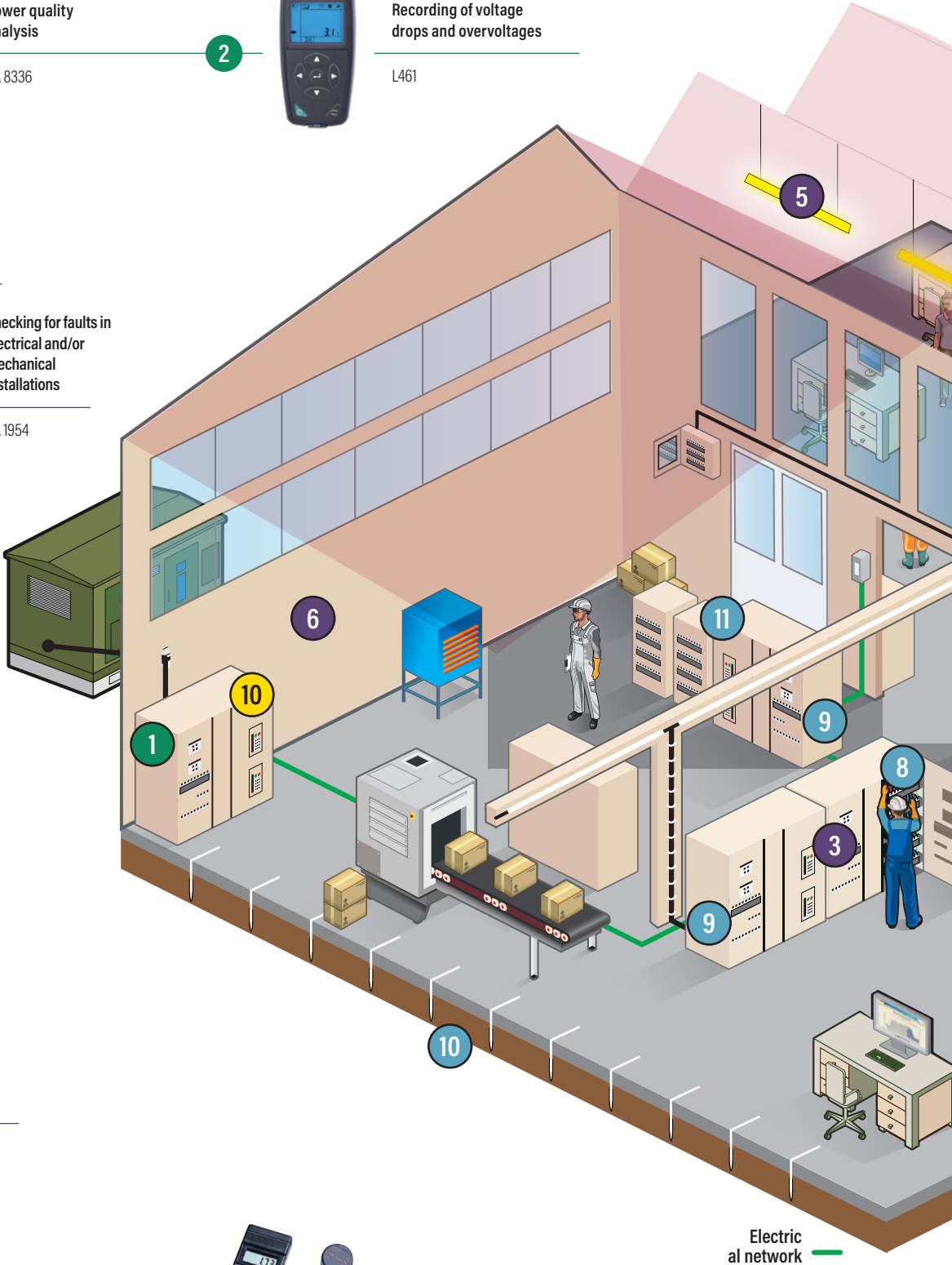
Humidity

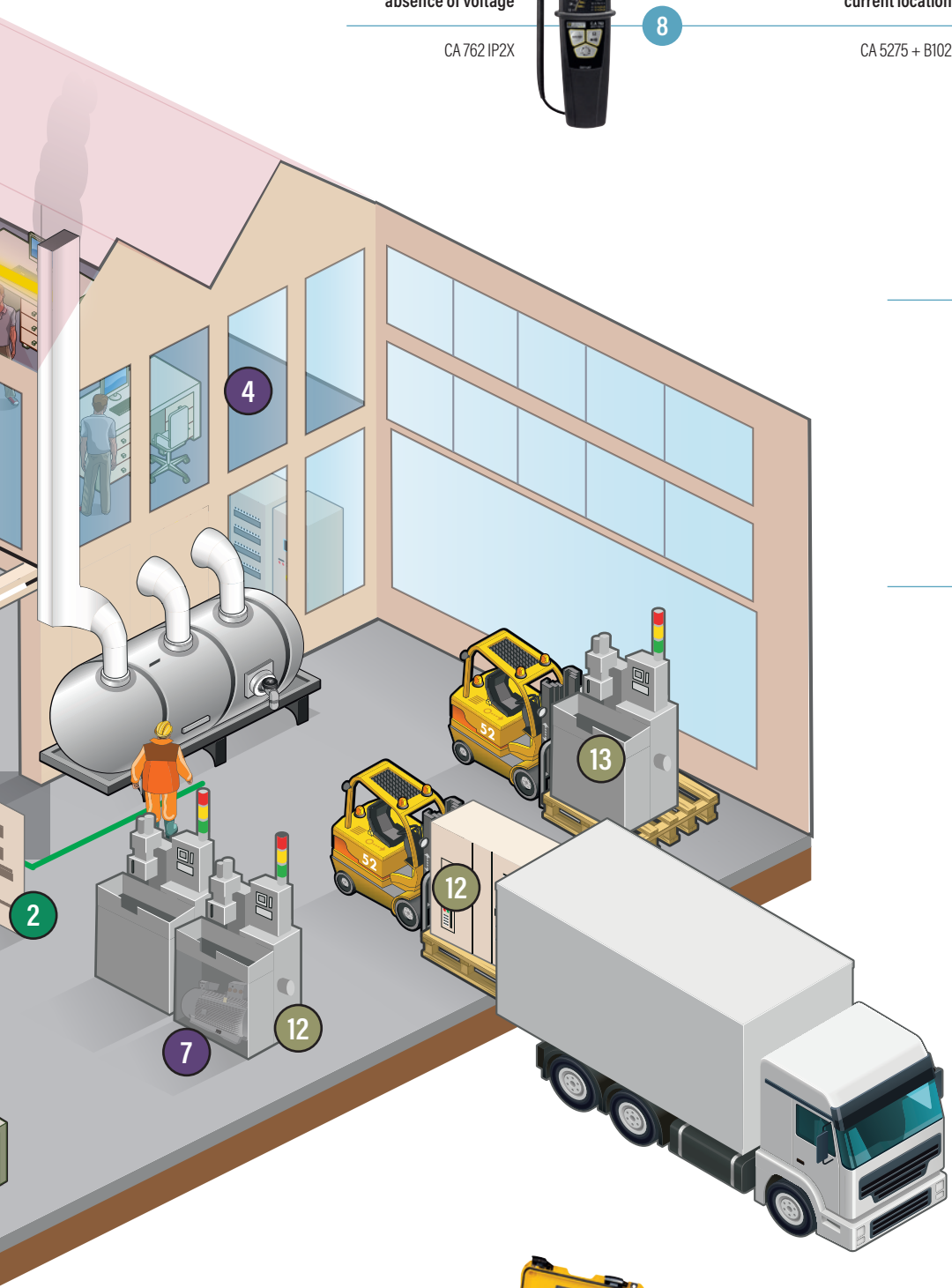
CA 1246

7

Electric fields

CA 40





Checking for  
absence of voltage

CA 762 IP2X



8

Leakage  
current location

CA 5275 + B102



9

Earth control

CA 6417



10

Insulation check

CA 6524



11

Inspection  
of industrial machinery

CA 6163



13

Control of electrical cabinets

CA 6161



12

## PERSONAL SAFETY

## QUALITY CONTROL QUALITY CONTROL

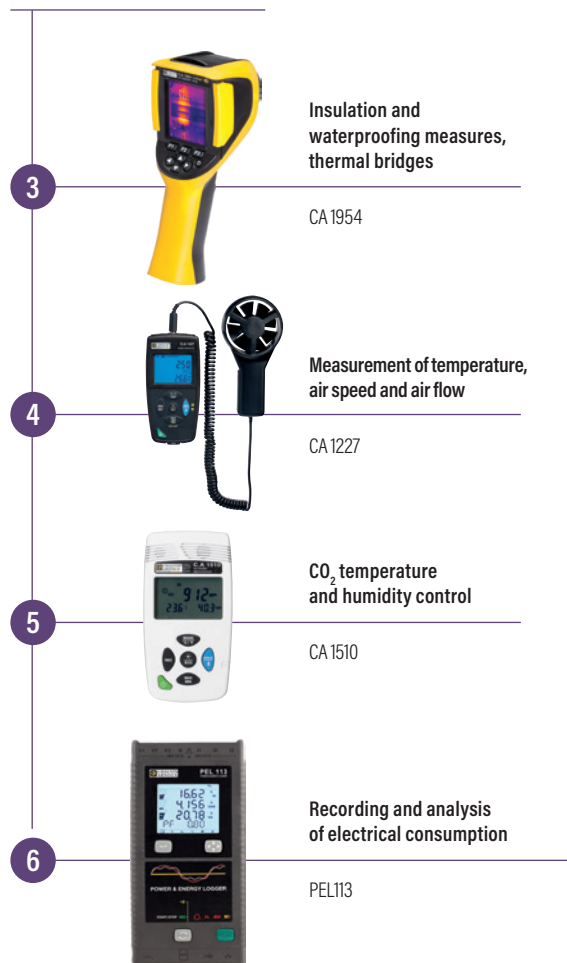


## APPLICATIONS: RESIDENTIAL & COMMERCIAL

### REGULATORY CONTROL IN ACCORDANCE WITH NF C 15-100



### ENERGY EFFICIENCY





## GENERAL ELECTRICAL RENOVATION

Checking power supply and continuity  
of electrical connections

CA 755



7

Search for  
and location  
of metallic  
cables and  
conductors

CA 6683



8

Verification of  
electrical voltages  
and continuity

F201



9

Measurement  
of ionisation  
current on gas boiler

CA 5277



10



# DDT/VAT and testers

|                                                             |    |
|-------------------------------------------------------------|----|
| CA 732 tester .....                                         | 12 |
| TX 01 tester .....                                          | 12 |
| Testers CA 745N - CA 755 - CA 757 .....                     | 13 |
| DDT / VAT CA 742 - CA 742 IP2X - CA 762 - CA 762 IP2X ..... | 14 |
| DDT / VAT CA 771 - CA 771 IP2X - CA 773 - CA 773 IP2X ..... | 15 |
| Accessories .....                                           | 16 |





Tester

CA 732

1000 V  
CAT III

Simple and practical

- No contact phase detection
- Built-in torch
- Moulded body for exceptionally comfortable handling



| CA 732              |                                               |
|---------------------|-----------------------------------------------|
| Detection threshold | 195 V <sub>AC</sub> ≤ U ≤ 265 V <sub>AC</sub> |
| Operating frequency | 50/60 Hz                                      |
| Standards           | IEC 61010 1000 V CAT III                      |
| Power supply        | 2 x 1.5 V LR03 batteries                      |
| Dimensions / weight | 176 x 26 mm / 48 g                            |



1 CA 732 tester delivered  
in blister pack with:

- 2 x 1.5 V LR03 batteries



To order

CA 732  
Reference: P01191745Z

Tester

TX 01

600 V  
CAT III

Essential electrical testing  
and diagnostic tool

- Checks AC and DC voltages and electrical continuity with audible and visual indication
- Self-test function to check the condition of the device and the battery
- High-intensity LEDs
- Removable test probe with standard Ø 4 mm banana plug



| TX 01                |                                                                             |
|----------------------|-----------------------------------------------------------------------------|
| Voltage test         | 12 V to 690 V (7 diodes)                                                    |
| Audible alarm        | U > 50 V                                                                    |
| Phase identification | Flashing "Ph" diode for U > 100 V                                           |
| Operating frequency  | DC ... 400 Hz                                                               |
| Diode polarity test  | "+" and "-"                                                                 |
| Audible continuity   | Yes                                                                         |
| Resistance           | 2 kΩ to 300 kΩ (3 diodes)                                                   |
| Power supply         | 1 x 9 V 6F22                                                                |
| Safety électrique    | 600 V CAT III                                                               |
| Dimensions / weight  | 193 x 47 x 36 mm / 170 g                                                    |
| Other                | Built-in 1.2 m lead with Ø 2 mm test probe<br>+ Ø 2 mm removable test probe |



1 TX 01 tester supplied with:

- 1 removable test probe
- 1 9 V battery
- 1 operating instructions

To order

TX 01  
Reference: TX0001-Z



## Testeurs

### CA 745N - CA 755 - CA 757

600 V  
CAT III

IP 54



#### CA 745N

No risk of tripping high-sensitivity RCDs during phase/earth testing.

|                              | CA 745N                                                                       |
|------------------------------|-------------------------------------------------------------------------------|
| Voltage test                 | 12 V to 690 V <sub>AC</sub> (7 segments)                                      |
| Audible beep                 | U > 50 V <sub>AC</sub>                                                        |
| Impedance                    | 400 kΩ                                                                        |
| Phase/neutral identification | Flashing 'Ph' diode and intermittent audible beep for U > 100 V <sub>AC</sub> |
| Frequency of use             | DC and 50/60 Hz                                                               |
| Polarity test                | "+" and "-" symbols                                                           |
| Voltage protection           | Up to 1,100 V                                                                 |
| Continuity sound test        | R < 2 kΩ                                                                      |
| Resistance test              | 2 kΩ to 300 kΩ (3 segments)                                                   |
| Standards                    | IEC 61010 600 V CAT III                                                       |
| Power supply                 | 2 x 1.5 V LR03 batteries                                                      |
| Dimensions / Weight          | 180 x 52 x 45 mm / 200 g                                                      |

#### CA 755 and CA 757

- Measurements up to 1,000 V
- Backlit digital display
- Built-in compartment for stowing test probes in casing
- CA 757: MiniFlex® current measurement accessory supplied



|                                      | CA 755                                                                  | CA 757                          |
|--------------------------------------|-------------------------------------------------------------------------|---------------------------------|
| Measurement range via current sensor |                                                                         | 500 mA to 300 A (2 Calibration) |
| Resolution                           |                                                                         | 0.01 A to 0.1 A                 |
| DC voltage                           | 3 mV to 1,000 V – 4 Calibration                                         |                                 |
| Resolution                           | 1 mV to 1 V                                                             |                                 |
| AC voltage                           | 100 mV to 1,000 V – 4 Calibration                                       |                                 |
| Resolution                           | 1 mV to 1 V                                                             |                                 |
| Operating frequency                  | DC and 50/60 Hz                                                         |                                 |
| Impedance                            | 10 MΩ                                                                   |                                 |
| No-contact voltage detection         | 230 V 50/60 Hz at a distance of approx. 5 cm                            |                                 |
| Audible continuity test              | R ≤ 30 Ω                                                                |                                 |
| Resistance test                      | 0.3 Ω to 30 MΩ – 6 Calibration                                          |                                 |
| Resolution                           | 0.1 Ω to 0.01 MΩ                                                        |                                 |
| Capacitance test                     | 400 pF to 30 mF                                                         |                                 |
| Resolution                           | 0.001 nF to 0.01 mF                                                     |                                 |
| Standards                            | 600 V CAT III, IEC 61010-1, IEC 61010-031, IEC 61010-032, IEC 61010-033 |                                 |
| Power supply                         | 2 x 1.5 V LR03 batteries                                                |                                 |
| Battery life                         | 100 hours with alkaline batteries – Automatic standby after 10 minutes  |                                 |
| Dimensions / weight                  | 180 x 52 x 45 mm / 200 g                                                |                                 |



#### CA 745N delivered in a blister pack with :

- 2 x 1.5 V LR03 batteries,
- 2 removable test probes (red/black)

#### CA 755 delivered with :

- 1 set of extra-fine test probes CAT III/CAT IV (red/black)
- 2 x 1.5 V LR3 alkaline batteries



#### CA 757 delivered with :

- 1 set of extra-fine test probes CAT III/CAT IV (red/ black),
- 2 x 1.5 V LR3 alkaline batteries,
- 1 MiniFlex® sensor with a loop length of 250 mm and a connection cable 1 m long
- 1 specific connector for CA 757, 1 Velcro strap

#### To order

CA 745N Reference: P01191743Z

CA 755 Reference: P01191755

CA 757 Reference: P01191757

#### Recommended accessories



**P01298074**  
Bag compatible with MultiFix accessory, 120 x 200 x 60 mm



**P01191748Z**  
CA 753 universal measuring adapter for 2P+E sockets



Bipolar voltage detectors

CA 742 – CA 742 IP2X – CA 762 – CA 762 IP2X



600 V  
CAT IV

IP 65

IEC  
61243-3

NF C  
18-510



Essential before any intervention

- Full integrated Autotest
- Voltage test up to 690 Vac (16 2/3 – 800 Hz) / 750 Vdc
- Phase-sequence testing up to 400 Hz
- Removable test probe and lead

Indoor and outdoor use

- Protection rating exceeds recommendations
- IP65 allows indoor and outdoor use from -15 °C (type N)

|                                            | CA 742                                                                                                                                                            | CA 762                                       |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| Display                                    | LEDs                                                                                                                                                              | LEDs                                         |
| Voltage detection                          |                                                                                                                                                                   | Yes                                          |
| Hazardous voltage indication               |                                                                                                                                                                   | Yes                                          |
| Phase / Neutral identification             |                                                                                                                                                                   | Yes                                          |
| Continuity & Resistance                    |                                                                                                                                                                   | Yes                                          |
| Extended continuity test                   | -                                                                                                                                                                 | 2 kΩ, 60 kΩ, 300 kΩ                          |
| Phase rotation                             | -                                                                                                                                                                 | 2-wire method                                |
| Ph/Ph voltage                              |                                                                                                                                                                   | 50 V ≤ U ≤ 690 V <sub>AC</sub> (45 - 400 Hz) |
| Buzzer                                     | Intermittent beep for voltage detection and continuous beep for continuity                                                                                        |                                              |
| Voltage                                    | 12 V <sub>AC</sub> ≤ U ≤ 690 V <sub>AC</sub> // 12 V <sub>DC</sub> ≤ U ≤ 750 V <sub>DC</sub>                                                                      |                                              |
| Frequency                                  | DC, 16 2/3 à 800 Hz                                                                                                                                               |                                              |
| Impedance                                  | > 300 kΩ                                                                                                                                                          | > 400 kΩ                                     |
| Max. current                               | 3,5 mA RMS                                                                                                                                                        |                                              |
| Repetitive indication of dangerous voltage | The red ELV (Extra Low Voltage) LED indicates when the voltage is higher than the SELV (Safety Extra Low Voltage); the higher the voltage, the faster it flashes. |                                              |
| Polarity indication                        | Above 120 V (45 - 65 Hz) Above 400 V (16 2/3 - 45 Hz)                                                                                                             |                                              |
| Continuity                                 | 100 Ω typical (150 Ω max.)                                                                                                                                        |                                              |
| Standards and Safety électrique            | IEC/EN 61243-3                                                                                                                                                    |                                              |
|                                            | IEC 61010 600 V CAT IV                                                                                                                                            |                                              |
| Ingress protection                         | IP65                                                                                                                                                              |                                              |
| Climatic conditions                        | -15 °C to +45 °C / 20 to 95% HR                                                                                                                                   |                                              |
| Battery life                               | 7,500 x 10 s measurements                                                                                                                                         | 7,000 x 10 s measurements                    |
| Dimensions / weight                        | 163 x 64 x 40 mm / 210 g                                                                                                                                          |                                              |



1 voltage detector delivered with:

- 1 black Ø 2 mm test-probe lead with crystal safety cap
- 1 red Ø 2 mm test-probe lead with crystal safety cap
- 1 wrist-strap
- 2 x 1.5 V LR03 batteries

The IP2X version is delivered with:

- 2 x Ø 4 mm IP2X test probes (red/black)
- 1 black cable 1.10 m long equipped with a probe-holder system
- 1 wrist strap
- 2 x 1.5 V LR03 batteries

To order

|                     |                       |
|---------------------|-----------------------|
| CA 742 DDT/VAT      | Reference: P01191742Z |
| CA 742 IP2X DDT/VAT | Reference: P01191742D |
| CA 762 DDT/VAT      | Reference: P01191762Z |
| CA 762 IP2X DDT/VAT | Reference: P01191762D |

Recommended accessories



P01298065Z  
Carrying case



P01101997Z  
CA 751 - Adapter for 2P+T socket



## Bipolar voltage detectors

### CA 771 - CA 771 IP2X | CA 773 - CA 773 IP2X



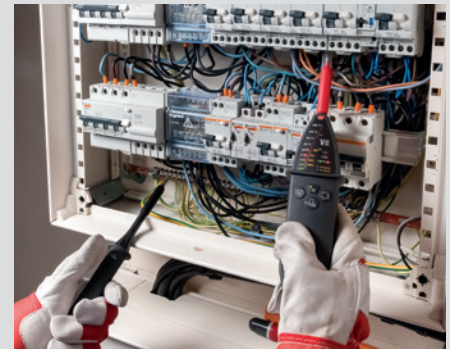
IP 65

1000 V  
CAT IVIEC  
61243-3

The CA 771 and CA 773 feature phase sequence control using the '2-wire method' up to 400 Hz, which works with isolation transformers and generator sets.

- A comprehensive built-in self-test
- Extended class: for extreme environments, the CA 771 allows measurements from -30 °C to +60 °C (type S).
- Audible and visual continuity up to 100  $\Omega$  complies with the recommendation in Annex B of the standard.
- The test probes are removable to meet specific requirements or the legislation of certain countries.

|                                            | CA 771                                                                                                                                                                | CA 773                           |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| Display                                    | LEDs                                                                                                                                                                  | LEDs                             |
| Voltage detection                          |                                                                                                                                                                       | Yes                              |
| Polarity indication                        |                                                                                                                                                                       | Yes                              |
| Stray voltage detection                    |                                                                                                                                                                       | Yes                              |
| Differential protection trip               |                                                                                                                                                                       | Yes                              |
| Repetitive indication of dangerous voltage |                                                                                                                                                                       | Yes                              |
| Phase / Neutral identification             |                                                                                                                                                                       | Yes                              |
| Continuity & Resistance                    |                                                                                                                                                                       | Yes                              |
| Phase rotation                             | Yes (2-wire method)                                                                                                                                                   |                                  |
| Ph/Ph voltage                              | 50 V $\leq U \leq 1000$ V <sub>AC</sub> (45 - 400 Hz)                                                                                                                 |                                  |
| Buzzer                                     | Yes                                                                                                                                                                   |                                  |
| Voltage                                    | 12 V <sub>AC</sub> $\leq U \leq 1000$ V <sub>AC</sub> // 12 V <sub>DC</sub> $\leq U \leq 1400$ V <sub>DC</sub>                                                        |                                  |
| Frequency                                  | DC, 162/3 to 800 Hz                                                                                                                                                   |                                  |
| Impedance                                  | > 500 k $\Omega$                                                                                                                                                      |                                  |
| Max. current                               | 3,5 mA RMS                                                                                                                                                            |                                  |
| Repetitive indication of dangerous voltage | La LED ELV (Extra Low Voltage) indique une tension supérieure à la TBT (Très Basse Tension de Sécurité) avec une vitesse de clignotement proportionnelle à la tension |                                  |
| Phase / Neutral identification             | Au delà de 50 V (45 - 65 Hz) Au delà de 150 V (16 2/3 - 45 Hz)                                                                                                        |                                  |
| Continuity                                 | 100 $\Omega$ typique (150 $\Omega$ max.)                                                                                                                              |                                  |
| Extended continuity test, Resistance       | 2 k $\Omega$ , 60 k $\Omega$ , 300 k $\Omega$                                                                                                                         | 0,5 $\Omega$ to 2,999 k $\Omega$ |
| Buzzer                                     | Bip discontinu pour la détection de tension / Bip continu pour la continuité                                                                                          |                                  |
| Standards and Safety électrique            | IEC/EN 61243-3<br>IEC 61010 1000 V CAT IV                                                                                                                             |                                  |
| Climatic conditions                        | -30 °C to +60 °C (extended "Class S")                                                                                                                                 | -15 °C to +45 °C ("Class N")     |
| Autonomy                                   | > 5,000 x 10s measurements                                                                                                                                            | > 2,500 x 10s measurements       |
| Dimensions / weight                        | 228 x 60 x 39 mm (without test probe) / 350 g approx.                                                                                                                 |                                  |



#### 1 voltage detector delivered with:

- 1 set of red/black  $\varnothing$  2 mm removable test probes with crystal safety cap
- 1 test-probe protector
- 1 Velcro strap
- 2 x 1.5 V LR03 batteries

#### The IP2X version is delivered with:

- 1 set of red/black IP2X  $\varnothing$  4 mm removable test probes with crystal safety cap
- 1 Velcro strap
- 2 x 1.5 V LR03 batteries

#### To order

CA 771 DDT/VAT

Reference: P01191771

CA 771 DDT/VAT IP2X

Reference: P01191771A

CA 773 DDT/VAT

Reference: P01191773

CA 773 DDT/VAT IP2X

Reference: P01191773A

#### Recommended accessories

P01298076  
BagP01191748Z  
CA 753 universal measuring  
adapter for 2P+E sockets



## Accessories for testers

■ Accessories ■ Included in original delivery condition

|                                                                                     | Item code  | Description                                                                                                                                                                        | CA 732 | TX 01 | CA 745N | CA 755 | CA 757 | CA 742<br>CA 762<br>CA 742 IP2X<br>CA 762 IP2X | CA 771 / IP2X<br>CA 773 / IP2X |
|-------------------------------------------------------------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-------|---------|--------|--------|------------------------------------------------|--------------------------------|
|    | P01103061Z | Removable red test probe with locking pin for tester or remote control probe / 600 V CAT IV / for CA 745, TX01, remote control probe                                               |        | ■     |         |        |        |                                                |                                |
|    | P01102152Z | Set of 2 test probes / 4 mm male plug / 1,000 V CAT IV for CA 745N, CA 755, CA 757                                                                                                 |        |       | ■       | ■      | ■      |                                                |                                |
|    | P01102153Z | Set of 2 Ø2 test probes with crystal cap / 4 mm male plug / 300V CAT II for CA 745N, CA 755, CA 757                                                                                |        |       | ■       | ■      | ■      |                                                |                                |
|    | P01102154Z | Set of 2 Ø4 mm test probes with crystal cap / Ø4 mm male plug / 300V CAT II for CA 745N, CA 755, CA 757                                                                            |        |       | ■       | ■      | ■      |                                                |                                |
|   | P01102008Z | Removable red touch tip for DDT-VAT / Connection via insulated 4 mm female plug / Compliant with IEC 61243-3                                                                       |        |       |         |        |        | ■                                              |                                |
|  | P01102123Z | Set of 2 touch probes for DDT/VAT (1 red, 1 black) / Ø4 mm female plug / 1000V CAT IV                                                                                              |        |       |         |        |        |                                                | ■                              |
|  | P01102124Z | Set of 2 D2 mm touch probes with crystal cap for DDT/VAT (1 red, 1 black) / Ø4 mm female plug / IEC 61243-3 1000V                                                                  |        |       |         |        |        |                                                | ■                              |
|  | P01102125Z | Set of 2 D4 mm test probes for DDT/VAT (1 red, 1 black) / Ø4 mm female plug / IEC 61243-3 1000V                                                                                    |        |       |         |        |        |                                                | ■                              |
|  | P01102127Z | Set of 2 IP2X touch probes for DDT/VAT (1 red, 1 black) / Female plug Ø4 mm / 1000V CAT IV                                                                                         |        |       |         |        |        | ■                                              | ■                              |
|  | P01102128Z | Set of 2 touch probes Ø4 mm IP2X for DDT/VAT (1 red, 1 black) / Female plug Ø4 mm / IEC 61243-3 1000V                                                                              |        |       |         |        |        | ■                                              | ■                              |
|  | P01102009Z | PVC cord with black touch tip for DDT-VAT / Insulated angled Ø4mm female plug / Length 0.85 m / IEC 61243-3                                                                        |        |       |         |        |        | ■                                              |                                |
|  | P01102121Z | Accessory kit for DDT/VAT CA 74x/xN, CA 76x/ xN / 1 black cord 1.10 m with insulated male 4-pin plug and angled 4 mm female plug / 2 IP2X Ø4 RD/BK test probes, IEC 61243-3 1000 V |        |       |         |        |        | ■                                              |                                |
|  | P01295285Z | Set of 2 IP2X cords for DDT/VAT with IP2X test probe D4 female angled plug Ø4 mm, length 0.25 m (red) and 0.85 m (black), compliant with IEC 61243-3 1000V                         |        |       |         |        |        | ■                                              |                                |

## Accessories for testers

|                                                                                     | Item code  | Description                                                                                                                                                                                                   | CA 732 | TX 01 | CA 745N | CA 755 | CA 757 | CA 742<br>CA 762<br>CA 742 IP2X<br>CA 762 IP2X | CA 771 / IP2X<br>CA 773 / IP2X |
|-------------------------------------------------------------------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-------|---------|--------|--------|------------------------------------------------|--------------------------------|
|    | P01295462Z | Set of 2 IP2X cords for DDT/VAT (1 red, 1 black) / IP2X test probe Ø4 mm-angled female plug Ø4 mm / 15 A / 1.5 m / IEC 61243-3 1000V                                                                          |        |       |         |        |        | ■                                              |                                |
|    | P01295463Z | Set of 2 PVC IP2X cords for DDT/VAT / IP2X test probe D2 mm - angled female plug Ø4 mm / 15 A / 1.5 m / 600V CAT IV - 1000V CAT III                                                                           |        |       |         |        |        | ■                                              |                                |
|    | P01101997Z | CA 751 Test adapter for 2P+T socket. Accessory for DDT/VAT CA 74x, CA 76x                                                                                                                                     |        |       |         |        |        | ■                                              |                                |
|    | P01191748Z | CA 753 Measuring adapter for 2P+T EU socket (type E and F). For safe measurement of P (Phase), N (Neutral) and PE (Earth) with all test probes. Indicator light for P-N voltage (> 200 V) and phase position. |        | ■     | ■       | ■      | ■      |                                                | ■                              |
|    | P01120591  | MA101-250 Flexible 300A AC current sensor replacement for the 757 AC tester                                                                                                                                   |        |       |         |        | ■      |                                                |                                |
|  | P01298012  | Soft bag No. 10 for transport and storage, useful dimensions 180x75x45 mm                                                                                                                                     |        |       |         |        |        | ■                                              |                                |
|  | P01298065Z | Carrying and storage case, one compartment with useful dimensions of 200 x 100 x 40 mm with belt attachment                                                                                                   |        |       |         |        |        | ■                                              |                                |
|  | P01298074  | Bag equipped with an internal pocket, a strap and can be combined with the MultiFix accessory. Useful internal dimensions: 120 x 200 x 60 mm                                                                  |        |       | ■       | ■      | ■      | ■                                              |                                |
|  | P01298076  | Bag equipped with an internal pocket, a strap and can be combined with the MultiFix accessory. Useful internal dimensions: 120 x 320 x 60 mm                                                                  |        |       |         |        |        |                                                | ■                              |
|  | P01102100Z | MultiFix mounting accessory. Combined with measuring devices (multimeters, etc.) and MultiFix-compatible cases and bags, it allows for transport and mounting for greater ease of use.                        |        |       | ■       | ■      | ■      |                                                |                                |
|                                                                                     | P01102113  | Set of 5 Velcro® straps, useful length 180 mm, width 15 mm for storing and organising cables, flexible sensors, etc.                                                                                          |        |       | ■       | ■      | ■      |                                                |                                |
|                                                                                     | P01102033  | Set of 10 replacement crystal safety caps for thin touch tips with a diameter of 2 mm                                                                                                                         |        |       |         |        |        | ■                                              | ■                              |
|  | P01102126Z | Replacement touch point protectors for DDT/VAT models CA 771 and CA 773                                                                                                                                       |        |       |         |        |        |                                                | ■                              |

# Multimeters

|                                                                |    |
|----------------------------------------------------------------|----|
| Digital multimeters .....                                      | 19 |
| CA 702 - CA 703 digital pocket multimeters .....               | 20 |
| Compact digital multimeters CA 5231 - CA 5233 .....            | 21 |
| Compact digital multimeters MTX 202, MTX 203, MTX 204 .....    | 22 |
| Industrial digital multimeters CA 5273, CA 5275, CA 5277 ..... | 23 |
| Industrial digital multimeters MTX 3290 - MTX 3291 .....       | 24 |
| Graphic digital multimeters CA 5292 - CA 5293 .....            | 25 |
| Intrinsically safe multimeter MTX 3297Ex .....                 | 26 |
| Calibration software ACC SOFT - ACC CAL .....                  | 27 |
| CA 922 - CA 942 oscilloscope multimeters .....                 | 28 |
| Analogue multimeters - Selection guide .....                   | 29 |
| Analogue multimeter MX 1 .....                                 | 29 |
| Analogue multimeters CA 5001 - CA 5003 - CA 5005 .....         | 30 |
| CA 5011 digital analogue multimeter .....                      | 31 |
| Accessories for multimeters .....                              | 32 |



# Digital multimeters

## Selection guide



|                                 | CA 702    | CA 703    | MTX 202                                    | MTX 203                                    | MTX 204                                    | CA 5231   | CA 5233   | CA 5273   | CA 5275       | CA5277        | MTX 3290       | MTX 3291       | CA 5292       | CA 5293       | MTX 3297Ex               |
|---------------------------------|-----------|-----------|--------------------------------------------|--------------------------------------------|--------------------------------------------|-----------|-----------|-----------|---------------|---------------|----------------|----------------|---------------|---------------|--------------------------|
| Colour graph                    |           |           |                                            |                                            |                                            |           |           |           |               |               |                |                | ■             | ■             |                          |
| 2,000 dot display               | ■         | ■         |                                            |                                            |                                            |           |           |           |               |               |                |                |               |               |                          |
| 4,000 dot display               |           |           | ■                                          |                                            |                                            |           |           |           |               |               |                |                |               |               |                          |
| 6,000 dot display               |           |           |                                            | ■                                          | ■                                          | ■         | ■         | ■         | ■             | ■             | ■              |                |               |               |                          |
| 60,000 dot display              |           |           |                                            |                                            |                                            |           |           |           |               |               |                | ■              |               |               | ■                        |
| 100,000 dot display             |           |           |                                            |                                            |                                            |           |           |           |               |               |                |                | ■             | ■             |                          |
| Simultaneous display(s)         | 1         | 1         | 1                                          | 1                                          | 1                                          | 1         | 1         | 2         | 2             | 2             | 2              | 2              | 4             | 4             | 2                        |
| Bar graph / central 0 bar graph |           |           |                                            |                                            |                                            | ■ / -     | ■ / -     | ■ / ■     | ■ / ■         | ■ / ■         | ■ / ■          | ■ / ■          | ■ / ■         | ■ / ■         | ■ / ■                    |
| Backlight                       |           |           | ■                                          | ■                                          | ■                                          | ■         | ■         | ■         | ■             | ■             | ■              | ■              | ■             | ■             | ■                        |
| AVG measurement method          | ■         | ■         |                                            |                                            |                                            |           |           |           |               |               |                |                |               |               |                          |
| TRMS measurement method         |           |           | AC/DC                                      | AC/DC                                      | AC/DC / AC+DC                              | AC/DC     | AC/DC     | AC/DC     | AC/DC / AC+DC | AC/DC / AC+DC | AC/DC / AC+DC  | AC/DC / AC+DC  | AC/DC / AC+DC | AC/DC / AC+DC | AC/DC / AC+DC            |
| Bandwidth                       |           |           | 1 kHz                                      | 1 kHz                                      | 1 kHz                                      | 1 kHz     | 1 kHz     | 3 kHz     | 10 kHz        | 10 kHz        | 20 kHz         | 20 kHz         | 100 kHz       | 200 kHz       | 20 kHz                   |
| AC / DC voltage                 | 600 V     | 600V      | 750 V <sub>AC</sub> / 1000 V <sub>DC</sub> | 750 V <sub>AC</sub> / 1000 V <sub>DC</sub> | 750 V <sub>AC</sub> / 1000 V <sub>DC</sub> | 1000 V    | 600 V     | 1000 V    | 1000 V        | 1000 V        | 1000 V         | 1000 V         | 1000 V        | 1000 V        | 1000 V                   |
| VLowZ / VLowZ+FPB / PB filter   |           |           | ■ / - / -                                  | ■ / - / -                                  | ■ / - / -                                  | ■ / - / - | ■ / - / - | - / ■ / - | - / ■ / -     | - / ■ / -     | ■ / - / ■      | ■ / - / ■      | ■ / - / ■     | ■ / - / ■     | ■ / - / ■                |
| No-contact voltage detection    | ■         | ■         | ■                                          | ■                                          | ■                                          | ■         | ■         |           |               |               |                |                |               |               |                          |
| AC / DC current                 |           | 200 mA    | 10 A                                       | 10 A                                       | 10 A                                       |           | 10 A      | 10 A      | 10 A          | 10 A          | 10 A           | 10 A           | 10 A          | 10 A          | 10 A                     |
| Current via clamp               |           |           |                                            |                                            |                                            | ■         |           |           |               |               | ■              | ■              | ■             | ■             | ■                        |
| µA rating                       |           | ■         |                                            |                                            |                                            |           |           |           | ■             | ■             | ■              | ■              | ■             | ■             | ■                        |
| Resistance / Continuity / Diode | ■ / ■ / ■ | ■ / ■ / ■ | ■ / ■ / ■                                  | ■ / ■ / ■                                  | ■ / ■ / ■                                  | ■ / ■ / ■ | ■ / ■ / ■ | ■ / ■ / ■ | ■ / ■ / ■     | ■ / ■ / ■     | ■ / ■ / ■      | ■ / ■ / ■      | ■ / ■ / ■     | ■ / ■ / ■     | ■ / ■ / ■                |
| Frequency                       |           |           |                                            |                                            | ■                                          |           | ■         | ■         | ■             | ■             | ■              | ■              | ■             | ■             | ■                        |
| Capacities                      |           |           | ■                                          | ■                                          | ■                                          |           | ■         | ■         | ■             | ■             | ■              | ■              | ■             | ■             | ■                        |
| Temperature                     |           |           | ■                                          | ■                                          |                                            |           | TcK       | TcK       |               | TcK           | Pt100 / Pt1000 | Pt100 / Pt1000 | Pt/TcK / TcI  | Pt/TcK / TcI  | Pt100 / Pt1000           |
| Communication                   |           |           |                                            |                                            |                                            |           |           |           |               |               | Isolated USB   | Isolated USB   | Isolated USB  | Isolated USB  | Isolated USB (safe zone) |
| ATEX / IEC Ex                   |           |           |                                            |                                            |                                            |           |           |           |               |               |                |                |               |               | ■                        |
| CAT III 600 V                   |           |           | ■                                          | ■                                          | ■                                          |           | ■         |           |               |               |                |                |               |               |                          |
| CAT III 1,000 V                 | ■         | ■         |                                            |                                            |                                            | ■         |           | ■         | ■             | ■             | ■              | ■              | ■             | ■             | ■ (safe zone)            |
| CAT IV 600 V                    | ■         | ■         |                                            |                                            |                                            | ■         | ■         | ■         | ■             | ■             | ■              | ■              | ■             | ■             | ■ (safe zone)            |
| Tightness                       |           |           | IP54                                       | IP54                                       | IP54                                       | IP54      | IP54      | IP54      | IP54          | IP54          | IP67           | IP67           | IP67          | IP67          | IP67                     |



## Pocket digital multimeters

## CA 702 - CA 703

600 V  
CAT IVIEC  
61010-2-033Practical and indispensable  
instruments for  
basic measurements

- Pocket size
- Solid touch counts
- Handy and safe
- Built-in torch



|                                          | CA 702                                                                                                                                                                                                               | CA 703                                                                                                                                        |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Display                                  | 2000 counts                                                                                                                                                                                                          |                                                                                                                                               |
| Calibre selection                        | Automatic (AUTORANGE)                                                                                                                                                                                                |                                                                                                                                               |
| V <sub>DC</sub> / Accuracy               | 2,000 V ; 20.00 V ; 200.0 V ; 600 V / $\pm 1.2\%$ L + 3 D<br>> 600 V / out of specification                                                                                                                          |                                                                                                                                               |
| V <sub>AC</sub> / Accuracy (40-400 Hz)   | 2,000 V ; 20.00 V / $\pm 1.0\%$ L + 8 D<br>200.0 V ; 600 V / $\pm 2.3\%$ L + 10 D<br>> 600 V / out of specification                                                                                                  |                                                                                                                                               |
| No-contact voltage detection             | Yes                                                                                                                                                                                                                  |                                                                                                                                               |
| I <sub>DC</sub> / Accuracy / Protection  | -                                                                                                                                                                                                                    | 200.0 $\mu$ A ; 2,000 $\mu$ A / $\pm 2.0\%$ L + 8 D<br>20.00 mA ; 200.0 mA / $\pm 2.0\%$ L + 8 D<br>200 mA / 500 V electronic fuse protection |
| I <sub>AC</sub> / Accuracy / Protection  | -                                                                                                                                                                                                                    | 200.0 $\mu$ A ; 2,000 $\mu$ A / $\pm 2.5\%$ L + 10 D<br>20.00 mA ; 200.0 mA / $\pm 2.5\%$ L + 10 D<br>Protection 200 mA / 500 V               |
| Resistance / Accuracy / Protection       | 200.0 $\Omega$ / $\pm 0.8\%$ L + 5 D<br>2,000 k $\Omega$ , 20.00 k $\Omega$ , 200.0 k $\Omega$ / $\pm 1.2\%$ L + 5 D<br>2,000 M $\Omega$ / $\pm 5.0\%$ L + 5 D<br>20.00 M $\Omega$ / $\pm 10.0\%$ L + 5 D • 600 Vrms |                                                                                                                                               |
| Diode test / Test signal / Protection    | 1,999 V / V <sub>Test</sub> $\leq$ 1.5 V / I <sub>Test</sub> $\leq$ 1 mA • 600 Vrms                                                                                                                                  |                                                                                                                                               |
| Audible continuity / Buzzer / Protection | 199.9 $\Omega$ / R < approx. 60 $\Omega$ / 600 Vrms                                                                                                                                                                  |                                                                                                                                               |
| Torch                                    | Yes                                                                                                                                                                                                                  |                                                                                                                                               |
| Standards                                | IEC 61010 1000 V CAT III / 600 V CAT IV                                                                                                                                                                              |                                                                                                                                               |
| Power supply                             | 2 x 1.5 V LR03 batteries                                                                                                                                                                                             |                                                                                                                                               |
| Various                                  | Touch-tip leads attached to the device                                                                                                                                                                               |                                                                                                                                               |
| Dimensions / weight                      | 104 x 55 x 32.5 mm / 145 g                                                                                                                                                                                           |                                                                                                                                               |



## 1 pocket multimeter supplied with:

- 2 x 1.5 V LR03 batteries

## To order

CA 702

Reference: P01191739Z

CA 703

Reference: P01191740Z

## Recommended accessory

P01298065Z  
Carrying case

## Compact digital multimeters

### CA 5231 - CA 5233



IP 54

1000 V  
CAT III600 V  
CAT IVIEC  
61010-2-033

TRMS

This series of digital multimeters has all the functions expected by electricians for the maintenance of residential and tertiary equipment and installations equipment and installations.

2 «Off» positions for greater efficiency and a compact case covered in No-slip, protective material for excellent grip.

#### CA 5231 and CA 5233

- Compact and ergonomic
- Exceptional readability thanks to 6000 counts backlit display with bar graph
- AC/DC voltage up to 1,000 V
- AC/DC current up to 600 A with 1,000/1 current clamp (optional)

|                                    | CA 5231                                                          | CA 5233                                                         |
|------------------------------------|------------------------------------------------------------------|-----------------------------------------------------------------|
| Display                            | 6000 counts display+ bargraph 61 segments                        |                                                                 |
| Backlight                          | Yes                                                              |                                                                 |
| Acquisition                        | True RMS AC                                                      |                                                                 |
| Autorange / Manual range           | Yes / Yes                                                        |                                                                 |
| Better accuracy                    | 0.02 %                                                           |                                                                 |
| AC voltage LowZ                    | Yes                                                              |                                                                 |
| Audible continuity / Diode test    | Yes / Yes                                                        |                                                                 |
| No-contact voltage detection (NCV) | Yes                                                              |                                                                 |
| Display memory (Hold)              | Yes                                                              |                                                                 |
| Relative mode                      | -                                                                | Yes                                                             |
| Min-Max                            | -                                                                | Yes                                                             |
| Power supply                       | 1 x 9 V battery 6LR61                                            |                                                                 |
| Degree of tightness                | IP54 RATING                                                      |                                                                 |
| Standards                          | IEC 61010-1,<br>IEC 61010-2-033 CAT IV 600 V /<br>CAT III 1000 V | IEC 61010-1,<br>IEC 61010-2-033 CAT IV 600 V /<br>CAT III 600 V |
| Dimensions / weight                | 155 x 75 x 55 mm / 320 g                                         |                                                                 |

|                        |                                                                                |                                                                    |
|------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------|
| AC voltage             | 6 ranges / 1,000 V / resolution: 0.01 mV / bandwidth: 45 Hz ... 1 kHz          |                                                                    |
| DC voltage             | 6 ranges / 1,000 V / resolution: 0.01 mV                                       |                                                                    |
| AC/DC current          | With 1 optional AC or DC clamp (1 mV/A)<br>1 rating: 600 A / Resolution: 0.1 A | 2 ratings: 10 A / 6 A<br>Resolution: 0.001 A                       |
| Resistance measurement | 6 Calibration / 60 MΩ / Resolution : 0,1 Ω                                     |                                                                    |
| Capacity               | -                                                                              | 6 ratings / 1,000 μF<br>Resolution: 0.01 nF                        |
| Temperature            | -                                                                              | 2 ranges -20 °C to 760 °C<br>-4 °F to 1,400 °F<br>Resolution: 0.1° |



#### 1 CA 5231 multimeter supplied with:

- 1 set of red/black touch-tip cords
- 1 x 9 V battery 6LR61

The CA 5231 is also available complete with its 100 Aac clamp ammeter, model MINI 03 (P01196734)

#### 1 CA 5233 multimeter supplied with:

- 1 set of red/black test leads
- 1 TC-K adapter for DMM
- 1 K wire thermocouple
- 1 9 V battery 6LR61

#### To order

CA 5231

Reference: P01196731

CA 5233

Reference: P01196733

CA 5231 with MINI 03 clamp

Reference: P01196734

#### Recommended accessories



P01102100Z  
MULTIFIX accessories



P01295459Z  
Accessory kit for electricians

Compact digital multimeters

MTX 202, MTX 203, MTX 204



600 V  
CAT III

IEC  
61010-2-033

IP 54

TRMS

For measurements on electrical networks and installations up to 600 V CAT III, the MTX 200 series multimeters are professional, general-purpose measuring instruments.

- Compact case with multi-purpose cable storage sleeve, magnetic mounting for metal cabinets and shock protection with MULTIFIX system
- Blue backlight with torch for optimum viewing in dark environments

|                                  | MTX 202                                                                     | MTX 203                          | MTX 204                          |
|----------------------------------|-----------------------------------------------------------------------------|----------------------------------|----------------------------------|
| Acquisition                      | TRMS AC/DC                                                                  | TRMS AC/DC                       | TRMS AC/DC/AC+DC                 |
| Display resolution               | 4,000 counts                                                                | 6,000 counts                     | 6,000 counts                     |
| Auto power off                   | 30 min / Permanent mode                                                     |                                  |                                  |
| Basic accuracy (Voc)             | 0.20 %                                                                      |                                  |                                  |
| Bandwidth                        | 1 kHz                                                                       |                                  |                                  |
| Audible continuity               | Yes                                                                         |                                  |                                  |
| Frequency and duty cycle         |                                                                             |                                  | 2 Hz to 1 kHz                    |
| Diode test                       | Yes                                                                         | Yes                              | Yes                              |
| Capacity (ranges)                | 1 nF to 100 mF                                                              | 1 nF to 100 mF                   | 1 nF to 100 mF                   |
| HOLD                             | ■                                                                           | ■                                | ■                                |
| Min/MAX                          | -                                                                           | -                                | ■                                |
| ΔREL                             | -                                                                           | -                                | ■                                |
| Power supply / Battery life      | 2 x 1.5 V / 500 h batteries                                                 | 2 x 1.5 V / 500 h batteries      | 2 x 1.5 V / 500 h batteries      |
| Dimensions / Weight              | 170 x 80 x 50 mm / 320 g                                                    | 170 x 80 x 50 mm / 320 g         | 170 x 80 x 50 mm / 320 g         |
| Safety électrique                | IEC 61010-2-033<br>600 V CAT III                                            | IEC 61010-2-033<br>600 V CAT III | IEC 61010-2-033<br>600 V CAT III |
| High resistance enclosure        | IP 54                                                                       | IP 54                            | IP 54                            |
| Warranty                         | 2 years                                                                     | 2 years                          | 2 years                          |
| Measurement range                | Measurement range from 10 mV to 750 V <sub>AC</sub> / 1,000 V <sub>DC</sub> |                                  |                                  |
| AC voltage / DC voltage (ranges) | 400 mV to 600 V / 600 V                                                     | 600 mV to 750 V / 1,000 V        | 600 mV to 750 V / 1,000 V        |
| AC/DC current (ranges)           | 20 mA to 10 A                                                               | 10 μA to 10 A                    | 10 μA to 10 A                    |
| Resistance (ranges)              | 1 Ω to 40 MΩ                                                                | 1 Ω to 60 MΩ                     | 1 Ω to 60 MΩ                     |
| No-contact voltage detection NCV | 230 V / 50 Hz                                                               | 230 V / 50 Hz                    | 230 V / 50 Hz                    |
| Temperature                      | -55 °C to 1,200 °C                                                          | -55 °C to 1,200 °C               | No                               |



1 MTX 202 or MTX 203 multimeter supplied with:

- 1 set of 2 safety leads with touch points
- 2 x 1.5 V AA batteries
- 1 wired K thermocouple
- 1 elastomer sheath with stand
- Operating instructions

1 MTX 204 multimeter supplied with:

- 1 set of 2 safety leads with touch points
- 2 x 1.5 V AA batteries
- 1 magnetised elastomer sheath with lever handle
- Operating instructions

To order

MTX202 delivered in blister pack  
**Reference: MTX202-Z**

MTX203 delivered in blister pack  
**Reference: MTX203-Z**

MTX204 delivered in blister pack  
**Reference: MTX204-Z**

Recommended accessories



HX0052B  
Bag



P01102107Z  
K thermocouple



HX0064  
SMD clip banana cord

## Industrial digital multimeters

CA 5273, CA 5275, CA 5277

1000 V  
CAT III600 V  
CAT IVIEC  
61010-2-033

IP 54

TRMS

**A full-featured range  
for inspection control,  
maintenance or expertise**

**CA 5273**

- Temperature and capacitance measurements
- Central bar graph zero mode
- Min/Max memory

**CA 5275 and CA 5277**

- 10  $\mu$ V resolution
- Current measurement from  $\mu$ A
- Measurement of ionisation currents
- Min / Max / Peak+ / Peak- acquisition

|                                                                    | CA 5273                                                        | CA 5275                                                          | CA 5277                                    |
|--------------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------------------|--------------------------------------------|
| Display                                                            | 2 x 6000 counts backlit                                        |                                                                  |                                            |
| Bar graph                                                          | 63-element dual mode (full scale / centre zero)                |                                                                  |                                            |
| Acquisition                                                        | TRMS AC / DC                                                   | TRMS AC / DC / AC+DC                                             |                                            |
| Measurement rate                                                   | 5 measurements / second                                        |                                                                  |                                            |
| Calibration Automatics / Manuels                                   | Yes / Yes                                                      |                                                                  |                                            |
| AC voltage LowZ                                                    | Low impedance position with Low Pass Filter                    |                                                                  |                                            |
| Audible continuity / Diode test                                    | Yes / Yes                                                      |                                                                  |                                            |
| Hold                                                               | Yes                                                            |                                                                  |                                            |
| Min / MAX (100 ms)                                                 | Yes                                                            |                                                                  |                                            |
| Peak+ / Peak- (1 ms)                                               | No                                                             | Yes                                                              |                                            |
| Differential ( $\Delta$ X) / RELative ( $\Delta$ X/X%) measurement | No                                                             |                                                                  | Yes                                        |
| Automatic switch-off                                               | Yes (disengageable)                                            |                                                                  |                                            |
| Safety                                                             | IEC 61010-1, IEC 61010-2-033 CAT IV 600 V / CAT III 1000 V     |                                                                  |                                            |
| Protection class and d'étanchéité                                  | IP54                                                           |                                                                  |                                            |
| Power supply                                                       | 1 x 9V 6LR61 battery                                           |                                                                  |                                            |
| Dimensions / weight                                                | 90 x 190 x 45 / 400 g                                          |                                                                  |                                            |
| AC/DC voltage                                                      | 600.0 mV / 6.000 V / 60.00 V / 600.0 V / 1,000 V               |                                                                  |                                            |
| AC/DC/AC+DC voltage                                                | 60.00 mV / 600.0 mV / 6 V / 60.00 V / 600.0 V / 1,000 V        |                                                                  |                                            |
| Typical accuracy (Voc)                                             | 0.2% + 2 cts                                                   | 0.09% + 2 cts                                                    |                                            |
| Bandwidth (V <sub>AC</sub> )                                       | 40 Hz to 3 kHz                                                 | 40 Hz à 10 kHz                                                   |                                            |
| AC/DC current                                                      | 6.000 A / 10.00 A (20 A/30 s)                                  | -                                                                | -                                          |
| AC/DC/AC+DC current                                                | -                                                              | 6,000 µA / 60.00 mA / 600.0 mA / 6.000 A / 10.00 A (20A/30s)     |                                            |
| Ionisation current                                                 |                                                                | 0.2 µA to 20.0 µA <sub>DC</sub>                                  |                                            |
| Resistance measurement                                             | 600.0 Ω / 6,000 Ω / 60.00 kΩ / 600.0 kΩ<br>6.000 MΩ / 60.00 MΩ | 600.0 Ω / 6,000 Ω / 60.00 kΩ / 600.0 kΩ<br>6.000 MΩ / 60.00 MΩ   |                                            |
| Audible continuity / Diode test                                    | Yes / Yes                                                      |                                                                  |                                            |
| Frequency                                                          | 600.0 Hz / 6.000 kHz / 20.00 kHz                               | 600.0 Hz / 6.000 kHz / 20.00 kHz                                 |                                            |
| Capacity                                                           | 8 cal. : 6,000 nF to 60,00 mF                                  | 6,000 nF / 60 nF / 600 nF / 6 µF / 60 µF / 600 µF / 6 mF / 60 mF |                                            |
| Temperature                                                        | -59,6 °C to +1,200 °C<br>-4 °F to 2,192 °F                     | No                                                               | -59,6 °C to +1,200 °C<br>-4 °F to 2,192 °F |

**CA 5273 supplied with:**

- 1 set of banana cords
- 1 set of test probes
- 1 9 V battery 6LR61
- 1 K thermocouple temperature sensor

**CA 5275 supplied with:**

- 1 set of banana leads
- 1 set of test probes
- 1 x 9 V battery
- 1 carrying case
- 1 MultiFix mounting accessory
- 1 start-up guide

**CA 5277 same as CA 5275 plus:**

- 1 K thermocouple temperature sensor

**To order**

1 CA 5273 multimeter

**Reference: P01196773**

1 CA 5275 multimeter

**Reference: P01196775**

1 CA 5277 multimeter

**Reference: P01196777****Recommended accessories****P01295459Z**

Electrician's accessory kit

**P01298076**

Carrying case



Industrial digital multimeters

MTX 3290 - MTX 3291



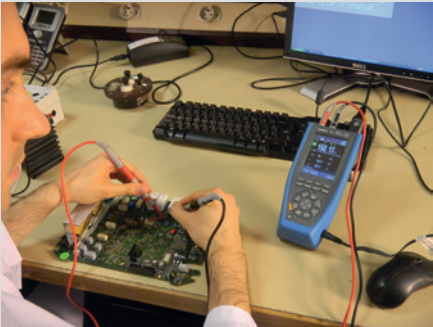
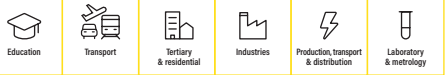
- 1 000 V  
CAT III
- 600 V  
CAT IV
- IP 67
- IEC  
61010-2-033
- 

Multimeters designed for the field, a single high-performance, comprehensive diagnostic instrument that's above all easy to use!

- Each main measurement is instantly accessible via one of the 6 dedicated keys

|                                        | MTX 3290                                                                                            | MTX 3291*                                 |
|----------------------------------------|-----------------------------------------------------------------------------------------------------|-------------------------------------------|
| Display type                           | LCD with backlight*, and 14 mm digit height<br>Dual 60,000-dot* or 6,000-count display              |                                           |
| DC, AC and AC+DC voltages              | 600 mV to 600 V (5 ranges)                                                                          | 60 mV to 1 000 V (6 ranges)               |
| DC accuracy                            | 0.3 %                                                                                               | 0.05 %                                    |
| AC bandwidth AC+DC                     | 20 kHz                                                                                              | 100 kHz                                   |
| Current DC, AC, AC+DC                  | 600 µA at 10 A /20 A (30 s max)*                                                                    |                                           |
| DC accuracy                            | 1.2 %                                                                                               | 0.8 %                                     |
| Frequency                              | 60 Hz to 600 kHz                                                                                    |                                           |
| Resistance                             | 600 Ω to 60 MΩ (5 ranges)                                                                           |                                           |
| Audible continuity                     | 600 Ω SIGNAL < 30 Ω ±5 Ω < 5 V                                                                      |                                           |
| Diode test                             | 3 V resolution 1 mV                                                                                 |                                           |
| Capacities                             | 6 nF to 60 mF (8 ranges)                                                                            |                                           |
| Temperature PT100/1000                 | -200 °C to +800 °C                                                                                  |                                           |
| Other functions                        |                                                                                                     |                                           |
| Monitoring                             | MAX/MIN / AVG time-stamped or PEAK ±, on all main positions                                         |                                           |
| REL                                    | Relative value REL+ secondary display: the reference measured value*                                |                                           |
| PWM filter                             | Low-pass 300 Hz, 4th order for measurement on induction motor drives                                |                                           |
| Direct reading V output clamp function | Ratio integration 1/1, 1/10, 1/100, 1/1,000 mV/A                                                    |                                           |
| Secondary functions or measurements    | dBm and VA resistive power, duty cycle +/-, and pulse width*                                        |                                           |
| Central zero                           | Selectable or automatic* bar graph in V <sub>OC</sub> and I <sub>OC</sub>                           |                                           |
| General characteristics                |                                                                                                     |                                           |
| PC interface                           | -                                                                                                   | Optical USB connector and SX-DMM software |
| Power supply                           | 4 x 1.5 V AA or Ni-MH batteries                                                                     |                                           |
| Safety                                 | Safety according to IEC 61010-2-033 1000 V-CAT III/600 V CAT IV*<br>or 600 V CAT III / 300 V CAT IV |                                           |
| Environment                            | Storage -20 °C to +70 °C - Use -10 °C to +55 °C                                                     |                                           |
| Mechanical specifications              | Dimensions (W x D x H) : 196 x 90 x 47.1 mm - Weight : 570 g                                        |                                           |

(\*) MTX 3291 seulement



Multimeter supplied with:

- 4 x 1.5 V alkaline batteries
- 1.5 m straight/straight cable, red
- 1.5 m straight/straight cable, black
- CAT IV 1 kV probe, red
- CAT IV 1 kV test probe, black
- Operating instructions CD and paper start-up guide
- USB cable and remote programming manual for communicating version (MTX 3291 + SX-DMM software)

To order

MTX 3290  
Reference: MTX3290

MTX 3291  
Reference: MTX3291

Recommended accessories

HX0056-Z  
Optical/USB cable

HX0052B  
Carrying case for MTX 329x multimeter

## Graphic digital multimeters

## CA 5292 - CA 5293

1000 V  
CAT III600 V  
CAT IVIEC  
61010-2-033

IP 67



- Bandwidth 100 kHz to 200 kHz
- TK/TJ or PT temperature measurement from -200 °C to +1200 °C
- Current measurement by direct reading clamp (ratio integration)
- Numerous additional measurement functions: low-pass PWM filter (inverter), and low impedance VLowZ (500 kΩ), dB/dBm measurement, duty cycle, pulses, diode measurements: zener or led, etc.
- Simplified settings for number of measurements, interval (from 0.2 s to 24 h), duration and memory capacity...
- Zoom function on curve in memory

|                                  | CA 5292                                                                                   | CA 5293 |
|----------------------------------|-------------------------------------------------------------------------------------------|---------|
| Display                          | 4 x 100,000 TRMS counts                                                                   |         |
| Bar graph                        | 40 elements or central zero mode                                                          |         |
| Measurement rate                 | 5 measurements / second                                                                   |         |
| DC, AC and AC+DC voltages        |                                                                                           |         |
| Measurement range                | 10 µV to 600 V <sub>AC</sub> /1,000 V <sub>DC</sub>                                       |         |
| Range                            | 100 mV* / 1,000 mV / 10 V / 100 V / 1,000 V                                               |         |
| Bandwidth AC AC+DC               | 100 kHz                                                                                   | 200 kHz |
| Basic accuracy AC AC+DC          | 0.3 %                                                                                     | 0.3 %   |
| Basic accuracy DC                | 0.03 %L                                                                                   | 0.02 %L |
| Impedance in VLowZ AC            | 500 kΩ                                                                                    |         |
| Current DC, AC, AC+DC            |                                                                                           |         |
| Measurement range                | 100 µA to 20 A (30 s)                                                                     |         |
| Range                            | 1,000 µA / 10 mA / 100 mA / 1,000 mA / 10 A<br>10 A / 20 A (30 s max)                     |         |
| Bandwidth AC AC+DC               | 50 kHz                                                                                    |         |
| Frequency                        |                                                                                           |         |
| Measurement range                | 1 Hz to 5 MHz                                                                             |         |
| Frequency range                  | 10 Hz / 100 Hz / 1 kHz / 10 kHz / 100 kHz / 1 MHz / 5 MHz                                 |         |
| Resistance and continuity        |                                                                                           |         |
| Ranges                           | 100 Ω* / 1 kΩ / 100 kΩ / 1,000 kΩ / 10 MΩ / 100 MΩ                                        |         |
| Continuity detection             | < 20 Ω                                                                                    |         |
| Diode test                       |                                                                                           |         |
| Voltage measurement              | Open circuit diodes< 26 V <sub>max</sub> at 10 mA                                         |         |
| Capacities                       |                                                                                           |         |
| Measurement range                | 1pF to 10mF                                                                               |         |
| Ranges                           | 1 nF / 10 nF / 100 nF / 1,000 nF / 10 µF / 100 µF / 1 mF / 10 mF                          |         |
| Temperature Pt100/1000 and TK/TJ |                                                                                           |         |
| Operating range                  | -200 °C to +800 °C for Pt and -40 °C to +1,200 °C for TK                                  |         |
| Other functions                  |                                                                                           |         |
| MAX/MIN/AVG - PEAK               | On all time-stamped main quantities - Secondary measurement                               |         |
| REL                              | Relative value REF - Main measurement                                                     |         |
| PWM filter                       | Low-pass 300 Hz 4th order for measurement on induction motor drives                       |         |
| SPEC                             | Measurement tolerance display+ Smin+ Smax                                                 |         |
| GRAPH                            | Main measurement trend based on variable time from 1 min 28 s to 1 h 13 min 20 s          |         |
| WAVEFORME                        | Graphical display of a signal up to 600 Hz auto mode                                      |         |
| Secondary measurements           | 3 measurements+ main measurement                                                          |         |
| Measurement memory               | 10,000                                                                                    | 30,000  |
| General characteristics          |                                                                                           |         |
| Display type                     | Colour graphics (70 x 52) with backlight, black background on 4 x 100,000 counts displays |         |
| PC interface*                    | Optical USB connector                                                                     |         |
| Power supply                     | Charger or 4 AA or Ni-MH batteries                                                        |         |
| Safety / EMC                     | IEC 61010-2-033 - 1,000 V CAT III - 600 V CAT IV<br>EMC according to EN61326-1            |         |
| Environment                      | Storage -20 °C to +70 °C - Use 0 °C to +40 °C                                             |         |
| Mechanical characteristics       | Dimensions (W x D x H): 196 x 90 x 47.1 mm / Weight: 570 g                                |         |
| Protection class                 | IP67                                                                                      |         |

CA 5292,  
and CA 5293  
supplied with:

- 1 case
- 4 Ni-MH batteries
- 1 USB charger
- 1 set of 2 red/black 1.5 m straight/straight cables
- 1 set of CAT IV 1 kV red/black test probes
- 1 USB optical cable
- 1 SX-DMM software

## To order

1 CA 5292 multimeter **Reference: P01196802**1 CA 5293 multimeter **Reference: P01196803**

## Recommended accessory

P01120401  
MN08 current clamp

## Intrinsically safe multimeter

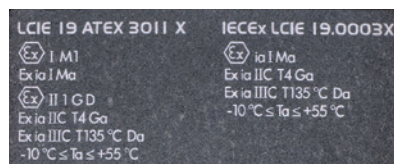
MTX 3297Ex

600 V  
CAT IVTRMS  
AC+DC

IP 67



- TRMS AC+DC acquisition
- Display resolution of 60,000 counts
- 100 kHz bandwidth
- Voltage resolution of 1  $\mu$ V and current resolution of 0.01  $\mu$ A
- Large 5.7" backlit digital display
- Secure terminal block with clear marking of connections to prevent any risk of error



| Tensions DC, AC and AC+DC                               |                                   |                                                                              |
|---------------------------------------------------------|-----------------------------------|------------------------------------------------------------------------------|
| V DC                                                    | Measurement range                 | 0.001 mV to 1000.0 V DC                                                      |
|                                                         | Uncertainty                       | 0.05 % + 25 cts                                                              |
| V AC, V AC+DC                                           | Measurement range                 | 0.001 mV to 1000.0 V AC or AC+DC                                             |
|                                                         | Uncertainty AC, AC+DC / Bandwidth | 0.05 % + 25 cts, 0.05% + 40 cts / 100 kHz                                    |
| V <sub>LOWZ</sub>                                       | Measurement range                 | 0.01 mV to 1000.0 V                                                          |
|                                                         | Uncertainty / Bandwidth           | 0.05 % + 25 cts / 300 Hz                                                     |
| Measurement range certified in ATEX Zone                |                                   | 0.001 mV to 65.00 Vrms                                                       |
| DC, AC & AC+DC currents (fused)                         |                                   |                                                                              |
| A DC                                                    | Measurement range                 | 0.01 µA to 10.00 A DC (max. 20 A/30 s)                                       |
|                                                         | Uncertainty                       | 0.8 % + 20 cts                                                               |
| A AC, A AC+DC                                           | Measurement range                 | 0.01 µA to 10.00 A AC or AC+DC (max. 20 A/30 s)                              |
|                                                         | Uncertainty / Bandwidth           | 1.0 % + 25 cts / 20 kHz                                                      |
| Certified measurement range in ATEX Zone <sup>(3)</sup> |                                   | 0.01 µA to 5.00 A                                                            |
| with external sensor (clamp)                            |                                   | up to 6000 A depending on sensor, transformation ratio 1, 10, 100, 1000 mV/A |
| Frequency                                               |                                   |                                                                              |
| Hz                                                      | Measurement range                 | 10.00 Hz to 200.0 kHz (in V), 20.00 kHz (in A)                               |
|                                                         | Uncertainty                       | 0.1 % + 1 cts                                                                |
| Resistance & Continuity, Diode                          |                                   |                                                                              |
| Ω                                                       | Measurement range                 | 0.00 Ω to 60.000 MΩ                                                          |
|                                                         | Uncertainty                       | 0.1 % + 20 cts                                                               |
| Continuity                                              |                                   | Audible signal< 30 ± 5 Ω / < 5 V, I< 1,1 mA                                  |
| Diode test                                              |                                   | 3.000 V, 1%+ 30 cts / U< 5 V, I< 1.1 mA                                      |
| Capacitance                                             |                                   |                                                                              |
| nF/µF/mF                                                | Measurement range                 | 0.100 nF ;to 60.000 mF                                                       |
|                                                         | Accuracys                         | 1 % + 10 cts                                                                 |
| Temperature Pt100/Pt1000                                |                                   |                                                                              |
| °C/°F                                                   | Measurement range                 | -200.0 °C to +800.0 °C                                                       |
|                                                         | Uncertainty                       | 0.1 % ± 1.5°C                                                                |
| Other measurements                                      |                                   |                                                                              |
| Secondary measurements                                  |                                   | Duty cycle, Pulse width, Resistive power (U <sup>2</sup> /R), dBm            |
| Functions                                               |                                   |                                                                              |
| MAX/Min/AVG, Peak+/Peak-                                |                                   | On all main measurements 100 ms except Peak 1 ms                             |
| ΔREL, ΔREL/R                                            |                                   | Differential value, Relative value                                           |
| PWM filter                                              |                                   | Low-pass filter 300 Hz 4th order                                             |
| General characteristics                                 |                                   |                                                                              |
| Display                                                 |                                   | Dual 60,000-dot LCD display with 3-level backlighting                        |
| Power supply                                            |                                   | 4 AA/FR6 Li-FeS2 ATEX-qualified batteries / 350 h operating time             |
| Compliance outside ATEX zone                            |                                   | IEC 61010-2-033 1000V CAT III/600V CAT IV, EN 61326-1 class B                |
| Sealing / Environment                                   |                                   | IP 67 <sup>(2)</sup> / Storage -20°C to +70°C, Use -10°C to +55 °C           |
| Mechanical specifications                               |                                   | Dimensions (W x D x H): 196 x 90 x 47.1 mm - Weight: 715g                    |
| Warranty                                                |                                   | 3 years                                                                      |

(1) In «safe zone» (non-ATEX zone). (2) IP67 when not in use. (3) Current measurement in hazardous areas must be carried out using the Ampere input.



## + The extra

Outside the ATEX zone, the MTX 3297Ex is also a high-performance 1,000 V CAT III/ 600 V CAT IV industrial multimeter.



## MTX3297 supplied with:

- 1 set of 2 1.5 m straight/coiled leads
- 1 set of probe tips
- 1 start-up guide (18 languages) including information (link & QR code) for free download of the operating manual
- 1 ATEX safety manual
- 1 set of 4 batteries (pre-installed in the device) 1.5V AA/ FR6 Li-FeS2 ATEX qualified

## To order

Multimeter MTX 3297Ex

Reference: MTX3297

## Recommended accessories

|  |                                           |
|--|-------------------------------------------|
|  | <b>HX0091</b><br>Pt100 / Pt1000 adapter   |
|  | <b>HX0056-Z</b><br>Optique/USB cable      |
|  | <b>P01105105Z</b><br>MINI05 current clamp |

## Spare parts Certified in Explosive Environment :

**AT0097**  
ATEX fuse 10x38 10 A 1000 V / 30 kA (unit)

**HX0097**  
Set of 4 ATEX Batteries 1.5V AA/FR6 Li-FeS2

**P01295451Z**  
Set of 2 overmoulded red/black PVC cords, straight/angled

**P01295454Z**  
Set of 2 red/black overmoulded touch tips



## Calibration software

### ACC SOFT - ACC CAL

#### Calibration software for optimum measurement accuracy

The software enables you to carry out periodic checking and/or adjustment operations on the «closed case» instruments. The software allows you to carry out periodic checks and/or adjustments on «closed-case» instruments using RS or USB serial communication (depending on the model), simply and efficiently.

Without having to go through the tedious process of acquiring in-depth technical knowledge of the Instrument, users will be able to carry out the «manufacturer's» procedures or devise their own. Without entering into a tedious process of in-depth technical knowledge of the instrument, the user can carry out the «manufacturer's» procedures or draw up his own procedures, in compliance with quality monitoring standards, while ensuring the reverse traceability of his processes, data back-up and the printing of readings.

#### List of multimeters supported and associated software

- Associated software HX0059B for:  
MTX 3292B and MTX 3293B
- Associated software P01196770 for :
  - MTX 3291
  - MTX 3297Ex
  - MX 5060
  - CA 5271, CA 5273
  - CA 5275, CA 5277

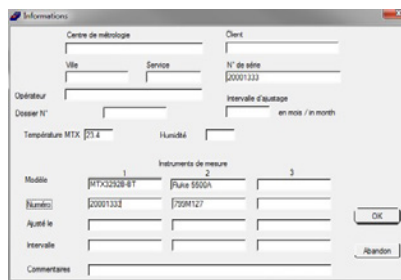
#### To order

Calibration software (depending on model)  
**Références : HX0059B or P01196770**

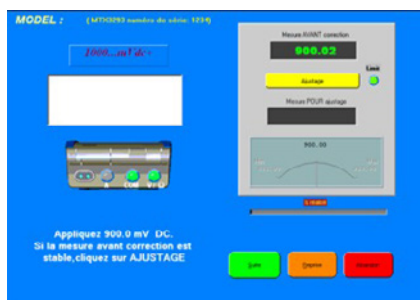


The software can be used to generate adjustment and verification statement files and a verification report.

Adjustment points can be recorded and stored, with product traceability information:



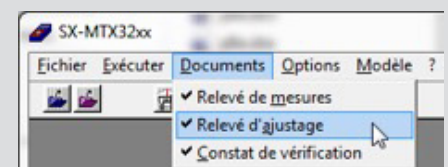
Step-by-step instructions for connections and adjustments are given so that you can follow the steps in the right order:



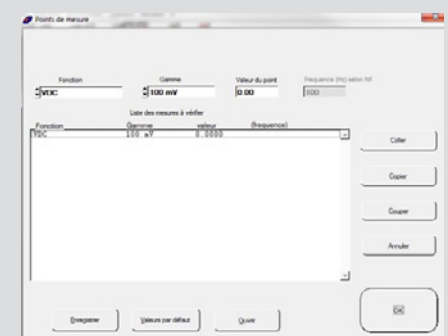
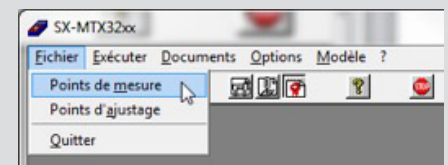
E.g.: extract from the test.txt file

| Ranges       | Adjustment value | Max deviation | Measured deviation | Tolerance (%) |
|--------------|------------------|---------------|--------------------|---------------|
| Offset V...  | 0.0000           | unadjusted    |                    |               |
| 100... mVdc+ | 90.000           | unadjusted    |                    |               |
| 100... mVdc- | -90.000          | unadjusted    |                    |               |
| 1000...mVdc+ | 900.00           | 0.7202        | -0.0300            | 4.16          |
| 1000...mVdc- | -900.00          | 0.7202        | 0.0000             | 0.00          |

Tolerance error (%) indicates the error in the general tolerance of the MTX.  
Here the adjustment error is 4.16 % of the maximum tolerance.



The programme is useful for checking basic measurements. The verification results are available in a file.





# Oscilloscope multimeters

## CA 922 - CA 942

**HANDSCOPE**
**3 in 1**
**600 V  
CAT III**

**TRMS  
AC+DC**


## For maintenance and troubleshooting, view signals in the field

- 20 or 40 MHz 2-channel isolated oscilloscope
- Dual 8000-point multimeter
- Dual harmonic analyser

|                            | CA 922                                                                                                                | CA 942                          |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------|---------------------------------|
| HMI                        |                                                                                                                       |                                 |
| Display type               | 3"5 colour TFT - 320x240 resolution - LED backlighting                                                                |                                 |
| Display mode               | 2500 real acquisition points on screen                                                                                |                                 |
| Curves displayed on screen | 2 curves+ 2 references+ memory trace or mathematical calculation                                                      |                                 |
| Controls                   | Direct settings on front panel & on-screen menus via navigator (main & secondary without "hidden menus")              |                                 |
| Interactive on-board help  | 14 languages: French, English, German, Spanish, Italian, Swedish, Romanian, Russian, Finnish, ...                     |                                 |
| OSCILLOSCOPE MODE          |                                                                                                                       |                                 |
| Vertical deflection        |                                                                                                                       |                                 |
| Bandwidth                  | 20 MHz                                                                                                                | 40 MHz                          |
| Bandwidth limiter          | 1.5 MHz, 5 kHz                                                                                                        |                                 |
| Number of channels         | 2 fully isolated channels                                                                                             |                                 |
| Input impedance            | 1 MΩ ±0.5%, approx. 17 pF                                                                                             |                                 |
| Maximum input voltage      | 600 V CAT III - Derating -20 dB per decade from 100 kHz                                                               |                                 |
| Vertical sensitivity       | 5 mV to 200 V/div                                                                                                     |                                 |
| Horizontal deviation       |                                                                                                                       |                                 |
| Scanning speed             | From 25 ns/div to 200 s/div - Roll mode from 100 ms to 200 s/div                                                      |                                 |
| Horizontal zoom            | zoom coefficient: x1, x2, x5                                                                                          |                                 |
| Triggering                 |                                                                                                                       |                                 |
| Mode                       | Automatic, triggered, single shot & Roll triggered                                                                    |                                 |
| Type                       | Front, Pulse width (20 ns - 20 s)                                                                                     |                                 |
| Coupling                   | AC or DC (depending on trigger channel coupling), HF, LF or noise rejection                                           |                                 |
| Sensitivity                | ≤ 12 divisions p-p up to 20 MHz                                                                                       | ≤ 12 divisions p-p up to 40 MHz |
| Digital memory             |                                                                                                                       |                                 |
| Maximum sampling rate      | 2 GS/s in ETS - 50 MS/s in single shot on each channel                                                                |                                 |
| Vertical resolution        | 9 bit                                                                                                                 |                                 |
| Memory depth               | 2500 points per channel                                                                                               |                                 |
| User memory                | 2 MB for storing files: trace (.trc), text (.txt), configuration (.cfg), image files (.bmp)                           |                                 |
| GLITCH mode                | Duration≥ 20 ns - 1250 Min/Max torques                                                                                |                                 |
| Display modes              | Envelope, Averaging (Factors 2 to 64) and XY (vector)                                                                 |                                 |
| Other functions            |                                                                                                                       |                                 |
| MATH functions             | Channel inversion, addition, subtraction, multiplication and division (adjustable scaling)                            |                                 |
| Cursor measurements        | 2 cursors: V, T, dV, dt simultaneous - 4-digit resolution display                                                     |                                 |
| Automatic measurements     | 18 time or level measurements and Phase measurement                                                                   |                                 |
| MULTIMETER MODE            |                                                                                                                       |                                 |
| General characteristics    | 2 channels, 8000 point display+ bar graph min/max - Graphical recording of 2700 measurements (5 min to 1 month)       |                                 |
| Operating modes            | Absolute or relative display (absolute, deviation, ref, ref%) - Monitoring (instantaneous, Min, Max, Avg)             |                                 |
| AC, DC, AC+DC voltages     | Ranges from 600 mV to 600 VRMS, 800 mV to 800 VDC - VDC accuracy 1%L+20D - 50 kHz bandwidth                           |                                 |
| Resistance                 | Range from 80 Ω to 32 MΩ - accuracy 2%L+10D - Fast continuity test 10 ms                                              |                                 |
| Capacitors                 | Ranges from 5 nF to 5 mF - basic accuracy 2%L+10D                                                                     |                                 |
| Other measurements         | Frequency, rotation speed, 3.3 V diode test, temperature measurement (by K thermocouple and infrared probe)           |                                 |
| POWER                      |                                                                                                                       |                                 |
| Measurements               | Single-phase and balanced three-phase active power (with or without neutral), simultaneous display of current - PF    |                                 |
| HARMONIC MODE              |                                                                                                                       |                                 |
| Multi-channel analysis     | 2 channels, 31 rows, fundamental frequency from 40 to 450 Hz                                                          |                                 |
| Simultaneous measurements  | Total VRMS, THD and selected rank (%fundamental, phase, frequency, VRMS)                                              |                                 |
| GENERAL CHARACTERISTICS    |                                                                                                                       |                                 |
| Copies d'écran             | Up to 100 files in standard ".bmp" format, displayable on the instrument                                              |                                 |
| Communication PC           | Isolated optical USB interface - Optional "SX-Metro" PC application software                                          |                                 |
| Power supply               | 6 LR06 or 6 AA Ni-MH batteries - Battery life up to 8.5 hours<br>JACK/USB cable with adaptor - Fast charge in 3 hours |                                 |
| Safety / CEM               | Safety: 600 V CAT III, IEC 61010-2-033 / EN 61000-3 & EN 61326-1                                                      |                                 |
| Mechanical specifications  | 214 x 110 x 57 mm - 1,2 kg with batteries - elastomer-moulded case                                                    |                                 |



For stable measurement on signals seen by the motor at the drive output, a PWM kit is available.

### + The extra

- 1 single connector for all modes: 2 BNC inputs for probe or BNC/banana adaptor supplied



### CA 922 and CA 942:

- BNC-Banana adaptors, 2 for CA 922, 1 for CA 942
- Sets of 1.5 m PVC moulded straight-curved banana leads R/N, 2 for CA 922, 1 for CA 942
- Set of crocodile clips R/N, 2 for CA 922, 1 for CA 942
- 1 probe 1/10 600 V for CA 942
- Set of CAT IV 1000V touch probes R/N, 2 for CA 922, 1 for CA 942
- Jack-USB cable+ WALLPLUG USB
- USB optical lead
- Carrying case

### To order

CA 922

**Reference: P01192200**

CA 942

**Reference: P01194200**

### Recommended accessory



**P01102188**

1 PWM kit: one PWM voltage filter probe + one E27 current clamp

## Analogue multimeters

### Selection guide



|                                     | CA 5001 | CA 5003 | CA 5005 | CA 5011 |
|-------------------------------------|---------|---------|---------|---------|
| Analogue                            | ■       | ■       | ■       | ■       |
| Digital                             |         |         |         | ■       |
| Antiparallax mirror                 | ■       | ■       | ■       |         |
| 4000 dot display                    |         |         |         | ■       |
| Backlight                           |         |         |         | ■       |
| Measurement method TRMS AC+ DC      |         |         |         | ■       |
| Max                                 |         |         |         | ■       |
| Low impedance rating (LowZ)         | ■       | ■       | ■       |         |
| AC and DC current                   | ■       | ■       | ■       | ■       |
| Current via clamp                   |         |         | ■       |         |
| µA rating                           | ■       | ■       | ■       |         |
| 5 A rating                          | ■       |         |         |         |
| 10 A rating                         |         |         | ■       | ■       |
| 15 A rating                         |         | ■       |         |         |
| Resistance                          | ■       | ■       | ■       | ■       |
| Sound continuity                    | ■       | ■       | ■       | ■       |
| Frequency                           |         |         |         | ■       |
| dB                                  | ■       | ■       | ■       | ■       |
| Fuse control light                  | ■       | ■       | ■       | ■       |
| Ohmmeter voltage presence indicator |         | ■       | ■       | ■       |

## Analogue multimeter

### MX 1

600V  
CAT III

IP65



Thanks to its pointer display, the MX 1 multimeter offers rapid display of measurement results

- Audible alarm to protect the ohmmeter function
- Parallax mirror for accurate measurements
- Faulty fuse indicator

#### MX1

|                     |                                                                                    |
|---------------------|------------------------------------------------------------------------------------|
| Display             | Analogue with parallax mirror / 80 mm length scale                                 |
| DC voltage          | 10 mV to 600 V                                                                     |
| Ratings             | 150 mV / 0.5 V / 1.5 V / 5 V / 15 V / 50 V / 150 V / 500 V / 1.5 kV <sup>(1)</sup> |
| Accuracy class      | 2                                                                                  |
| AC voltage          | 10 mV to 600 V                                                                     |
| Ratings             | 5 V / 15 V / 50 V / 150 V / 500 V / 1.5 kV <sup>(1)</sup>                          |
| Accuracy class      | 2.5                                                                                |
| DC current          | 2 µA to 10 A                                                                       |
| Ratings             | 50 µA / 500 µA / 5 mA / 150 mA / 500 mA / 1.5 A / 10 A                             |
| Accuracy class      | 2                                                                                  |
| AC current          | 20 µA to 10 A                                                                      |
| Ratings             | 500 µA / 5 mA / 150 mA / 500 mA / 1.5 A / 10 A                                     |
| Accuracy class      | 2.5                                                                                |
| Resistance          | Voltage presence audible alarm                                                     |
| Ratings             | x1 / x10 / x100                                                                    |
| Midpoint            | 200 Ω / 2 kΩ / 20 kΩ                                                               |
| Accuracy class      | 2.5                                                                                |
| Sound continuity    | < 150 Ω                                                                            |
| Other measurements  | Diode test, dB                                                                     |
| Tightness           | IP 65                                                                              |
| Power supply        | 1 x 1.5 V AA / LR06                                                                |
| Electrical safety   | 600 V CAT III according to IEC / EN 61010-1 Edition 2                              |
| Dimensions / weight | 40 x 98 x 150 mm / 420 g                                                           |

(1) Use limited to 600 Vmax



#### MX1 with:

- 1 set of test leads with touch-points
- 1 x 1.5 V battery
- 1 operating manual in 5 languages

#### To order

1 MX 1

Reference: MX1

1 MX1 supplied with 1 TX 01 voltage tester and a carrying case

Reference: MX0001-T

1 MINI01 current clamp

Reference: P01105101Z

1 MN09 current clamp

Reference: P01120402



|                      | MINI 01                    | MN 09                        |
|----------------------|----------------------------|------------------------------|
| Clamping Ø           | 10 mm                      | 20 mm                        |
| Measurement range    | 2 A to 150 A <sub>AC</sub> | 0.5 A to 200 A <sub>AC</sub> |
| Transformation ratio | 1 000/1                    | 1 000/1                      |

# Analogue multimeters

## CA 5001 - CA 5003 - CA 5005

600 V  
CAT III

IP 53



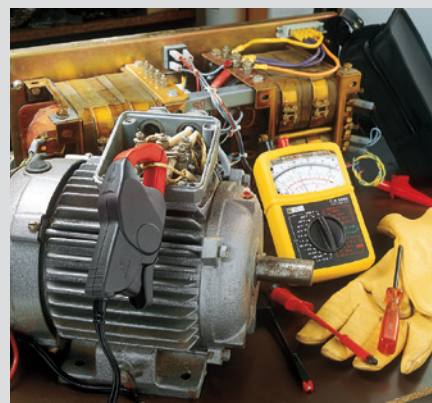
For analogue fans a range of multimeters to meet all the measurement needs of electricians and electrical technicians

- "Fus" indicator: check HPC fuses
- Volttest® indicator™: presence of ohmmeter voltage
- Automatic ohmmeter calibration
- µA calibrators
- Compact, shock-proof case with multi-purpose articulated stand "Multistand™".

\* for CA 5003 and CA 5005

|                                  | CA 5001                                          | CA 5003 <sup>(1)</sup>         | CA 5005 <sup>(1)</sup>                      |
|----------------------------------|--------------------------------------------------|--------------------------------|---------------------------------------------|
| DC voltage                       | 8 ratings: 100 mV / ... / 1,000 V <sup>(2)</sup> |                                |                                             |
| AC voltage                       | 5 ratings: 10 V / ... / 1,000 V <sup>(2)</sup>   |                                |                                             |
| Internal resistance              | 20 kΩ/V                                          |                                |                                             |
| Operating frequency              | 10 Hz ... 100 kHz depending on rating            |                                |                                             |
| DC current                       | 5 cal.:<br>50 µA / ... / 5 A                     | 7 cal.:<br>50 µA / ... / 15 A  | 6 cal.:<br>50 µA / ... / 10 A               |
| AC current                       | 4 cal.:<br>5 mA / ... / 5 A                      | 5 cal.:<br>1,5 mA / ... / 15 A | 5 cal.:<br>3 A / ... / 300 A <sup>(3)</sup> |
| Resistor                         | 2 cal.: 10 kΩ and 1 MΩ                           |                                |                                             |
| Audible continuity test          | R < 50 Ω                                         |                                |                                             |
| Scale in dB for Vac              | 0 ... +22 dB                                     |                                |                                             |
| Typical accuracy <sup>(4)</sup>  | 1,5 % in VDC • 2,5 % in VAC and AAC • 10 % in Ω  |                                |                                             |
| Power supply                     | 1 x 1.5 V LR06 battery                           | 1 x 9 V 6LR61 battery          |                                             |
| Battery life                     | 10,000 measurements of 15 s                      | 10,000 measurements of 10 s    |                                             |
| Safety électrique <sup>(5)</sup> | IEC 61010-1 Edition 2 600 V CAT III              |                                |                                             |
| Protection <sup>(6)</sup>        | HPC fuses<br>0,5 A and 5 A                       | HPC fuses<br>1,6 A and 16 A    | HPC fuses<br>1 A and 10 A                   |
| Degré d'étanchéité               | IP 40                                            | IP 53                          |                                             |
| Conditions climatiques           | -10 °C ... +55 °C and HR < 90 %                  |                                |                                             |
| Dimensions / weight              | 160 x 105 x 56 mm / 500 g                        |                                |                                             |

(1) Additional «Volttest™» function to check for the presence of resistance voltage and audible continuity test - (2) Use limited to 600 V max. (3) Limited to 240 A max. by MN 89 mini clamp - (4) In % of full scale - (5) Pollution degree 2 - (6) Electronic protection and HPC fuses for current ratings with fuse control indicator.



### + The extra

- Also available complete in a case:  
CA 5001 case ..... P01196521F  
CA 5003 case ..... P01196522F  
CA 5005 case ..... P01196523F
- The CA 5005 comes with a current clamp for measurements up to 200 A<sub>AC</sub>



### CA 5001 supplied with:

- 1 set of silicone cords straight banana plug/angled banana plug
- 1 set of safety pins
- 1 x 1,5 V LR06 battery

### CA 5003 supplied with:

- 1 set of silicone cords, straight banana plug/angled banana plug
- 1 set of safety pushbuttons
- 1 x 9 V battery 6LR61

### CA 5005 supplied with:

- 1 MN89 AC clamp ammeter
- 1 set of silicone leads, straight banana plug/angled banana plug
- 1 set of safety touch-points
- 1 x 9 V battery 6LR61

### To order

|                      |                       |
|----------------------|-----------------------|
| 1 CA 5001 multimeter | Reference: P01196521E |
| 1 CA 5003 multimeter | Reference: P01196522E |
| 1 CA 5005 multimeter | Reference: P01196523E |

# Analogue digital multimeter

## CA 5011

600 V  
CAT IV

IP 53

TRMS



**The CA 5011 gives the true RMS value regardless of whether the signal is sinusoidal or distorted**

It is suitable for all types of installation, even those with non-linear loads.

- Enhanced safety with 2 LEDs:  
«Fus»: control of HPC fuses, «Voltest™»: presence of ohmmeter voltage.
- Two complementary readings:  
Digital for accuracy, with backlighting and analogue for reading speed
- Automatic AC/DC recognition
- Compact, shockproof enclosure with multipurpose Multistand™ articulated lever handle

|                                        | CA 5011                                             |
|----------------------------------------|-----------------------------------------------------|
| DC and AC voltage                      | 2 x 5 ratings 400 mV / ... / 1,000 V <sup>(1)</sup> |
| Impedance                              | 10 MΩ                                               |
| Operating frequency <sup>(2)</sup>     | 20 Hz / ... / 10 kHz                                |
| DC and AC current                      | 2 x 6 ratings: 400 μA / ... / 10 A                  |
| Resistance <sup>(3)</sup>              | 6 ratings: 400 Ω / ... / 40 MΩ                      |
| Audible continuity test <sup>(3)</sup> | R < 400 Ω                                           |
| Frequency                              | 3 ratings: 4 kHz / ... / 100 kHz                    |
| dB scale for Vac                       | -20 dB ... +16 dB                                   |
| Maximum value                          | Over 500 ms                                         |
| Typical accuracy <sup>(4)</sup>        | 1% in Vac and Ω, 1,5 % in Aac                       |
| Power supply                           | 1 x 9 V 6LR61 battery                               |
| Battery life                           | 300 hours                                           |
| Electrical safety <sup>(5)</sup>       | IEC 61010-1 Edition 2 600 V CAT IV                  |
| Protection <sup>(6)</sup>              | HPC 1 A and 10 A fuses                              |
| Tightness level                        | IP 53                                               |
| Climatic conditions                    | -10 °C ... +55 °C and HR < 90 %                     |
| Dimensions / Weight                    | 160 x 105 x 56 mm / 500 g                           |

(1) Use limited to 600 V max. (2) Crest factors ≤ 5 - (3) Additional Voltest™ function to check for possible presence of voltage (4) In digital. In analogue: 2.5% - (5) Pollution degree 2 - (6) Electronic protection and HPC fuses for current ratings with fuse check indicator.



Education



Transport



Tertiary &amp; residential



Industries



Production, transport &amp; distribution



### + The extra

- Also available complete in case:  
CA 5011 case ..... **P01196311F**

### CA 5011 supplied with:

- 1 set of silicone cords straight banana plug / angled banana plug
- 1 set of safety touch points
- 1 x 9 V battery 6LR61

### To order

1 CA 5011 multimeter  
Reference: **P01196311E**

### Recommended accessories



**P01295459Z**  
Accessory kit for electrician



**P01295456Z**  
PVC cord with touch point, insulated angled male plug Ø 4 mm (x 2)



**P01298036**  
Carrying case no. 5



## Accessories for multimeters

|                                                                                     | Item code  | Description                                                                                                                                                                                                                        | CA 702<br>CA 703 | MTX 202<br>MTX 203 | MTX 204 | CA 5231 | CA 5233 | CA 5273 | CA 5275 | CA 5277 | MTX 3290 | MTX 3291 | CA 5292<br>CA 5293 | MTX 3297<br>Ex | CA 922<br>CA 962 | MX1 | CA 5001<br>CA 5003<br>CA 5005 | CA 5011 |
|-------------------------------------------------------------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|--------------------|---------|---------|---------|---------|---------|---------|----------|----------|--------------------|----------------|------------------|-----|-------------------------------|---------|
|    | P01295454Z | Set of 2 moulded touch-points (1 red / 1 black) for CAT III & IV 1,000 V installations                                                                                                                                             |                  | ■                  | ■       | ■       | ■       | ■       | ■       | ■       | ■        | ■        | ■                  | ■              | ■                | ■   | ■                             | ■       |
|    | P01295458Z | Set of 2 moulded touch-points 4 mm (1 red and 1 black) for CAT II 300 V installations                                                                                                                                              |                  | ■                  | ■       | ■       | ■       | ■       | ■       | ■       | ■        | ■        | ■                  |                | ■                | ■   | ■                             | ■       |
|    | P01295460Z | Set of 2 moulded touch-points 2 mm (1 red and 1 black) for CAT II 300 V installations                                                                                                                                              |                  | ■                  | ■       | ■       | ■       | ■       | ■       | ■       | ■        | ■        | ■                  |                | ■                | ■   | ■                             | ■       |
|    | P01295491Z | Ø2 mm test probes 1,000 V CAT IV 10 A - Suitable for IP2X contacts on modular switchboards - Ø4 mm insulated female connector - Set of 2 (1 red/1 black) - UL certified                                                            |                  | ■                  | ■       | ■       | ■       | ■       | ■       | ■       | ■        | ■        |                    | ■              |                  | ■   | ■                             | ■       |
|     | P01295455Z | Set of 2 PVC touch point leads (1 red, 1 black) / Insulated Ø4mm straight male plug / 15 A / 1.5 m / 1,000 V CAT IV                                                                                                                |                  |                    |         | ■       | ■       | ■       | ■       | ■       |          |          |                    |                |                  | ■   | ■                             | ■       |
|     | P01295456Z | Set of 2 PVC push-pull leads (1 red, 1 black) / Ø4 mm insulated angled male plug / 15 A / 1.5 m / 1,000 V CAT IV                                                                                                                   |                  | ■                  | ■       | ■       | ■       | ■       | ■       | ■       | ■        | ■        | ■                  |                |                  | ■   | ■                             | ■       |
|    | P01295461Z | Set of 2 IP2X multimeter leads (1 red, 1 black) / IP2X touch point - Ø4 mm angled male plug / 15 A / 1.5 m / IEC 61010 600 V CAT IV                                                                                                |                  | ■                  | ■       | ■       | ■       | ■       | ■       | ■       | ■        | ■        | ■                  |                |                  | ■   | ■                             | ■       |
|    | P01295451Z | Set of 2 moulded PVC cords (1 red, 1 black) / Ø4 mm insulated straight male plug - Ø4 mm insulated angled male plug / 15 A / 1.5 m / 1,000 V CAT IV                                                                                |                  | ■                  | ■       | ■       | ■       | ■       | ■       | ■       | ■        | ■        | ■                  | ■              |                  | ■   | ■                             | ■       |
|   | P01295453Z | Set of 2 moulded silicone leads (1 red, 1 black) / Ø4 mm insulated straight male plug - Ø4 mm insulated angled male plug / 15 A / 1.5 m / 1,000 V CAT IV                                                                           |                  | ■                  | ■       | ■       | ■       | ■       | ■       | ■       | ■        | ■        | ■                  |                |                  | ■   | ■                             | ■       |
|  | P01295459Z | Kit of measuring accessories for electricians including 2 moulded CAT IV test probes, 2 moulded PVC cords (red/black) with rightangle male-male plugs 1.5 m, 2 alligator clips, 2 D4mm overmoulded CAT II test probes              |                  | ■                  | ■       | ■       | ■       | ■       | ■       | ■       | ■        | ■        | ■                  | ■              | ■                | ■   | ■                             | ■       |
|  | P01295474Z | Accessory kit, 2 PVC RD/BK cords, insulated 4mm straight male plug-insulated 4mm angled male plug, 15 A, 1.5 m, 600V CAT IV, 2 moulded Ø 2 test probes, 4mm female plug, CAT II 300 V                                              |                  | ■                  | ■       | ■       | ■       | ■       | ■       | ■       | ■        | ■        | ■                  |                |                  | ■   | ■                             | ■       |
|  | P01295475Z | Accessory kit 2 PVC RD/BK leads, insulated 4 mm straight male plug - insulated 4mm angled male plug, 15 A, 1.5 m, 600 V CAT IV, 2 Ø 4 moulded touch points, 4mm female plug, CAT II 300V                                           |                  | ■                  | ■       | ■       | ■       | ■       | ■       | ■       | ■        | ■        | ■                  |                |                  | ■   | ■                             | ■       |
|  | HX0091     | HX0091 Pt100/Pt1000 probe adaptor lead for multimeter 4 mm dia. insulated male plugs                                                                                                                                               |                  |                    |         |         |         |         |         |         | ■        | ■        | ■                  | ■              |                  |     |                               |         |
|  | P01102106Z | Set of 2 safety thermocouple adapters for multimeters / Thermocouple female plug - Ø 4 mm insulated male plugs (red/black) with 19 mm centres                                                                                      |                  |                    |         |         | ■       | ■       |         | ■       |          |          | ■                  |                |                  |     |                               |         |
|  | P01102107Z | K thermocouple temperature probe for multimeters and multimeter clamps fitted with a temperature measurement gauge with 19 mm centre distance banana plugs. Measurement range from -50°C to +450°C. Sensor length: approx. 100 cm. |                  | ■                  |         |         | ■       | ■       |         | ■       |          |          | ■                  |                |                  |     |                               |         |
|  | P01191748Z | CA 753 Measuring adapter for 2P+T EU socket (E and F type). For safe measurement of P (Phase), N (Neutral) and PE (Earth) with all test probes. Indicates presence of P-N voltage (> 200 V) and phase position.                    | ■                | ■                  | ■       | ■       | ■       | ■       | ■       | ■       | ■        | ■        | ■                  | ■              | ■                | ■   | ■                             | ■       |
|  | P03295509  | CM1214S Current cord fitted with a 2P+T French mains plug for safely connecting an ammeter in series or measuring current with a clamp ammeter without stripping the outer sheath of the cable power cable                         |                  |                    |         |         | ■       | ■       | ■       | ■       | ■        | ■        | ■                  |                |                  | ■   | ■                             | ■       |

## Accessories for multimeters

|                                                                                     | Item code  | Description                                                                                                                                                                                        | CA 702<br>CA 703 | MTX 202<br>MTX 203 | MTX 204 | CA 5231 | CA 5233 | CA 5273 | CA 5275 | CA 5277 | MTX 3290 | MTX 3291 | CA 5292<br>CA 5293 | MTX 3297<br>Ex | CA 922<br>CA 962 | MX1 | CA 5001<br>CA 5003<br>CA 5005 | CA 5011 |
|-------------------------------------------------------------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|--------------------|---------|---------|---------|---------|---------|---------|----------|----------|--------------------|----------------|------------------|-----|-------------------------------|---------|
|    | P01295457Z | Set of 2 alligator clips (1 red and 1 black) 15 A for CAT III & IV 1,000 V installations                                                                                                           |                  | ■                  | ■       | ■       | ■       | ■       | ■       | ■       | ■        | ■        | ■                  | ■              | ■                | ■   | ■                             | ■       |
|    | P01102053Z | Set of 2 rigid alligator clips (1 red / 1 black) / 20 A / 1,000 V CAT III                                                                                                                          |                  | ■                  | ■       | ■       | ■       | ■       | ■       | ■       | ■        | ■        | ■                  |                | ■                | ■   | ■                             | ■       |
|    | P01102055Z | Set of 2 wire clips (1 red and 1 black) for very low voltage use (30 V AC, 60 V DC)                                                                                                                |                  |                    |         |         |         |         |         |         |          |          | ■                  | ■              |                  | ■   | ■                             | ■       |
|    | HX0064     | SMD clamp for multimeter / Gold-plated copperberyllium contacts / Ø 4 mm male plug / 120 m lead / SELV                                                                                             |                  | ■                  | ■       |         |         |         | ■       | ■       | ■        | ■        | ■                  | ■              | ■                |     |                               |         |
|    | AE0236     | Carrying case to replace the one supplied with clamp multimeters models MX350 and MX355                                                                                                            |                  |                    |         |         |         |         |         |         |          |          |                    |                |                  |     |                               |         |
|    | HX0052B    | Soft case, protective bag, transport and storage for MTX 329x multimeters dim 245x120x60 mm                                                                                                        |                  | ■                  | ■       |         |         |         |         |         | ■        | ■        |                    | ■              |                  |     |                               |         |
|    | HX0104     | Protective carrying case for Metrix multimeters type ASYC II dim 220 x 110 x 40 mm                                                                                                                 |                  |                    | ■       |         |         |         |         |         |          |          |                    |                |                  |     |                               |         |
|   | P01298033  | Carrying case with strap for multimeter and multimeter clamp. Useful dimensions 225 x 270 x 70 mm                                                                                                  |                  |                    |         |         |         |         |         |         |          |          |                    |                |                  |     | ■                             | ■       |
|  | P01298036  | No5 carrying case. For storing the instrument and its leads. Usable dimensions 180 x 220 x 75 mm                                                                                                   |                  |                    |         |         |         |         |         |         |          |          |                    |                |                  |     | ■                             | ■       |
|  | P01298065Z | Carrying and storage case, one compartment, useful dimensions 200 x 100 x 40 mm with belt attachment                                                                                               | ■                |                    |         |         |         |         |         |         |          |          |                    |                |                  |     |                               |         |
|  | P01298074  | Carrying case with inside pocket, hand strap and MultiFix accessory. MultiFix accessory. Useful internal dimensions 120 x 200 x 60 mm                                                              | ■                |                    |         | ■       | ■       |         |         |         |          |          |                    |                |                  |     |                               |         |
|  | P01298076  | Bag with inside pocket, hand strap and MultiFix accessory. MultiFix accessory. Useful interior dimensions 120 x 320 x 60 mm                                                                        |                  |                    |         |         |         | ■       | ■       | ■       |          |          | ■                  |                |                  |     |                               |         |
|  | P01102100Z | MultiFix attachment accessory. For use with measuring devices (multimeters, etc.), MultiFix-compatible cases and panniers, it can be transported and attached for greater for greater ease of use. |                  | ■                  |         | ■       | ■       | ■       | ■       | ■       | ■        | ■        | ■                  | ■              |                  |     |                               |         |
|  | P01298037  | Storage case for analogue multimeters models CA 5001, CA 5003, for digital and analogue multimeter CA 5011                                                                                         |                  |                    |         |         |         |         |         |         |          |          |                    |                |                  |     | ■                             | ■       |
|  | HX0056-Z   | Opto-isolated USB link cable for CA 647x, CA 655x, Handscope with driver Windows compatible                                                                                                        |                  |                    |         |         |         |         |         |         |          | ■        | ■                  | ■              | ■                |     |                               |         |
|  | SX-DMM2    | Windows compatible PC data acquisition software for SX-DMM portable and bench multimeters                                                                                                          |                  |                    |         |         |         |         |         |         |          | ■        | ■                  | ■              | ■                |     |                               |         |



DEPART CLIENT

# Multimeter clamps

|                                                                                 |    |
|---------------------------------------------------------------------------------|----|
| Selection guide Multimeter clamps .....                                         | 35 |
| F65 leakage multimeter clamp .....                                              | 36 |
| Multimeter clamps for electricians MX 350 - MX 355 .....                        | 37 |
| Multimeter clamps for general maintenance F201 - F203 - F205 .....              | 38 |
| Multimeter clamps for general maintenance MX 650 - MX 655 .....                 | 39 |
| Multimeter clamps for general maintenance MX 670 - MX 675 .....                 | 40 |
| Multimeter clamps for industry and energy F402 - F404 - F406 - F604 - F606 .... | 41 |
| Power and harmonic clamp meters F407 - F607 .....                               | 42 |
| Accessories for clamp meters .....                                              | 43 |





# Multimeter clamps

## Guide de choix



|                                   | F65       | MX 350    | MX 355    | F201      | F203      | F205        | MX 650    | MX 655    | MX 670    | MX 675    | F402      | F404      | F406        | F407        | F604      | F606        | F607        |
|-----------------------------------|-----------|-----------|-----------|-----------|-----------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-------------|-------------|-----------|-------------|-------------|
| AC current                        | ■         | ■         | ■         | ■         | ■         | ■           | ■         | ■         | ■         | ■         | ■         | ■         | ■           | ■           | ■         | ■           | ■           |
| DC current                        |           |           | ■         |           | ■         | ■           |           | ■         |           | ■         |           | ■         | ■           | ■           | ■         | ■           | ■           |
| Leakage current                   | ■         |           |           |           |           |             |           |           |           |           |           |           |             |             |           |             |             |
| Photovoltaic                      |           |           |           |           |           |             |           |           |           |           |           | ■         | ■           |             | ■         | ■           |             |
| True frequency measurement (TRMS) |           | AC        | AC/DC     | AC        | AC/DC     | AC/DC/AC+DC |           | AC/DC     | AC        | AC/DC     | AC        | AC/DC     | AC/DC/AC+DC | AC/DC/AC+DC | AC/DC     | AC/DC/AC+DC | AC/DC/AC+DC |
| Clamping Ø 26 mm                  |           | ■         |           |           |           |             |           |           |           |           |           |           |             |             |           |             |             |
| Clamping Ø 28 mm                  | ■         |           |           |           |           |             |           |           |           |           |           |           |             |             |           |             |             |
| Clamping Ø 30 mm                  |           |           | ■         |           |           |             |           |           |           |           |           |           |             |             |           |             |             |
| Clamping Ø 34 mm                  |           |           |           | ■         | ■         | ■           |           |           |           |           |           |           |             |             |           |             |             |
| Clamping Ø 36 mm                  |           |           |           |           |           |             | ■         |           |           |           |           |           |             |             |           |             |             |
| Clamping Ø 40 mm                  |           |           |           |           |           |             |           | ■         |           | ■         |           |           |             |             |           |             |             |
| Clamping Ø 42 mm                  |           |           |           |           |           |             |           |           | ■         |           |           |           |             |             |           |             |             |
| Clamping Ø 48 mm                  |           |           |           |           |           |             |           |           |           |           | ■         | ■         | ■           | ■           |           |             |             |
| Clamping Ø 60 mm                  |           |           |           |           |           |             |           |           |           |           |           |           |             |             | ■         | ■           | ■           |
| 6,000-stitch drawing              |           | ■         | ■         | ■         | ■         | ■           | ■         | ■         |           |           |           |           |             |             |           |             |             |
| 10,000-count display              | ■         |           |           |           |           |             |           |           | ■         | ■         | ■         | ■         | ■           | ■           | ■         | ■           | ■           |
| Backlighting                      | ■         |           |           |           | ■         | ■           |           |           | ■         | ■         | ■         | ■         | ■           | ■           | ■         | ■           | ■           |
| Bar graph                         |           | ■         | ■         |           |           |             | ■         | ■         |           |           |           |           |             |             |           |             |             |
| AC current                        | 100 A     | 400 A     | 400 A     | 600 A     | 600 A     | 600 A       | 1,000 V   | 1,000 V   | 1,000 V   | 1,000 V   | 1,000 V   | 1,000 A   | 1,000 A     | 1,000 A     | 2,000 A   | 2,000 A     | 2,000 A     |
| DC current                        |           |           | 400 A     |           | 900 A     | 900 A       |           | 1,000 V   |           | 1,400 A   |           | 1,500 A   | 1,500 A     | 1,500 A     |           | 3,000 A     | 3,000 A     |
| AC voltage                        | 600 V     | 600 V     | 600V      | 1,000 V   | 1,000 V   | 1,000 V     | 750 V     | 750 V     | 1,000 V   | 1,000 V   | 1,200 V   | 1,200 V   | 1,200 V     | 1,000 V     | 1,200 V   | 1,200 V     | 1,000 V     |
| DC voltage                        | 600 V     | 600 V     | 600V      | 1,000 V   | 1,000 V   | 1,000 V     | 1,000 V   | 1,000 V   | 1,400 V   | 1,400 V   | 1,700 V   | 1,700 V   | 1,700 V     | 1,000 V     | 1,700 V   | 1,700 V     | 1,000 V     |
| Resistance                        | ■         | ■         | ■         | ■         | ■         | ■           | ■         | ■         | ■         | ■         | ■         | ■         | ■           | ■           | ■         | ■           | ■           |
| Sound continuity / Diode          | ■ / -     | ■ / -     | ■ / -     | ■ / ■     | ■ / ■     | ■ / ■       | ■ / ■     | ■ / ■     | ■ / -     | ■ / -     | ■ / ■     | ■ / ■     | ■ / ■       | - / -       | ■ / ■     | ■ / ■       | - / -       |
| Frequency                         | ■         | ■         |           | ■         | ■         | ■           | ■         | ■         | ■         | ■         | ■         | ■         | ■           | ■           | ■         | ■           | ■           |
| Temperature                       |           |           |           | ■         | ■         |             |           |           | ■         | ■         | ■         | ■         |             |             | ■         |             |             |
| Adapter input (external sensor)   |           |           |           |           | ■         |             |           |           |           |           |           | ■         |             |             | ■         |             |             |
| W, var, VA / PF / DPF             |           |           |           |           |           | ■ / ■ / -   |           |           |           |           |           |           | ■ / ■ / -   | ■ / ■ / ■   |           | ■ / ■ / -   | ■ / ■ / ■   |
| THDf, r% / Harm0..25 / FC         |           |           |           |           |           |             |           |           |           |           |           |           | ■ / - / -   | ■ / ■ / ■   |           | ■ / - / -   | ■ / ■ / ■   |
| Phase rotation                    |           |           |           |           |           | ■           |           |           |           |           |           |           | ■           |             |           | ■           |             |
| Min / Max / Peak                  | - / ■ / - | - / - / - | - / - / ■ | ■ / ■ / - | ■ / ■ / - | ■ / ■ / ■   | ■ / ■ / ■ | ■ / ■ / ■ | ■ / ■ / ■ | ■ / ■ / ■ | ■ / ■ / - | ■ / ■ / - | ■ / ■ / ■   | ■ / ■ / ■   | ■ / ■ / - | ■ / ■ / ■   | ■ / ■ / ■   |
| Relative ΔX / Differential ΔX/X   |           | ■ / -     | ■ / -     |           | ■ / ■     | ■ / ■       | ■ / -     | ■ / -     |           | ■ / -     |           | ■ / ■     | ■ / ■       |             | ■ / ■     | ■ / ■       |             |
| InRush / TrueInrush               |           |           |           | ■ / ■     | ■ / ■     | ■ / ■       |           |           |           |           | ■ / ■     | ■ / ■     | ■ / ■       | ■ / ■       | ■ / ■     | ■ / ■       | ■ / ■       |
| Data logging                      |           |           |           |           |           |             |           |           |           |           |           |           |             | ■           |           |             | ■           |
| BlueTooth interface               |           |           |           |           |           |             |           |           |           |           |           |           |             | ■           |           |             | ■           |
| CAT III 300 V                     | ■         |           |           |           |           |             |           |           |           |           |           |           |             |             |           |             |             |
| CAT III 600 V                     |           | ■         | ■         |           |           |             | ■         | ■         |           |           |           |           |             |             |           |             |             |
| CAT III 1000 V                    |           |           |           | ■         | ■         | ■           |           |           | ■         | ■         |           |           |             |             |           |             |             |
| CAT III 1500 V (Photovoltaic)     |           |           |           |           |           |             |           |           |           |           | ■         | ■         | ■           |             | ■         | ■           |             |
| CAT IV 600 V                      |           |           |           | ■         | ■         | ■           |           |           | ■         | ■         |           |           |             |             |           |             |             |
| CAT IV 1000 V                     |           |           |           |           |           |             |           |           |           |           | ■         | ■         | ■           | ■           | ■         | ■           | ■           |





Leakage multimeter clamp

F65



10  $\mu$ A    10 000 counts    TRMS



In the event of an insulation fault or differential circuit breaker tripping, the F65 clamp is the ideal tool for detecting and measuring earth leakage currents

- Quickly check leakage currents
- Search for insulation faults on live installations
- 50/60 Hz filter



F65 supplied with:

- 1 carrying case
- 1 set of straight banana/elbow banana cords
- 1 set of safety touch points
- 2 x 1.5 V LR03 batteries

To order

1 F65 multimeter clamp  
Reference: P01120761

Recommended accessories

- 

**P01295457Z**  
Alligator clips red + black blister pack (set of 2)
- 

**P01295456Z**  
Angled fingertip leads, 1.5 m (1 red/1 black)

|                                |               |                 |                | F65                                             |                            |
|--------------------------------|---------------|-----------------|----------------|-------------------------------------------------|----------------------------|
| Display                        |               |                 |                | 10,000 count - 2 measurements / s               |                            |
| Acquisition                    |               |                 |                | TRMS <sub>AC</sub>                              |                            |
| Function                       | Unit          | Calibre         | Resolution     | Accuracy                                        |                            |
| ith 50-60 Hz filter            |               |                 |                |                                                 |                            |
| Current                        | mA AC         | 60 mA           | 10 µA          | 1.2 % ± 5 cts                                   | 2.5 % ± 5 cts (60-500 Hz)  |
|                                |               | 600 mA          | 100 µA         |                                                 | 3.5 % ± 10 cts (500-3 kHz) |
|                                | A AC          | 10 A            | 1 mA           | 1.2 % ± 5 cts                                   | 2.5 % ± 5 cts (60-500 Hz)  |
|                                |               | 80 A            | 10 mA          |                                                 | 3.5 % ± 10 cts (500-3 kHz) |
|                                |               | 100 A           |                | 5 % ± 5 cts                                     | 5 % ± 5 cts (50-60 Hz)     |
|                                |               | Voltage         | V AC           | 600 V                                           | 0.1 V                      |
| V DC                           | 600 V         |                 | 0.1 V          | 1 % ± 2 cts                                     |                            |
| Resistance                     | Ω             | 1 kΩ            | 0.1 Ω          | 1 % + 3 cts                                     |                            |
| Audible continuity             | Buzzer < 35 Ω |                 |                | (VTest ≤ 3.3 V <sub>DC</sub> )                  |                            |
| Frequency                      | A             | 100 Hz<br>1 kHz | 0.1 Hz<br>1 Hz | 0.5 % ± 2 cts (I > 10 mA)                       |                            |
|                                | V             | 100 Hz<br>1 kHz | 0.1 Hz<br>1 Hz | 0.5 % ± 2 cts (V > 5 V <sub>AC</sub> )          |                            |
| Max. value                     |               |                 |                | 100 ms                                          |                            |
| Backlight                      |               |                 |                | Yes                                             |                            |
| Automatic switch-off           |               |                 |                | Yes                                             |                            |
| Clamping diameter              |               |                 |                | 28 mm                                           |                            |
| Dimensions / weight            |               |                 |                | 218 x 64 x 30 mm / 280 g (with batteries)       |                            |
| Standards                      |               |                 |                | IEC 61010-1 / IEC 61010-2-032 / IEC 61010-2-033 |                            |
| Installation category          |               |                 |                | 300 V CAT III                                   |                            |
| Degree of enclosure protection |               |                 |                | IP 30 according to EN 60529                     |                            |



## Multimeter clamps for electricians

### MX 350 - MX 355

**600V  
CAT III**
**IEC  
61010-2-032**
**TRMS**


### Complete, all the electrician's functions in one hand

- Compact, ergonomic clamp-on multimeters
- Measures current up to 400 AAC (MX 350) and 400 AAC / ADC (MX 355)
- AC & DC voltage measurement up to 600 V
- Resistance and continuity measurement
- Frequency measurement (MX 350)
- Automatic DC zero (MX 355)
- TRMS measurements
- Peak function (1 ms) (MX 355)

|                      | MX 350                                               | MX 355                                 |
|----------------------|------------------------------------------------------|----------------------------------------|
| Designation          | Mult. clamp 400A <sub>AC</sub> TRMS                  | Mult. clamp 400A <sub>AC/DC</sub> TRMS |
| Display              | 6,000 counts                                         |                                        |
| Bar graph            | -                                                    |                                        |
| Clamping diameter    | 26 mm                                                | 30 mm                                  |
| Type of acquisition  | TRMS                                                 |                                        |
| Range selection      | Automatic                                            |                                        |
| AC current           | 0.05 A to 400.0 A                                    |                                        |
| Basic accuracy       | 1,9 %L + 5 D                                         |                                        |
| Bandwidth            | 48 to 400 Hz                                         |                                        |
| DC current           | -                                                    | 0.1 A to 400.0 A                       |
| Basic accuracy       | -                                                    | 2.5 %L + 10 D                          |
| AC voltage           | 0.05 V to 600.0 V                                    |                                        |
| Basic accuracy       | 1.9 %L + 5 D                                         |                                        |
| Bandwidth            | 48 à 400 Hz                                          |                                        |
| DC voltage           | 0.03 V to 600.0 V                                    |                                        |
| Basic accuracy       | 1 %L + 3 D                                           |                                        |
| Resistance           | 0.2 Ω to 600.0 Ω                                     |                                        |
| Basic accuracy       | 1 %L + 2 D                                           |                                        |
| Sound continuity     | ≤ 40 Ω                                               |                                        |
| Frequency            | In I: 20 Hz to 10.00 kHz<br>In V: 10 Hz to 100.0 kHz | -                                      |
| Functions            | Hold                                                 | Hold<br>ΔZero<br>Peak (1 ms)           |
| Automatic switch-off | 20 min. disengageable                                |                                        |
| Power supply         | 2 x 1.5 AAA / LR03                                   |                                        |
| Electrical safety    | IEC 61010-1, IEC 61010-2-032 / 600V CAT III          |                                        |
| Dimensions / weight  | 199 x 75 x 36 mm / 243 g (with batteries)            |                                        |



### 1 MX 35x multimeter clamp supplied with:

- 1 set of test leads with touch points
- 1 soft carrying case
- 2 x 1.5 V AAA alkaline batteries
- 1 operating manual in 5 languages

### To order

1 MX 350 clamp

**Reference: MX0350Z**

1 MX 355 clamp

**Reference: MX0355Z**

## Multimeter clamps for general maintenance

### F201 - F203 - F205

600 A<sub>AC</sub>  
900 A<sub>DC</sub>

TRMS

1 000 V  
CAT III

600 V  
CAT IV

True  
InRush

IEC  
61010-2-032

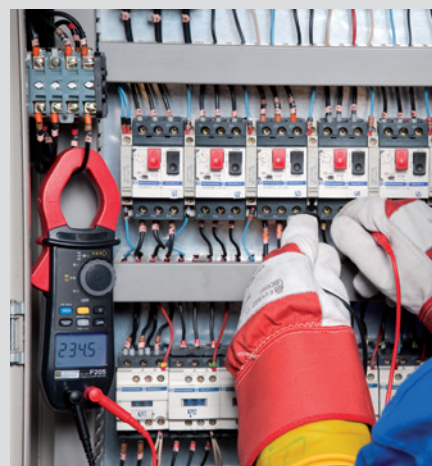


### Special maintenance

Equipped with a digital acquisition system  
With its fast 12-bit response, the F200 series  
provides accurate true-range (TRMS) AC+DC  
measurements whatever the nature and shape  
of the signal.

- 34 mm clamping diameter
- Compact size
- TRMS AC+DC for F205 clamp

|                                                                | F201       | F203                                             | F205                  |
|----------------------------------------------------------------|------------|--------------------------------------------------|-----------------------|
| Bagging                                                        |            | Ø 34 mm                                          |                       |
| Display                                                        | LCD        | Backlit LCD                                      |                       |
| Resolution                                                     |            | 6,000 counts                                     |                       |
| Number of displayed values                                     |            | 1                                                |                       |
| Acquisition type                                               | TRMS<br>AC | TRMS<br>AC/DC                                    | TRMS<br>AC, DC, AC+DC |
| Automatic calibration<br>(Autorange)                           |            | Yes                                              |                       |
| Automatic AC/DC detection                                      |            | Yes                                              |                       |
| A <sub>AC</sub>                                                |            | 600 A                                            |                       |
| A <sub>DC</sub>                                                |            | 900 A                                            |                       |
| A <sub>AC+DC</sub>                                             |            | 600 A (900 A peak)                               |                       |
| Better accuracy                                                |            | 1% L + 3 counts                                  |                       |
| V <sub>AC</sub>                                                |            | 1,000 V                                          |                       |
| V <sub>DC</sub>                                                |            | 1,000 V                                          |                       |
| V <sub>AC+DC</sub>                                             |            | 1,000 V (1,400 V peak)                           |                       |
| Better accuracy                                                |            | 1% L + 3 counts                                  |                       |
| Frequency in V / in I                                          |            | Yes / Yes                                        |                       |
| Resistance                                                     |            | 60 kΩ                                            |                       |
| Sound continuity                                               |            | Adjustable from 1 Ω to 599 Ω                     |                       |
| Diode test<br>(semiconductor junction)                         |            | Yes                                              |                       |
| Temperature (type K)                                           |            | °C : -60.0 to +1,000 °C<br>°F : -76 to +1,832 °F |                       |
| Adapter                                                        |            | Yes                                              |                       |
| Single-phase<br>and total three-phase                          |            | AC, DC, AC+DC                                    |                       |
| Active (W)                                                     |            | Yes                                              |                       |
| Reactive (var)                                                 |            | Yes                                              |                       |
| Apparent (VA)                                                  |            | Yes                                              |                       |
| FP                                                             |            | Yes                                              |                       |
| Phase rotation (2-wire method)                                 |            | Yes                                              |                       |
| Functions                                                      |            |                                                  |                       |
| Measurement of overcurrent                                     |            | Yes                                              |                       |
| Motor start (InRush)                                           |            | Yes                                              |                       |
| Load evolution (TrueInrush)                                    |            | Yes                                              |                       |
| Hold                                                           |            | Yes                                              |                       |
| Min / MAX                                                      |            | Yes                                              |                       |
| Peak+ / Peak-                                                  |            | Yes                                              |                       |
| RELative ΔX                                                    |            | Yes                                              |                       |
| Differential ΔX/X(%)                                           |            | Yes                                              |                       |
| Auto Power Off                                                 |            | Yes                                              |                       |
| Electrical safety according to<br>IEC 61010-1, IEC 61010-2-032 |            | 600 V CAT IV - 1000 V CAT III                    |                       |
| Power supply                                                   |            | 1 x 9 V 6LR61                                    |                       |
| Dimensions / weight                                            |            | 78 x 222 x 42 mm / 340 g                         |                       |



### F201 supplied with:

- 1 set of PVC leads (black/red) with integral touch points / male banana plug  
Ø 4 mm insulated angled
- 1 x 9 V battery 6LR61
- 1 Multifix-compatible case

### 203 idem F201 avec en plus:

- 1 thermocouple-wire with Ø 4 mm insulated banana plugs integrated at 19 mm centres

### F205 supplied with:

- 1 set of PVC cords (black/red) Ø 4 mm insulated male banana plug, angled / Ø 4 mm insulated male banana plug, straight
- 2 touch points / Ø 4 mm insulated female plug (black/red)
- 1 safety alligator clip (black)
- 1 x 9 V battery 6LR61
- 1 Multifix compatible case

### To order

1 F201 multimeter clamp

**Reference: P01120921**

1 F203 multimeter clamp

**Reference: P01120923**

1 F205 multimeter clamp

**Reference: P01120925**



## Multimeter clamps for general maintenance

### MX 650 - MX 655

IEC  
61010-2-032



### Suitable for the maintenance of electrical machines or electrotechnical machines

- Clamps for measuring high currents and voltages
- Current measurement up to 1,000 AAC (MX 650) and 1,000 AAC and 1,000 AAC&DC (MX 655)
- AC & DC voltage measurement up to 1,000 V
- Resistance, continuity and frequency measurements
- RMS measurements (MX 655)
- Min-Max and Peak 1 ms analysis functions
- Differential current, voltage and resistance measurement



|                                       | MX 650                                                               | MX 655                                                             |
|---------------------------------------|----------------------------------------------------------------------|--------------------------------------------------------------------|
| Display                               | 4,000 counts                                                         |                                                                    |
| Bar graph                             | 42 segments                                                          |                                                                    |
| Clamping diameter                     | 36 mm                                                                | 40 mm                                                              |
| Type of acquisition                   | AVG                                                                  | RMS                                                                |
| Range selection                       | Automatic or Manual                                                  | Automatic                                                          |
| AC current                            | 0.05 A to 1,000 A                                                    |                                                                    |
| Basic accuracy                        | 1.9 %L + 5 D                                                         |                                                                    |
| Bandwidth                             | 50 Hz to 1 kHz                                                       |                                                                    |
| DC current                            | -                                                                    | 0.10 A to 1,000 A                                                  |
| Basic accuracy                        | -                                                                    | 2.5 %L + 10 D                                                      |
| AC voltage                            | 0.5 V to 750 V                                                       |                                                                    |
| Basic accuracy                        | 1.2 %L + 5 D                                                         | 1.5 %L + 5 D                                                       |
| Bandwidth                             | 50 Hz to 1 kHz                                                       |                                                                    |
| DC voltage                            | 0.2 V to 1,000 V                                                     |                                                                    |
| Basic accuracy                        | 0.75 %L + 2 D                                                        | 1 %L + 2 D                                                         |
| Resistance                            | -                                                                    | 0.2 to 4,000 Ω                                                     |
| Basic accuracy                        | 1 %L + 2 D                                                           |                                                                    |
| Sound continuity                      | ≤ 100 Ω                                                              |                                                                    |
| Diode and semiconductor junction test | I <sub>test</sub> ≤ 0.6 mA / V <sub>test</sub> ≤ 3.3 V <sub>oc</sub> | I <sub>test</sub> ≤ 1.7 mA / V <sub>test</sub> ≤ 6 V <sub>oc</sub> |
| Frequency                             | Current: 20 Hz to 10 kHz<br>Voltage: 10 Hz to 10 kHz                 |                                                                    |
| Basic accuracy                        | 0.1 %L + 1 D                                                         |                                                                    |
| Functions                             | Hold, Peak (1 ms), Max-Min, ΔREL, Range                              | Hold, Peak (1 ms), Max-Min, ΔREL                                   |
| Automatic switch-off                  | 30 min disengageable                                                 |                                                                    |
| Power supply                          | 1 x 9 V 6LF22                                                        |                                                                    |
| Electrical safety                     | IEC 61010-1, IEC 61010-2-032, 600 V CAT III                          |                                                                    |
| Dimensions / Weight                   | 246 x 93 x 43 mm / 400 g                                             |                                                                    |



### 1 MX 65x multimeter clamp supplied with:

- 1 set of test leads with touch points
- 1 soft carrying case
- 1 9 V alkaline battery and 1 operating manual in 5 languages

### To order

1 MX 650 clamp

Reference: MX0650-Z

1 MX 655 clamp

Reference: MX0655-Z



Multimeter clamps for general maintenance

MX 670 - MX 675

- 600 V  
CAT IV
- 1 000 V  
CAT III
- IEC  
61010-2-032



Dual display  
for simultaneous  
voltage/current monitoring

- 2 simultaneous TRMS measurement channels
- Dual 10,000-dot backlit display
- 600 V CAT IV
- Voltage up to 1,400 V
- Temperature measurement

|                      | MX 670                                                   | MX 675                                                       |
|----------------------|----------------------------------------------------------|--------------------------------------------------------------|
| Clamping Ø           | 42 mm                                                    | 40 mm                                                        |
| Display              | 2 x 10,000 dots / Backlit                                |                                                              |
| Acquisition type     | TRMS AC/DC                                               |                                                              |
| Range selection      | Automatic                                                |                                                              |
| AC current           | 0.05 A to 1,000 A                                        |                                                              |
| Basic accuracy       | 1.5 %L + 5 D                                             |                                                              |
| Bandwidth            | 50 Hz to 3 kHz                                           |                                                              |
| DC current           | 0.10 A to 1,400 A                                        |                                                              |
| Basic accuracy       | 1.2 %L + 5 D                                             |                                                              |
| AC voltage           | 0.5 V to 1,000 V                                         |                                                              |
| Basic accuracy       | 1 %L + 5 D                                               |                                                              |
| Bandwidth            | 50 Hz to 3 kHz                                           |                                                              |
| DC voltage           | 0.2 V to 1,400 V                                         |                                                              |
| Basic accuracy       | 1 %L + 2 D                                               |                                                              |
| Resistance           | 0.2 to 9,999 Ω                                           |                                                              |
| Basic accuracy       | 1 %L + 3 D                                               |                                                              |
| Sound continuity     | ≤ 35 Ω                                                   |                                                              |
| Temperature          | -40.0 °C to +1,200 °C / -40 °F to +2,192 °F              |                                                              |
| Basic accuracy       | 1 %L + 2 °C / 1 %L + 4 °F                                |                                                              |
| Frequency            | Current: 0.2 Hz to 9999 Hz<br>Voltage: 10 Hz to 9,999 Hz |                                                              |
| Basic accuracy       | 1 %L + 2 cts                                             |                                                              |
| Functions            | Hold<br>Peak (1 ms)<br>Min (500 ms)<br>Max (500 ms)      | Hold<br>Peak (1 ms)<br>Min (500 ms)<br>Max (500 ms)<br>ΔZero |
| Automatic switch-off | 10 min disengageable                                     |                                                              |
| Power supply         | 1 x 9 V 6LF22                                            |                                                              |
| Electrical safety    | 600 V CAT IV / 1,000 V CAT III                           |                                                              |
| Dimensions / weight  | 272 x 80 x 43 mm / 480 g                                 | 257 x 80 x 43 mm / 440 g                                     |

- Transport
- Tertiary  
& residential
- Industries
- Production, transport  
& distribution



1 MX 67x multimeter clamp  
supplied with:

- 1 9 V alkaline battery
- 1 operating manual in 5 languages
- 1 soft carrying case
- 1 set of leads with touch points and K thermocouple sensor

To order

1 MX 670 clamp  
Reference: MX0670-Z

1 MX 675 clamp  
Reference: MX0675-Z

# Multimeter clamps for industry and energy

## F402 - F404 - F406 - F604 - F606



|                      |                      |                    |                   |
|----------------------|----------------------|--------------------|-------------------|
| 1000 Aac<br>1500 Aac | 2000 Aac<br>3000 Aac | TRMS               | 1000 V<br>CAT IV  |
| IP 54                | True<br>InRush       | IEC<br>61010-2-032 | 1500 V<br>CAT III |

**The F400 and F600 series are suitable for control and maintenance, analysis and expert assessment applications**

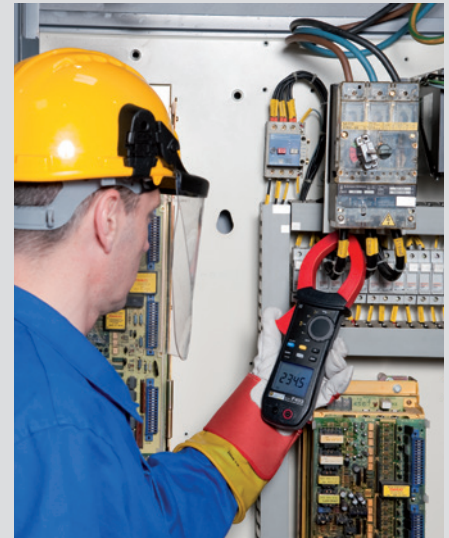
### F40X Series

- Small and medium-power LV applications
- 48 mm clamping diameter

### F60X Series

- High-power LV applications
- 60 mm clamping diameter

|                                                             | F402                                           | F404       | F406                   | F604                                           | F606                   |
|-------------------------------------------------------------|------------------------------------------------|------------|------------------------|------------------------------------------------|------------------------|
| Clamp                                                       | Ø 48 mm                                        |            |                        | Ø 60 mm                                        |                        |
| Display                                                     | Backlit LCD                                    |            |                        |                                                |                        |
| Resolution                                                  | 10,000 counts                                  |            |                        |                                                |                        |
| Acquisition type                                            | TRMS AC                                        | TRMS AC/DC | TRMS AC, DC, AC+DC     | TRMS AC/DC                                     | TRMS AC, DC, AC+DC     |
| Automatic calibration (Autorange)                           | Yes                                            |            |                        |                                                |                        |
| Automatic AC/DC detection                                   | Yes                                            |            |                        |                                                |                        |
| Aac                                                         | 0.25 to 1,000 A                                |            |                        | 0.25 to 2,000 A                                |                        |
| Aac                                                         | 0.15 to 1,500 A                                |            |                        | 0.25 to 3,000 A                                |                        |
| Aac+DC                                                      |                                                |            | 1,000 A (1,500 A peak) |                                                | 2,000 A (3,000 A peak) |
| Better accuracy                                             | 1% L + 3 counts                                |            |                        |                                                |                        |
| Vac                                                         | 0.15 to 1,200 V                                |            |                        |                                                |                        |
| Vdc                                                         | 0.15 to 1,700 V                                |            |                        |                                                |                        |
| VAc+DC                                                      |                                                |            | 0.15 to 1,700 V peak   |                                                | 0.15 to 1,700 V peak   |
| Better accuracy                                             | 1% L + 3 counts                                |            |                        |                                                |                        |
| Frequency in V / in I                                       | Yes / Yes                                      |            |                        |                                                |                        |
| Resistance                                                  | 100 kΩ                                         |            |                        |                                                |                        |
| Audio continuity                                            | Adjustable from 1 Ω to 999 Ω                   |            |                        |                                                |                        |
| Diode test (semiconductor junction)                         | Yes                                            |            |                        |                                                |                        |
| Temperature (K type)                                        | °C: -60.0 to +1,000 °C<br>°F: -76 to +1,832 °F |            |                        | °C: -60.0 to +1,000 °C<br>°F: -76 to +1,832 °F |                        |
| Adapter Powers monophasées et totales triphasées            | Yes                                            |            |                        | Yes                                            |                        |
| Actives (W)                                                 |                                                |            | Yes                    |                                                | Yes                    |
| réactives (VAR)                                             |                                                |            | Yes                    |                                                | Yes                    |
| apparentes (VA)                                             |                                                |            | Yes                    |                                                | Yes                    |
| FP                                                          |                                                |            | Yes                    |                                                | Yes                    |
| Analyses harmoniques THDf / THDr                            |                                                |            | Yes / Yes              |                                                | Yes / Yes              |
| Phase rotation (méthode 2 fils)                             |                                                |            | Yes                    |                                                | Yes                    |
| Functions                                                   |                                                |            |                        |                                                |                        |
| Overcurrent measurement                                     | Yes                                            |            |                        |                                                |                        |
| Motor starting (Inrush)                                     | Yes                                            |            |                        |                                                |                        |
| Load evolution (TrueInrush)                                 | Yes                                            |            |                        |                                                |                        |
| Hold                                                        | Yes                                            |            |                        |                                                |                        |
| Min / MAX                                                   | Yes                                            |            |                        |                                                |                        |
| Peak+ / Peak-RELative ΔX                                    |                                                |            | Yes                    |                                                | Yes                    |
| Differential ΔX/X(%)                                        |                                                | Yes        | Yes                    | Yes                                            | Yes                    |
| Auto Power Off                                              | Yes                                            |            |                        |                                                |                        |
| Electrical safety according to IEC 61010-1, IEC 61010-2-032 | 1,000 V CAT IV - 1,500 V CAT III               |            |                        |                                                |                        |
| Power supply                                                | 4 x 1.5 V LR06                                 |            |                        |                                                |                        |
| Dimensions / weight                                         | 92 x 272 x 41 mm / 600 g                       |            |                        | 111 x 296 x 41 mm / 640 g                      |                        |



### + The extra

Compatible with the latest photovoltaic installations (1,500 V).



### F402 / F404 / F604 supplied with:

- 1 set of PVC cords (black/red) Ø 4 mm insulated male banana plug, angled / Ø 4 mm insulated male banana plug, straight
- 2 test probes / Ø 4 mm insulated female plug (black/red)
- 1 thermocouple-wire with Ø 4 mm insulated banana plug at 19 mm centres
- 4 x 1.5 V AA/LR06 batteries
- 1 Multifix-compatible case

### F406 / F606 :

- same as F402 / F404 / F604 without thermocouple-wire and with 1 safety alligator clip (black)

### To order

|                         |                      |
|-------------------------|----------------------|
| 1 F402 multimeter clamp | Reference: P01120942 |
| 1 F404 multimeter clamp | Reference: P01120944 |
| 1 F406 multimeter clamp | Reference: P01120946 |
| 1 F604 multimeter clamp | Reference: P01120964 |
| 1 F606 multimeter clamp | Reference: P01120966 |

## Power and harmonic multimeter clamps

### F407 - F607

1000 V  
CAT IV

IP 54

Ø  
60 mm2000  
Aac

### 2 clamps with power and energy measurements

- Measures up to 2,000 Aac or 3,000 Adc or Aac+dc
- Ø clamping 60 mm
- Harmonic analysis up to rank 25
- TruInrush function

|                                  | F407                                      | F607                                       |
|----------------------------------|-------------------------------------------|--------------------------------------------|
| Current (RMS)                    |                                           |                                            |
| AC                               | From 250 mA to 1,000 A                    | From 250 mA to 2,000 A                     |
| DC and AC+DC                     | From 250 mA to 1,500 A                    | From 100 mA to 3,000 A                     |
| Better accuracy                  | 1% L + 3 counts                           |                                            |
| Voltage (RMS)                    |                                           |                                            |
| AC                               | From 150 mV to 1,000 V                    |                                            |
| DC and AC+DC                     | From 150 mV to 1,000 V                    |                                            |
| Better accuracy                  | 1% L + 3 counts                           |                                            |
| Auto AC/DC                       | Yes (V and A)                             |                                            |
| Resistance                       | 0,1 Ω to 60 kΩ                            |                                            |
| Continuity/buzzer                | Yes (< 40 Ω)                              |                                            |
| Power W (P), var (Q1) , VA (S)   | Yes, single and total three-phase         |                                            |
| Crest factor (CF)                | Yes                                       |                                            |
| PF and cos φ (DPF)               | Yes / Yes                                 |                                            |
| Auto switch-off                  | Yes                                       |                                            |
| Hold function                    | Yes                                       |                                            |
| Backlight function               | Yes                                       |                                            |
| Min Max button                   | Yes                                       |                                            |
| Peak +/- function                | Yes - 100 ms                              |                                            |
| True-Inrush function             | Yes                                       |                                            |
| THD-f / THD-r harmonic function  | Yes / Yes                                 |                                            |
| Harmonic rank decomposition      | 25 <sup>th</sup>                          |                                            |
| REC memory function              | Yes                                       |                                            |
| Recordings (with Min, Max)       | Up to 3000 measurements                   |                                            |
| Bluetooth communication function | Yes                                       |                                            |
| Frequency                        | From 5 Hz to 20 kHz                       |                                            |
| Clamping diameter                | 48 mm                                     | 60 mm                                      |
| Protection                       | IP 54                                     |                                            |
| Electrical safety                | IEC 61010<br>1,000 V CAT IV               |                                            |
| Warranty                         | 3 years                                   |                                            |
| Dimensions / weight              | 272 x 92 x 41 mm - 600 g (with batteries) | 296 x 111 x 41 mm - 640 g (with batteries) |



### F407 and F607 livrées en sacoche compatible avec le système MultiFix :

- 1 set of banana/banana cords (red/black)
- 1 set of fingertips (red/black)
- 1 set of alligator clips (red/black)
- 4 x 1.5 V LR06 batteries
- 1 safety plug
- 1 PC data transfer software Power Analyser Transfer and 1 user manual to download from our website

### To order

1 F407 multimeter clamp

**Reference: P01120947**

1 F604 multimeter clamp

**Reference: P01120967**

### Recommended accessories



**P01295451Z**  
Banana/banana cable set,  
red/black



**P01295457Z**  
Set of alligator clips, red/black

## Accessories for multimeter clamps

|                                                                                     | Item code  | Description                                                                                                                                                                                                                        | F65 | MX350<br>MX 355 | F201<br>F203 | F205 | MX650<br>MX655 | MX670<br>MX675 | F402<br>F404 | F406 | F407 | F604 | F606 | F607 |
|-------------------------------------------------------------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----------------|--------------|------|----------------|----------------|--------------|------|------|------|------|------|
|    | P01295454Z | Set of 2 moulded touch probes (1 red / 1 black) for CAT III & IV 1,000V installations                                                                                                                                              | ■   | ■               | ■            | ■    | ■              | ■              | ■            | ■    | ■    | ■    | ■    | ■    |
|    | P01295458Z | Set of 2 overmoulded touch-points 4 mm (1 red and 1 black) for CAT 2,300 V installations                                                                                                                                           | ■   | ■               | ■            | ■    | ■              | ■              | ■            | ■    | ■    | ■    | ■    | ■    |
|    | P01295460Z | Set of 2 moulded touch points 2mm (1 red and 1 black) for CAT 2,300 V installations                                                                                                                                                | ■   | ■               | ■            | ■    | ■              | ■              | ■            | ■    | ■    | ■    | ■    | ■    |
|    | P01295491Z | Ø2 mm 1,000 V CAT IV 10 A contact pins - Suitable for IP2X contacts on modular switchboards - Ø4mm insulated female connector - Set of 2 (1 red/1 black) - UL certified                                                            | ■   | ■               | ■            | ■    | ■              | ■              | ■            | ■    | ■    | ■    | ■    | ■    |
|    | P01295455Z | Set of 2 PVC touch point leads (1 red, 1 black) / Insulated Ø 4 mm straight male plug / 15 A / 1.5 m / 1,000 V CAT IV                                                                                                              | ■   | ■               | ■            | ■    | ■              | ■              | ■            | ■    | ■    | ■    | ■    | ■    |
|    | P01295456Z | Set of 2 PVC touch-tone leads (1 red, 1 black) / Ø4mm insulated angled male plug / 15A / 1.5 m / 1000 V CAT IV                                                                                                                     | ■   | ■               | ■            | ■    | ■              | ■              | ■            | ■    | ■    | ■    | ■    | ■    |
|    | P01295461Z | Set of 2 IP2X multimeter leads (1 red, 1 black) / IP2X key tip - Ø 4 mm angled male plug / 15 A / 1.5 m / IEC 61010 600 V CAT IV                                                                                                   | ■   | ■               | ■            | ■    | ■              | ■              | ■            | ■    | ■    | ■    | ■    | ■    |
|    | P01295451Z | Set of 2 moulded PVC cords (1 red, 1 black) / Ø4 mm insulated straight male plug - Ø4 mm insulated angled male plug / 15 A / 1.5 m / 1,000 V CAT IV                                                                                | ■   | ■               | ■            | ■    | ■              | ■              | ■            | ■    | ■    | ■    | ■    | ■    |
|  | P01295453Z | Set of 2 moulded silicone leads (1 red, 1 black) / Ø4 mm insulated straight male plug - Ø4 mm insulated angled male plug / 15 A / 1.5 m / 1,000 V CAT IV                                                                           | ■   | ■               | ■            | ■    | ■              | ■              | ■            | ■    | ■    | ■    | ■    | ■    |
|  | P01295459Z | Kit of measuring accessories for electricians including 2 moulded CAT IV test probes, 2 moulded PVC cords (red/black) with right-angle male-male plugs 1.5 m, 2 alligator clips, 2 Ø 4 mm overmoulded CAT II test probes           | ■   | ■               | ■            | ■    | ■              | ■              | ■            | ■    | ■    | ■    | ■    | ■    |
|  | P01295474Z | Accessory kit, 2 PVC RD/BK cords, insulated 4mm straight male plug-insulated 4mm angled male plug, 15 A, 1.5 m, 600 V CAT IV, 2 moulded Ø 2 test probes, 4 mm female plug, CAT II 300 V                                            | ■   | ■               | ■            | ■    | ■              | ■              | ■            | ■    | ■    | ■    | ■    | ■    |
|  | P01295475Z | Accessory kit, 2 PVC RD/BK leads, insulated 4mm straight male plug-insulated 4 mm angled male plug, 15 A, 1.5 m, 600 V CAT IV, 2 Ø 4 moulded touch points, 4mm female plug, CAT II 300 V                                           | ■   | ■               | ■            | ■    | ■              | ■              | ■            | ■    | ■    | ■    | ■    | ■    |
|  | P01102106Z | Set of 2 safety thermocouple adapters for multimeters / Female thermocouple plug - Ø 4mm insulated male plugs (red/black) with 19 mm centres                                                                                       |     |                 | ■            |      |                |                | ■            |      |      | ■    |      |      |
|  | P01102107Z | K thermocouple temperature probe for multimeters and multimeter clamps fitted with a temperature measurement gauge with 19 mm centre distance banana plugs. Measurement range from -50°C to +450°C. Sensor length: approx. 100 cm. |     |                 | ■            |      |                |                | ■            |      |      | ■    |      |      |
|  | P01191748Z | CA 753 Measuring adapter for 2P+T EU socket (E and F type). For safe measurement of P (Phase), N (Neutral) and PE (Earth) with all test probes. Indicates presence of P-N voltage (> 200 V) and phase position.                    | ■   | ■               | ■            | ■    | ■              | ■              | ■            | ■    | ■    | ■    | ■    | ■    |
|  | P03295509  | CMi214S Current cord with 2P+T French mains plug for safe series connection of an ammeter or current measurement with a clamp ammeter, without stripping the outer sheath of the cable power supply cable                          | ■   | ■               | ■            | ■    |                |                |              |      |      |      |      |      |



## Accessories for multimeter clamps

|                                                                                     | Item code  | Description                                                                                                                                                                      | F65 | MX350<br>MX 355 | F201<br>F203 | F205 | MX650<br>MX655 | MX670<br>MX675 | F402<br>F404 | F406 | F407 | F604 | F606 | F607 |
|-------------------------------------------------------------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----------------|--------------|------|----------------|----------------|--------------|------|------|------|------|------|
|    | P01295457Z | Set of 2 alligator clips (1 red and 1 black) 15 A for CAT III & IV 1,000 V installations                                                                                         | ■   | ■               | ■            | ■    | ■              | ■              | ■            | ■    | ■    | ■    | ■    | ■    |
|    | P01102053Z | Set of 2 rigid crocodile clips (1 red / 1 black) / 20 A / 1000 V CAT III                                                                                                         | ■   | ■               | ■            | ■    | ■              | ■              | ■            | ■    | ■    | ■    | ■    | ■    |
|     | P01102055Z | Set of 2 wires (1 red and 1 black) for very low voltage use (30 V AC, 60 V DC)                                                                                                   | ■   |                 |              |      |                |                |              |      |      |      |      |      |
|    | HX0064     | SMD clamp for multimeter / Gold-plated copper-beryllium contacts / Ø 4 mm male plug / 120 m lead / SELV                                                                          |     |                 |              |      |                |                |              |      |      |      |      |      |
|    | AE0236     | Carrying case to replace the one supplied with clamp multimeters models MX350 and MX355                                                                                          | ■   |                 |              |      |                |                |              |      |      |      |      |      |
|    | P01298065Z | Carrying and storage case, one compartment, useful dimensions 200 x 100 x 40 mm with belt attachment                                                                             | ■   |                 |              |      |                |                |              |      |      |      |      |      |
|    | P01298075  | Carrying case with inside pocket, hand strap and MultiFix accessory. Useful internal dimensions 120 x 245 x 60 mm                                                                |     |                 | ■            | ■    |                |                |              |      |      |      |      |      |
|   | P01298076  | Bag with inside pocket, hand strap and MultiFix accessory. Useful interior dimensions 120 x 320 x 60 mm                                                                          |     |                 |              |      | ■              | ■              | ■            | ■    | ■    | ■    | ■    | ■    |
|  | P01102100Z | MultiFix attachment accessory. Combined with MultiFix-compatible measuring instruments (multimeters, etc.), cases and bags, it can be carried and fixed for greater ease of use. |     |                 | ■            | ■    |                |                | ■            | ■    | ■    | ■    | ■    | ■    |
|  | P01102095  | DATAVIEW PC software for configuring, saving and processing data, editing reports, etc. for measuring instruments Chauvin Arnoux                                                 |     |                 |              |      |                |                |              |      | ■    |      |      | ■    |

# Power, power quality and facility monitoring

|                                                              |    |
|--------------------------------------------------------------|----|
| Selection guide - Power analysers .....                      | 46 |
| CA 8220 motor maintenance and power analyser .....           | 47 |
| Power and energy analysers                                   |    |
| CA 8331 - CA 8333 - CA 8336 - CA 8436 .....                  | 48 |
| Voltage quality analyser CA 8345 .....                       | 50 |
| Selection guide Power and energy recorders .....             | 51 |
| L411 - L412 - L461 voltage/current recorders .....           | 52 |
| Power and energy data loggers                                |    |
| single and two-phase PEL 51 - PEL 52 .....                   | 53 |
| Power and energy recorders PEL 112 - PEL 113 - PEL 115 ..... | 54 |
| FTV500 photovoltaic analyser .....                           | 55 |
| Accessories / Spare parts .....                              | 56 |

# Power analysers

## Guide de choix



|                           | CA 8220             | CA 8331                       | CA 8333             | CA 8336             | CA 8436             | CA 8345             |
|---------------------------|---------------------|-------------------------------|---------------------|---------------------|---------------------|---------------------|
| <b>Display</b>            |                     |                               |                     |                     |                     |                     |
| Digital                   | ■                   | ■                             | ■                   | ■                   | ■                   | ■                   |
| Graphics                  |                     | ■                             | ■                   | ■                   | ■                   | ■                   |
| <b>Number of entries</b>  |                     |                               |                     |                     |                     |                     |
|                           | 1U/1I               | 3U/3I                         | 3U/3I               | 4U/4I               | 4U/4I               | 4U/4I               |
| <b>Current</b>            |                     |                               |                     |                     |                     |                     |
| AC                        | ■                   | ■                             | ■                   | ■                   | ■                   | ■                   |
| DC                        | ■                   | ■                             | ■                   | ■                   | ■                   | ■                   |
| Range                     | Depending on sensor | Depending on sensor           | Depending on sensor | Depending on sensor | Depending on sensor | Depending on sensor |
| <b>Voltage</b>            |                     |                               |                     |                     |                     |                     |
| AC                        | 600 V               | 1,000 V                       | 1,000 V             | 1,000 V             | 1,000 V             | 1,000 V             |
| DC                        | 600 V               | 1,000 V                       | 1,000 V             | 1,000 V             | 1,000 V             | 1,000 V             |
| <b>DPF PF</b>             |                     |                               |                     |                     |                     |                     |
|                           | ■                   | ■                             | ■                   | ■                   | ■                   | ■                   |
| <b>Harmonics</b>          |                     |                               |                     |                     |                     |                     |
| THD/ranks                 | ■ /50               | ■ /50                         | ■ /50               | ■ /50               | ■ /50               | ■ /127              |
| <b>Power</b>              |                     |                               |                     |                     |                     |                     |
|                           | P Q S               | P N Q; D S                    | P N Q; D S          | P N Q; D S          | P N Q; D S          | P N Q; D S          |
| <b>Memory</b>             |                     |                               |                     |                     |                     |                     |
| Internal                  | ■                   | ■                             | ■                   | ■                   | ■                   |                     |
| SD card                   |                     | ■                             | ■                   | ■                   | ■                   | ■                   |
| <b>Recording</b>          |                     |                               |                     |                     |                     |                     |
| Trend                     |                     | ■                             | ■                   | ■                   | ■                   | ■                   |
| Alarms                    |                     |                               | ■                   | ■                   | ■                   | ∞                   |
| Transients                |                     |                               | 80 µs               | 80 µs               | 80 µs               | 2,5 µs              |
| Images                    | 99                  | 12                            | 12                  | 50                  | 50                  | ∞                   |
| Inrush                    | ■                   |                               |                     | ■                   | ■                   | ∞                   |
| Shock wave                |                     |                               |                     |                     |                     | 12 kV & 500 ns      |
| Monitoring                |                     |                               |                     | EN50160 Ed.02       | EN50160 Ed.02       | EN50160 Ed.03       |
| <b>Standards</b>          |                     |                               |                     |                     |                     |                     |
| IEC61010                  | 600 V CAT III       | 600 V CAT IV - 1000 V CAT III |                     |                     |                     | 1000 V CAT IV       |
| IEC61000-4-30             |                     |                               |                     | Class B             | Class B             | Class A             |
| IEC 60529                 | IP54                | IP53                          | IP53                | IP53                | IP67                | IP54                |
| Temperature               | ■                   |                               |                     |                     |                     |                     |
| Resistance                | ■                   |                               |                     |                     |                     |                     |
| Rotation speed            | ■                   |                               |                     |                     |                     |                     |
| <b>Unbalance</b>          |                     |                               |                     |                     |                     |                     |
|                           |                     | ■                             | ■                   | ■                   | ■                   | ■                   |
| <b>Flicker</b>            |                     |                               |                     |                     |                     |                     |
|                           |                     | PST                           | PST                 | PST/PLT             | PST/PLT             | PST/PLT             |
| <b>Communication</b>      |                     |                               |                     |                     |                     |                     |
| USB                       | ■                   | ■                             | ■                   | ■                   | ■                   | ■                   |
| Wifi                      |                     |                               |                     |                     |                     | ■                   |
| Ethernet / IRD server     |                     |                               |                     |                     |                     | ■ / ■               |
| <b>Power supply</b>       |                     |                               |                     |                     |                     |                     |
| Batteries                 | ■                   |                               |                     |                     |                     |                     |
| Mains                     |                     | ■                             | ■                   | ■                   | ■                   | ■                   |
| Batteries                 | ■                   | ■                             | ■                   | ■                   | ■                   | ■                   |
| <b>Phase power supply</b> |                     |                               |                     |                     |                     |                     |
|                           |                     | Opt.                          | Opt.                | Opt.                | Integrated          | Opt.                |



# Power and motor maintenance analyser

## CA 8220



IP 54

600 V  
CAT III

CE

## For monitoring of rotating machinery

The CA 8220 is a single-phase power analyser with a segmented liquid crystal display.

Suitable for use in electrical engineering, in particular the control of rotating machinery, it is designed for technicians and engineers in control teams. It is the ideal tool for companies' maintenance departments.

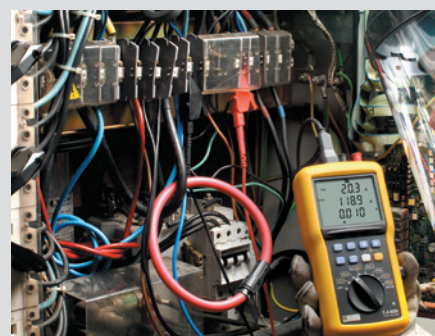
It provides an instant picture of the main characteristics of a single-phase network and enables rotating machines to be monitored (temperature, current consumption and speed of rotation).

Diagnostics  
& control

Education

Energy  
efficiencyTertiary  
& residential

Industries

Production, transport  
& distribution

## + The extra

**Temperature:** Today's motors and rotating machines are equipped with temperature sensors, easily accessible on a terminal block. Simply connecting the CA 8220 to this terminal block measures the motor's internal temperature directly.

**Rotational speed:** As part of predictive maintenance, regular monitoring of the rotational speed of rotating machines is required.

The CA 8220, an all-in-one instrument, responds simply and effectively to this requirement.

## CA 8220 supplied with:

- 6 AA batteries
- 1 x 1.5 m red banana lead (right-right)
- 1 x 1.5 m black banana lead (right-right)
- 1 red touch tip 4 mm
- 1 black touch tip 4 mm
- 1 red alligator clip
- 1 black alligator clip
- 1 USB optical cable
- 1 safety plug
- 1 PC data transfer software Power Analyser Transfer and 1 user manual to download from our website

## Recommended accessories



P01120425B  
MN93 clamp



P01298049  
Bag n°05

## To order

CA 8220 Power analyser

Reference: P01160620

CA 8220 Power analyser with MN93A clamp

Reference: P01160621

Download the free PAT software  
at [www.chauvin-arnoux.com](http://www.chauvin-arnoux.com)

|                                         | CA 8220                                                      |
|-----------------------------------------|--------------------------------------------------------------|
| As easy to use as a multimeter          | ■                                                            |
| T-RMS measurements                      | ■                                                            |
| Backlit display                         | ■                                                            |
| Min - Max                               | ■                                                            |
| Automatic current sensor recognition    | ■                                                            |
| Screen captures to document a report    | ■                                                            |
| Number of channels and number of inputs | 1 voltage input and 1 current input                          |
| Voltage (TRMS AC+DC)                    | Phase-to-phase and phase-to-neutral voltage 2 V to 660 V     |
| Current (TRMS AC+DC)                    | MN93 500 mA to 200 A <sub>AC</sub>                           |
|                                         | MN93A 0.005 A to 100 A                                       |
|                                         | CI93 1 A to 1,000 A <sub>AC</sub>                            |
|                                         | AmpFLEX™ or MiniFlex® 10 A to 6,500 A <sub>AC</sub>          |
|                                         | PAC93 1 A to 1,300 A <sub>AC/DC</sub>                        |
|                                         | E27 (with optional adaptor) 100 mA to 100 A <sub>AC/DC</sub> |
| Power ratings                           | W (P), VA (S), var (Q), PF, DPF, cos φ, tan φ                |
| Energies                                | Wh, varh, VAh                                                |
| Harmonics                               | Yes, from rank 0 to 50, phase                                |
| Inrush mode                             | 100 ms                                                       |
| Communication interface                 | USB                                                          |
| Autonomy                                | Up to 8 hours                                                |
| Dimensions / Weight                     | 211 x 108 x 60 mm / 840 g with batteries                     |



Power and energy analysers

CA 8331 - CA 8333 - CA 8336 - CA 8436



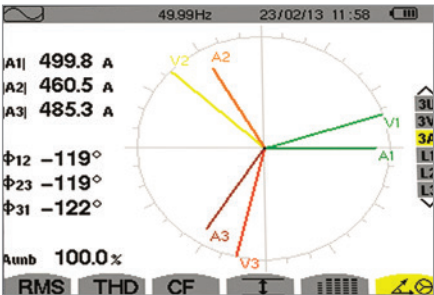
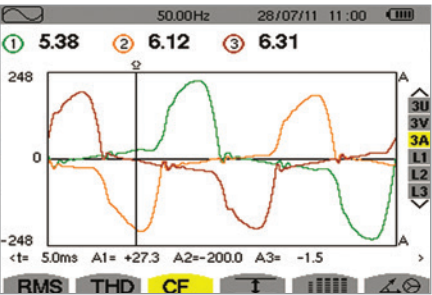
Qualistar experience

Qualistars are designed for use in the inspection and maintenance of industrial and tertiary installations. They provide an instant picture of the main characteristics of the quality of the electrical network. Easy to use and accurate, these devices also offer a wide range of calculated values and several processing functions.

Depending on model:

- Real-time display of waveforms (5 voltage inputs and 4 current inputs)
- RMS voltage and current measurements at ½ period
- Intuitive operation
- Automatic recognition of different types of current sensors
- All DC components taken into account
- Voltage and current ratios
- Mix of current sensors
- Phase diagram display
- Measurement of VA, W, VAD and var power, total and per phase
- Measurement of VAh, Wh, VADh and varh energy, total and per phase
- Calculation of K factor - FHL
- Calculation of power displacement factor cos φ (DPF) and power factor PF
- Power system monitoring with alarm settings
- IEC 61000-4-30 Class B
- Automatic parameter setting for EN 50160 Ed. 02 report
- Save and record screenshots (image and data)
- Recording and export to PC
- Software for data retrieval and real-time real-time communication with a PC

|                                                                                                                      | CA 8331 | CA 8333 | CA 8336 | CA 8436 |
|----------------------------------------------------------------------------------------------------------------------|---------|---------|---------|---------|
| Proven ease of use                                                                                                   | ■       | ■       | ■       | ■       |
| Measurement of voltage, current and power parameters useful for the complete diagnosis of an electrical installation | ■       | ■       | ■       | ■       |
| Measurements for sizing harmonic filters                                                                             | ■       | ■       | ■       | ■       |
| Recording to monitor all the parameters to define a phase-shift compensation cabinet                                 | ■       | ■       | ■       | ■       |
| Detection of micro outages of a few μs                                                                               | ■       | ■       | ■       | ■       |
| All the power balances needed to draw up an energy efficiency diagnosis                                              | ■       | ■       | ■       | ■       |
| Data logger                                                                                                          | ■       | ■       | ■       | ■       |
| Monitoring with alarms                                                                                               | ■       | ■       | ■       | ■       |
| Load start mode                                                                                                      | ■       | ■       | ■       | ■       |
| Waterproof device for outdoor use                                                                                    | ■       | ■       | ■       | ■       |



Monitoring faults on an electrical cabinet

+ The extra

Breakdown of reactive power, with the concept of nonactive power (N), distorting power (D) and reactive power (Q).

- Distorting power (D) for sizing harmonic filters.
- The reactive power (Q<sub>i</sub>) linked to the phase shift of the fundamental for sizing the rephasing capacitor bank.
- The total reactive power (N) of the installation, also known as non-active power.

| Qualistar + CA 8331, CA 8333, CA8336 and CA 8436                |                       |                                                                                                                                                    |
|-----------------------------------------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of channels and inputs                                   |                       | 3U / 4I with 4 voltage terminals / 3 current inputs (CA 8331 & CA 8333)<br>4U / 4I with 5 voltage terminals / 4 current inputs (CA 8336 & CA 8436) |
| IEC 61000-4-30                                                  |                       | For EN 50160 Edition 2 reports (CA 8336 & CA 8436)                                                                                                 |
| Voltage (TRMS AC+DC)                                            | Voltage ratio         | 2 V to 1,000 V / up to 500 kV                                                                                                                      |
| Current (TRMS AC+DC)                                            | MN                    | MN93: 500 mA to 200 A <sub>AC</sub> ; MN93A : 0.005 A <sub>AC</sub> to 100 A <sub>AC</sub>                                                         |
|                                                                 | C193                  | 1 A to 1,000 A <sub>AC</sub>                                                                                                                       |
|                                                                 | AmpFLEX™ or MiniFlex* | 100 mA to 10 000 A <sub>AC</sub>                                                                                                                   |
|                                                                 | PAC93                 | 1 A to 1,300 A <sub>AC/DC</sub>                                                                                                                    |
|                                                                 | E27                   | 50 mA to 100 A <sub>AC/DC</sub>                                                                                                                    |
|                                                                 | J93                   | 50 to 3,500 A <sub>AC</sub> / 50 to 5,000 A <sub>DC</sub>                                                                                          |
| Frequency                                                       |                       | 40 Hz to 69 Hz                                                                                                                                     |
| Powers                                                          |                       | W (P), VA (S), var (Q, N, D), PF, DPF, cos φ, tan φ                                                                                                |
| Energy                                                          |                       | Wh, varh (Qh, Nh, Dh), VAh                                                                                                                         |
| Harmonics                                                       | THD                   | Yes, from rank 0 to 50, phase                                                                                                                      |
|                                                                 | Expert mode           | Yes (CA 8333, CA 8336 & CA 8436)                                                                                                                   |
| Transient                                                       |                       | Less than 80 μs<br>50 (CA 8333), 210 (CA 8336 and CA 8436)                                                                                         |
| Flicker                                                         |                       | Pst, Plt (via software) (CA 8336 & CA 8436)                                                                                                        |
| Inrush mode                                                     |                       | RMS trend (> 10 minutes)<br>and oscillogram (> 1 minute) (CA 8336 and CA 8436)                                                                     |
| Unbalance                                                       |                       | In voltage In current                                                                                                                              |
| Recording of a selection of parameters on a programmable sample |                       | From a few days to several weeks                                                                                                                   |
| Alarms                                                          |                       | 4,000 of 10 different types (CA 8333)<br>10,000 of 40 different types (CA 8336 & CA 8436)                                                          |
| Peak                                                            |                       | Yes                                                                                                                                                |
| Vector representation                                           |                       | Automatic in voltage, current and voltage/current                                                                                                  |
| Display                                                         |                       | TFT colour display 1/4 VGA 320 x 240 diagonal 148 mm                                                                                               |
| Screen capture, data & associated curves                        |                       | 12 (CA 8331 & CA 8333) 50 (CA 8336 & CA 8436)                                                                                                      |
| Electrical safety                                               |                       | IEC 61010 1 000 V CAT III / 600 V CAT IV                                                                                                           |
| Protection class                                                |                       | IP53 / IK08 (CA 8331, CA 8333 & CA 8336)<br>IP67 / IK08 (CA 8436)                                                                                  |
| Languages                                                       |                       | More than 27                                                                                                                                       |
| Communication interface                                         |                       | USB                                                                                                                                                |
| Autonomy                                                        |                       | Up to 10 hours                                                                                                                                     |
| Power supply                                                    |                       | Rechargeable 9.6 V NiMH battery or mains supply                                                                                                    |
| Dimensions / Weight                                             |                       | 240 x 180 x 55 mm / 1.9 kg - CA 8436 : 270 x 250 x 180 mm / 3.7 kg                                                                                 |



**CA 8436**  
the all-rounder  
robust and  
waterproof  
IP67

### Power and energy analyser

- For indoor and outdoor use, even in the rain
- 5 voltage inputs, 4 current inputs
- Continuous and simultaneous recording of all parameters
- Monitoring with alarms
- All types of installations



### CA 8331 / CA 8333 / CA 8336 supplied with:

- 1 N°22 case
- 1 USB cable
- 1 mains adaptor
- 4 x 3 m 4 mm banana plug leads (5 leads for CA 8336/CA 8436)
- 4 alligator clips (5 clips for CA 8336/CA 8436)
- 1 safety plug
- 1 set of 12-colour markers for cables and inputs
- 1 anti-scratch screen protection film (fitted)
- 1 PC data transfer software Power Analyser Transfer and 1 user manual to download from our website

### To order

CA8331 Three-phase power analyser

**Reference: P01160511**

CA8333 Three-phase power analyser

**Reference: P01160541**

CA8336 Three-phase power analyser

**Reference: P01160591**

CA8436 Three-phase power analyser

**Reference: P01160595**

### Recommended accessories



**P01120593, P01120592, P01120594**  
**MA194** flexible AC current transducer  
Available in 3 lengths 250 mm / 350 mm / 1,000 mm



**P01120434B**  
**MN93A** AC current transducer  
Ranges 5 and 100 A



**P01120027**  
**E27** AC and DC current transducer  
10 A and 100 A ranges



**P01102150**  
**PA31ER** mains adaptor  
For power supply via measurement channels

Download the free PAT2 software  
at [www.chauvin-arnoux.com](http://www.chauvin-arnoux.com)

# Voltage quality analyser

## CA 8345

1000 V  
CAT IV

IP 54

SD

Wi-Fi

USB

USB

IEC

61000-4-30

Web server

### Class A

For industrial or tertiary installation control and maintenance services, Qualistar provides an instant image of the main characteristics of the quality of the electrical network.

Qualistar is suitable for all types of installation. For added security, they automatically recognise the type of current sensor connected.

It can display harmonics and inter-harmonics as defined by IEC 61000-4-7 up to rank 127. Flicker measurements are carried out in accordance with IEC 61000-4-15.

**Communication :** In addition to the SD card and USB key, it is of course possible to retrieve measurements and communicate with the device from a greater or lesser distance. USB, remote links, Wifi (direct or via server) or via RJ45.

|                                    | CA 8345                                                             |
|------------------------------------|---------------------------------------------------------------------|
| Easy to use with multilingual help | ■                                                                   |
| IEC61000-4-30                      | Class A Full                                                        |
| Harmonic / Interharmonic           | Rank 127 / 126                                                      |
| Power                              | P, N, Q, S, D                                                       |
| Alarms                             | Up to 20,000                                                        |
| Transients                         | 2.5 µs                                                              |
| Shock wave                         | 12kV - 500 ns                                                       |
| Inrush                             | RMS (30 min), Peak (10min)                                          |
| Number of channels and inputs      | 4U / 4I with 5 voltage terminals / 4 current inputs                 |
| Voltage (TRMS AC+DC)               | from 5 to 1,000 V - Phase-to-phase and phase-to-neutral voltage     |
| Current (TRMS AC+DC)               |                                                                     |
|                                    | MN93 500 mA to 200 A <sub>AC</sub>                                  |
|                                    | MN93A 0,005 A to 100 A <sub>AC</sub>                                |
|                                    | MINI 94 50 mA to 200 A <sub>AC</sub>                                |
|                                    | C193 1 A to 1,000 A <sub>AC</sub>                                   |
|                                    | AmpFLEX™ or MiniFlex® 100 mA to 10 000 A <sub>AC</sub>              |
|                                    | PAC93 1 A to 1,000 A <sub>AC</sub> / 1 A to 1,300 A <sub>DC</sub>   |
|                                    | E94 de 50 mA to 100 A <sub>AC/DC</sub>                              |
|                                    | J93 50 A to 3,500 A <sub>AC</sub> and 50 A to 5,000 A <sub>DC</sub> |
| Power ratings                      | W (P), VA (S), var (Q, D, N), PF, DPF, cos φ, tan φ                 |
| Energies                           | Wh, varh, VAh                                                       |
| Harmonics                          | Yes, from rank 0 to 127, phase                                      |
| Communication interface            | USB, Ethernet, Wifi, SD                                             |
| Operating time                     | Up to 8 hours on Li-Ion batteries                                   |
| Measurement campaign               | EN 50160 Ed. 03                                                     |
| Dimensions / Weight                | 200 x 285 x 55 mm / 2 kg                                            |



### + The extra

**Remote interface:** The CA 8345 has on-board software for remote access. It can be remotely controlled via VNC, and activated from any Internet browser.

- Large colour touch screen
- Isolated measurement inputs
- On-board GPS for perfect time synchronisation

### CA 8345 supplied with:

- 1 PA40W-2 mains adapter
- 1 removable handle
- 1 magnetic clip
- 5 black 3 m banana cords (right-right)
- 5 black alligator clips
- 1 USB cable
- 1 safety plug
- 1 PC data transfer software Power Analyser Transfer and 1 user manual to download from our website
- set of counters / coloured rings
- 5 Reelingboxes
- SD card
- carrying bag

### To order

CA8345 Power analyser

**Reference: P01160657N**

CA8345

Phase-fed power analyser

**Reference: P01160658N**

### Recommended accessories

 **P01120592**  
Miniflex MA194-350

 **P01298083**  
Bag for CA 8345

 **P01103076**  
Power supply via PA32ER  
measurement inputs - 1,000 V  
AC and DC

Download the free PAT3  
at [www.chauvin-arnoux.com](http://www.chauvin-arnoux.com)

# Voltage, current, power and energy recorders

## Selection guide



|                         | L411            | L412            | L461                                                           | PEL 51                               | PEL 52                               | PEL 112                                    | PEL 113                                    | PEL 115                              |
|-------------------------|-----------------|-----------------|----------------------------------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------|
| <b>Display</b>          |                 |                 |                                                                |                                      |                                      |                                            |                                            |                                      |
| Without                 |                 |                 |                                                                |                                      |                                      | ■                                          |                                            |                                      |
| With                    | ■               | ■               | ■                                                              | ■                                    | ■                                    |                                            | ■                                          | ■                                    |
| <b>Number of inputs</b> |                 |                 |                                                                |                                      |                                      |                                            |                                            |                                      |
|                         | 1I              | 2I              | 1U                                                             | 1U/1I                                | 2U/2I                                | 3U/3I                                      | 3U/3I                                      | 4U/4I                                |
| <b>Current</b>          |                 |                 |                                                                |                                      |                                      |                                            |                                            |                                      |
| AC                      | ■               | ■               |                                                                | ■                                    | ■                                    | ■                                          | ■                                          | ■                                    |
| DC                      |                 |                 |                                                                |                                      |                                      | ■                                          | ■                                          | ■                                    |
| <b>Voltage</b>          |                 |                 |                                                                |                                      |                                      |                                            |                                            |                                      |
| AC                      |                 |                 | 1,000 V                                                        | 600 V                                | 600 V                                | 1,000 V                                    | 1,000 V                                    | 1,000 V                              |
| DC                      |                 |                 | 1,500 V                                                        |                                      |                                      | 1,000 V                                    | 1,000 V                                    | 1,000 V                              |
| <b>Powers</b>           |                 |                 |                                                                |                                      |                                      |                                            |                                            |                                      |
|                         |                 |                 |                                                                | P N Q D S                            | P N Q D S                            | P N Q D S                                  | P N Q D S                                  | P N Q D S                            |
| <b>Memory</b>           |                 |                 |                                                                |                                      |                                      |                                            |                                            |                                      |
| SD card                 | Internal        | Internal        | Internal                                                       | ■                                    | ■                                    | ■                                          | ■                                          | ■                                    |
| <b>Communication</b>    |                 |                 |                                                                |                                      |                                      |                                            |                                            |                                      |
| USB                     | ■               | ■               | ■                                                              |                                      |                                      | ■                                          | ■                                          | ■                                    |
| Wifi                    | ■               | ■               | ■                                                              | ■                                    | ■                                    | ■                                          | ■                                          | ■                                    |
| RJ45                    |                 |                 |                                                                |                                      |                                      | ■                                          | ■                                          | ■                                    |
| Webserver               | ■               | ■               | ■                                                              | ■                                    | ■                                    |                                            |                                            |                                      |
| IRD server              | ■               | ■               | ■                                                              | ■                                    | ■                                    | ■                                          | ■                                          | ■                                    |
| <b>Power supply</b>     |                 |                 |                                                                |                                      |                                      |                                            |                                            |                                      |
|                         | Batteries       | Batteries       | Batteries                                                      | Mains via voltage measurement inputs | Mains via voltage measurement inputs | Mains via voltage measurement inputs (opt) | Mains via voltage measurement inputs (opt) | Mains via voltage measurement inputs |
| <b>Protection</b>       |                 |                 |                                                                |                                      |                                      |                                            |                                            |                                      |
|                         | IP54            | IP54            | IP54                                                           | IP54                                 | IP54                                 | IP54                                       | IP54                                       | IP67                                 |
| <b>Safety</b>           |                 |                 |                                                                |                                      |                                      |                                            |                                            |                                      |
| IEC 61010               | CAT III 1,000 V | CAT III 1,000 V | CAT III 1,000 V <sub>AC</sub><br>CAT III 1,500 V <sub>DC</sub> | CAT III 600 V                        | CAT III 600 V                        | CAT III 1,000 V<br>CAT IV 600 V            | CAT III 1,000 V<br>CAT IV 600 V            | CAT IV 1,000 V                       |



## Voltage and current recorders

### L411 - L412 - L461



#### For diagnostics and preventive maintenance

- Simplified implementation and use
- Very high memory depth
- Measurements and recordings up to 1,500 V<sub>DC</sub>

|                                                                       | L411 | L412 | L461 |
|-----------------------------------------------------------------------|------|------|------|
| 1 measurement channel                                                 | ■    | ■    | ■    |
| 2 measurement channels                                                |      | ■    |      |
| Current :<br>MiniFlex captive sensor 3,000 A <sub>AC</sub>            | ■    |      |      |
| Current :<br>Multiple technology<br>AC current transducers            |      | ■    |      |
| Voltage :<br>Measures 1,000 V <sub>AC</sub> and 1,500 V <sub>DC</sub> |      |      | ■    |
| Single-phase electrical<br>distribution system                        | ■    | ■    | ■    |
| Single & two-phase electrical<br>distribution system                  |      | ■    |      |

|                       | L411                                             | L412                     | L461                                                          |
|-----------------------|--------------------------------------------------|--------------------------|---------------------------------------------------------------|
| Number of channels    | 1                                                | 2                        | 1                                                             |
| Current range         | From 0.08 to 3,000 A ac                          | Depending on the sensors | From 10 V to 1,200 Vac / 1,700 Vdc                            |
| Frequency             |                                                  | Yes                      |                                                               |
| Display               |                                                  | LCD rétro éclairé        |                                                               |
| Memory size           |                                                  | 8 Go                     |                                                               |
| Acquisition speed     |                                                  | 1 mesure / s             |                                                               |
| Aggregation           |                                                  | De 1 à 60 min            |                                                               |
| Communication         | USB, Wifi, Web server, IRD server DataView Synch |                          |                                                               |
| Power supply          | 3 Batteries AA, ou USB                           |                          |                                                               |
| Battery life          | 3 jours en Recording sans Wi-Fi                  |                          |                                                               |
| Dimensions            | 147 x 34 x 72 mm                                 | 177 x 34 x 72 mm         | 178 x 34 x 72 mm                                              |
| Weight                | 300 g environ                                    | 350 g environ            | 300 g environ                                                 |
| Sensor                | Ø 100mm / 350mm<br>cordon longueur 1,2 m         | -                        | -                                                             |
| Operating temperature | De -20°C à 50°C                                  |                          |                                                               |
| Protection            | IP54                                             |                          |                                                               |
|                       | 600 V CAT IV                                     |                          |                                                               |
| Electrical safety     | 1 000 V CAT III                                  | 1 000 V CAT III          | 1 000 V <sub>AC</sub> CAT III / 1 500 V <sub>DC</sub> CAT III |



#### + The extra

The **Wi-Fi interface** on the Data Logger L411, L412 and L461 allows the device to be connected to a communicating network and become accessible from any PC on the network using the Data Logger Transfer software. The devices then become remote voltage and current sensors.

#### 1 recorder (L411, L412 or L461) supplied with:

- 1 test report
- 1 safety data sheet
- 1 CE certificate
- 1 quick start guide
- 1 USB-micro USB cable
- 1 USB power adapter
- 3 batteries (AA or LR06)
- 1 Data Logger Transfer software package and user manual available for download from our website

#### Plus for L461:

- 2 power cords (red / black)
- 2 alligator clips (red / black)

#### To order

L411 1-channel current logger

**Reference: P01157180**

L412 2-channel current recorder

**Reference: P01157181**

L461 1-channel voltage recorder

**Reference: P01157182**

#### Recommended accessories



For L461 :  
**P01103058Z**  
Magnetic key tips



For L412 :  
**P01106194**  
Mini94 current sensor

Download free Data Logger Transfer software  
from [www.chauvin-arnoux.com](http://www.chauvin-arnoux.com)

## Power and energy loggers single and two-phase

### PEL 51 / PEL 52

600 V  
CAT III

TRMS

IP 54

#### + The extra

- To optimise energy efficiency of single-phase installations
- Easy to connect to the WiFi network
- Memory depth: all measurements per second for 100 years, time synchronised

The PEL 51 and PEL 52 are voltage and current recorders with a liquid crystal segment display. They will enable you to obtain detailed energy and electricity consumption profiles during ISO 50 001 energy audits and to identify potential savings specifically around single-phase loads in your installations.

### Versatility

The PEL 51 has a voltage measurement input (2 banana terminals) and a current measurement input and is designed for the single-phase electrical market. The PEL 52 is mainly intended for the two-phase electrical market, but can also be used in single-phase with 2 current channels recorded.

|                                                                             | PEL 51 & PEL 52 |
|-----------------------------------------------------------------------------|-----------------|
| Power and energy logger                                                     | ■               |
| Recording for monitoring all parameters to search for energy losses         | ■               |
| T-RMS voltage and current measurements                                      | ■               |
| Backlit display                                                             | ■               |
| Min and Max values                                                          | ■               |
| Automatic current sensor recognition                                        | ■               |
| Measurement storage on SD card                                              | ■               |
| Wifi connection (Access point & hotspot)                                    | ■               |
| Remote use in VNC mode (Webserver)                                          | ■               |
| Magnetic fixing for simplified use                                          | ■               |
| Unlimited autonomy thanks to its power supply from the measurement channels | ■               |

|                                         |                                                                                              |                      |
|-----------------------------------------|----------------------------------------------------------------------------------------------|----------------------|
| Number of channels and number of inputs | PEL 51: 1 voltage input and 1 current input<br>PEL 52: 2 voltage inputs and 2 current inputs |                      |
| Voltage (TRMS AC)                       | Phase-to-phase and phase-to-neutral voltage 10 V to 600 V                                    |                      |
| Current (TRMS AC)                       | MN93                                                                                         | 500 mA to 200 Aac    |
|                                         | MN93A                                                                                        | 0.005 Aac to 100 Aac |
|                                         | C193                                                                                         | 1 A to 1,000 Aac     |
|                                         | Mini 94                                                                                      | 50 mA to 200 Aac     |
|                                         | AmpFLEX™ ou MiniFlex®                                                                        | 500 mA to 2,400 Aac  |
| Power                                   | W (P, PF), VA (S), var (Q, N, D), PF, DPF / cos φ, tan φ                                     |                      |
| Energy                                  | Wh, varh, VAh                                                                                |                      |
| Communication interface                 | Wifi                                                                                         |                      |
| Dimensions / weight                     | 180 x 88 x 37 mm / 400 g                                                                     |                      |



#### PEL 51 supplied with:

- 1 MA194-250 current sensor
- 1 bag
- 2 red/black 1.5 m banana cables (right-right)
- 2 red/black alligator clips
- 1 C8 adapter
- 1 mains lead
- 1 SD card
- 1 safety plug
- 1 PC data transfer software PEL Transfer and 1 user manual to download from our website

#### PEL 52 supplied with:

- Same as PEL51 without current sensor (wide choice of compatible sensors depending on application).  
Plus :
- 1 blue 1.5 m banana cord (right-right) ;
  - 1 blue alligator clip

### To order

PEL51

Single-phase power and energy recorder

**Reference: P01157166**

PEL52

Two-phase power and energy data logger

**Reference: P01157167**

### Recommended accessories

**P01120594**  
MA194 flexible AC current transducer 1 000 mm

**P01120434B**  
MN93A AC current transducer 5 A and 100 A ranges

**P01106194**  
MINI94 clamp

Download the free PEL Transfer software  
at [www.chauvin-arnoux.com](http://www.chauvin-arnoux.com)

## Power and energy recorders

### PEL 112 - PEL 113 - PEL 115

600 V  
CAT IV1000 V  
CAT III

TRMS



The PEL 110 series includes 3 voltage and current recorders with a liquid crystal segment display. They are used to obtain detailed energy and electricity consumption profiles for energy audits under the European Union's Energy Efficiency Directive. ISO 50 001 and identify potential savings specifically around electrical loads in your installations.

### Power and energy measurements

Measurements of active (P, Pfun), apparent (S) and reactive (N, Q, D) power, as well as power factors and power displacement, enable you to define the exact consumption of the various loads. to determine the exact power consumption of the various loads.

1000 V  
CAT IV

IP 67

#### Série PEL 110

|                                                                                                                         |   |
|-------------------------------------------------------------------------------------------------------------------------|---|
| Recorder for all power and energy                                                                                       | ■ |
| Recording for monitoring all parameters to search for energy losses                                                     | ■ |
| T-RMS voltage and current measurements                                                                                  | ■ |
| Backlit display (PEL113 - PEL115)                                                                                       | ■ |
| Min and Max values                                                                                                      | ■ |
| Automatic current sensor recognition                                                                                    | ■ |
| Measurement storage on SD card                                                                                          | ■ |
| USB, Ethernet and Wifi connection (Access point & hotspot)                                                              | ■ |
| Magnetic attachment for easy use (PEL112 & 113)                                                                         | ■ |
| Unlimited autonomy thanks to its power supply from the measurement channels (Optional PEL112 & 113; included in PEL115) | ■ |

|                               | PEL 112 & PEL 113                                                                                             | PEL 115                                                                        |
|-------------------------------|---------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Number of channels and inputs | 3 voltage channels & 3-way current<br>4 voltage inputs<br>and 3 current inputs                                | 4 voltage channels & 4-way current<br>5 voltage inputs<br>and 4 current inputs |
| Voltage (TRMS AC+DC)          | Phase-to-phase and phase-to-neutral<br>voltage 10 V to 1,000 V <sub>AC</sub> / 100 V to 1,000 V <sub>DC</sub> |                                                                                |
| Current (RMS AC)              | MN93                                                                                                          | 500 mA to 200 A <sub>AC</sub>                                                  |
|                               | MN93A                                                                                                         | 0.005 A <sub>AC</sub> to 100 A <sub>AC</sub>                                   |
|                               | C193                                                                                                          | 1 A to 1,000 A <sub>AC</sub>                                                   |
|                               | Mini 94                                                                                                       | 50 mA to 200 A <sub>AC</sub>                                                   |
|                               | AmpFLEX™ ou MiniFlex™                                                                                         | 200 mA to 10,000 A <sub>AC</sub>                                               |
| Current (TRMS AC+DC)          | E94                                                                                                           | 100 mA to 100 A <sub>AC/DC</sub>                                               |
|                               | PAC93                                                                                                         | 1 A to 1,000 A <sub>AC</sub> / 1 A to 1,300 A <sub>DC</sub>                    |
|                               | J93                                                                                                           | 50 A to 3,500 A <sub>AC</sub> / 50 A to 5,000 A <sub>DC</sub>                  |
| Power ratings                 | W (P), VA (S), var (Q), PF, DPF, cos φ, tan φ                                                                 |                                                                                |
| Energies                      | Wh, varh, VAh                                                                                                 |                                                                                |
| Acquisition step              | 200 ms                                                                                                        |                                                                                |
| Communication interface       | Wifi, Ethernet, USB                                                                                           |                                                                                |
| Protection                    | IP54                                                                                                          | IP67                                                                           |
| Dimensions / Weights          | 256 x 125 x 37 mm / 930 g                                                                                     | 270 x 245 x 180 mm / 3,4 kg                                                    |



Education



Energy efficiency



Transport



Tertiary &amp; residential



Industries



Production, transport &amp; distribution



### PEL 113 supplied with:

- 1 case
- 4 black 3 m banana cables (right-right)
- 4 black alligator clips
- 1 USB/SD adapter
- 1 power cord
- 1 USB cable
- 1 set of marker rings
- 4 cable reels
- 1 SD card
- 1 safety data sheet
- 1 PC data transfer software PEL Transfer and 1 user manual to download from our website

### PEL 112 supplied with:

- Same as PEL113

### PEL 115 supplied with:

- 1 carrying case
- 5 black 3 m banana leads (right-right)
- 5 black alligator clips
- 1 USB/SD adapter
- 1 power cord
- 1 USB cable
- 1 SD card
- 1 set of marker rings
- 5 cable reels
- 1 safety plug
- 1 PC data transfer software PEL Transfer and 1 user manual to download from our website

### To order

PEL113 Power and energy logger

**Reference: P01157157**

PEL113 version with 3 MiniFlex MA194-350 current sensors and mains adapter

**Reference: P01300003**

PEL113 version with 3 MiniFlex MA194-350 current sensors, mains adapter, DataView software and magnetic touch points

**Reference: P01300004**

PEL112 Power and energy logger

**Reference: P01157156**

PEL115 Power and energy logger

**Reference: P01157169**

Download the free PEL Transfer software from  
[www.chauvin-arnoux.com](http://www.chauvin-arnoux.com)

# Photovoltaic analyser

## FTV500



The FTV500 photovoltaic tester is a measuring instrument designed to meet all the requirements of technicians and professionals when it comes to installation, testing and maintenance of photovoltaic systems.

### Checking electrical safety

The FTV500 can be used to check that the installation is safe. Insulation and continuity tests are possible, in compliance with IEC61557 standards.

### I-V curves

The device is designed to carry out tests and measurements on PV modules made up of an appropriate number of PV cells in order to detect their I-V (current-voltage) characteristic curve and the series of resistances  $R_s$ , characteristic parameters that constructively identify them, based on the IEC 60891 standard.

### Efficiency and shadow curves

Efficiency data recording represents the recording of parameters related to the efficiency test.

In fact, it represents the evaluation of the installation's efficiency over time. The aim of this test is to check whether the same efficiency is maintained over the long term.

### Performance of photovoltaic systems

The performance of photovoltaic systems in normal operation is assessed in accordance with IEC 61446 (Voc, Isc, Pmpp, etc.) and IEC 61724 (PR and PRP parameters).

|                                                                       | FTV500 |
|-----------------------------------------------------------------------|--------|
| Efficiency of the inverter and the complete installation              | ■      |
| Simplified HMI with touch screen                                      | ■      |
| No PC required, thanks to automatic generation of measurement reports | ■      |
| Daily recording for monitoring the site's shadow curve                | ■      |
| Wi-Fi communication with remote module                                | ■      |
| Remote control of the device in VNC mode                              | ■      |

|                   |                                                    |
|-------------------|----------------------------------------------------|
| Display           | 5" colour TFT touch screen                         |
| DC voltage        | 1,000 V                                            |
| Current DC        | 20 A                                               |
| AC voltage        | 1,000 V                                            |
| Current AC        | 3,000 A                                            |
| Continuity        | 0.01 to 99 $\Omega$ , current 200 mA               |
| Insulation        | Power off<br>Power on                              |
|                   | 0.25 to 199 M $\Omega$<br>0.25 to 100 M $\Omega$   |
| Solar irradiation | From 50 to 2,000 W/m <sup>2</sup>                  |
| Temperature       | Contact and ambient                                |
| Autonomy          | Up to 15 hours                                     |
| Protection        | IP54<br>IEC 61010 CAT III - 1,000 V / CAT IV 600 V |



### + The extra

#### Live insulation test

The  $R_s$  series resistance test (only possible when powered up) enables this parameter to be measured accurately in real time on the PV module, in accordance with the procedure laid down in standard IEC 60891.

#### Recommended accessories



**P01102184**  
FTV500 remote box



**P01120600**  
PAC500 clamp



#### FTV500 comes with:

- 1 carrying case
- 1 certificate of conformity
- 12 red/black 2 m banana cables
- 1 set of red/black alligator clips
- 3 x MA500 MiniFlex AC current sensors
- 3 x PAC500 DC current sensors
- 1 I-V cable for DC connection
- 1 FTV500 remote unit
- 1 FTV500 mains adapter
- 1 inclinometer
- 1 set of flexible test leads

#### To order

FTV500 Photovoltaic analyser  
Reference: P01129600



Accessories / Spare parts

|        | CA 8220<br>CA 8230 | CA 8332<br>CA 8332B<br>CA 8334<br>CA 8334B | CA 8335<br>CA 8331<br>CA 8333<br>CA 8336 | CA 8435<br>CA 8436 | CA 8435 | PEL51<br>PEL52 | PEL102<br>PEL103 | PEL104<br>PEL112<br>PEL113 | PEL105  | PEL106<br>PEL115 |
|--------|--------------------|--------------------------------------------|------------------------------------------|--------------------|---------|----------------|------------------|----------------------------|---------|------------------|
| MN93   |                    |                                            |                                          | (1)                |         |                |                  |                            | (1)     | (1)              |
| MN93A  |                    |                                            |                                          | (1)                |         |                |                  |                            | (1)     | (1)              |
| Mini94 |                    |                                            |                                          |                    |         |                |                  |                            |         | (1)              |
| C193   |                    |                                            |                                          | (1)                |         |                |                  |                            | (1)     | (1)              |
| MA193  |                    |                                            |                                          | (1)                |         |                |                  |                            | (1)     | (1)              |
| MA194  |                    |                                            |                                          | (1)                |         |                |                  |                            | (1)     | (1)              |
| MA196  |                    |                                            |                                          |                    |         |                |                  |                            |         |                  |
| A193   |                    |                                            |                                          |                    |         |                |                  |                            | (1)     | (1)              |
| A196   |                    |                                            |                                          |                    |         |                |                  |                            |         |                  |
| E3N    | (2)                |                                            | (2)                                      | (1) (2)            | (2)     |                | (2)              | (2)                        | (1) (2) | (1) (2)          |
| E27    | (2)                |                                            | (2)                                      | (1) (2)            | (2)     |                | (2)              | (2)                        | (1) (2) | (1) (2)          |
| E94    |                    |                                            |                                          |                    | (3)     |                |                  | (3)                        |         | (1) (3)          |
| PAC93  |                    |                                            |                                          | (1)                | (3)     |                |                  |                            | (1)     | (1)              |
| J93    |                    |                                            |                                          | (1)                |         |                |                  |                            | (1)     | (1)              |

COMPATIBILITY CURRENT  
SENSORS QUALISTAR  
RANGE

|  |                 |
|--|-----------------|
|  | Recommended     |
|  | Not Recommended |
|  | Incompatible    |

(1) without IP67 sealing  
(2) with adapter  
(3) powered by the device



## Accessories and spare parts for analysers and recorders power and energy quality

CA 8220, CA 8331, CA 8333, CA 8336, CA 8436, CA 8435, PEL 112, PEL 113, PEL 115 and PEL51, PEL52

Check compatibility of measurement ranges

| CAPTEURS DE Current | Model                                                                                                                               | Measuring range                                                    | ø Gap / Length                                                     | IEC 61010                                    | Reference                                        |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------|
|                     |  MN93                                              | 500 mA to 200 A <sub>AC</sub>                                      | Ø 20 mm                                                            | 600 V CAT III / 300 V CAT IV                 | P01120425B                                       |
|                     |  MN 93A                                            | 5 mA to 100 A <sub>AC</sub>                                        | Ø 20 mm                                                            | 600 V CAT III / 300 V CAT IV                 | P01120434B                                       |
|                     |  Mini94                                            | 50 mA to 200 A <sub>AC</sub>                                       | Ø 16 mm                                                            | IEC 61010 CAT III<br>600 V / CAT IV - 300 V  | P01106194                                        |
|                     |  MA194-250<br>MA194-350<br>MA194-1000<br>MA196-350 | 100 mA to 10 kA <sub>AC</sub>                                      | Ø 70/250 mm<br>Ø 100/350 mm<br>Ø 300/1.000 mm<br>Ø 100 mm / 350 mm | 1000 V CAT III / 600 V CAT IV                | P01120593<br>P01120592<br>P01120594<br>P01120568 |
|                     |  PAC93                                             | 1 A to 1,000 A <sub>AC</sub> / 1 A to 1,300 A <sub>DC</sub>        | 1 x Ø 39 mm or 2 x Ø 25 mm                                         | 600 V CAT III / 300 V CAT IV                 | P01120079B                                       |
|                     |  J93                                               | 50 A to 3,500 A <sub>AC</sub> / 50 A to 5,000 A <sub>DC</sub>      | Ø 72 mm                                                            | 600 V CAT III / 300 V CAT IV                 | P01120110                                        |
|                     |  A193-450<br>A196A-610                            | 100 mA to 10 kA <sub>AC</sub>                                      | Ø 140 mm / 450 mm<br>Ø 190 mm / 610 mm                             | 1000V CAT III / 600 V CAT IV<br>1000V CAT IV | P01120526B<br>P01120554                          |
|                     |  A193-800                                        | 100 mA to 10 kA <sub>AC</sub>                                      | Ø 250 mm / 800 mm                                                  | 1,000 V CAT III / 600 V CAT IV               | P01120531B                                       |
|                     |  C193                                            | 1 A to 1,000 A <sub>AC</sub>                                       | Ø 52 mm                                                            | 600 V CAT IV                                 | P01120323B                                       |
|                     |  E3N / E27<br>E94                                | 50 mA to 10 A <sub>AC/DC</sub><br>100 mA to 100 A <sub>AC/DC</sub> | Ø 11,8 mm                                                          | 600 V CAT III / 300 V CAT IV                 | P01120027<br>P01120044                           |

| OTHER ACCESSORIES | Description                                                                                                                                                    | Reference |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
|                   |  Kit of 5 banana cables<br>+ 5 alligator clips<br>+ 1 set of coloured rings | P01295483 |
|                   |  Set of 4 banana cords<br>+ 4 alligator clips<br>+ 1 set of coloured rings  | P01295476 |
|                   |  1 set of coloured counters<br>and rings                                    | P01102080 |
|                   |  5 A adapter box                                                            | P01101959 |

| OTHER ACCESSORIES | Description                                                                                                                  | Reference |
|-------------------|------------------------------------------------------------------------------------------------------------------------------|-----------|
|                   |  Reeling box - MultiFix<br>magnetic reel | P01102149 |
|                   |  USB-A USB-B cable                       | P01295293 |
|                   |  Carrying case no. 22                    | P01298056 |
|                   |  DataView Software®                      | P01102095 |
|                   |  ESSAILEC box                            | P01102131 |
|                   |  Magnetic hook                           | P01103079 |

## Accessories

|                                                                                     | Item code  | Description                                      | F407/<br>F607 | CA 8220 | CA 8331/<br>CA 8333 | CA 8336 | CA 8436 | CA 8345 | PEL 51/<br>PEL 52 | PEL 112/<br>PEL 113 | PEL 115 | FTV500 |
|-------------------------------------------------------------------------------------|------------|--------------------------------------------------|---------------|---------|---------------------|---------|---------|---------|-------------------|---------------------|---------|--------|
|                                                                                     | HX0055B    | RS232/USB adapter                                |               | ■       |                     |         |         |         |                   |                     |         |        |
|    | HX0056Z    | Optical/USB cable                                |               | ■       |                     |         |         |         |                   |                     |         |        |
|    | HX0061     | Car charger                                      |               |         | ■                   | ■       | ■       |         |                   |                     |         |        |
|    | HX0091     | Pt100 adapter, 2 wires                           |               | ■       |                     |         |         |         |                   |                     |         |        |
|    | P01101959  | 5 A box                                          |               |         | ■                   | ■       | ■       | ■       |                   | ■                   | ■       |        |
|                                                                                     | P01101967  | PAC93 mains adapter                              |               | ■       | ■                   | ■       | ■       | ■       |                   | ■                   | ■       |        |
|    | P01102057  | Power supply PA30W                               |               |         | ■                   | ■       | ■       |         |                   |                     | ■       |        |
|    | P01295457Z | Set of 16 A alligator clips, red/black           | ■             | ■       |                     |         |         |         | ■                 |                     |         |        |
|    | P01102059  | Screen protection film                           |               |         | ■                   | ■       | ■       |         |                   |                     |         |        |
|    | P01102080  | Set of ring-pins                                 |               |         | ■                   | ■       | ■       | ■       |                   | ■                   | ■       |        |
|                                                                                     | P01102081  | E3N / E27 clamp adapter                          |               | ■       | ■                   | ■       | ■       |         |                   |                     |         |        |
|   | P01102082  | CA 1711 tachometer probe                         |               | ■       |                     |         |         |         |                   |                     |         |        |
|  | P01102095  | DataView® software                               | ■             | ■       | ■                   | ■       | ■       | ■       | ■                 | ■                   | ■       |        |
|  | P01102099  | Set of 5 locking alligator clips                 |               |         |                     |         | ■       |         |                   |                     | ■       |        |
|  | P01102100Z | MultiFix magnet kit                              | ■             |         |                     |         |         |         |                   |                     |         |        |
|  | P01102115  | Inclinometer                                     |               |         |                     |         |         |         |                   |                     |         | ■      |
|                                                                                     | P01102117  | Set of plugs (CA 8436)                           |               |         |                     |         | ■       |         |                   |                     |         |        |
|  | P01102131  | ESSAILEC box                                     |               |         | ■                   | ■       | ■       | ■       |                   | ■                   | ■       |        |
|                                                                                     | P01102146  | Pole fixing kit                                  |               |         |                     |         | ■       |         |                   |                     | ■       |        |
|                                                                                     | P01102147  | Set of rubber stoppers (5 small+ 4 large)        |               |         |                     |         | ■       |         |                   |                     | ■       |        |
|  | P01102149  | Reeling Box                                      |               |         | ■                   | ■       | ■       | ■       |                   | ■                   | ■       |        |
|  | P01102150  | PA31ER mains adapter                             |               |         | ■                   | ■       |         |         |                   |                     |         |        |
|  | P01102155  | Power supply PA40W-2 Li-Ion                      |               |         |                     |         |         | ■       |                   |                     |         |        |
|  | P01102184  | FTV500 remote box                                |               |         |                     |         |         |         |                   |                     |         | ■      |
|  | P01102189  | Flexible tips                                    |               |         |                     |         |         |         |                   |                     |         | ■      |
|  | P01102204B | Mains adapter (self-powered)                     |               |         |                     |         |         |         |                   | ■                   |         |        |
|  | P01103058Z | Set of 2 magnetic measuring tips (1 red/1 black) |               | ■       |                     |         |         |         |                   |                     |         |        |
|  | P01103076  | Power supply PA32ER 1,000 V                      |               |         |                     |         |         | ■       |                   |                     |         |        |
|  | P01103077  | C8 adapter                                       |               |         |                     |         |         | ■       |                   |                     |         |        |
|                                                                                     | P01103078  | SD card                                          |               |         |                     |         |         | ■       |                   | ■                   | ■       |        |

## Accessories

|                                                                                     | Item code  | Description                                                          | F407/<br>F607 | CA 8220 | CA 8331/<br>CA 8333 | CA 8336 | CA 8436 | CA 8345 | PEL 51/<br>PEL 52 | PEL 112/<br>PEL 113 | PEL 115 | FTV500 |
|-------------------------------------------------------------------------------------|------------|----------------------------------------------------------------------|---------------|---------|---------------------|---------|---------|---------|-------------------|---------------------|---------|--------|
|    | P01103079  | Magnetic hook                                                        |               |         | ■                   | ■       |         | ■       |                   |                     |         |        |
|    | P01120027  | E27 clip                                                             |               | ■       | ■                   | ■       | ■       |         |                   |                     |         |        |
|                                                                                     | P01120047  | Power supply E3N/E27                                                 |               | ■       | ■                   | ■       | ■       |         |                   |                     |         |        |
|    | P01120480  | PAC500 DC clamp                                                      |               |         |                     |         |         |         |                   |                     |         | ■      |
|    | P01120600  | MiniFlex MA500 sensor                                                |               |         |                     |         |         |         |                   |                     |         | ■      |
|    | P01295174  | Power supply cable                                                   |               |         |                     |         |         |         | ■                 | ■                   | ■       |        |
|    | P01295288Z | Banana/banana cords (1 red/1 black)                                  |               | ■       |                     |         |         |         | ■                 |                     |         |        |
|    | P01295293  | USB-A / USB-B cable                                                  |               |         | ■                   | ■       | ■       | ■       |                   | ■                   | ■       |        |
|    | P01295451Z | Banana/banana cable set (red/black)                                  | ■             |         |                     |         |         |         |                   |                     |         |        |
|    | P01295454Z | Touch points (1 red/1 black)                                         |               | ■       |                     |         |         |         |                   |                     |         |        |
|    | P01295476  | Set of 4 banana cords, 4 alligator clips and 1 set of coloured rings |               |         | ■                   | ■       | ■       | ■       |                   | ■                   | ■       |        |
|    | P01295477  | IP 67 power cord (CA 8436)                                           |               |         |                     |         | ■       |         |                   |                     |         |        |
|  | P01295479  | Set of 3 m IP 67 banana cables (x5) BB196                            |               |         |                     |         | ■       |         |                   |                     | ■       |        |
|  | P01295483  | Kit of 5 banana leads, 5 alligator clips and 1 set of coloured rings |               |         |                     | ■       | ■       | ■       |                   |                     | ■       |        |
|                                                                                     | P01295496  | Banana power cord (CA 8436)                                          |               |         |                     |         | ■       |         |                   |                     |         |        |
|  | P01295504  | MC4 cable set                                                        |               |         |                     |         |         |         |                   |                     |         | ■      |
|  | P01295505  | FTV500 mains adapter                                                 |               |         |                     |         |         |         |                   |                     |         | ■      |
|  | P01296024  | QualistarPlus battery pack                                           |               |         | ■                   | ■       | ■       |         |                   |                     |         |        |
|                                                                                     | P01296037  | Pack of 6 NiMH batteries                                             |               | ■       |                     |         |         |         |                   |                     |         |        |
|  | P01296047  | CA 8345 battery pack                                                 |               |         |                     |         |         | ■       |                   |                     |         |        |
|                                                                                     | P01296052  | FTV500 battery                                                       |               |         |                     |         |         |         |                   |                     |         | ■      |
|  | P01298049  | Carrying case n°5                                                    |               | ■       |                     |         |         |         |                   |                     |         |        |
|  | P01298055  | Belly bag n° 21                                                      |               |         | ■                   | ■       |         |         |                   |                     |         |        |
|  | P01298066  | Saddlebag n° S21                                                     |               |         | ■                   | ■       | ■       | ■       |                   | ■                   |         |        |
|  | P01298067  | Satchel No. 22                                                       |               |         | ■                   | ■       | ■       |         |                   |                     | ■       |        |
|  | P01298076  | Bag n° S03                                                           | ■             |         |                     |         |         |         | ■                 |                     |         |        |
|  | P01298078  | Bag n° 20                                                            |               |         |                     |         |         |         |                   | ■                   |         |        |
|  | P01298083  | Bag Q2                                                               |               |         |                     |         |         | ■       |                   |                     |         |        |
|                                                                                     | P01637301  | Bluetooth kit                                                        | ■             |         |                     |         |         |         |                   |                     |         |        |
|  | P01651023  | 230 V USB-USB B cord adapter for E27                                 |               | ■       | ■                   | ■       | ■       |         |                   |                     |         |        |
|  | P03295509  | Current Measurement Lead                                             |               | ■       |                     |         |         |         |                   |                     |         |        |



# Electrical control and safety

Guide to choosing electrical installation controllers .....61

Electrical installation controllers

CA 6113 - CA 6116N - CA 6117 .....62

Electrical installation controllers

CA 6131 - CA 6133 .....64

Field electrical safety controller MX 531 .....65

Continuity tester CA 6011 .....66

Surge arrester tester MX 604 .....67

CA 6652 Electric Vehicle Charging

Station Test Adapter .....68

Portable Insulation Tester Selection Guide .....69

CA 6503 Magneto Insulation Tester .....70

CA 6511 - CA 6513 Analogue Insulation Tester .....70

Insulation and continuity testers

CA 6522 - CA 6524 - CA 6526 .....71

CA 6528 Digital Insulation Tester .....72

CA 6532 - CA 6534 - CA 6536

Digital Insulation Testers .....73

Selection guide - construction site insulation tester .....74

CA 6541 - CA 6543 construction site

insulation testers .....75

CA 6505 - CA 6545

construction site insulation monitors .....76

CA 6547 - CA 6549

Construction Site Insulation Testers .....77

CA 6550 - CA 6555

Construction site insulation testers .....78

Selection guide earth testers .....79

CA 6422 - CA 6424 earth testers .....80

CA 6460 - CA 6462 earth testers .....81

CA 6470N TERCA 3 - CA 6471 earth testers .....82

Earth tester CA 6472 .....83

Earth tester - pylons CA 6474 .....84

CA 6416 - CA 6417 - CA 6418 earth clamps .....85

Selection guide for electrical equipment

controllers for machines and switchboards .....84

Electrical equipment controllers

for machines and panels CA 6161 - CA 6163 .....87

Electrical equipment controller

for machines and panels CA 6165 .....88

Micro-ohmmeter CA 6240 .....89

Micro-ohmmeter CA 6255 .....90

CA 6292 micro-ohmmeter .....91

CA 6683 LOCAT cable locator .....92

Phase rotation testers CA 6608 - CA 6609 .....93

Battery capacity tester CA 6630 .....94

Ratiometer DTR 8510 .....95

Accessories .....96

# Installation testers

## Selection guide



|                                                        | CA 6011                     | CA 6131      | CA 6133             | CA 6113                        | CA 6116N | CA 6117  |
|--------------------------------------------------------|-----------------------------|--------------|---------------------|--------------------------------|----------|----------|
| <b>Insulation</b>                                      |                             |              |                     |                                |          |          |
| Test voltage                                           |                             | 250 / 500 V  | 250 / 500 / 1,000 V | 50 / 100 / 250 / 500 / 1,000 V |          |          |
| <b>RCD tests</b>                                       |                             |              |                     |                                |          |          |
| No-Trip tests                                          |                             | ■            | ■                   | ■                              | ■        | ■        |
| Trip time (pulse)                                      |                             | ■            | ■                   | ■                              | ■        | ■        |
| Trip current (Ramp)                                    |                             | ■            | ■                   | ■                              | ■        | ■        |
| Management of standard or selective RCDs, type AC or A |                             | ■ (standard) | ■ (standard)        | ■                              | ■        | ■        |
| Management of type-B RCDs                              |                             |              |                     |                                |          | ■        |
| <b>Earth measurement</b>                               |                             |              |                     |                                |          |          |
| Terre 2P/3P                                            |                             |              | ■                   | ■                              | ■        | ■        |
| Terre sous Voltage (RA) 1P                             |                             |              |                     | ■                              | ■        | ■        |
| Terre sélective 1 pince (RA Sel)                       |                             |              |                     | ■                              | ■        | ■        |
| <b>Loop impedance &amp; resistance</b>                 |                             |              |                     |                                |          |          |
| Z-loop (L-PE)                                          |                             | ■            | ■                   | ■                              | ■        | ■        |
| Z-Line (L-N or LL)                                     |                             | ■            | ■                   | ■                              | ■        | ■        |
| Ik calculation (PFC)                                   |                             | ■            | ■                   | ■                              | ■        | ■        |
| Icc calculation (PSCC)                                 |                             | ■            | ■                   | ■                              | ■        | ■        |
| Integrated fuse table                                  |                             |              |                     |                                |          | ■        |
| Voltage drop                                           |                             |              |                     |                                |          | ■        |
| <b>Resistance / Continuity</b>                         |                             |              |                     |                                |          |          |
| Mesure manuelle & Automatic                            | ■                           | ■            | ■                   | ■                              | ■        | ■        |
| <b>Other functions</b>                                 |                             |              |                     |                                |          |          |
| Voltage / frequency                                    |                             | ■ / -        | ■ / ■               | ■ / ■                          | ■ / ■    | ■ / ■    |
| Current / leakage current on clamp                     |                             | ■            | ■                   | ■                              | ■        | ■        |
| Phase sequence                                         |                             | ■            | ■                   | ■                              | ■        | ■        |
| Power values                                           |                             |              |                     |                                | ■        | ■        |
| Harmonics                                              |                             |              |                     |                                | ■        | ■        |
| Wiring polarity test + reversal                        |                             |              |                     | ■                              | ■        | ■        |
| Alarms                                                 |                             | ■            | ■                   | ■                              | ■        | ■        |
| <b>Data Storage / Communication</b>                    |                             |              |                     |                                |          |          |
| Data storage                                           |                             |              | ■                   |                                | ■        | ■        |
| Storage of 3 tree-structure levels                     |                             |              |                     |                                | ■        | ■        |
| USB interface                                          |                             |              |                     |                                | ■        | ■        |
| Bluetooth                                              |                             |              | ■                   |                                |          |          |
| <b>Display et Power supply</b>                         |                             |              |                     |                                |          |          |
| Black and white LCD                                    | ■ (Two-colour backlighting) | ■ (Custom)   | ■ (Custom)          |                                |          |          |
| Black and white graphical LCD                          |                             |              |                     | ■                              |          |          |
| Colour graphical LCD                                   |                             |              |                     |                                | ■        | ■        |
| Online help                                            |                             |              |                     | ■                              | ■        | ■        |
| Battery operation                                      | ■                           | ■            |                     |                                |          |          |
| Operation with rechargeable batteries                  |                             |              | ■ Ni-Mh             | ■ Ni-Mh                        | ■ Li-ion | ■ Li-ion |
| <b>Software</b>                                        |                             |              |                     |                                |          |          |
| ICT / DataView®                                        |                             |              |                     |                                | ■        | ■        |
| Android application                                    |                             |              | ■                   |                                |          |          |
| <b>Safety / Standards</b>                              |                             |              |                     |                                |          |          |
| IEC 61010-1 600V CAT III                               |                             | ■            | ■                   | ■                              | ■        | ■        |
| IEC 61557                                              | ■                           | ■            | ■                   | ■                              | ■        | ■        |

## Installation testers

### CA 6113 - CA 6116N - CA 6117

600 V  
CAT III

IP 53

IEC  
61557

### Complete control of electrical installations in accordance with current standards

- Test on DDR AC, A, F, B, B+, EV
- Battery with up to 30 hours of autonomy
- Verification in accordance with IEC 60364-6, NF C 15-100, DIN VDE 100, DIN VDE 0105, NF C 16-600, etc.
- Automatic continuity measurement
- Colour display (except CA 6113)
- Measurements: voltage, current via clamp, power, waveforms and harmonics
- Loop measurement with 1 mΩ resolution

### Effective contextual help and guaranteed safety

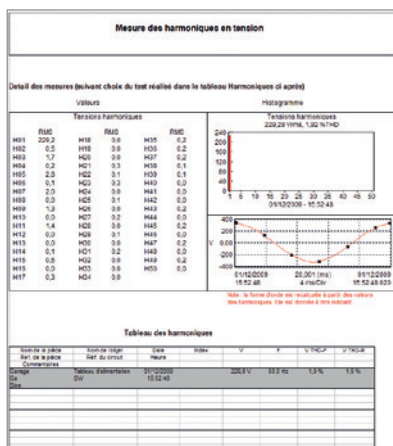
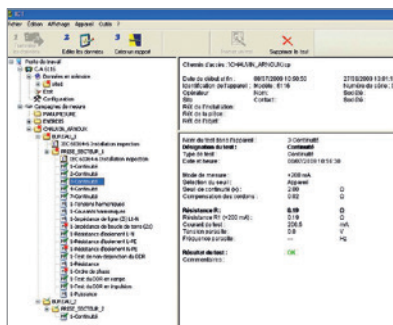
Controllers have access to clear and detailed contextual help. They are therefore suitable for both experienced and less experienced users.

Each measurement has dedicated help, including a guide for the connections to be made and help for interpreting the results. For added safety, in the event of incorrect connection or the presence of dangerous voltage, the device displays an error message to warn the user.

DataView® automatically recognises the device when it is connected to the PC and launches the corresponding menu. This menu, presented in a tree structure, gives the user direct access to the data recorded in the device, its configuration, etc. DataView® has multiple predefined report templates for quick editing in full compliance with current standards. Users can create their own templates according to their needs.

Specific to installation controllers, the DataView ICT module enables quick and easy analysis of measurements recorded by the CA 6116N and CA 6117 controllers. Supplied as standard, it offers the following features:

- Data retrieval
- Device configuration
- Customisation of measurement campaigns with transfer to the device
- First-level report editing

Diagnostics  
& control

Education

Tertiary  
& residential

Industries



### + The extra

- Integrated fuse table for quick reading of results on the device
- User-friendly interface
- Extra-large graphic display
- On-screen help for each function
- ICT data export software included
- Compatible with DataView® software
- Supplied with a tripod cord and European mains plug

### To order

1 CA 6113 controller

Reference: P01145445

1 CA 6116N controller

Reference: P01145455

1 CA 6117 controller

Reference: P01145460





|                                                                       |                                         | CA 6113                                                                                                                                             | CA 6116N                                                      | CA 6117                                       |
|-----------------------------------------------------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-----------------------------------------------|
| Continuity / Resistance                                               |                                         |                                                                                                                                                     |                                                               |                                               |
| Measurement current                                                   |                                         | I > 200 mA up to 39.99 Ω and approx. 12 mA up to 400 Ω                                                                                              |                                                               |                                               |
| Accuracy                                                              |                                         | ± (1.5% of measurement + 2 cts), with audible beep                                                                                                  |                                                               |                                               |
| Range                                                                 |                                         | 4 kΩ / 40 kΩ - 400 kΩ                                                                                                                               |                                                               |                                               |
| Insulation                                                            |                                         |                                                                                                                                                     |                                                               |                                               |
| Test voltage                                                          |                                         | 50 / 100 / 250 / 500 / 1,000 Vdc                                                                                                                    |                                                               |                                               |
| Range / accuracy                                                      |                                         | 0.01 MΩ to 2 GΩ / ±(5 % of measurement + 3 cts)                                                                                                     |                                                               |                                               |
| Short-circuit current                                                 |                                         | ≤ 3 mA                                                                                                                                              |                                                               |                                               |
| Earth                                                                 |                                         |                                                                                                                                                     |                                                               |                                               |
| 3P earth                                                              | Range                                   | 0.50 Ω to 15 kΩ                                                                                                                                     |                                                               |                                               |
|                                                                       | Accuracy                                | ±(2 % of measurement + 2 cts )                                                                                                                      |                                                               |                                               |
|                                                                       | Others                                  | RH & RS auxiliary-stake resistance measurement (up to 40 kΩ)                                                                                        |                                                               |                                               |
| Selective 1P earth                                                    | Range / accuracy                        | 0.20 Ω to 399.9 Ω ±(10 % of measurement + 10 cts) (I sel via clamp)                                                                                 |                                                               |                                               |
| Loop impedance (Zs (L-PE) and Zi (L-N or L-L)) – 1P live earth        |                                         |                                                                                                                                                     |                                                               |                                               |
| Live earth                                                            |                                         |                                                                                                                                                     |                                                               |                                               |
|                                                                       | Installation voltage / freq.            | 90 to 500 V / 15.8 to 17.5 Hz - 45 to 65 Hz                                                                                                         |                                                               |                                               |
| High current mode - Zs (L-PE) (TRIP) & Zi (L-N or L-L)                | Range / accuracy                        | Max. test current: 7.5 A<br>0.100 Ω to 399.99 Ω / ±(5% of measurement + 2 cts)                                                                      |                                                               |                                               |
|                                                                       | NO TRIP mode (Zs (L-PE))                | Test current: 6 mA – 9 mA – 12 mA (as required) - 0.20 Ω to 3,999 Ω ±(5% of measurement + 2 cts)                                                    |                                                               |                                               |
| Calculation of short-circuit current Ik (PFC (Zs)) , I Sc (PSCC (Zi)) |                                         | Fault and short-circuit current: display range 0.1 A to 6 kA                                                                                        |                                                               |                                               |
| Integrated fuse table                                                 |                                         | Yes                                                                                                                                                 |                                                               |                                               |
| Voltage drop DU% (Zi)                                                 |                                         |                                                                                                                                                     | -40% to + 40%                                                 |                                               |
| Others                                                                |                                         | Measurement of the resistive and inductive components of the impedances Zs and Zi                                                                   |                                                               |                                               |
| RCDs                                                                  |                                         |                                                                                                                                                     |                                                               |                                               |
| Type AC, A and F RCDs                                                 | Installation voltage / freq.            | 90 to 500 V / 15.8 to 17.5 Hz - 45 to 65 Hz                                                                                                         |                                                               |                                               |
|                                                                       | IDn                                     | 10 / 30 / 100 / 300 / 500 / 650 / 1,000 mA (90 V – 280 V) or variable - 10 / 30 / 100 / 300 / 500 mA (280-550 V) or variable<br>Ramp and pulse test |                                                               |                                               |
|                                                                       | NO TRIP test                            | at ½ IDn – Duration: 1,000 ms or 2,000 ms                                                                                                           |                                                               |                                               |
|                                                                       | Trip current Ramp mode                  | 0.3 x IDn to 1.06 x IDn in increments of 3.3% x IDn                                                                                                 |                                                               |                                               |
|                                                                       | Trip time measurement Pulse mode        | 0.2 to 0.5 x IDn (Uf) / 0.5 x IDn / 2 x IDn (selective) / 5 x IDn.<br>Pulse: 0 to 500 ms, Ramp mode: 0 to 200 ms                                    |                                                               |                                               |
| Type B, B+ and EV RCDs                                                | Installation voltage / freq.            |                                                                                                                                                     |                                                               | 90 V to 275 V / 15.8 to 17.5 Hz - 45 to 65 Hz |
|                                                                       | IDn: ramp / pulse 2 x IDn pulse 4 x IDn | 10 / 30 / 100 / 300 / 500 mA 10 / 30 / 100 mA                                                                                                       |                                                               |                                               |
| Test in ramp mode                                                     |                                         | 0.2 x IDn to 2.2 x IDn                                                                                                                              |                                                               |                                               |
| Trip test                                                             |                                         | 1.1x2 or 2.2x2 or 2.2x4 x IDn                                                                                                                       |                                                               |                                               |
| Other measurements                                                    |                                         |                                                                                                                                                     |                                                               |                                               |
| Current                                                               |                                         | (1 mA*) 5.0 mA to 19.99 A (MN77 clamp) / 5.0 mA to 199.9 A (CI77 A clamp)                                                                           |                                                               |                                               |
| Voltage                                                               |                                         | 0 to 550 Vac / dc / dc and 15.8 to 500 Hz                                                                                                           |                                                               |                                               |
| Frequency                                                             |                                         | 10 to 500 Hz                                                                                                                                        |                                                               |                                               |
| Phase rotation                                                        |                                         | 20 to 500 Vac                                                                                                                                       |                                                               |                                               |
| Active power                                                          |                                         | 0 to 110 kW in single-phase - 0 to 330 kW in three-phase<br>Simultaneous display of voltage and current waveform                                    |                                                               |                                               |
| Harmonics                                                             |                                         |                                                                                                                                                     | Voltage and current / up to 50th order / THD-F / THD-R        |                                               |
| General specifications                                                |                                         |                                                                                                                                                     |                                                               |                                               |
| Large backlit LCD screen, 320 x 240 cts                               |                                         | monochrome graphical 5.7"                                                                                                                           |                                                               | colour graphical 5.7"                         |
| Data storage / Communication                                          |                                         |                                                                                                                                                     | 1,000 tests / via USB for data transfer and report generation |                                               |
| Power supply: rechargeable battery                                    |                                         | NiMH 9.6 V rated 4 Ah.                                                                                                                              |                                                               | Lithium-ion 10.8 V rated 5.8 Ah               |
| Battery life                                                          |                                         | up to 24 hours                                                                                                                                      |                                                               | up to 30 hours                                |
| Dimensions / weight                                                   |                                         | 280 x 190 x 128 mm / 2.2 kg                                                                                                                         |                                                               |                                               |
| Ingress protection / EMC                                              |                                         | IP 53 / IK04 / IEC 61326-1                                                                                                                          |                                                               |                                               |
| Electrical safety / Standards                                         |                                         | IEC 61010 -1 – 600 V CAT III – 300 V CAT IV – IEC 61557                                                                                             |                                                               |                                               |

\*if a voltage is connected to the device



### CA 6113 delivered in a shoulder bag with:

- 1 x PA 30 W power pack
- 1 Euro 3-point lead - 3 safety leads (red, blue, green)
- 3 test probes Ø 4 mm (red, blue, green)
- 3 crocodile clips (red, blue, green)
- 2 elbowed-straight safety leads (red and black) 3 m long
- 1 three-point Euro mains lead
- 1 remote-control probe
- 1 anti-scratch film mounted on the instrument
- 1 wrist-strap
- 1 x 4-point hands-free strap
- 1 CD-ROM containing the user's manual

### CA 6116N and CA 6117 delivered in a shoulder bag with:

- 1 mains power / charger pack (type 2)
- 1 Li-Ion rechargeable battery pack mounted on the instrument
- 1 USB A / B cable 1.80 m long with ferrite
- 1 three-point lead - 3 safety leads (red, green and blue)
- 3 test probes Ø 4 mm (red, green and blue)
- 3 crocodile clips (red, green and blue)
- 2 elbowed-straight safety leads 3 m long (red and black)
- 1 three-point EURO mains lead
- 1 two-point EURO mains lead
- 1 remote-control probe
- 1 anti-scratch film mounted on the instrument
- 1 wrist-strap
- 1 x 4-point hands-free strap
- 1 ICT data export software on CD-ROM
- 1 CD-ROM containing the user manual

### Recommended accessories



**P01295398**  
Three-point lead with separated wires 2.5 m



**P01295393**  
Three-point lead for testing European mains sockets



**P01102095**  
Dataview

Download the free ICT software compatible with the CA 6116N and CA 6117.



# Installation testers

## CA 6131 - CA 6133

600 V  
CAT III

IP 54

IEC  
61557Auto  
Script

### Earth measurement by stake and loop method

- Continuity measurement at 0.2 A
- Insulation testing
- RCD testing: current and trip time
- Automatic test sequences
- Storage of tests
- Power supply by mains-rechargeable batteries with USB or vehicle cigarette lighter connection

|                                                | CA 6131                                                                                                                   | CA 6133                                                                                    |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| Display                                        | 231-segment LCD with blue backlighting                                                                                    |                                                                                            |
| Data storage                                   | -                                                                                                                         | 30 sites x 99 tests                                                                        |
| Communication                                  | -                                                                                                                         | Bluetooth Class 1 ; range > 10m                                                            |
| Software                                       | -                                                                                                                         | IT-Report Android application                                                              |
| Power supply                                   | 6 x LR 6 or AA batteries                                                                                                  | 6 NiMH batteries rechargeable via the mains<br>< 6 hours, USB or vehicle cigarette lighter |
| Battery life                                   | > 1,900 continuity measurements at 1 Ω                                                                                    | > 1,700 continuity measurements at 1 Ω                                                     |
| Protection                                     | IP 54 (IEC 60529) ; IK 04 (IEC 50102)                                                                                     |                                                                                            |
| Standards / electrical safety                  | EMC: IEC 61326-1 ; IEC 61010-1 ; IEC 61010-2-030 ; IEC 61010-2-034, 600 V CAT III, 300 V CAT II on charger input          |                                                                                            |
| IEC 61557 compliance                           | Parts 1, 2, 3, 4, 6, 7 and 10                                                                                             | Parts 1, 2, 3, 4, 5, 6, 7 and 10                                                           |
| Continuity                                     |                                                                                                                           |                                                                                            |
| Range / Resolution / Accuracy                  | 0.00 to 9.99 Ω / Cable compensation up to 5 Ω; I >= 200 mA / 0.01 Ω / ± (2 %R + 2 cts)                                    |                                                                                            |
| Resistance                                     |                                                                                                                           |                                                                                            |
| Range / Resolution / Accuracy                  | 1 to 9,999 Ω — 10.00 to 99.99 kΩ / 1 Ω — 10 Ω / ± (1 %R + 5 cts)                                                          |                                                                                            |
| Insulation                                     |                                                                                                                           |                                                                                            |
| Test voltage                                   | 250 V / 500 V                                                                                                             | 250 V / 500 V / 1,000 V                                                                    |
| Range / Resolution / Accuracy                  | 0.01 to 999.9 MΩ / 10 kΩ or 100 kΩ / ± (3 % R + 3 cts)                                                                    |                                                                                            |
| Earth resistance - 3P method                   |                                                                                                                           |                                                                                            |
| Range                                          | -                                                                                                                         | 0.50 to 99.99 Ω / 100.0 to 999.9 Ω / 1,000 to 2,000 Ω                                      |
| Measurement frequency                          | -                                                                                                                         | 128 Hz                                                                                     |
| Earth loop measurement (Zs) No TRIP (12 mA)    |                                                                                                                           |                                                                                            |
| Range / Resolution / Accuracy                  | 1* to 2,000 / 1 / ± (5 %R +2 cts)                                                                                         |                                                                                            |
| Ik calculation                                 | 1 to 999 A                                                                                                                |                                                                                            |
| Earth loop measurement (Zs) With TRIP (300 mA) |                                                                                                                           |                                                                                            |
| Type of connection                             | Zs: via banana leads and Euro plug tripod; Zi: via banana leads                                                           |                                                                                            |
| Range / Resolution / Accuracy                  | 0.1** to 399.9 Ω / 0.1 Ω / ±(5 %R + 2 cts)                                                                                |                                                                                            |
| Ik calculation                                 | 1 to 9,999 A                                                                                                              |                                                                                            |
| RCD test                                       |                                                                                                                           |                                                                                            |
| Voltage de l'installation                      | 90 to 450 V ; 45 to 65 Hz                                                                                                 |                                                                                            |
| Types and calibres                             | AC and A ; 30 mA - 100 mA - 300 mA - 500 mA - 650 mA                                                                      |                                                                                            |
| Trip time                                      | 0.5 x I ΔN ; 1 x I ΔN ; 5 x I ΔN / 5.0 to 300 ms                                                                          |                                                                                            |
| Trip current                                   | 30 mA : - 0. - + (7 %R +3.3 % I ΔN + 2 mA)                                                                                |                                                                                            |
| Fault voltage: Range / Resolution / Accuracy   | 1.0 to 25.0 V — 25.0 to 70.0 V / 0.1 V / ± (15 %R + 3 cts) - ± (5 %R + 2 cts)                                             |                                                                                            |
| Automatic test sequence                        | No                                                                                                                        | RCD, Loop-RCD-Insulation                                                                   |
| Voltage & frequency                            |                                                                                                                           |                                                                                            |
| Voltage: Range / Resolution / Accuracy         | 2.0 to 550.0 V <sub>AC</sub> / 0.1 V / ± (1 % R + 2 cts) ;<br>0.0 to 800.0 V <sub>DC</sub> / 0.1 V / ± (1 % R + 2 cts)    |                                                                                            |
| Frequency: Range / Resolution / Accuracy       | -                                                                                                                         | 30.0 to 999.9 Hz / 0.1 Hz /<br>±(0.1 %R + 1 ct) - Voltage > 2 V                            |
| Phase rotation                                 | 45 to 550 V / 45 to 65 Hz                                                                                                 |                                                                                            |
| Current                                        | Via clamp with voltage output<br>using the voltage sensor option (AUX)                                                    | Via MN73 A clamp, 2 A<br>calibre: 10.0 mA to 2,400 mA,<br>200 A calibre: 1.00 to 200 A     |
| AUX sensor function (CA 6131)                  |                                                                                                                           |                                                                                            |
| AC+DC range: Range / Resolution / Accuracy     | 2.0 to 999.9 mV — 1.000 to 12,000 V /<br>0.1 mV — 1 mV / ±(1 % R + 2 cts)                                                 |                                                                                            |
| DC range / Resolution / Accuracy               | ±(0.0 to 999.9 mV) — ±(1,000 to 2,000 V)<br>/ 0.1 mV — 1 mV / ±(1 % R + 2 cts)                                            |                                                                                            |
| General characteristics                        |                                                                                                                           |                                                                                            |
| Dimensions / weight                            | 223 x 126 x 70 mm / approx. 1.1 kg                                                                                        |                                                                                            |
| Environment                                    | Use: 0 to 40 °C / Storage: -10 to 70 °C (80% RH)                                                                          |                                                                                            |
| Protection                                     | IP 54 (IEC 60529) ; IK 04 (IEC 50102)                                                                                     |                                                                                            |
| Standards / Electrical safety                  | EMC: IEC 61326-1; IEC 61010-1; IEC 61010-2-030; IEC 61010-2-034, IEC 61557,<br>600V CAT III, 300V CAT II on charger input |                                                                                            |

\* from 10 ohms (IEC 61557) \*\* from 1 ohm (IEC 61557)



### 1 contrôleur CA 6131 ou CA 6133 supplied with:

- 1 carrying bag containing:
- 1 neck strap
- 1 three-pole EURO mains cable
- 3 safety cables
- 3 crocodile clips
- 1 test probe
- 1 USB 2 A power supply + 1 USB cable (CA 6133)
- 6 x 1.5 V LR06 batteries (CA 6131)
- 6 Ni MH rechargeable batteries (CA 6133)
- 1 test report with measurement report

### To order

1 CA 6131 controller

**Reference: P01146011**

1 CA 6133 controller

**Reference: P01146013**

### Recommended accessories

**P01102157**  
Remote control probe**P01120439**  
MN73A current clamp  
(for CA 6133)

Download the IT-Report application  
compatible with the CA 6133

## Field electrical safety controller

### MX 531

**300 V  
CAT III**
**IP 40**


### Practical and simple, the 'MX5 3-in-1'

For your diagnostics and checks in industry, the tertiary sector and residential, a measuring device suitable for TT neutral systems

- 1 - Measures voltage and checks the connection of the 2P+E socket, phase, neutral, earth
- 2 - Automatic earth measurement without tripping the RCD with a resolution of 0.1 Ω
- 3 - 30 mA RCD test via TEST button, display held for 7 seconds


Diagnostics  
& control


Education


Tertiary  
& residential

Laboratory  
& metrology


### + The extra

- Fully autonomous (no batteries) with immediate display no adjustment or position selection required
- Tester adapts to any socket configuration with its rotating head and compact design
- Instant display on the two-colour screen depending on the compliance of the installation



### MX0531 EARTH RCD30mA supplied:

equipped with wrist strap, carrying case and paper operating instructions

### To order

MX 531 controller

Reference: MX0531

|                                   | MX 531                                                                              |
|-----------------------------------|-------------------------------------------------------------------------------------|
| Display                           | 2,000 counts                                                                        |
| Acquisition                       | RMS AC+DC                                                                           |
| Automatic calibration             | Yes                                                                                 |
| R <sub>E</sub> earth fault error  | Red screen display if R <sub>E</sub> > 100 Ω or OL > 2,000 Ω                        |
| Earth R <sub>E</sub> Range        | 0 to 1999 Ω                                                                         |
| Automatic calibres                | 3 Ω to 199,9 Ω and 180 Ω to 1999 Ω                                                  |
| Resolution                        | 0,1 Ω ; 1 Ω                                                                         |
| Accuracy                          | ± (3% R + 5 D)                                                                      |
| Protection / Permissible overload | 300 V CAT III                                                                       |
| RMS voltage (AC+DC)               | 100 V to 400 V                                                                      |
| Phase-neutral voltage             | 195 V to 253 V 50/60 Hz<br>L/N reversal indication and if < 195 V and > 253 V fault |
| Resolution                        | 1 V                                                                                 |
| Accuracy                          | ± (2 %+1 D)                                                                         |
| Position indication               | Phase neutral and earth                                                             |
| 30mA AC type RCD                  | If R <sub>E</sub> correct                                                           |
| Nominal value                     | 230 V between phase and neutral current 30 mA - 0% and +6%                          |
| Conditions                        | Time 200 ms ± 4 ms                                                                  |
| General characteristics           |                                                                                     |
| Display                           | 46 x 50 mm blue and red backlit LCD                                                 |
| Plug type                         | 2P +E 10/16A -Type E and F                                                          |
| Safety                            | EN 61010-2-030, pollution degree 2, CAT III 300V                                    |
| Operating temperature             | -10 to +45 °C                                                                       |
| Standards                         | Tested according to IEC/EN 61557-1 -3 and -6 - EMC<br>according to IEC 61236-1      |
| Dimensions / Weight / IP / IK     | Dimensions 185 x 65 x 53 mm / Weight : 230 g ± 50 g / IP 40 / IK 07                 |

# Continuity tester

## CA 6011

300 V  
CAT IV

IP 40

IEC  
61557-4

## Designed for simple, repetitive daily use

Specially designed for periodic checks of the continuity of protective conductors to earth on electrical equipment, materials and installations, in particular in accordance with standards and legislation IEC/EN 60364, NF C 15-100, VDE 0100-600

- Dedicated to continuity testing on protective earth conductors
- Double configuration: continuity tester attached to the reeler and remote continuity tester on the wrist
- Lightweight and compact

| CA 6011                                     |                                                                        |                                 |
|---------------------------------------------|------------------------------------------------------------------------|---------------------------------|
| Display                                     | 2,000 counts with two-colour backlighting                              |                                 |
| Continuity                                  |                                                                        |                                 |
| Measurement range                           | 0.00 $\Omega$ to 2.00 $\Omega$                                         | 2.00 $\Omega$ to 20.00 $\Omega$ |
| Resolution                                  | 10 m $\Omega$                                                          |                                 |
| Measurement current                         | 200 mA                                                                 | 20 mA                           |
|                                             | with automatic polarity reversal                                       |                                 |
| Open-circuit voltage                        | $\pm(4 \text{ Vdc} < U < 6 \text{ Vdc})$                               |                                 |
| Resistance                                  |                                                                        |                                 |
| Measurement range                           | 1.0 $\Omega$ to 200.0 $\Omega$                                         |                                 |
| Resolution                                  | 100 m $\Omega$                                                         |                                 |
| Measurement current                         | 10 mA                                                                  |                                 |
| Open-circuit voltage                        | $\pm(4 \text{ Vdc} < U < 6 \text{ Vdc})$                               |                                 |
| Continuity threshold                        | Programmable: 1 $\Omega$ or 2 $\Omega$                                 |                                 |
| Compensation of cable resistance            | Yes                                                                    |                                 |
| Test conformity / non-conformity indication | Configurable: visual, audible and / or vibrating                       |                                 |
| Compliance with standards                   | IEC 61557-1 & IEC 61557-4 IEC 61010-1, IEC 61010-2-030 300 V CAT IV    |                                 |
| Automatic standby mode                      | 10 minutes / deactivatable                                             |                                 |
| Battery life                                | 30,000 measurements in actual use<br>4,500 as per IEC 61557-4 protocol |                                 |
| Power supply                                | 4 x 1.5 V AA / LR6 batteries                                           |                                 |
| Dimensions (instrument+reeler)              | 225 x 185 x 135 mm                                                     |                                 |
| Weight                                      | CA 6011 alone: 350 g - Reeler with 30 m cable: 1.2 kg                  |                                 |



### CA 6011 KIT supplied with:

- 1 elastic strap for fixing the measuring unit to your wrist
- 1 waist belt + 1 shoulder belt
- 1 "Cable Reeler No. 01" with 1 green PVC cable 30 m long
- 1 black spiral PVC cable 3.5 m long
- 1 green crocodile clip with  $\varnothing$  4 mm banana socket
- 1 moulded black test probe
- 1 green PVC cable 0.50 m long
- 1 set of 4 x 1.5 V LR06 alkaline batteries

### CA 6011 supplied with:

- 1 elastic strap for fixing the measuring unit to your wrist
- 1 set of 4 x 1.5 V LR06 alkaline batteries

### To order

1 CA 6011 alone

**Reference: P01191611**

1 kit of CA 6011

**Reference: P01299926**

### Recommended accessories

**P01295492**

Cable reeler no.1 30 m

**P01102084A**

Continuity rod

\* Supplied with the kit



# Lightning arrester tester

## MX 604



300 V  
CAT III

V

Hz

### Lightning arrester tester

- Lightning-arrester support module for measurements on unmounted lightning arresters
- Probe with remote control button for in-situ measurements
- Measures insulation resistance at 50, 100 and 500 Vdc
- Quick and easy readings with the colour-scale dial



### 1 MX 604 delivered in a hard case with :

- 1 detachable lightning-arrester support module,
- 1 remote-control probe
- 1 red test probe,
- 1 black straight-straight lead 1.5 m long with built-in test probe,
- 1 black crocodile clip,
- 1 lightning-arrester support clamp,
- 1 strap mounted on the instrument,
- 3 batteries LR03 or AAA
- 1 user's manual in 5 languages

### To order

1 MX 604 tester

Reference: MX0604

| MX 604                  |                                                                    |
|-------------------------|--------------------------------------------------------------------|
| Lightning arrester test | 0 to 600 Vdc                                                       |
| Insulation              | 100 kΩ to 2,000 MΩ at 50 / 100 and 500 Vdc (3 ranges)              |
| Battery test            | Yes                                                                |
| Electrical safety       | IEC 61010 – 300 V CAT III                                          |
| Power supply            | 3 x 1.5 V batteries for a battery life of 1,500 x 5 s measurements |
| Dimensions / weight     | 155 x 98 x 40 mm / 350 g                                           |



Test adapter for type-2 AC electric vehicle charging stations

CA 6652



- 300 V  
CAT II
- IEC  
61851-1
- IEC  
60364-7-722
- IP 54

TYPE 2 test adapter  
for charging stations  
BEV/BHEV

- Immediate diagnosis of your installations  
AC EV charging stations for EVs/BEVs/BHEVs
- Simplified connection of measuring  
and testing devices
- Safe use, indoors and outdoors

| CA 6652                           |                                                                                                                                              |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Charging point socket connector   |                                                                                                                                              |
| Charging point                    | Type 2 IEC 62196-2                                                                                                                           |
| Operator safety                   |                                                                                                                                              |
| Voltage detection on PE           | With conductive key                                                                                                                          |
| Vehicle presence simulation       |                                                                                                                                              |
| PP simulation                     | Not connected NC, 13A, 20A, 32A, 63A                                                                                                         |
| CP simulation                     | States A, B, C, D                                                                                                                            |
| Simulation of fault conditions    |                                                                                                                                              |
|                                   | CP-PE short circuit, CP-PE diode short circuit, PE opening                                                                                   |
| Outputs                           |                                                                                                                                              |
| 4 mm banana measurement terminals | L1, L2, L3, N, PE, CP signal                                                                                                                 |
| Voltage presence indication       | via LEDs                                                                                                                                     |
| General characteristics           |                                                                                                                                              |
| Environment                       | USE -20 °C TO +55 °C; STORAGE -20 °C TO +70 °C                                                                                               |
| Housing dimensions (L x W x H)    | 221 x 100 x 44 mm                                                                                                                            |
| Type 2 socket dimensions          | Approximately 240 x Ø 58 mm                                                                                                                  |
| Cable length                      | Approximately 60 cm                                                                                                                          |
| Weight                            | Approximately 850 g                                                                                                                          |
| Protection rating                 | IP 40 - IEC 60529, in operation, when all terminals are connected<br>IP 54 - IEC 60529, out of operation, with the type 2 plug cap in place. |
| Standards / Electrical safety     | Adapter: IEC/EN 61010-2-030. Cords: IEC/EN 61010-2-031, 300 V CAT II pollution degree 2.                                                     |
| EMC                               | IEC/EN 61326-1.                                                                                                                              |



+ The extra

- The AC adapter 6652 is the ideal tool for performing operations on **AC EV** charging stations.
- Qualification
  - Installation and commissioning
  - Maintenance and troubleshooting of charging stations
  - Periodic tests



CA 6652 adapter for BEV/BHEV charging stations, supplied in a cardboard box including:

- 1 carrying case
- 1 cable terminated with a type 2 plug
- 1 multilingual quick start guide
- 1 multilingual safety sheet
- 1 verification certificate

To order

- CA 6652  
Reference: P01191309
- PACK EVSE CA6652 + MX535 + CA762 IP2X  
Reference: P01300005
- PACK EVSE CA6652 + CA6133 + CA762 IP2X  
Reference: P01300006
- PACK EVSE CA6652+CA6117+DW+CA762 IP2X  
Reference: P01300002

EVSE PACK CA 6652  
+ MX 535 + CA 762 IP2X

CA 6652  
EV charging stations

+

CA 762IP2X  
DDT/VAT

+

MX 535  
Electrical installation tester

EVSE PACK CA 6652  
+ CA 6133 + CA 762 IP2X

CA 6652  
EV charging stations

+

CA 762IP2X  
DDT/VAT

+

CA 6117  
Electrical installation tester

EVSE PACK CA 6652  
+ CA6117 + DW + CA762 IP2X

CA 6652  
EV charging stations

+

CA 762IP2X  
DDT/VAT

+

CA 6133  
Electrical installation tester

# Portable insulation testers

## Guide de choix



|                                    | CA 6503      | CA 6511  | CA 6513 | CA 6528          | CA 6522 | CA 6524 | CA 6526 | CA 6532 | CA 6534 | CA 6536          |
|------------------------------------|--------------|----------|---------|------------------|---------|---------|---------|---------|---------|------------------|
| Type                               |              |          |         |                  |         |         |         |         |         |                  |
|                                    | Hand-cranked | Analogue |         | Portable digital |         |         |         |         |         |                  |
| Test voltage (in V <sub>DC</sub> ) |              |          |         |                  |         |         |         |         |         |                  |
| 10                                 |              |          |         |                  |         |         |         |         | ■       | ■ 1 V increments |
| 25                                 |              |          |         |                  |         |         |         |         | ■       | ■ 1 V increments |
| 50                                 |              |          |         |                  |         | ■       | ■       | ■       |         | ■ 1 V increments |
| 100                                |              |          |         |                  |         | ■       | ■       | ■       | ■       | ■ 1 V increments |
| 250                                | ■            |          |         | ■                | ■       | ■       | ■       |         | ■       |                  |
| 500                                | ■            | ■        | ■       | ■                | ■       | ■       | ■       |         | ■       |                  |
| 1000                               | ■            |          | ■       | ■                | ■       | ■       | ■       |         |         |                  |
| Max. measured value                |              |          |         |                  |         |         |         |         |         |                  |
| 1 GΩ                               |              | ■        | ■       |                  |         |         |         |         |         |                  |
| 5 GΩ                               | ■            |          |         |                  |         |         |         |         |         |                  |
| 11 GΩ                              |              |          |         | ■                |         |         |         |         |         |                  |
| 20 GΩ                              |              |          |         |                  |         |         |         | ■       |         | ■                |
| 40 GΩ                              |              |          |         |                  | ■       |         |         |         |         |                  |
| 50 GΩ                              |              |          |         |                  |         |         |         |         | ■       |                  |
| 200 GΩ                             |              |          |         |                  |         | ■       | ■       |         |         |                  |
| Continuity                         |              | ■        | ■       | ■                | ■       | ■       | ■       | ■       | ■       | ■                |
| Resistance                         |              |          | ■       | ■                |         | ■       | ■       | ■       | ■       | ■                |
| Capacitance                        |              |          |         |                  |         |         | ■       | ■       |         |                  |
| Leakage current                    |              |          |         |                  |         | ■       | ■       | ■       | ■       | ■                |
| Chronometer                        |              |          |         | ■                | ■       | ■       | ■       | ■       | ■       | ■                |
| Programming of test duration       |              |          |         | ■                | ■       | ■       | ■       | ■       | ■       | ■                |
| Quality ratios                     |              |          |         |                  |         |         |         |         |         |                  |
| PI                                 |              |          |         |                  |         | ■       | ■       | ■       |         |                  |
| DAR                                |              |          |         |                  |         | ■       | ■       | ■       |         |                  |
| Data storage                       |              |          |         |                  |         | ■       | ■       | ■       | ■       |                  |
| Bluetooth                          |              |          |         |                  |         |         | ■       | ■       | ■       |                  |
| Display                            |              |          |         |                  |         |         |         |         |         |                  |
| Analogue                           | ■            | ■        | ■       |                  |         |         |         |         |         |                  |
| LCD                                |              |          |         | ■                |         |         |         |         |         |                  |
| LCD + bargraph                     |              |          |         |                  | ■       | ■       | ■       | ■       | ■       | ■                |
| Power supply                       |              |          |         |                  |         |         |         |         |         |                  |
| Hand-cranked magneto               | ■            |          |         |                  |         |         |         |         |         |                  |
| Batteries                          |              | ■        | ■       | ■                | ■       | ■       | ■       | ■       | ■       | ■                |

Hand-cranked insulation testers

CA 6503



300 V  
CAT III

IP 54

| CA 6503             |                                                 |                          |
|---------------------|-------------------------------------------------|--------------------------|
| Insulation          | Test voltage (DC)                               | 250 V / 500 V / 1,000 V  |
|                     | Range                                           | 1 to 5,000 MΩ            |
|                     | Accuracy                                        | 2.5 % of full scale      |
| Voltage             | Range                                           | 0... 600 V <sub>AC</sub> |
|                     | Frequency                                       | 45 to 450 Hz             |
|                     | Accuracy                                        | 3 % of full scale        |
| Display             | Analogue                                        |                          |
| Dimensions / weight | 120 x 120 x 130 mm / 1.06 kg                    |                          |
| Power supply        | Hand-cranked magneto providing a stable voltage |                          |
| Ingress protection  | IP 54 with cover / IP 52 without cover          |                          |
| Electrical safety   | IEC 61010 - 600 V CAT II / 300 V CAT III        |                          |

Analogue insulation testers

CA 6511 - CA 6513



600 V  
CAT III

IP 40

|                     |                     | CA 6511                                      | CA 6513             |
|---------------------|---------------------|----------------------------------------------|---------------------|
| Insulation          | Test voltage (DC)   | 500 V                                        | 500 V / 1,000 V     |
|                     | Range               | 0.1 to 1,000 MΩ                              |                     |
|                     | Accuracy            | ± 5 % of measurement                         |                     |
|                     |                     |                                              |                     |
| Resistance          | Range               | -                                            | 0 to 1,000 Ω        |
|                     | Accuracy            | -                                            | ± 3 % of full scale |
|                     |                     |                                              |                     |
| Continuity          | Range               | -10 Ω to +10 Ω                               |                     |
|                     | Accuracy            | ± 3 % of full scale                          |                     |
|                     | Measurement current | ≥ 200 mA                                     |                     |
|                     | Current reversal    | Yes                                          |                     |
|                     |                     |                                              |                     |
| Voltage             | Range               | 0... 600 V <sub>AC</sub>                     |                     |
|                     | Frequency           | 45 à 400 Hz                                  |                     |
|                     | Accuracy            | 3 % de la pleine échelle                     |                     |
|                     |                     |                                              |                     |
| Display             |                     | Analogue                                     |                     |
| Dimensions / weight |                     | 167 x 106 x 55 mm / 500 g (excluding sheath) |                     |
| Power supply        |                     | 4 x 1.5 V LR06 batteries                     |                     |
| Electrical safety   |                     | IEC 61010 - 600 V CAT III                    |                     |



Diagnostics  
& control



Education



Transport



Industries



Production, transport  
& distribution

+ The extra

- Rugged plastic casing ideal for all-terrain use
- Special for on-site use
- Does not require a power supply

CA 6503 delivered in a shoulder bag

- 3 elbowed / straight PV leads 1.5 m long (black / red / blue)
- 3 crocodile clips (black / red / blue)
- 1 black test probe



To order

CA 6503

Reference: P01132504



Diagnostics  
& control



Education



Transport



Tertiary  
& residential



Industries



CA 6511 and CA 6513 delivered mounted in their shockproof sleeves:

- 2 elbowed / straight PVC leads 1.5 m long (black / red)
- 1 black test probe
- 1 red crocodile clip
- 4 x 1.5 V LR06 batteries
- 1 replacement fuse
- 1 operating manual

To order

CA 6511      Reference: P01140201

CA 6513      Reference: P01140301

# Insulation and continuity controllers

## CA 6522 - CA 6524 - CA 6526

600 V  
CAT IV

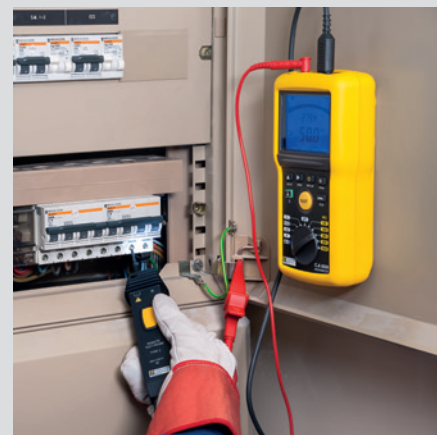
IP 54

IEC  
61557

TRMS

### For testing and diagnostics in industry and the service sector

- Test voltage from 50 to 1000 V
- Measurement range from 10 kΩ to 200 GΩ
- PI, DAR ratios to determine insulation quality
- Illuminated alarms and Pass/Fail indicators (CA 6526)
- Memory for up to 1300 measurements



|                                     | CA 6522                                                                                                     | CA 6524          | CA 6526             |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------|------------------|---------------------|
| Display                             | 2 x 4,000 cts + logarithmic bar graph                                                                       |                  |                     |
| Memory                              | -                                                                                                           | 300 measurements | 1,300 measurements  |
| Communication                       | -                                                                                                           | -                | Bluetooth® Class II |
| Power supply / Automatic switch-off | 6 LR06 batteries / 5 mn, deactivatable                                                                      |                  |                     |
| Operating time                      | 1,500 measurements: UN x 1 kΩ @ UN (5 s ON / 55 s OFF)<br>3,000 continuity measurements (5 s ON / 55 s OFF) |                  |                     |
| Dimensions / Weight / IP rating     | 211 x 108 x 60 mm / 850 g / IP 54 / IK 04                                                                   |                  |                     |
| EMC / Electrical safety             | IEC 61326 - 1 / IEC 61010 - 1 and IEC 61010 - 2 - 030, 600 V CAT IV                                         |                  |                     |
| Compliance with standards           | IEC 61557 parts 1, 2, 4 and 10                                                                              |                  |                     |

| Voltage                                 |  |                                               |                                                                                    |
|-----------------------------------------|--|-----------------------------------------------|------------------------------------------------------------------------------------|
| Measuring range / Resolution            |  | 0.3 V - 399.9 V / 0.1 V ; 400 V - 700 V / 1 V |                                                                                    |
| Accuracy / Input impedance              |  | ± (3 %+ 2 cts) / 400 KΩ                       |                                                                                    |
| Operating frequency                     |  | -                                             | DC ; 15.3 - 800 Hz                                                                 |
| Frequency                               |  |                                               |                                                                                    |
| Measuring range / Resolution / Accuracy |  | -                                             | 15.3 Hz - 399.9 Hz / 0.1 Hz / ± (1%+ 2 cts)<br>400 - 800 Hz / 1 Hz / ± (1 %+ 1 pt) |
| Isolation                               |  |                                               |                                                                                    |
| Test voltage                            |  | 250 - 500 - 1,000 V                           | 50 - 100 - 250 - 500 - 1,000 V                                                     |
| Range at maximum test voltage           |  | 40 GΩ                                         | 200 GΩ                                                                             |
| Compliance with IEC 61557 - 2           |  | 2 GΩ                                          |                                                                                    |
| Measuring range                         |  |                                               |                                                                                    |

|  |         |                |                 |
|--|---------|----------------|-----------------|
|  | 50 V    | -              | 10 kΩ - 10 GΩ   |
|  | 100 V   | -              | 20 kΩ - 20 GΩ   |
|  | 250 V   | 50 kΩ - 10 GΩ  | 50 kΩ - 50 GΩ   |
|  | 500 V   | 100 kΩ - 20 GΩ | 100 kΩ - 100 GΩ |
|  | 1 000 V | 200 kΩ - 40 GΩ | 200 kΩ - 200 GΩ |

|                                |                                                                                                                                                                                        |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Measurement range / Resolution | 10 <sup>(1)</sup> - 999 kΩ and 1,000 - 3,999 MΩ / 1 kΩ ; 4.00 - 39.99 MΩ / 10 kΩ ; 40.0 - 399.9 MΩ / 100 kΩ ; 400 - 3,999 MΩ / 1 MΩ / 4.00 - 39.99 GΩ / 10 MΩ ; 40.0 - 200 GΩ / 100 MΩ |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|          |                                |
|----------|--------------------------------|
| Accuracy | ± (3 % + 2 cts) <sup>(2)</sup> |
|----------|--------------------------------|

|                         |              |
|-------------------------|--------------|
| Test voltage (I < 1 mA) | - 0 % + 20 % |
|-------------------------|--------------|

|                      |                 |
|----------------------|-----------------|
| Voltage display Test | ± (3 % + 3 cts) |
|----------------------|-----------------|

|                           |   |                                                                                       |
|---------------------------|---|---------------------------------------------------------------------------------------|
| Test current / resolution | - | 0.01 μA - 39.99 μA / 10 nA ;<br>40.0 - 399.9 μA / 100 nA ;<br>0.400 - 2.000 mA / 1 μA |
|---------------------------|---|---------------------------------------------------------------------------------------|

|                       |   |                  |
|-----------------------|---|------------------|
| Test current accuracy | - | ± (10 % + 3 cts) |
|-----------------------|---|------------------|

|                |   |                            |
|----------------|---|----------------------------|
| PI / DAR ratio | - | 10 mn / 1 mn - 1 mn / 30 s |
|----------------|---|----------------------------|

|              |                                     |  |
|--------------|-------------------------------------|--|
| Timer (mn:s) | 0:00 - 39:59 - configurable minutes |  |
|--------------|-------------------------------------|--|

|                          |            |  |
|--------------------------|------------|--|
| Discharge time (at 25 V) | < 2 s / μF |  |
|--------------------------|------------|--|

|        |   |                                               |
|--------|---|-----------------------------------------------|
| Alarms | - | 2 fixed thresholds + 1 programmable threshold |
|--------|---|-----------------------------------------------|

|                   |  |  |
|-------------------|--|--|
| <b>Continuity</b> |  |  |
|-------------------|--|--|

|                              |                              |                                                    |
|------------------------------|------------------------------|----------------------------------------------------|
| Continuity measurement range | 0.00 Ω - 10.00 Ω<br>(200 mA) | 0.00 Ω - 10.00 Ω (200 mA)<br>0.0 - 100.0 Ω (20 mA) |
|------------------------------|------------------------------|----------------------------------------------------|

|                                 |                         |  |
|---------------------------------|-------------------------|--|
| Accuracy / Open circuit voltage | ± (2 % + 2 cts) / ≥ 6 V |  |
|---------------------------------|-------------------------|--|

|                     |                                                         |  |
|---------------------|---------------------------------------------------------|--|
| Measurement current | 200 mA : 200 mA (- 0 mA + 20 mA) - 20 mA : 20 mA ± 5 mA |  |
|---------------------|---------------------------------------------------------|--|

|                                    |           |                                  |
|------------------------------------|-----------|----------------------------------|
| Continuity thresholds (rapid beep) | 2 Ω fixed | 2 Ω, 1 Ω, programmable threshold |
|------------------------------------|-----------|----------------------------------|

|                   |              |  |
|-------------------|--------------|--|
| Lead compensation | up to 9.99 Ω |  |
|-------------------|--------------|--|

|                                            |   |                                                                                                          |
|--------------------------------------------|---|----------------------------------------------------------------------------------------------------------|
| Resistance: Measurement range / Resolution | - | 0 - 3,999 Ω / 1 Ω<br>4.00 kΩ - 39.99 kΩ / 10 Ω<br>40.0 kΩ - 399.9 kΩ / 100 Ω<br>400 kΩ - 1,000 kΩ / 1 kΩ |
|--------------------------------------------|---|----------------------------------------------------------------------------------------------------------|

|          |   |                 |
|----------|---|-----------------|
| Accuracy | - | ± (3 % + 2 cts) |
|----------|---|-----------------|

|                                           |   |                                                                                     |
|-------------------------------------------|---|-------------------------------------------------------------------------------------|
| Capacitance: Measuring range / Resolution | - | 0.1 nF - 399.9 nF / 0.1 nF<br>400 nF - 3,999 nF / 1 nF<br>4.00 μF - 10.0 μF / 10 nF |
|-------------------------------------------|---|-------------------------------------------------------------------------------------|

|          |   |                 |
|----------|---|-----------------|
| Accuracy | - | ± (3 % + 2 cts) |
|----------|---|-----------------|

(1) 2 kΩ for models CA 6532 - CA 6534 - CA 6536.

(2) In addition: 10 V: 1% per 0.1 GΩ; 25 V: 0.4% per 0.1 GΩ; 50 V: 2% per GΩ; 100 V: 1% per GΩ; 250 V: 0.4% per GΩ; 500 V: 0.2% per GΩ; 1000 V: 0.1% per GΩ.4

### CA 6522, CA 6524 or CA 6526 insulation tester supplied with:

- 1 hands-free carry and use bag
- 2 right-angled safety leads (red and black), 1.50 m long
- 1 red alligator clip
- 1 black key tip
- 6 LR06 batteries
- 1 multilingual safety card
- 1 multilingual quick start guide
- Downloadable operating manuals
- 1 Megohmmeter Transfer software download for CA 6526

### To order

1 CA 6522 insulation tester

**Reference: P01140822**

1 CA 6524 insulation tester

**Reference: P01140824**

1 CA 6526 insulation tester

**Reference: P01140826**

### Recommended accessories



**P01102092A**  
Remote control probe type 3



**P01295453Z**  
2 x 1.50 m straight bent safety leads (red and black)

Download the free Megohmmeter Transfer (MEG) software from [www.chauvin-arnoux.com](http://www.chauvin-arnoux.com)



# Digital insulation testers

## CA 6528

1000 V  
CAT III600 V  
CAT IV

IP 40

IEC  
61557

## For servicing and maintenance

Designed for field use, with shockproof casing, the CA 6528 controller enables servicing and repair of electrical equipment such as cabinets, motors, cables, etc.

- Insulation measurement at 250 / 500 / 1,000 V
- Insulation resistance up to 11 GΩ
- Manual, locked and timer modes
- AC and AC+DC voltage measurement up to 700 V
- Continuity at 200 mA
- Visual alarm, blue / red backlighting

### CA 6528

Industrial maintenance

|                                    |                                                                                                                          |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Display                            | 2 x 4,000 cts                                                                                                            |
| Power supply / Automatic power-off | 6 x LR06 or AA batteries / 10 min deactivatable                                                                          |
| Battery life                       | 1,000 measurements:<br>at 1 MΩ @ 1 kV (5 s ON / 25 s OFF);<br>> 3,000 continuity measurements (5 s ON / 25 s OFF) at 1 Ω |
| Dimensions / weight / IP rating    | 218 x 95 x 63 mm / 760 g / IP 40                                                                                         |
| EMC / electrical safety            | IEC 61326-1 / IEC 61010-1, IEC 61010-2-030 and IEC 61010-2-034 / 600 V CAT IV                                            |
| Compliance with standards          | IEC 61557 parties 1, 2, 4 and 10                                                                                         |

|                                  |                                                                                                                                                  |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Voltage</b>                   |                                                                                                                                                  |
| Measurement range / resolution   | ± (1 - 700 V) / 1 V                                                                                                                              |
| Accuracy / input impedance       | ±12% R ± 1ct for AC+DC;<br>±1 R ± 1ct for DC / 25 MΩ                                                                                             |
| Operating frequency              | DC ; 45-65 Hz                                                                                                                                    |
| <b>Insulation</b>                |                                                                                                                                                  |
| Test voltage                     | 250 - 500 - 1,000 V                                                                                                                              |
| Range at maximum test voltage    | 11 GΩ                                                                                                                                            |
| Measurement range 250 V          | 50 kΩ - 4.2 GΩ                                                                                                                                   |
| 500 V                            | 100 kΩ - 4.2 GΩ                                                                                                                                  |
| 1,000 V                          | 200 kΩ - 11 GΩ                                                                                                                                   |
| Measuring range / resolution     | 50 kΩ - 3.999 MΩ / 1 kΩ;<br>(0.2) 3.6 - 39.99 MΩ / 10 kΩ;<br>36-399.9 MΩ / 100 kΩ;<br>360-4.200 MΩ / 1 MΩ;<br>(1 kV) 3.6 - 11 GΩ / 10 MΩ         |
| Accuracy                         | 0.05 - 399.9 MΩ : ± 1.5 % R ± 10 cts<br>360 - 4,000 MΩ : ± 4 % R ± 10 cts ;<br>± 4 % R ± 5 ct (under 1,000 V)<br>3.6 - 11 GΩ : ± 10 % R ± 10 cts |
| Timer (mn:s)                     | 10 s to 39 mn 59 s                                                                                                                               |
| Alarms                           | 1 threshold / test voltage                                                                                                                       |
| <b>Continuity</b>                |                                                                                                                                                  |
| Measurement range                | 0.02 Ω - 40 Ω                                                                                                                                    |
| Accuracy / open-circuit voltage  | ±12% R ± 3 pt / 6 V <sub>DC</sub> < U < 9 V <sub>DC</sub>                                                                                        |
| Measurement current              | ≥ 200 mA (up to 2 Ω)                                                                                                                             |
| Continuity threshold (fast beep) | 2 Ω / 1 Ω                                                                                                                                        |
| Cable compensation               | up to 5 Ω                                                                                                                                        |
| <b>Resistance</b>                |                                                                                                                                                  |
| Measurement range / resolution   | 1 - 399.9 Ω / 0.1 Ω<br>360 - 3,999 Ω / 1 Ω<br>3.60 - 39.99 kΩ / 10 Ω<br>36.0 - 420.0 kΩ / 100 Ω                                                  |
| Accuracy                         | ±12% R ± 3 cts                                                                                                                                   |

<sup>1</sup> under 1,000 V

## CA 6528 delivered in hands-free bag containing:

- 2 safety leads (1 red, 1 black)
- 1 red crocodile clip
- 1 black test probe
- 1 protective sheath mounted on the instrument
- 6 x LR06 or AA batteries
- 1 safety datasheet
- 1 Quick Start Guide
- 1 verification certificate

## To order

CA 6528

Reference: P01140838

## Recommended accessory

P01102084A  
Continuity pole

## Digital insulation monitors

**CA 6532 Telecom, CA 6534 Electronics,  
CA 6536 Avionics, ESD, space, defence**



**600 V  
CAT IV**

**IP 54**

**IEC  
61557**



**TRMS**

- Test voltage from 50 to 500 V
- Measurement range from 2 kΩ to 50 GΩ
- Configurable ΔRel mode and alarms
- Linear capacitance measurement in nF/km (CA 6532)
- Continuity 200 mA / 20 mA with active protection without fuse

|                                           | CA 6532                                                                                                                                                                               | CA 6534                     | CA 6536                |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------------------------|
| Display                                   | 2 x 4,000 cts+ logarithmic bar graph                                                                                                                                                  |                             |                        |
| Memory                                    | 1 300 measurements                                                                                                                                                                    |                             |                        |
| Communication                             | Bluetooth® Class II                                                                                                                                                                   |                             |                        |
| Power supply / Automatic switch-off       | 6 LR06 batteries / 5 min, can be switched off                                                                                                                                         |                             |                        |
| Autonomy                                  | 1,500 measurements: UN x1 kΩ @ UN (5 s ON / 55 s OFF) 3,000 continuity measurements (5 s ON / 55 s OFF)                                                                               |                             |                        |
| Dimensions / Weight / IP rating           | 211 x 108 x 60 mm / 850 g / IP 54 / IK 04                                                                                                                                             |                             |                        |
| EMC / Electrical safety                   | IEC 61326-1 / IEC 61010-1 and IEC 61010-2-030, 600 V CAT IV                                                                                                                           |                             |                        |
| Compliance with standards                 | IEC 61557 parts 1, 2, 4 and 10                                                                                                                                                        |                             |                        |
| Voltage                                   |                                                                                                                                                                                       |                             |                        |
| Measurement range / Resolution            | 0.3 V - 399.9 V / 0.1 V ; 400 V - 700 V / 1 V                                                                                                                                         |                             |                        |
| Accuracy / Input impedance                | ± (3 % + 2 cts) / 400 kΩ                                                                                                                                                              |                             |                        |
| Operating frequency                       | DC ; 15.3 - 800 Hz                                                                                                                                                                    |                             |                        |
| Frequency                                 | 15.3 Hz - 399.9 Hz / 0.1 Hz / ± (1 % + 2 cts)                                                                                                                                         |                             |                        |
| Measurement range / Resolution / Accuracy | 400 - 800 Hz / 1 Hz / ± (1 % + 1 pt)                                                                                                                                                  |                             |                        |
| Insulation                                |                                                                                                                                                                                       |                             |                        |
| Test voltage                              | 50 - 100 V                                                                                                                                                                            | 10 - 25 - 100 - 250 - 500 V | 10 to 100 V pas de 1 V |
| Range at maximum test voltage             | 20 GΩ                                                                                                                                                                                 | 50 GΩ                       | 20 GΩ                  |
| Compliance with IEC 61557 - 2             | 2 GΩ                                                                                                                                                                                  |                             |                        |
| Measuring range                           |                                                                                                                                                                                       |                             |                        |
|                                           | 10 V                                                                                                                                                                                  | -                           | 2 kΩ - 1 GΩ            |
|                                           | 25 V                                                                                                                                                                                  | -                           | 5 kΩ - 2 GΩ            |
|                                           | 50 V                                                                                                                                                                                  | 10 kΩ - 10 GΩ               | -                      |
|                                           | 100 V                                                                                                                                                                                 | 20 kΩ - 20 GΩ               | 20 kΩ - 10 GΩ          |
|                                           | 250 V                                                                                                                                                                                 | -                           | 50 kΩ - 25 GΩ          |
|                                           | 500 V                                                                                                                                                                                 | -                           | 100 kΩ - 50 GΩ         |
| Variable test voltage                     | -                                                                                                                                                                                     | -                           | 10 to 100 V            |
| Measurement range / Resolution            | 10 <sup>(1)</sup> - 999 kΩ et 1 000 - 3 999 MΩ / 1 kΩ ; 4 00 - 39 99 MΩ / 10 kΩ ; 40 0 - 399 9 MΩ / 100 kΩ ; 400 - 3 999 MΩ / 1 MΩ ; 4 00 - 39 99 GΩ / 10 MΩ ; 40 0 - 200 GΩ / 100 MΩ |                             |                        |
| Accuracy                                  | ± (3 % + 2 cts) <sup>(2)</sup>                                                                                                                                                        |                             |                        |
| Test voltage (I < 1 mA)                   | - 0 % + 20 %                                                                                                                                                                          |                             |                        |
| Test voltage display                      | -                                                                                                                                                                                     | ± (3 % + 3 cts)             | -                      |
| Test current / resolution                 | 0.01 µA - 39 99 µA / 10 nA ; 40 0 - 399 9 µA / 100 nA                                                                                                                                 |                             |                        |
| Test current accuracy                     | -                                                                                                                                                                                     | 0.400 - 2 000 mA / 1 µA     | -                      |
| PI/DAR ratio                              | 10 mn / 1 mn - 1 mn / 30 s                                                                                                                                                            | -                           | -                      |
| Timer (mn:s)                              | 0:00 - 39:59 - configurable minutes                                                                                                                                                   |                             |                        |
| Discharge time (at 25 V)                  | < 2 s/µF                                                                                                                                                                              |                             |                        |
| Alarms                                    | 2 fixed thresholds+ 1 programmable threshold                                                                                                                                          |                             |                        |
| Continuity                                |                                                                                                                                                                                       |                             |                        |
| Continuity measurement range              | 0.00 Ω - 10.00 Ω (200 mA) ; 0 0 - 100 0 Ω (20 mA)                                                                                                                                     |                             |                        |
| Accuracy / Open circuit voltage           | ± (2 % + 2 cts) / ≥ 6 V                                                                                                                                                               |                             |                        |
| Measurement current                       | 200 mA: 200 mA (- 0 mA +20 mA) - 20 mA: 20 mA ± 5 mA                                                                                                                                  |                             |                        |
| Continuity thresholds (rapid beep)        | 2 Ω, 1 Ω , programmable threshold                                                                                                                                                     |                             |                        |
| Cord compensation                         | up to 9.99 Ω                                                                                                                                                                          |                             |                        |
| Resistance                                |                                                                                                                                                                                       |                             |                        |
| Measurement range / Resolution            | 0 - 3 999 Ω / 1 Ω ; 4 00 kΩ - 39 99 kΩ / 10 Ω / ± (3 % + 2 cts)                                                                                                                       |                             |                        |
| Capacity                                  | 400 kΩ - 1 000 kΩ / 1 kΩ / ± (3 % + 2 cts)                                                                                                                                            |                             |                        |
| Capacity                                  | 0.1 nF - 399.9 nF / 0.1 nF                                                                                                                                                            |                             |                        |
| Measuring range / Resolution              | 400 nF - 3 999 nF / 1 nF                                                                                                                                                              |                             |                        |
| Accuracy                                  | 4.00 µF - 10 0 µF / 10 nF                                                                                                                                                             |                             |                        |
| Line length                               | ± (3 % + 2 cts)                                                                                                                                                                       |                             |                        |
|                                           | 0 - 100 km                                                                                                                                                                            |                             |                        |
|                                           | -                                                                                                                                                                                     |                             |                        |
|                                           | -                                                                                                                                                                                     |                             |                        |

(1) 2 kΩ for models CA 6532 - CA 6534 - CA 6536.

(2) In addition: 10 V: 1% per 0.1 GΩ; 25 V: 0.4% per 0.1 GΩ; 50 V: 2% per GΩ; 100 V: 1% per GΩ; 250 V: 0.4% per GΩ; 500 V: 0.2% per GΩ; 1,000 V: 0.1% per GΩ.

(3) 10% / UN is added per 100 MΩ



### CA 6532, CA 6534 and CA 6536 supplied with:

- 2 right-angled safety cords (red and black)
- 1 red alligator clip
- 1 black key tip
- 2 grip wires (red and black)
- 6 LR06 or AA batteries
- 1 hands-free carry and use case
- 1 multilingual safety data sheet
- 1 multilingual quick-start guide
- MEG software download

### To order

1 CA 6532 insulation monitor

**Reference: P01140832**

1 CA 6534 insulation tester

**Reference: P01140834**

1 insulation tester CA 6536

**Reference: P01140836**

1 ESD kit CA 6536 + electrode

**Reference: P01299974**

### Recommended accessories



**P01102092A**  
Remote control probe type 3



**P01295453Z**  
2 x 1.50 m straight-angled  
safety cords (red and black)

Download the free Megohmmeter Transfer (MEG)  
software from [www.chauvin-arnoux.com](http://www.chauvin-arnoux.com)

# On-site insulation tester

## Selection guide



|                              | CA 6541         | CA 6543 | CA 6505 | CA 6545 | CA 6547 | CA 6549 | CA 6550 | CA 6555 |
|------------------------------|-----------------|---------|---------|---------|---------|---------|---------|---------|
| Type                         | On-site digital |         |         |         |         |         |         |         |
| Test voltage (en Vdc)        |                 |         |         |         |         |         |         |         |
| 50                           | ■               | ■       | ■       | ■       | ■       | ■       | ■       | ■       |
| 100                          | ■               | ■       | ■       | ■       | ■       | ■       | ■       | ■       |
| 250                          | ■               | ■       | ■       | ■       | ■       | ■       | ■       | ■       |
| 500                          | ■               | ■       | ■       | ■       | ■       | ■       | ■       | ■       |
| 1,000                        | ■               | ■       | ■       | ■       | ■       | ■       | ■       | ■       |
| 2,500                        |                 |         | ■       | ■       | ■       | ■       | ■       | ■       |
| 5,000                        |                 |         | ■       | ■       | ■       | ■       | ■       | ■       |
| variable from 50 to 5,100    |                 |         | ■       | ■       | ■       | ■       | ■       | ■       |
| 10,000                       |                 |         |         |         |         |         | ■       | ■       |
| variable from 40 to 10,000   |                 |         |         |         |         |         | ■       | ■       |
| 15,000                       |                 |         |         |         |         |         |         | ■       |
| variable from 40 to 15,000   |                 |         |         |         |         |         |         | ■       |
| Max. measured value          |                 |         |         |         |         |         |         |         |
| 4 TΩ                         | ■               | ■       |         |         |         |         |         |         |
| 10 TΩ                        |                 |         | ■       | ■       | ■       | ■       |         |         |
| 25 TΩ                        |                 |         |         |         |         |         | ■       |         |
| 30 TΩ                        |                 |         |         |         |         |         |         | ■       |
| Continuity                   | ■               | ■       |         |         |         |         |         |         |
| Resistance                   | ■               | ■       |         | ■       | ■       | ■       | ■       | ■       |
| Capacitance                  | ■               | ■       | ■       | ■       | ■       | ■       | ■       | ■       |
| Leakage current              |                 |         | ■       | ■       | ■       | ■       | ■       | ■       |
| Chronometer                  | ■               | ■       |         | ■       | ■       | ■       | ■       | ■       |
| Programming of test duration | ■               | ■       | ■       | ■       | ■       | ■       | ■       | ■       |
| Quality ratios               |                 |         |         |         |         |         |         |         |
| PI                           | ■               | ■       | ■       | ■       | ■       | ■       | ■       | ■       |
| DAR                          | ■               | ■       | ■       | ■       | ■       | ■       | ■       | ■       |
| DD                           |                 |         |         | ■       | ■       | ■       | ■       | ■       |
| Graphics                     |                 |         |         |         |         |         |         |         |
| R (t)                        | ■               | ■       |         | ■       | ■       | ■       | ■       | ■       |
| u (t) + i (t)                |                 |         |         |         |         |         | ■       | ■       |
| i (u)                        |                 |         |         |         |         |         | ■       | ■       |
| Ramp                         |                 |         |         |         |         |         | ■       | ■       |
| Ramp by voltage steps        |                 |         |         |         |         | ■       | ■       | ■       |
| Calculation of R. (Tref)     |                 |         |         |         |         | ■       | ■       | ■       |
| I limit                      |                 |         |         |         |         |         | ■       | ■       |
| Early break / burn-in        |                 |         |         |         |         |         | ■       | ■       |
| Data storage                 | ■               | ■       |         | ■       | ■       | ■       | ■       | ■       |
| RS 232                       |                 | ■       |         |         |         |         |         |         |
| USB                          |                 |         |         |         | ■       | ■       | ■       | ■       |
| Display                      |                 |         |         |         |         |         |         |         |
| LCD + bargraph               | ■               | ■       | ■       | ■       | ■       |         |         |         |
| Graphics                     |                 |         |         |         |         | ■       | ■       | ■       |
| Power supply                 |                 |         |         |         |         |         |         |         |
| Batteries                    | ■               |         |         |         |         |         |         |         |
| Rechargeable battery         |                 | ■       | ■       | ■       | ■       | ■       | ■       | ■       |

## 1 kv on-site installation testers

## CA 6541 - CA 6543

600 V  
CAT III

IP 53

IEC  
61557Devices designed  
for the field!

- Test voltages from 50 V to 1,000 V
- Wide measurement range from 2 kΩ to 4 TΩ
- Automatic calculation of DAR / PI quality ratios
- Communication for CA 6543

|                                     | CA 6541                                | CA 6543                         |
|-------------------------------------|----------------------------------------|---------------------------------|
| <b>Insulation</b>                   |                                        |                                 |
| Test voltage                        |                                        |                                 |
| 50 V                                | 2 kΩ to 200 GΩ                         |                                 |
| 100 V                               | 4 kΩ to 400 GΩ                         |                                 |
| 250 V                               | 10 kΩ to 1 TΩ                          |                                 |
| 500 V                               | 20 kΩ to 2 TΩ                          |                                 |
| 1,000 V                             | 40 kΩ to 4 TΩ                          |                                 |
| <b>Accuracy</b>                     |                                        |                                 |
| 2 kΩ to 40 GΩ                       | ±(5 % L + 3 cts)                       |                                 |
| 40 GΩ to 4 TΩ                       | ±(15 % L + 10 cts)                     |                                 |
| Programming of test duration        | 1 to 59 min.                           |                                 |
| DAR (1 min. / 30 sec.)              | 0.000 to 9.999                         |                                 |
| PI (10 min. / 1 min.)               | 0.000 to 9.999                         |                                 |
| Customizable PI                     | Time customizable from 30 s to 59 min. |                                 |
| Voltage test / Safety               | 0 to 1000 Vac/dc                       |                                 |
| Voltage alert indicator             | Yes > 25 V                             |                                 |
| Test inhibition                     | Yes > 25 V                             |                                 |
| Smoother function                   | Yes                                    |                                 |
| <b>Continuity</b>                   |                                        |                                 |
| Range                               | 0.01 to 39.99 Ω                        |                                 |
| Measurement current                 | ≥ 200 mA up to 20 Ω                    |                                 |
| <b>Resistance</b>                   |                                        |                                 |
| Range                               | 0.01 to 400 kΩ                         |                                 |
| <b>Capacity</b>                     |                                        |                                 |
| Range                               | 0.005 to 4.999 μF                      |                                 |
| <b>Data storage - Communication</b> |                                        |                                 |
| Storage of R(t)                     | Memory 20 kB                           | Memory 128 kB                   |
| Storage of measurements             | 20 measurement results                 | Up to 1,500 measurement results |
| Communication port                  | No                                     | RS232                           |
| PC software                         | No                                     | DataView* (option)              |
| Display                             | Giant LCD + bargraph                   | Giant LCD + bargraph            |
| Power supply                        | 8 x LR14 batteries                     | NiMH rechargeable battery       |
| Dimensions / weight                 | 240 x 185 x 110 mm / 3.4 kg            |                                 |
| Electrical safety                   | IEC 61010 600 V CAT III - IEC 61557    |                                 |

CA 6541 delivered with  
an accessories bag containing:

- 1 set of 2 leads 1.5 m long (red / blue)
- 1 black guarded lead 1.5 m long
- 3 crocodile clips (red / blue / black)
- 1 test probe (black)
- 8 x LR14 batteries

CA 6543 delivered with  
an accessories bag containing:

- 1 set of 2 leads 1.5 m long (red / blue)
- 1 black guarded lead 1.5 m long
- 3 crocodile clips (red / blue / black)
- 1 test probe (black)
- 1 power-supply lead 2 m long
- 1 communication cable

## + The extra

- A highly impact-resistant construction site case
- Supplied with an accessory bag that can be clipped onto the construction site case

## To order

1 tester CA 6541

Reference: P01138901

1 tester CA 6543

Reference: P01138902

## Recommended accessory

P01654821  
CA 1821 Thermometer

Download the free Megohmmeter Transfer (MEG) software from the website [www.chauvin-arnoux.com](http://www.chauvin-arnoux.com)



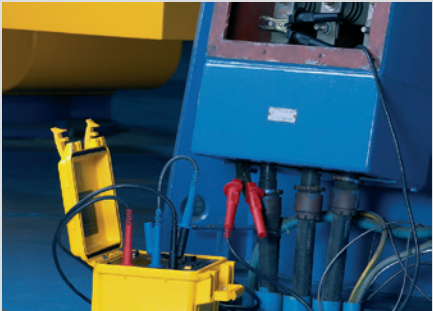
5 kv on-site installation testers

CA 6505 - CA 6545



- 1000 V  
CAT III
- 600 V  
CAT IV
- IP 53
- IEC  
61557

- Fixed and programmable test voltages from 40 V to 5,100 V
- Wide measurement range from 30 kΩ to 10 TΩ
- Measurement filtering functions
- Automatic calculation of DAR / PI / DD quality ratios
- Measurement of voltage, capacitance and leakage current



+

The extra

- A highly impact-resistant construction site case
- Supplied with a carrying bag

|                              | CA 6505                                                                  | CA 6545                                                        |
|------------------------------|--------------------------------------------------------------------------|----------------------------------------------------------------|
| Insulation                   |                                                                          |                                                                |
| Test voltage                 |                                                                          |                                                                |
| 500 V                        |                                                                          | 10 kΩ to 2 TΩ                                                  |
| 1,000 V                      |                                                                          | 100 kΩ to 4 TΩ                                                 |
| 2,500 V                      |                                                                          | 100 kΩ to 10 TΩ                                                |
| 5,000 V                      |                                                                          | 300 kΩ to 10 TΩ                                                |
| Programmation Voltage        | 40 V to 1,000 V: 10 V increments<br>1,000 V to 5,100 V: 100 V increments |                                                                |
| Accuracy                     |                                                                          |                                                                |
| 1 kΩ to 400 GΩ               |                                                                          | ± 5 % of value ± 3 cts                                         |
| 400 GΩ to 10 TΩ              |                                                                          | ± 15 % of value ± 10 cts                                       |
| Programmation durée de test  | 1 to 59 min.                                                             |                                                                |
| DAR (1 min. / 30 sec.)       | 0.02 to 50.00                                                            |                                                                |
| PI (10 min. / 1 min.)        | 0.02 to 50.00                                                            |                                                                |
| PI personnalisable           | Time adjustable from 30 s to 59 min.                                     |                                                                |
| DD                           | -                                                                        | 0.02 to 50.00                                                  |
| Test de Voltage/ Safety      | 0 to 1000 V <sub>AC</sub> /dc                                            |                                                                |
| Indicateur alerte de Voltage | Yes > 25 V                                                               |                                                                |
| Inhibition du test           | Yes > 25 V                                                               | Yes – Adjustable according to test voltage                     |
| Function de lissage          | -                                                                        | Configurable – Digital filtering to stabilize the measurements |
| Capacity                     | 0.005 to 49.99 µF                                                        |                                                                |
| Mesure de Leakage current    | 0.001 nA to 3 mA                                                         |                                                                |
| Memory                       |                                                                          |                                                                |
| Memory de R(t)               | -                                                                        | 4 kB memory                                                    |
| Memory des mesures           | -                                                                        | 20 measurement results                                         |
| Display                      | Giant LCD + bargraph                                                     |                                                                |
| Power supply                 | NiMH rechargeable battery                                                |                                                                |
| Dimensions / weight          | 270 x 250 x 180 mm / 4.3 kg                                              |                                                                |
| Electrical safety            | IEC 61010 1000 V CAT III - 600 V CAT IV<br>IEC 61557                     |                                                                |



CA 6505 - CA 6545 delivered with a shoulder bag containing:

- 2 safety leads 3 m long with HV plug and HV crocodile clip (red / blue)
- 1 guarded safety lead 3 m long with rear-connection HV plug and HV crocodile clip (black)
- 1 cable with rear connection (blue) 0.35 m long
- 1 mains power cable 2 m long

To order

1 insulation tester CA 6505

Reference: P01139714

1 insulation tester CA 6545

Reference: P01139711

Recommended accessories



P01654246  
CA 1246 Thermo-hygrometer



P01654821  
CA 1821 Thermometer

## 5 kv on-site installation testers

### CA 6547 - CA 6549

1000 V  
CAT III600 V  
CAT IV

IP 53

IEC  
61557

- Fixed and programmable test voltages from 40 V to 5,100 V
- Wide measurement range from 30 kΩ to 10 TΩ
- Measurement filtering functions
- Automatic calculation of DAR / PI / DD quality ratios
- Graphical display of R(t) curves (CA 6549)
- Resistance calculation at a reference temperature (CA 6549)

|                              | CA 6547                                                                  | CA 6549                                                                      |
|------------------------------|--------------------------------------------------------------------------|------------------------------------------------------------------------------|
| Insulation                   |                                                                          |                                                                              |
| Test voltage                 |                                                                          |                                                                              |
| 500 V                        |                                                                          | 30 kΩ to 2 TΩ                                                                |
| 1,000 V                      |                                                                          | 100 kΩ to 4 TΩ                                                               |
| 2,500 V                      |                                                                          | 300 kΩ to 10 TΩ                                                              |
| 5,000 V                      |                                                                          | 300 kΩ to 10 TΩ                                                              |
| Voltage programming          | 40 V to 1,000 V: 10 V increments<br>1,000 V to 5,100 V: 100 V increments |                                                                              |
| Test by voltage steps        | -                                                                        | Programmable value and duration up to 5 increments, three profiles memorized |
| Accuracy                     |                                                                          |                                                                              |
| 30 kΩ to 40 GΩ               |                                                                          | ±5 % of value ± 3 cts                                                        |
| 40 GΩ to 10 TΩ               |                                                                          | ±15 % of value ± 10 cts                                                      |
| Programming of test duration |                                                                          | 1 to 59 min.                                                                 |
| DAR (1 min. / 30 sec.)       |                                                                          | 0.02 to 50.00                                                                |
| PI (10 min. / 1 min.)        |                                                                          | 0.02 to 50.00                                                                |
| Customizable PI              |                                                                          | Time customizable from 30 s to 59 min.                                       |
| DD                           |                                                                          | 0.02 to 50.00                                                                |
| Voltage test / safety        |                                                                          | 0 to 1,000 V <sub>AC</sub> /dc                                               |
| Voltage alert indicator      |                                                                          | Yes > 25 V                                                                   |
| Test inhibition              |                                                                          | Yes - Adjustable according to test voltage                                   |
| Smoother function            |                                                                          | Configurable - Digital filtering stabilizing the measurements                |
| Capacity                     |                                                                          | 0.005 to 49.99 μF                                                            |
| Leakage current measurement  |                                                                          | 0.001 nA to 3 mA                                                             |
| Data storage - Communication |                                                                          |                                                                              |
| Storage of R(t)              | Storage 128 kB                                                           | Display on screen + Storage of samples                                       |
| Storage of measurements      |                                                                          | Up to 1,500 measurement results                                              |
| Communication port           |                                                                          | USB                                                                          |
| PC software                  |                                                                          | DataView* (option)                                                           |
| Display                      | Giant LCD + bargraph                                                     | Wide graphical screen                                                        |
| Power supply                 |                                                                          | NIMH rechargeable battery                                                    |
| Dimensions / weight          |                                                                          | 270 x 250 x 180 mm / 4.3 kg                                                  |
| Electrical safety            |                                                                          | IEC 61010 1000 V CAT III - 600 V CAT IV - IEC 61557                          |

Diagnostics  
& control

Education



Transport



Industries

Production, transport  
& distribution

#### + The extra

- Voltage step test (CA 6549)
- Compatible with DataView\* software



#### CA 6547 - CA 6549 delivered with a shoulder bag containing:

- 2 safety leads 3 m long with HV plug and HV crocodile clip (red / blue)
- 1 guarded safety lead 3 m long with rear-connection HV plug and HV crocodile clip (black)
- 1 cable with rear connection (blue) 0.35 m long
- 1 mains power cable 2 m long
- 1 communication cable

#### To order

1 insulation tester CA 6547

**Reference: P01139712**

1 insulation tester CA 6549

**Reference: P01139713**

#### Recommended accessories



**P01654246**  
CA 1246 Thermo-hygrometer



**P01654821**  
CA 1821 Thermometer

Download the free Megohmmeter Transfer (MEG) software from the website [www.chauvin-arnoux.com](http://www.chauvin-arnoux.com)

## 10 kV / 15 kV site insulation testers

## CA 6550 - CA 6555

1000 V  
CAT III

IP 54

IEC  
61557

Perfectly suited for testing rotating equipment and machinery operating at 12 kV and above. Compliant with the latest recommended practices and future developments.

- Fixed and programmable test voltages from 40 V to 10/15 kV
- Wide measurement range from 10 kΩ to 30 TΩ
- Load current of 5 mA
- Digital, graphical and bar graph display of  $R(t) + U(t)$ ,  $i(t)$  and  $i(u)$  curves in real time

|                                            | CA 6550                                                                                              | CA 6555                                                                   |
|--------------------------------------------|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| Graphics on display                        | $R(t)+u(t)$ ; $i(t)$ ; $i(u)$                                                                        |                                                                           |
| Data storage                               | 256 recordings, 80,000 cts R, U, I and date-stamp                                                    |                                                                           |
| Communication                              | Optically-isolated port for USB and RS232 connection                                                 |                                                                           |
| PC software                                | DataView®                                                                                            |                                                                           |
| Power supply                               | NiMH rechargeable batteries, 8 x 1.2 V / 4,000 mAh<br>Charging by 90-260 V 50/60 Hz external voltage |                                                                           |
| Electrical safety                          | 1000 V CAT IV - IEC 61010-1 and IEC 61557                                                            |                                                                           |
| Dimensions / weight                        | 406 x 330 x 174 mm, 6 kg approx.                                                                     |                                                                           |
| Test voltages                              | 10 kV                                                                                                | 15 kV                                                                     |
| Insulation measurement                     | 500 V: 10 kΩ to 2 TΩ                                                                                 |                                                                           |
|                                            | 1,000 V: 10 kΩ to 4 TΩ                                                                               |                                                                           |
|                                            | 2,500 V: 10 kΩ to 10 TΩ                                                                              |                                                                           |
|                                            | 5,000 V: 10 kΩ to 15 TΩ                                                                              |                                                                           |
|                                            | 10,000 V: 10 kΩ to 25 TΩ                                                                             |                                                                           |
|                                            | -                                                                                                    | 15,000 V: 10 kΩ to 30 TΩ                                                  |
| Fixed test voltages                        | 500 / 1,000 / 2,500 / 5,000 / 10,000 V                                                               | 500 / 1,000 / 2,500 / 5,000 / 10,000 / 15,000 V                           |
| Variable test voltages                     | 40 V - 10,000 V<br>3 preconfigurable voltage values                                                  | 40 V - 15,000 V<br>3 preconfigurable voltage values                       |
| Adjustment increment for variable voltages | Variable: 40-10 kV<br>Increment: 40 V - 1 kV: 10 V<br>1 kV - 10 kV: 100 V                            | Variable: 40-15 kV<br>Increment: 40 V - 1 kV: 10 V<br>1 kV - 15 kV: 100 V |
| Ramp mode                                  | 3 preconfigurable ramps:<br>start voltage / end voltage / duration                                   |                                                                           |
| Ramp configuration range                   | 40-1,100 V / 500-10,000 V                                                                            | 40-1,100 V / 500-15,000 V                                                 |
| Step mode                                  | Up to 10 plateaux (values and duration configurable for each plateau)                                |                                                                           |
| Voltage measurement before and after test  | AC: 0 - 2,500 V<br>DC: 0 - 4,000 V                                                                   |                                                                           |
| Capacitance measurement (> 500 V)          | 0.001-9.999 μF / 10.00-19.99 μF                                                                      |                                                                           |
| Leakage current measurement                | 0 - 8 mA                                                                                             |                                                                           |
| Discharge after test                       | Yes / Automatic                                                                                      |                                                                           |
| Additional test stop modes                 |                                                                                                      |                                                                           |
| I-limite                                   | Programmable 0.2 - 5 mA                                                                              |                                                                           |
| Early-break                                | di / dt                                                                                              |                                                                           |
| Timer                                      | Up to 99:59 minutes                                                                                  |                                                                           |
| Debug mode                                 | Permanent test                                                                                       |                                                                           |
| Calculation of ratios                      | PI, DAR, DD, SV, ΔR (ppm / V)                                                                        |                                                                           |
| Calculation of R at ref. temp.             | Yes                                                                                                  |                                                                           |
| Measurement display filter                 | 3 filters with variable time constant                                                                |                                                                           |



### 1 CA 6550 or CA 6555 controller supplied with a bag containing:

- 2 x 3 m safety cords with HT plug and 1 HT crocodile clip (red/blue)
- 1 x 3 m safety cord with HT plug and rear connection and HT crocodile clip (black)
- 1 x 0.5 m blue rear connection cable
- 1 x 2 m mains power cable
- 1 x DataView® software on USB stick
- 1 x optical/USB communication cable
- 1 x CD-ROM containing the operating instructions

### To order

1 CA 6550 insulation tester

Reference: P01139715

1 CA 6555 insulation tester

Reference: P01139716

### Recommended accessory



P01103062  
3 crocodile clips  
red/blue/black

Download the free Megohmmeter Transfer (MEG) software from the website [www.chauvin-arnoux.com](http://www.chauvin-arnoux.com)

## Earth tester

### Selection guide



|                                                | CA 6422       | CA 6424                   | CA 6460                       | CA 6462 | CA 6470N<br>TERCA 3 | CA 6471 | CA 6472 | CA 6416       | CA 6417 | CA 6418 |
|------------------------------------------------|---------------|---------------------------|-------------------------------|---------|---------------------|---------|---------|---------------|---------|---------|
| Type                                           |               |                           |                               |         |                     |         |         |               |         |         |
|                                                | Earth testers |                           | Earth and resistivity testers |         |                     |         |         | Earth testers |         |         |
| Earth                                          |               |                           |                               |         |                     |         |         |               |         |         |
| 3P method                                      | ■             | ■                         | ■                             | ■       | ■                   | ■       | ■       |               |         |         |
| 4P method                                      |               |                           | ■                             | ■       | ■                   | ■       | ■       |               |         |         |
| Automatic coupling                             |               |                           |                               |         | ■                   | ■       | ■       |               |         |         |
| Selective earth                                |               |                           |                               |         |                     |         |         |               |         |         |
| Earth clamp                                    |               |                           |                               |         |                     |         |         | ■             | ■       | ■       |
| 4P method + clamp                              |               |                           |                               |         |                     | ■       | ■       |               |         |         |
| 2-clamp method                                 |               |                           |                               |         |                     | ■       | ■       |               |         |         |
| Pylon earth measurement*                       |               |                           |                               |         |                     |         | ■       |               |         |         |
| Resistivity                                    |               |                           |                               |         |                     |         |         |               |         |         |
| Manual                                         |               |                           | ■                             | ■       |                     |         |         |               |         |         |
| Automatic                                      |               |                           |                               |         | ■                   | ■       | ■       |               |         |         |
| Contact voltage measurement                    |               |                           |                               |         |                     |         |         | ■             | ■       |         |
| Potential measurement                          |               |                           | ■                             | ■       | ■                   | ■       | ■       |               |         |         |
| Continuity                                     |               |                           |                               |         | ■                   | ■       | ■       |               |         |         |
| Earth potential                                |               |                           |                               |         |                     |         | ■       |               |         |         |
| Measurement frequency                          |               |                           |                               |         |                     |         |         |               |         |         |
| Single frequency: 128 Hz                       | ■ (& 256 Hz)  | ■ (& 256 Hz)              | ■                             | ■       |                     |         |         |               |         |         |
| Single frequency: 2,083 Hz                     |               |                           |                               |         |                     |         |         | ■             | ■       | ■       |
| 41 to 512 Hz                                   |               |                           |                               |         | ■                   | ■       |         |               |         |         |
| 41 to 5,078 Hz                                 |               |                           |                               |         |                     |         | ■       |               |         |         |
| Measurement of R <sub>S</sub> , R <sub>H</sub> |               | ■ (R <sub>H</sub> )       |                               |         | ■                   | ■       | ■       |               |         |         |
| Measurement of U <sub>stray</sub>              |               |                           |                               |         | ■                   | ■       | ■       |               |         |         |
| Current measurement                            |               | ■ (with G72 clamp option) |                               |         |                     |         |         | ■             | ■       | ■       |
| Display                                        |               |                           |                               |         |                     |         |         |               |         |         |
| LCD                                            | ■             |                           | ■                             | ■       |                     |         |         |               |         |         |
| LCD, 3 displays                                |               | ■                         |                               |         | ■                   | ■       | ■       |               |         |         |
| OLED                                           |               |                           |                               |         |                     |         |         | ■             | ■       | ■       |
| Data storage / Communication                   |               |                           |                               |         |                     |         |         |               |         |         |
| Data storage                                   |               | ■ ( 52% / 62% / 72% )     |                               |         | ■                   | ■       | ■       | ■             | ■       | ■       |
| Communication                                  |               |                           |                               |         | ■                   | ■       | ■       |               | ■       |         |
| Optical USB interface                          |               |                           |                               |         | ■                   | ■       | ■       |               |         |         |
| Bluetooth®                                     |               |                           |                               |         |                     |         |         |               | ■       |         |
| Power supply                                   |               |                           |                               |         |                     |         |         |               |         |         |
| Batteries                                      | ■             |                           | ■                             |         |                     |         |         | ■             | ■       | ■       |
| Rechargeable batteries                         |               | ■                         |                               | ■       | ■                   | ■       | ■       |               |         |         |
| PC / Tablet software                           |               |                           |                               |         |                     |         |         |               |         |         |
| GTT / DataView®                                |               |                           |                               |         | ■                   | ■       | ■       |               |         |         |
| GTC                                            |               |                           |                               |         |                     |         |         |               | ■       |         |
| Tablet application                             |               |                           |                               |         |                     |         |         |               | ■       |         |

\*Associated with CA 6474



## Earth testers

### CA 6422 - CA 6424

600 V  
CAT IV

IP 65

IEC  
61557

- 2P resistance / 3P earth resistance measurement up to 50 kΩ
- Automatic stabilization of the measurement
- Calculation of 52% / 62% / 72% average and % deviation
- Leakage current measurement from 0.5 mA
- Power supply by batteries rechargeable via the mains, USB socket or vehicle cigarette lighter

|                                                     | CA 6422                                                                               | CA 6424                                                                   |
|-----------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| <b>Voltage (U<sub>HE</sub>)</b>                     |                                                                                       |                                                                           |
| Range                                               | -                                                                                     | 0.1-600 V                                                                 |
| Resolution                                          | -                                                                                     | 0.1 V                                                                     |
| Accuracy                                            | -                                                                                     | ± (1% R + 1 ct)                                                           |
| <b>2P resistance</b>                                |                                                                                       |                                                                           |
| Range                                               | 0.05 - 99.99 Ω / 80.0 - 999.9 Ω /<br>0.800 - 9.999 kΩ / 8.00 - 50.00 kΩ               |                                                                           |
| Resolution                                          | 0.01 Ω / 1 Ω / 10 Ω / 100 Ω                                                           |                                                                           |
| Accuracy                                            | ± (2 %R + 10 cts) / ± (2 %R + 2 cts) / ± (2 %R + 1 ct) / ± (2 %R + 1 ct)              |                                                                           |
| Cable compensation                                  | -                                                                                     | up to 5 Ω                                                                 |
| <b>3P earth resistance</b>                          |                                                                                       |                                                                           |
| Range                                               | 0.5 Ω - 2,000 kΩ                                                                      | 0.5 Ω - 50.00 kΩ                                                          |
| Resolution                                          | 0.01 Ω / 0.1 Ω / 1 Ω                                                                  | 0.01 Ω / 0.1 Ω / 1 Ω / 10 Ω                                               |
| Accuracy                                            | ±(1 %R + 10 cts) / ±(1 %R + 2 cts) / ±(1 %R + 1 ct)                                   |                                                                           |
| Measurement frequency                               | 128 Hz or 256 Hz                                                                      |                                                                           |
| No-load voltage                                     | ± 10 V peak                                                                           |                                                                           |
| Measurement mode                                    | One-shot or permanent                                                                 |                                                                           |
| Data storage                                        | Registers: RE @ 62%;<br>RE @ 52%; RE @ 72%                                            |                                                                           |
| Calculation of average                              | -                                                                                     | Calculation of the average and the % deviation in relation to the average |
| <b>R<sub>H</sub> stake resistance measurement</b>   |                                                                                       |                                                                           |
| Range                                               | -                                                                                     | 0.05 - 9.999 kΩ / 8.00 - 49.99 kΩ                                         |
| Resolution                                          | -                                                                                     | 1 Ω / 10 Ω                                                                |
| Accuracy                                            | -                                                                                     | ±(10 %R + 1 ct)                                                           |
| <b>U<sub>SE</sub> voltage measurement</b>           |                                                                                       |                                                                           |
| Range                                               | -                                                                                     | 0.10 - 99.99 V <sub>AC</sub> /<br>80.0 - 600 V <sub>AC</sub>              |
| Resolution                                          | -                                                                                     | 0.01 V / 0.1 V                                                            |
| Accuracy                                            | -                                                                                     | ±(2% L + 2 pt)                                                            |
| <b>Current measurement (via optional G72 clamp)</b> |                                                                                       |                                                                           |
| Range                                               | 0.5 - 999.9 mA / 0.800-9.999 A / 8.00-60.00 A                                         |                                                                           |
| Resolution                                          | 0.1 / 1 / 10 mA                                                                       |                                                                           |
| Accuracy                                            | ±(1% R + 4 cts) / ±(1% R + 2 cts)                                                     |                                                                           |
| Display                                             | Backlit custom 206-segment LCD                                                        |                                                                           |
| Measurement mode                                    | R 2P (Ω), R 3P (Ω)                                                                    | V, I, R 2P (Ω), R 3P (Ω)                                                  |
| Power supply                                        | 6 x LR 6 or AA batteries                                                              | 6 x NiMH rechargeable batteries,<br>charging time approx. 6 hrs           |
| Charger                                             | -                                                                                     | Internal via mains / USB adapter supplied                                 |
| Automatic power-off                                 | -                                                                                     | Deactivatable                                                             |
| Battery life                                        | > 2,000 x 3P earth measurements at 100 Ω                                              | >1,500 x 3P earth measurements at 100 Ω                                   |
| Dimensions / weight                                 | 223 x 126 x 70 mm / 1 kg                                                              |                                                                           |
| Environment                                         | Operation: -10 to +50°C / Storage: -40 to +70°C<br>(without batteries / accumulators) |                                                                           |
| Protection                                          | Up to 600 V on any of the input terminals                                             |                                                                           |
| IP / IK index                                       | IP 65 as per IEC 60529 / IK 04 as per IEC 50102                                       |                                                                           |
| Drop test                                           | 1 metre as per IEC 61010-1                                                            |                                                                           |
| Standards / electrical safety                       | EMC: IEC 61326-1; IEC 61010-2-030 / 600 V CAT IV                                      |                                                                           |
| Compliance with IEC 61557                           | IEC 61557-1 and IEC 61557-5                                                           |                                                                           |



#### CA 6422 delivered with

- 6 x LR06 type AAA batteries
- 1 quick start guide
- 1 safety datasheet
- 1 test report with measurement results  
downloadable operating instructions

#### CA 6424 delivered with 1 carrying bag:

- 6 NiMH batteries
- 1 USB 2 A power supply, 1 USB micro-razor  
power cable
- 1 multilingual quick start guide
- 1 safety datasheet
- 1 battery datasheet
- 1 test report with measurement results  
downloadable operating instructions

#### To order

1 earth tester CA 6422

**Reference: P01127012**

1 earth tester CA 6424

**Reference: P01127014**

#### Recommended accessories



**P01298006**  
Carrying bag



**P01102021**  
50 m expert earth kit

## Earth testers

### CA 6460 - CA 6462

IP 53

IEC  
61557

#### Earth / resistivity / coupling testers

- 3-in-1 testers: resistivity, earth and coupling
- Validation of the measurement by self-diagnosis: 3 LEDs indicating the presence of faults liable to make the measurement result invalid
- Highly-resistant site-proof casing with lid for use in harsh field conditions
- Large LCD display with backlighting

|                   | CA 6460                                     | CA 6462                   |
|-------------------|---------------------------------------------|---------------------------|
| Measurement       | Earth / resistivity / coupling              |                           |
| Type              | 3P & 4P                                     |                           |
| Measurement range | 0.01 to 2,000 Ω (in 3 automatic calibres)   |                           |
| Resolution        | 10 mΩ / 100 mΩ / 1 Ω (depending on calibre) |                           |
| Accuracy          | ± (2 % + 1 ct)                              |                           |
| No-load voltage   | ≤ 42 V peak                                 |                           |
| Frequency         | 128 Hz                                      |                           |
| Alarms            | 3 fault presence LEDs                       |                           |
| Power supply      | 8 x 1.5 V LR06 batteries                    | NiMH rechargeable battery |
| Display           | 2,000-count digital LCD                     |                           |
| Electrical safety | IEC 61010 & IEC 61557                       |                           |
| Dimensions        | 273 x 247 x 127 mm (handle folded away)     |                           |
| Weight            | 2.8 kg                                      | 3.3 kg                    |



#### CA 6460 supplied with:

- 8 x 1.5 V LR06 batteries

#### CA 6462 supplied with:

- 1 mains lead for recharging
- 1 NiMH battery mounted inside the device

#### To order

1 earth and resistivity tester CA 6460

**Reference: P01126501**

1 earth and resistivity tester CA 6462

**Reference: P01126502**

#### Recommended accessory



**P01102024**  
Earth/Resistivity 4P kit (100 m)

## Earth testers

### CA 6470N TERCA 3 - CA 6471



IP 53

50 V  
CAT IVIEC  
61557

#### CA 6470N TERCA 3 :

- 4-in-1 tester: Earth / Resistivity / Coupling / Continuity

#### CA 6471

- 5-in-1 tester, Earth / Selective Earth / Resistivity / Coupling / Continuity
- Suitable for industry, housing and electricity companies

|                                             | CA 6470N                                                                                                | CA 6471           |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------|-------------------|
| 3P method                                   |                                                                                                         |                   |
| Range (automatic selection)                 | 0.01 Ω to 99.9 kΩ                                                                                       |                   |
| Resolution                                  | 0.01 to 100 Ω                                                                                           |                   |
| Test voltage                                | 16 V or 32 V, selectable                                                                                |                   |
| Measurement frequency                       | 41 to 513 Hz, automatic or manual                                                                       |                   |
| Test current                                | Up to 250 mA                                                                                            |                   |
| Accuracy                                    | ± 2 % of value ± 1 ct                                                                                   |                   |
| 4P method                                   |                                                                                                         |                   |
| Range                                       | 0.001 Ω to 99.99 kΩ                                                                                     |                   |
| Resolution                                  | 0.001 to 10 Ω                                                                                           |                   |
| Test voltage                                | 16 V or 32 V                                                                                            |                   |
| Measurement frequency                       | 41 to 513 Hz, automatic or manual                                                                       |                   |
| Test current                                | Up to 250 mA                                                                                            |                   |
| Measurement accuracy                        | ± 2 % of value ± 1 ct                                                                                   |                   |
| 4P method + 1 clamp                         |                                                                                                         | Same as 4P method |
| Soil resistivity measurement                |                                                                                                         |                   |
| Measurement method                          | Wenner or Schlumberger method with automatic calculation of the results and display in Ω-metre          |                   |
| Range (automatic selection)                 | 0.01 Ω to 99.99 kΩ (ρ max. 999 kΩm)                                                                     |                   |
| Resolution                                  | 0.01 Ω to 100 Ω                                                                                         |                   |
| Test voltage                                | 16 or 32 V, selectable                                                                                  |                   |
| Measurement frequency                       | 41 to 128 Hz selectable                                                                                 |                   |
| Measurements with 2 clamps                  |                                                                                                         |                   |
| Range                                       | 0.1 to 500 Ω                                                                                            |                   |
| Resolution                                  | 0.01 to 1 Ω                                                                                             |                   |
| Measurement frequency                       | Auto: 1611 Hz<br>Manual: 128 Hz – 1.367 Hz – 1,611 Hz – 1,758 Hz                                        |                   |
| External voltage measurement                |                                                                                                         |                   |
| Range (automatic selection)                 | 0.1 to 65.0 V <sub>AC/DC</sub> – DC and 15 - 440 Hz                                                     |                   |
| Accuracy                                    | ± 2 % of value ± 1 ct                                                                                   |                   |
| Resistance / Continuity - (earth bond test) |                                                                                                         |                   |
| Type of measurement                         | 2P or 4P method, selectable                                                                             |                   |
| Range (automatic selection)                 | 2P: 0.01 Ω to 99.9 kΩ<br>4P: 0.001 Ω to 99.99 kΩ                                                        |                   |
| Accuracy                                    | ± 2 % of value ± 2 cts                                                                                  |                   |
| Test voltage                                | 16 V <sub>DC</sub> (polarity +, – or auto)                                                              |                   |
| Test current                                | > 200 mA for R < 20 Ω                                                                                   |                   |
| Data storage                                |                                                                                                         |                   |
| Storage capacity                            | 512 test results                                                                                        |                   |
| Communication                               | Optically-isolated USB                                                                                  |                   |
| Power supply                                | Rechargeable battery                                                                                    |                   |
| Charger power supply                        | External power supply with 18 V <sub>DC</sub> / 1.5 A output or 12 V <sub>DC</sub> vehicle power supply |                   |
| Dimensions / weight                         | 272 x 250 x 128 mm / 3.2 kg                                                                             |                   |
| Electrical safety                           | 50 V CAT IV / IEC 61557 -1, -4, -5                                                                      |                   |



#### CA 6470N supplied with:

- 1 mains adapter
- 1 x 2-pole mains power cable for battery recharging on the mains
- Data export software
- 1 optical / USB communication cable
- 1 CD-Rom containing the user manual
- 5 specifications labels

#### CA 6471 supplied with:

- 1 mains adapter
- 1 x 2-pole main power cable for battery recharging on the mains
- Data export software
- 1 optical / USB communication cable
- 2 x C182 clamps with 2 safety leads
- 1 carrying bag
- 1 CD-Rom containing the user manual
- 5 specifications labels

#### To order

1 earth tester CA 6470N TERCA 3

**Reference: P01126506**

1 earth tester CA 6471

**Reference: P01126505**

#### Recommended accessories



**P01102024**

Earth and resistivity 4P kit (100 m)



**P01102095**

Dataview

Download the free Ground Tester Transfer (GTT) software from the website [www.chauvin-arnoux.com](http://www.chauvin-arnoux.com)



## Earth tester

CA 6472



IP 53 50 V CAT IV IEC 61557

### 6-in-1 controller, earth / selective earth / resistivity / coupling / continuity / pylon earth tester

- All types of earth resistance measurement & pylon earth measurement (with the CA 6474)
- Resistivity (Wenner + Schlumberger methods)
- Earth coupling
- Soil potential measurement
- Continuity / resistance
- Sweep mode

## CA 6472

| 3P measurements                          |                                                                                                         |
|------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Range (automatic selection)              | 0,01 $\Omega$ to 99,9 k $\Omega$                                                                        |
| Resolution                               | 0,01 $\Omega$ to 100 $\Omega$                                                                           |
| Test voltage                             | 10 V, 16 V, 32 V <sub>RMS</sub> ou 60 V, selectable                                                     |
| Measurement frequency                    | 41 to 5,078 Hz, automatic or manual                                                                     |
| Test current                             | Up to 250 mA                                                                                            |
| Accuracy                                 | $\pm 2\%$ L +1 pt to 128 Hz                                                                             |
| Mesures avec 2 pinces                    |                                                                                                         |
| Range                                    | 0.01 to 500 $\Omega$                                                                                    |
| Resolution                               | 0.01 to 1 $\Omega$                                                                                      |
| Measurement frequency                    | Auto: 1,611 Hz - Manual: 128 Hz - 1,367 Hz - 1,611 Hz - 1,758 Hz                                        |
| Method 4P / Mesure 4P+pinces             |                                                                                                         |
| Range                                    | 0.001 $\Omega$ to 99,99 k $\Omega$                                                                      |
| Resolution                               | 0.001 to 10 $\Omega$                                                                                    |
| Test voltage                             | 10 V, 16 V, 32 V or 60 V, selectable                                                                    |
| Measurement frequency                    | 41 to 5078 Hz, automatic or manual                                                                      |
| Test current                             | Up to 250 mA                                                                                            |
| Measurement accuracy                     | $\pm 2\%$ of value $\pm 1$ ct                                                                           |
| Mesure de résistivité du sol - Method 4P |                                                                                                         |
| Measurement method                       | Wenner or Schlumberger method with automatic calculation of the results and display                     |
| Range (automatic selection)              | 0.01 to 99.99 k $\Omega$ ; $\rho$ max. 999 k $\Omega$ m                                                 |
| Resolution                               | 0.01 $\Omega$ to 100 $\Omega$                                                                           |
| Test voltage                             | 10 V. 16 V. 32 V or 60 V, selectable                                                                    |
| Measurement frequency                    | 41 to 512 Hz, selectable                                                                                |
| Mesure du potentiel de Terre             |                                                                                                         |
| Measuring range                          | 0.00 to 65.00 V                                                                                         |
| Resolution                               | 0.01 mV to 10 mV                                                                                        |
| Measurement frequency                    | 41 to 5,078 Hz                                                                                          |
| Accuracy                                 | $\pm 5\%$ $\pm 1$ ct to 128 Hz                                                                          |
| Mesure de Voltage externe                |                                                                                                         |
| Range (automatic selection)              | 0.1 to 65.0 V <sub>AC/DC</sub> - DC and 15-450 Hz                                                       |
| Accuracy                                 | $\pm 2\%$ of value $\pm 1$ ct                                                                           |
| Mesure de Resistance / Continuity        |                                                                                                         |
| Type de mesure                           | 2P or 4P method. selectable                                                                             |
| Range (automatic selection)              | 2P: 0.01 $\Omega$ to 99.9 k $\Omega$<br>4P: 0.001 $\Omega$ to 99.99 k $\Omega$                          |
| Accuracy                                 | $\pm 2\%$ of value $\pm 2$ cts                                                                          |
| Test voltage                             | 16 V <sub>dc</sub> (polarity +, - or auto)                                                              |
| Test current                             | > 200 mA for R < 20 $\Omega$                                                                            |
| Memory                                   |                                                                                                         |
| Capacity Memory                          | 512 test results                                                                                        |
| Communication                            | Optically-isolated USB                                                                                  |
| Power supply                             |                                                                                                         |
| Charger power supply                     | Rechargeable battery                                                                                    |
| Charger power supply                     | External power supply with 18 V <sub>dc</sub> / 1.9 A output or 12 V <sub>dc</sub> vehicle power supply |
| Dimensions / weight                      | 272 x 250 x 128 mm / 3.2 kg                                                                             |
| Electrical safety                        | 50 V CAT IV / IEC 61557 -1, -4, -5                                                                      |



## CA 6472 delivered with:

- 1 mains adapter
- 1 x 2-pole mains power cable for battery recharging on the mains
- Data export software
- 1 optical / USB communication cable
- 2 x C182 clamps with 2 safety leads
- 1 carrying bag
- 1 CD-Rom containing the user manual
- 5 specifications labels

## To order

1 earth tester CA 6472

Reference: P01126504

## Recommended accessories



**P01102024**  
Earth and resistivity 4P kit (100 m)



**P01102095**  
Dataview

Download the free Ground Tester Transfer (GTT) software from the website [www.chauvin-arnoux.com](http://www.chauvin-arnoux.com)



Pylon earth controller

CA 6474



IP 53

Specially for measurements on pylons

- Used with the CA 6472 for measurements on pylons
- Pylon earth resistance
- Resistance of each pylon footing
- Quality of overhead earth wire connection

| CA 6474 / PYLON BOX                   |                                                                                                                                                                                                                                                 |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Measurements                          |                                                                                                                                                                                                                                                 |
| Type of measurement                   | Overall pylon earth resistance<br>Earth resistance of each pylon footing<br>Overall line impedance<br>Quality of overhead earth wire connection.<br>Active measurement (injection by the CA 6472)<br>Passive measurement (use of eddy currents) |
| Range                                 | 0.067 Ω to 99.99 kΩ                                                                                                                                                                                                                             |
| Accuracy                              | ± (5 % + 1 ct)                                                                                                                                                                                                                                  |
| Frequency                             | 41 to 5,078 Hz                                                                                                                                                                                                                                  |
| Frequency sweep                       | Yes                                                                                                                                                                                                                                             |
| Dimensions                            | 272 x 250 x 128 mm                                                                                                                                                                                                                              |
| Weight                                | 2.3 kg                                                                                                                                                                                                                                          |
| Power supply / Data storage / Display | Provided by the CA 6472                                                                                                                                                                                                                         |



+ The extra

Possibility of connecting several AmpFlex® units in series for lengths > 8 metres

The complete pylon earthing kit, in AmpFlex® 5 m version, is available to order under reference P01299930. It includes:

- CA 6472
- CA 6474
- AmpFlex® 5 m
- 100 m earthing kit

For the complete pylon earthing kit in AmpFlex® 8 m version, order:

- CA 6472 reference P01126504
- CA 6474 reference P01126511
- 100 m earthing kit reference P01102024

CA 6474 delivered with an accessories bag containing:

- 1 connection cable
- 4 BNC / BNC cables 15 m long
- 4 AmpFlex® flexible current sensors 5 m long
- 1 set of 12 identification rings for AmpFlex® with 15 m BNC cable
- 2 cables (5 m green, 5 m black) with safety plugs on winder
- 5 spade lug / Ø 4 mm banana plug adapters
- 3 adjustable clamps
- 1 calibration loop
- 5 specifications labels

Also available with 8 m AmpFlex® sensor: order reference P01126511

To order

1 earth tester CA 6474

Reference: P01126510

Download the free Ground Tester Transfer (GTT) software from the website [www.chauvin-arnoux.com](http://www.chauvin-arnoux.com)

# Earth clamps

## CA 6416 - CA 6417 - CA 6418

600 V  
CAT IV

IP 40



### For earth measurements on HV/MV installations, telecommunications, railway or building installations

- Quick earth loop check
- OLED display and force compensation system
- Loop resistance measurement from 0.01 to 1,500  $\Omega$  (1,200  $\Omega$  for CA 6418)
- Current measurement from 0.5 mA to 20 A
- Alarms available in  $\Omega$  and A, and in voltage for CA 6416 / CA 6417
- Time-stamped storage of 300 measurements, 2,000 for CA 6417

|                                                      | CA 6416                                                                          | CA 6417                              | CA 6418                                           |
|------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------------|---------------------------------------------------|
| Display                                              | 152-segment OLED. Active area 48 x 39 mm                                         |                                      |                                                   |
| Max. clamping diam.                                  | Ø 35 mm                                                                          |                                      | Ø 32 mm<br>L x H : 30 x 40 mm / 20 x 55 mm        |
| Data storage                                         | 300 time-date-stamped measurements                                               | 2,000 time-date-stamped measurements | 300 time-date-stamped measurements                |
| Communication                                        | Bluetooth Class 2                                                                |                                      |                                                   |
| Power supply                                         | 4 x 1.5 V LR06 batteries or 4 x NiMH batteries                                   |                                      |                                                   |
| Battery life                                         | 1,440 measurements of 30 seconds each                                            |                                      | 2,440 measurements of 30 seconds each             |
| Calibration                                          | Automatic at startup                                                             |                                      |                                                   |
| Electrical safety                                    | IEC 61010 600 V CAT IV                                                           |                                      | IEC 61010 100 V CAT IV, 150 V CAT III             |
| Ingress protection                                   | IP40                                                                             |                                      |                                                   |
| Dimensions / weight                                  | 55 x 95 x 262 mm / Approx. 935 g with batteries                                  |                                      | 56 x 106 x 300 mm / Approx. 1.2 kg with batteries |
| Measurement ranges (Ω) / Resolution (Ω) / Accuracy   |                                                                                  |                                      |                                                   |
|                                                      | 0.010 to 0.099 / 0.001 / ±1.5 % ±0.01 Ω                                          |                                      | 0.010 to 0.099 / 0.001 / ±1.5 %R ±0.01 Ω          |
| Loop ohmmeter                                        | 0.10 to 0.99 / 0.01 / ±1.5 % ±2 r                                                |                                      | 0.10 to 0.99 / 0.01 / ±1.5 %R ±2 r                |
| 1,500-count display on CA 6416 / CA 6417             | 1.0 to 49.9 / 0.1 / ±1.5 % ±r                                                    |                                      | 1.0 to 49.9 / 0.1 / ±1.5 %R ±2r                   |
| 1,200-count display on CA 6418                       | 50.0 to 99.5 / 0.5 / ±2 % ±r                                                     |                                      | 50.0 to 149 / 1 / ±2.5 %R ±2r                     |
|                                                      | 100 to 199 / 1 / ±3 % ±r                                                         |                                      | 150 to 245 / 5 / ±5 %R ±2r                        |
|                                                      | 200 to 395 / 5 / ±5 % ±r                                                         |                                      | 250 to 440 / 10 / ±10 %R ±2r                      |
|                                                      | 400 to 590 / 10 / ±10 % ±r                                                       |                                      | 450 to 640 / 10 / ±15 %R ±2r                      |
|                                                      | 600 to 1,150 / 50 / Approx. 20 %                                                 |                                      | 650 to 1200 / 50 / ±20 %R ±2r                     |
|                                                      | 1,200 to 1,500 / 50 / Approx. 25 %                                               |                                      | -                                                 |
| Frequencies                                          | Measurement frequency 2083 Hz<br>Transposition frequency 50, 60, 128 or 2,083 Hz |                                      | Measurement frequency<br>≤ 4.5 mV at 2,083 Hz     |
| Measurement ranges (μH) / Resolution (μH) / Accuracy |                                                                                  |                                      |                                                   |
| Loop inductance measurement                          | 10 to 100 / 1 / ±5 %±r                                                           |                                      | -                                                 |
|                                                      | 100 to 500 / 1 / ±3 %±r                                                          |                                      | -                                                 |
| Plages de mesures (V) / Resolution (V) / Accuracy    |                                                                                  |                                      |                                                   |
|                                                      | 0.1 to 4.9 / 0.1 / ±5 %±r                                                        |                                      | -                                                 |
| Contact voltage (calculated)                         | 5.0 to 49.5 / 0.5 / ±5 %±r                                                       |                                      | -                                                 |
|                                                      | 50.0 to 75.0 / 1 / ±10 %±r                                                       |                                      | -                                                 |
| Measurement ranges (A) / Resolution (A) / Accuracy   |                                                                                  |                                      |                                                   |
|                                                      | 0.200 to 0.999 mA / 1 μA / ±2 % ±50 μA                                           |                                      | 0.5 to 9.995 mA / 50 μA / ±2 %R ±200 μA           |
|                                                      | 1,000 to 2,990 mA - 3.00 to 9.99 mA / 10 μA / ±2 % ±50 μA                        |                                      | 10.00 to 99.90 mA / 100 μA / ±2 %R ±r             |
| Ammeter                                              | 10.00 to 29.90 mA - 30.0 to 99.9 mA / 100 μA / ±2 %±r                            |                                      | 100.00 to 299.0 mA / 1 mA / ±2 %R ±r              |
| 4,000-count display                                  | 100.0 to 299.0 mA - 0.300 to 0.990 A / 1 mA / ±2 %±r                             |                                      | 0.300 to 2.990 A / 10 mA / ±2 %R ±r               |
|                                                      | 1,000 to 2,990 A - 3.00 to 39.99 A / 10 mA / ±2 %±r                              |                                      | 3.00 to 20.00 A / 100 mA / ±2 %±r                 |
| Setup                                                |                                                                                  |                                      |                                                   |
| Modes                                                | Standard or advanced                                                             |                                      | Standard                                          |
| Alarms                                               | Configurable on Z, V and A                                                       |                                      | Configurable on Z, I                              |
| Buzzer                                               | Active / Inactive                                                                |                                      | Active                                            |
| HOLD                                                 | Manual or automatic PRE-HOLD                                                     |                                      |                                                   |
| Automatic power- off                                 | Active / Inactive                                                                |                                      |                                                   |

r = Resolution



### 1 CA 6416 or CA 6417 earth clamp or CA 6418 supplied with:

- A carrying case
- 4 x 1.5 V LR06 batteries
- 1 verification certificate
- 1 CD-ROM containing the operating instructions

### CA 6417 is supplied with:

- Simplified GTC software in addition

### To order

1 CA 6416 earth clamp

Reference: P01122015

1 CA 6417 earth clamp

Reference: P01122016

1 CA 6418 earth clamp

Reference: P01122018

### Recommended accessory

P01122301  
CL1 calibration loop

Download the free software  
Ground Tester Transfer Clamp (GTC)  
compatible with CA 6417

Download the ANDROID 6417 app  
from the Chauvin Arnoux Playstore to:

- use measurements on a smartphone or tablet by linking them to a GPS position, thus ensuring instant geolocation of measurements
- configure the CA 6417 clamp
- remotely view measurements in real time, or those recorded on the clamp
- email the measurement report

# Electrical equipment controllers for machines and switchboards

## Selection guide



|                                                                                         | CA 6161             | CA 6163             | CA 6165       |
|-----------------------------------------------------------------------------------------|---------------------|---------------------|---------------|
| <b>Insulation</b>                                                                       |                     |                     |               |
| 50 V <sub>DC</sub>                                                                      |                     |                     | ■             |
| 100 V <sub>DC</sub> / 250 V <sub>DC</sub> / 500 V <sub>DC</sub> / 1,000 V <sub>DC</sub> | ■ (1 GΩ)            | ■ (50 GΩ)           | ■ (200 MΩ)    |
| <b>Dielectric tests</b>                                                                 |                     |                     |               |
| 40 to 3,000 V <sub>AC</sub>                                                             | ■                   | ■                   |               |
| 40 to 5,350 V <sub>AC</sub>                                                             |                     | ■                   |               |
| 100 to 5,000 V <sub>AC</sub>                                                            |                     |                     | ■ AC/DC       |
| <b>Continuity</b>                                                                       |                     |                     |               |
| I test 0.1 A                                                                            | ■                   | ■                   |               |
| I test 0.2 A; 10 A                                                                      | ■                   | ■                   | ■             |
| I test 25 A                                                                             |                     | ■                   | ■             |
| I test 4 A                                                                              |                     |                     | ■             |
| <b>Voltage drop</b>                                                                     |                     |                     |               |
| I test 10 A                                                                             | ■                   | ■                   | ■             |
| <b>Discharge time at 34 V / 60 V / 120 V</b>                                            |                     |                     |               |
| Discharge time                                                                          | ■                   | ■                   | ■             |
| <b>Leakage current</b>                                                                  |                     |                     |               |
| PE direct leakage method                                                                | ■                   | ■                   | ■             |
| Differential leakage method                                                             | ■                   | ■                   | ■             |
| Direct & differential method via clamp                                                  | ■                   | ■                   |               |
| Substitution method                                                                     |                     | ■                   | ■             |
| Contact leakage method                                                                  |                     | ■                   | ■             |
| <b>Functional test</b>                                                                  |                     |                     |               |
| Active, reactive & apparent power values, voltage, current                              | ■ (except reactive) | ■ (except reactive) | ■             |
| THD U, THD I                                                                            | ■                   | ■                   | ■             |
| <b>Loop impedance and resistance</b>                                                    |                     |                     |               |
| Zs-loop (L-PE) (Trip), Calculation of I <sub>k</sub> (PFC)                              | ■                   | ■                   |               |
| Zs-loop (L-PE) (No Trip), Calculation of I <sub>k</sub> (PFC)                           | ■                   | ■                   |               |
| Zi-loop (L-N or L-L), Calculation of I <sub>dc</sub> (PSCC)                             | ■                   | ■                   |               |
| <b>RCD TEST</b>                                                                         |                     |                     |               |
| PRCD x 0.5 / x1 / x5 x IΔn                                                              | ■                   | ■                   |               |
| RCD x 0.5 / x1 / x2 / x4 / x5 / x10 x IΔn (AC, A, F, B, B+)                             | ■                   | ■                   |               |
| <b>Other functions</b>                                                                  |                     |                     |               |
| Alarms                                                                                  | ■                   | ■                   | ■             |
| Phase sequence                                                                          | ■                   | ■                   |               |
| <b>Data storage / Communication</b>                                                     |                     |                     |               |
| Data storage                                                                            | ■ 100,000 tests     | ■ 100,000 tests     | ■ μSD         |
| Communication                                                                           | USB / WiFi          | USB / WiFi          | RS232 / USB   |
| Result sent to printer                                                                  | ■                   | ■                   | ■             |
| Interfaces for START / STOP pedal and lamps                                             | ■                   | ■                   | ■             |
| Interface for barcode                                                                   | ■ USB               | ■ USB               | ■ RS232 / USB |
| DOOR OPEN interface                                                                     | ■                   | ■                   | ■             |
| <b>PC software</b>                                                                      |                     |                     |               |
| Automatic test sequences                                                                | ■                   | ■                   | ■             |

# Electrical equipment controllers for machines and switchboards

## CA 6161 - CA 6163

600 V  
CAT III

IP 64

IEC  
61557Auto  
Script

## Versatile, multi-standard controllers

The CA 6161 and CA 6163 electrical equipment controllers enable all electrical safety tests required by standards and regulations such as low-voltage switchboards in accordance with IEC/EN 61439-1 and machines in accordance with IEC/EN 60204-1 to be carried out. The EN 50699 and EN 50678 standards are also covered.

|                                                                            | CA 6161                                                                                                         | CA 6163                                                                  | Test socket |
|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-------------|
| High voltage                                                               |                                                                                                                 |                                                                          |             |
| AC / AC Rampe                                                              | 40 - 3,000 V                                                                                                    | 40 - 5,350 V                                                             |             |
| Resolution / Accuracy                                                      | 10 V / $\pm 1$ % R                                                                                              |                                                                          |             |
| Max. current                                                               | 200 mA                                                                                                          |                                                                          |             |
| Insulation                                                                 |                                                                                                                 |                                                                          |             |
| Voltage de test                                                            | 100 V / 250 V / 500 V / 1,000 V                                                                                 |                                                                          | ■           |
| Maximum measurement / Accuracy                                             | 1,000 M $\Omega$ / $\pm 10$ % R                                                                                 | 50 G $\Omega$ * / $\pm 10$ % R                                           |             |
| Continuity                                                                 |                                                                                                                 |                                                                          |             |
| Measurement current                                                        | 0.1 A; 0.2 A; 10 A (voltage drop)                                                                               |                                                                          | ■           |
|                                                                            | -                                                                                                               | 25 A*                                                                    |             |
| Measurement range                                                          | 120 $\Omega$ ; 60 $\Omega$ ; 0.5 $\Omega$                                                                       | 120 $\Omega$ ; 60 $\Omega$ ; 0.5 $\Omega$ ; 0.4 $\Omega$                 |             |
| Accuracy                                                                   | $\pm 2$ % R                                                                                                     | $\pm 2$ % R                                                              |             |
| Leakage current                                                            |                                                                                                                 |                                                                          |             |
| Direct I-PE- & I-differential Range / accuracy                             | Socket: 30 mA / $\pm 2$ % R<br>Clamp: 40 A / $\pm 2$ % R                                                        |                                                                          |             |
| I-substitution                                                             | -                                                                                                               | Socket: 50 mA                                                            |             |
| Contact leakage                                                            | -                                                                                                               | Socket and three-point: 30mA / measurement network: unweighted, weighted |             |
| Loop / fuse table                                                          |                                                                                                                 |                                                                          |             |
| Z <sub>S</sub> No Trip (Z <sub>S</sub> & R <sub>S</sub> ) Range / Accuracy | 2 000 $\Omega$ / $\pm 5$ % L / Ik (Range d'Display) 20 kA                                                       |                                                                          |             |
| Z <sub>S</sub> high current and Z <sub>i</sub> Range / Accuracy            | 400 $\Omega$ / $\pm 5$ % L / Ik (Range d'Display) 20 kA                                                         |                                                                          |             |
| Inductance Range / Accuracy                                                | 15 mH / $\pm 10$ % R                                                                                            |                                                                          |             |
| RCD & PRCD Types AC, A, F, B, B+; G, S                                     |                                                                                                                 |                                                                          |             |
| Voltage du réseau & calibres                                               | 440 V <sub>AC</sub> max; 10 / 30 / 100 / 300 / 500 / 1,000 mA / Var (6 - 1,000 mA)                              |                                                                          |             |
| Test en impulsion / Range / Accuracy                                       | x 0.5 ; x 1; x 2, x 4; x 5; x 10 (DC) I $\Delta$ n / 300 ms / $\pm 2$ ms                                        |                                                                          |             |
| Test en rampe / Resolution / Accuracy                                      | 10 / 30 / 100 / 300 / 500 / 1,000 mA; 0.3 x I $\Delta$ n to 1.06 x I $\Delta$ n / 0.1 mA / -0% + (7 % R + 2 mA) |                                                                          |             |
| Mesure de UF                                                               | 24.9 V / $\pm (15\%$ R + 3 ct); 70.0 V / $\pm (5\%$ R + 2 ct)                                                   |                                                                          |             |
| Discharge time at 34 V, 60 V, 120 V                                        |                                                                                                                 |                                                                          |             |
| Time / Voltage Up                                                          | 0.1 s - 9.9 s / 0.1 s / $\pm (1\%$ R + 1 ct); Socket & three-point: 34 V ; 60 V; 120 V                          |                                                                          | ■           |
| Power values                                                               |                                                                                                                 |                                                                          |             |
| Quantities                                                                 | Socket : U, I, P, S, F, P <sub>f</sub> , cos $\varphi$ , THD U, THD I                                           |                                                                          | ■           |
| Quantities                                                                 | Three-point + clamp: U, I, P, S, F, cos $\phi$ , P <sub>f</sub> , THD U, THD I                                  |                                                                          |             |
| Phase rotation                                                             |                                                                                                                 |                                                                          |             |
| Voltage et Frequency de l'installation                                     | 190.0 - 440.0 V ; 45-55 Hz                                                                                      |                                                                          |             |
| Pince de Current G72 (option)                                              |                                                                                                                 |                                                                          |             |
| Measuring range / Accuracy                                                 | 0.5 mA to 40 A / $\pm 2.5$ % R                                                                                  |                                                                          |             |
| General characteristics                                                    |                                                                                                                 |                                                                          |             |
| Display                                                                    | Colour touch screen; TN 800 x 480, 5"                                                                           |                                                                          |             |
| Data storage                                                               | 50,000 tests                                                                                                    | 100,000 test                                                             |             |
| Timer max.                                                                 | 40 min (depends on type of test)                                                                                |                                                                          |             |
| Communication                                                              | 1 x USB-B ; 2 x USB-A ; Wifi                                                                                    |                                                                          |             |
| Interfaces                                                                 | START / STOP pedals, DOOR Open, HV gun trigger, 4 lamps, barcode reader, RFID reader, sticker printer           |                                                                          |             |
| Power supply                                                               | 230 V <sub>AC</sub> ; $\pm 10\%$                                                                                |                                                                          |             |
| Dimensions / weight                                                        | 407 x 341 x 205 mm; 16 kg                                                                                       |                                                                          |             |
| Temperature / Protection                                                   | Operation: 0; + 45 °C; Storage: - 40; + 60 °C / IP 40 open / IP 64 closed                                       |                                                                          |             |
| Electrical safety                                                          | IEC 61010-1; IEC 61010-2-030; IEC 61010-2-034; 300 V CAT II; 300 V CAT III; 600 V CAT III ; IEC 61010-2-032     |                                                                          |             |
| Standards                                                                  | IEC 61557-1; -2; -3; -4; -6; -7; -10; -13; -14; -16 (partiel)                                                   |                                                                          |             |

\* hors prise d'essai



## + The extra

### The WiFi connection

This allows the user to remain safe outside the test area while viewing the tests in real time.

### The high-voltage gun with integrated trigger:

This allows a dielectric test to be triggered without having to press the TEST button. This ensures safety for the user, who then has both hands free.



## CA 6161 & CA 6163 supplied with:

- 1 accessories bag containing:
- 2 High-Voltage test guns with cables (3 m)
- 2 cables with silicone insulation: 1 red, 1 black (3 m)
- 1 black test probe
- 1 three-point lead with separated wires (2.5 m)
- 1 three-point lead with Euro socket (2.5 m)
- 3 crocodile clips: blue, red and green
- 3 crocodile test probes: blue, red and green
- 1 bag containing 3 extension connectors
- 1 USB-A-USB-B cable
- 1 x C19 Euro mains power cable (2.5 m)
- 1 Quick Start Guide
- 1 product safety datasheet
- 1 test report with measurement list

## CA 6161 with continuity accessories included:

- 2 x 10 A double continuity cables (2.5 m)
- 3 crocodile clips, 1 red, 2 black

## CA 6163 with continuity accessories included:

- 3 crocodile clips (red, green, blue)
- 1 x 25 A Kelvin gun (3 m)
- 1 x 25 A Kelvin crocodile clip (2.5 m)

## To order

CA 6161 Reference: P01145811

CA 6163 Reference: P01145831

Download the free software  
Machine Tester Transfer (MTT)  
compatible with CA 6161 and CA 6163



# Electrical equipment controllers for machines and switchboards

## CA 6165

600 V  
CAT II

IP 50

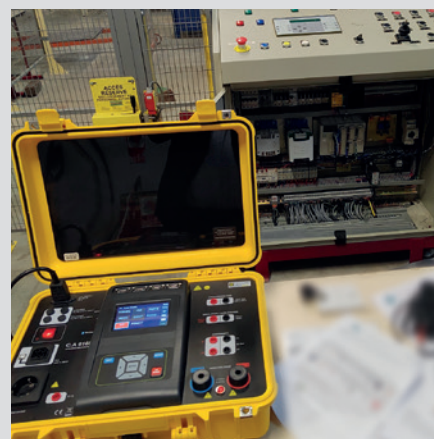


## Complete with DC dielectric test

- Capacitive colour touch screen
- Manual or automatic test sequences
- Storage of the tests on memory card up to 32 GB
- 5 kVac / 6 kVdc HV dielectric, 25 A continuity, insulation at 1,000 V
- Substitute direct leakage current, PE, differential leakage current and touch leakage current

### CA 6165

| High voltage                                               |                          |                                                                                                                                      |                                  |                                     |
|------------------------------------------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------------|
| AC / AC Programmable                                       | Range                    | 0 V to 1,999 V                                                                                                                       |                                  | 2 kV to 5 kV                        |
|                                                            | Resolution/Accuracy      | 1 V / $\pm 3\%$ R                                                                                                                    |                                  | 10 V / $\pm 3\%$ R                  |
| DC / DC Programmable                                       | Range                    | 0 V to 1,999 V                                                                                                                       |                                  | 2 kV to 6 kV                        |
|                                                            | Resolution/Accuracy      | 1 V / $\pm 3\%$ R                                                                                                                    |                                  | 10 V / $\pm 3\%$ R                  |
| Current                                                    |                          |                                                                                                                                      |                                  |                                     |
|                                                            | Range                    | AC: I apparent & resistive 0 mA to 99.9 mA<br>I capacitive: -99.9 mA to + 99.9 mA<br>DC: 0.01 mA to 9.99 mA                          |                                  |                                     |
|                                                            | Resolution/Accuracy      | AC: I apparent: 0.1 mA / $\pm 3\%$ R $\pm 3$ cts, indicative for I capacitive and I resistive<br>DC: 0.01 mA / $\pm (5\%$ R + 3 cts) |                                  |                                     |
| Continuity 0.2 A ; 4 A ; 10 A ; 25 A , Voltage drop (10 A) |                          |                                                                                                                                      |                                  |                                     |
|                                                            | Range                    | 0 to 19.99 $\Omega$                                                                                                                  | 20 to 99.9 $\Omega$              | 100 to 199.9 $\Omega$               |
|                                                            | Resolution               | 0.01 $\Omega$                                                                                                                        | 0.1 $\Omega$                     | 0.1 $\Omega$                        |
|                                                            | Accuracy                 | $\pm (2\%$ R + 2 cts)                                                                                                                | $\pm 3\%$ R                      | $\pm 5\%$ R                         |
|                                                            | Voltage drop (10 A)      | 0.00 V to 99.9 V                                                                                                                     |                                  |                                     |
| Insulation                                                 |                          |                                                                                                                                      |                                  |                                     |
|                                                            | Voltage                  | 50 V / 100 V                                                                                                                         |                                  | 250 V / 500 V / 1,000 V             |
|                                                            | Range                    | 0 to 19.99 M $\Omega$                                                                                                                | 20 M $\Omega$ to 99.9 M $\Omega$ | 0 to 19.99 M $\Omega$               |
|                                                            | Resolution               | 0.01 M $\Omega$                                                                                                                      | 0.1 M $\Omega$                   | 0.1 M $\Omega$                      |
|                                                            | Accuracy                 | $\pm (5\%$ R + 2 cts)                                                                                                                | $\pm 20\%$ R                     | $\pm (3\%$ R + 2 cts)               |
| Leakage current                                            |                          |                                                                                                                                      |                                  |                                     |
|                                                            | Method                   | Subs.                                                                                                                                | I PE                             | Diff.                               |
|                                                            | Range                    | 0.00 to 19.99 mA                                                                                                                     | 0.00 to 19.99 mA                 | 0.00 to 19.99 mA                    |
|                                                            | Resolution               | 10 $\mu$ A                                                                                                                           | 0.01 mA                          | 0.01 mA                             |
|                                                            | Accuracy                 | $\pm (5\%$ R + 3 cts)                                                                                                                | $\pm (3\%$ R + 3 cts)            | $\pm (3\%$ R + 5 cts)               |
| Discharge time at 34 V, 60 V, 120 V                        |                          |                                                                                                                                      |                                  |                                     |
|                                                            | Time                     | Range: 0 to 9.9 s                                                                                                                    | Res.: 0.1 s                      | Accuracy: $\pm (5\%$ R + 2 cts)     |
|                                                            | Up voltage               | Range: 0 to 550 V                                                                                                                    | Res.: 1 V                        | Accuracy: $\pm (5\%$ R + 3 cts)     |
| Power values                                               |                          |                                                                                                                                      |                                  |                                     |
|                                                            |                          | Active (P)                                                                                                                           | App. (S)                         | Reactive (Q)                        |
|                                                            | Range / resolution       | 0 to 3.70 kW / 0.01 W to 10 W                                                                                                        | 0 to 3.70 kVA / 0.01 VA to 10 VA | 0 to 3.70 kVar / 0.01 Var to 10 Var |
|                                                            | Accuracy                 | $\pm (5\%$ R + 5 cts)                                                                                                                | $\pm (5\%$ R + 10 cts)           | $\pm (5\%$ R + 10 cts)              |
|                                                            | Others                   | PF, Cos $\phi$ , THDi, THDu ; $(5\%$ R + 5 D)                                                                                        |                                  |                                     |
|                                                            | Voltage                  | 0.0 V to 199 V / 0.1 V / $\pm (3\%$ R + 10 cts)                                                                                      |                                  |                                     |
|                                                            | Current                  | 0 to 999 mA / 1 mA / $\pm (3\%$ R + 5 cts)                                                                                           |                                  |                                     |
| General specifications                                     |                          |                                                                                                                                      |                                  |                                     |
|                                                            | Display                  | TFT colour screen, 480 x 272 pixels                                                                                                  |                                  |                                     |
|                                                            | Data storage             | On microSD card                                                                                                                      |                                  |                                     |
|                                                            | Communication interfaces | RS232, USB, Bluetooth, Input / Outputs (2 x DB9)                                                                                     |                                  |                                     |
|                                                            | Power supply             | 110 V / 230 V - 50 Hz / 60 Hz; Max. consumption: 600W / 4.5 kW if charged on mains test socket                                       |                                  |                                     |
|                                                            | Dimensions / weight      | 435 x 292 x 155 mm / 17 kg                                                                                                           |                                  |                                     |
|                                                            | Temperature              | Operation: 0 °C to +40 °C;<br>Storage: -10 °C to + 60 °C                                                                             |                                  |                                     |
|                                                            | Protection               | IP40 open / IP50 closed                                                                                                              |                                  |                                     |
|                                                            | Electrical safety        | 300 V CAT II / 600 V CAT II (DISCH1 / DISCH2)                                                                                        |                                  |                                     |



## + The extra

- External and internal discharge time up to 10 s / 550 V peak
- Functional test: P, Q, S, PF, Cos  $\phi$ , THDU, THDI, U and I
- Inputs-outputs transmitted to pedal, indicator lamps, PC
- Compatible with 230 V / 115 V TT, TN or IT networks



## CA 6165 delivered with:

- 1 accessories bag containing
- 2 high-voltage guns with cables (2 m)
- 2 test probes (red / black)
- 3 red crocodile clips, 2 black crocodile clips
- 1 RS232 cable
- 1 USB cable
- 1 EURO mains power cable
- 2 double continuity cables 2.5 m long
- 1 set of insulation cables 2.5 m long (red / black)
- 1 single continuity cable 1.5 m long (red)
- MTLINK PC software on CD-ROM
- 1 EURO discharge cable
- 1 multilingual safety datasheet
- 1 measurement report

## To order

CA 6165

Reference: P01145851

Download the free software MTLINK  
compatible with CA 6165

## Micro-ohmmeter

CA 6240

50 V  
CAT III

IP 53



## Quality control of contacts

- M4-wire measurement method
- Automatic current reversal
- Test current up to 10 A
- 1  $\mu\Omega$  resolution
- Automatic recording "on the fly" or manual recording

|                      | CA 6240                   |                       |                       |                       |                       |                       |
|----------------------|---------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Measurement method   | 4-wire method             |                       |                       |                       |                       |                       |
| Range                | 4,000 $\mu\Omega$         | 40 m $\Omega$         | 400 m $\Omega$        | 4,000 m $\Omega$      | 40 $\Omega$           | 400 $\Omega$          |
| Accuracy             | 0.25 %<br>$\pm 2$ cts     | 0.25 %<br>$\pm 2$ cts | 0.25 %<br>$\pm 2$ cts | 0.25 %<br>$\pm 2$ cts | 0.25 %<br>$\pm 2$ cts | 0.25 %<br>$\pm 2$ cts |
| Resolution           | 1 $\mu\Omega$             | 10 $\mu\Omega$        | 0.1 m $\Omega$        | 1 m $\Omega$          | 10 m $\Omega$         | 100 m $\Omega$        |
| Measurement current  | 10 A                      | 1 A                   | 1 A                   | 100 mA                | 10 mA                 | 10 mA                 |
| Data storage         | 100 measurements          |                       |                       |                       |                       |                       |
| Communication output | Optical link / USB        |                       |                       |                       |                       |                       |
| Power supply         | NiMH rechargeable battery |                       |                       |                       |                       |                       |
| Dimensions / weight  | 270 x 250 x 180 mm / 5 kg |                       |                       |                       |                       |                       |
| Electrical safety    | IEC 61010 - 50 V CAT III  |                       |                       |                       |                       |                       |

Diagnostics  
& control

Education



Transport



Industries

Production, transport  
& distribution

## + The extra

- The CA 6240 is compatible with the DataView® software



## CA 6240 supplied with:

- 1 shoulder bag
- 1 set of 2 x 10 A Kelvin clamps with 3 m cable
- 1 European 2P mains power cable
- Data export software
- 1 optical / USB communication cable

## To order

CA 6240

Reference: P01143200

## Recommended accessories



P01102056

Double test probes 1 A (set of 2)



P01101783

Mini Kelvin clamp 1 A (set of 2)

Download the free software Micro-Ohmmeter  
Transfer (MOT) compatible with CA 6240

Micro-ohmmeter

CA 6255



50 V  
CAT III

IP 53

Optimized measurement on inductive objects

- 4-wire measurement method
- Automatic compensation of stray currents
- Test current of up to 10 A
- Measurements up to 2,500 Ω, resolution 0.1 μΩ
- Integrated “temperature compensation” function

|                          | CA 6255                                                        |                 |                  |                   |                 |                  |                   |
|--------------------------|----------------------------------------------------------------|-----------------|------------------|-------------------|-----------------|------------------|-------------------|
| Measurement method       | Method 4 fils                                                  |                 |                  |                   |                 |                  |                   |
| Range                    | 5.0000 mΩ                                                      | 25.000 mΩ       | 250.00 mΩ        | 2500.0 mΩ         | 25.000 Ω        | 250.00 Ω         | 2500.0 Ω          |
| Accuracy                 | 0.05 %<br>+1 μΩ                                                | 0.05 %<br>+3 μΩ | 0.05 %<br>+30 μΩ | 0.05 %<br>+0.3 mΩ | 0.05 %<br>+3 mΩ | 0.05 %<br>+30 mΩ | 0.05 %<br>+300 mΩ |
| Resolution               | 0.1 μΩ                                                         | 1 μΩ            | 10 μΩ            | 0.1 mΩ            | 1 mΩ            | 10 mΩ            | 100 mΩ            |
| Measurement current      | 10 A                                                           | 10 A            | 10 A             | 1 A               | 100 mA          | 10 mA            | 1 mA              |
| Measurement mode         | Inductive, non-inductive, non-inductive with automatic trigger |                 |                  |                   |                 |                  |                   |
| Temperature compensation | By temperature sensor or manual                                |                 |                  |                   |                 |                  |                   |
| Data storage             | 1,500 measurements                                             |                 |                  |                   |                 |                  |                   |
| Communication output     | RS232 link                                                     |                 |                  |                   |                 |                  |                   |
| Power supply             | NiMH rechargeable battery                                      |                 |                  |                   |                 |                  |                   |
| Dimensions / weight      | 270 x 250 x 180 mm / 4 kg                                      |                 |                  |                   |                 |                  |                   |
| Electrical safety        | IEC 61010 - CAT III 50 V                                       |                 |                  |                   |                 |                  |                   |



+ The extra

- The CA 6255 is compatible with the DataView® software
- Possibility of connecting the Pt100 sensor (option) directly to the instrument



CA 6255 delivered with a bag containing:

- 1 set of cables 3 m long terminated by Kelvin clamps
- 1 Euro mains power cable 2 m long
- 1 CD-ROM containing the MOT (Micro-Ohmmeter Transfer) software
- 1 RS 232 communication cable
- 1 CD-ROM containing the user's manual in 9 languages

To order

CA 6255  
Reference: P01143221

Recommended accessories

- 

P01102056  
Doubles 1 A test probes (x 2)
- 

P01101783  
Mini Kelvin clamp (set of 2)
- 

P01102013  
Pt100 temperature probe

Download the free software Micro-Ohmmeter Transfer (MOT) compatible with CA 6255

## Micro-ohmmeter

CA 6292



IP 54



## The CA 6292 is suitable for many sectors of activity, for :

- Testing the contact resistance of HTA/HTB cells
- Checking the quality of contacts on circuit breakers, switches, relays, etc.
- Resistance testing on busbars, cables, etc.
- Continuity testing on rails, axles or welded joints
- Inspection of surface condition and metallisation
- Testing of cut-off devices

## CA 6292

|                         |                                                                                                       |                                                 |                                          |
|-------------------------|-------------------------------------------------------------------------------------------------------|-------------------------------------------------|------------------------------------------|
| Test current            | Programmable from 20 to 200 A                                                                         |                                                 |                                          |
| Resistance              | 0.1 $\mu\Omega$ to 2 m $\Omega$                                                                       | 2 to 200 m $\Omega$                             | 200 m $\Omega$ to 1 $\Omega$             |
| Resolution              | 0.1 $\mu\Omega$<br>(200 A max)                                                                        | 10 $\mu\Omega$<br>(25 A max to 200 m $\Omega$ ) | 1 m $\Omega$<br>(5 A max at 1 $\Omega$ ) |
| Accuracy                | $\pm 1\%$ from 50 $\mu\Omega$ to 1 $\Omega$                                                           |                                                 |                                          |
| Output voltage          | 110 V <sub>AC</sub> : 4.2 V @ 200 A<br>220 V <sub>AC</sub> : 8.6 V @ 200 A                            |                                                 |                                          |
| Maximum load resistance | 110 V <sub>AC</sub> : 20 m $\Omega$ @ 200 A<br>220 V <sub>AC</sub> : 42 m $\Omega$ @ 200 A            |                                                 |                                          |
| Measurement method      | 4 Kelvin-type connection terminals                                                                    |                                                 |                                          |
| Test mode               | Normal or Both Sides Grounded (BSG)                                                                   |                                                 |                                          |
| Test duration           | Adjustable from 5 to 120s @ 200 A<br>Unlimited below 100 A                                            |                                                 |                                          |
| Data storage            | Up to 8,000 measurement results                                                                       |                                                 |                                          |
| Interface               | USB 2.0                                                                                               |                                                 |                                          |
| Software                | DataView®                                                                                             |                                                 |                                          |
| Power supply            | 100 to 240 V <sub>AC</sub> - 50/60 Hz                                                                 |                                                 |                                          |
| Dimensions              | 502 x 394 x 190 mm                                                                                    |                                                 |                                          |
| Weight                  | Approx. 13 kg                                                                                         |                                                 |                                          |
| Operating temperature   | 0 °C to +55 °C                                                                                        |                                                 |                                          |
| Storage temperature     | -10 °C to +70 °C                                                                                      |                                                 |                                          |
| Humidity                | 95 % HR                                                                                               |                                                 |                                          |
| Protection              | Protected against voltage surges, short-circuits, overheating and overvoltage on the safety terminals |                                                 |                                          |
| Ingress protection      | IP 54                                                                                                 |                                                 |                                          |
| Electrical safety       | IEC 61010-1                                                                                           |                                                 |                                          |
| Consumption             | 1,500 VA max                                                                                          |                                                 |                                          |

## Current measurement with the MR6292 clamp available as an option

|                                         |                             |
|-----------------------------------------|-----------------------------|
| Measurement range                       | 1.0 - 50.0 A <sub>ac</sub>  |
| Resolution                              | 0.1 mA                      |
| Intrinsic uncertainty                   | $\pm (3\% + 2 \text{ cts})$ |
| Output signal                           | 10 mV / A <sub>ac</sub>     |
| Load impedance                          | > 100 k $\Omega$ // 100 pF  |
| Influence of conductor position in jaws | 0.50 %                      |

Diagnostics  
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## + The extra

- Permanent test at 100 A and for up to 120 s at 200 A
- Test current up to 200 A
- Resistance from 0.1  $\mu\Omega$  to 1  $\Omega$
- Safe measurements: BSG method (Both Sides Grounded)
- Storage of up to 8,000 measurement results

## CA 6292 delivered with a hard case containing:

- 1 set of 2 Kelvin leads 6 m long (red / black) with adjustable-clamp connections
- 1 green earth lead 3 m long with 1 crocodile clip
- 1 USB cable 1.5 m long
- 1 T1 5 A 250 V fuse mounted in the instrument
- 1 European mains power lead
- 1 CD-ROM containing the DataView® software
- 1 CD-ROM containing the user manual in 5 languages

## To order

CA 6292      Reference: P01143300

## Recommended accessories



P01295486

1 set of 2 Kelvin cables, 6 m (red/black) with clamp connections



P01295488

1 green earth cable with crocodile clip



P01120470

MR 6292 clamp





Cable and metal conductor locator

CA 6683 LOCAT



For your maintenance, renovation and home improvement projects

The CA 6683 LOCAT locator allows you to find the location of electrical power cables, network/telecommunications cables, pipes, ducts, conduits or any metal conductors.

- Can be used on live and non-live installations
- Digital, visual and audible indication for intuitive conductor tracking
- Large LCD display with indication of the transmission power of the identification code and the voltage present on the tested circuit

| CA 6683E transmitter                  |                                                                                                                                    |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Display                               | Backlit graphic LCD display                                                                                                        |
| Information displayed                 | Measured voltage level, polarity (AC or DC), transmitted signal power, battery status, identification code, high voltage presence. |
| External voltage identification range | 12 V, 50 V, 120 V, 230 V and 400 V 50/60 Hz or DC                                                                                  |
| Output signal frequency               | 125 kHz                                                                                                                            |
| Signal power                          | Adjustable (3 levels)                                                                                                              |
| Transmitter identification            | Digital signal coding allowing the use of 7 transmitters simultaneously                                                            |
| Power supply                          | 6 x 1.5 V LR03/AAA batteries                                                                                                       |
| Security                              | Compliant with IEC 61010 300 V CAT III                                                                                             |
| Operating temperature                 | 0 to 40 °C                                                                                                                         |
| Storage temperature                   | -20 to +60 °C                                                                                                                      |
| Dimensions                            | 160 x 84 x 40 mm                                                                                                                   |
| Weight                                | Approx. 350 g                                                                                                                      |

| CA 6683R receiver                   |                                                                                                                                                                                    |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Screen                              | Backlit graphic LCD display                                                                                                                                                        |
| Information displayed               | Signal amplitude (digital value + graduated scale), detection sensitivity, transmitter identification code and transmitted signal strength, battery status, high voltage presence. |
| Detection distance with transmitter | - in unipolar mode: 2 m typical<br>- in bipolar mode: 0.5 m typical<br>- single loopback line: up to 2.5 m                                                                         |
| Detection sensitivity               | Automatic or manual adjustment (7 levels)                                                                                                                                          |
| Non-contact voltage detection (NCV) | 12 V to 1,000 V AC at 50/60Hz voltage referenced to earth                                                                                                                          |
| Other functions                     | Torch;<br>audible signal deactivation                                                                                                                                              |
| Power supply                        | 6 x 1.5 V LR03/AAA batteries                                                                                                                                                       |
| Safety                              | Type F probe compliant with IEC 61010-031 300 V CAT III                                                                                                                            |
| Operating temperature               | 0 to 40 °C                                                                                                                                                                         |
| Storage temperature                 | -20 to +60 °C                                                                                                                                                                      |
| Dimensions                          | 198 x 67 x 36 mm                                                                                                                                                                   |
| Weight                              | Approx. 310 g                                                                                                                                                                      |



**1 CA 6683E transmitter and 1 CA 6683R receiver delivered in a case with:**

- 1 set of 2 cables
- 1 set of 2 crocodile clips
- 1 T-shaped earth stake
- 2 sets of 6 1.5V LR03/AAA alkaline batteries
- 1 set of 3 adapters: P/N mains plug, bayonet socket B22 and screw socket E27.
- 1 operating manual in 5 languages.
- 1 certificate of verification

**To order**

CA 6683 LOCAT

Reference: P01141627

## Phase rotation testers

### CA 6608 - CA 6609



600 V  
CAT III

IP 40

IEC  
61557

### Phase rotation and / or motor testers

- Indication of phase presence or absence
- Determination of a motor's rotation direction with or without contact (CA 6609 only)
- Automatic tests as soon as the connections have been set up
- Terminals and cables identified by colour coding to simplify connection

|                                               | CA 6608                                  | CA 6609                                                                                                                           |
|-----------------------------------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Operating voltage according to phase rotation | 40 to 650 V <sub>AC</sub> between phases | With connections:<br>40 to 600 V <sub>AC</sub> between phases<br>Without connection:<br>120 to 400 V <sub>AC</sub> between phases |
| Frequency range                               | 15 to 400 Hz                             |                                                                                                                                   |
| Power supply                                  | Self-powered via the measurement inputs  | 9 V battery                                                                                                                       |
| Dimensions                                    | 130 x 69 x 32 mm                         |                                                                                                                                   |
| Weight                                        | 130 g                                    | 170 g                                                                                                                             |
| Electrical safety                             | IEC 61010-1 600 V CAT III<br>IEC 61557-7 |                                                                                                                                   |



#### CA 6608 phase rotation testers delivered in a shoulder bag with:

- 3 test leads
- 3 crocodile clips

#### CA 6609 phase rotation and motor tester delivered in a shoulder bag with:

- 3 test leads
- 3 crocodile clips

#### To order

CA 6608

Reference: P01191304

CA 6609

Reference: P01191305

Battery capacity tester

CA 6630



50 V  
CAT III

IP 53

Battery capacity tester

- Zero adjustment function for compensation of the voltage circuit displayed
- 2-display LCD screen
- 7-hour battery life in continuous operation with 6 x 1.5 V batteries (not supplied)
- Capacity test from 35 Ah to 500 Ah
- Nickel-Cadmium, Lithium-Ion, Nickel-Metal-Hybrid or Lead-Acid batteries



+ The extra

- Simultaneous display of internal resistance (precise 4-wire method) and open-circuit voltage
- Comparator function for quick assessment of battery deterioration

|                           | CA 6630                                                            |         |        |         |
|---------------------------|--------------------------------------------------------------------|---------|--------|---------|
| Resistance measurement    |                                                                    |         |        |         |
| Range                     | 40 mΩ                                                              | 400 mΩ  | 4 Ω    | 40 Ω    |
| Resolution                | 10 μΩ                                                              | 100 μΩ  | 1 mΩ   | 10 mΩ   |
| Measurement current       | 37.5 mA                                                            | 3.75 mA | 375 μA | 37.5 μA |
| Accuracy                  | ± (1 % R + 8 digits)<br>Temp. coeff.: ± ( 0.1 %R + 0.5 digit) / °C |         |        |         |
| Measurement               | 1.5 mV <sub>AC</sub>                                               |         |        |         |
| Measurement frequency     | 1 kHz ± 10 %                                                       |         |        |         |
| Voltage measurement       |                                                                    |         |        |         |
| Range                     | 4 V                                                                |         | 40 V   |         |
| Resolution                | 1 mV                                                               |         | 10 mV  |         |
| Accuracy                  | ± (0.1 % R + 6 digits)                                             |         |        |         |
| Max. consumed power       | 1 VA                                                               |         |        |         |
| Mechanical specifications |                                                                    |         |        |         |
| Dimensions                | 250 x 100 x 45 mm                                                  |         |        |         |
| Weight                    | 500 g batteries included                                           |         |        |         |



CA 6630 delivered in a hard case containing:

- 1 set of 2 measurement leads 1 m long terminated by retractable test probes
- PC data transfer software to export and process the stored data
- 1 CA 6630 / PC connection cable

To order

CA 6630  
Reference: P01191303

Recommended accessory

P01102103  
Set of 2 leads with retractable test probes

## Ratiometer

## DTR 8510

50 V  
CAT IV

IP 53



## Accuracy for qualifying transformers

- Measurement of the transformation ratio of power, potential and current transformers
- Storage of up to 10,000 measurement results
- Displays the transformation ratio, excitation current, winding polarity and percentage deviation from nominal values
- Direct reading of the transformation ratio from 0.8000:1 to 8000.0:1
- Tests performed by primary excitation with secondary measurement

|                               | DTR 8510                                                                                                                                      |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Range of ratios (TT / TP)     | Automatic: 0.8000 to 8,000:1                                                                                                                  |
| Accuracy (VT / PT)            | Range of ratios                                                                                                                               |
|                               | 0.8000 to 9.9999                                                                                                                              |
|                               | 10.000 to 999.99                                                                                                                              |
|                               | 1,000.0 to 4,999.9                                                                                                                            |
|                               | 5,000.0 to 8,000.0                                                                                                                            |
| Accuracy (% of reading)       |                                                                                                                                               |
| ± 0.2 %                       |                                                                                                                                               |
| ± 0.1 %                       |                                                                                                                                               |
| ± 0.2 %                       |                                                                                                                                               |
| ± 0.25 %                      |                                                                                                                                               |
| Range of ratios (CT)          | Automatic range: 0.8000 to 1,000.0                                                                                                            |
| Accuracy (CT)                 | ± 0.5 % L                                                                                                                                     |
| Excitation signal             | VT / PT mode: 32 Vrms max.<br>CT mode: auto level 0 to 1 A, 0.1 to 4.5 Vrms                                                                   |
| Display of excitation current | Range: 0 to 1,000 mA; Accuracy: ± (2 %R + 2 mA)                                                                                               |
| Excitation frequency          | 70 Hz                                                                                                                                         |
| Display                       | Alphanumeric LCD, 2 lines of 16 characters with adjustment of the contrast and backlighting.<br>Easy to read in both day and night conditions |
| Available languages           | French, English, Spanish, Italian, German, Portuguese                                                                                         |
| Measurement method            | As per the IEEE Std C57.12.90™ standard                                                                                                       |
| Power supply                  | 2 x 12 V, NiMH rechargeable batteries, 1,650 mAh                                                                                              |
| Battery life                  | Up to 10 hours in continuous operation, low battery alert                                                                                     |
| Battery charger               | Universal input (90 to 264 Vrms), smart charger                                                                                               |
| Charging time                 | < 4 hours for full charge                                                                                                                     |
| Data storage                  | 10,000 tests                                                                                                                                  |
| Date / time                   | Power supply by dedicated battery, real-time clock                                                                                            |
| Communication                 | USB 2.0, optical isolation, 115.2 kB                                                                                                          |
| Software                      | Delivered with the DataView® analysis software                                                                                                |
| Dimensions / weight           | 272 x 248 x 130 mm / 3.7 kg                                                                                                                   |
| Connection                    | XLR connectors                                                                                                                                |
| Cables                        | Screened H and X cables, length 4.6 m (15 ft), equipped with colour-coded crocodile clips                                                     |
| Casing                        | Rugged polypropylene casing, UL 90 V0                                                                                                         |
| Vibrations                    | IEC 68-2-6 (1.5 mm at 55 Hz)                                                                                                                  |
| Shocks                        | IEC 68-2-27 (30 G)                                                                                                                            |
| Falls                         | IEC 68-2-32 (1 m)                                                                                                                             |
| Ingress protection            | IP 40 with lid open as per EN 60529<br>IP 53 with lid closed as per EN 60529                                                                  |
| Safety                        | EN 61010-1, 50 V CAT IV; pollution degree 2                                                                                                   |

Diagnostics  
& control

Education



Industries

Production, transport  
& distribution

## + The extra

- Up to 10 hours of continuous operation thanks to NiMH battery power supply



## DTR 8510 delivered with:

- 1 carrying case
- 1 set of 4.6 m cables with crocodile clips
- 1 external battery charger with power cord
- 1 USB cable
- 1 NiMH battery pack
- 1 DataView software

## To order

DTR 8510

Reference: P01157702

## Recommended accessories

P01295143A  
Set of 2 cables, length 4.6 mP01295293  
USB cable



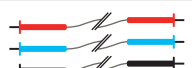
## Accessories for multifunction installation testers

■ Accessories ■ Included in the initial delivery

|                               | Article code                                                                                   | Description                                                         | CA 6113 | CA 6116N | CA 6117 | CA 6131 | CA 6133 |
|-------------------------------|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------|----------|---------|---------|---------|
| MEASUREMENT LEADS AND SENSORS |  P01295398    | .5 m three-point lead with separate wires                           | ■       | ■        | ■       |         |         |
|                               |  HX0300       | Three-point Euro cable                                              |         |          |         | ■       | ■       |
|                               |  P01295393    | Three-point cable for EURO mains socket test                        | ■       | ■        | ■       |         |         |
|                               |  P01295094    | 2 elbowed-straight safety leads - (red and black) 3 m long          | ■       | ■        | ■       |         |         |
|                               |  P01101921    | 3 x Ø 4 mm test probes - (red, blue and green)                      | ■       | ■        | ■       |         |         |
|                               |  P01101922    | 3 crocodile clips (red, blue and green)                             | ■       | ■        | ■       |         |         |
|                               |  P01102092A   | CA 6116N remote-control probe                                       | ■       | ■        | ■       |         |         |
|                               |  P01102157    | CA 6131 - CA 6133 remote-control probe                              |         |          |         | ■       | ■       |
|                               |  P01101943    | Spare black test probe for remote-control probe                     | ■       | ■        | ■       |         |         |
|                               |  P01120335    | C177 clamp (20 A)                                                   | ■       |          |         |         |         |
|                               |  P01120336    | C177A clamp (200 A)                                                 | ■       | ■        | ■       |         |         |
|                               |  P01120460   | MN77 clamp (20 A)                                                   | ■       | ■        | ■       |         |         |
|                               |  P01120439  | MN73A clamp                                                         |         |          |         |         | ■       |
|                               |  P01120421  | MN73 clamp                                                          |         |          |         | ■       |         |
| POWER SUPPLY / BATTERIES      |  P01102057  | PA 30 W mains power pack                                            | ■       |          |         |         |         |
|                               |  P01102129  | Type-2 power pack / charger without mains lead (requires P01295174) |         | ■        | ■       |         |         |
|                               |  P01296024  | NiMH 4AH battery pack                                               | ■       |          |         |         |         |
|                               |  P01296047  | Li-Ion battery pack                                                 |         | ■        | ■       |         |         |
|                               |  P01102130  | Li-Ion charging support without mains lead                          |         | ■        | ■       |         |         |
|                               |  P01295174  | EURO 2P mains lead                                                  | ■       | ■        | ■       |         |         |
|                               |  HX0061     | DC / DC vehicle cigarette-lighter charger                           | ■       |          |         |         |         |
| MISCELLANEOUS                 |  P01102186  | Type-R USB charger                                                  |         |          |         |         | ■       |
|                               |  P01102084A | Continuity rod                                                      | ■       | ■        | ■       | ■       | ■       |
|                               |  P01102017  | 15 m earth kit (red / blue / green)                                 | ■       | ■        | ■       | ■       | ■       |
|                               |             | P01102018                                                           | ■       | ■        | ■       |         |         |
|                               |                                                                                                | P01102021                                                           | ■       | ■        | ■       |         |         |
|                               |                                                                                                | P01102022                                                           | ■       | ■        | ■       |         |         |
|                               |  P01298081  | 4-point hands-free strap (Model 2)                                  | ■       | ■        | ■       |         |         |
|                               |  P01298057  | Hand strap                                                          | ■       | ■        | ■       |         |         |
|                               |  P01102094  | CA 6116 screen protection film                                      | ■       | ■        | ■       |         |         |
|                               |  P01298056  | Carrying bag no. 22                                                 | ■       | ■        | ■       |         |         |
|                               |  P01295293  | USB-A USB-B lead                                                    | ■       | ■        | ■       |         |         |
|                               |  P01102095  | DataView® software                                                  |         | ■        | ■       |         |         |
|                               |  P01298082  | Comfort strap                                                       | ■       | ■        | ■       |         |         |
|                               |  HX0302     | 4-point strap                                                       |         |          |         | ■       | ■       |
|                               |                                                                                                |                                                                     |         |          |         |         |         |

## Measurement leads for insulation testers

■ Accessories ■ Included in the initial delivery

|                | Article code                                                                        | Description                             | Longueur                                                                             | CA 6505 | CA 6545 | CA 6547 | CA 6549 | CA 6550 | CA 6555 |
|----------------|-------------------------------------------------------------------------------------|-----------------------------------------|--------------------------------------------------------------------------------------|---------|---------|---------|---------|---------|---------|
| 5 KV RANGE     |    | P01295231                               | Red simplified HV safety lead / black with rear connection                           | 3 m     | ■       | ■       | ■       | ■       |         |
|                |    | P01295232                               | Blue simplified HV safety lead + blue crocodile clip                                 | 3 m     | ■       | ■       | ■       | ■       |         |
|                |    | P01295516                               | Blue guarded HV safety lead with rear connection                                     | 0.35 m  | ■       | ■       | ■       | ■       |         |
|                |    | P01295510 +<br>P01295506 +<br>P01295513 | Set of 3 safety leads with HV crocodile clip (red / blue / black)                    | 3 m     | ■       | ■       | ■       | ■       |         |
|                |    | P01295507                               | Safety lead with blue HV crocodile clip                                              | 8 m     | ■       | ■       | ■       | ■       |         |
|                |    | P01295511                               | Safety lead with red HV crocodile clip                                               | 8 m     | ■       | ■       | ■       | ■       |         |
|                |    | P01295514                               | Safety lead with rear connection and black HV crocodile clip                         | 8 m     | ■       | ■       | ■       | ■       |         |
|                |   | P01295508                               | Safety lead with blue HV crocodile clip                                              | 15 m    | ■       | ■       | ■       | ■       |         |
|                |  | P01295512                               | Safety lead with red HV crocodile clip                                               | 15 m    | ■       | ■       | ■       | ■       |         |
|                |  | P01295515                               | Safety lead with rear connection and black HV crocodile clip                         | 15 m    | ■       | ■       | ■       | ■       |         |
| 10/15 KV RANGE |  | P01295465                               | Set of 3 red, blue and black simplified HV safety leads with rear connection         | 3 m     |         |         |         |         | ■ ■     |
|                |  | P01295517 +<br>P01295520 +<br>P01295523 | Set of 3 safety leads with red / blue / black HV crocodile clip with rear connection | 3 m     |         |         |         |         | ■ ■     |
|                |  | P01295526                               | Blue guarded HV safety lead with rear connection                                     | 0.5 m   |         |         |         |         | ■ ■     |
|                |  | P01295521                               | Safety lead with blue HV safety lead                                                 | 8 m     |         |         |         |         | ■ ■     |
|                |  | P01295518                               | Safety lead with red HV crocodile clip                                               | 8 m     |         |         |         |         | ■ ■     |
|                |  | P01295524                               | Safety lead with rear connection and black HV crocodile clip                         | 8 m     |         |         |         |         | ■ ■     |
|                |  | P01295522                               | Safety lead with blue HV crocodile clip                                              | 15 m    |         |         |         |         | ■ ■     |
|                |  | P01295519                               | Safety lead with red HV crocodile clip                                               | 15 m    |         |         |         |         | ■ ■     |
|                |  | P01295525                               | Safety lead with rear connection and black HV crocodile clip                         | 15 m    |         |         |         |         | ■ ■     |

## Contents of the earth and resistivity kits

| To order |              |                                        | Contents of the earth and resistivity kits |       |       |       |                   |                            |              | Recommended related products |         |                     |                    |                    |          |         |         |         |
|----------|--------------|----------------------------------------|--------------------------------------------|-------|-------|-------|-------------------|----------------------------|--------------|------------------------------|---------|---------------------|--------------------|--------------------|----------|---------|---------|---------|
|          |              |                                        | Reels and winders                          |       |       |       | Other accessories |                            |              | Installation testers         |         |                     | 3P                 | 3/4P+ρ             | Expert   |         | Pylon   |         |
|          | Article code | Description                            | Green                                      | Red   | Blue  | Black | Stake(s) / mallet | Spade lug / banana adapter | Carrying bag | CA 6133                      | CA 6113 | CA 6116N<br>CA 6117 | CA 6422<br>CA 6424 | CA 6460<br>CA 6462 | CA 6470N | CA 6471 | CA 6472 | CA 6474 |
| Kit 1P   | P01102018    | Black 30 m 1P earth kit                |                                            |       |       | 33 m  | 1 / -             |                            |              |                              | ■       | ■                   |                    |                    |          |         |         |         |
|          | P01102020    | 33 m 1P loop kit <sup>3</sup>          | 33 m                                       |       |       |       | 1 / -             |                            |              |                              |         |                     |                    |                    |          |         |         |         |
| Kit 3P   | P01102017    | 15 m 3P earth kit (red / green / blue) | 5 m                                        | 15 m  | 10 m  |       | 2 / -             |                            |              | ■                            | ■       | ■                   |                    |                    |          |         |         |         |
|          | P01102021    | 50 m earth kit for 3P method           | 10 m                                       | 50 m  | 50 m  |       | 2 / 1             | 5                          | Standard     |                              | ■       | ■                   | ■                  | ■                  |          |         |         |         |
|          | P01102022    | 100 m earth kit for 3P method          | 10 m                                       | 100 m | 100 m |       | 2 / 1             | 5                          | Standard     |                              |         |                     | ■                  | ■                  | ■        | ■       | ■       |         |
| Kit 4P   | P01102040    | 50 m 4P earth & resistivity kit        | 33 m                                       | 50 m  | 50 m  | 33 m  | 4 / 1             | 5                          | Standard     |                              |         |                     |                    | ■                  | ■        | ■       | ■       |         |
|          | P01102024    | 100 m earth & resistivity kit          | 100 m<br>10 m                              | 100 m | 100 m | 33 m  | 4 / 1             | 5                          | Prestige     |                              |         |                     |                    | ■                  | ■        | ■       | ■       |         |
|          | P01102025    | 166 m earth & resistivity kit          | 100 m<br>10 m                              | 166 m | 166 m | 33 m  | 4 / 1             | 5                          | Prestige     |                              |         |                     |                    |                    | ■        | ■       | ■       |         |

## Other accessories

| Article code | Description                                                | Reels and winders |       |       |       |
|--------------|------------------------------------------------------------|-------------------|-------|-------|-------|
|              |                                                            | Green             | Red   | Blue  | Black |
| P01102026    | Green cable H winder <sup>1</sup>                          | 10 m              |       |       |       |
| P01102028    | Set of 5 adapters for terminals <sup>3</sup>               |                   |       |       |       |
| P01102029    | Set of 4 reel handles                                      |                   |       |       |       |
| P01102031    | T-shaped earth stake                                       |                   |       |       |       |
| P01102046    | Set of 3 adjustable clamps                                 |                   |       |       |       |
| P01102047    | H-shaped black cable winder - 10 m <sup>1</sup>            |                   |       |       | 10 m  |
| P01120310    | C172 clamp                                                 |                   |       |       |       |
| P01295260    | 166 m red cable reel <sup>1</sup>                          |                   | 166 m |       |       |
| P01295261    | 100 m red cable reel <sup>1</sup>                          |                   | 100 m |       |       |
| P01295262    | 50 m red cable reel <sup>1</sup>                           |                   | 50 m  |       |       |
| P01295263    | 166 m blue cable reel <sup>1</sup>                         |                   |       | 166 m |       |
| P01295264    | 100 m blue cable reel <sup>1</sup>                         |                   |       | 100 m |       |
| P01295265    | 50 m blue cable reel <sup>1</sup>                          |                   |       | 50 m  |       |
| P01295266    | 100 m green cable reel <sup>1</sup>                        | 100 m             |       |       |       |
| P01295267    | 33 m black cable reel <sup>1</sup>                         |                   |       |       | 33 m  |
| P01295268    | 33 m green cable reel <sup>1</sup>                         | 33 m              |       |       |       |
| P01295270    | 2 m black cable winder (2 m cable for clamps) <sup>1</sup> |                   |       |       | 2 m*  |
| P01295291    | 5 m green cable H winder <sup>2</sup>                      | 5 m               |       |       |       |
| P01295292    | 5 m black cable H winder <sup>2</sup>                      |                   |       |       | 5 m   |

| Article code | Description                                                                                                                                      |   |   |  |  |                |   |   |   |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---|---|--|--|----------------|---|---|---|
| P01102037    | CA 647x continuity kit (4 red, black, blue and yellow crocodile clips), (2 black test probes), (4 red, black, blue and yellow cables 1.5 m long) |   |   |  |  |                | ■ | ■ | ■ |
| P01120550    | 5 m AmpFlex™ flexible current sensors                                                                                                            |   |   |  |  |                |   |   | ■ |
| P01120551    | 8 m AmpFlex™ flexible current sensors                                                                                                            |   |   |  |  |                |   |   | ■ |
| P01102046    | Set of 3 adjustable clamps                                                                                                                       |   |   |  |  |                |   |   | ■ |
| P01120310    | C172 clamp <sup>3</sup>                                                                                                                          |   |   |  |  |                |   |   |   |
| P01120335    | C177 clamp                                                                                                                                       | ■ |   |  |  |                |   |   |   |
| P01120336    | C177A clamp                                                                                                                                      |   | ■ |  |  |                |   |   |   |
| P01120333    | C182 clamp                                                                                                                                       |   |   |  |  |                |   | ■ | ■ |
| P01120872    | G72 clamp <sup>4</sup>                                                                                                                           |   |   |  |  | ■<br>(CA 6424) |   |   |   |

### + The extra

Possibility of ordering carrying bag:

- Standard version .....P01298066
- Prestige version.....P01298067



<sup>1</sup> connections: spring clip - banana

<sup>2</sup> connections: banana - banana

<sup>3</sup> for CA 6030

<sup>4</sup> only leakage current

\* for CA 6470N and CA 6471

## Accessories for electrical equipment testers

■ Accessories ■ Included in the initial delivery

|                                                                                     | Article code | Description                                    | Length | CA 6121 | CA 6155 | CA 6160 | CA 6165 |
|-------------------------------------------------------------------------------------|--------------|------------------------------------------------|--------|---------|---------|---------|---------|
| Test and measurement lead                                                           |              |                                                |        |         |         |         |         |
|    | P01295097    | 4 mm banana cable- red + black                 | 3 m    | ■       |         | ■       | ■       |
|    | P01295137    | Double crocodile cable - black                 | 2.5 m  | ■       |         |         |         |
|    | P01295140    | Double crocodile cable - red                   | 2.5 m  | ■       |         |         |         |
|    | P01295141    | Discharge cable (EURO)                         | 2 m    | ■       |         | ■       | ■       |
|    | P01295236    | Double continuity cables                       | 2.5 m  |         |         | ■       | ■       |
|    | P01295234    | Power cable (EURO)                             | 2 m    |         |         | ■       |         |
|    | P01102139    | Red test lead                                  | 4 m    |         | ■       |         |         |
|    | P01102136    | Plug-in test cable                             | 1.5 m  |         | ■       |         |         |
|    | P01102137    | Test cable with separate wires                 | 3 m    |         | ■       |         |         |
|    | P01102138    | Black + red test lead                          | 1.5 m  |         | ■       |         |         |
|    | P01102140    | Green test lead                                | 1.5 m  |         | ■       |         |         |
|  | P01102141    | Black test probe for CA 6155                   |        |         | ■       |         |         |
|                                                                                     | P01102142    | Red test probe for CA 6155                     |        |         | ■       |         |         |
|                                                                                     | P01102143    | Green test probe for CA 6155                   |        |         | ■       |         |         |
|                                                                                     | P01102144    | Blue test probe for CA 6155                    |        |         | ■       |         |         |
|  | P01102145    | Set of 3 black crocodile clips                 |        |         | ■       |         |         |
| Pistolet et sonde HT                                                                |              |                                                |        |         |         |         |         |
|  | P01101919    | HV test gun                                    | 2 m    | ■       |         | ■       |         |
|  | P01102135    | HV test probe for CA 6155, for P01146001       |        |         | ■       |         |         |
|  | P01102182    | HV test gun (set of 2)                         | 2 m    | ■       |         |         | ■       |
| Télécommande, signalisation et communication                                        |              |                                                |        |         |         |         |         |
|  | P01101916    | Remote-control pedals                          |        | ■       |         | ■       |         |
|  | P01101917    | Red / green indicator lamps                    |        | ■       |         | ■       |         |
|  | P01101841    | DB9F-DB25M adapter                             |        | ■       |         | ■       |         |
|  | P01295172    | DB9F-25F cable x2                              |        | ■       |         | ■       |         |
|                                                                                     | P01295173    | DB9F-DB9M cable no. 1                          |        | ■       |         |         |         |
|  | P01102177    | Control pedal                                  |        |         |         |         | ■       |
|  | P01102178    | 2-colour indicator lamp                        |        |         |         |         | ■       |
|  | P01102179    | 4-colour indicator lamp                        |        |         |         |         | ■       |
|  | P01102180    | Power supply adapter for lamps                 |        |         |         |         | ■       |
|  | P01101915    | MachineLink software with communication cables |        | ■       |         |         |         |
|                                                                                     |              | CALink software                                |        |         | ■       |         |         |
|                                                                                     |              | MTLink software                                |        |         |         |         | ■       |
|                                                                                     | P01101996    | CELink software with communication cables      |        |         |         | ■       |         |
| Fuses                                                                               |              |                                                |        |         |         |         |         |
|                                                                                     | P01297086    | F 6x32T 16 A 250 V (set of 10 fuses)           |        |         | ■       | ■       |         |
|                                                                                     | P01297102    | F 6x32T 16 A 500 V (set of 10 fuses)           |        |         | ■       |         | ■       |
|                                                                                     | P01297103    | F 5x20T 5 A 250 V (set of 10 fuses)            |        |         | ■       |         | ■       |



## Accessories

■ Accessories ■ Included in the initial delivery

|                                                                                     | Article code | Description                                                          | CA 6161 | CA 6163 |
|-------------------------------------------------------------------------------------|--------------|----------------------------------------------------------------------|---------|---------|
|    | P01102193    | Set of 2 HV test guns, length 3 m<br>15 m length also available      | ■       | ■       |
|                                                                                     | P01102195    |                                                                      | ■       | ■       |
|    | P01295236    | Double continuity lead 3 m long x 2                                  | ■       | ■       |
|    | P01101784    | 25 A Kelvin croc. clip,<br>length 2.5 m                              | ■       | ■       |
|    | P01102199    | 25 A Kelvin test gun, length 3 m<br>25 A Kelvin test gun, length 6 m | ■       | ■       |
|                                                                                     | P01102200    |                                                                      | ■       | ■       |
|    | P01295499    | Set of 2 elbowed-straight<br>silicone leads, length 3 m              | ■       | ■       |
|    | P01295398    | Tripod lead with separate wires, length 2.5 m                        | ■       | ■       |
|   | P01295393    | Tripod socket with Schuko socket, length 2.5 m                       | ■       | ■       |
|  | P01101922    | Set of 3 red, blue and green<br>crocodile clips                      | ■       | ■       |
|  | P01101921    | Set of 3 red, blue and green test probes                             | ■       | ■       |
|  | P01295457Z   | Set of 2 red and black crocodile clips                               | ■       | ■       |
|  | P01295454Z   | Set of 2 black and red test probes                                   | ■       | ■       |
|  | P01102201    | 1 bag of 3 extension connectors                                      | ■       | ■       |
|  | P01295293    | USB-A to USB-B cable                                                 | ■       | ■       |
|  | P01295234    | C19 mains lead, length 2.5 m                                         | ■       | ■       |
|  | P01102191    | Type-3 remote control pedal                                          | ■       | ■       |
|  | P01102192    | Tower with 4 indicator lamps<br>(red, green, blue and orange)        | ■       | ■       |
|  | P01102196    | Barcode reader - USB                                                 | ■       | ■       |
|  | P01102904    | Label printer                                                        | ■       | ■       |
|  | P01102197    | RFID transponder                                                     | ■       | ■       |
|  | P01102198    | Set of 100 RFID tags                                                 | ■       | ■       |
|  | P01102202    | 16 A three-phase adapter                                             | ■       | ■       |

## Accessories for other testers

■ Accessories ■ Included in the initial delivery

|                                                                                     | Article code | Description                                                                                   | Connectique                                  | CA 6161 | CA 6163 | CA 6240 | CA 6255 | CA 6292 | DTR 8510 | CA 6681 | CA 6630 |
|-------------------------------------------------------------------------------------|--------------|-----------------------------------------------------------------------------------------------|----------------------------------------------|---------|---------|---------|---------|---------|----------|---------|---------|
| <b>Double test probes and Kelvin clamps for micro-ohmmeters</b>                     |              |                                                                                               |                                              |         |         |         |         |         |          |         |         |
|    | P01101794    | 10 A Kelvin clamps (set of 2), L=3 m                                                          | Spade lug                                    |         |         | ■       | ■       |         |          |         |         |
|    | P01101783    | 1 A Kelvin mini-clamps (set of 2)                                                             | Spade lug                                    |         |         | ■       | ■       |         |          |         |         |
|    | P01102056    | 1 A double test probe (set of 2) L=2.85 m                                                     | Spade lug and 4 mm banana                    |         |         | ■       | ■       |         |          |         |         |
|    | P01103081    | 10 A double gun-type test probe (set of 2) L= 3.15 m                                          | Spade lug and 4 mm banana                    |         |         | ■       | ■       |         |          |         |         |
|    | P01103063    | 10 A double pivoting test probe (set of 2) L= 3.15 m                                          | Spade lug and 4 mm banana                    |         |         | ■       | ■       |         |          |         |         |
|    | P01295486    | Set of 2 Kelvin leads 6 m long (red / black) with adjustable-clamp connections                |                                              |         |         |         |         | ■       |          |         |         |
|    | P01295487    | Set of 2 Kelvin leads 15 m long (red / black) with adjustable-clamp connections               |                                              |         |         |         |         | ■       |          |         |         |
|    | P01295494    | Set of 2 leads 6 m long with 200 A Kelvin clamps                                              |                                              |         |         |         |         | ■       |          |         |         |
|  | P01295495    | Set of 2 leads 15 m long with 200 A Kelvin clamps                                             |                                              |         |         |         |         | ■       |          |         |         |
|  | P01101784    | 1 x 25 A Kelvin crocodile clip                                                                |                                              | ■       | ■       |         |         |         |          |         |         |
|  | P01102199    | 1 x 25 A Kelvin test probe 3 m long                                                           |                                              | ■       | ■       |         |         |         |          |         |         |
|  | P01102200    | 1 x 25 A Kelvin test probe 6 m long                                                           |                                              | ■       | ■       |         |         |         |          |         |         |
|  | P01295488    | Green earth lead with crocodile clip                                                          |                                              |         |         |         |         | ■       |          |         |         |
|  | P01120470    | MR6292 clamp                                                                                  |                                              |         |         |         |         | ■       |          |         |         |
| <b>Other accessories</b>                                                            |              |                                                                                               |                                              |         |         |         |         |         |          |         |         |
|  | P01102013    | Pt 100 probe                                                                                  |                                              |         |         |         | ■       |         |          |         |         |
|  | P01102201    | Set of 3 Input / Output connectors                                                            |                                              | ■       | ■       |         |         |         |          |         |         |
|  | P01102202    | Three-phase / 16 A Banana adapter                                                             |                                              | ■       | ■       |         |         |         |          |         |         |
|  | P01120872    | G72 clamp                                                                                     |                                              | ■       | ■       |         |         |         |          |         |         |
| <b>Measurement lead for ratiometer</b>                                              |              |                                                                                               |                                              |         |         |         |         |         |          |         |         |
|  | P01295143A   | Set of 2 spare leads, primary H, secondary X L= 4.6 m, compatible with DTR 8500 / DTR 8510    | 4 mm banana                                  |         |         |         |         |         | ■        |         |         |
| <b>Adapters for cable and metal conductor locator</b>                               |              |                                                                                               |                                              |         |         |         |         |         |          |         |         |
|  | P01102114Z   | Kit of 3 measurement adapters for housing (B22, E27, mains socket)                            | B22 bayonet E27 screw socket 2P mains socket |         |         |         |         |         |          | ■       |         |
| <b>Measurement lead for battery capacity tester</b>                                 |              |                                                                                               |                                              |         |         |         |         |         |          |         |         |
|  | P01102103    | Set of 2 double-contact current / voltage measurement leads for CA 6630 battery tester. L=1 m | Jack                                         |         |         |         |         |         |          |         | ■       |

## Accessories / replacement parts

### INSTALLATION TESTERS

#### CA 6011

- Cable reeler no. 1 - 30 m ..... P01295492
- 1 waist belt + 1 shoulder strap ..... P01102171
- 30 m cable for reeler ..... P01295493
- 2 elastic straps ..... P01102172
- 1 set of replacement accessories ..... P01102173
- Continuity rod ..... P01102084A

#### CA 6030

- C172 current clamp ..... P01120310
- C176 clamp ..... P01120330
- MN20 current clamp ..... P01120440
- 1P loop kit ..... P01102020
- 3 crocodile clips (red / white / yellow) ..... P01101905
- 3 test probes (red / white / yellow) ..... P01101906A
- Optical / RS232 connection cable ..... P01295252
- 10 m green cable H winder ..... P01102026
- T earth stake ..... P01102031
- 100 m reel of green cable ..... P01295266
- 33 m reel of green cable ..... P01295268
- Standard bag no. 5 ..... P01298066

#### CA 6131, CA 6133

- Remote-control probe no. 4 ..... P01102157
- Three-pole EURO cable ..... HX0300
- Neck strap ..... HX0302
- Continuity rod ..... P01102084A
- Test probes (red + black) ..... P01295454Z
- Crocodile clips (red + black) ..... P01295457Z
- 2 cables 1.5 m long (red / black) ..... P01295450Z
- Yellow bag no. 2 ..... P01298006

#### CA 6131

- MN73 clamp ..... P01120421
- 1.5 V LR6 alkaline battery ..... P01296033

#### CA 6133

- MN73A clamp ..... P01120439
- Type R USB charger ..... P01102186
- 4 x 1.2 V NiMH 2.4 AH AALSD batteries ..... HX0051B
- 15 m basic earth kit (yellow, green, red) ..... P01102019
- 50 m earth kit ..... P01102021

### INSULATION TESTERS

#### CA 6501 and CA 6503

- Bag no. 2 ..... P01298006
- CA 1246 thermo-hygrometer ..... P01654246
- CA 1821 ..... P01654821
- 0.2 A / HRC fuse for CA 6501 ..... P01297095
- 2 crocodile clips (red / black) ..... P01295457Z
- 2 test probes (red / black) ..... P01295458Z
- 2 leads 1.5 m long (red / black) ..... P01295289Z
- 3 crocodile clips (red, black, blue) ..... P01103062
- 3 safety leads 1.5 m (red, black, blue) ..... P01295171

#### CA 6511 and CA 6513

- CA 1246 thermo-hygrometer ..... P01654246
- CA 1821 ..... P01654821
- 2 crocodile clips (red / black) ..... P01295457Z
- 2 test probes (red / black) ..... P01295454Z
- 2 leads 1.5 m long (red / black) ..... P01295289Z
- 1.5 V LR6 battery ..... P01296033
- 1.6 A fuse ..... P01297022
- Shockproof sheath no. 13 ..... P01298016

#### CA 6522, CA 6524, CA 6526, CA 6532, CA 6534 and CA 6536

- Remote-control probe ..... P01102092
- CA 1246 thermo-hygrometer ..... P01654246
- CA 1821 ..... P01654821
- Hands-free bag ..... P01298049
- 1.5 V LR6 battery ..... P01296033
- Test probes (red + black) ..... P01295454Z
- Crocodile clips (red + black) ..... P01295457Z
- Elbowed-straight safety leads  
(red + black) 1.5 m long ..... P01295453Z
- DataView® software ..... P01102095

#### CA 6528

- CA 1246 thermo-hygrometer ..... P01654246
- CA 1821 thermometer ..... P01654821
- 1.5 V LR6 battery ..... P01296033
- Test probes (red + black) ..... P01295454Z
- Crocodile clips (red + black) ..... P01295457Z
- Elbowed-straight safety leads  
(red + black) 1.5 m long ..... P01295289Z

#### CA 6541 and CA 6543

- Remote-control probe ..... P01101935
- CA 1246 thermo-hygrometer ..... P01654246
- CA 1821 ..... P01654821
- Bag no. 6 for accessories ..... P01298051
- 1.5 V LR14 battery ..... P01296034
- Fuse F 2.5 A - 1200 V - 8 x 50 mm - 15 kA (x 5) ..... P01297071
- Fuse F 0.1 A - 660 V - 6.3 x 32 mm - 20 kA (x 10) ..... P01297072

#### CA 6543

- DataView® software ..... P01102095
- 1.5 m safety leads (red, blue, black) ..... P01295171
- RS232 PC DB 9F - DB 25F cable x 2 ..... P01295172
- European 2P mains lead ..... P01295174
- UK mains lead ..... P01295253
- Battery pack ..... P01296021

#### CA 6505, CA 6545, CA 6547 and CA 6549

- CA 1246 thermo-hygrometer ..... P01654246
- CA 1821 ..... P01654821
- Standard bag for accessories ..... P01298066
- Fuse FF 0.1 A - 380 V -  
5 x 20 mm - 10 kA (x 10) ..... P03297514
- European 2P mains lead ..... P01295174

#### CA 6547 and CA 6549

- DataView® report generation software ..... P01102095
- RS 232 PC DB 9F - DB 25F cable x 2 ..... P01295172

#### CA 6550 and CA 6555

- 2 red / black test probes ..... P01295454Z
- 3 red / blue / black crocodile clips ..... P01103062
- USB optical cable ..... HX0056-Z
- Shoulder bag ..... P01298066
- CA 1246 thermo-hygrometer ..... P01654246
- CA 1821 ..... P01654821
- European 2P mains lead ..... P01295174

### CLAMP MULTIMETERS FOR LEAKAGE CURRENT

#### F65

- Red / black crocodile clamps (set of 2) ..... P01295457Z
- Elbowed test-probe leads, 1.5 m, (1 red / 1 black) ..... P01295456Z
- Soft case 200 x 100 x 40 mm with belt clip ..... P01298065Z
- CM1214S current measurement lead ..... P03295509

### EARTH AND RESISTIVITY TESTERS

#### CA 6421 and CA 6423

- Carrying strap ..... P01298005
- Fuse HRC 0.1 A - 250 V (x 10) ..... P01297012
- 1.5 V LR06 battery ..... P01296033
- Shoulder bag no. 2 ..... P01298006

#### CA 6422 and CA 6424

- 15 m earth kit (blue / green / red) ..... P01102017
- 50 m expert earth kit ..... P01102021
- Carrying bag ..... P01298006
- 4-point hands-free strap ..... HX0302

#### CA 6422

- 1.5 V LR6 battery ..... P01296033

#### CA 6424

- 4 x 1.2 V NiMH 2.4 AH AALSD batteries ..... HX0051B
- Type-R USB charger ..... P01102186
- G72 current clamp ..... P01120872

#### CA 6416 and CA 6417

- DataView® software ..... P01102095
- Bluetooth / USB modem ..... P01102112
- Hard case ..... P01298080
- CL1 calibration loop ..... P01122301

#### CA 6418

- CL1 calibration loop ..... P01122301
- MLT110\* carrying case ..... P01298080
- 1.5 V LR6 alkaline battery ..... P01296033

\*Requires 2 X convoluted foam inserts 691714A00

#### CA 6460 and CA 6462

- European 2P mains lead ..... P01295174
- Fuse HRC 0.1 A - 250 V (x 10) ..... P01297012
- Battery pack ..... P01296021
- 1.5 V LR06 battery ..... P01296033
- Standard bag ..... P01298066

## Accessories / replacement parts

### CA 6470N, CA 6471 and CA 6472

- DataView® report generation software.....P01102095
- Adapter for battery charging  
on vehicle cigarette lighter.....P01102036B
- Optical / RS communication cable.....P01295252
- UK mains lead.....P01295253
- Set of 10 fuses:  
F 0.63 A - 250 V - 5 x 20 mm - 1.5 kA.....AT0094
- Adapter for battery charging  
on the mains supply.....P01102035
- Battery pack.....P01296021
- Optical / USB communication cable.....HX0056-Z

### CA 6471 and CA 6472

- MN82 clamp (diam. 20 mm) delivered with  
2 m cable for connection to ES terminal.....P01120452
- C182 clamp (diam. 52 mm) delivered with  
2 m cable for connection to ES terminal.....P01120333
- Standard bag.....P01298066

### CA 6474

- Connection cable.....P01295271
- 15 m BNC / BNC cable.....P01295272
- 5 m AmpFlex® flexible current sensor.....P01120550
- 8 m AmpFlex® flexible current sensor.....P01120551
- Set of 12 identification rings for AmpFlex®.....P01102045
- Set of 3 adjustable clamps.....P01102046
- 5 m green cable (E terminal connection).....P01295291
- 5 m black cable (E terminal connection).....P01295292
- Spade lug / banana plug adapter.....P01102028
- Calibration loop.....P01295294
- Prestige bag.....P01298067

## ELECTRICAL EQUIPMENT TESTERS

### CA 6121

- Machine Link Windows processing software  
(supplied with communication cable).....P01101915
- Series printer no. 5.....P01102903
- DB9F-DB25M adapter.....P01101841
- Remote-control pedal.....P01101916
- Indicator lamps (green / red).....P01101917
- Roll of paper for series printer (set of 5).....P01101842
- 2 crocodile clips (red / black).....P01295457Z
- 2 test probes (red / black).....P01295458Z
- 2 dielectric test guns with 6 m cable.....P01101918
- 2 dielectric test guns with 2 m cable.....P01101919
- 2 safety leads 3 m long (red / black).....P01295097
- Continuity test lead 2.5 m long (black).....P01295137
- Continuity test lead 2.5 m long (red).....P01295140
- Discharge-time cable (European).....P01295141

### CA 6155

- 4 m red test lead.....P01102139
- Red + black 1.5 m test lead.....P01102138
- Red 1.5 m test lead.....P01102140
- 1.5 m plug-in test cable.....P01102136
- 3 m test cable with separate wires.....P01102137

- Black test probe.....P01101141
- Red test probe.....P01102142
- Green test probe.....P01102143
- Blue test probe.....P01102144
- Set of 3 black crocodile clips.....P01102145
- Set of 10 fuses: 16 A-250 V 6 x 32 T.....P01297086
- Set of 2 HV cables.....P01103071
- HV crocodile clip.....P01103072
- HV test probe.....P01103073

### CA 6165

- 1 remote-control pedal (type 2).....P01102177
- 2-lamp tower (red / green).....P01102178
- 4-lamp tower (red / green / blue / orange).....P01102179
- Lamp power supply adapter.....P01102180
- 2 x 2 m HV guns.....P01102182
- 2 x 3 m cables (red / black).....P01295097
- EURO discharge cable.....P01295141
- 1 double continuity cable.....P01295236
- 2 test probes, CAT IV 1kV (red / black).....P01295454Z
- 2 crocodile clips, CAT IV 1kV (red / black).....P01295457Z
- Time-delay fuse, 6 X 32 mm, 16 A 250 V (x10).....P01297102
- Fuse 5 X 20 mm 5 A 250 V (x10).....P01297103
- Standard carrying bag.....P01298066

## OTHER TESTERS

### CA 6240 and CA 6255

- 1 A double test probe (x 2).....P01102056
- Mini Kelvin clamp (set of 2).....P01101783
- UK mains lead.....P01295253
- CA 1846 thermo-hygrometer.....P01654246
- European 2P mains lead.....P01295174
- Standard bag.....P01298066
- 10 A-P clamp (set of 2).....P01101794
- DataView®.....P01102095
- Straight probe with 10 A double pivoting  
retractable test probe (x 2).....P01103063
- Gun with 10 A double retractable  
test probe (x 2).....P01103065

### CA 6240

- Set of 10 fuses: 6.3 x 32 / 12.5 A / 500 V.....P01297091
- Optical / USB communication cable.....HX0056-Z

### CA 6255

- Pt 100 temperature sensor.....P01102013
- 2 m cable for remote Pt 100.....P01102014
- RS 232 PC DB 9F - DB 25F cable x 2.....P01295172
- Set of 10 fuses: 6.3 x 32 / 16 A / 250 V.....P01297089
- Set of 10 fuses: 5.0 x 20 / 2 A / 250 V.....P01297090

### CA 6292

- 1 set of 2 Kelvin leads 6 m long (red / black)  
with adjustable-clamp connections.....P01295486
- 1 set of 2 Kelvin leads 15 m long (red / black)  
with adjustable-clamp connections.....P01295487
- 1 green earth lead with crocodile clip.....P01295488

- 1 set of 5 fuses: T1 5 A 250 V 5x20 mm.....P01297101
- 1 USB-A USB-B cable 1.5 m long.....P01295293
- 1 MR6292 clamp.....P01120470
- Set of 2 leads 6 m long with  
200 A Kelvin clamps.....P01295494
- Set of 2 leads 15 m long with  
200 A Kelvin clamps.....P01295495
- Standard carrying bag.....P01298066

### DTR 8510

- Set of 2 replacement leads 4.6 m long.....P01295143A
- Set of 2 replacement leads 10 m long.....P01295145
- USB cable.....P01295293
- Shoulder bag.....P01298066

### CA 6681

- 33 m reel of green wire, battery clip / 4 mm  
male banana on winder with handle.....P01295268
- 10 m reel of green wire, battery clip / 4 mm  
male banana on H winder.....P01102026
- Kit of 3 measurement adapters for housing  
(B22, E27, mains socket).....P01102114Z

### CA 6630

- Set of 2 leads with retractable test probes.....P01102103



# Oscilloscopes Industrial

|                                                          |     |
|----------------------------------------------------------|-----|
| Portable oscilloscope selection guide .....              | 105 |
| OX 9302-BUS portable oscilloscope .....                  | 106 |
| Portable oscilloscopes OX9304 OX9104 OX9102 OX9062 ..... | 107 |
| PROBIX accessories .....                                 | 108 |



## Portable oscilloscopes

### Selection guide



|                                     | OX9062                                                                                                                                                                                                                                                           | OX9102 | OX9104 | OX9302-BUS | OX9304 |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|------------|--------|
| Bandwidth (MHz)                     | 60                                                                                                                                                                                                                                                               | 100    | 100    | 300        | 300    |
| Number of channels                  | 2                                                                                                                                                                                                                                                                | 2      | 4      | 2          | 4      |
| Display                             | 7-inch colour touchscreen                                                                                                                                                                                                                                        |        |        |            |        |
| Oscilloscope mode                   |                                                                                                                                                                                                                                                                  |        |        |            |        |
| Vertical deflection                 |                                                                                                                                                                                                                                                                  |        |        |            |        |
| Vertical scales                     | 16 scales from 2.5 mV to 200 V/div.                                                                                                                                                                                                                              |        |        |            |        |
| Maximum voltage                     | 600 Vrms / 800 Vpeak with HX0030C/D probe                                                                                                                                                                                                                        |        |        |            |        |
| Vertical resolution                 | 12 bits                                                                                                                                                                                                                                                          |        |        |            |        |
| Zoom factor                         | 16 max.                                                                                                                                                                                                                                                          |        |        |            |        |
| Input impedance                     | 1 MΩ / 12 pF                                                                                                                                                                                                                                                     |        |        |            |        |
| Horizontal deflection               |                                                                                                                                                                                                                                                                  |        |        |            |        |
| Time base scales                    | 1 ns / .. / 200 s/div.                                                                                                                                                                                                                                           |        |        |            |        |
| Sampling                            | 2.5 GS/s (real time), 100 GS/s (repeat signal mode)                                                                                                                                                                                                              |        |        |            |        |
| Triggering                          |                                                                                                                                                                                                                                                                  |        |        |            |        |
| Source                              | 1 channel of your choice. Threshold(s) adjustable directly on the screen                                                                                                                                                                                         |        |        |            |        |
| Trigger mode                        | Automatic, Triggered, Single shot, Auto-Level 50%                                                                                                                                                                                                                |        |        |            |        |
| Trigger type                        | On edge, on pulse width (4 modes), after delays, after repetitions (counting), by comparison                                                                                                                                                                     |        |        |            |        |
| Measurement mode                    |                                                                                                                                                                                                                                                                  |        |        |            |        |
| Time measurements                   | rise/fall time, positive/negative pulse, duty cycle, period, frequency, phase, count, integral                                                                                                                                                                   |        |        |            |        |
| Level measurements                  | DC/effective/peak-to-peak voltage, amplitude, max./min. voltage, upper/lower plateau, overshoot                                                                                                                                                                  |        |        |            |        |
| Spectrum analyser mode              |                                                                                                                                                                                                                                                                  |        |        |            |        |
| FFT                                 | THD and 63-rank FFT (fundamental between 40 and 450 Hz).<br>Real time for each trace (channel) displayed on the screen.<br>Rectangular, Hamming, Hanning, Blackman windowing. Linear or logarithmic scale.<br>Automatic adjustment using the 'Autoset' function. |        |        |            |        |
| Multimeter mode                     |                                                                                                                                                                                                                                                                  |        |        |            |        |
| Acquisition                         | TRMS AC+DC, 12 bits, 5 measurements/s                                                                                                                                                                                                                            |        |        |            |        |
| V AC, DC, AC+DC                     | 4 ranges from 600.0 mV to 600.0 Vrms / 800.0 to 800.0 V peak or DC - BP 200 kHz                                                                                                                                                                                  |        |        |            |        |
| Resistance / Continuity / Diode     | 7 ranges from 0.01 Ω to 32.00 MΩ / < 30 Ω / Open circuit voltage approx. 3.3 V                                                                                                                                                                                   |        |        |            |        |
| Capacity / Frequency                | 7 ranges from 5,000 nF to 5,000 mF/200 kHz                                                                                                                                                                                                                       |        |        |            |        |
| Temperature                         | with probe for TcK HX0035B (optional)                                                                                                                                                                                                                            |        |        |            |        |
| Power                               | W, var, VA, FP simultaneously with U & I                                                                                                                                                                                                                         |        |        |            |        |
| Logger mode                         |                                                                                                                                                                                                                                                                  |        |        |            |        |
| Acquisition                         | Continuous at a rate of 0.2 s with one recording every 100,000 measurements                                                                                                                                                                                      |        |        |            |        |
| Other features                      |                                                                                                                                                                                                                                                                  |        |        |            |        |
| Interfaces                          | USB, Ethernet, Wi-Fi/ScopeNet (JAVA interface) for remote control, data transfer, etc./Screen printing via network                                                                                                                                               |        |        |            |        |
| Power supply                        | Li-Ion battery, battery life up to 5 hours, mains power supply 98-264V@50/60 Hz                                                                                                                                                                                  |        |        |            |        |
| Safety                              | IEC 61010-2-30 600 V CAT III                                                                                                                                                                                                                                     |        |        |            |        |
| Waterproofing / Dimensions / Weight | IP54 / 293 x 210 x 66 mm / 21 kg with battery.                                                                                                                                                                                                                   |        |        |            |        |



Portable oscilloscopes

OX 9302-BUS



600 V  
CAT III

IP 54

Wi-Fi

MICRO  
SD

A genuine SCOPIX IV,  
with all its modes and  
features, plus the BUS function!

- 1 button to activate an analysis
- 4 steps to qualify a data bus
- Intuitive and scalable Human Machine Interface
- Multi-interface communication
- Customisation of your fieldbus via the SX-BUS software provided
- Verification of signal transmission quality for fieldbus protocols: KNX, DALI, CAN, LIN, FlexRay™, ASi, Profibus®, RS-485, RS-232, Ethernet, etc.

Display

7» WVGA TFT colour touchscreen LCD with 800 x 480 pixels  
LED backlighting (adjustable standby mode)

Bandwidth

300 MHz

Number of channels

2 isolated channels

The **BUS** function of **SCOPIX IV** allows you to perform electrical measurements to assess the integrity of fieldbuses, i.e. the operation of the physical layer (electrical specifications, synchronisation, etc.), in accordance with current standards.

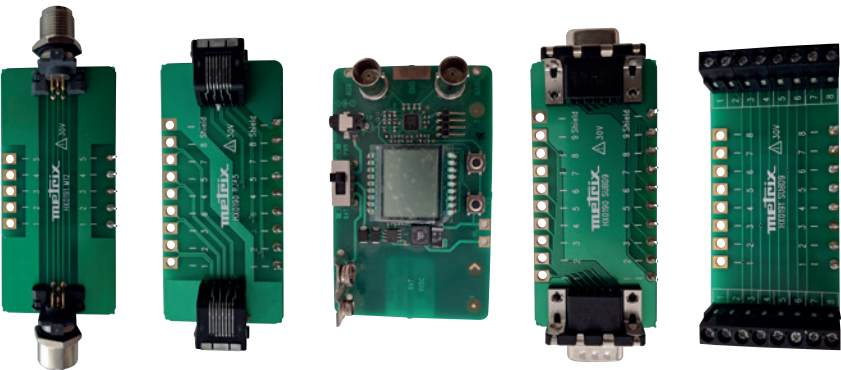
Once the bus diagnosis has been launched, it proceeds step by step and allows the calculation of the various parameters required by the standard to be viewed.

**Efficiency:** if the diagnosis stops before the end of the measurements, this means that the minimum level and amplitude criteria have not been met and do not allow the calculation of the other parameters.

- 1- Select the bus to be analysed from a list.
- 2- Display measurement tolerances.
- 3- Analyse the bus according to the associated standard.
- 4- Analysis result with interpretation assistance.

**SCOPIX BUS** offers connection assistance based on the bus to be checked with the corresponding wiring diagram.

The 5 **HX0190** and **HX0191** cards supplied provide connection assistance: these cards are equipped with SUBD9, RJ45, M12 or 8-wire screw connectors, which are the main types of connection to fieldbuses.



1 oscilloscope  
OX 9302-BUS supplied with:

- a carrying bag,
- 1 PA40W-2 mains power
- pack/charger and 1 2P EURO mains power cable,
- 1 Li-Ion battery pack,
- 1 stylus,
- 1 Ethernet cable,
- 1 USB cable,
- 2 safety leads (red, black),
- 2 x Ø 4 mm test probes (red, black),
- 2 voltage probes depending on model,
- 1 µSD card (8 GB),
- 1 USB /µSD adapter,
- 1 wrist strap,
- 1 PROBIX BANANA connector,
- 1 USB installation procedure for use of the ScopeNet data export software on CD-ROM,
- 1 PDF user's manual on CD (more than 5 languages),
- 1 Quick Start Guide on paper
- 1 safety datasheet in 20 languages.
- 5 HX090 and HX091 cards

To order

1 oscilloscope 2 x 300 MHz BUS  
Reference: OX9302-BUS

## Portable oscilloscopes

### SCOPIX IV

The functions and performance of the SCOPIX IV models have been improved. For example, their bandwidth has been increased, as have their recording possibilities, their storage capacity, etc., and this evolution will continue to facilitate your measurements.

|                                      | Scopix IV                                                                                                 |            |            |            |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------|------------|------------|------------|
|                                      | Electronics                                                                                               | Electrical |            | Industrial |
| Selection families                   | OX9304                                                                                                    | OX9104     | OX9102     | OX9062     |
| Bandwidth                            | 300 MHz                                                                                                   | 100 MHz    |            | 60 MHz     |
| Channels (number/type)               | 4 isolated                                                                                                | 4 isolated | 2 isolated | 2 isolated |
| Analogue filters                     | 15 MHz, 1,5 MHz, 5 kHz                                                                                    |            |            |            |
| Single-shot digital sampling         | 2,5 GS/s                                                                                                  |            |            |            |
| Repetitive mode max sampling         | 100 GS/s                                                                                                  |            |            |            |
| Vertical resolution                  | 12 bits                                                                                                   |            |            |            |
| Safety according to IEC61010         | 600 V cat III                                                                                             |            |            |            |
| Display mode                         | Vector, envelope, entire acquisition                                                                      |            |            |            |
| Signal type                          | Automatic ROLL (> 100 ms), repetitive, min/max                                                            |            |            |            |
| Averaging                            | 2/4/16/64                                                                                                 |            |            |            |
| Oscilloscope specifications          |                                                                                                           |            |            |            |
| Minimum input sensitivity            | 156 $\mu$ V/div (zoom) - 2.5 mV                                                                           |            |            |            |
| Maximum input amplitude              | 200 V/div                                                                                                 |            |            |            |
| Time base (per division)             | 1 ns - 200 s                                                                                              |            |            |            |
| FFT+signal mode                      | 2500 pts, log and linear echo, weighting window                                                           |            |            |            |
| XY mode                              | According to X(T) time base + waveform                                                                    |            |            |            |
| Memory depth                         | 100 kpts/channel                                                                                          |            |            |            |
| Acquisition memory                   | > 2 GB on SD card, all $\mu$ SDHC/XC card formats                                                         |            |            |            |
| Automatic measurements/cursors       | 20 auto measurements + cursors                                                                            |            |            |            |
| Front triggering                     | Rising or falling on 2 or 4 channels                                                                      |            |            |            |
| Pulse triggering                     | < T1; >T2; or between T with T1 and T2: [16 ns, 20 s]                                                     |            |            |            |
| Delay Trigger                        | From 48 ns to 20 s sources and 2 or 4 channel trigger                                                     |            |            |            |
| Counting Trigger                     | From 3 to 16,384 events sources and 2 or 4 channel trigger                                                |            |            |            |
| Hold-Off / Adjustable Delay          | Adjustable from 64 ns to 15 sec                                                                           |            |            |            |
| Calculation functions                | Simple (addition/subtraction/multiplication/division) or advanced via the equation editor. Between tracks |            |            |            |
| Autoset                              | With track selection                                                                                      |            |            |            |
| Other functions                      |                                                                                                           |            |            |            |
| TRMS multimeters                     | 200 kHz                                                                                                   | 200 kHz    |            | 200 kHz    |
| Logger                               | REC mode Multimeter / 100 kpts file / 0.2s period                                                         |            |            |            |
| Harmonic analysis                    | 63 ranks, Vrms, overall THD and per rank                                                                  |            |            |            |
| Viewer number of channels            | 4                                                                                                         | 4          | 2          | 2          |
| Power measurement                    | Single-phase/Three-phase, Active, reactive, apparent power and PF, Min/MAX                                |            |            |            |
| General features                     |                                                                                                           |            |            |            |
| Colour screen                        | 7" wide - Resolution 800 x 480 pixels                                                                     |            |            |            |
| LI-ION battery                       | Battery life: 5 hours                                                                                     |            |            |            |
| Terms and conditions of registration | Internal memory 1 GB, $\mu$ SD memory card from 2 GB to 2 TB                                              |            |            |            |
| Communication                        | USB, Ethernet (RJ45), Wi-Fi/ScopeNet (JAVA interface for PC) or SX-METRO/P (software)                     |            |            |            |



#### 1 SCOPIX IV oscilloscope delivered with:

- 1 carrying case
- 1 PA40W-2 power supply/charger and 1 2P EURO power cord
- 1 Li-Ion battery pack
- 1 stylus
- 1 Ethernet cable
- 1 USB cable
- 2 safety cables (red, black)
- 2  $\emptyset$  4 mm test probes (red, black)
- 2 or 4 voltage probes depending on model
- 1  $\mu$ SD card (8 GB), 1 USB/ $\mu$ SD adapter
- 1 hand strap
- 1 ProbiX adapter -  $\emptyset$ 4 safety plugs
- 1 USB installation procedure for use ScopeNet data export software on CD-ROM
- 1 operating manual in .pdf format on CD (>5 languages)
- 1 paper quick start guide
- 1 safety data sheet in 20 languages.

#### To order

1 x 2 x 60 MHz oscilloscope **Reference: OX9062**

1 x 2 x 100 MHz oscilloscope **Reference: OX9102**

1 x 4 x 100 MHz oscilloscope **Reference: OX9104**

1 x 4 x 300 MHz oscilloscope **Reference: OX9304**

#### Recommended accessories

##### SX-METRO/P

SX-METRO software (complete software solution for Scopix series oscilloscopes)

##### HX0073

MiniFlex 300 A 2.5 MHz ProbiX flexible current sensor

##### HX0080

$\mu$ SD memory card  
+  $\mu$ SD/SD adapter  
+ USB reader

##### HX0121

Scopix IV replacement stylus



## Industrial oscilloscopes

# ProbiX

### The advantages of the patented ProbiX system

The advantages of the patented ProbiX system Scopix portable oscilloscopes benefit from intelligent Probix accessories, which offer users a whole range of innovative features guaranteeing simplicity, efficiency, versatility and safety.

The Probix system, with its smart probes, accessories and adapters, ensures quick and error-free instrument implementation.

A kind of 'plug and play' for measurement, the probes and adapters are immediately recognised once connected. The instrument not only identifies them, but also provides information about their characteristics.

Active safety is integrated, in particular in the form of safety information and recommendations for the user, taking into account their specific configuration.

The coefficients, scales and units of the sensors, as well as the channel configuration, are automatically managed.

This system also allows accessories to be powered directly from the oscilloscope, without the need for batteries or additional mains adapters.

Some Probix accessories have three control buttons directly accessible on the probe. For example, the first two control buttons on the probes are used to directly modify the settings of the channel to which they are connected.

### ProbiX - measuring accessories (current, voltage, temperature)

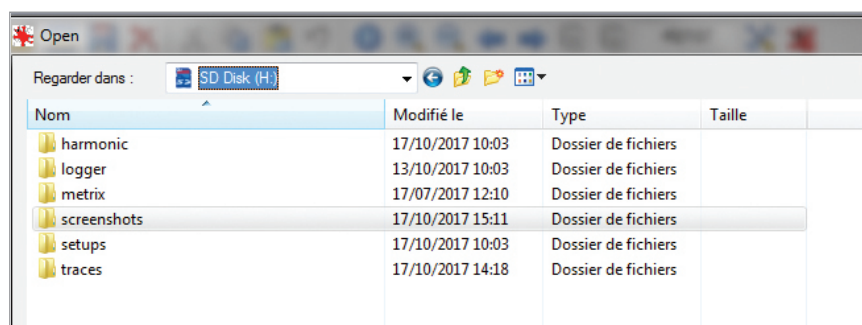
|                     |                                                                                     | Connections |       |     |        |          |                     |                | Measurement range              | Measurement type                      |
|---------------------|-------------------------------------------------------------------------------------|-------------|-------|-----|--------|----------|---------------------|----------------|--------------------------------|---------------------------------------|
|                     |                                                                                     | Ratio       | Probe | BNC | Banana | Amp FLEX | SK1-20 Mini AmpFLEX | SK1-19 sensors |                                |                                       |
| HX0130              |    | 1/10        | ■     |     |        |          |                     |                | 300 V CAT III<br>500 MHz       | Voltage                               |
| HX0030C/<br>HX0030D |    | 1/10        | ■     |     |        |          |                     |                | 600 V CAT III<br>250 MHz       | Voltage                               |
| HX0031              |    |             |       | ■   |        |          |                     |                | 300 V CAT III<br>250 MHz       | Voltage-Resistance-Capacitance-Tester |
| HX0032              |   | 50 Ω        |       | ■   |        |          |                     |                | 30 V CAT I<br>250 MHz          | Voltage                               |
| HX0033              |  |             |       |     | ■      |          |                     |                | 300 V CAT III                  | Voltage-Resistance-Capacitance-Tester |
| HX0093              |  |             |       |     | ■      |          |                     |                | 300 V CAT III<br>300 Hz filter | Voltage-Resistance-Capacitance-Tester |
| HX0072              |  |             |       |     |        | ■        |                     |                | 5 - 3,000 A<br>200 kHz         | Current                               |
| HX0073              |  |             |       |     |        |          | ■                   |                | 1 - 300 Arms<br>2.5 MHz        | Current                               |
| HX0094              |  |             |       |     | ■      |          |                     |                | 4 - 20 mA                      | Current                               |
| HX0035B             |  |             |       |     |        |          |                     | ■              | -10 °C to +1,250 °C            | Temperature<br>K thermocouple         |

Find all the available accessories, sensors and clamps in the accessories chapter.

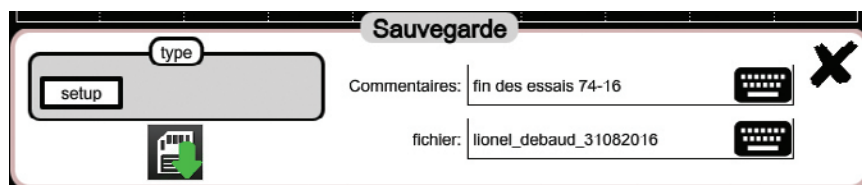
## Communication tools in SCOPIX IV

### File management

Oscilloscope mode traces or backups are available in two formats: .trc for recall on screen or .txt for direct export to another standard Windows application, such as a spreadsheet



It is also very easy to take .png screenshots from the front panel of the oscilloscope, which are stored in the screenshot directory, print to a network printer, transfer or delete files in the file manager.



In each mode, the configuration can be saved to make adjustments easier.

### The use of data



- On the oscilloscope, recall .trc curves stored in memory and screen copies via a PNG viewer.
- On a PC via the Java ScopeNet application over USB or Ethernet: remote control, data viewing and transfer, programming via SCPI commands or via SX-METRO software.
- The multiple communication tools with ScopiX IV allow you to view curves in real time on a PC, perform additional measurements and remote analyses, capture screenshots and control your oscilloscope. ScopiX IV provides you with comprehensive post-acquisition expertise.

#### SEE ALSO

SX-METRO, software solution dedicated to oscilloscopes SEE ALSO Scopix series - page 155

### The numerous interfaces of ScopiX IV



The communication interfaces are grouped together in a dedicated space on the right side of the product and protected by a protective cap: USB host, wired Ethernet or WiFi for communicating with a PC or printing to a network printer. A slot for a high-capacity  $\mu$ SD memory card allows you to expand the data storage capacity.

You can choose the type of communication that best suits your needs:

- Wired RJ45 Ethernet LAN network with integrated DHCP for easy connections to your network, option to activate the WiFi radio link to communicate with a PC.
- USB type A to interface with a PC to save, recall or load configurations.
- $\mu$ SD to store data, update the internal software if necessary, a direct interface that does not require a connection;



# Climate engineering and environmental measurements

|                                                    |     |
|----------------------------------------------------|-----|
| CA 1954 thermal camera.....                        | 112 |
| Thermometer selection guide.....                   | 113 |
| Infrared thermometers                              |     |
| CA 1860, CA 1862, CA 1864, CA 1866 .....           | 114 |
| Infrared thermometer                               |     |
| with K thermocouple input CA 876.....              | 115 |
| Probe thermometers TK 2000, TK 2002 .....          | 115 |
| Probe thermometers CA 1821, CA 1822, CA 1823 ..... | 116 |
| K thermocouple probes.....                         | 117 |
| K thermocouple extension cables.....               | 118 |
| Temperature probes.....                            | 118 |
| CA 1110 luxmeter.....                              | 119 |
| CA 1310, CA 832 sound level meters.....            | 120 |

|                                        |     |
|----------------------------------------|-----|
| CA 1227 thermo-anemometer .....        | 121 |
| CA 1246 thermo-hygrometer.....         | 122 |
| Moisture meter for materials .....     | 122 |
| CA 1550, CA 850 pressure gauges .....  | 123 |
| Tachometers CA 1725, CA 1727 .....     | 124 |
| CA 1510 indoor air quality meter ..... | 125 |
| CA 895 CO detector .....               | 126 |
| Stroboscope CDA 9452 .....             | 126 |
| CA 1730 rangefinder.....               | 127 |
| Field testers VX 0003, VX 0100 .....   | 128 |
| CA 40 field meter .....                | 129 |
| CA 7028 LAN network tester .....       | 129 |





# Thermal camera

## CA 1954



IP 54

160 x 120



PNG

**FREE**  
software  
CAmReport with  
automatic report  
generation

## High-performance and user-friendly

The CA 1954 thermal camera is suitable for all applications in the building, electrical and mechanical maintenance sectors.

- Unprecedented! Up to 9 hours of battery life
- Drop resistance up to 2 metres
- Focus free with 38° x 28° field of view
- Data retrieval from other measuring devices (current, humidity, dew point, etc.)
- Practical: voice recording, built-in emissivity table to be expanded, file organisation by site

|                                            | CA 1954                                                                                                                |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Detector                                   | 160 x 120                                                                                                              |
| Type                                       | UFPA microbolometer, 8 -14 µm                                                                                          |
| Frequency                                  | 9 Hz                                                                                                                   |
| Sensitivity (N.E.T.D)                      | 80 mK @ 30 °C (0.08 °C @ 30 °C)                                                                                        |
| <b>Temperature measurement</b>             |                                                                                                                        |
| Temperature range                          | -20 °C to +250 °C                                                                                                      |
| Accuracy                                   | ±2 °C or ±2 % of the reading                                                                                           |
| <b>Imaging performance (thermal image)</b> |                                                                                                                        |
| Field of view                              | 38° x 28°                                                                                                              |
| IFOV (spatial resolution)                  | 4.1 mrad                                                                                                               |
| Focusing                                   | Fixed                                                                                                                  |
| Minimum focal distance                     | 30 cm                                                                                                                  |
| Real image                                 | Yes (320 x 240 pixels)                                                                                                 |
| Display mode                               | Thermal image, real image with automatic parallax compensation.<br>Image merge function available in the PC software   |
| <b>Analysis functions</b>                  |                                                                                                                        |
| Measuring tools                            | 1 manual cursor + 1 automatic detection function + Min Max Avg on adjustable area + temperature profile + Isotherm     |
| Parameter settings                         | Emissivity, environmental temperature, distance, relative humidity                                                     |
| Voice comments                             | Yes via Bluetooth (earpiece supplied)                                                                                  |
| Connectivity                               | CA 1821/22/23, CA 1246, CA 1227, F407, F607, MTX 3292, MTX 3293                                                        |
| Data storage                               | On removable 2 GB micro SD card (approx. 4,000 images), up to 32 GB possible                                           |
| Image format                               | .png (thermal images and real images saved simultaneously)                                                             |
| Laser pointer                              | Yes                                                                                                                    |
| <b>Presentation of the image</b>           |                                                                                                                        |
| Adjustment                                 | Automatic or manual adjustment of palette min-max                                                                      |
| Image hold                                 | Animated or fixed image                                                                                                |
| Image display                              | Multiple palettes                                                                                                      |
| Screen                                     | 2.8 inches                                                                                                             |
| <b>Power supply</b>                        |                                                                                                                        |
| Type                                       | NiMH rechargeable batteries with low self-discharge                                                                    |
| Recharging mode                            | External (charger supplied)                                                                                            |
| Battery life                               | 9 hours (typical) / 50 % brightness, Bluetooth deactivated                                                             |
| <b>Environmental specifications</b>        |                                                                                                                        |
| Operating temperature                      | -15 °C to +50 °C                                                                                                       |
| Storage temperature range                  | -40 °C to +70 °C                                                                                                       |
| Compliance                                 | IEC 61326-1, IEC 61010-2-030, IEC 60825-1                                                                              |
| Resistance to falls                        | 2 metres on all surfaces                                                                                               |
| <b>Physical specifications</b>             |                                                                                                                        |
| Weight                                     | 700 g with rechargeable batteries                                                                                      |
| Dimensions                                 | 225 x 125 x 83 mm                                                                                                      |
| Protection class                           | IP54                                                                                                                   |
| <b>Interfaces</b>                          |                                                                                                                        |
|                                            | - USB link and Mass Storage function<br>- Bluetooth for connectivity with earpiece                                     |
| Tripod mount                               | Yes, 1/4" insert on camera                                                                                             |
| <b>General information</b>                 |                                                                                                                        |
| Report generation software                 | Supplied as standard with automatic report generation (.pdf / .docx)<br>Compatibility with W7, W8, W10, 32 and 64 bits |
| Warranty                                   | 2 years                                                                                                                |



Diagnostics &amp; control



Education



Energy efficiency



Transport



Tertiary &amp; residential



Industries



Production, transport &amp; distribution



Laboratory &amp; metrology



## + The extra

- The combination of thermograms and intensities from the F407/F607 clamps allows you to determine the load level at the time of measurement and facilitates the identification and criticality of the defect.
- The isotherm coupled with the dew point value of the CA 1246 allows you to detect areas at risk of mould
- Recording of ambient, outdoor or indoor temperature via the CA 1246 via Bluetooth



## CA 1954 livrée en mallette durcie avec :

- 4 NiMH batteries
- 1 battery charger
- 1 2GB HD micro SD card
- 1 USB cable
- 1 Bluetooth headset
- CAmReport software download
- 1 measurement report

## To order

CA 1954 thermal camera

Reference: P01651904

## Thermometer

### Selection guide



|                             | CA 1860 | CA 1862  | CA 1864 | CA 1866 | CA 876 | CA 1821                        | CA 1822                        | CA 1823                        | TK 2000 | TK 2002 |
|-----------------------------|---------|----------|---------|---------|--------|--------------------------------|--------------------------------|--------------------------------|---------|---------|
| Infrared measurement        |         |          |         |         |        |                                |                                |                                |         |         |
|                             | ■       | ■        | ■       | ■       | ■      |                                |                                |                                |         |         |
| Field of view               |         |          |         |         |        |                                |                                |                                |         |         |
| 10/1                        | ■       |          |         |         | ■      |                                |                                |                                |         |         |
| 12/1                        |         | ■        |         |         |        |                                |                                |                                |         |         |
| 30/1                        |         |          | ■       |         |        |                                |                                |                                |         |         |
| 50/1                        |         |          |         | ■       |        |                                |                                |                                |         |         |
| Emissivity                  |         |          |         |         |        |                                |                                |                                |         |         |
| Fixed: 0.95                 | ■       |          |         |         |        |                                |                                |                                |         |         |
| Variable: 0.1 to 1          |         | ■        | ■       | ■       | ■      |                                |                                |                                |         |         |
| Laser sight                 | ■       | ■ Double | ■       | ■       | ■      |                                |                                |                                |         |         |
| Contact measurement         |         |          |         |         |        |                                |                                |                                |         |         |
| 1-input thermocouple sensor |         |          |         |         | ■      | J, K, T, N, E, R, S            | J, K, T, N, E, R, S            |                                | K       | K       |
| 2-input thermocouple sensor |         |          |         |         |        |                                | J, K, T, N, E, R, S            |                                |         | K       |
| 1-input resistive probe     |         |          |         |         |        |                                |                                | Pt100<br>Pt1000                |         |         |
| General functions           |         |          |         |         |        |                                |                                |                                |         |         |
| HOLD                        | ■       | ■        | ■       | ■       | ■      | ■                              | ■                              | ■                              | ■       | ■       |
| Max                         | ■       | ■        | ■       | ■       | ■      | ■                              | ■                              | ■                              |         |         |
| Min                         | ■       | ■        | ■       | ■       | ■      | ■                              | ■                              | ■                              |         |         |
| Avg                         | ■       | ■        | ■       | ■       |        | via<br>Data Logger<br>Transfer | via<br>Data Logger<br>Transfer | via<br>Data Logger<br>Transfer |         |         |
| Alarm                       | ■       | ■        | ■       | ■       | ■      | ■                              | ■                              | ■                              |         |         |
| Choice of units             | ■       | ■        | ■       | ■       | ■      | ■                              | ■                              | ■                              |         |         |
| Backlighting                | ■       | ■        | ■       | ■       | ■      | ■                              | ■                              | ■                              |         |         |



No-contact thermometers

CA 1860 - CA 1862 | CA 1864 - CA 1866



IP65 °C

To identify all your hot spots in seconds, the ergonomic design of these thermometers makes them very easy to use.



CA 1860 - CA 1862

- Compact and rugged thanks to its resistance to falls from up to 3 metres and IP65 ingress protection
- Excellent metrological performance
- Wide dynamic range for measurement: -35 °C to +650 °C
- Double LASER sight (CA 1862) for precise targeting of the test area
- Parameterizable high and low alarms

CA 1864 - CA 1866

- Extended temperature range: measure up to 1,000 °C
- Use the variable emissivity to perform your inspections in accordance with reality
- High distance/spot ratio for better accuracy at long distances
- Set your alarm thresholds so that you are alerted every time there is an abnormal temperature!

|                       | CA 1860                                                                                                                   | CA 1862                    | CA 1864                                                                                                                                               | CA 1866 |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Measurement range     | - 35 °C to + 450 °C                                                                                                       | - 35 °C to + 650 °C        | - 50 °C to +1000 °C                                                                                                                                   |         |
| Measurement accuracy  | ≥ 0° C : ± 1,8 °C ou ± 1,8 % de la lecture<br>(prendre la valeur la plus haute)<br>< 0 °C : ± (1,8 °C + 0,1 °C / °C)      |                            | - 50 °C to - 20 °C : ± 5 °C<br>- 20 °C to +200 °C : ±1.5 % L + 2 °C<br>+200 °C to +538 °C : ±2.0 % L + 2 °C<br>+538 °C to +1,000 °C : ±3.5 % L ± 5 °C |         |
| Display resolution    | 0.1 °C                                                                                                                    |                            |                                                                                                                                                       |         |
| Field of view         | 10 : 1                                                                                                                    | 12 : 1                     | 30 : 1                                                                                                                                                | 50 : 1  |
| Emissivity            | 0.95                                                                                                                      | Adjustable from 0.1 to 1.0 |                                                                                                                                                       |         |
| Spectral response     | 8 µm ~ 14 µm                                                                                                              |                            |                                                                                                                                                       |         |
| Number of lasers      | Single laser                                                                                                              | Double laser               | Single laser                                                                                                                                          |         |
| Measurement functions | Instantaneous mode, MAX, MIN, AVG, differential (DIF), continuous measurement by blocking the measurement trigger, alarms |                            | MAX, MIN, AVG, DIFF, HOLD                                                                                                                             |         |
| Alarms                | High and low                                                                                                              |                            |                                                                                                                                                       |         |
| Backlit display       | Yes                                                                                                                       |                            |                                                                                                                                                       |         |
| Battery type          | 9V 6LR61 battery                                                                                                          |                            |                                                                                                                                                       |         |
| Tripod insert         | Yes                                                                                                                       |                            | -                                                                                                                                                     | -       |
| Dimensions/Weight     | 189 mm x 118 mm x 55 mm / 292 g                                                                                           |                            | 230 x 100 x 56 mm / 290 g                                                                                                                             |         |

1 thermometer CA 1860 or CA 1862 or CA 1864 or CA 1866 delivered with:

- 1 carrying bag
- 1 x 9 V 6LR61 battery

To order

CA 1860  
Reference: P01651815

CA 1862  
Reference: P01651816

CA 1864  
Reference: P01651813

CA 1866  
Reference: P01651814

Recommended accessory



P01298033  
Bag

## Infrared thermometer with K-type thermocouple input

CA 876



### Monitor temperature variations

- Robust thanks to a shock-resistant protective sheath
- Temperature control up to 1350 °C
- Measurement accuracy
- Sensor stability over time
- Infrared measurement possible
- 100% reliable

|                     | IR measurement             | Thermocouple probe input |
|---------------------|----------------------------|--------------------------|
| Field of view       | 10/1                       | -                        |
| Emissivity          | 0.1 to 1                   | -                        |
| Measuring range     | -20 °C to +550 °C          | -40 °C to +1,350 °C      |
| Accuracy            | ± 2% of reading or ± 3 °C  | ± 0.1% of reading + 1 °C |
| Functions           | Max., Min., HOLD, Alarms   |                          |
| Dimensions / weight | 173 x 60.5 x 38 mm / 255 g |                          |

## Probe thermometers

TK 2000 - TK 2002



IP65

°C

### Connect your probe and take a measurement

- Compact, accurate and easy to use
- Can be used in any environment thanks to their IP 65 protection
- Measures the temperature difference using the TK 2002's 2 thermocouple inputs

|               | TK 2000             | TK 2002             |
|---------------|---------------------|---------------------|
| No. of inputs | 1                   | 2                   |
| Range         | -50 °C to +1,000 °C | -50 °C to +1,000 °C |
| Accuracy      | ± 1.5 % + 0.5 °C    | ± 1.5 % + 0.5 °C    |
| Functions     | HOLD, °C            | HOLD, °C            |
| Dimensions    | 163 x 63 x 37.5 mm  | 163 x 63 x 37.5 mm  |
| Weight        | 200 g               | 200 g               |



Diagnostics  
& control



Education



Energy  
efficiency



Transport



Tertiary  
& residential



Industries



Production, transport  
& distribution



Laboratory  
& metrology



### TK 2000 supplied with:

- 1 K-type thermocouple cable probe
- 1 x 9 V 6LR61 battery

### TK 2002 supplied with:

- 2 K-type thermocouple cable probes
- 1 x 9 V 6LR61 battery

### CA 876 supplied with:

- 1 shockproof sheath
- 1 K-type thermocouple cable probe

### To order

1 thermometer TK2000

Reference: P01653100

1 thermometer TK2002

Reference: P01653110

1 thermometer CA 876

Reference: P01651403Z

### Recommended accessory



K thermocouple probe range for ambient, surface or immersion measurement.

> page 117



## Probe thermometers

### CA 1821 - CA 1822 - CA 1823



IP 54



Compact and magnetic for fixed or portable use, these thermometers are accurate, versatile and durable. Communicating via USB or Bluetooth, the free Android CA Environmental Loggers app allows you to configure the products, view data in real time, export recorded data and send it by email.

- IP54 magnetic housing
- Large backlit display
- Records up to 1 million data points
- Connects via USB or Bluetooth
- Alarms and alarm-triggered recording
- Up to 3 years of battery life
- Android app & Data Logger Transfer software with automatic report generation provided free of charge

|                     | CA 1821                                                                                                                         | CA 1822                           | CA 1823                                          |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|--------------------------------------------------|
| Probe type          | Thermocouples J, K, T, N, E, R, S                                                                                               | Thermocouples J, K, T, N, E, R, S | Pt100, Pt1000                                    |
| Number of channels  | 1                                                                                                                               | 2                                 | 1                                                |
| Temperature range   | -250 °C to +1,767 °C                                                                                                            |                                   | -100 °C to +400 °C                               |
| Resolution          | $\theta < 1,000\text{ °C}$ : 0.1 °C   $\theta \geq 1,000\text{ °C}$ : 1 °C                                                      |                                   | 0.1 °C                                           |
| Basic accuracy      | $\pm (0.1\% \text{ of reading} + 0.6\text{ °C})$                                                                                |                                   | $\pm (0.4\% \text{ of reading} + 0.3\text{ °C})$ |
| Functions           | Min, Max, HOLD, Alarms                                                                                                          |                                   |                                                  |
| Recording           | Manual start and stop on the product<br>Programmed recording                                                                    |                                   |                                                  |
| Alarms              | Visual alert when configurable threshold is exceeded<br>via Data Logger Transfer. Recording can be triggered at alarm threshold |                                   |                                                  |
| Battery life        | 1,000 hours (portable mode) / 3 years in recording mode (based on 15-minute measurements)                                       |                                   |                                                  |
| Protection rating   | IP54 enclosure                                                                                                                  |                                   |                                                  |
| Mounting            | Bracket featuring: a magnet, a wall mounting system, a slot for hanging the product.<br>Compatible with the Multifix accessory  |                                   |                                                  |
| Connectivity        | Miniature female compensated                                                                                                    |                                   | Type 3-point flat pin                            |
| Dimensions / weight | 150 x 72 x 32 mm / 260 g with batteries                                                                                         |                                   |                                                  |



#### CA 1821, CA 1822, CA 1823 supplied with:

- 1 carrying case
- 3 x 1.5 V LR6 batteries
- 1 USB cable
- 1 measurement report

PC software  
DL Transfer  
free available  
for download on  
the website  
Chauvin Arnoux

#### To order

CA 1821 thermometer with thermocouple probes, 1 channel  
**Reference: P01654821**

CA 1822 thermometer with thermocouple probes, 2 channels  
**Reference: P01654822**

CA 1823 thermometer with resistance probes, 1 channel  
**Reference: P01654823**

#### Recommended accessories



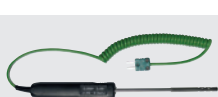
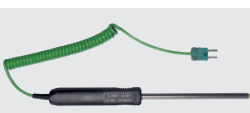
Range of K thermocouple probes  
for ambient, surface or immersion  
measurement.



**P01654242**  
Shockproof sheath

## Accessories for thermometers

### K thermocouple sensors

| Model                                                                               | Sensor head                                                                              | Description                                                                                                                                                   | Type / Application                 | Measurement range  | Tolerance class | Response time at 63%                                   | Plunger diameter         | Plunger length | Ref.      | Model |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|--------------------|-----------------|--------------------------------------------------------|--------------------------|----------------|-----------|-------|
|    |  SK20   | Sheathed sensor as per the NF EN 61615 standard. Hot junction isolated from chassis-earth. Inconel 600 protective sheath                                      | Flexible general purpose sensor    | -40 °C to 450 °C   | Cl. 1           | 1 s                                                    | 1.5 mm                   | 1 m            | P01655010 | SK20  |
|    |  SK6    | "General-purpose" sensor recommended for measurements where access is difficult. Do not use in liquids (tip is not watertight)                                | Flexible sensor                    | -50 °C to 285 °C   | Cl. 2           | 1 s par contact                                        | 1 mm                     | 1 m            | P03652906 | SK6   |
|    |  SK2    | Sensor with stainless-steel sheath which can be bent as required. Radius of curvature > 4 mm                                                                  | Bendable general purpose sensor    | -50 °C to 1,000 °C | Cl. 2           | 3 s en ambiance                                        | 2 mm                     | 1 m            | P03652902 | SK2   |
|    |  SK3    | Slightly bendable sensor with stainless-steel sheath                                                                                                          | Semi-rigid general purpose sensor  | -50 °C to 1,000 °C | Cl. 2           | 2 s                                                    | 4 mm                     | 50 cm          | P03652903 | SK3   |
|    |  SK13   | Sensor with stainless-steel sheath                                                                                                                            | General purpose sensor             | -50 °C to 1,100 °C | Cl. 2           | 6 s                                                    | 3 mm                     | 30 cm          | P03652918 | SK13  |
|    |  SK7    | In "calm" conditions without air movement, shake the sensor to encourage heat exchange                                                                        | Air sensor for ambient measurement | -50 °C to 250 °C   | Cl. 2           | 12 s                                                   | 5 mm                     | 15 cm          | P03652907 | SK7   |
|  |  SK17 | In "calm" conditions without air movement, shake the sensor to encourage heat exchange                                                                        | Air sensor for ambient measurement | -50 °C to 600 °C   | Cl. 2           | 5 s                                                    | 6 mm                     | 13 cm          | P03652921 | SK17  |
|  |  SK1  | Sensor with stainless-steel sheath for penetration (20 mm min.) in pasty, viscous or liquid specimens                                                         | Needle sensor for penetration      | -50 °C to 800 °C   | Cl. 2           | 1 s                                                    | 3 mm                     | 15 cm          | P03652901 | SK1   |
|  |  SK11 | Sensor with stainless-steel sheath for penetration (20 mm min.) in pasty, viscous or liquid specimens                                                         | Needle sensor for penetration      | 50 °C to 600 °C    | Cl. 2           | 12 s                                                   | 3 mm                     | 13 cm          | P03652917 | SK11  |
|  |  SK4  | Sheathed sensor with stainless-steel sensing element and Teflon base. For small flat surfaces. Contact can be improved by using silicone grease.              | Surface sensor                     | 0°C to 250°C       | Cl. 2           | 1 s                                                    | 5 mm                     | 15 cm          | P03652904 | SK4   |
|  |  SK14 | For surface temperatures when access is difficult                                                                                                             | Elbowed surface sensor             | -50°C to 450°C     | Cl. 2           | 8 s                                                    | 6 mm                     | 13 cm          | P03652919 | SK14  |
|  |  SK5  | For flat surfaces. The spring ensures optimum contact even if the sensor is not positioned perpendicularly. Contact can be improved by using silicone grease  | Surface sensor with spring         | -50°C to 500°C     | Cl. 2           | 1 s                                                    | 5 mm Ø in contact 8.5 mm | 15 cm          | P03652905 | SK5   |
|  |  SK15 | For flat surfaces. The spring ensures optimum contact even if the sensor is not positioned perpendicularly. Contact can be improved by using silicone grease. | Surface sensor with spring         | -50°C to 900°C     | Cl. 2           | 2 s                                                    | 8 mm                     | 13 cm          | P03652920 | SK15  |
|  |  SK8  | For measurements on pipes. The copper sheet is applied to the clean, dry pipe. The two-sided Velcro strip ensures contact by winding.                         | Pipe sensor                        | -50°C to 140°C     | Cl. 2           | 10 seconds on stainless-steel pipe with 12 mm diameter | Ø 10-90 mm               | 32 cm          | P03652908 | SK8   |
|  |  SK19 | Sensor with magnet for flat metal surfaces                                                                                                                    | Magnetic sensor                    | -50°C to 200°C     | Cl. 2           | 7 s                                                    | 4 mm                     | 1 m            | P03652922 | SK19  |

Accuracy Class I / -40 °C to +375 °C:  $\pm 1.5^\circ\text{C}$  / +375 °C to +1000°C:  $\pm 0.004 \times T^\circ\text{C}$ .Accuracy Class II / -40 °C to +333 °C:  $\pm 2.5^\circ\text{C}$  / +333 °C to +1200°C:  $\pm 0.0075 \times T^\circ\text{C}$ .

Standard compensated miniature male 2-pole connector.

Spiral cable from 45 cm to 1m

## Accessories / replacement parts

### Extensions for thermocouples



CK 3

CK 2

CK 1

CK 4

| Models                                                 | Description                                  | Ø    | Length |
|--------------------------------------------------------|----------------------------------------------|------|--------|
| CK 1                                                   | Terminated by male plug / female plug        | 4 mm | 1 m    |
| CK 2                                                   | Terminated by male plug / 2 bare wires       | 4 mm | 1 m    |
| CK 3                                                   | Terminated by 5-pin DIN plug / female socket | 4 mm | 1 m    |
| CK 4                                                   | Terminated by 2 banana plugs / female socket | 4 mm | 1 m    |
| Temperature withstand of extensions: -40 °C to +100 °C |                                              |      |        |

### To order

CK 1 - Extension cables for thermocouples

**Reference: P03652909**

CK 2 - Extension cables for thermocouples

**Reference: P03652910**

CK 3 - Extension cables for thermocouples

**Référence :P03652913**

CK 4 - Extension cables for thermocouples

**Reference: P03652914**

### Recommended accessory

**P03652912**

PP1 handle for CK extensions

## Pt 100 Ω temperature sensors

| Model                                                                                    | Type / Application             | Description                                                                                                                                                | Measurement range | Tolerance class | Response time at 63% | Plunger diameter | Plunger length | Ref.      |
|------------------------------------------------------------------------------------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------|----------------------|------------------|----------------|-----------|
|  SP 10 | Surface sensor with spring     | For flat surfaces<br>The spring ensures optimum contact, even if the sensor is not set up perpendicularly. Silicone grease can be used to improve contact. | -50 °C to 200 °C  | Cl. B           | 6 s                  | 5 mm             | 13 cm          | P03652712 |
|  SP 11 | Needles sensor for penetration | For penetration (20 mm minimum) in pasty, viscous or liquid media.                                                                                         | -100 °C to 600 °C | Cl. B           | 7 s                  | 3 mm             | 13 cm          | P03652713 |
|  SP 12 | Air sensor                     | In "calm" conditions without air movement, shake the sensor to encourage heat exchange                                                                     | -100 °C to 600 °C | Cl. B           | 5 s                  | 5 mm             | 13 cm          | P03652714 |
|  SP 13 | Sensor for immersion           | Sensor with stainless-steel sheath specially designed for liquids                                                                                          | -100 °C to 600 °C | Cl. B           | 7 s                  | 3 mm             | 13 cm          | P03652715 |
|  SP 14 | General purpose sensor         | 316L stainless-steel sensor for general use                                                                                                                | -100 °C to 450 °C | Cl. A           | 7 s                  | 3 mm             | 20 cm          | P01655020 |

Accuracy Class A /  $0.15\text{ °C} + 0.002 \times T\text{ °C}$ Accuracy Class B /  $0.3\text{ °C} + 0.005 \times T\text{ °C}$ 

Miniature 3-pole flat-pin connector

Spiral cable from 45 cm to 1m

## Luxmeter

## CA 1110



LUX

FC

CLASSEC  
NFC 42-710

LED

FLUO



## Measures illuminance from all light sources

- Illuminance measurement in full compliance and in all directions
- Measure up to 200,000 lux
- Mapping of measured illuminance for a surface or room (MAP mode)
- Metrological compensation on LED and fluorescent lamps.
- Min., Max., Avg., HOLD functions
- Records up to 1 million points

|                                  | CA 1110                                                                                                                                           |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Functions                        | Min., Max., HOLD, Average                                                                                                                         |
| Recording                        | Manual Start / Stop on the product<br>Programmed recording                                                                                        |
| MAP mode                         | The MAP function can be used to map the lighting on a surface or in a room.<br>In this way, the lighting measurements are saved in the same file. |
| Data storage                     | More than 1 million points                                                                                                                        |
| Power supply                     | - 3 x 1.5V AA / LR6 alkaline batteries or NiMH rechargeable battery<br>- Mains connection possible with the mains / micro USB adapter (option)    |
| Battery life                     | 500 hours (portable mode) / 3 years of recording (15-minute measurement interval)                                                                 |
| Dimensions                       | Casing: 150 x 72 x 32 mm<br>Sensor: 67 x 64 x 35 mm (with protective cover) Spiral cable: 24 to 120 cm                                            |
| Weight                           | 345 g with batteries                                                                                                                              |
| Ingress protection               | Casing IP50                                                                                                                                       |
| Operating temperature / humidity | -10 to +60 °C - 10 to 90 % HR                                                                                                                     |
| Standards                        | Class C as per the NFC 42-710 standard                                                                                                            |
| Measurement range                | 0.1 to 200,000 lx                                                                                                                                 |
| Accuracy in standard mode        |                                                                                                                                                   |
| Incandescent lamp                | ± 3 % of reading                                                                                                                                  |
| LED                              | ± 6 % of reading (3,000 K to 6,000 K)                                                                                                             |
| Fluorescent lamp                 | ± 9 % of reading                                                                                                                                  |
| Accuracy in compensation mode    |                                                                                                                                                   |
| LED mode                         | ± 4 % of reading (at 4000 K)                                                                                                                      |
| Fluo mode                        | ± 4 % of reading (type F11, 4000 K)                                                                                                               |



### + The extra

- Remote probe limits the risk of the sensor being obscured by the operator or integrated into the product for one-handed use



### 1 CA 1110 lux meter delivered with:

- 1 carrying case
- 3 x 1.5 V LR06 batteries
- 1 USB cable
- 1 measurement report

Software  
Data Logger  
Transfer  
available for  
download

### To order

1 CA 1110 lux meter  
Reference: P01654110

### Recommended accessories



P01654252  
Shockproof case  
+ MultiFix accessory



P01651023  
Mains adapter



## Sound level meter

### CA 1310

|                                                          | CA 1310                                                                                                                                      |
|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Measurement range                                        | 30.0 to 130.0 dB                                                                                                                             |
| Frequency range                                          | 20 Hz to 8 kHz                                                                                                                               |
| Accuracy (in reference conditions at 94 dB, 1 kHz)       | ± 1 dB                                                                                                                                       |
| Frequency weighting                                      | A / C                                                                                                                                        |
| Time weighting                                           | FAST:125 ms / SLOW: 1 second                                                                                                                 |
| Function                                                 |                                                                                                                                              |
| Measurement modes                                        | SPL (Sound Pressure Level)<br>Leq (Equivalent Continuous Sound Level)<br>MaxL (Maximum Equivalent Sound Level)<br>MinL (Minimum Sound Level) |
| Leq (equivalent continuous sound level) integration time | Available values:<br>10 sec, 1 min, 5 min, 10 min, 15 min, 30 min, 1 h, 8 h, 24 h                                                            |
| Recording                                                | 64 000 points                                                                                                                                |
| Display                                                  | Digital and bargraph<br>Time/date-stamping                                                                                                   |
| Physical specifications                                  |                                                                                                                                              |
| Tripod insert                                            | Yes                                                                                                                                          |
| Dimensions / weight                                      | 262 x 75 x 39 mm / 390 g                                                                                                                     |
| General specifications                                   |                                                                                                                                              |
| Compliance                                               | IEC 61672-1 Class 2                                                                                                                          |
| Warranty                                                 | 2 years                                                                                                                                      |
| Software                                                 | SL-Software:<br>- Values displayed in graph or table format<br>- Data export<br>- Real-time mode                                             |

dBA

dBc



Leq



### Precise measurement of the sound environment indoors and outdoors

- Measurement of the equivalent continuous sound level Leq
- Recording of up to 64,000 measurement points and data analysis software supplied as standard
- Large backlit display with digital display and bar graph
- Remote microphone (extension cable available as an accessory)



### CA 1310 sound level meter delivered in a case with:

- Batteries
- Windscreen
- SL software
- 1 male jack plug
- Operating instructions
- Verification certificate

### To order

CA 1310

Reference: P01651030

## Sound level meter

### CA 832

|                                                    | CA 832                        |
|----------------------------------------------------|-------------------------------|
| Measurement range                                  | 37.0 to 130.0 dB              |
| Frequency range                                    | 31.5 Hz to 8 kHz              |
| Accuracy (in reference conditions at 94 dB, 1 kHz) | ± 2 dB                        |
| Frequency weighting                                | A / C                         |
| Time weighting                                     | FAST: 125 ms / SLOW: 1 second |
| Function                                           |                               |
| Measurement modes                                  | MaxL (Maximum sound level)    |
| Physical specifications                            |                               |
| Tripod insert                                      | Yes                           |
| Dimensions / weight                                | 237 x 60.5 x 38 mm / 230 g    |
| General specifications                             |                               |
| Compliance                                         | IEC 651 type 2                |
| Warranty                                           | 2 years                       |

dBA

dBc



### Key features

- Noise level control
- Ease of use



### CA 832 delivered with:

- 1 shockproof case
- 1 jack plug for analogue output
- 1 universal adapter for mounting on a tripod
- 1 9 V 6LR61 battery

### To order

CA 832

Reference: P01185501Z

# Thermo-anemometer

## CA 1227



### Air velocity and flow rate measurements in all situations

- Air temperature, velocity and flow rate
- Mapping of measured air velocities (MAP mode)
- Min., Max., Avg. and HOLD functions
- Recording of up to 1 million data points

|                                  | CA 1227                                                                                                                                                  |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Air speed / flow rate sensor     | Rotating vane with optical detection                                                                                                                     |
| Air speed range                  | 0.50 m/s to 27.0 m/s                                                                                                                                     |
| Air speed accuracy               | ± 3 % of reading ± 0,1 m/s                                                                                                                               |
| Air flow rate range              | 0 to 2,999 m³/h                                                                                                                                          |
| Air flow rate accuracy           | ± 8 % L                                                                                                                                                  |
| Temp. range °C/°F                | - 20 to +50 °C                                                                                                                                           |
| Temp. accuracy °C                | 0 to 50 °C: ± 0.8 °C<br>-20 to 0 °C: ± 1.6 °C                                                                                                            |
| Functions                        | Min., Max., HOLD, Average                                                                                                                                |
| Recording                        | Manual Start / Stop on the product<br>Programmed recording                                                                                               |
| Data storage                     | More than 1 million points                                                                                                                               |
| Power supply                     | - 3 x 1.5V LR6 alkaline batteries or NiMH rechargeable battery<br>- Mains connection possible with the mains / micro-USB adapter offered as an accessory |
| Battery life                     | 200 hrs (portable mode) / 8 days of recording (measurements at 15-minute intervals)                                                                      |
| Dimensions                       | Casing: 150 x 72 x 32 mm<br>Sensor: 160 x 80 x 38 mm<br>Spiral cable: 24 to 120 cm                                                                       |
| Weight                           | Approx. 400 g                                                                                                                                            |
| Ingress protection               | IP40 casing                                                                                                                                              |
| Operating temperature / humidity | -10 to +60 °C / 10 to 90 % HR                                                                                                                            |
| Standards                        | IEC 61010-1 - IEC 61326-1                                                                                                                                |



### + The extra

- Data export in .xls format and email delivery directly to the field thanks to the CA Environmental Loggers Android app



### CA 1227 supplied with:

- 1 carrying case
- 3 x 1.5 V LR6 batteries
- 1 USB cable
- 1 measurement report

**PC software**  
**DL Transfer**  
free available  
for download  
on the website  
Chauvin Arnoux

### To order

1 Thermo-anemometer CA 1227  
Reference: P01654227

### Recommended accessories



**P01654250**  
Set of 2 cones for flow measurement with propeller (circular section Ø 210 mm and rectangular 346 x 346 mm)



**P01654251**  
Propeller sensor Ø 80 mm (spare part)

## Thermo-hygrometer

### CA 1246



%HR

°C

°F



### Precise and simultaneous control of humidity and temperature

- Hygrometry, temperature and dew point
- Recording of up to 1 million points
- Visual alarm when thresholds are exceeded
- MultiFix-compatible magnetic product
- Recording triggered when alarm threshold is reached

|                                  | CA 1246                                                                                                                                          |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| RH range                         | 3 to 98 % RH                                                                                                                                     |
| RH accuracy                      | 10 to 90 %RH: $\pm (2 \%RH \pm 1 \text{ ct})$<br>outside that range: $\pm (4 \%RH \pm 1 \text{ ct})$                                             |
| Temp. range °C/°F                | -10 to +60 °C                                                                                                                                    |
| Temp. accuracy °C/°F             | 10 to 40°C: $\pm (0.5^\circ\text{C} \pm 1 \text{ ct})$<br>outside that range: $\pm (0.032 \times (T-25) \pm 1 \text{ ct})$ / T=temperature in °C |
| Dew point range                  | -10 to +60 °Ctd                                                                                                                                  |
| Dew point accuracy               | 1.5 °C from 20 % RH to 30 % RH<br>1 °C above 30 % RH                                                                                             |
| Functions                        | Min, Max, HOLD, Alarms                                                                                                                           |
| Recording                        | Manual Start / Stop on the product<br>Programmed recording                                                                                       |
| Alarms                           | Visual alert on threshold overrun set via Data Logger Transfer<br>Recording can be triggered on alarm threshold                                  |
| Data storage                     | More than 1 million points                                                                                                                       |
| Power supply                     | - 3 x 1.5V AA / LR6 alkaline batteries or NiMH rechargeable battery<br>- Mains connection possible with the mains / micro USB adapter (option)   |
| Battery life                     | 1,000 hrs (portable mode) / 3 years for recording (15-minute measurement interval)                                                               |
| Dimensions / weight              | 187 x 72 x 32 mm / 260 g with batteries                                                                                                          |
| Ingress protection               | IP54 casing                                                                                                                                      |
| Operating temperature / humidity | -10 to +60 °C / 10 to 90 % RH                                                                                                                    |
| Standards                        | IEC 61010-1 - IEC 61326-1                                                                                                                        |

### + The extra

- Data export in .xls format and email delivery directly to the field thanks to the CA Environmental Loggers app

### CA 1246 supplied with:

- 1 carrying case
- 3 x 1.5 V LR06 batteries
- 1 USB cable
- 1 measurement report



PC software  
DL Transfer  
free available  
for download  
on the website  
Chauvin Arnoux

### To order

CA 1246

Reference: P01654246

### Recommended accessory



P01156401  
75% salt cartridge

## Material moisture meter

### CA 847



### Measuring moisture content in materials

- Measure wood moisture with ease: insert the probe and read the corresponding value on the LED display

|             | CA 847              |
|-------------|---------------------|
| RH range    | 6 to 100 % RH       |
| RH accuracy | $\pm 1 \text{ LED}$ |
| Dimensions  | 173 x 60.5 x 38 mm  |
| Weight      | 160 g               |



### CA 847 delivered with:

- 1 x 9 V 6LR61 battery
- 1 x shockproof case

### To order

CA 847

Reference: P01156302Z

## Manometer

### CA 1550 - KIT CA 1550



### Accurate verification of the proper functioning of HVAC installations

- Accurate and easy to use
- Time-stamped monitoring
- Differential measurements Function
- Thermometer function and speed/flow function with Pitot

#### CA 1550

|                                                       |                                                                                                                               |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Differential pressure measurement                     |                                                                                                                               |
| Measuring range                                       | - 2,450 to + 2,450 Pa                                                                                                         |
| Accuracy / Resolution                                 | ± 0.5% Full scale ± 1 pt / 0.1 Pa for measurements between ± 200 Pa / 1 Pa beyond                                             |
| Air velocity and flow rate with Pitot probe accessory |                                                                                                                               |
| Air velocity range                                    | from 2 m/s to 60 m/s                                                                                                          |
| Accuracy                                              | from 2 to 5 m/s: ± 0.7 m/s - from 5 m/s to 60 m/s: ± 0.5% of reading ± 0.3 m/s                                                |
| Air flow range                                        | 0.00 to 9,999 m³ / h                                                                                                          |
| Accuracy                                              | ± 0.5% of reading ± 1 pt                                                                                                      |
| Compensations                                         | Manual or automatic temperature compensation (K thermocouple input)<br>Automatic atmospheric pressure compensation            |
| Functions                                             | Min-Average-Max-Hold-Auto-Zero-MAP mode                                                                                       |
| Recording                                             | Manual triggering and stopping on the product or programmed                                                                   |
| Memory                                                | Capacity : over 1 million points                                                                                              |
| Power supply                                          | - Alkaline batteries: 3 x 1.5V LR06 or rechargeable NiMH battery<br>- Mains connection via mains adapter/micro USB (optional) |
| Autonomy                                              | 500 hours (portable mode) / 3 years in recording mode (based on 15-minute measurements)                                       |
| Dimensions / weight                                   | 150 x 72 x 32 mm / 260 g with batteries                                                                                       |
| Operating environment                                 | Temperature: -10 to 50 °C / Humidity: 10 to 90% RH                                                                            |
| Standards                                             | IEC 61010-1 - IEC 61326-1                                                                                                     |

## Manometer

### CA 850



#### Bar

### Pressure level measurement in air conditioning installations and pneumatic control systems

- Accurate and easy to use
- Time-stamped monitoring
- Differential measurements
- Compact and lightweight

#### CA 850

|                     |                                                                                                                                                      |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Measurement range   | -6.89 to +6.89 bar                                                                                                                                   |
| Accuracy            | 1 % at full scale + 1 ct                                                                                                                             |
| Units               | psi, bar, mbar, mmH <sub>2</sub> O, inH <sub>2</sub> O<br>kbar, cmH <sub>2</sub> O, FtH <sub>2</sub> O, mmHg, OZin <sup>2</sup> , kg/cm <sup>2</sup> |
| Functions           | Differential measurements, Min., Max., HOLD                                                                                                          |
| Dimensions / weight | 182 x 72 x 30 mm                                                                                                                                     |
| Weight              | 220 g                                                                                                                                                |



### + The extra

- Android app: data recovery and transmission of measurement reports by email
- The CA 1550 is available in a kit version, supplied with the P01654555 Pitot tube
- The CA 1550 has an input for a K thermocouple temperature sensor for temperature compensation during measurement with a Pitot tube.

### CA 1550 delivered with:

- 1 carrying case
- 3 x 1.5V AA alkaline batteries
- 2 transparent connecting tubes
- 1 USB cable
- 1 measurement report and quick start guide

### CA 850 comes with:

- 1 carrying case
- 2 transparent tubes
- 1 9V 6LR61 battery

PC software  
DL Transfer  
free available  
for download  
on the website  
Chauvin Arnoux

### To order

|             |                      |
|-------------|----------------------|
| CA 850      | Reference: P01184101 |
| CA 1550     | Reference: P01654550 |
| KIT CA 1550 | Reference: P01654555 |

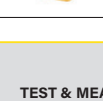
### Recommended accessories



**P01654560**  
Pitot tube (length 324 mm, connection Ø 6 mm, tube head Ø 8 mm)



**P01654561**  
Transparent tube (internal Ø 5 mm, length 2 metres)



**P01654242**  
Shockproof sheath



## Tachometers

### CA 1725 - CA 1727



#### Measures the rotational speed of a motor, the pulse frequency or the opening time of the contacts of a relay

- Measurements up to 100,000 rpm
- Contactless and contact measurements
- Numerous functions available: rotational speed, linear, counting, frequency, period
- Programmable and memory capacity CA 1727

#### CA 1727

- USB connection for evaluating recordings on a PC for the CA 1727

|                            | CA 1725                                   | CA 1727             |
|----------------------------|-------------------------------------------|---------------------|
| <b>RPM function</b>        |                                           |                     |
| Range                      | 60 to 100,000 rpm                         |                     |
| Accuracy                   | 10 <sup>-4</sup> of reading ± 6 cts       |                     |
| <b>m/min function</b>      |                                           |                     |
| Range                      | 60 to 10,000 m/min.                       |                     |
| Accuracy                   | 10 <sup>-4</sup> of reading ± 1 increment |                     |
| <b>Hz function</b>         |                                           |                     |
| Range                      | 0.1 to 1000 ms                            |                     |
| Accuracy                   | 4 x 10 <sup>-5</sup> of reading ± 4 cts   |                     |
| <b>ms functions</b>        |                                           |                     |
| Range                      | 0.1 to 1000 ms                            |                     |
| Accuracy                   | 10 <sup>-4</sup> of reading ± 5 cts       |                     |
| <b>Duty cycle function</b> |                                           |                     |
| Range                      | 0.1 to 100 %                              |                     |
| Accuracy                   | 0.1 % to 1 %                              |                     |
| <b>Counting function</b>   |                                           |                     |
| Range                      | -                                         | 0 to 100,000 events |
| Accuracy                   | -                                         | ± 1 event           |
| <b>Functions</b>           | Min., Max., HOLD, Smooth                  |                     |
|                            | -                                         | High and low alarms |
| <b>Data storage</b>        | -                                         | 4,000 points        |
| <b>Dimensions</b>          | 216 x 72 x 47 mm                          |                     |
| <b>Weight</b>              | 250 g                                     |                     |



#### CA 1725 delivered with:

- 1 case
- 1 FRB F connector
- 1 9 V 6LR61 battery
- 1 set of 15 reflective retro films (length 0.1 m)
- 1 CD-ROM containing the operating instructions

#### CA 1727 delivered with:

- 1 case
- 1 FRB F connector
- 1 9V 6LR61 battery
- 1 set of 15 retro-reflective films (length 0.1 m)
- 1 CD-ROM containing the TACHOGRAPH software

#### To order

CA 1725

Reference: P01174810

CA 1727

Reference: P01174830

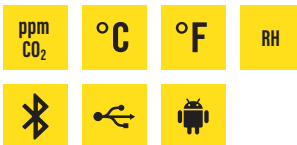
#### Recommended accessory



P01174902  
Mechanical accessory kit

## Air quality measurement

## CA 1510

3 in 1: CO<sub>2</sub> logger - Temperature - Humidity

- CO<sub>2</sub>, temperature and humidity logger (up to 1 million data points)
- Compact: for fixed or portable use
- User-friendly: thanks to comfort level indicators based on CO<sub>2</sub> levels and hygrothermal criteria
- User-configurable threshold values (e.g. 800 ppm)
- Accurate: Compliant with decrees no. 2022-1689 & no. 2022-1690 and the order of 27 December 2022 on air quality monitoring
- Low gas consumption thanks to its on-site calibration kit

| CA 1510                                  |                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Specifications for CO<sub>2</sub></b> |                                                                                                                                                                                                                                                                                                                                                                                          |
| Measurement range                        | 0 to 5,000 ppm                                                                                                                                                                                                                                                                                                                                                                           |
| Accuracy                                 | ± 50 ppm ± 3% of measured value                                                                                                                                                                                                                                                                                                                                                          |
| Resolution                               | 1 ppm                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Temperature measurement</b>           |                                                                                                                                                                                                                                                                                                                                                                                          |
| Measurement range                        | -10°C to +60°C                                                                                                                                                                                                                                                                                                                                                                           |
| Accuracy                                 | ± 0.5 °C                                                                                                                                                                                                                                                                                                                                                                                 |
| Resolution                               | 0.1°C                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Humidity</b>                          |                                                                                                                                                                                                                                                                                                                                                                                          |
| Measurement range                        | 5 to 95 % RH                                                                                                                                                                                                                                                                                                                                                                             |
| Accuracy                                 | ± 2% RH                                                                                                                                                                                                                                                                                                                                                                                  |
| Resolution                               | 0.1% RH                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Possibilities of the product</b>      |                                                                                                                                                                                                                                                                                                                                                                                          |
| Portable measurement                     | Quick measurement and display of the CO <sub>2</sub> , temperature and relative humidity values                                                                                                                                                                                                                                                                                          |
| Indicator                                | 1D mode: CO <sub>2</sub> confinement indication<br>Visual indication (two-colour backlighting and pictograms) and/or audible indication of high confinement when the CO <sub>2</sub> concentration is between 1,000 ppm and a 1,700 ppm threshold.<br>3D mode: indication of optimum comfort zone on the basis of hygrothermal criteria and the CO <sub>2</sub> concentration            |
| <b>Energy saving (ECO)</b>               |                                                                                                                                                                                                                                                                                                                                                                                          |
|                                          | For fixed use on battery power, the product performs measurements every 10 minutes over a programmable time range for a battery life of up to one year                                                                                                                                                                                                                                   |
| Logger                                   | Activation of programmed recording (P_REC) The start date, recording rate and end date can be customized with the PC software or the Android application.<br>Possibility of locking the display in this mode (no values displayed).<br>Manual activation (M_REC)<br>Manual start and stop controls on the product.<br>Recording is performed at the rate of the mode currently selected. |
| <b>Specifications</b>                    |                                                                                                                                                                                                                                                                                                                                                                                          |
| Recording rate                           | Customizable from 1 minute to 2 hours                                                                                                                                                                                                                                                                                                                                                    |
| Data storage                             | More than 1 million points                                                                                                                                                                                                                                                                                                                                                               |
| Buzzer and units                         | Yes / °C or °F                                                                                                                                                                                                                                                                                                                                                                           |
| Backlighting / Hold / Min Max            | Yes                                                                                                                                                                                                                                                                                                                                                                                      |
| Dimensions / weight                      | 125 x 65.5 x 32 mm / 190 g with batteries                                                                                                                                                                                                                                                                                                                                                |
| Power supply                             | Batteries: 2 x 1.5 V AA / LR6 or rechargeable battery<br>Connection to mains possible with mains / micro USB adapter supplied as standard                                                                                                                                                                                                                                                |
| Interfaces                               | 2 communication modes possible: Bluetooth wireless communication and USB link; the product is then recognized as a USB key for easy file transfer                                                                                                                                                                                                                                        |
| Mounting                                 | CA 1510 casing equipped with a magnet, a wall-suspension system and a slit for hanging the product.<br>A wall support for use with a padlock (padlock not supplied) is available as an accessory, as is a desktop stand (supplied as standard with the CA 1510W).                                                                                                                        |
| Processing software supplied as standard | Representation in graph or table format / Data export<br>- Real-time mode / Report generation                                                                                                                                                                                                                                                                                            |



## + The extra

- CA 1510 is also available in black. This version comes in a metal case.
- Supplied in a metal case



## CA 1510 delivered in a neutral cardboard box with:

- 2 x 1.5 V LR06 batteries
- 1 USB mains adapter
- 1 USB-micro USB cable
- 1 desktop stand
- 1 operating manual (5 languages) on CD-ROM
- 1 verification certificate

Software  
Data Logger  
Transfer  
available for  
download

## To order

CA 1510 white

Reference: P01651011

CA 1510 black

Reference: P01651010

## Recommended accessories



P01651022

In Situ calibration kit



P01298071

Metal case

CO detector

CA 895



ppm  
CO

Check that your  
combustion appliances  
are working properly

- Measures the level of carbon monoxide present in a room
- Checks the operation of combustion equipment
- Warning buzzer to indicate when there is a risk

|                   | CA 895             |
|-------------------|--------------------|
| Measurement range | 0 to 1,000 ppm     |
| Accuracy          | ± 5 % + 5 ppm      |
| Measurement mode  | Normal or Avg.     |
| Functions         | Alarms, Max., HOLD |
| Dimensions        | 237 x 60.5 x 38 mm |
| Weight            | 190 g              |



CA 895 delivered with:

- 1 shockproof protective sheath
- 1 x 9 V 6LR61 battery

To order

CA 895  
Reference: P01651001Z

Stroboscope

CDA 9452



Flashes  
/min

Speed measurement  
without contact

- Frequency or speed measurement without contact with rotating parts
- Digital frequency display
- Quartz time base
- Flash lamp, white, 40 joules

|                     | CDA 9452                                                |
|---------------------|---------------------------------------------------------|
| LED display         | 10,000 counts                                           |
| Measurement range   | 100... 1,000 flashes/min<br>1,000... 10,000 flashes/min |
| Résolution          | 1 flash/min                                             |
| Accuracy            | 0.05 %                                                  |
| Power supply        | 220 V - 50/60 Hz                                        |
| Climatic conditions | 0... + 50 °C / RH < 80 %                                |
| Dimensions          | 210 x 120 x 120 mm                                      |
| Weight              | 1kg                                                     |



+ The extra

When the flashes of a strobe light are directed at an object moving at a regular speed, and the flashes have the same frequency as the observed phenomenon, the object appears to be stationary. Simply read the frequency expressed in flashes per minute on the CDA 9452. To obtain the frequency expressed in Hz, simply divide the reading by 60.

CDA 9452 delivered with:

- power cable

To order

CDA 9452  
Reference: P03197704

## Distance meter

## CA 1730



## All distance measurements up to 60 metres

- Distance measurement up to 60 metres
- Area / Volume / Addition / Subtraction
- Height calculation and continuous measurement mode
- 4-line backlit display
- Memory with 20 data points
- Ruler for offset measurement

|                                | CA 1730                                                                                |
|--------------------------------|----------------------------------------------------------------------------------------|
| Measurement range              | 0.2 ~ 60 metres                                                                        |
| Accuracy                       | $\pm 2 \text{ mm} + 5 \times 10^{-5} \text{ Distance}$                                 |
| Area & volume measurement      | Yes                                                                                    |
| Addition/Subtraction           | Yes                                                                                    |
| Single measurement             | Yes                                                                                    |
| Continuous measurement         | Yes                                                                                    |
| Display                        | On 4 lines with backlighting                                                           |
| Audible signal                 | Yes                                                                                    |
| Data storage                   | History of 20 results                                                                  |
| Units                          | m / in / ft / ft+in                                                                    |
| <b>Power supply</b>            |                                                                                        |
| Type                           | 2 x 1.5 V AAA batteries                                                                |
| Battery life                   | Approximately 5,000 measurements                                                       |
| Auto power-off                 | LASER automatic power-off (30 seconds)<br>Instrument automatic power-off (180 seconds) |
| <b>Physical specifications</b> |                                                                                        |
| Dimensions / weight            | 115 x 52 x 32 mm / 118 g                                                               |
| Protection                     | IP54                                                                                   |
| Operating range                | Temperature: 0 to +40 °C without condensation<br>Storage: -10°C to +60°C               |
| Warranty                       | 2 years                                                                                |

Diagnostics  
& control

Education

Energy  
efficiency

Transport

Tertiary  
& residential

Industries

Production, transport  
& distributionLaboratory  
& metrology

## CA 1730 delivered in a cardboard box with:

- 1 carrying case
- 2 AAA batteries
- Operating instructions in 5 languages
- Certificate of verification

## To order

CA 1730

Reference: P01651730



## Field testers

### VX 0003 - VX 0100



### Control exposure to electromagnetic pollution in the home or office

- Test for pollution generated by the distribution of electrical energy (0-3 kHz) (VX 0003/VX 0100)
- Tests pollution generated by connected equipment (3-100 kHz) (VX 0100)
- 2 complementary measurement methods for greater efficiency:
  - Representative method: fields taking into account the individual
  - Traditional method: fields referenced to earth
- External antenna for field measurement and cable detection (VX 0100)
- An audible alarm for immediate identification of field levels
- Control in accordance with current and future standards and directives

|                                                                        | VX 0003                                                                                          | VX 0100                                                                                                                   |
|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| <b>Display &amp; Buzzer</b>                                            |                                                                                                  |                                                                                                                           |
| Display on 2 scales of 7 LEDs each                                     | ■                                                                                                |                                                                                                                           |
| 2,000-count backlit LCD display                                        |                                                                                                  | ■                                                                                                                         |
| Direct display in Volt/m (compatible with standards)                   | ■                                                                                                | ■                                                                                                                         |
| Buzzer proportional to E field level                                   | ■                                                                                                | ■                                                                                                                         |
| Indication of measurement frequency range                              |                                                                                                  | ■                                                                                                                         |
| "Low battery" & "Hold" indicators                                      | ■                                                                                                | ■                                                                                                                         |
| <b>Commands</b>                                                        |                                                                                                  |                                                                                                                           |
| On / Off (with automatic shutdown after 30 min)                        | ■                                                                                                | ■                                                                                                                         |
| Measurement Hold                                                       | ■                                                                                                | ■                                                                                                                         |
| Buzzer On/Off                                                          | ■                                                                                                | ■                                                                                                                         |
| Measurement range selection                                            | Manual                                                                                           | Automatic                                                                                                                 |
| 3 kHz filter selection (<, >, full band)                               |                                                                                                  | ■                                                                                                                         |
| <b>Antenna &amp; Reference</b>                                         |                                                                                                  |                                                                                                                           |
| Built-in «Field» antenna                                               | ■                                                                                                |                                                                                                                           |
| Removable «Field» antenna, diameter 62 mm + «cable detection» function |                                                                                                  | ■                                                                                                                         |
| «Individual» field measurement reference + continuity rod              | ■                                                                                                | ■                                                                                                                         |
|                                                                        |                                                                                                  | Optional accessory                                                                                                        |
| «Earth» field measurement reference                                    | ■                                                                                                | ■                                                                                                                         |
| <b>Measurements</b>                                                    |                                                                                                  |                                                                                                                           |
| RMS electric field intensity in V/m                                    | ■                                                                                                | ■                                                                                                                         |
| <b>Sensitivity &amp; Accuracy</b>                                      |                                                                                                  |                                                                                                                           |
| 2 sensitivity ranges (compatible with standards)                       | 5 to 100 V/m - 100 to 2,000 V/m                                                                  | 1.0 to 200.0 V/m - 200 to 2,000 V/m                                                                                       |
| Measurement accuracy (in laboratory conditions)                        | ±10 % on LED thresholds                                                                          | ±3 % ± 20 D @ 50/60 Hz                                                                                                    |
| <b>Frequency range</b>                                                 |                                                                                                  |                                                                                                                           |
| Analysis of electrical equipment 10 Hz to 3 kHz                        | ■                                                                                                | ■                                                                                                                         |
| Analysis of equipment connected to the mains                           | 10 Hz to 3 kHz                                                                                   | 10 Hz to 3 kHz (3 kHz low-pass filter)<br>3 kHz to 100 kHz (3 kHz high-pass filter)<br>10 Hz to 100 kHz (no 3 kHz filter) |
| <b>General specifications</b>                                          |                                                                                                  |                                                                                                                           |
| Power supply                                                           | 1 x 9 V battery (supplied) - Battery life 60 to 80 hours - Automatic power-off function (30 min) |                                                                                                                           |
| Mechanical specifications                                              | IP65 watertight casing- Dimensions 63.6 x 163 x 40 mm - Weight approx. 200 g with battery        |                                                                                                                           |
| Warranty                                                               | 2 years                                                                                          |                                                                                                                           |



### + The extra

The VX 0003 and VX 0100 BioTest field testers/measurers instantly indicate the level of low-frequency electric fields. Suitable for residential and commercial use, they can be used by both professionals and individuals.

In your home or office, control your exposure to electromagnetic pollution.

In your home or office, check your exposure to electromagnetic pollution.

The VX 0003 and VX 0100 are easy-to-use, economical and reliable testers!

They are mainly used in the field of electrical installation testing (new & renovation) and in technical and vocational education.

### VX 0003 delivered in blister pack with:

- A carrying case
- An earth cable
- A socket tester
- A 9 V battery

### VX 0100 delivered in case with:

- An earth cable
- A socket tester
- A 9 V battery

### To order

VX 0003      Reference: P01651011

VX 0100      Reference: P01651011

### Recommended accessories

#### For VX 0100



**HX0104**  
Bag for VX testers



**P01102084A**  
Continuity test probe

#### For VX 0003

**HX0009**  
Case

## Field meter

CA 40

Field meter  
low frequencies

- Measurement of low-frequency magnetic fields
- Rapid assessment of radiation from devices and installations
- Handy unidirectional probe

|                            | CA 40                   |                         |                          |
|----------------------------|-------------------------|-------------------------|--------------------------|
| Magnetic field measurement | 20 $\mu$ T              | 200 $\mu$ T             | 2,000 $\mu$ T            |
| Accuracy                   | $\pm(4\%+3\text{ cts})$ | $\pm(5\%+3\text{ cts})$ | $\pm(10\%+5\text{ cts})$ |
| Frequency range            | 30 to 300 Hz            |                         |                          |
| Probe                      | Unidirectional          |                         |                          |
| Dimensions                 | 163 x 68 x 24 mm        |                         |                          |
| Weight                     | 285 g                   |                         |                          |



## CA 40 delivered with:

- 1 probe
- 1.9 V 6LR61 battery

## To order

CA 40

Reference: P01167501

## Recommended accessory



P01298036  
Carrying case

## LAN Network Tester

CA 7028



RJ45

## LAN network testing

- Graphic display
- Detects, identifies and locates faults up to 150 metres
- Designed for use on UTP, STP, FTP, & SSTP cables equipped with RJ45 connectors and wired in accordance with TIA 568A/B, USOC or ISDN specifications

|                  | CA 7028                                                                                                                          |
|------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Connector        | RJ 45                                                                                                                            |
| Cable types      | UTP, STP, FTP & SSTP                                                                                                             |
| Faults indicated | Short-circuited pair<br>Open-circuit wire<br>Short circuit between pairs<br>Crossed pairs<br>Reversed pairs<br>Shield continuity |
| Remote modules   | Identifiers 1 to 9                                                                                                               |
| Dimensions       | 165 x 90 x 37 mm                                                                                                                 |
| Weight           | 350 g                                                                                                                            |



## CA 7028 delivered with:

- 2 RJ45 cables
- 1 identifier no. 1
- 1 carrying case
- 4 1.5 V LR06 batteries

## To order

CA 7028

Reference: P01129501

## Recommended accessories



P01101994  
Set of 4 identifiers no. 2 to 5



P01101995  
Set of 4 identifiers no. 6 to 9





# Temperature calibrators

CA 1621, CA 1623 Temperature Calibrators ..... 132

CA 1631 process calibrator ..... 133





Temperature calibrators

CA 1621 - CA 1623



°C

°F

Accurate measurement  
and simulation of  
temperature probes

- Large screen for improved readability
- Calibration of devices without dismantling sensors
- Easy to handle thanks to its dimensions (205x97x45 mm) and weight (472 g)

**CA 1621** : thermocouple probe temperature calibrator capable of measuring and simulating:

- up to 8 types of thermocouple: J, K, T, E, R, S, B and N
- mV voltage

**CA 1623** : resistive probe temperature calibrator capable of measuring and simulating:

- up to 7 types of resistive probes:  
Pt 10, Pt 50, Pt 100, Pt 200, Pt 500, Pt 1000, Pt 100 (JIS)
- resistance



+ The extra

- Optional mains power supply:
- Input: 100 V/240 V - 50/60 Hz – 1.8 A
- Output: 12 VDC, 2 A max
- Powered by batteries (6 x 1.5 V supplied) or mains power supply (optional)

CA 1621 delivered with:

- 1 calibrator
- 1 case
- 6 x 1.5 V LR06 batteries
- 2 thermocouple adapters

CA 1623 delivered with:

- 1 calibrator
- 1 case
- 6 x 1.5 V LR06 batteries
- 2 test leads and 2 alligator clips

To order

CA 1621      Reference: P01654621

CA 1623      Reference: P01654623

Recommended accessories



**P01298075**  
MultiFix compatible bag  
120 x 245 x 60 equipped



**P01103057**  
Mains power supply

CA 1621

| Input/output range |                    | Resolution | Accuracy             |                          |
|--------------------|--------------------|------------|----------------------|--------------------------|
| -10 mV ... 100 mV  |                    | 0.01 mV    | ± 0.025 % + 2 counts |                          |
| Function           | Range              | Resolution | Accuracy             | Reference junction error |
| Type J             | -200 ... +1,200 °C | 0.1°C      | ± (0.3 °C + 10 µV)   | ± 0.3 °C                 |
| Type K             | -200 ... +1,370 °C | 0.1°C      | ± (0.3 °C + 10 µV)   | ± 0.3 °C                 |
| Type T             | -200 ... +400 °C   | 0.1°C      | ± (0.3 °C + 10 µV)   | ± 0.3 °C                 |
| Type E             | -200 ... +950 °C   | 0.1°C      | ± (0.3 °C + 10 µV)   | ± 0.3 °C                 |
| Type R             | -20 ... +1,750 °C  | 1°C        | ± (1 °C + 10 µV)     | ± 0.3 °C                 |
| Type S             | -20 ... +1,750 °C  | 1°C        | ± (1 °C + 10 µV)     | ± 0.3 °C                 |
| Type B             | +600 ... +1,800 °C | 1°C        | ± (1 °C + 10 µV)     | ± 0.3 °C                 |
| Type N             | -250 ... +1,300 °C | 0.1°C      | ± (0.3 °C + 10 µV)   | ± 0.3 °C                 |

CA 1623

| Range                   | 4-wire measurement accuracy ± Ω | Simulation accuracy ± Ω | Permissible excitation mA |
|-------------------------|---------------------------------|-------------------------|---------------------------|
| 0.00 Ω ... 400.0 Ω      | 0.1                             | 0.15                    | 0.1 ... 0.5               |
|                         |                                 | 0.1                     | 0.5 ... 3.0               |
| 400.0 Ω ... 1,500.0 Ω   | 0.5                             | 0.5                     | 0.05 ... 0.8              |
| 1,500.0 Ω ... 3,200.0 Ω | 1                               | 1                       | 0.05 ... 0.4              |
|                         | 2                               |                         |                           |

| Mode       | Range            | Accuracy in °C |                     |        | Permissible excitation mA |
|------------|------------------|----------------|---------------------|--------|---------------------------|
|            |                  | 4-wire input   | 2-wire/3-wire input | output |                           |
| Pt10 385   | -200 ... +800 °C |                |                     |        | 0.1 ... 3.0               |
| Pt50 385   | -200 ... +800 °C | 0.7            | 1.0                 | 0.7    | 0.1 ... 3.0               |
| Pt100 385  | -200 ... +800 °C | 0.33           | 0.5                 | 0.33   | 0.1 ... 3.0               |
| Pt200 385  | -200 ... +250 °C | 0.2            | 0.3                 | 0.2    | 0.1 ... 3.0               |
|            | +250 ... +630 °C | 0.8            | 1.6                 | 0.8    |                           |
| Pt500 385  | -200 ... +500 °C | 0.3            | 0.6                 | 0.3    | 0.05 ... 3.0              |
|            | +500 ... +630 °C | 0.4            | 0.9                 | 0.4    |                           |
| Pt1000 385 | -200 ... +100 °C | 0.2            | 0.4                 | 0.2    | 0.1 ... 3.0               |
|            | +100 ... +630 °C | 0.2            | 0.5                 | 0.2    |                           |
| Pt100 JIS  | +200 ... +630 °C | 0.2            | 0.5                 | 0.3    | 0.1 ... 3.0               |

# Process signal calibrator

## CA 1631



°C

°F

### Measurement and simulation of process signals

Voltage/current process signal calibrator used to measure or deliver:

- a direct current loop between 0 and 24 mA
- a direct voltage between 0 and 20 V

#### CA 1631

| Calibre | Resolution | Accuracy ± (% of reading + points) |
|---------|------------|------------------------------------|
| 100 mV  | 0.01 mV    | 0.02 % + 3                         |
| 20 V    | 0.001 V    | 0.02 % + 3                         |

Input impedance: 2 MΩ (nominal value), < 100 pF  
Surge protection: 30 V - Current delivered at 20 V: 1 mA

| Calibre | Resolution | Accuracy ± (% of reading + points) |
|---------|------------|------------------------------------|
| 24 mA   | 0.001 mA   | 0.015 % + 3                        |

Overload protection: 125 mA 250 V fast-acting fuse  
Percentage display: 0% = 4 mA 100% = 20 mA  
Source mode: 1,000 Ω load at 20 mA for battery voltage ≥ 6.8 V,  
(700 Ω at 20 mA for battery voltage between 5.8 and 6.8 V  
Simulation mode: external loop voltage condition:  
24 V (nominal value), 30 V maximum, 12 V minimum.

Loop voltage supply: 24 V ± 10%



### + The extra

- Optional mains power supply
- Input: 100 V/240 V - 50/60 Hz - 1.8 A
- Output: 12 V<sub>DC</sub>, 2 A max
- Powered by batteries (6 x 1.5 V supplied) or mains power supply (optional)



### CA 1631 delivered with:

- 1 calibrator
- 1 case
- 6 x 1.5 V LR06 batteries
- 2 test leads
- 2 alligator clips
- 2 test probes

### To order

CA 1631

Reference: P01654402

### Recommended accessories



**P01298075**  
MultiFix compatible bag  
120 x 245 x 60 equipped (spare)

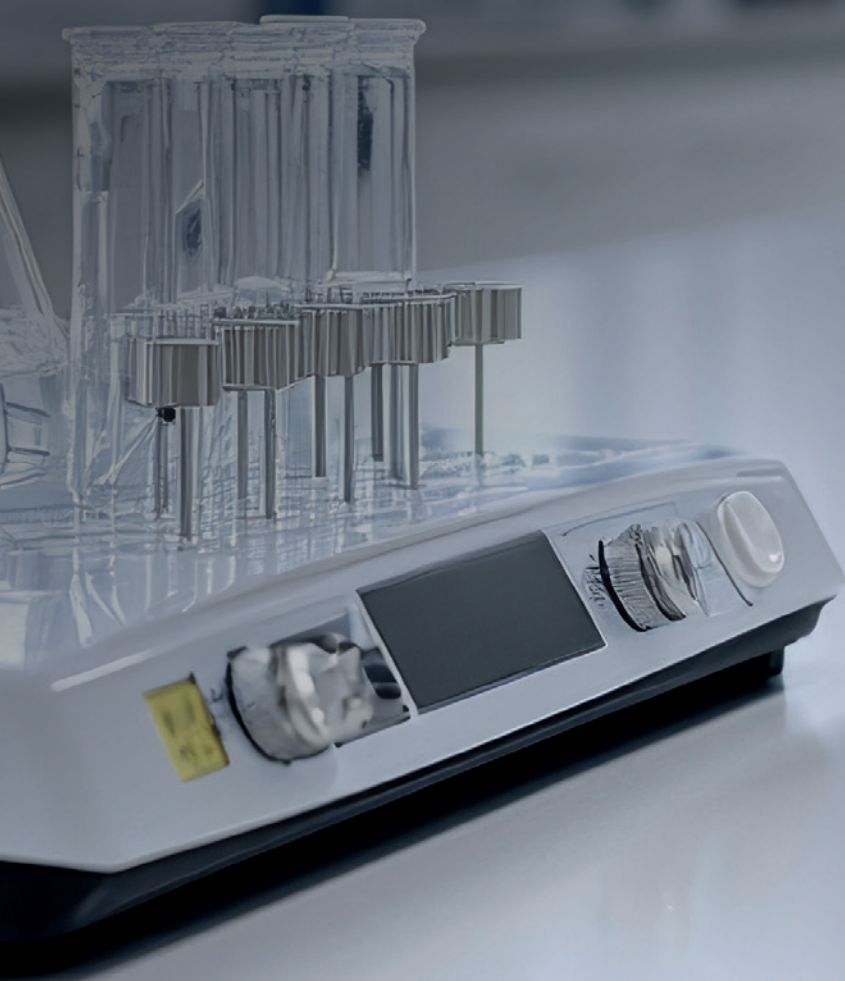


**P01103057**  
Mains power supply



# Electrochemistry

|                                                         |     |
|---------------------------------------------------------|-----|
| CA 10101 waterproof portable pH meter .....             | 136 |
| CA 10141 waterproof portable conductivity meter .....   | 137 |
| pH testers CA 10001 – CA 10002 .....                    | 138 |
| pH meters and conductivity meters for laboratory use    |     |
| CA 10101E - CA 10141E .....                             | 139 |
| Electrodes for general use.....                         | 140 |
| Specific electrodes for Chauvin Arnoux devices .....    | 142 |
| pH meters and conductivity meters for teaching purposes |     |
| PSD1 PSD21 PPD26 P310 CSD22 C320 MPC25 .....            | 143 |
| Buffer and maintenance solutions .....                  | 144 |





# Waterproof portable ph meter

## CA 10101



IP 67



Connexion PC



Rétro-éclairage



Indicateur de stabilité



État de l'électrode

## pH meter designed for professionals

The CA 10101 comes in a kit with a carrying case to facilitate mobile measurements in the field or in a production environment. The stand stabilises the device and allows it to be used on a laboratory bench.

- **Large LCD screen with backlighting:** dual pH and temperature display
- **PC connection via micro-USB port:** compatible with Data Logger Transfer software
- **Automatic and optimised calibration:** calibration up to 3 points, 10 buffers stored with the option to add customised buffers. The device indicates the quality of the electrode that has just been calibrated.
- **Calibration log:** the device indicates the value of the slope and offset of the last calibration. The complete calibration log is available via PC
- **Signal stability indicator:** for accurate measurements
- **Data recording:** manual, automatic at intervals or programmed

|                                 | CA 10101 |
|---------------------------------|----------|
| Waterproof device for field use | ■        |
| pH measurement                  | ■        |
| Redox measurement               | ■        |
| Temperature measurement         | ■        |
| Automatic calibration           | ■        |
| Calibration log                 | ■        |
| Data recording                  | ■        |

|                          |                         | CA 10101                                                                                                                                                  |                                    |
|--------------------------|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| pH                       | Measuring range         | 2.00 to 16.00                                                                                                                                             |                                    |
|                          | Resolution (R)          | 0.01 pH                                                                                                                                                   |                                    |
|                          | Uncertainty             | ± 0.01 pH ± R                                                                                                                                             |                                    |
| Redox                    | Measuring range         | ±199.9 mV                                                                                                                                                 | -1999 to -200 and +200 to +1999 mV |
|                          | Resolution (R)          | 0.1 mV                                                                                                                                                    | 1 mV                               |
|                          | Uncertainty             | ± 0.1 mV ± R                                                                                                                                              | ± 1 mV ± R                         |
| Temperature              | Measuring range         | -10.0 to +120.0 °C / 14.0 to 248.0 °F                                                                                                                     |                                    |
|                          | Resolution (R)          | 0.1 °C / 0.1 °F                                                                                                                                           |                                    |
|                          | Uncertainty             | < 0.4 °C / < 0.7 °F                                                                                                                                       |                                    |
| Calibration              | pH                      | Automatic, up to 3 points, 10 stored buffers (4.01; 7.00; 9.18; 1.68; 4.01; 7.00; 10.01; 4.005; 6.865; 9.180) and option to add your own buffer solutions |                                    |
|                          | Redox                   | Automatic, 1 point, 2 stored buffers (220 mV and 468 mV) and option to add your own buffer solutions                                                      |                                    |
|                          | Calibration log         | Display of the slope and offset of the last calibration on the device<br>Complete history saved and accessible via PC                                     |                                    |
| Temperature compensation |                         | Automatic (ATC) or manual (MTC); from -10.0 to +120.0 °C / 14.0 to 248.0 °F                                                                               |                                    |
| Connectors               | pH electrode input      | 8-point DIN (adapters for BNC, S7 and Jack optional)                                                                                                      |                                    |
|                          | Communication interface | Micro-USB                                                                                                                                                 |                                    |
| Electrodes               | pH                      | pH XRGST1 (supplied), combined pH electrode with integrated temperature sensor (PT1000), 8-pin DIN connector                                              |                                    |
|                          | Redox                   | XRPTST1 (optional), combined ORP electrode with integrated temperature sensor (PT1000), 8-pin DIN connector                                               |                                    |
| Data recording           | Time stamp              | Yes                                                                                                                                                       |                                    |
|                          | Memory                  | > 100,000 measurements                                                                                                                                    |                                    |
|                          | Manual recording        | Yes                                                                                                                                                       |                                    |
|                          | Automatic recording     | Yes, at intervals                                                                                                                                         |                                    |
|                          | Data transfer           | Yes, to PC via USB with Data Logger Transfer software                                                                                                     |                                    |
| Batteries                |                         | 4 x 1.5 V alkaline AA or LR06 batteries                                                                                                                   |                                    |
| Battery life             |                         | Approximately 300 hours of continuous use                                                                                                                 |                                    |
| Auto shut-off            |                         | Auto shut-off after 3, 10 or 15 minutes of non-use (adjustable)                                                                                           |                                    |
| Dimensions/Weight        |                         | 211 x 127 x 54 mm / 600 g                                                                                                                                 |                                    |



Diagnostics &amp; control



Industries



Laboratory &amp; metrology



## + The extra

**Scheduled recordings:** using the Data Logger Transfer software, you can schedule immediate or delayed recordings. The device will automatically switch back on at the start of the recording if it is switched off.



## CA 10101 delivered in a hard case with:

- 1 pH electrode with integrated temperature sensor XRGST1
- 4 x 1.5 V LR06 batteries
- 1 protective cover mounted on the device
- 2 ready-to-use buffer solutions (NIST/DIN compliant) with pH values of 4.01 and 7.00
- 2 plastic beakers
- 1 USB/μUSB cable
- 1 wrist strap

## To order

pH meter CA 10101

**Reference: P01710010**

## Recommended accessories

**P01710052**  
ORP electrode XRPTST1

**P01710057**  
pH electrode XRGST1 3 m cable

Buffer solutions  
see page 145

# Portable waterproof conductivity meter

## CA 10141



IP 67



## Conductivity meter designed for professionals

The CA 10141 comes with a carrying case to facilitate mobile measurements in the field or in a production environment. The stand allows the device to be stabilised and also used on a laboratory bench.

- **Large LCD screen with backlight:** dual display of conductivity and temperature
- **PC connection via micro-USB port:** compatible with Data Logger Transfer software
- **Automatic and optimised calibration:** 6 stored buffers with the option to add custom buffers.
- **Conversion of conductivity values:** resistivity, salinity and TDS
- **Calibration log:** the device displays the cell constant from the last calibration. The complete calibration log is available via PC
- **Signal stability indicator:** for accurate measurements

CA 10141

|                                                         |   |
|---------------------------------------------------------|---|
| Waterproof device for field use                         | ■ |
| Measurement of conductivity, resistivity, salinity, TDS | ■ |
| Temperature measurement                                 | ■ |
| Automatic calibration                                   | ■ |
| Calibration log                                         | ■ |
| Data recording                                          | ■ |

| CA 10141                 |                         |                                                                                                                                                               |
|--------------------------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Conductivity             | Measuring range         | 0.050 µS/cm to 500.0 mS/cm                                                                                                                                    |
|                          | Resolution (R)          | 1 nS/cm to 100 µS/cm (depending on range)                                                                                                                     |
|                          | Accuracy                | ± 0.5% L* ± R                                                                                                                                                 |
| TDS                      | Measuring range         | 0.001 mg/l to 499.9 g/l                                                                                                                                       |
|                          | Resolution (R)          | 1 µg/L to 100 mg/L (depending on range)                                                                                                                       |
|                          | Accuracy                | ± 0.5% L* ± R                                                                                                                                                 |
|                          | TDS factor              | 2.000 Ω.cm to 19.99 MΩ.cm                                                                                                                                     |
| Resistivity              | Measuring range         | 1 mΩ.cm to 10 kΩ.cm (depending on range)                                                                                                                      |
|                          | Resolution (R)          | 1 mΩ.cm à 10 kΩ.cm (selon la plage)                                                                                                                           |
|                          | Accuracy                | ± 0.5% L* ± R                                                                                                                                                 |
| Salinity                 | Measuring range         | 2.0 to 42.0 psu                                                                                                                                               |
|                          | Resolution (R)          | 0.1                                                                                                                                                           |
|                          | Accuracy                | ± 0.5% L* ± R                                                                                                                                                 |
| Temperature              | Measuring range         | -10.0 to +120.0 °C (14.0 to 248.0 °F)                                                                                                                         |
|                          | Resolution (R)          | 0.1 °C (0.1 °F)                                                                                                                                               |
|                          | Accuracy                | < 0.4 °C (<0.7 °F)                                                                                                                                            |
|                          | Reference temperatures  | 20 or 25 °C (68 or 77 °F)                                                                                                                                     |
| Calibration              | Conductivity            | Automatic, 1 point, 6 stored buffers (147.0 µS/cm; 1408 mS/cm; 12.85 mS/cm; 84.0 µS/cm; 1.413 mS/cm; 12.88 mS/cm) and option to add your own buffer solutions |
|                          | Calibration log         | Display of the cell constant from the last calibration on the device<br>Complete history saved and accessible via PC                                          |
| Temperature compensation |                         | Automatic (ATC) or manual (MTC); from -10.0 to +120.0 °C / 14.0 to 248.0 °                                                                                    |
| Temperature correction   |                         | Linear, non-linear, disabled                                                                                                                                  |
| Connectors               | pH electrode input      | 8-pin DIN (adapters for BNC, S7 and Jack optional)                                                                                                            |
|                          | Communication interface | Micro-USB                                                                                                                                                     |
| Conductivity probe       |                         | XCP4ST1 (supplied), 4-pole conductivity sensor with integrated temperature probe (Pt 1000), 8-pin DIN connector, 1 m cable                                    |
| Data recording           | Time stamp              | Yes                                                                                                                                                           |
|                          | Memory                  | > 100,000 measurements                                                                                                                                        |
|                          | Manual recording        | Yes                                                                                                                                                           |
|                          | Automatic recording     | Yes, at intervals                                                                                                                                             |
|                          | Data transfer           | Yes, to a PC via USB using the Data Logger Transfer software                                                                                                  |
| Batteries                |                         | 4 x 1.5 V alkaline AA or LR06 batteries                                                                                                                       |
| Battery life             |                         | Approximately 300 hours of continuous use                                                                                                                     |
| Auto shut-off            |                         | Auto shut-off after 3, 10 or 15 minutes of non-use (adjustable)                                                                                               |
| Dimensions/Weight        |                         | 211 x 127 x 54 mm / 600 g                                                                                                                                     |

\* R: % of reading



## + The extra

### Recordings programmed via Data Logger

**Transfer software:** programme immediate or delayed recordings.

The device will automatically switch back on at the start of the recording if it is switched off.



### CA 10101 supplied in a hard case with:

- 1 four-pole conductivity cell with integrated temperature probe XCP4ST1
- 4 x 1.5 V LR06 batteries
- 4 x 1.5 V LR06 batteries
- 1 protective cover fitted to the device
- 1 x 1408 µS/cm conductivity standard solution
- 1 x plastic beaker
- 1 x USB to micro USB cable
- 1 x wrist strap

## To order

CA 10141 Conductivity Meter  
Reference: P01710020

## Recommended accessories



Buffer solutions  
see page 145

pH testers

CA 10001 – CA 10002



IP 65

ATC

HOLD

Waterproof pH and temperature testers for accurate, reliable and rapid spot measurements

The CA 10001 and CA 10002 are designed for measuring pH and conductivity, while the CA 10002 is designed for measuring pH and temperature.

- IP65 waterproof housing
- Designed to test samples with a narrow opening (electrode body diameter : 20 mm)
- Large screen with simultaneous display of pH and temperature
- Automatic calibration can be performed at 1, 2 or 3 points
- HOLD button to freeze the measurement for greater convenience when reading
- ATC (Automatic Temperature Compensation) mode for temperature-compensated pH values
- Compact, easy to transport

The pH tester for general use

The CA 10001 is designed for routine measurements in solution.

The special pH tester for the food industry

The CA 10002 is suitable for many applications in the food industry thanks to its penetrating and perforating glass tip.

Applications: dairy products, meat, yoghurt, semi-solid foods, etc.

|                                                                        | CA 10001 | CA 10002 |
|------------------------------------------------------------------------|----------|----------|
| Pocket size for mobile applications, in the field or in the laboratory | ■        | ■        |
| pH tester for general use in solution                                  | ■        |          |
| pH testers for the food industry                                       |          | ■        |
| pH measurement                                                         | ■        | ■        |
| Temperature measurement                                                | ■        | ■        |
| HOLD button to freeze the measurement                                  | ■        | ■        |
| Automatic calibration                                                  | ■        | ■        |
| Spherical tip electrode                                                | ■        |          |
| Pointed tip electrode                                                  |          | ■        |
| Waterproof tester for field use                                        | ■        | ■        |

|                          |             | CA 10001                                                                   | CA 10002                          |
|--------------------------|-------------|----------------------------------------------------------------------------|-----------------------------------|
| Measurement range        | pH          | 0.00 to 14.00                                                              | 2.00 to 12.00                     |
|                          | Temperature | 0.0 to 60.0 °C / 32.0 to 140.0 °F                                          | 0.0 to 80.0 °C / 32.0 to 176.0 °F |
| Resolution               | pH          | 0.01 pH                                                                    |                                   |
|                          | Temperature | 0.1 °C / 0.1 °F                                                            | 0.5 °C / 0.5 °F                   |
| Error                    | pH          | ± 0.1 pH                                                                   |                                   |
|                          | Temperature | ± 1 °C / ± 2 °F                                                            |                                   |
| Electrode tip            |             | Spherical                                                                  | Pointed                           |
| Calibration              |             | Automatic, up to 3 points, stored buffers: 4.00; 7.00 and 10.00            |                                   |
| Temperature compensation |             | Automatic                                                                  |                                   |
| Electrode                |             | pH electrode with integrated temperature sensor, plastic body, gel filling |                                   |
| Connection               |             | Canvas                                                                     |                                   |
| Power supply/lifespan    |             | 2 x 3V CR2032 batteries/<100 hours                                         |                                   |
| Auto-shutdown            |             | After 20 minutes of inactivity                                             |                                   |
| Dimensions/Weight        |             | 226 x 36 x 20 mm / 65 g                                                    | 228 x 36 x 20 / 65 g              |



CA 10001 and CA 10002 come with:

- 2 CR2032 3V batteries
- 1 storage bottle for the electrode
- 1 multilingual operating manual
- 1 verification certificate

To order

CA 10001 General purpose tester

Reference: P01710015

CA 10002 Specialised for the food industry

Reference: P01710016

Recommended accessories

P01298075  
Carrying case  
(120 x 245 x 60 cm)

See page 145  
Buffer solutions

## pH meter and conductivity meter for laboratory use

## CA 10101E - CA 10141E



## pH meter and conductivity meter suitable for teaching and compatible with the needs of professionals

- BNC connector
- Large LCD screen with backlighting
- Data transfer to Regressi, Graph2D and Data Logger Transfer software
- Compatible with ExAO interfaces via analogue outputs
- Signal stability indicator: for accurate measurements
- Automatic and optimised calibration: stored buffers with the option to add custom buffer values.
- Data recording: manual, automatic at intervals or programmed via Data Logger Transfer software

|                                               | CA 10101E | CA 10141E |
|-----------------------------------------------|-----------|-----------|
| pH measurement                                | ■         |           |
| Redox measurement                             | ■         |           |
| Conductivity, resistivity and TDS measurement |           | ■         |
| Temperature measurement                       | ■         | ■         |
| Analogue output(s)                            | ■         | ■         |
| Automatic calibration                         | ■         | ■         |
| Calibration log                               | ■         | ■         |
| Data logging                                  | ■         | ■         |

|                          |                                          | CA 10101E                                                                                                                                              | CA 10141E                                                                                                                                                     |
|--------------------------|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| pH                       | Measuring range                          | 2.00 to 16.00 pH                                                                                                                                       | -                                                                                                                                                             |
|                          | Resolution (R)                           | 0.01 pH                                                                                                                                                | -                                                                                                                                                             |
| Redox                    | Measuring range                          | ±199.9 mV / from -1999 to -200 and +200 to +1999 mV                                                                                                    | -                                                                                                                                                             |
|                          | Resolution (R)                           | 0.1 mV / 1 mV                                                                                                                                          | -                                                                                                                                                             |
| Conductivity             | Measuring range                          | -                                                                                                                                                      | - 0.050 µS/cm to 200.0 mS/cm                                                                                                                                  |
|                          | Resolution (R)                           | -                                                                                                                                                      | 1 nS/cm to 100 µS/cm (depending on range)                                                                                                                     |
| TDS                      | Measuring range                          | -                                                                                                                                                      | 0.001 mg/l to 200.0 g/l                                                                                                                                       |
|                          | Resolution (R)                           | -                                                                                                                                                      | 1 µg/l to 100 mg/l (depending on range)                                                                                                                       |
|                          | Facteur TDS                              | -                                                                                                                                                      | 0.40 to 1.00                                                                                                                                                  |
| Resistivity              | Measuring range                          | -                                                                                                                                                      | 2 Ω.cm to 4999 kΩ.cm                                                                                                                                          |
|                          | Resolution (R)                           | -                                                                                                                                                      | 1 mΩ.cm to 1 kΩ.cm (depending on range)                                                                                                                       |
| Salinity                 | Measuring range                          | -                                                                                                                                                      | 2.0 to 42.0 PSU                                                                                                                                               |
|                          | Resolution (R)                           | -                                                                                                                                                      | 0.1 PSU                                                                                                                                                       |
| Temperature              | Measuring range                          | -10.0 to +120.0°C / 14.0 to 248.0°F                                                                                                                    |                                                                                                                                                               |
|                          | Resolution (R)                           | 0.1 °C / 0.1 °F                                                                                                                                        |                                                                                                                                                               |
| Calibration              | pH                                       | Automatic, up to 3 points, 10 buffers stored (4.01; 7.00; 9.18; 1.68; 10.01; 4.005; 6.865; 9.180) and option to add your own buffer solutions          |                                                                                                                                                               |
|                          | Redox                                    | Automatic, 1 point, 2 stored buffers (220 mV and 468 mV) and option to add your own buffer solutions                                                   |                                                                                                                                                               |
|                          | Conductivity                             | -                                                                                                                                                      | Automatic, 1 point, 6 stored buffers (147.0 µS/cm; 1408 mS/cm; 12.85 mS/cm; 84.0 µS/cm; 1.413 mS/cm; 12.88 mS/cm) and option to add your own buffer solutions |
|                          | Calibration log                          | Display of slope and offset from last calibration on device<br>Complete history saved and accessible via PC<br>Calibration certificate                 | Display of cell constant from last calibration on device<br>Complete history saved and viewable via PC                                                        |
| Temperature compensation |                                          | Automatic (ATC) or manual (MTC) - from -10.0 to +120.0 °C / 14.0 to 248.0 °F<br>BNC (pH and redox electrode)<br>2 mm banana plug (reference electrode) |                                                                                                                                                               |
| Connectors               | Probe inputs<br>Temperature sensor input | Jack (Pt1000 temperature probe)                                                                                                                        |                                                                                                                                                               |
|                          | Communication interface                  | Micro-USB type B (also used for power supply)<br>Analogue output (2 x 4 mm banana plugs)                                                               | Micro-USB type B (also used for power supply) and 2 analogue outputs for conductivity/TDS/salinity/resistivity and temperature (3 x 4 mm banana plugs)        |
| Data recording           |                                          | Time stamp - Memory > 100,000 measurements - Manual and automatic recording                                                                            |                                                                                                                                                               |
| Data transfer            |                                          | Yes, to PC via USB                                                                                                                                     |                                                                                                                                                               |
| Batteries                |                                          | 4 x 1.5 V AA or LR06 alkaline batteries - Mains adapter supplied                                                                                       |                                                                                                                                                               |
| Battery life             |                                          | Approx. 200 hours                                                                                                                                      |                                                                                                                                                               |
| Auto power off           |                                          | Auto power off after 3, 10 or 15 minutes of non-use (adjustable)                                                                                       |                                                                                                                                                               |
| Dimensions/weight        |                                          | 211 x 127 x 54 mm / 600 g                                                                                                                              |                                                                                                                                                               |



## + The extra

A mains adapter is supplied with the instruments to facilitate organisation in laboratories.

The CA 10141E has 2 analogue outputs (3 x 4 mm banana sockets, one red, one black and one yellow) which continuously supply a voltage proportional to the measurement value and a voltage proportional to the temperature.

The CA 10101E has one analogue output (two 4 mm banana sockets, one red and one black) which provides a continuous voltage proportional to the pH value or ORP value.

Configure the analogue outputs using the SetAnalogOutput\_pH/ORP/Conduc/T.txt files. To access them, connect the device to the PC via the USB/micro-USB cable.

## CA 10101E and CA 10141E delivered with:

- 4 AA or LR06 alkaline batteries
- 1 protective cover fitted to the device
- 1 USB-µUSB cable
- 1 mains adapter
- 1 quick start guide
- 1 verification certificate

## To order

pH meter CA 10101E

Reference: P01710011

Conductivity meter CA 10141E

Reference: P01710021



# Electrodes

## For general laboratory use



### Standard pH, redox and conductivity probes

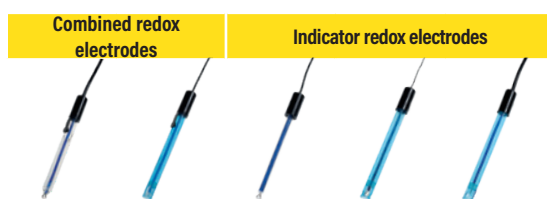
Most Chauvin-Arnoux electrodes are manufactured in France. They are reliable, robust and designed for laboratories and teaching. These electrodes are suitable for most Chauvin Arnoux devices.

pH measurement involves two electrodes: the indicator electrode, consisting of a glass membrane sensitive to hydronium ions, and the reference electrode, which delivers a constant potential. These electrodes can be housed in the same body, in which case they are referred to as 'combined' electrodes, or they can be mounted separately.

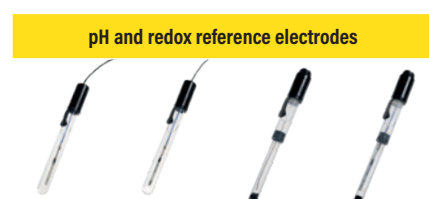
Redox measurement involves the same type of electrode assembly. The difference lies in the nature of the indicator electrode, which in this case is made of an inert metal capable of gaining or losing electrons (such as platinum or gold).

Conductivity probes are made of platinum or graphite and consist of either two or four electrodes combined in the same body. Conductivity probes are more stable over time.

|                                        | Combined pH electrodes |                        |                                                                            |                        |                                 | Indicator pH electrodes |                                                                                                     |
|----------------------------------------|------------------------|------------------------|----------------------------------------------------------------------------|------------------------|---------------------------------|-------------------------|-----------------------------------------------------------------------------------------------------|
|                                        |                        |                        |                                                                            |                        |                                 |                         |                                                                                                     |
| Electrode                              | BRV1H                  | XRV1H                  | LRV7                                                                       | BRV4H                  | BRV4H-S7-130                    | BV41H                   | XV41                                                                                                |
| Measurement range                      | 0-12                   | 0-12                   | 0-14                                                                       | 0-12                   | 0-12                            | 0-12                    | 0-12                                                                                                |
| Tip                                    | Spherical              | Spherical              | A tip                                                                      | Micro                  | Micro                           | Spherical               | Spherical                                                                                           |
| Reference system                       | Ag/AgCl                | Ag/AgCl                | Ag/AgCl                                                                    | Ag/AgCl                | Ag/AgCl                         | -                       | -                                                                                                   |
| Reference electrolyte                  | Refillable KCl 1 mol/L | Refillable KCl 1 mol/L | Gel                                                                        | Refillable KCl 1 mol/L | Refillable KCl 1 mol/L          | -                       | -                                                                                                   |
| Junction                               | Ceramic                | Ceramic                | Ceramic and open Ceramic                                                   | Ceramic                | Ceramic                         | -                       | -                                                                                                   |
| Body material                          | Glass                  | PVC                    | PVC                                                                        | Glass                  | Glass                           | Glass                   | PVC                                                                                                 |
| Operating temperature                  | 0 to 80 °C             | 0 to 60 °C             | 0 to 60 °C                                                                 | 0 to 80 °C             | 0 to 80 °C                      | 0 to 80 °C              | 0 to 60 °C                                                                                          |
| Diameter Ø and length under cover (mm) | 12 x 120               | 12 x 120               | 6 (end) x 123                                                              | 6,5 (end) x 120        | 6,5 (end) x 185                 | 12 x 110                | 12 x 120                                                                                            |
| Cable length                           | 1 m                    | 1 m                    | 1 m                                                                        | 1 m                    | 1 m                             | 1 m                     | 1 m                                                                                                 |
| Recommended use                        | General use            | General use            | Dairy products (milk, cheese, yoghurt), semi-solid foods (cheese, yoghurt) | Low volumes            | Low volumes<br>Long body 130 mm | General use             | General use. To be used in conjunction with a reference electrode of type BR41, BR42 or XR41, XR42. |
| References                             |                        |                        |                                                                            |                        |                                 |                         |                                                                                                     |
| Connectors BNC                         | BRV1H-BNC              | XRV1H-BNC              | P01715019                                                                  | BRV4H-BNC              | -                               | BV41H-BNC               | XV41-BNC                                                                                            |
| S7 connectors (screw-on)               | BRV1H-S7               | XRV1H-S7               | -                                                                          | BRV4H-S7               | BRV4H-S7-130                    | BV41H-S7                | XV41-S7                                                                                             |
| DIN connectors                         | -                      | XRV1H-DIN              | -                                                                          | -                      | -                               | -                       | -                                                                                                   |
| DIN connectors 8-point waterproof      | -                      | -                      | P01715020                                                                  | -                      | -                               | -                       | -                                                                                                   |
| TV connectors                          | BRV1H-TV               | XRV1H-TV               | -                                                                          | -                      | -                               | -                       | -                                                                                                   |



| Electrode                              | BRPT1                  | XRPT1                  | BPT1                                                                                    | XPT1       | XPT2         |
|----------------------------------------|------------------------|------------------------|-----------------------------------------------------------------------------------------|------------|--------------|
| Redox measurement range                | +/- 2,000 mV           |                        |                                                                                         |            |              |
| Metal                                  | Platinum wire          |                        |                                                                                         |            | Platinum rod |
| Reference system                       | Ag/AgCl                | Ag/AgCl                | -                                                                                       | -          | -            |
| Reference electrolyte                  | Refillable KCl 1 mol/L | Refillable KCl 1 mol/L | -                                                                                       | -          | -            |
| Junction                               | Ceramics               | Ceramics               | -                                                                                       | -          | -            |
| Body material                          | Glass                  | PVC                    | Glass                                                                                   | PVC        | PVC          |
| Operating temperature                  | 0 to 80 °C             | 0 to 60 °C             | 0 to 80 °C                                                                              | 0 to 60 °C | 0 to 60 °C   |
| Diameter Ø and length under cover (mm) | 12 x 115               | 12 x 120               | 8 x 115                                                                                 | 12 x 120   | 12 x 120     |
| Cable length                           | 1 m                    | 1 m                    | 1 m                                                                                     | 1 m        | 1 m          |
| Recommended use                        | General use            | General use            | General use<br>To be used with a reference electrode of type BR41 or BR42 or XR41, XR42 |            |              |
| References                             |                        |                        |                                                                                         |            |              |
| Connectors BNC                         | BRPT1-BNC              | XRPT1-BNC              | BPT1-BNC                                                                                | XPT1-BNC   | XPT2-BNC     |
| S7 connectors (screw-on)               | BRPT1-S7               | XRPT1-S7               | BPT1-S7                                                                                 | XPT1-S7    | XPT2-S7      |
| BA4 connectors                         | -                      | -                      | -                                                                                       | XPT1-BA4   | XPT2-BA4     |



| Electrode                              | BR41                                                             | BR42                   | XR41                   | XR42                   |
|----------------------------------------|------------------------------------------------------------------|------------------------|------------------------|------------------------|
| pH/redox measurement range             | 0-14 / ± 2,000 mV                                                |                        |                        |                        |
| Reference system                       | Ag/AgCl                                                          | Calomel                | Ag/AgCl                | Calomel                |
| Electrolyte de référence               | Refillable KCl 1 mol/L                                           | Refillable KCl 3 mol/L | Refillable KCl 1 mol/L | Refillable KCl 3 mol/L |
| Junction                               | Ceramics                                                         | Ceramics               | Ceramics               | Ceramics               |
| Body material                          | Glass                                                            | Glass                  | PVC                    | PVC                    |
| Operating temperature                  | 0 to 80 °C                                                       | 0 to 80 °C             | 0 to 60 °C             | 0 to 60 °C             |
| Diameter Ø and length under cover (mm) | 12 x 115                                                         | 12 x 115               | 8 (end) x 110          | 8 (end) x 110          |
| Cable length                           | 1 m                                                              | 1 m                    | 1 m                    | 1 m                    |
| Recommended use                        | General use<br>To be used with a pH or redox indicator electrode |                        |                        |                        |
| References                             |                                                                  |                        |                        |                        |
| S7 connectors (screw-on)               | BR41-S7                                                          | BR42-S7                | XR41-S7                | XR42-S7                |
| BA2 connectors                         | BR41-BA2                                                         | BR42-BA2               | XR41-BA2               | XR42-BA2               |
| BA4 connectors                         | BR41-BA4                                                         | BR42-BA4               | XR41-BA4               | XR42-BA4               |



## Electrodes for silver measurement

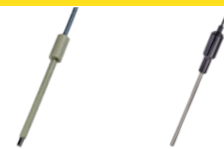
| Combined electrode                                                                | Indicator electrodes                                                              |                                                                                   | Reference electrodes                                                               |                                                                                     |                                                                                     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |  |  |
| BRAG1                                                                             | BAG1                                                                              | XAG1                                                                              | BR43                                                                               | XR43                                                                                | BR44                                                                                |
| +/- 2,000 mV                                                                      |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Silver rod                                                                        |                                                                                   |                                                                                   | -                                                                                  | -                                                                                   | -                                                                                   |
| Mercurous sulphate                                                                |                                                                                   |                                                                                   | Mercurous sulphate                                                                 | Mercurous sulphate                                                                  | Ag/AgCl                                                                             |
| Refillable saturated K <sub>2</sub> SO <sub>4</sub>                               |                                                                                   |                                                                                   | Refillable saturated K <sub>2</sub> SO <sub>4</sub>                                | Refillable saturated K <sub>2</sub> SO <sub>4</sub>                                 | Refillable KCl 1 mol/L KNO <sub>3</sub> 1 mol/L                                     |
| Ceramics                                                                          |                                                                                   |                                                                                   | Ceramics                                                                           | Ceramics                                                                            | Ceramics                                                                            |
| Glass                                                                             | Glass                                                                             | PVC                                                                               | Glass                                                                              | PVC                                                                                 | Glass                                                                               |
| 0 to 80 °C                                                                        | 0 to 80 °C                                                                        | 0 to 60 °C                                                                        | 0 to 80 °C                                                                         | 0 to 60 °C                                                                          | 0 to 80 °C                                                                          |
| 12 x 125                                                                          | 12 x 125                                                                          | 12 x 120                                                                          | 12 x 115                                                                           | 8 (end) x 110                                                                       | 12 x 120                                                                            |
| 1 m                                                                               | 1 m                                                                               | 1 m                                                                               | 1 m                                                                                | 1 m                                                                                 | 1 m                                                                                 |
| General use                                                                       | General use<br>To be used with a BR43, XR43 or BR44 reference electrode           |                                                                                   | General use<br>To be used with a BAG1 or XAG1 indicator electrode                  |                                                                                     | Double junction for clogging products                                               |
|                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| BRAG1-BNC                                                                         | BAG1-BNC                                                                          | XAG1-BNC                                                                          | -                                                                                  | -                                                                                   | -                                                                                   |
| BRAG1-S7                                                                          | BAG1-S7                                                                           | XAG1-S7                                                                           | BR43-S7                                                                            | XR43-S7                                                                             | BR44-S7                                                                             |
| -                                                                                 | -                                                                                 | -                                                                                 | BR43-BA2                                                                           | XR43-BA2                                                                            | BR44-BA2                                                                            |
| -                                                                                 | -                                                                                 | XAG1-BA4                                                                          | BR43-BA4                                                                           | XR43-BA4                                                                            | BR44-BA4                                                                            |

## Conductivity probes



| Probes                                 | XCPST4           | BCP4           | XCP4       |
|----------------------------------------|------------------|----------------|------------|
| Conductivity range                     | 0.1 µS to 200 mS |                |            |
| Probe type                             | 2 platinum poles |                |            |
| Cell constant (cm-1)                   | 1                | 1              | 1          |
| Temperature sensor                     | Yes              | No             | No         |
| Body material                          | PVC              | Glass          | PVC        |
| Operating temperature                  | 0 to 60 °C       | 0 to 80 °C     | 0 to 60 °C |
| Diameter Ø and length under cover (mm) | 12 x 115         | 11 (end) x 100 | 12 x 115   |
| Cable length                           | 1 m              | 1 m            | 1 m        |
| Recommended use                        | General use      |                |            |
| References                             |                  |                |            |
| 5-pole connector                       | XCPST4           | -              | -          |
| BNC connectors                         | -                | BCP4-BNC       | XCP4-BNC   |
| S7 connectors (screw-on)               | -                | BCP4-S7        | XCP4-S7    |
| BA4 connectors                         | -                | -              | XCP4-BA4   |
| RAD connectors                         | -                | -              | XCP4-RAD   |

## Temperature sensors



| Sensors                                | BT5           | BT6             |
|----------------------------------------|---------------|-----------------|
| Temperature range                      | 0 to +90 °C   | -10 to +110 °C  |
| Body material                          | Polypropylene | Stainless steel |
| Temperature sensor                     | Pt100         | Pt1000          |
| Operating temperature                  | 0 to +90 °C   | -10 to +110 °C  |
| Diameter Ø and length under cover (mm) | 6 (end) x 116 | 5 x 97          |
| Cable length                           | 1 m           | 1 m             |
| Recommended use                        | General use   |                 |
| References                             |               |                 |
| Jack connectors                        | BT5-JACK      | P01710070       |
| DIN connectors                         | BT5-DIN       | -               |

## Electrodes

### Specially designed for CA 10101 & CA 10141



### pH and redox electrodes and conductivity probe for the waterproof portable range

The CA 10101 pH meter and CA 10141 conductivity meter are portable measuring devices specially designed by Chauvin Arnoux for mobile applications: in the field, in the laboratory or in production.

To facilitate field work, these devices are supplied with probes that incorporate a Pt1000 temperature sensor. They are also designed with robust materials, making them particularly resistant. The pH and redox electrodes are combined and incorporate a gel electrolyte, which enhances their durability.

The probes have a waterproof 8-point DIN connector.



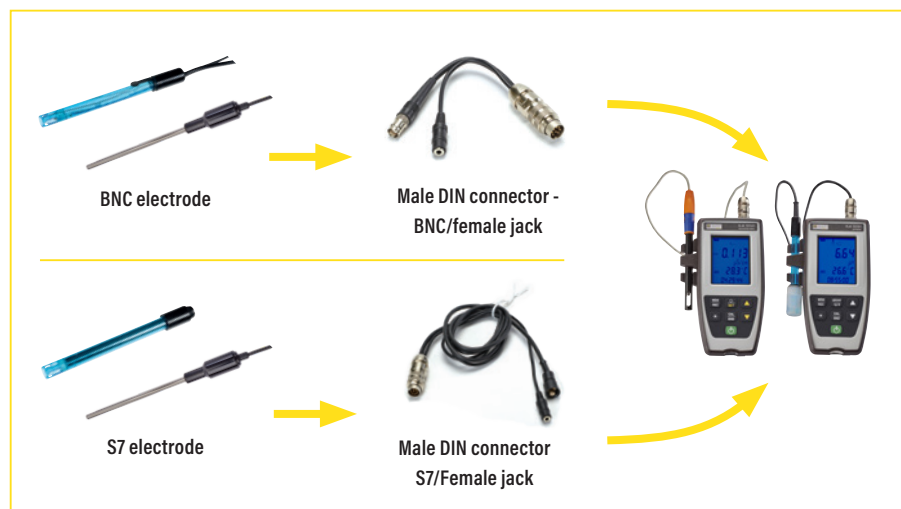
| Electrode                      | XRGST1                                                        | XRGST1 - 3 mètres                                             | LRV7                                                     | XRPTST1                                                       | XCP4ST1                                                       |
|--------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
| pH measurement range           | 1-12                                                          | 1-12                                                          | 0-14                                                     |                                                               |                                                               |
| Redox measurement range        | -                                                             | -                                                             | -                                                        | ± 1,999 mV                                                    | -                                                             |
| Conductivity measurement range | -                                                             | -                                                             | -                                                        | -                                                             | 0.1 µS/cm<br>500 mS/cm                                        |
| Tip                            | Spherical                                                     | Spherical                                                     | Pointed                                                  | -                                                             | -                                                             |
| Reference system               | Ag/AgCl                                                       | Ag/AgCl                                                       | Ag/AgCl                                                  | Ag/AgCl                                                       | -                                                             |
| Reference Electrolyte          | Gel                                                           | Gel                                                           | Gel                                                      | Gel                                                           | -                                                             |
| Junction                       | Ceramic and non-woven fabric                                  | Ceramic and non-woven fabric                                  | Ceramic and open                                         | Ceramic                                                       | -                                                             |
| Cell constant (cm-1)           | -                                                             | -                                                             | -                                                        | -                                                             | 0,55 ± 0,05 cm-1                                              |
| Temperature sensor             | Yes                                                           | Yes                                                           | No                                                       | Yes                                                           | Yes                                                           |
| Temperature measurement range  | 0 to 60°C                                                     | 0 to 60°C                                                     | 0 to 60°C                                                | 0 to 60°C                                                     | 0 to 100°C                                                    |
| Dimensions                     | 150 x Ø 16 mm                                                 | 150 x Ø 16 mm                                                 | 132 x Ø 16mm                                             | 190 x Ø 18 mm                                                 | 190 x Ø 18 mm                                                 |
| Body material                  | Polycarbonate                                                 | Polycarbonate                                                 | PVC                                                      | Polycarbonate                                                 | Epoxy                                                         |
| Cable length                   | 1 m                                                           | 3 m                                                           | 1 m                                                      | 1 m                                                           | 1 m                                                           |
| Connector                      | DIN 8 points waterproof                                       | DIN 8 points waterproof                                       | DIN 8 points waterproof                                  | DIN 8 points waterproof                                       | DIN 8 points waterproof                                       |
| Recommended use                | Applications in the field and general use and in laboratories | Applications in the field and general use and in laboratories | Dairy products (milk, cheese, yoghurt), semi-solid foods | Applications in the field and general use and in laboratories | Applications in the field and general use and in laboratories |
| Reference                      | P01710051                                                     | P01710057                                                     | P01715020                                                | P01710052                                                     | P01710053                                                     |

### Specific connectors

DIN adapter cables are available for use with electrodes with BNC connectors or S7 screw connectors with a temperature sensor (Jack connector).

Please note: the adapter part numbers are different depending on the model (pH meter CA 10101 or conductivity meter CA 10141).

With the P01295501 adapter, you can use the LRV7 food industry electrode with BNC connectors (P01715019) and the BT6 temperature sensor with Jack connectors (P01710070) on the CA 10101 pH meter.



### To order

Male DIN connector – BNC/female jack for CA 10101

**Reference: P01295501**

Male DIN connector – BNC/female jack for CA 10141

**Reference: P01710054**

Male DIN connector – S7/female jack for CA 10101

**Reference: P01295502**

Male DIN connector – S7/female jack for CA 10141

**Reference: P01710055**



## Teaching equipment

### pH meters, conductivity meters and benchtop multiparameter meters

#### Chauvin-Arnoux offers a range of benchtop instruments specially designed for teaching purposes

The analogue range consists of the PSD1, PSD21 and PPD26 pH meters, the CSD22 conductivity meter and the MPC25 multiparameter meter.

The potentiometers provide a simplified, educational approach to electrochemical measurement. These devices also feature an analogue output for compatibility with ExAO software.

The P310 pH meter and C320 conductivity meter are part of the digital range. They have an RS232 output and 0–5 V analogue outputs.

Thanks to standard BNC connectors, these devices are compatible with a wide range of electrodes suitable for every need.

#### pH meters are delivered with:

- concentrated standard solutions (125 mL) pH4 and pH7
- a 9 V mains adapter (except for the PPD26, which runs on batteries)
- operating instructions.
- The P310 pH meter** comes with a 2 mm banana plug reference cable and a 2 mm male/4 mm female banana plug adapter (for reference electrode)

#### All conductivity meters are delivered with:

- 1M KCl solution (125 mL)
- 9 V mains adapter
- operating instructions



#### The MPC25 multiparameter meter is delivered with:

- concentrated standard solutions (125 mL) pH4 and pH7
- 1M KCl solution (125 mL)
- a Michaelis solution
- a 2 mm male/4 mm female banana plug adapter (for reference electrode)
- a 9 V mains adapter
- operating instructions

|                          | PSD1                               | PSD21                                                                                                        | D26                                                                        | P310                                                                                                                                                                                 | CSD22                                        | C320                                                                                                                              | C25                                                                                                                             |
|--------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| pH                       | ■                                  | ■                                                                                                            | ■                                                                          | ■                                                                                                                                                                                    | -                                            | -                                                                                                                                 | ■                                                                                                                               |
| mV                       | -                                  | ■                                                                                                            | ■                                                                          | ■                                                                                                                                                                                    | -                                            | -                                                                                                                                 | ■                                                                                                                               |
| Conductivity             | -                                  | -                                                                                                            | -                                                                          | -                                                                                                                                                                                    | ■                                            | ■                                                                                                                                 | ■                                                                                                                               |
| Temperature              | -                                  | -                                                                                                            | ■                                                                          | ■                                                                                                                                                                                    | -                                            | ■                                                                                                                                 | -                                                                                                                               |
| Temperature compensation | Manual                             | Manual                                                                                                       | Manual                                                                     | Automatic/Manual                                                                                                                                                                     | -                                            | Automatic/Manual                                                                                                                  | Manual                                                                                                                          |
| Calibration              | Manual                             | Manual                                                                                                       | Manual                                                                     | Automatic or manual (2 pH points and 1 mV point)                                                                                                                                     | Manual                                       | Manual                                                                                                                            | Manual                                                                                                                          |
| Connectors               | BNC for pH electrode               | BNC for pH or redox electrode (combined or measurement)<br>2 mm banana plug for separate reference electrode | BNC for electrode pH or redox<br>3.5 mm jack for temperature probe (Pt100) | BNC (x2) for pH and redox electrode (combined or measurement)<br>2 mm banana plug (x2) for reference electrode<br>5-pin plug for temperature sensor<br>1/4" jack plug for microphone | BNC for conductivity cell BNC                | BNC for conductivity cell<br>5-pin connector for conductivity cell with integrated temperature sensor or temperature sensor alone | BNC (x2) for pH electrode or redox (combined or measurement) and conductivity probe<br>2 mm banana plug for reference electrode |
| Outputs                  | Terminals 4 mm for output recorder | Terminals 4 mm insulated for recorder output recorder                                                        | Jack 2.54 mm for recorder output recorder                                  | Sub-D connector 9-pin male for outputs analogue recorders (x3)<br>Sub-D connector 9-pin female for RS232 output                                                                      | 4 mm terminals insulated for recorder output | 2 x 4 mm terminals insulated for output analogue recorder<br>Sub-D connector 9 female channels for RS232 output                   | 4 mm terminals insulated for output recorder conductivity<br>4 mm terminals insulated for output pH/mV recorder                 |



## Solutions

### For electrode calibration and maintenance

#### Buffer solutions for pH, redox and conductivity and maintenance solutions and servicing

The calibration frequency depends on the level of accuracy required, but also on the frequency of use of the electrode.

It is up to the user to define the frequency best suited to their protocol and needs.

It is recommended to calibrate the electrode with at least two points, as the electrode is characterised by both its slope and its zero point. A three-point calibration is recommended when measurements cover a wider range.

Calibrate under temperature conditions identical to those of the sample measurements.

#### Care and maintenance of electrodes



##### MAINTENANCE SOLUTIONS

|                                    |           |
|------------------------------------|-----------|
| 1 mol/L KCl solution               | P01700120 |
| 3 mol/L KCl solution               | P01700121 |
| Pepsin/HCL solution with 1% pepsin | P01700122 |

The maintenance of pH and redox electrodes is very important for their lifespan and accuracy.

**It is essential to store the electrodes in aqueous solutions rich in ions** in order to keep the glass membrane moist and prevent the reference electrolyte from losing its conductivity. Electrodes with a liquid electrolyte require regular recharging of the electrolyte to prevent the level from falling below that of the sample solution.

**Regular cleaning of the diaphragm and glass bulb is essential** for optimal response time. The frequency of cleaning and the type of solution used depend on the nature of the sample. For example, contamination by proteins can be cleaned using a solution of acidic pepsin.

#### Solutions pH buffers



##### BUFFERS pH NIST/DIN

|                      |           |
|----------------------|-----------|
| NIST buffer pH 1.68  | P01700105 |
| NIST buffer pH 4.01  | P01700106 |
| NIST pH 7.00 buffer  | P01700107 |
| NIST pH 9.18 buffer  | P01700108 |
| NIST pH 10.01 buffer | P01700109 |

The formulation of these buffer solutions complies with the specifications of NIST (National Institute of Standards and Technology, United States) and DIN 19266. The solutions are supplied with a quality certificate (upon customer request).



##### CONCENTRATED pH BUFFERS (125 mL)

|                             |           |
|-----------------------------|-----------|
| Concentrated pH 4.00 buffer | P01700111 |
| Concentrated pH 7.00 buffer | P01700112 |
| Concentrated pH 9.00 buffer | P01700113 |

Concentrated buffer solutions with pH values of 7.00 and 9.00 are supplied in 125 mL bottles and must be diluted 10 times before use. The pH 4.00 buffer must be diluted 5 times before use.



##### COFRAC-CERTIFIED pH BUFFERS (25 mL BOTTLE)

|                                                  |           |
|--------------------------------------------------|-----------|
| COFRAC pH buffer pH 4.005 (x10)                  | P01700101 |
| COFRAC pH buffer pH 6.865 (x10)                  | P01700102 |
| COFRAC pH buffer pH 9.180 (x10)                  | P01700103 |
| Set of 3x5 COFRAC pH buffers 4.005; 6.865; 9.180 | P01700104 |

25 mL single-dose bottle.

**Accuracy:** guaranteed pH and contamination eliminated for a period of 1 to 2 years until opening.

**Convenience:** time savings, more efficient calibration, waste and spills avoided.

**Traceability:** bottle labelled with batch number, expiry date and COFRAC logo of reference material producer.

Certificate supplied with each box of COFRAC pH buffer.



#### Solutions redox buffers



##### REDOX BUFFERS

|                           |           |
|---------------------------|-----------|
| Michaelis solution 146 mV | P01700110 |
| Redox buffer 220 mV       | P01700114 |
| Redox buffer 468 mV       | P01700115 |

Manumasure offers two ready-to-use standard solutions (220 mV and 468 mV) and one concentrated solution (Michaelis Solution 146 mV).

#### Solutions standards conductivity



##### CONDUCTIVITY STANDARDS

|                                        |           |
|----------------------------------------|-----------|
| KCl conductivity standard 1 mol/L      | P01700116 |
| NIST conductivity standard 147 µS/cm   | P01700117 |
| NIST conductivity standard 1408 µS/cm  | P01700118 |
| OIML conductivity standard 12.85 mS/cm | P01700119 |

Conductivity standards are checked and standardised using a calibrated conductivity meter with:

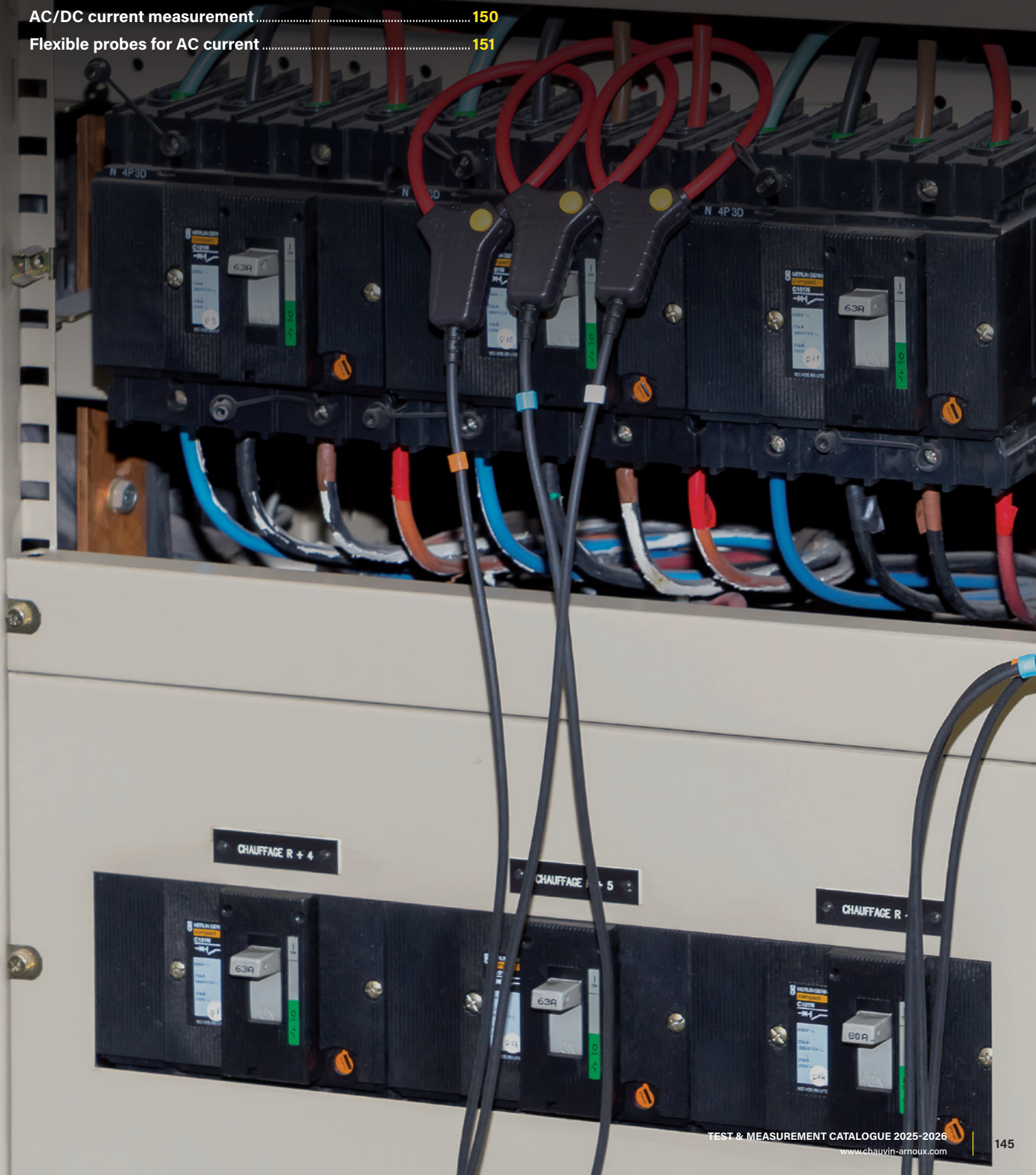
- A certified solution traceable to NIST reference materials
- A standard developed in accordance with OIML (International Organisation of Legal Metrology).

The concentrated 1 mol/L KCl solution must be diluted to obtain different conductivity values.



# Current measurement

|                                                |     |
|------------------------------------------------|-----|
| MA400D, MA4000D flexible sensor ammeters ..... | 146 |
| Guide to choosing current clamps .....         | 147 |
| AC current measurement .....                   | 148 |
| AC/DC current measurement .....                | 150 |
| Flexible probes for AC current .....           | 151 |



## Flexible sensor ammeters

## MA400D - MA4000D

600 V  
CAT IV

TRMS



Equipped with a 4,000-point digital display for direct reading of the intensity, Digiflex provides the solution to the difficulties of accessing many electrical conductors.

- Compact, autonomous and easy to use
- Direct reading of the intensity
- Measurement from a few tens of mA
- MAX HOLD maximum value memory

|                                   | MA400D-170 / 250 / 1000                                                                             |                    |                     |
|-----------------------------------|-----------------------------------------------------------------------------------------------------|--------------------|---------------------|
| Display range                     | 4 A <sub>AC</sub>                                                                                   | 40 A <sub>AC</sub> | 400 A <sub>AC</sub> |
| Measuring range                   | 0.020 A ... 3.999 A                                                                                 | 4.00 A ... 39.99 A | 40.0 A ... 399.9 A  |
| Resolution                        | 1 mA                                                                                                | 10 mA              | 100 mA              |
| Accuracy                          | ± (2% + 10 cts)                                                                                     | ± (1.5% + 2 cts)   | ± (1.5% + 2 cts)    |
| Clamping diameter / Sensor length | MA400D-170 : Ø 45 mm / 170 mm<br>MA400D-250 : Ø 70 mm / 250 mm<br>MA400D-1000 : Ø 318 mm / 1,000 mm |                    |                     |
| Bandwidth                         | 10 Hz ... 3 kHz                                                                                     |                    |                     |
| Power supply                      | 2 Batteries 1,5 V AAA / LR03                                                                        |                    |                     |
| Safety                            | IEC 61010 CAT IV 600 V                                                                              |                    |                     |
| Operating temperature             | 0°C to +50°C                                                                                        |                    |                     |
| Device weight approx.             | 130 g                                                                                               |                    |                     |
| Case dimensions                   | 100 x 60 x 20 mm                                                                                    |                    |                     |
| Cable length                      | 0,8 m                                                                                               |                    |                     |

|                                   | MA4000D-350 / 1000                                                    |                     |                       |
|-----------------------------------|-----------------------------------------------------------------------|---------------------|-----------------------|
| Display range                     | 40 A <sub>AC</sub>                                                    | 400 A <sub>AC</sub> | 4,000 A <sub>AC</sub> |
| Measuring range                   | 0,2 A ... 39.99 A                                                     | 40,0 A ... 399.9 A  | 400 A ... 3,999 A     |
| Resolution                        | 10 mA                                                                 | 100 mA              | 1 A                   |
| Accuracy                          | ± (2% + 10 cts)                                                       | ± (1,5% + 2 cts)    | ± (1,5% + 2 cts)      |
| Clamping diameter / Sensor length | MA4000D-350 : Ø 100 mm / 350 mm<br>MA4000D-1000 : Ø 318 mm / 1,000 mm |                     |                       |
| Bandwidth                         | 10 Hz ... 3 kHz                                                       |                     |                       |
| Power supply                      | 2 x 1.5 V AAA / LR03 batteries                                        |                     |                       |
| Safety                            | IEC 61010 CAT IV 600 V                                                |                     |                       |
| Operating temperature             | 0°C to +50°C                                                          |                     |                       |
| Device weight approx.             | 130 g                                                                 |                     |                       |
| Case dimensions                   | 100 x 60 x 20 mm                                                      |                     |                       |
| Cable length                      | 0.8 m                                                                 |                     |                       |



## + The extra

MA400D: Measurement from 20 mA AC

MA400D-170 / 250,  
MA4000D-350  
delivered with:

- 2 Batteries 1,5 V AAA/LR03
- 1 sangle de fixation Velcro

MA400D-1000 and  
MA4000D-1000  
also come with:

- 1 carrying case

## To order

1 MA400D-170 ammeter

Reference: P01120575Z

1 MA400D-250 ammeter

Reference: P01120576Z

1 MA400D-1000 ammeter

Reference: P01120578

1 MA4000D-350 ammeter

Reference: P01120577Z

1 MA4000D-1000 ammeter

Reference: P01120579

## Recommended accessories

P01298074  
Bag 120 x 200 x 60P01102100Z  
MULTIFIX accessories



# AC current clamps

## Selection guide

### Choosing your current clamp

There is a wide range of criteria for choosing a current clamp. The approach below is designed to help define your requirements and guide you naturally towards the model which best suits your application. The criteria selected are classified from 1 to 6. To choose your clamp, we advise you to follow this logic:

- **Measurement of direct or alternating current?**
  - > AC/DC clamps table or AC clamps table
- **High or low currents?**
  - > see the "Input" column to define the appropriate families of clamps
- **On small wires or large cables?**
  - > see the diagrams at the bottom of the next page and only choose families with the shapes and dimensions required
- **What instrument will it be connected to?**
  - > see "Output / Connection" column to choose to clamp with compatible signal and connection possibilities
- **What are your other criteria?**
  - > see "Specific features" column to check that the clamp chosen fulfils your requirements perfectly

### The widest range of IEC 61010-2-032 clamps

Our innovation, technical expertise and determination to manufacture top-quality products that comply with standards have made Chauvin Arnoux the worldwide specialist in current clamps.

On the next few pages, you will find a table presenting the clamps for measuring AC/DC current, followed by a diagram giving the clamp form with dimensions and then another table grouping a large number of models for AC current.

As a result of their specifications, certain clamps are specialized for specific applications:

- Clamps for oscilloscopes (BNC output): E27, PAC17, PAC27, MN60, Y7N, C160, D38N and MA200
- Clamps for leakage currents: MN73, C173 and B102
- Clamp for measurements on the secondary windings of current transformers: MN71

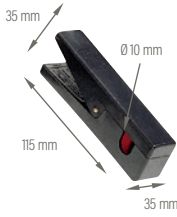
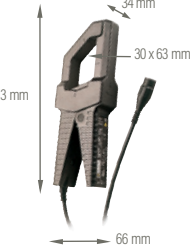


|                                                           | MINI 0x | MINI 10x | MN    | YN    | C1xx    | DN      | Bxx    | MiniFlex<br>Série MA110 | MiniFlex<br>Série MA130 | MiniFlex<br>Série MA200 | AmpFlex<br>Série A110 | AmpFlex<br>Série A130 | E2X   | MH60  | PAC 1x | PAC 2x  |
|-----------------------------------------------------------|---------|----------|-------|-------|---------|---------|--------|-------------------------|-------------------------|-------------------------|-----------------------|-----------------------|-------|-------|--------|---------|
| <b>For currents</b>                                       |         |          |       |       |         |         |        |                         |                         |                         |                       |                       |       |       |        |         |
| Clamping Ø (mm)                                           | 10      | 16       | 20    | 30    | 52      | 64      | 112    | 45<br>70<br>100         | 70                      | 45<br>70<br>100         | 140<br>250<br>380     | 250                   | 11.8  | 26    | 30     | 39      |
| AC                                                        | ■       | ■        | ■     | ■     | ■       | ■       | ■      | ■                       | ■                       | ■                       | ■                     | ■                     | ■     | ■     | ■      | ■       |
| DC                                                        |         |          |       |       |         |         |        |                         |                         |                         |                       |                       |       |       |        |         |
| Min                                                       | 5 mA    | 5 mA     | 10 mA | 1 A   | 1 mA    | 100 mA  | 500 µA | 80 mA                   | 500 mA                  | 500 mA                  | 80 mA                 | 500 mA                | 5 mA  | 1 mA  | 500 mA | 500 mA  |
| MAX                                                       | 150 A   | 200 A    | 240 A | 600 A | 1,200 A | 3,600 A | 400 A  | 3,000 A                 | 3,000 A                 | 3,000 A                 | 30,000 A              | 3,000 A               | 150 A | 140 A | 600 A  | 1,400 A |
| <b>Output</b>                                             |         |          |       |       |         |         |        |                         |                         |                         |                       |                       |       |       |        |         |
| in mA <sub>AC</sub>                                       | ■       | ■        | ■     | ■     | ■       | ■       |        |                         |                         |                         |                       |                       |       |       |        |         |
| in mV <sub>AC</sub>                                       | ■       | ■        | ■     | ■     | ■       | ■       | ■      | ■                       | ■                       | ■                       | ■                     | ■                     |       |       |        |         |
| in mV <sub>DC</sub>                                       | ■       |          | ■     | ■     |         |         |        |                         |                         |                         |                       |                       |       |       |        |         |
| in mV <sub>AC+DC</sub>                                    |         |          |       |       |         |         |        |                         |                         |                         |                       |                       | ■     | ■     | ■      | ■       |
| <b>Connection</b>                                         |         |          |       |       |         |         |        |                         |                         |                         |                       |                       |       |       |        |         |
| Insulated Ø 4 mm sockets                                  |         |          | ■     |       | ■       | ■       |        |                         |                         |                         |                       |                       |       |       |        |         |
| Cable with Ø 4 mm insulated<br>elbowed male plugs         | ■       | ■        | ■     | ■     | ■       | ■       | ■      | ■                       |                         |                         | ■                     |                       | ■     |       | ■      | ■       |
| Coaxial cable with insulated<br>male BNC connector        |         |          | ■     | ■     | ■       | ■       |        |                         | ■                       | ■                       |                       | ■                     | ■     | ■     | ■      | ■       |
| Single-calibre                                            | ■       | ■        | ■     | ■     | ■       | ■       |        |                         |                         | ■                       |                       |                       |       | ■     | ■      | ■       |
| Multi-calibre                                             | ■       |          | ■     |       | ■       |         | ■      | ■                       | ■                       | ■                       | ■                     | ■                     | ■     |       | ■      | ■       |
| For multimeters                                           | ■       | ■        | ■     | ■     | ■       | ■       | ■      | ■                       | ■                       |                         | ■                     | ■                     | ■     |       | ■      | ■       |
| For oscilloscopes                                         |         |          | ■     | ■     | ■       | ■       |        |                         |                         | ■                       |                       |                       | ■     | ■     | ■      | ■       |
| For detecting leakage and<br>insulation faults            |         |          | ■     |       | ■       |         | ■      |                         |                         |                         |                       |                       |       |       |        |         |
| For measuring power,<br>harmonics, etc.                   | ■       | ■        | ■     |       | ■       | ■       |        | ■                       | ■                       |                         | ■                     | ■                     | ■     |       | ■      | ■       |
| For the process and the 4-20/0-<br>20 mA measurement loop |         |          |       |       |         |         |        |                         |                         |                         |                       |                       |       |       |        |         |
| <b>Power supply</b>                                       |         |          |       |       |         |         |        |                         |                         |                         |                       |                       |       |       |        |         |
| Stand-alone                                               | ■       | ■        | ■     | ■     | ■       | ■       | ■      |                         |                         |                         |                       |                       |       | ■*    |        |         |
| Batteries                                                 |         |          |       |       |         |         |        | ■                       | ■                       | ■                       | ■                     | ■                     | ■     | ■     | ■      | ■       |
| Mains adapter                                             |         |          |       |       |         |         |        | ■                       | ■                       | ■                       | ■                     | ■                     | ■     | ■     | ■      | ■       |

\* for multimeters

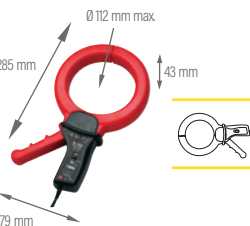
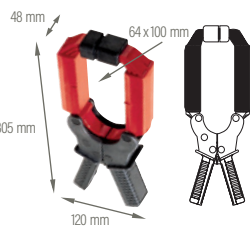


# AC current measurement

|                                                                                     | Series | Model   | Input                             |                                                                 |                |              |                     |                                   | Output - Connection                        |         |                             |                       |                         | Specific Features                   |                                       |                   |                                     |                             |                                 | Reference  |
|-------------------------------------------------------------------------------------|--------|---------|-----------------------------------|-----------------------------------------------------------------|----------------|--------------|---------------------|-----------------------------------|--------------------------------------------|---------|-----------------------------|-----------------------|-------------------------|-------------------------------------|---------------------------------------|-------------------|-------------------------------------|-----------------------------|---------------------------------|------------|
|                                                                                     |        |         | Measurement range <sup>(1)</sup>  |                                                                 |                |              |                     |                                   | Current                                    | Voltage | Cable + ø 4 mm safety plugs | Female ø 4 mm sockets | BNC connector (coaxial) | Transformation ratio (input/output) | Output protected against overvoltages | Automatic DC zero | Power measurement (low phase shift) | Bandwidth (frequency in Hz) | Typical accuracy <sup>(3)</sup> |            |
|                                                                                     |        |         | Very low current                  | Low current                                                     | Medium current | High current | Alternating current | Direct current                    |                                            |         |                             |                       |                         |                                     |                                       |                   |                                     |                             |                                 |            |
|    |        | MINI 01 |                                   | 2 to 150 A                                                      |                |              | ■                   |                                   | 0.15 A <sub>AC</sub>                       |         | ■                           |                       |                         | 1,000/1                             | ■                                     |                   |                                     | 48 Hz to 500 Hz             | ≤ 2.5 %                         | P01105101Z |
|                                                                                     |        | MINI 02 | 50 mA to 100 A                    |                                                                 |                |              | ■                   |                                   | 0.1 A <sub>AC</sub>                        |         | ■                           |                       |                         | 1,000/1                             | ■                                     |                   | ■                                   | 48 Hz to 10 kHz             | ≤ 1 %                           | P01105102Z |
|                                                                                     |        | MINI 03 |                                   | 1 to 100 A                                                      |                |              | ■                   |                                   | 0.1 V <sub>AC</sub>                        |         | ■                           |                       |                         | 1 A / 1 mV                          |                                       |                   |                                     |                             | ≤ 2 %                           | P01105103Z |
|                                                                                     |        | MINI 05 | 5 mA to 10 A<br>1 to 100 A        |                                                                 |                |              | ■                   |                                   | 10 V <sub>AC</sub><br>0.1 V <sub>AC</sub>  |         | ■                           |                       |                         | 1 mA / 1 mV<br>1 A / 1 mV           |                                       |                   |                                     | 48 Hz to 500 Hz             | ≤ 3 %<br>≤ 2 %                  | P01105105Z |
|                                                                                     |        | MINI 09 |                                   | 1 to 150 A                                                      |                |              | ■                   |                                   | 15 V <sub>DC</sub> <sup>(2)</sup>          |         | ■                           |                       |                         | 1 A / 100 mV                        |                                       |                   |                                     |                             | ≤ 4 %                           | P01105109Z |
|   |        | MINI102 | 0.05 A to 200 A                   |                                                                 |                |              | ■                   |                                   | 0.2 A <sub>AC</sub>                        |         | ■                           |                       |                         | 1,000/1                             | ■                                     |                   | ■                                   | 48 Hz . 10 kHz              | ≤ 1 %                           | P01106102  |
|                                                                                     |        | MINI103 | 0.1 A to 200 A                    |                                                                 |                |              | ■                   |                                   | 0.2 V <sub>AC</sub>                        |         | ■                           |                       |                         | 1 A / 1 mV                          | ■                                     |                   | ■                                   | 48 Hz . 10 kHz              | ≤ 1.5 %                         | P01106103  |
|  |        | MN08    |                                   | 0.5 to 240 A                                                    |                |              | ■                   |                                   | 0.2 A <sub>AC</sub>                        |         | ■                           |                       |                         | 1,000/1                             |                                       |                   |                                     |                             | ≤ 1 %                           | P01120401  |
|                                                                                     |        | MN09    |                                   | 0.5 to 240 A                                                    |                |              | ■                   |                                   | 0.2 A <sub>AC</sub>                        |         | ■                           |                       |                         | 1,000/1                             |                                       |                   |                                     |                             | ≤ 1 %                           | P01120402  |
|                                                                                     |        | MN10    |                                   | 0.5 to 240 A                                                    |                |              | ■                   |                                   | 0.2 A <sub>AC</sub>                        |         | ■                           |                       |                         | 1,000/1                             |                                       |                   |                                     |                             | ≤ 2 %                           | P01120403  |
|                                                                                     |        | MN11    |                                   | 0.5 to 240 A                                                    |                |              | ■                   |                                   | 0.2 A <sub>AC</sub>                        |         | ■                           |                       |                         | 1,000/1                             |                                       |                   |                                     |                             | ≤ 2 %                           | P01120404  |
|                                                                                     |        | MN12    |                                   | 0.5 to 240 A                                                    |                |              | ■                   |                                   | 2 V <sub>AC</sub>                          |         | ■                           |                       |                         | 1 A / 10 mV                         |                                       |                   |                                     |                             | ≤ 1 %                           | P01120405  |
|                                                                                     |        | MN13    |                                   | 0.5 to 240 A                                                    |                |              | ■                   |                                   | 2 V <sub>AC</sub>                          |         | ■                           |                       |                         | 1 A / 10 mV                         |                                       |                   |                                     |                             | ≤ 1 %                           | P01120406  |
|                                                                                     |        | MN14    |                                   | 0.5 to 240 A                                                    |                |              | ■                   |                                   | 0.2 V <sub>AC</sub>                        |         | ■                           |                       |                         | 1 A / 1 mV                          |                                       |                   |                                     | 40 Hz to 10 kHz             | ≤ 1 %                           | P01120416  |
|                                                                                     |        | MN15    |                                   | 0.5 to 240 A                                                    |                |              | ■                   |                                   | 0.2 V <sub>AC</sub>                        |         | ■                           |                       |                         | 1 A / 1 mV                          |                                       |                   |                                     |                             | ≤ 1 %                           | P01120417  |
|                                                                                     |        | MN21    |                                   | 0.1 to 240 A                                                    |                |              | ■                   |                                   | 0.2 A <sub>AC</sub>                        |         | ■                           |                       |                         | 1,000/1                             |                                       |                   |                                     |                             | ≤ 2 %                           | P01120418  |
|                                                                                     |        | MN23    |                                   | 0.1 to 240 A                                                    |                |              | ■                   |                                   | 2 V <sub>AC</sub>                          |         | ■                           |                       |                         | 1 A / 10 mV                         |                                       |                   |                                     |                             | ≤ 1.5 %                         | P01120419  |
|                                                                                     |        | MN38    |                                   | 0.1 to 24 A<br>0.5 to 240 A                                     |                |              | ■                   |                                   | 2 V <sub>AC</sub><br>2 V <sub>AC</sub>     |         | ■                           |                       |                         | 1 A / 100 mV<br>1 A / 10 mV         |                                       |                   |                                     |                             | ≤ 1 %                           | P01120407  |
|                                                                                     |        | MN39    |                                   | 0.1 to 24 A<br>0.5 to 240 A                                     |                |              | ■                   |                                   | 2 V <sub>AC</sub><br>2 V <sub>AC</sub>     |         | ■                           |                       |                         | 1 A / 100 mV<br>1 A / 10 mV         |                                       |                   |                                     |                             | ≤ 1 %                           | P01120408  |
|                                                                                     |        | MN60    |                                   | 0.1 A to 60 A <sub>PEAK</sub><br>0.5 A to 600 A <sub>PEAK</sub> |                |              | ■                   |                                   | 6 V <sub>PEAK</sub><br>6 V <sub>PEAK</sub> |         | ■                           |                       |                         | 1 A / 100 mV<br>1 A / 10 mV         |                                       |                   |                                     | 40 Hz to 40 kHz             | ≤ 2 %<br>≤ 1.5 %                | P01120409  |
|                                                                                     |        | MN71    | 10 mA to 12 A                     |                                                                 |                |              | ■                   |                                   | 1 V <sub>AC</sub>                          |         | ■                           |                       |                         | 1 A / 100 mV                        |                                       |                   |                                     |                             | ≤ 1 %                           | P01120420  |
|                                                                                     |        | MN73    | 10 mA to 2.4 A<br>100 mA to 240 A |                                                                 |                |              | ■                   |                                   | 2 V <sub>AC</sub><br>2 V <sub>AC</sub>     |         | ■                           |                       |                         | 1 mA / 1 mV<br>1 A / 10 mV          |                                       |                   |                                     | 40 Hz to 10 kHz             | ≤ 1 %<br>≤ 2 %                  | P01120421  |
|                                                                                     | MN88   |         | 0.5 to 240 A                      |                                                                 |                | ■            |                     | 20 V <sub>DC</sub> <sup>(2)</sup> |                                            | ■       |                             |                       | 1 A / 100 mV            |                                     |                                       |                   |                                     | ≤ 2 %                       | P01120410                       |            |
|                                                                                     | MN89   |         | 0.5 to 240 A                      |                                                                 |                | ■            |                     | 20 V <sub>DC</sub> <sup>(2)</sup> |                                            | ■       |                             |                       | 1 A / 100 mV            |                                     |                                       |                   |                                     | ≤ 2 %                       | P01120415                       |            |
|  |        | Y1N     |                                   | 4 A to 500 A                                                    |                |              | ■                   |                                   | 0.5 A <sub>AC</sub>                        |         | ■                           |                       |                         | 1,000/1                             |                                       |                   |                                     |                             | ≤ 3 %                           | P01120001A |
|                                                                                     |        | Y2N     |                                   | 4 A to 500 A                                                    |                |              | ■                   |                                   | 0.5 A <sub>AC</sub>                        |         | ■                           |                       |                         | 1,000/1                             |                                       |                   |                                     |                             | ≤ 1 %                           | P01120028A |
|                                                                                     |        | Y3N     |                                   | 4 A to 500 A                                                    |                |              | ■                   |                                   | 5 A <sub>AC</sub>                          |         | ■                           |                       |                         | 100/1                               |                                       |                   |                                     | 48 Hz to 1 kHz              | ≤ 3 %                           | P01120029A |
|                                                                                     |        | Y4N     |                                   | 4 A to 500 A                                                    |                |              | ■                   |                                   | 0.5 V <sub>DC</sub> <sup>(2)</sup>         |         | ■                           |                       |                         | 500 A / 0.5 V                       |                                       |                   |                                     |                             | ≤ 1 %                           | P01120005A |
|                                                                                     |        | Y7N     |                                   | 1 A to 1,200 A <sub>PEAK</sub>                                  |                |              | ■                   |                                   | 1.2 V <sub>PEAK</sub>                      |         | ■                           |                       |                         | 1 A / 1 mV                          |                                       |                   |                                     | 5 Hz to 10 kHz              | ≤ 2 %                           | P01120075  |

(1) The upper value corresponds to 120 % of the max. rated value. (2) Reshaping of AC signal by diodes. (3) Based on reference conditions.

# AC current measurement

|                                                                                     |       | Input                            |                                                                                                   |                                                                                               |              |                     | Output - Connection |         |                                                                   |                       |                          | Specific Features                                       |                                       |                   |                                     |                             |                                          |                |
|-------------------------------------------------------------------------------------|-------|----------------------------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------|---------------------|---------------------|---------|-------------------------------------------------------------------|-----------------------|--------------------------|---------------------------------------------------------|---------------------------------------|-------------------|-------------------------------------|-----------------------------|------------------------------------------|----------------|
|                                                                                     |       | Measurement range <sup>(1)</sup> |                                                                                                   |                                                                                               |              |                     | Current             | Voltage | Cable + ø 4 mm safety plugs                                       | Female ø 4 mm sockets | BNC connector (coaxial)  | Transformation ratio (input/output)                     | Output protected against overvoltages | Automatic DC zero | Power measurement (low phase shift) | Bandwidth (frequency in Hz) | Typical accuracy <sup>(2)</sup>          |                |
| Series                                                                              | Model | Very low current                 | Low current                                                                                       | Medium current                                                                                | High current | Alternating current |                     |         |                                                                   |                       |                          |                                                         |                                       |                   |                                     |                             |                                          | Direct current |
|   | C100  | 0.1 A to 1,200 A                 |                                                                                                   |                                                                                               |              | ■                   | 1 A AC              |         | ■                                                                 |                       | 1,000/1                  |                                                         |                                       |                   | 30 Hz to 10 kHz                     | ≤ 0.5 %                     | P01120301                                |                |
|                                                                                     | C102  | 0.1 A to 1,200 A                 |                                                                                                   |                                                                                               |              | ■                   | 1 A AC              |         | ■                                                                 |                       | 1,000/1                  | ■                                                       |                                       |                   |                                     | ≤ 0.5 %                     | P01120302                                |                |
|                                                                                     | C103  | 0.1 A to 1,200 A                 |                                                                                                   |                                                                                               |              | ■                   | 1 A AC              |         | ■                                                                 |                       | 1,000/1                  | ■                                                       |                                       |                   |                                     | ≤ 0.5 %                     | P01120303                                |                |
|                                                                                     | C106  | 0.1 A to 1,200 A                 |                                                                                                   |                                                                                               |              | ■                   |                     | 1 V AC  | ■                                                                 |                       | 1 A / 1 mV               |                                                         |                                       |                   |                                     | ≤ 0.5 %                     | P01120304                                |                |
|                                                                                     | C107  | 0.1 A to 1,200 A                 |                                                                                                   |                                                                                               |              | ■                   |                     | 1 V AC  | ■                                                                 |                       | 1 A / 1 mV               |                                                         |                                       |                   |                                     | ≤ 0.5 %                     | P01120305                                |                |
|                                                                                     | C112  | 1 mA to 1,200 A                  |                                                                                                   |                                                                                               |              | ■                   | 1 A AC              |         | ■                                                                 |                       | 1,000/1                  | ■                                                       | ■                                     |                   |                                     | ≤ 0.3 %                     | P01120314                                |                |
|                                                                                     | C113  | 1 mA to 1,200 A                  |                                                                                                   |                                                                                               |              | ■                   | 1 A AC              |         | ■                                                                 |                       | 1,000/1                  | ■                                                       | ■                                     |                   |                                     | ≤ 0.3 %                     | P01120315                                |                |
|                                                                                     | C116  | 1 mA to 1,200 A                  |                                                                                                   |                                                                                               |              | ■                   |                     | 1 V AC  | ■                                                                 |                       | 1 A / 1 mV               |                                                         | ■                                     |                   |                                     | ≤ 0.3 %                     | P01120316                                |                |
|                                                                                     | C117  | 1 mA to 1,200 A                  |                                                                                                   |                                                                                               |              | ■                   |                     | 1 V AC  | ■                                                                 |                       | 1 A / 1 mV               |                                                         | ■                                     |                   |                                     | ≤ 0.3 %                     | P01120317                                |                |
|                                                                                     | C122  | 1 A to 1,200 A                   |                                                                                                   |                                                                                               |              | ■                   | 5 A AC              |         | ■                                                                 |                       | 1,000/5                  | ■                                                       |                                       |                   |                                     | ≤ 1 %                       | P01120306                                |                |
|  | C148  |                                  | 1 A to 300 A<br>1 A to 600 A<br>1 A to 1,200 A                                                    |                                                                                               |              |                     | ■                   | 5 A AC  |                                                                   | ■                     | 250/5<br>500/5<br>1000/5 | ■                                                       |                                       |                   | 48 Hz to 1 kHz                      | ≤ 2 %<br>≤ 1 %<br>≤ 1 %     | P01120307                                |                |
|                                                                                     | C160  |                                  | 0.1 A to 30 A <sub>PEAK</sub><br>0.1 A to 300 A <sub>PEAK</sub><br>1 A to 2,000 A <sub>PEAK</sub> |                                                                                               |              |                     | ■                   |         | 3 V <sub>PEAK</sub><br>3 V <sub>PEAK</sub><br>2 V <sub>PEAK</sub> |                       | ■                        | 10 A / 1 V<br>100 A / 1 V<br>1,000 A / 1 V              |                                       |                   |                                     | 10 Hz to 100 kHz            | ≤ 3 %<br>≤ 2 %<br>≤ 1 %                  | P01120308      |
|                                                                                     | C173  |                                  | 1 mA to 12 A<br>0.01 A to 12 A<br>0.1 A to 120 A<br>1 A to 1,200 A                                |                                                                                               |              |                     | ■                   |         | 1 V AC                                                            | ■                     |                          | 1 A / 1 V<br>10 A / 1 V<br>100 A / 1 V<br>1,000 A / 1 V |                                       |                   |                                     | 10 Hz to 3 kHz              | ≤ 0.7 %<br>≤ 0.5 %<br>≤ 0.3 %<br>≤ 0.2 % | P01120309      |
|  | B102  |                                  | 500 µA to 4 A<br>0.5 A to 400 A                                                                   |                                                                                               |              |                     | ■                   |         | 4 V AC<br>0.4 V AC                                                | ■                     |                          | 1 mA / 1 mV<br>1 A / 1 mV                               |                                       |                   |                                     | 10 Hz to 1 kHz              | ≤ 0.5 %<br>≤ 0.35 %                      | P01120083      |
|                                                                                     | D30N  |                                  |                                                                                                   | 1 A to 3,600 A                                                                                |              |                     | ■                   | 1 A AC  |                                                                   | ■                     |                          | 3,000/1                                                 | ■                                     | ■                 | 30 Hz to 5 kHz                      | ≤ 0.5 %                     | P01120049A                               |                |
|                                                                                     | D30CN |                                  |                                                                                                   | 1 A to 3,600 A                                                                                |              |                     | ■                   | 1 A AC  |                                                                   | ■                     |                          | 3,000/1                                                 | ■                                     | ■                 |                                     | ≤ 0.5 %                     | P01120064                                |                |
|                                                                                     | D31N  |                                  |                                                                                                   | 1 A to 600 A<br>1 A to 1,200 A<br>1 A to 1,800 A                                              |              |                     | ■                   | 1 A AC  |                                                                   | ■                     |                          | 500/1<br>1,000/1<br>1,500/1                             |                                       |                   | 30 Hz to 1.5 kHz                    | ≤ 3 %<br>≤ 1 %<br>≤ 0.5 %   | P01120050A                               |                |
|                                                                                     | D32N  |                                  |                                                                                                   | 1 A to 1,200 A<br>1 A to 2,400 A<br>1 A to 3,600 A                                            |              |                     | ■                   | 1 A AC  |                                                                   | ■                     |                          | 1,000/1<br>2,000/1<br>3,000/1                           |                                       | ■                 | 30 Hz to 1 kHz                      | ≤ 1 %<br>≤ 0.5 %<br>≤ 0.5 % | P01120051A                               |                |
|                                                                                     | D33N  |                                  |                                                                                                   | 1 A to 3,600 A                                                                                |              |                     | ■                   | 5 A AC  |                                                                   | ■                     |                          | 3,000/5                                                 |                                       |                   | 30 Hz to 5 kHz                      | ≤ 1 %                       | P01120052A                               |                |
|                                                                                     | D34N  |                                  |                                                                                                   | 1 A to 600 A<br>1 A to 1,200 A<br>1 A to 1,800 A                                              |              |                     | ■                   | 5 A AC  |                                                                   | ■                     |                          | 500/5<br>1,000/5<br>1,500/5                             |                                       |                   | 30 Hz to 1.5 kHz                    | ≤ 3 %<br>≤ 1 %<br>≤ 0.5 %   | P01120053A                               |                |
|                                                                                     | D35N  |                                  |                                                                                                   | 1 A to 1,200 A<br>1 A to 2,400 A<br>1 A to 3,600 A                                            |              |                     | ■                   | 5 A AC  |                                                                   | ■                     |                          | 1,000/5<br>2,000/5<br>3,000/5                           |                                       | ■                 |                                     | ≤ 1 %<br>≤ 0.5 %<br>≤ 0.5 % | P01120054A                               |                |
|                                                                                     | D36N  |                                  |                                                                                                   | 1 A to 3,600 A                                                                                |              |                     | ■                   | 3 A AC  |                                                                   | ■                     |                          | 3,000/3                                                 | ■                                     | ■                 | 30 Hz to 5 kHz                      | ≤ 0.5 %                     | P01120055A                               |                |
|                                                                                     | D37N  |                                  |                                                                                                   | 0.1 A to 36 A<br>1 A to 360 A<br>1 A to 3,600 A                                               |              |                     | ■                   |         | 3 V AC                                                            | ■                     |                          | 30 A / 3 V<br>300 A / 3 V<br>3,000 A / 3 V              |                                       |                   |                                     | ≤ 2 %                       | P01120056A                               |                |
|                                                                                     | D38N  |                                  |                                                                                                   | 1 A to 90 A <sub>PEAK</sub><br>1 A to 900 A <sub>PEAK</sub><br>1 A to 9,000 A <sub>PEAK</sub> |              |                     | ■                   |         | 0.9 V <sub>PEAK</sub>                                             | ■                     |                          | 1 A / 10 mV<br>1 A / 1 mV<br>1 A / 0.1 mV               |                                       |                   | 30 Hz to 50 kHz                     | ≤ 2 %                       | P01120057A                               |                |

(1) The upper value corresponds to 120 % of the max. rated value. (2) Based on reference conditions.

# AC/DC current measurement

|                                                                                    | Series | Model | Input             |                                                                                                                                      |                |              |                     |                | Output - Connection |                                                                                          |                             |                       | Specific Features       |                                     |                                       |                   |                                     |                             | Reference        |                                |
|------------------------------------------------------------------------------------|--------|-------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------|---------------------|----------------|---------------------|------------------------------------------------------------------------------------------|-----------------------------|-----------------------|-------------------------|-------------------------------------|---------------------------------------|-------------------|-------------------------------------|-----------------------------|------------------|--------------------------------|
|                                                                                    |        |       | Measurement range |                                                                                                                                      |                |              |                     |                | Current             | Voltage                                                                                  | Cable + ø 4 mm safety plugs | Female ø 4 mm sockets | BNC connector (coaxial) | Transformation ratio (input/output) | Output protected against overvoltages | Automatic DC zero | Power measurement (low phase shift) | Bandwidth (frequency in Hz) |                  | Typical accuracy <sup>a)</sup> |
|                                                                                    |        |       | Very low current  | Low current                                                                                                                          | Medium current | High current | Alternating current | Direct current |                     |                                                                                          |                             |                       |                         |                                     |                                       |                   |                                     |                             |                  |                                |
|   |        | E25   |                   | 5 mA to 2 A <sub>DC</sub><br>5 mA to 1.5 A <sub>AC</sub><br>50 mA to 80 A <sub>DC</sub><br>50 mA to 60 A <sub>AC</sub>               |                |              | ■                   | ■              |                     | 2 V <sub>DC</sub><br>1.5 V <sub>AC</sub><br>600 mV <sub>DC</sub><br>800 mV <sub>DC</sub> | ■                           |                       |                         | 1 A / 1 V<br>1 A / 10 mV            | ■                                     |                   |                                     | DC to 20 kHz                | ≤ 2 %<br>≤ 4 %   | P01120025                      |
|                                                                                    |        | E27   |                   | 100 mA to 10 A <sub>PEAK</sub><br>500 mA to 100 A <sub>PEAK</sub>                                                                    |                |              | ■                   | ■              |                     | 1V <sub>PEAK</sub><br>1V <sub>PEAK</sub>                                                 |                             | ■                     |                         | 1 A / 100 mV<br>1 A / 10 mV         | ■                                     |                   |                                     | DC to 100 kHz               | ≤ 3 %<br>≤ 4 %   | P01120027                      |
|  |        | MH60  |                   | 0.01 A to 140 A <sub>PEAK</sub>                                                                                                      |                |              | ■                   | ■              |                     | 1.4 V <sub>PEAK</sub>                                                                    |                             | ■                     |                         | 10 mV/A                             | ■                                     |                   |                                     | DC to 1 MHz                 | ≤ 1.5 %          | P01120612                      |
|                                                                                    |        | PAC15 |                   | 0.5 A to 400 A <sub>AC</sub><br>0.5 A to 600 A <sub>DC</sub>                                                                         |                |              | ■                   | ■              |                     | 600 mV <sub>AC/DC</sub>                                                                  | ■                           |                       |                         | 1 A / 1 mV                          | ■                                     |                   |                                     | DC to 30 kHz                | ≤ 2 %            | P01120115                      |
|  |        | PAC16 |                   | 0.5 A to 40 A <sub>AC</sub><br>0.5 A to 60 A <sub>DC</sub><br>0.5 A to 400 A <sub>AC</sub><br>0.5 A to 600 A <sub>DC</sub>           |                |              | ■                   | ■              |                     | 600 mV <sub>AC/DC</sub><br>600 mV <sub>AC/DC</sub>                                       | ■                           |                       |                         | 1 A / 10 mV<br>1 A / 1 mV           | ■                                     |                   |                                     | DC to 30 kHz                | ≤ 1.5 %<br>≤ 2 % | P01120116                      |
|                                                                                    |        | PAC17 |                   | 0.5 A to 60 A <sub>PEAK</sub><br>0.5 A to 60 A <sub>DC</sub><br>0.5 A to 600 A <sub>PEAK</sub><br>0.5 A to 600 A <sub>DC</sub>       |                |              | ■                   | ■              |                     | 600 mV <sub>PEAK</sub><br>600 mV <sub>PEAK</sub>                                         |                             | ■                     |                         | 1 A / 10 mV<br>1 A / 1 mV           | ■                                     |                   |                                     | DC to 30 kHz                | ≤ 1.5 %<br>≤ 2 % | P01120117                      |
|  |        | PAC25 |                   | 0.5 A to 1,000 A <sub>AC</sub><br>0.5 A to 1,400 A <sub>DC</sub>                                                                     |                |              | ■                   | ■              |                     | 1.4 V <sub>AC/DC</sub>                                                                   | ■                           |                       |                         | 1 A / 1 mV                          | ■                                     |                   |                                     | DC to 30 kHz                | ≤ 4 %            | P01120125                      |
|                                                                                    |        | PAC26 |                   | 0.5 A to 100 A <sub>AC</sub><br>0.5 A to 150 A <sub>DC</sub><br>0.5 A to 1,000 A <sub>AC</sub><br>0.5 A to 1,400 A <sub>DC</sub>     |                |              | ■                   | ■              |                     | 1.5 V <sub>AC/DC</sub><br>1.4 V <sub>AC/DC</sub>                                         | ■                           |                       |                         | 1 A / 10 mV<br>1 A / 1 mV           | ■                                     |                   |                                     | DC to 30 kHz                | ≤ 1.5 %<br>≤ 4 % | P01120126                      |
|                                                                                    |        | PAC27 |                   | 0.5 A to 150 A <sub>PEAK</sub><br>0.5 A to 150 A <sub>DC</sub><br>0.5 A to 1,400 A <sub>PEAK</sub><br>0.5 A to 1,400 A <sub>DC</sub> |                |              | ■                   | ■              |                     | 1.5 V <sub>PEAK</sub><br>1.4 V <sub>PEAK</sub>                                           |                             | ■                     |                         | 1 A / 10 mV<br>1 A / 1 mV           | ■                                     |                   |                                     | DC to 30 kHz                | ≤ 1.5 %<br>≤ 4 % | P01120127                      |

(1) Based on reference conditions.

## Ampflex® flexible ac current sensors

### MA110 - MA130 | MA200 | A110 - A130

600 V  
CAT IV1 000 V  
CAT III600 V  
CAT IV1 000 V  
CAT IV

80 mA

80 mA

3 kA<sub>AC</sub>1 000 V  
CAT III30 kA<sub>AC</sub>

4 calibres

4 calibres

IP 67

1 MHz

IP 67



### For multimeters, recorders, oscilloscopes, etc.

- No magnetic saturation constraints: excellent linearity, low phase shift, high measurement dynamics
- Flexible sensors for easy clamping of conductors to be measured
- Compact, they can be easily installed in domestic or industrial electrical cabinets
- Snap-on device for opening and closing the torus for handling with protective gloves
- Snap-on device for opening and closing the torus for handling with protective gloves



### + The extra

#### Model MA110 & model A110

- Measures from 80 mA
- Connects to the AC voltage input (mV<sub>AC</sub> / V<sub>AC</sub>) of any multimeter or measuring device equipped with Ø 4 mm female banana plugs
- Can be powered by batteries or through a standard external power supply
- Feature an automatic standby system that can be deactivated during start-up to perform long-term measurement campaigns
- Have 3 LEDs (green, yellow and red) indicating the power supply status, the status of the automatic standby function and when the measurement capacity has been exceeded

#### Model MA130 triphasé & Model A130 triphasé

- Connect to the AC voltage inputs (mV<sub>AC</sub> / V<sub>AC</sub>) of any power analyser, recorder or measuring device equipped with BNC or Ø 4 mm banana plugs (adapters included)

#### MA200 model

- Features a BNC output and connects to all types of oscilloscopes
- Offers high bandwidth
- Particularly suitable for viewing transient signals, control signals, thyristor trigger current or viewing the output signal of an electronic power supply

### MA110 or A110 supplied with:

- 2 x 1.5 V LR06/AAA alkaline batteries, 1 safety sheet,
- 1 verification certificate

### MA130 or A130 supplied with:

- 2 x 1.5 V LR06/AAA alkaline batteries, 1 safety sheet,
- 1 verification certificate, 1 set of coloured rings for cable identification/markings, 3 female BNC adapters/male plugs Ø 4 mm

### MA200 supplied with:

- 1 9 V battery, 1 verification certificate



|       |                                                  | Input                                                                    |                                                                 |                |              |                     |                | Output - Connection |                       |                             |                       | Specific Features       |                                           |                                       |                   |                                     |                                                                          | Reference                       |           |
|-------|--------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------------------------------|----------------|--------------|---------------------|----------------|---------------------|-----------------------|-----------------------------|-----------------------|-------------------------|-------------------------------------------|---------------------------------------|-------------------|-------------------------------------|--------------------------------------------------------------------------|---------------------------------|-----------|
|       |                                                  | Measurement range                                                        |                                                                 |                |              |                     |                |                     |                       |                             |                       |                         |                                           |                                       |                   |                                     |                                                                          |                                 |           |
|       |                                                  | Very low current                                                         | Low current                                                     | Medium current | High current | Alternating current | Direct current |                     |                       |                             |                       |                         |                                           |                                       |                   |                                     |                                                                          |                                 |           |
| Serie | Model                                            |                                                                          |                                                                 |                |              |                     |                | Current             | Voltage               | Cable + ø 4 mm safety plugs | Female ø 4 mm sockets | BNC connector (coaxial) | Transformation ratio (input/output)       | Output protected against overvoltages | Automatic DC zero | Power measurement (low phase shift) | Bandwidth (frequency in Hz)                                              | Typical accuracy <sup>(1)</sup> |           |
|       | MA110 3-30-300-3,000/3<br>(17 cm / Ø 4.5 cm)     | 0.08 A to 3 A<br>0.5 A to 30 A<br>0.5 A to 300 A<br>0.5 A to 3,000 A     |                                                                 |                |              | ■                   |                |                     | 3 V <sub>AC</sub>     | ■                           |                       |                         | 1 V/A<br>100 mV/A<br>10 mV/A<br>1 mV/A    |                                       |                   | ■                                   | 10 Hz to 10 kHz<br>10 Hz to 20 kHz<br>10 Hz to 20 kHz<br>10 Hz to 20 kHz | ≤ 1%                            | P01120660 |
|       | MA110 3-30-300-3,000/3<br>(25 cm / Ø 7 cm)       | 0.08 A to 3 A<br>0.5 A to 30 A<br>0.5 A to 300 A<br>0.5 A to 3,000 A     |                                                                 |                |              | ■                   |                |                     | 3 V <sub>AC</sub>     | ■                           |                       |                         | 1 V/A<br>100 mV/A<br>10 mV/A<br>1 mV/A    |                                       |                   | ■                                   | 10 Hz to 10 kHz<br>10 Hz to 20 kHz<br>10 Hz to 20 kHz<br>10 Hz to 20 kHz | ≤ 1%                            | P01120661 |
|       | MA110 3-30-300-3,000/3<br>(35 cm / Ø 10 cm)      | 0.08 A to 3 A<br>0.5 A to 30 A<br>0.5 A to 300 A<br>0.5 A to 3,000 A     |                                                                 |                |              | ■                   |                |                     | 3 V <sub>AC</sub>     | ■                           |                       |                         | 1 V/A<br>100 mV/A<br>10 mV/A<br>1 mV/A    |                                       |                   | ■                                   | 10 Hz to 10 kHz<br>10 Hz to 20 kHz<br>10 Hz to 20 kHz<br>10 Hz to 20 kHz | ≤ 1%                            | P01120662 |
|       | MA130 30-300-3,000/3<br>(25 cm / Ø 7 cm)         | 0.5 A to 30 A<br>0.5 A to 300 A<br>0.5 A to 3,000 A                      |                                                                 |                |              | ■                   |                |                     | 3 V <sub>AC</sub>     |                             |                       | ■                       | 100 mV/A<br>10 mV/A<br>1 mV/A             |                                       |                   | ■                                   | 10 Hz to 20 kHz<br>10 Hz to 20 kHz<br>10 Hz to 20 kHz                    | ≤ 1%                            | P01120663 |
|       | MA200 30-300/3<br>(17 cm / Ø 4.5 cm)             |                                                                          | 0.5 A to 45 A <sub>PEAK</sub><br>0.5 A to 450 A <sub>PEAK</sub> |                |              | ■                   |                |                     | 4.5 V <sub>PEAK</sub> |                             |                       | ■                       | 100 mV/A<br>10 mV/A                       |                                       |                   |                                     | 5 Hz to 1 MHz                                                            | ≤ 1%<br>+ 0.3 A                 | P01120570 |
|       | MA200 30-300/3<br>(25 cm / Ø 7 cm)               |                                                                          | 0.5 A to 45 A <sub>PEAK</sub><br>0.5 A to 450 A <sub>PEAK</sub> |                |              | ■                   |                |                     | 4.5 V <sub>PEAK</sub> |                             |                       | ■                       | 100 mV/A<br>10 mV/A                       |                                       |                   |                                     |                                                                          | ≤ 1%<br>+ 0.3 A                 | P01120571 |
|       | MA200 3,000 / 3<br>(35 cm / Ø 10 cm)             |                                                                          | 0.5 A to 4,500 A <sub>PEAK</sub>                                |                |              | ■                   |                |                     | 4.5 V <sub>PEAK</sub> |                             |                       | ■                       | 1 mV/A                                    |                                       |                   |                                     |                                                                          | ≤ 1%<br>+ 0.3 A                 | P01120572 |
|       | A110 3-30-300-3,000/3<br>(45 cm / Ø 14 cm)       | 0.08 A to 3 A<br>0.5 A to 30 A<br>0.5 A to 300 A<br>0.5 A to 3,000 A     |                                                                 |                |              | ■                   |                |                     | 3 V <sub>AC</sub>     | ■                           |                       |                         | 1 V/A<br>100 mV/A<br>10 mV/A<br>1 mV/A    |                                       |                   | ■                                   | 10 Hz to 10 kHz<br>10 Hz to 20 kHz<br>10 Hz to 20 kHz<br>10 Hz to 20 kHz | ≤ 1%                            | P01120630 |
|       | A110 3-30-300-3,000/3<br>(80 cm / Ø 25 cm)       | 0.08 A to 3 A<br>0.5 A to 30 A<br>0.5 A to 300 A<br>0.5 A to 3,000 A     |                                                                 |                |              | ■                   |                |                     | 3 V <sub>AC</sub>     | ■                           |                       |                         | 1 V/A<br>100 mV/A<br>10 mV/A<br>1 mV/A    |                                       |                   | ■                                   | 10 Hz to 10 kHz<br>10 Hz to 20 kHz<br>10 Hz to 20 kHz<br>10 Hz to 20 kHz | ≤ 1%                            | P01120631 |
|       | A110 30-300-3,000-30,000/3<br>(120 cm / Ø 38 cm) | 0.5 A to 30 A<br>0.5 A to 300 A<br>0.5 A to 3,000 A<br>0.5 A to 30,000 A |                                                                 |                |              | ■                   |                |                     | 3 V <sub>AC</sub>     | ■                           |                       |                         | 100 mV/A<br>10 mV/A<br>1 mV/A<br>0.1 mV/A |                                       |                   | ■                                   | 10 Hz to 5 kHz<br>10 Hz to 20 kHz<br>10 Hz to 20 kHz<br>10 Hz to 20 kHz  | ≤ 1%                            | P01120632 |
|       | A130 30-300-3,000/3<br>(80 cm / Ø 25 cm)         | 0.5 A to 30 A<br>0.5 A to 300 A<br>0.5 A to 3,000 A                      |                                                                 |                |              | ■                   |                |                     | 3 V <sub>AC</sub>     |                             |                       | ■                       | 100 mV/A<br>10 mV/A<br>1 mV/A             |                                       |                   | ■                                   | 10 Hz to 20 kHz<br>10 Hz to 20 kHz<br>10 Hz to 20 kHz                    | ≤ 1%                            | P01120633 |

(1) Based on reference conditions.

Accessories / replacement parts for current sensors

- MiniFlex MA110 / MA130
- AmpFlex® A110 / A130
- E25 / E27
- MH60
- PAC15/16/17 & PAC25/26/27
- Mains adapter / µUSB-B cableP01651023

- 110 V-240 V 50/60 Hz mains power pack, USB type A female 5V 1A

- Charging and connection cable, USB type A male - USB type Micro-B male 1.80 m

- MH60
- Spare rechargeable batteryP01296049Z
- E1N / E3N / E6N
- Mains adapterP01101965
- PAC10/11/12/20/21/22
- Mains adapterP01101967
- AmpFlex® A100
- Mains adapterP01101968

- MiniFlex MA200
- Mains adapterP01102087

# Software

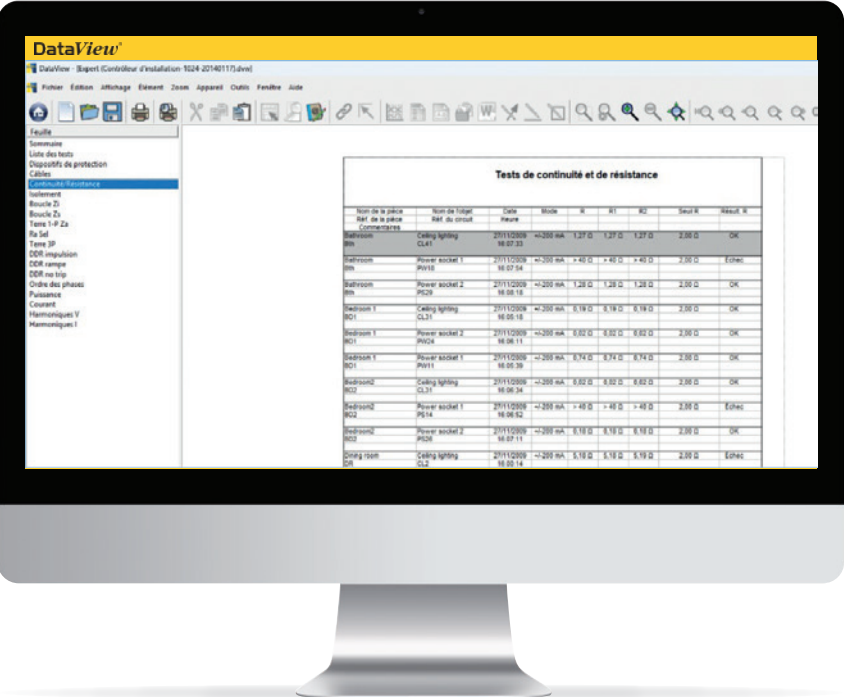
|                                                                   |     |
|-------------------------------------------------------------------|-----|
| Data processing software DATAVIEW® .....                          | 154 |
| ICT, MEG, GTT, GTC, MOT, DTR, MTT .....                           | 155 |
| PAT, PAT 2, PAT 3, PEL TRANSFER.....                              | 156 |
| DATA LOGGER TRANSFER.....                                         | 157 |
| Thermogram analysis software CAM REPORT.....                      | 158 |
| Software for SX-DMM multimeter SX-DMM .....                       | 159 |
| Software for SCOPIX IV - ScopeNet IV, SX METRO oscilloscopes..... | 160 |





# Data processing software

## DataView®



One of the main functions of DataView® is the analysis and display of reports based on measurement data. This platform is common to many Chauvin-Arnoux product ranges.

- Software suite integrating all software modules from the various Chauvin Arnoux device ranges
  - DDL TRANSFER, module for environmental and electrochemical measurement devices
  - PAT, module for power analysers
  - PEL Transfer, for power and energy recorders
  - GTT, for earth testers
  - ICT, for installation testers
  - MEG, for insulation testers
  - GTC, for earth clamps
  - MOT, for micro-ohmmeters
  - DTR, for ratiometers
  - MTT, for machine testers
- Report generation in accordance with current standards such as EN 50160

- Customised report editing
  - To view and work on captured data. DataView has multiple predefined report templates for quick editing in full compliance with current standards. Users can create their own templates according to their needs.
  - Documents can be exported in PDF format for printing or sending via email.

### Features

- Retrieval of measurement data stored in the device
- Saving of measurement files
- Opening of saved files
- Processing and report creation
- Export to .pdf format
- Database management

### Supported operating systems:

- Windows 10 (32 & 64 Bit)
- Windows 11

### + The extra

Register your licence in the **Support** section of our website to be notified of free updates and to receive the best technical support.

### DataView software:

- 1 USB key
- 1 licence code

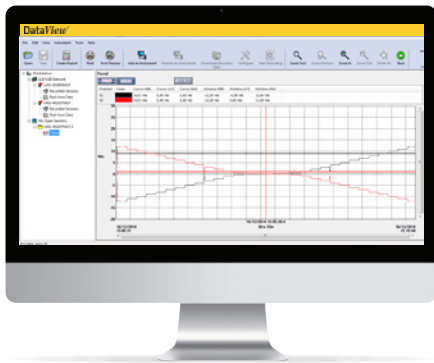


### To order

DataView

Reference: P01102095

# Data exploitation software modules



ICT

MEG

GTT

GTC

MOT

DTR

MTT

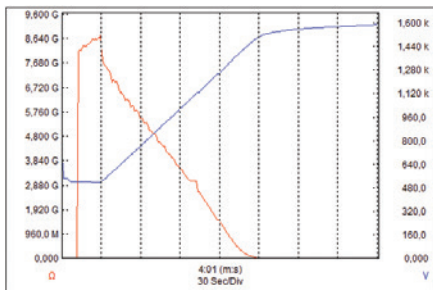
## + The extra

These modules are individually functional.

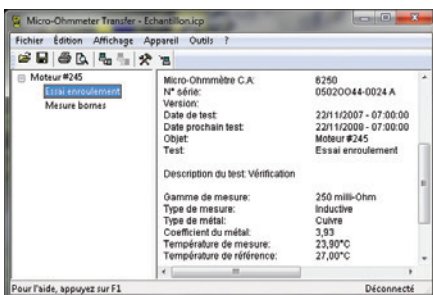
They can be downloaded free of charge from our website.

## Features

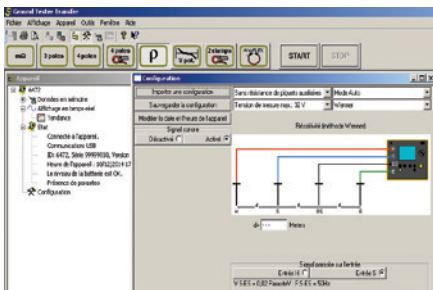
- Configuration of all device functions connected to a PC
- Retrieval of recorded measurement data
- Saving of measurement files
- Opening of saved files
- Export to Excel spreadsheet
- Export to .pdf format
- Database management
- Remote test launch at the touch of a button
- Real-time data capture and display
- Display of DAR, PI and DD ratios
- Graphical plotting of programmed duration tests and real-time voltage ramp tests
- Option to create a library of configurations tailored to specific applications



**MEG Module** Graphical trace of V(t) and R(t) tests on non-linear insulation resistance (surge arrester)



**MOT module** Results of motor winding test



**GTT Module** Configuration example

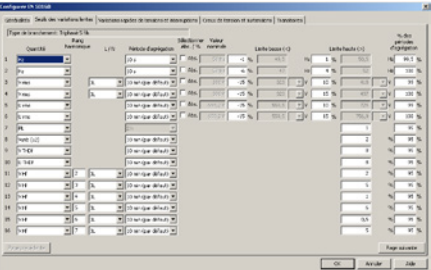
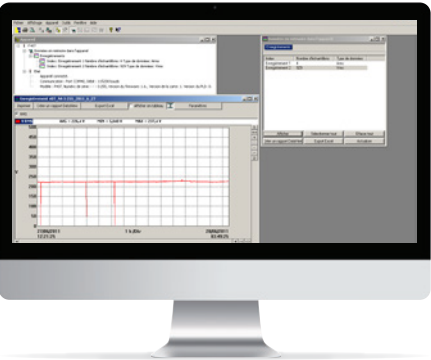
| Modules | Related products                                                                     |
|---------|--------------------------------------------------------------------------------------|
| ICT     | CA 6116N<br>CA 6117                                                                  |
| MEG     | CA 6543<br>CA 6547<br>CA 6549<br>CA 6550<br>CA 6555<br>CA 6526<br>CA 6532<br>CA 6534 |
| GTT     | CA 6470N<br>CA 6471<br>CA 6472<br>CA 6474                                            |
| GTC     | CA 6417                                                                              |
| MOT     | CA 6240<br>CA 6255<br>CA 6292                                                        |
| DTR     | DTR 8510                                                                             |
| MTT     | CA 6161<br>CA 6163                                                                   |



Data processing software modules



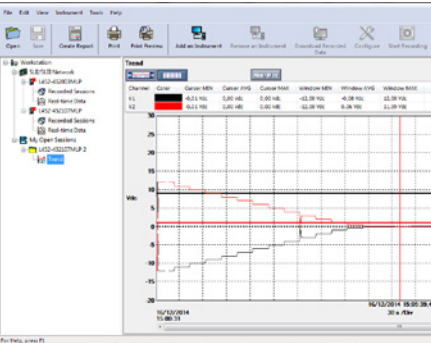
- PAT
- PAT 2
- PAT 3
- PEL TRANSFER



PAT 2 Module Configuration of EN 50160 parameters



PEL TRANSFER Module Remote visualisation of a vector representation



DATA LOGGER Module Trend recording

Features

- Configuration of all device functions connected to a PC
- Retrieval of recorded measurement data
- Saving of measurement files
- Opening of saved files
- Export to an Excel spreadsheet

| Modules      | Related products                                  |
|--------------|---------------------------------------------------|
| PAT          | F407<br>F607<br>CA 8220                           |
| PAT 2        | CA 8331<br>CA 8333<br>CA 8336<br>CA 8436          |
| PAT 3        | CA 8345                                           |
| PEL TRANSFER | PEL 112<br>PEL 113<br>PEL 115<br>PEL 51<br>PEL 52 |

+ The extra

These modules are individually functional.  
They can be downloaded free of charge from our website.

PEL Transfer for PEL 100 and PEL 110

- With additional functions:
- Energy breakdown for loss detection
  - Trend curve display
  - Current sensor reversal in case of installation error
  - Communication mode configuration

Power Analyser Transfer 3 for CA 8345

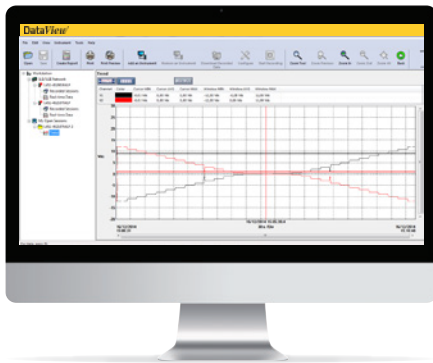
- With additional functions:
- Event representation (transients, inrush, shock waves, etc.)
  - Monitoring mode configuration (EN50160)
  - Configuration for communication with IRD server

Power Analyser Transfer 2 for CA 8331, CA 8336, CA 8333 and CA 8436

- The DataView® PAT 2 module offers additional features:
- Alarm configuration
  - Transient configuration
  - Trend configuration
  - Real-time display
  - Data retrieval, backup and export
  - Launch of measurement campaign after automatic configuration of associated device
  - Data export to Excel

# Data analysis software

## Data Logger Transfer



**DATA  
LOGGER  
TRANSFER**

**DATA  
LOGGER  
TRANSFER**  
downloadable  
free of charge  
from the web pages  
of the products  
concerned

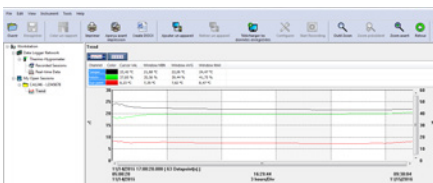
### + The extra

These modules are individually functional.

They can be downloaded free of charge from our website.

## Features

- Configuration of all device functions connected to a PC
- Data visualisation in tables and graphs
- Export to Excel spreadsheet or JPEG image
- Recording programming (date and frequency)
- Automatic report export in Word format



**General** **Recording** **Thermo-hygrometer** **Alarms**

Session name:

Session type:  
☐ Record now  
☐ Schedule recording  
☐ Alarm triggered recording

Start date: 16/11/2016 Start time: 11:22:00  
 End date: 16/11/2016 End time: 11:37:00

Storage duration: 000 : 00 : 15 : 00 (D : H : M : S) [Reset date/time](#)

Sampling period: 1.5  
 Demand period: 1.5

Estimated battery autonomy:  
 Not recording: Not  
 When recording: Not  
 The battery autonomy is only indicative. It takes into account the voltage level of batteries, which is dependent of temperature and battery quality. This indication assumes that your batteries were fully charged when replaced.

Disk space:  
 20.23% of the memory has been used.  
 7.15 Mbytes of available memory. 3.86 Mbytes total memory capacity.  
 0.08% of the memory is needed by the current recording settings.  
 You should modify the settings of your recording or make space in the memory.

☐ Keyboard locked during recording  
 Select the option to disable any keyboard action during recording. Once the recording starts with the option, keyboard is locked until the end of recording (end of session reached or with the "Stop recording" command of PhysICA Control Panel)

[Read](#) [Save](#) [Load](#)

File Edit View Instrument Tools Help

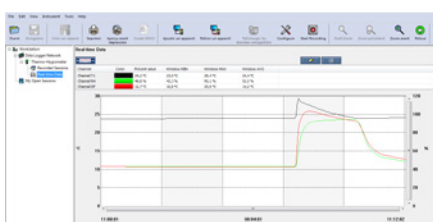
Quickstart Color calibration Recorder Alarm event description Create DOCX Animate an report Restore an account Technical documents

By Visualization

Thermo-hygrometer  
 Recorded Sessions  
 Real-time Data  
 My Open Sessions  
 CAL361 - 1219078  
 Log Panel

**Trend**

| Date       | Time     | Temperature | Relative Humidity | Dev. diff. |
|------------|----------|-------------|-------------------|------------|
| 16/11/2016 | 17:04:06 | 23.12 °C    | 36.96 %           | 2.27 °C    |
| 16/11/2016 | 17:04:07 | 23.12 °C    | 36.96 %           | 2.27 °C    |
| 16/11/2016 | 17:04:08 | 23.12 °C    | 36.96 %           | 2.27 °C    |
| 16/11/2016 | 17:04:09 | 23.11 °C    | 36.98 %           | 2.25 °C    |
| 16/11/2016 | 17:04:10 | 23.11 °C    | 36.98 %           | 2.25 °C    |
| 16/11/2016 | 17:04:11 | 23.12 °C    | 36.98 %           | 2.26 °C    |
| 16/11/2016 | 17:04:12 | 23.11 °C    | 36.98 %           | 2.26 °C    |
| 16/11/2016 | 17:04:13 | 23.11 °C    | 36.98 %           | 2.26 °C    |
| 16/11/2016 | 17:04:14 | 23.11 °C    | 36.98 %           | 2.25 °C    |
| 16/11/2016 | 17:04:15 | 23.12 °C    | 36.98 %           | 2.27 °C    |
| 16/11/2016 | 17:04:16 | 23.11 °C    | 36.98 %           | 2.25 °C    |
| 16/11/2016 | 17:04:17 | 23.11 °C    | 36.98 %           | 2.25 °C    |
| 16/11/2016 | 17:04:18 | 23.11 °C    | 36.98 %           | 2.25 °C    |
| 16/11/2016 | 17:04:19 | 23.11 °C    | 36.98 %           | 2.25 °C    |
| 16/11/2016 | 17:04:20 | 23.11 °C    | 36.98 %           | 2.25 °C    |
| 16/11/2016 | 17:04:21 | 23.11 °C    | 36.98 %           | 2.25 °C    |
| 16/11/2016 | 17:04:22 | 23.11 °C    | 36.98 %           | 2.25 °C    |
| 16/11/2016 | 17:04:23 | 23.11 °C    | 36.98 %           | 2.25 °C    |
| 16/11/2016 | 17:04:24 | 23.11 °C    | 36.98 %           | 2.25 °C    |
| 16/11/2016 | 17:04:25 | 23.11 °C    | 36.98 %           | 2.25 °C    |
| 16/11/2016 | 17:04:26 | 23.11 °C    | 36.98 %           | 2.25 °C    |
| 16/11/2016 | 17:04:27 | 23.11 °C    | 36.98 %           | 2.25 °C    |
| 16/11/2016 | 17:04:28 | 23.11 °C    | 36.91 %           | 2.27 °C    |
| 16/11/2016 | 17:04:29 | 23.11 °C    | 36.91 %           | 2.27 °C    |
| 16/11/2016 | 17:04:30 | 23.11 °C    | 36.91 %           | 2.27 °C    |
| 16/11/2016 | 17:04:31 | 23.11 °C    | 36.91 %           | 2.27 °C    |
| 16/11/2016 | 17:04:32 | 23.11 °C    | 36.91 %           | 2.27 °C    |
| 16/11/2016 | 17:04:33 | 23.10 °C    | 36.91 %           | 2.25 °C    |



### Data Logger Transfer

### DataView® Modules

### Related products

CA 1821  
 CA 1822  
 CA 1823  
 CA 1550  
 CA 1246  
 CA 1227  
 CA 1110  
 CA 1510  
 CA 10101  
 CA 10141  
 L411  
 L412  
 L461

# Thermogram analysis software

## CAMReport



Downloadable  
free of charge  
from the web pages  
of the products  
concerned

CA 1954

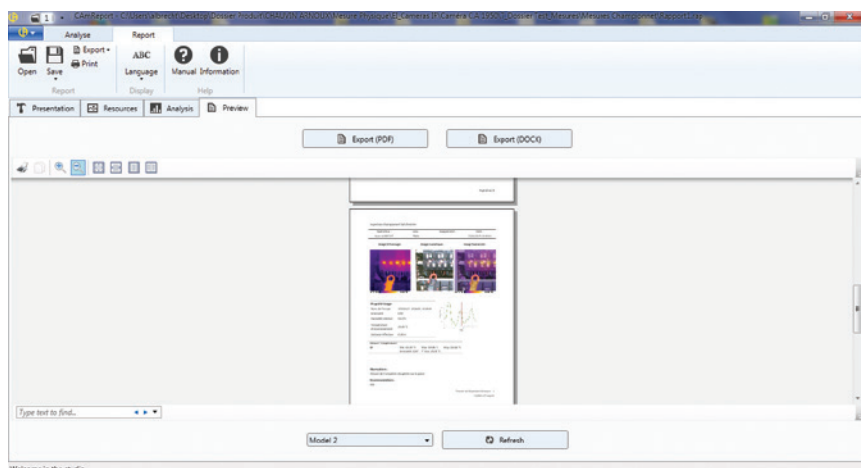
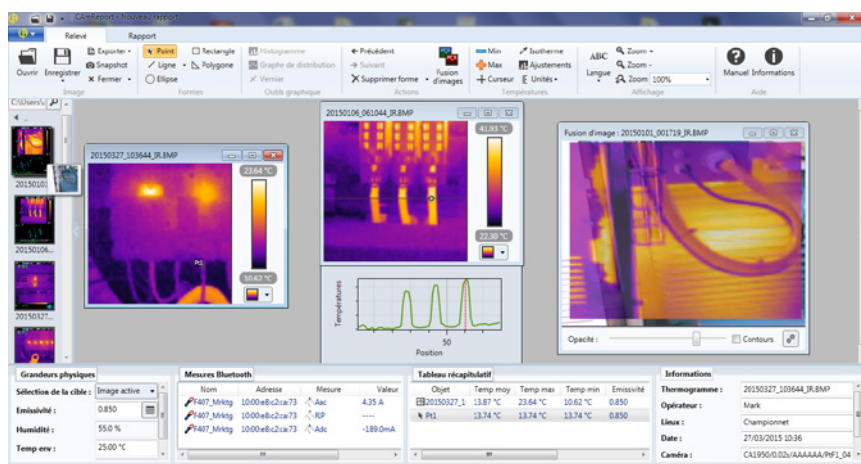


### Precise analysis tools

- Cursors (automatic display of the temperature at the selected point)
- Thermal profile (automatic display of the Min/Max/Avg temperatures of the line)
- A square or circle for zone analysis
- Polygons and polylines for more precise analysis of certain areas of the thermogram
- Results tables automatically and quickly display all information
- Retrieval of voice comments or connected measurements
- Automatic merging of thermal and real images recorded simultaneously
- Automatic creation of reports for export in .pdf or .docx format

### + The extra

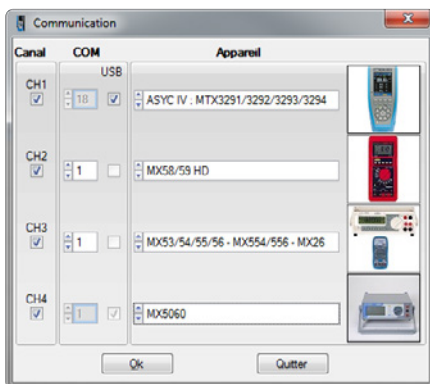
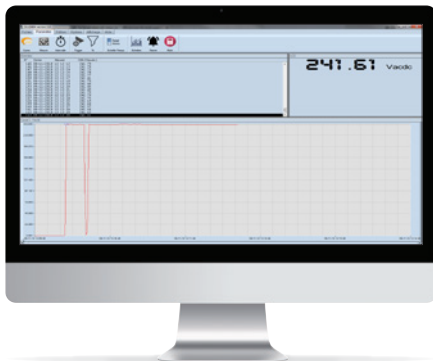
- Dedicated to the CA 1954 model
- Supplied as standard at no extra cost
- Complete, with all the features needed for reliable analysis of measurement results
- Automatic creation of analysis reports exportable in Word or PDF format



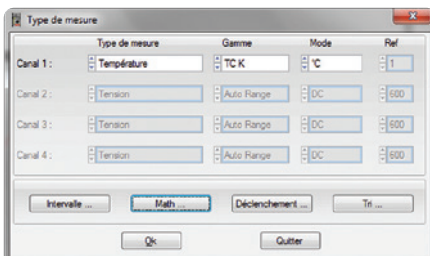
- Reports are generated automatically using a variety of available templates.
- They can be exported in Word or PDF format, simplifying editing and archiving.

# Multimeter software

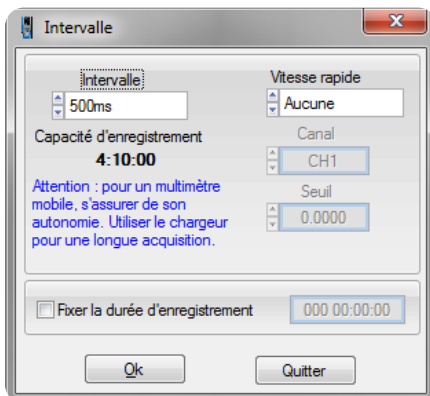
## SX-DMM



Choosing the type of DMM



Measurement type



Acquisition, minimum step size 0.2 s on MTX 3292B / MTX 3293B

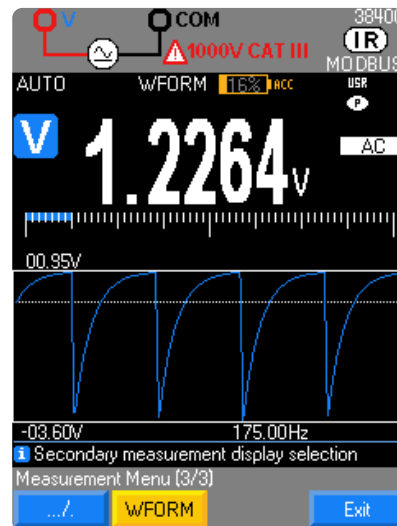
This data acquisition software allows you to connect up to 4 controllable multimeters, whether they are field multimeters or bench multimeters.

### Data display

- **Graphical plot**  
Each channel must be assigned a COM or USB serial port number to connect. It is possible to open multiple SX-DMM sessions on a PC. Trigger mode and acquisition intervals can be configured from 100 ms and automatic clock management depending on the model.
- **Post-acquisition processing:**  
sorting, simple or complex mathematical functions on the channel, zoom, adding cursors, XY functions, addition, subtraction, multiplication and division

It transforms your multimeter(s) into a measurement centre with up to 4 channels for your tests or spot check

- XY mathematical functions, derivative, integral, curve smoothing
- Data export to EXCEL for use in spreadsheets
- Screen copies



### + The extra

#### List of controllable multimeters

- MX 26, M 53, MX 54, MX 56, MX 57, MX 58, MX 59
- MX 554, MX 556, MX 5060
- MTX 3250
- MTX 3281, MTX 3282, MTX 3283
- MTX 3291, MTX 3292B, MTX 3293B
- MTX 3297Ex (safe zone, outside ATEX zone)
- OX5022, OX5042 (multimeter mode)
- CA 5292, CA 5293
- CA 922, CA 942 (multimeter mode)

### To order

Software for multimeters

**Reference: SX-DMM2**



## Integrated application in SCOPIX IV

### ScopeNet IV

ScopeNet IV is a JAVA application for PCs that uses Ethernet communication (RJ45 wired and WiFi)

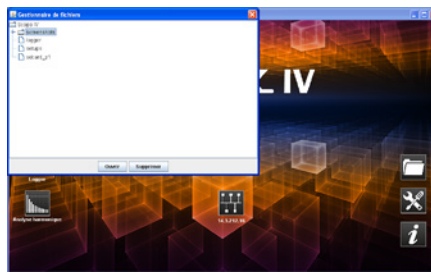
ScopeNet IV for SCOPIX IV allows you to:

- remotely control the oscilloscope
- display acquisitions as curves in all modes
- recall or save device configurations
- recall and make a screenshot in .png file format.

It also allows you to:

- copy the screenshot to the clipboard.

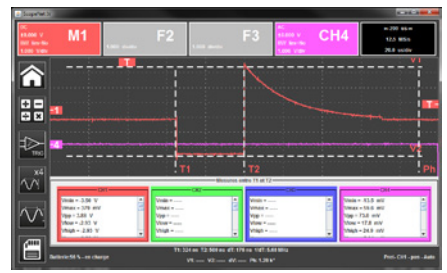
File manager



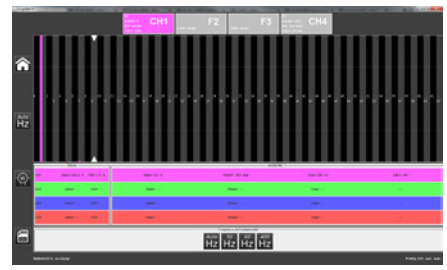
Multimeter



Oscilloscope

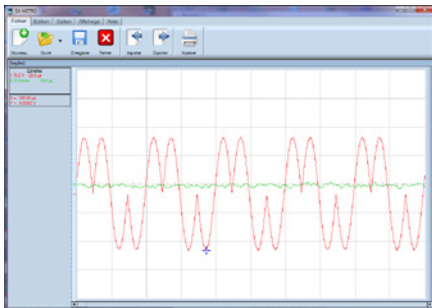


Harmonics



## Application for SCOPIX IV

### SX METRO



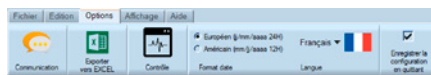
### USB-RS232 or Ethernet connection

Data processing software for all Metrix oscilloscopes for:

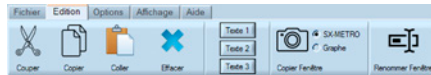
- Viewing waveforms: Up to 5 max per screen
- Displaying waveforms on the PC in real time with oscilloscopes
- Remote control of the oscilloscope via the PC
- Loading a configuration to the oscilloscope
- Import curves stored in the oscilloscope's memory and image files
- Store curves on the PC in text format
- Perform mathematical processing such as FFT of the displayed signal
- Transfer data (curves or FTT) to MS Excel

### The 5 tabs accessible in SX METRO

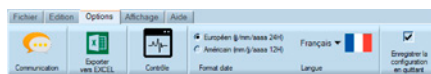
- 'File' includes file creation, data saving or window closing, importing the file from the oscilloscope memory or exporting to the trace memory or configuration.



- 'Edit' offers window processing, text addition or screen capture.



- 'Options' manages the type of communication according to the output port or cable used, the setting of communication parameters, export to Excel, and the choice of one of five languages. Options/control allows you to view the front panel of the connected device in real time and adjust the parameters.



- 'Display' of the reticle, deviation cursors, different screen sizes to optimise viewing.



With the colour function, you can change the colours of the different objects in the SX-METRO window and thus print your curves in the format you want to optimise printing according to your printer.

- 'Help' calls up a .pdf file of the SX METRO user manual, adds a link to our support site to an update file and displays the current version of SX METRO.



### To order

SX-METRO PC software for Scopix (OX90xxx, OX 7xxx, OX6xxx) and HandScope (OX50xx, CA 9x2)

Reference: SX-METRO/P

# Accessories

|                                     |     |
|-------------------------------------|-----|
| 4 mm banana connectors.....         | 162 |
| Product-specific accessories.....   | 164 |
| Other accessories.....              | 165 |
| Protection, storage, transport..... | 166 |
| Fuses.....                          | 168 |



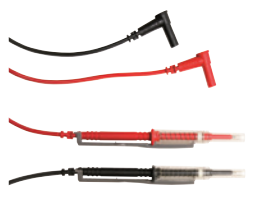
## Accessories

### 4 mm banana connectors

#### CORDONS DE MESURE

| Model                                                                               | Description                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>OVERMOULDED</b>                                                                  |                                                                                                                                                                                                                 |
|    | <b>Set of 2 red/black overmoulded PVC cables</b> P01295450Z<br>Insulated straight male plug Ø 4 mm –<br>Insulated straight male plug Ø 4 mm<br>• 15 A<br>• 1.5 m<br>• 1,000 V CAT IV / 1,500 V CAT III / UL     |
|    | <b>Set of 2 red/black silicone overmoulded leads</b> P01295452Z<br>Insulated straight male plug Ø 4 mm –<br>Insulated straight male plug Ø 4 mm<br>• 15 A<br>• 1.5 m<br>• 1,000 V CAT IV / 1,500 V CAT III / UL |
|   | <b>Set of 2 red/black PVC overmoulded cords</b> P01295451Z<br>Straight male plug Ø 4 mm insulated –<br>Angled male plug Ø 4 mm insulated<br>• 15 A<br>• 1.5 m<br>• 1,000 V CAT IV / 1,500 V CAT III / UL        |
|  | <b>Set of 2 red/black silicone overmoulded cords</b> P01295453Z<br>Straight male plug Ø 4 mm insulated –<br>Angled male plug Ø 4 mm insulated<br>• 15 A<br>• 1.5 m<br>• 1,000 V CAT IV / 1,500 V CAT III / UL   |
| <b>STANDARDS</b>                                                                    |                                                                                                                                                                                                                 |
|  | <b>Set of 2 red/black PVC cords</b> P01295288Z<br>Straight male plug Ø 4 mm insulated –<br>Straight male plug Ø 4 mm insulated<br>• 15 A<br>• 1.5 m<br>• 1,000 V CAT IV / 1,500 V CAT III / UL                  |
|  | <b>Set of 2 red/black PVC cords</b> P01295289Z<br>Straight male plug Ø 4 mm insulated –<br>Angled male plug Ø 4 mm insulated<br>• 15 A<br>• 1.5 m<br>• 1,000 V CAT IV / 1,500 V CAT III / UL                    |
|  | <b>Set of 2 red/black PVC cords</b> P01295290Z<br>Straight male plug Ø 4 mm insulated with rear connection<br>Straight male plug Ø 4 mm insulated with rear connection<br>• 20 A<br>• 2 m<br>• 600 V CAT III    |

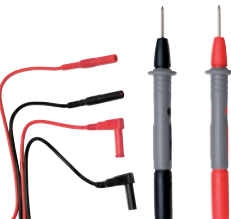
#### LEADS WITH TEST PROBES

| Model                                                                                | Description                                                                                                                                                                                                     |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>FOR CAT IV &amp; CAT III INSTALLATIONS</b>                                        |                                                                                                                                                                                                                 |
|    | <b>Set of 2 red/black PVC leads with test probes</b> P01295455Z<br>Straight male plug Ø 4 mm insulated<br>• 15 A<br>• 1.5 m<br>• 1,000 V CAT IV / 1,500 V CAT III / UL                                          |
|   | <b>Set of 2 PVC cords with red/black test probes</b> P01295456Z<br>Insulated angled male plug Ø 4 mm<br>• 15 A<br>• 1.5 m<br>• 1,000 V CAT IV / 1,500 V CAT III / UL                                            |
|  | <b>Set of 2 PVC IP2X leads for multimeter</b> P01295461Z<br>Compliant with IEC 61010-031<br>• IP2X test lead tip<br>• Insulated angled male plug Ø 4 mm<br>• 15 A<br>• 1.5 m<br>• 600 V CAT IV / 1000 V CAT III |

## Accessories

### 4 mm banana plugs

#### CORD WITH TEST PROBES

| Model                                                                              | Description                                                                                                                                                                                                                                                                                                                             |
|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>FOR CAT II &amp; LOWER INSTALLATIONS</b>                                        |                                                                                                                                                                                                                                                                                                                                         |
|   | <b>Test lead kit + test probes</b><br><b>P01295475Z</b><br>Comprising:<br>Set of 2 red/black PVC leads<br>Insulated straight male plug Ø 4 mm –<br>Insulated angled male plug Ø 4 mm<br>• 15 A<br>• 1.5 m<br>• 1,000 V CAT IV / 1,500 V CAT III / UL<br>+ Set of 2 moulded Ø 4 mm test probes<br>• Female plug Ø 4 mm<br>• CAT II 300 V |
|                                                                                    |                                                                                                                                                                                                                                                                                                                                         |
|  | <b>Test lead kit + test probes</b><br><b>P01295474Z</b><br>Comprising:<br>Set of 2 red/black PVC leads<br>Insulated straight Ø 4 mm male plug –<br>Insulated angled Ø 4 mm male plug<br>• 15 A<br>• 1.5 m<br>• 1,000 V CAT IV / 1,500 V CAT III / UL<br>+ Set of 2 moulded Ø 2 mm test probes<br>• Female plug Ø 4 mm<br>• CAT II 300 V |
|                                                                                    |                                                                                                                                                                                                                                                                                                                                         |

#### REMOVABLE TEST PROBES

| Model                                                                                | Description                                                                                                                                                                             |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>FOR CAT IV &amp; CAT III INSTALLATIONS</b>                                        |                                                                                                                                                                                         |
|    | <b>Set of 2 red/black moulded test probes</b><br><b>P01295454Z</b><br>• Female plug Ø 4 mm<br>• 15 A<br>• 1,000 V CAT IV / 1,500 V CAT III / UL                                         |
|                                                                                      |                                                                                                                                                                                         |
|    | <b>Set of 2 moulded red/black test probes Ø 2 mm</b><br><b>P01295491Z</b><br>• Suitable for measuring modular systems on DIN rails<br>• Female plug Ø 4 mm<br>• 10 A<br>• CAT IV 1000 V |
|                                                                                      |                                                                                                                                                                                         |
| <b>FOR CAT II &amp; LOWER INSTALLATIONS</b>                                          |                                                                                                                                                                                         |
|  | <b>Set of 2 moulded test probes Ø 4 mm</b><br><b>P01295458Z</b><br>• Female plug Ø 4 mm<br>• 15 A<br>• CAT II 300 V                                                                     |
|                                                                                      |                                                                                                                                                                                         |
|  | <b>Set of 2 moulded Ø 2 mm test probes</b><br><b>P01295460Z</b><br>• Female plug Ø 4 mm<br>• 15 A<br>• CAT II 300 V                                                                     |
|                                                                                      |                                                                                                                                                                                         |



## Accessoires

## Accessoires spécifiques produits

| Model                                                                               | Description                                                                                                                   |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <b>FOR MULTIMETERS OR TESTERS WITH + TERMINAL ON TOP</b>                            |                                                                                                                               |
| Red test probe Ø 4 mm                                                               |                                                                                                                               |
|    | <b>P01103060Z</b><br>removable for tester or DMM<br>Use as "hands-free" test probe<br>• Male plug Ø 4 mm<br>• 600 V CAT IV    |
| <b>FOR CA 745 TESTER OR REMOTE CONTROL PROBE</b>                                    |                                                                                                                               |
| Red test probe Ø 4 mm                                                               |                                                                                                                               |
|     | <b>P01103061Z</b><br>removable with locking pin<br>For tester or remote-control probe<br>• Male plug Ø 4 mm<br>• 600 V CAT IV |
| <b>FOR CA 745N, CA 755 AND CA 757</b>                                               |                                                                                                                               |
| Set of red/black test probes                                                        |                                                                                                                               |
|  | <b>P01102152Z</b><br>• CAT III/IV                                                                                             |
| Set of red/black test probes                                                        |                                                                                                                               |
|  | <b>P01102153Z</b><br>• Ø 2 mm<br>• CAT II                                                                                     |
| Set of red/black test probes                                                        |                                                                                                                               |
|  | <b>P01102154Z</b><br>• Ø 4 mm<br>• CAT II                                                                                     |
| <b>FOR CA 704, CA 740 AND CA 760 VOLTAGE ABSENCE TESTERS</b>                        |                                                                                                                               |
|  | <b>Removable red test probe 2</b><br><b>P01103059Z</b><br>• Female plug Ø 4 mm<br>• 600 V CAT IV                              |
|  | <b>Black test-probe lead</b><br><b>P01295464Z</b><br>Insulated elbowed female plug Ø 4 mm<br>Length 0.85 m<br>• 600 V CAT IV  |

| Model                                                                               | Description                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>FOR ALL VOLTAGE ABSENCE TESTERS, CA 74X/XN SERIES / CA 76X/XN SERIES</b>         |                                                                                                                                                                                                                                             |
| Set of 2 PVC IP2X leads                                                             |                                                                                                                                                                                                                                             |
|    | <b>P01295463Z</b><br>for CA 760 and CA 704 VATs<br>Complies with NF C 18-510 and IEC 61010-031+A1:2008<br>• IP2X test probe Ø 2 mm<br>• Elbowed female plug Ø 4 mm<br>• 15 A<br>• 1.5 m<br>• 600 V CAT IV                                   |
|    | <b>Red removable test probe</b><br><b>P01102008Z</b><br>• Female plug Ø 4 mm<br>• IEC 61243-3                                                                                                                                               |
|    | <b>Black test-probe lead</b><br><b>P01102009Z</b><br>Insulated elbowed female plug Ø 4 mm<br>• Length 0.85 m<br>• IEC 61243-3                                                                                                               |
| Set of 2 IP2X leads for CA 740N and CA 760N VATs                                    |                                                                                                                                                                                                                                             |
|  | <b>P01295462Z</b><br>• IP2X test probe Ø 4 mm<br>• Elbowed female plug Ø 4 mm<br>• 15 A<br>• NF C 18-510 / IEC 61243-3 1000 V<br>• 1.5 m<br><br><b>Also available:</b><br><b>P01295285Z</b><br>- 0.25 m lead (red)<br>- 0.85 m lead (black) |
| Set of IP2X accessories for VAT                                                     |                                                                                                                                                                                                                                             |
|  | <b>P01102121Z</b><br>• 2 x IP2X Ø 4 mm test probes<br>• 1 point-point cable, L = 1.10 m                                                                                                                                                     |
| CA 751 measurement adapter                                                          |                                                                                                                                                                                                                                             |
|  | <b>P01101997Z</b><br>• For 2P+E sockets                                                                                                                                                                                                     |

| Model                                                                                 | Description                                                   |
|---------------------------------------------------------------------------------------|---------------------------------------------------------------|
| <b>FOR CA 771 &amp; CA 773 VOLTAGE ABSENCE TESTERS</b>                                |                                                               |
| Set of 2 red/black IP2X test probes Ø 4 mm                                            |                                                               |
|    | <b>P01102128Z</b><br>Female plug Ø 4 mm<br>IEC 61423-3 1000 V |
| Set of 2 red/black IP2X test probes                                                   |                                                               |
|    | <b>P01102127Z</b><br>Female plug Ø 4 mm<br>1000 V CAT IV      |
| Set of 2 red/black test probes                                                        |                                                               |
|   | <b>P01102123Z</b><br>Fiche femelle Ø 4 mm<br>1000 V CAT IV    |
| Set of 2 red/black test probes Ø 2 mm with crystal                                    |                                                               |
|  | <b>P01102124Z</b><br>Female plug Ø 4 mm<br>IEC 61423-3 1000 V |
| Set of 2 red/black test probes Ø 4 mm                                                 |                                                               |
|  | <b>P01102125Z</b><br>Female plug Ø 4 mm<br>IEC 61423-3 1000 V |
| Protective cap for test probe                                                         |                                                               |
|  | <b>P01102126Z</b>                                             |

## Accessories

### Other accessories

| Model                                                                               | Description                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>FOR CAT IV &amp; CAT III INSTALLATIONS</b>                                       |                                                                                                                                                                                                                                                                 |
| Set of 2 red/black crocodile clips                                                  |                                                                                                                                                                                                                                                                 |
|    | <b>P01295457Z</b><br>• 15 A<br>• 1,000 V CAT IV /<br>1,500 V CAT III / UL                                                                                                                                                                                       |
| Set of leads and measuring accessories for electricians                             |                                                                                                                                                                                                                                                                 |
|    | <b>P01295459Z</b><br>• 2 x 1000 V CAT IV moulded test probes<br>• 2 x 1.5 m 1000 V CAT IV red/black moulded leads with straight male plug – elbowed male plug<br>• 2 x red/black 1000 V CAT IV crocodile clips<br>• 2 x 300 V CAT II moulded test probes Ø 4 mm |
| Set of 2 red/black magnetized test probes                                           |                                                                                                                                                                                                                                                                 |
|  | <b>P01103058Z</b><br>For voltage measurement only<br>Ø test probe: 6.6 mm<br>Elbowed female plug Ø 4 mm<br>• 1000 V CAT III / 600 V CAT IV                                                                                                                      |
| Set of 2 red/black crocodile wire grips                                             |                                                                                                                                                                                                                                                                 |
|  | <b>P01102053Z</b><br>• 20 A<br>• 1,000 V CAT III                                                                                                                                                                                                                |
| Set of 2 adapters                                                                   |                                                                                                                                                                                                                                                                 |
|  | <b>P01102101Z</b><br>Insulated female BNC plug<br>Red/black - insulated male plugs<br>Ø 4 mm with 19 mm spacing<br>• 600 V CAT III                                                                                                                              |
| Set of 2 adapters                                                                   |                                                                                                                                                                                                                                                                 |
|  | <b>HX0107</b><br>Insulated BNC male plug<br>Insulated red/black female plugs<br>Ø 4 mm spacing 19 mm<br>• 600 V CAT III                                                                                                                                         |
| BNC coaxial connection cable PVC lead                                               |                                                                                                                                                                                                                                                                 |
|  | <b>HX0106</b><br>Insulated BNC male plug<br>Insulated BNC female plug<br>Impedance 50 Ω 1 m<br>• 600 V CAT III                                                                                                                                                  |

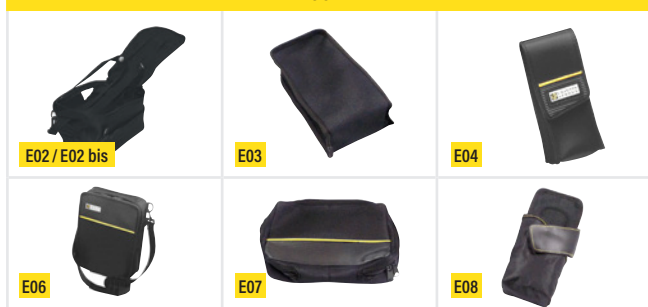
| Model                                                                               | Description                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>FOR CAT II &amp; LOWER INSTALLATIONS</b>                                         |                                                                                                                                                                                                                                                                                                                                                                                       |
| Set of 3 measurement adapters for housing                                           |                                                                                                                                                                                                                                                                                                                                                                                       |
|    | <b>P01102114Z</b><br>2 red/black insulated straight male plugs Ø 4 mm<br>• E27 screw socket<br>• B22 bayonet socket<br>• 2-pole mains socket (P/N)<br>• 250 V CAT II                                                                                                                                                                                                                  |
| CA 753: Measurement adapter for 2P+E socket                                         |                                                                                                                                                                                                                                                                                                                                                                                       |
|    | <b>P01191748Z</b><br>• Suitable for European and Schuko sockets<br>• Can be used for measurements on the P (Phase), N (Neutral) and PE (Earth) conductors in total safety<br>• Guarantees mechanical and electrical contact with all test probes (Ø2, Ø4, IP2x, etc.)<br>• Shows the presence of a P-N voltage (> 200 V) and indicates the phase position<br>• IEC 61010 230 V CAT II |
| Current lead equipped with a French 2P+E mains socket                               |                                                                                                                                                                                                                                                                                                                                                                                       |
|  | <b>P03295509</b><br>• For inserting an ammeter in series in total safety<br>• For measuring the current with a current clamp without having to remove the outer sheath of the power supply cable                                                                                                                                                                                      |
| Measurement lead for French and German 2P+E mains sockets                           |                                                                                                                                                                                                                                                                                                                                                                                       |
|  | <b>P06239307</b><br>For direct measurement on a mains socket Quick implementation and reliable connections                                                                                                                                                                                                                                                                            |
| Set of 2 red/black insulation-piercing clips                                        |                                                                                                                                                                                                                                                                                                                                                                                       |
|  | <b>P01102055Z</b><br>• 30 V AC, 60 V DC                                                                                                                                                                                                                                                                                                                                               |
| CMS clamp                                                                           |                                                                                                                                                                                                                                                                                                                                                                                       |
|  | <b>HX0064</b><br>Copper-gold-plated beryllium contacts Output via male plugs Ø 4 mm<br>• 12 m<br>• SELV                                                                                                                                                                                                                                                                               |
| Set of 2 adapters                                                                   |                                                                                                                                                                                                                                                                                                                                                                                       |
|  | <b>P01101847</b><br>Red/black insulated male BNC – female sockets<br>Ø 4 mm with 19 mm spacing<br>• 500 V CAT I, 150 V CAT III                                                                                                                                                                                                                                                        |

| Model                                                                                 | Description                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>EXTERNAL POWER SUPPLY &amp; MAINS POWER PACK</b>                                   |                                                                                                                                                                                                                             |
| Set of 4 x 1.5 V LR06 rechargeable batteries                                          |                                                                                                                                                                                                                             |
|    | <b>HX0051B</b>                                                                                                                                                                                                              |
| 230 V / µUSB – B mains adapter                                                        |                                                                                                                                                                                                                             |
|    | <b>P01651023</b><br>• 110 – 240 V 50/60 Hz<br>• Female USB type A, 5 V 1 A<br>Charging and connection cable<br>• Male USB type A – Male USB type µ-B<br>• 1.8 m                                                             |
| <b>ADAPTERS FOR TEMPERATURE MEASUREMENT SENSORS</b>                                   |                                                                                                                                                                                                                             |
| Set of 2 safety thermocouple adapters for multimeters                                 |                                                                                                                                                                                                                             |
|  | <b>P01102106Z</b><br>Female thermocouple plug – insulated red/black male plugs<br>Ø 4 mm with 19 mm spacing                                                                                                                 |
| Safety adapter and K-sensor temperature probe                                         |                                                                                                                                                                                                                             |
|  | <b>P01102107Z</b><br>For multimeters and multimeter clamps equipped with a temperature measurement calibre with 19 mm-spaced banana inputs<br>- Measurement range from -50 °C to +350 °C<br>- Sensor length: approx. 100 cm |
| Pt100/Pt1000 sensor adapter for multimeters                                           |                                                                                                                                                                                                                             |
|  | <b>HX0091</b><br>Female Pt100/Pt1000 plug – Red/black insulated male plugs Ø 4 mm                                                                                                                                           |

## Accessories

### Protection, storage + transport

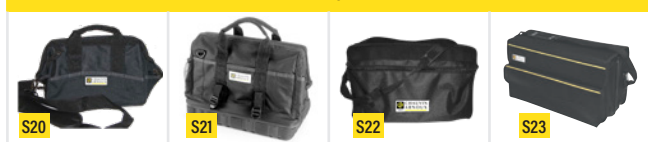
#### POCKET



#### BAG



#### BAG



#### CASE



#### MOUNTING ACCESSORY



#### WATERPROOF CASE



#### STRAP



#### Storage accessory

##### Reeling Box cable reel..... Ref.: P01102149

For cords that never get tangled.  
Can store up to 3 m of cable  
(1 x 3 m / 2 x 1.5 m). Built-in magnet for  
easy attachment to any metal surface.

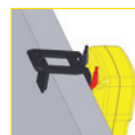
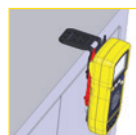


| Photo              | W x H x D                        | Reference  | Additional information                                                                                   |
|--------------------|----------------------------------|------------|----------------------------------------------------------------------------------------------------------|
| MOUNTING ACCESSORY |                                  |            |                                                                                                          |
| F01                | 110 x 220 x 45 mm                | P01102100Z | MultiFix fixing system                                                                                   |
| POCKET             |                                  |            |                                                                                                          |
| E02                | 125 x 210 x120                   | P01298049  | Specific to a device or<br>a range of products.                                                          |
| E02 bis            | 125 x 210 x120                   | HX0105     |                                                                                                          |
| -                  | (82 + 51) x 156 x 45             | AE0216     |                                                                                                          |
| E04                | 180 x 75 x 45                    | P01298012  |                                                                                                          |
| E06                | 190 x 250 x 60                   | P01298055  |                                                                                                          |
| E07                | 250 x 190 x 80                   | P01298051  |                                                                                                          |
| BAG                |                                  |            |                                                                                                          |
| S11                | 95 x 210 x 30                    | AE0236     | Compatible with MultiFix system                                                                          |
| E01                | 110 x 220 x 45                   | P01298065Z |                                                                                                          |
| E01 bis            | 105 x 225 x 40                   | HX0105     |                                                                                                          |
| S01                | 120 x 200 x 60                   | P01298074  |                                                                                                          |
| S02                | 120 x 245 x 60                   | P01298075  |                                                                                                          |
| S02 bis            | 120 x 245 x 60                   | HX0052B    |                                                                                                          |
| S03                | 120 x 320 x 60                   | P01298076  |                                                                                                          |
| S03 bis            | 120 x 320 x 60                   | HX0052C    |                                                                                                          |
| S04                | 150 x 230 x (40+40)              | P01298032  |                                                                                                          |
| S06                | 180 x 220 x 75                   | P01298036  |                                                                                                          |
| S07                | 225 x 270 x 70                   | P01298033  |                                                                                                          |
| -                  | 240 x 230 x 45                   | AE0226     |                                                                                                          |
| S08                | 240 x 140 x 130                  | P01298006  |                                                                                                          |
| S09                | 355 x 255 x 235                  | P01298056  |                                                                                                          |
| S10                | 360 x 200 x 140 + 360 x 160 x 35 | P01298061A |                                                                                                          |
| BAG                |                                  |            |                                                                                                          |
| S20                | 330 x 240 x 240                  | P01298078  | Waterproof all-terrain base.<br>Two compartments and a document pocket.<br>Supplied with shoulder strap. |
| S21                | 395 x 335 x 210                  | P01298066  |                                                                                                          |
| S21                | 395 x 335 x 210                  | HX0120     |                                                                                                          |
| S22                | 575 x 320 x (200 + x +x)         | P01298067  |                                                                                                          |
| S23                |                                  | P01298031  |                                                                                                          |
| CASE               |                                  |            |                                                                                                          |
| M01                | 270 x 195 x 65                   | P01298071  | Equipped with a set of foam inserts.<br>Supplied with strap and keys                                     |
| M02                | 285 x 210 x 80                   | P01298037  | Specific to a device or product range.                                                                   |
| M02                | 285 x 210 x 80                   | P01298080  |                                                                                                          |
| M03                | 285 x 210 x 80                   | P01298037A |                                                                                                          |
| M04                | 320 x 255 x 75                   | P01298004  | Equipped with a set of foam inserts.<br>Supplied with strap and keys                                     |
| M05                | 320 x 255 x 75                   | P01298011  | Specific to a device or<br>a range of products                                                           |
| M07                | 440 x 310 x 135                  | P01298072  | Equipped with a set of foam inserts.<br>Supplied with strap and keys                                     |
| M08                | 430 X 320 X (53+53)              | HX0038     | Specific to a device or<br>a range of products.                                                          |
| WATERPROOF CASE    |                                  |            |                                                                                                          |
| B01                | 272 x 248 x 130 mm               | P01298068  | Equipped with a set of foam inserts                                                                      |
| B02                | 272 x 248 x 182 mm               | P01298069  | Equipped with a set of foam inserts                                                                      |
| STRAP              |                                  |            |                                                                                                          |
| S30                |                                  | P01298057  | Equipped with a set of foam inserts                                                                      |
| -                  | 272 x 248 x 182 mm               | P01298005  | Equipped with a set of foam inserts                                                                      |

#### Mounting accessory

##### MultiFix ..... Ref.: P01102100Z

When used with compatible cases and bags, it allows for the transport and secure attachment of measuring devices for greater user comfort.



## Choose the right protection for your device

**TEST & MEASUREMENT CATALOGUE 2025-2026**  
www.chauvin-arnoux.com



Accessories

Fuses

| Product  | Dimensions | Amperage | Reference |
|----------|------------|----------|-----------|
| AX 501   | 5 x 20     | 6,3 A    | AT0087    |
| AX 502   | 5 x 20     | 6,3 A    | AT0087    |
| AX 503   | 5 x 20     | 6,3 A    | AT0087    |
| CA 10    | 6 x 32     | 8 A      | P01297013 |
| CA 1621  | 5 x 20     | 0,125 A  | P01297099 |
| CA 1631  | 5 x 20     | 0,125 A  | P01297099 |
| CA 404   | 6 x 32     | 1,25 A   | P01297015 |
| CA 405   | 6 x 32     | 6,3 A    | P01297016 |
| CA 5001  | 6 x 32     | 0,5 A    | P01297028 |
| CA 5001  | 6 x 32     | 5 A      | P01297035 |
| CA 5003  | 10 x 38    | 16 A     | P01297037 |
| CA 5003  | 6 x 32     | 1,6 A    | P01297036 |
| CA 5005  | 6 x 32     | 1 A      | P01297039 |
| CA 5005  | 6 x 32     | 10 A     | P01297038 |
| CA 5011  | 6 x 32     | 1 A      | P01297039 |
| CA 5011  | 6 x 32     | 10 A     | P01297038 |
| CA 5210  | 10 x 38    | 12 A     | P01297021 |
| CA 5210  | 6 x 32     | 0,4 A    | P01297020 |
| CA 5210G | 10 x 38    | 12 A     | P01297021 |
| CA 5210G | 6 x 32     | 0,4 A    | P01297020 |
| CA 5220  | 10 x 38    | 12 A     | P01297021 |
| CA 5220  | 6 x 32     | 0,4 A    | P01297020 |
| CA 5220G | 10 x 38    | 12 A     | P01297021 |
| CA 5220G | 6 x 32     | 0,4 A    | P01297020 |
| CA 5230G | 10 x 38    | 12 A     | P01297021 |
| CA 5230G | 6 x 32     | 0,5 A    | P01297028 |
| CA 5233  | 6 x 32     | 10A      | AT0070    |
| CA 5240G | 10 x 38    | 12 A     | P01297021 |
| CA 5240G | 6 x 32     | 0,5 A    | P01297028 |
| CA 5260G | 6 x 32     | 0,1 A    | P01297012 |
| CA 5271  | 10 x 38    | 10 A     | P01297096 |
| CA 5273  | 10 x 38    | 10 A     | P01297096 |
| CA 5275  | 10 x 38    | 10 A     | P01297096 |
| CA 5275  | 6 x 32     | 0,63 A   | P01297098 |
| CA 5277  | 10 x 38    | 10 A     | P01297096 |
| CA 5277  | 6 x 32     | 0,63 A   | P01297098 |
| CA 5287  | 10 x 38    | 0,44 A   | P01297094 |
| CA 5287  | 10 x 38    | 11 A     | P01297092 |
| CA 5289  | 10 x 38    | 0,44 A   | P01297094 |
| CA 5289  | 10 x 38    | 11 A     | P01297092 |
| CA 5292  | 10X38      | 11A      | P01297092 |
| CA 6114  | 6 x 32     | 3,15 A   | P01297080 |
| CA 6115N | 5 x 20     | 2 A      | P01297026 |
| CA 6115N | 6 x 32     | 3,15 A   | P01297080 |
| CA 6121  | 5 x 20     | 4 A      | P01297032 |
| CA 6121  | 6 x 32     | 0,2 A    | P01297033 |
| CA 6240  | 6 x 32     | 12,5 A   | P01297091 |
| CA 6250  | 5 x 20     | 2 A      | P01297090 |
| CA 6250  | 6 x 32     | 16 A     | P01297089 |
| CA 6421  | 6 x 32     | 0,1 A    | P01297012 |
| CA 6423  | 6 x 32     | 0,1 A    | P01297012 |

| Product   | Dimensions | Amperage | Reference |
|-----------|------------|----------|-----------|
| CA 6425   | 6 x 32     | 0,1 A    | P01297012 |
| CA 6460   | 6 x 32     | 0,1 A    | P01297012 |
| CA 6462   | 6 x 32     | 0,1 A    | P01297012 |
| CA 6470   | 5 x 20     | 0,63 A   | AT0094    |
| CA 6471   | 5 x 20     | 0,63 A   | AT0094    |
| CA 6472   | 5 x 20     | 0,63 A   | AT0094    |
| CA 6501   | 6 x 32     | 0,2 A    | P01297095 |
| CA 6503   | 6 x 32     | 0,2 A    | P01297095 |
| CA 6511   | 6 x 32     | 1,6 A    | P01297022 |
| CA 65113  | 6 x 32     | 1,6 A    | P01297022 |
| CA 6521   | 6 x 32     | 0,63 A   | P01297078 |
| CA 6522   | 6 x 32     | 0,63 A   | P01297078 |
| CA 6523   | 6 x 32     | 0,63 A   | P01297078 |
| CA 6524   | 6 x 32     | 0,63 A   | P01297078 |
| CA 6525   | 6 x 32     | 0,63 A   | P01297078 |
| CA 6526   | 6 x 32     | 0,63 A   | P01297078 |
| CA 6528   | 6 x 32     | 0,200 A  | P01297104 |
| CA 6531   | 6 x 32     | 0,63 A   | P01297078 |
| CA 6532   | 6 x 32     | 0,63 A   | P01297078 |
| CA 6534   | 6 x 32     | 0,63 A   | P01297078 |
| CA 6536   | 6 x 32     | 0,63 A   | P01297078 |
| CA 6541   | 6 x 32     | 0,1 A    | P01297072 |
| CA 6541   | 8 x 50     | 2,5 A    | P01297071 |
| CA 6543   | 6 x 32     | 0,1 A    | P01297072 |
| CA 6543   | 8 x 50     | 2,5 A    | P01297071 |
| CA 6545   | 5 x 20     | 0,1 A    | P03297514 |
| CA 6547   | 5 x 20     | 0,1 A    | P03297514 |
| CA 6549   | 5 x 20     | 0,1 A    | P03297514 |
| CA5293    | 10X38      | 11A      | P01297092 |
| DMM 111   | 10 x 38    | 10 A     | P01297096 |
| DMM 111   | 6 x 32     | 0,630 A  | P01297098 |
| DMM 121   | 10 x 38    | 10 A     | P01297096 |
| DMM 121   | 6 x 32     | 0,630 A  | P01297098 |
| DMM 141   | 10 x 38    | 10 A     | P01297096 |
| DMM 141   | 6 x 32     | 0,630 A  | P01297098 |
| DMM 210   | 10 x 38    | 11 A     | P01297092 |
| DMM 210   | 6 x 32     | 0,8 A    | P01297093 |
| DMM 220   | 10 x 38    | 11 A     | P01297092 |
| DMM 220   | 6 x 32     | 0,8 A    | P01297093 |
| DMM 230   | 10 x 38    | 11 A     | P01297092 |
| DMM 230   | 6 x 32     | 0,8 A    | P01297093 |
| DMM 240   | 10 x 38    | 11 A     | P01297092 |
| DMM 240   | 6 x 32     | 0,5 A    | P01297097 |
| DMM 53    | 6 x 32     | 0,4 A    | P01297020 |
| DMM 53    | 6 x 32     | 10 A     | AT0070    |
| DMM 54    | 6 x 32     | 0,500 A  | P01297097 |
| DMM 54    | 6 x 32     | 10 A     | AT0070    |
| IMEG 500  | 5 x 20     | 0,2 A    | P02297302 |
| IMEG 500N | 5 x 20     | 0,2 A    | P02297302 |
| MTX 203-Z | 10X38      | 11A      | P01297096 |
| MTX 203-Z | 6,3x32     | 0,63A    | P01297098 |

| Product    | Dimensions | Amperage | Reference |
|------------|------------|----------|-----------|
| MTX 204-Z  | 10X38      | 10A      | P01297096 |
| MTX 204-Z  | 6,3x32     | 0,63A    | P01297098 |
| MTX 3250   | 6 x 32     | 10 A     | AT0095    |
| MTX 3281   | 10 x 38    | 11 A     | P01297092 |
| MTX 3282   | 10 x 38    | 11 A     | P01297092 |
| MTX 3283   | 10 x 38    | 11 A     | P01297092 |
| MTX 3290   | 6,3X32     | 10A      | P01297038 |
| MTX 3291   | 10x38      | 11A      | P01297092 |
| MTX 3292B  | 10X38      | 11A      | P01297092 |
| MTX 3293B  | 10X38      | 11A      | P01297092 |
| MTX 3297Ex | 10 x 38    | 10 A     | HX0097    |
| MX 1       | 6 x 32     | 1,6 A    | AT0071    |
| MX 1       | 6 x 32     | 10 A     | AT0070    |
| MX 20      | 5 x 20     | 0,63 A   | AT0094    |
| MX 20HD    | 5 x 20     | 0,63 A   | AT0094    |
| MX 20HD    | 6 x 32     | 10 A     | AT0095    |
| MX 22      | 6 x 32     | 0,63 A   | AT0519    |
| MX 22      | 6 x 32     | 10 A     | AT0095    |
| MX 23      | 6 x 32     | 10 A     | AT0095    |
| MX 24B     | 6 x 32     | 0,63 A   | AT0519    |
| MX 24B     | 6 x 32     | 10 A     | AT0095    |
| MX 26      | 6 x 32     | 0,63 A   | AT0519    |
| MX 26      | 6 x 32     | 10 A     | AT0095    |
| MX 407     | 6 x 32     | 0,5 A    | P01297097 |
| MX 409     | 6 x 32     | 0,200 A  | P01297104 |
| MX 44      | 5 x 20     | 0,63 A   | AT0096    |
| MX 44      | 6 x 32     | 10 A     | AT0095    |
| MX 44HD    | 5 x 20     | 0,630 A  | AT0096    |
| MX 44HD    | 6 x 32     | 10 A     | AT0095    |
| MX 44HDL   | 5 x 20     | 0,630 A  | AT0096    |
| MX 5006    | 6X32       | 10A      | AT0095    |
| MX 5060    | 6X32       | 10A      | AT0095    |
| MX 51      | 5 x 20     | 0,63 A   | AT0094    |
| MX 52      | 5 x 20     | 0,63 A   | AT0094    |
| MX 53      | 5 x 20     | 0,63 A   | AT0096    |
| MX 53      | 6 x 32     | 10 A     | AT0095    |
| MX 54C     | 5 x 20     | 0,63 A   | AT0096    |
| MX 54C     | 6 x 32     | 10 A     | AT0095    |
| MX 553     | 6 x 32     | 10 A     | AT0095    |
| MX 556     | 6 x 32     | 10 A     | AT0095    |
| MX 55C     | 5 x 20     | 0,63 A   | AT0096    |
| MX 55C     | 6 x 32     | 10 A     | AT0095    |
| MX 56C     | 5 x 20     | 0,630 A  | AT0096    |
| MX 56C     | 6 x 32     | 10 A     | AT0095    |
| MX 58HD    | 10 x 38    | 11 A     | P01297092 |
| MX 58HD    | 5 x 20     | 0,630 A  | AT0096    |
| MX 59HD    | 10 x 38    | 11 A     | P01297092 |
| MX 59HD    | 5 x 20     | 0,630 A  | AT0096    |
| MX 59HDL   | 5 x 20     | 0,630 A  | AT0096    |
| PX 110     | 10 x 38    | 10 A     | HX0019    |
| PX 120     | 10 x 38    | 10 A     | HX0019    |

## Index

## By product name

| Product     | Page |
|-------------|------|
| A110        | 151  |
| A130        | 151  |
| ACCESSOIRES | 161  |
| B102        | 149  |
| C100 à C173 | 149  |
| C320        | 143  |
| CA 10001    | 138  |
| CA 10002    | 138  |
| CA 10101    | 136  |
| CA 10101E   | 139  |
| CA 10141    | 137  |
| CA 10141E   | 139  |
| CA 1110     | 119  |
| CA 1227     | 121  |
| CA 1246     | 122  |
| CA 1310     | 120  |
| CA 1510     | 125  |
| CA 1550     | 123  |
| CA 1621     | 132  |
| CA 1623     | 132  |
| CA 1631     | 133  |
| CA 1725     | 124  |
| CA 1727     | 124  |
| CA 1730     | 127  |
| CA 1821     | 116  |
| CA 1822     | 116  |
| CA 1823     | 116  |
| CA 1860     | 114  |
| CA 1862     | 114  |
| CA 1864     | 114  |
| CA 1866     | 114  |
| CA 1954     | 112  |
| CA 40       | 129  |
| CA 5001     | 30   |
| CA 5003     | 30   |
| CA 5005     | 30   |
| CA 5011     | 31   |
| CA 5231     | 21   |
| CA 5233     | 21   |
| CA 5273     | 23   |
| CA 5275     | 23   |
| CA 5277     | 23   |
| CA 5292     | 25   |
| CA 5293     | 25   |
| CA 6011     | 66   |
| CA 6113     | 62   |
| CA 6116N    | 62   |
| CA 6117     | 62   |
| CA 6131     | 64   |
| CA 6133     | 64   |
| CA 6161     | 87   |
| CA 6163     | 87   |
| CA 6165     | 88   |
| CA 6240     | 89   |
| CA 6255     | 90   |
| CA 6292     | 91   |
| CA 6416     | 85   |
| CA 6417     | 85   |
| CA 6418     | 85   |
| CA 6422     | 80   |
| CA 6424     | 80   |
| CA 6460     | 81   |
| CA 6462     | 81   |
| CA 6470N    | 82   |

| Product              | Page |
|----------------------|------|
| CA 6471              | 82   |
| CA 6472              | 83   |
| CA 6474              | 84   |
| CA 6503              | 70   |
| CA 6505              | 76   |
| CA 6511              | 70   |
| CA 6513              | 70   |
| CA 6522              | 71   |
| CA 6524              | 71   |
| CA 6526              | 71   |
| CA 6528              | 72   |
| CA 6532              | 73   |
| CA 6534              | 73   |
| CA 6536              | 73   |
| CA 6541              | 75   |
| CA 6543              | 75   |
| CA 6545              | 76   |
| CA 6547              | 77   |
| CA 6549              | 77   |
| CA 6550              | 78   |
| CA 6555              | 78   |
| CA 6608              | 93   |
| CA 6609              | 93   |
| CA 6630              | 94   |
| CA 6652              | 68   |
| CA 6683              | 92   |
| CA 702               | 20   |
| CA 7028              | 129  |
| CA 703               | 20   |
| CA 732               | 12   |
| CA 742 / CA 742 IP2X | 14   |
| CA 745N              | 13   |
| CA 755               | 13   |
| CA 757               | 13   |
| CA 762 / CA 762 IP2X | 14   |
| CA 771 / CA 771 IP2X | 15   |
| CA 773 / CA 773 IP2X | 15   |
| CA 8220              | 47   |
| CA 832               | 120  |
| CA 8331              | 48   |
| CA 8333              | 48   |
| CA 8336              | 48   |
| CA 8345              | 50   |
| CA 8436              | 48   |
| CA 847               | 122  |
| CA 850               | 123  |
| CA 876               | 115  |
| CA 895               | 126  |
| CA 922               | 28   |
| CA 942               | 28   |
| CAM REPORT           | 157  |
| CDA 9452             | 126  |
| CSD 22               | 143  |
| D30N à D38N          | 149  |
| DATAVIEW             | 154  |
| DTR 8510             | 95   |
| E27                  | 150  |
| E25                  | 150  |
| Electrodes           | 140  |
| F201                 | 38   |
| F203                 | 38   |
| F205                 | 38   |
| F402                 | 41   |
| F404                 | 41   |

| Product           | Page |
|-------------------|------|
| F406              | 41   |
| F407              | 42   |
| F604              | 41   |
| F606              | 41   |
| F607              | 42   |
| F65               | 36   |
| FTV 500           | 56   |
| FUSIBLES          | 168  |
| L411              | 52   |
| L412              | 52   |
| L461              | 52   |
| MA 4000D          | 146  |
| MA 400D           | 146  |
| MA110             | 151  |
| MA130             | 151  |
| MA200             | 151  |
| MH60              | 150  |
| MINI 01 à MINI 09 | 148  |
| MINI102           | 148  |
| MINI103           | 148  |
| MN 08 à MN 89     | 148  |
| MPC 25            | 143  |
| MTX 202           | 22   |
| MTX 203           | 22   |
| MTX 204           | 22   |
| MTX 3290          | 24   |
| MTX 3291          | 24   |
| MTX 3297Ex        | 26   |
| MX 1              | 29   |
| MX 350            | 37   |
| MX 355            | 37   |
| MX 531            | 65   |
| MX 604            | 67   |
| MX 650            | 39   |
| MX 655            | 39   |
| MX 670            | 40   |
| MX 675            | 40   |
| OX 9062           | 107  |
| OX 9102           | 107  |
| OX 9104           | 107  |
| OX 9302-BUS       | 106  |
| OX 9304           | 107  |
| PAC15 à PAC27     | 150  |
| PEL 112           | 54   |
| PEL 113           | 54   |
| PEL 115           | 54   |
| PEL 51            | 53   |
| PEL 52            | 53   |
| PPD 26            | 143  |
| PROBIX            | 108  |
| PSD 1             | 143  |
| PSD 21            | 143  |
| SCOPENET          | 159  |
| SX DMM            | 158  |
| SX-METRO          | 159  |
| TK 2000           | 115  |
| TK 2002           | 115  |
| TX 01             | 18   |
| VX 0003           | 128  |
| VX 0100           | 128  |
| Y1N à Y7N         | 148  |

