

MEASUREMENT • NEWS

CONTACT

125

1893 - 2018

years of innovation

N°68
SPECIAL ISSUE



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Chauvin Arnoux

a long history
of modernity!

In 2018, Chauvin Arnoux is celebrating its 125th anniversary. Our history is dotted with crucial dates, starting with the company's foundation in 1893 by two enthusiasts, René Arnoux et Raphaël Chauvin, fascinated by physics and electricity. The invention of the first universal tester in 1927 was certainly a major event, as it is now seen as emblematic of the measurement sector. The list of innovations and patents filed which have marked our development is impressive and continues to grow with our increasingly connected products.

I would like first of all to highlight what makes us stand out on the market: our history, with its five successive leaders from the same family, supported by the women and men who have contributed to our success throughout these 125 years. It might be summed up as "team spirit" around one of our main values: "the customer comes first".

Today, Chauvin Arnoux is an international company which remains proud to be above all a French manufacturer. We continue to design our measuring instruments and energy solutions in our 6 R&D departments, manufacturing them on our 7 production sites and commercializing our product ranges via the 5 French companies spearheading our brands. Each one is specialized in its activity and markets. Chauvin Arnoux in portable test and measurement instrumentation, Chauvin Arnoux Energy (formerly ENERDIS) in automation relays, metering and energy performance measurement, CA Pyrocontrolle in the design of the temperature sensors essential for industrial processes, and CA Manumasure, which handles the metrology for our instruments and proposes standard regulatory testing. Our latest acquisition, Indatech, is a start-up which joined the Group at the end of 2017, diversifying our expertise on the biomedical markets with its spectrometry know-how. As usual, science is the keyword!

We now cover the whole world via our 10 subsidiaries (Europe, United States, China, Lebanon) and we are exploring new markets thanks to our export sales teams. This means we offer a broad palette of skills with a wide range of products to meet our customers' requirements in sectors as varied as electricity, naturally, but also the nuclear sector, iron and steel, health, quality of the environment, medical applications, agri-food, etc.

Every year, we reinvest 11% of our sales revenues in Research and Development, a strategy which enables us to adapt to the markets, maintain a technological watch and develop future products.

It is an honour and a pleasure to share these 125 years of innovations, discoveries and passion with you, our customers and longstanding partners.

Axel Arnoux

Chairman, Chauvin Arnoux Group



Company News

2018 is certainly a year which will mark the history of the Chauvin Arnoux Group. A new name for Enerdis, a new managing director for CA Pyrocontrole, a stronger identity for the Group's companies which are all now under the same banner and the integration of CA Indatech, a young, ambitious start-up which confirms the Group's determination to constantly innovate on the French and international markets.

ENERDIS HAS BECOME CHAUVIN ARNOUX ENERGY



The Group's French subsidiary specialized in metering and energy control solutions, formerly called Enerdis, has changed its name to Chauvin Arnoux Energy, highlighting its membership of the Chauvin Arnoux Group, the leader in the measurement sector in France and internationally.

The Group, of course, designs and manufactures portable and fixed measuring instruments on its own production sites and also develops the software and applications in its 6 R&D departments. Chauvin Arnoux Energy benefits from the Group's entire industrial infrastructure and the quality control processes in each production phase to meet all the needs of the various markets (nuclear, infrastructure, etc.).

The products are sent all over the world by the shipment platform on the industrial site at Pont-l'Évêque. Your contacts remain unchanged. Whatever the department, your correspondents at Chauvin Arnoux Energy remain the same. All the email and postal addresses, phone numbers and banking details are unchanged. Only the company name has changed and now figures on their invoices, quotes, etc.



INDATECH HAS JOINED THE CHAUVIN ARNOUX GROUP

This French start-up, founded in 2009 at Clapiers in southern France (Hérault) by Sylvie Roussel and Fabien Chauchard, focuses on innovation in measuring instruments for complex products in the pharmaceutical, biotechnological and chemical industries.



LEFT TO RIGHT: WINTHROP SMITH (CEO), PATRICK YAICLE (CHAIRMAN), SYLVIE ROUSSEL (MANAGING DIRECTOR) AND FABIEN CHAUCHARD (TECHNICAL DIRECTOR)

In welcoming this new French subsidiary, the Chauvin Arnoux Group is continuing its policy of diversification and seeking to boost the sales of this innovative technology. In this way, Indatech will be able to pursue its ambition of becoming a major player in spectroscopic measurement for Industry 4.0.

NEW MANAGING DIRECTOR AT CA PYROCONTROLE



François Drouin has joined the Chauvin Arnoux Group and taken over the reins of CA Pyrocontrole in Meyzieu, near Lyon (France). Specialized in temperature measurement in industrial environments, CA Pyrocontrole designs high-accuracy sensors for severe environments. "Developing the company, creating value, federating, stimulating and motivating the teams" are the aims which he has set himself for the next few years. An entrepreneur at home in the field, this man with a particularly industrial, international profile, benefits from long experience in management which he is now using to the Group's advantage.

125 YEARS AND A NEW CORPORATE IDENTITY!

Strengthening membership of the Chauvin Arnoux Group, communicating under the same banner in France and internationally, celebrating a history stretching back 125 years while remaining innovative and forward-looking ...that's the meaning of the evolution of the company's logo. The CA pictogram now has the rounded shape of the applications in mobile environments and all the brands are grouped under the names of the founding families: Chauvin Arnoux.

Today, Chauvin Arnoux covers the whole world and develops its businesses around a common theme: MEASUREMENT

- **CHAUVIN ARNOUX / METRIX**
Portable electrical measurement.
- **CHAUVIN ARNOUX ENERGY**
Measurement, metering and energy performance.
- **CA MANUMESURE**
Measurement for regulatory testing and metrology.
- **CA PYROCONTROLE**
Temperature measurement in industrial environments.
- **CA INDATECH**
Quality control measurement using spectroscopy in the laboratory and in-line processes.

We are proud to share this year of celebration with you.



ALL THE GROUP'S BRANDS ARE NOW GATHERED UNDER THE NAMES OF THE FOUNDING FAMILIES: CHAUVIN ARNOUX. A SINGLE LOGO WITH A MORE CONTEMPORARY SHAPE ACCOMPANIES THIS CHANGE OF IDENTITY.



#1 Innovation

at the heart of the Chauvin
Arnoux Group's R&D teams

Ergonomics designed for smooth, simple

Since the company's founding in 1893, the R&D teams have played a key role in successful product development at Chauvin Arnoux. The Group now has 6 R&D departments in Paris, Antony, Annecy, Lyon, Dover USA and Milan, focused around historical core skills.

In Paris and Annecy, they handle the mechanical and electronic development for portable measurement, as well as software development. In Antony, they specialize in specific development of the Chauvin Arnoux Energy brand's fixed instrumentation. Lyon focuses on temperature sensor design, while Milan develops automation relays and Dover in the United States is in charge of the loggers and adaptation of our products to the US standards.

In the world of measurement in general and electrical measurement in particular, the instrument's look and functions change very little. Nothing is more like a clamp than another clamp, one multimeter looks the same as the next one, rotary switches are all much of a muchness and oscilloscopes remain large rectangular boxes which you can stack in laboratories.

But there's actually much more to it than that!

At Chauvin Arnoux everyone, from the industrial draughtsman and the person in charge of the mechanical part to the developer-integrator and the graphic designer in the communication department, strives to contribute their intelligence and creativity in order to serve the performance of our products. It's then a question of intuitive HMI's, "plug & play" technology, universal communication protocols, immediate connectivity, etc. The Group regularly wins industrial design prizes alongside designers like Philippe Stark and is now developing Android applications and communication gateways between products. Human intelligence is applied to technological innovations to ensure that our products offer concentrated functionality, rapidity and communication while remaining easy to use.



2002



Launch of the first SCOPIX 12-bit oscilloscopes for use in the field

2010



The oscilloscopes are equipped with communication via FTP server

2012

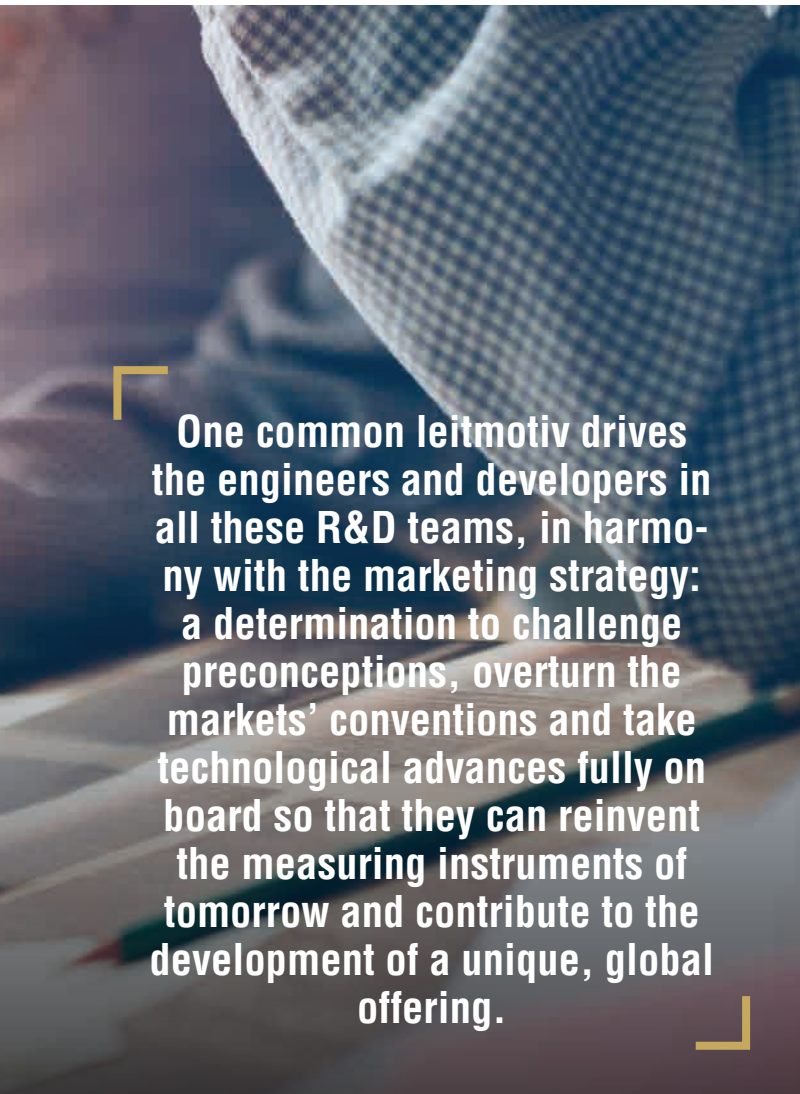


Launch of the HandScope, an oscilloscope which fits in one hand

2018



New Scopix IV range with touch screen



One common leitmotiv drives the engineers and developers in all these R&D teams, in harmony with the marketing strategy: a determination to challenge preconceptions, overturn the markets' conventions and take technological advances fully on board so that they can reinvent the measuring instruments of tomorrow and contribute to the development of a unique, global offering.



MULTI-DISPLAY TOUCH SCREEN WITH A CONFIGURABLE BACKGROUND ENSURING VISIBILITY OF THE MEASUREMENT CURVES THROUGH COLOUR CODING AND DIGITAL DISPLAY AREAS.

Unified communication

DESIGN AND ERGONOMICS

The digital multimeters, oscilloscopes and function generators from the Metrix® brand have stood out from the crowd on the market in the last ten years or so due to their focus on ergonomics, design and technological innovation. The Group invented the keyed switch (MTX® Mobile) and launched the first oscilloscope with isolated channels that fits in one hand (HandScope®), the first "flip" multimeter inspired by mobile phones, the wide, multi-display touch screen with curves and digital values, etc.

In 2018, the new Scopix IV oscilloscopes range combines technological advances and a determination to continuously improve the HMI of the Group's instruments. The melancholy

grey rectangle usually associated in the profession with serious, high-technology oscilloscopes was dropped more than 10 years ago. Via its Metrix® brand, Chauvin Arnoux has launched digital oscilloscopes with 4 isolated channels associating the blue of the brand and industrial grey in an ergonomic, shockproof, "rubber-like" casing.

CONSTANTLY IMPROVING COMFORT

As no improvements should be neglected, drawing on customer feedback in the field, a handle has been added on one side so that the instrument can be picked up one-handed, thus freeing the other to work with the test probes or clamps which may be used with it.

Users benefit from 5 instruments in one without changing the connections. The 7-inch backlit colour WVGA touch screen is particularly clear, organized into zones: upper zone for the zoom and FFT, lower zone for the measurement parameters with central display of the curves in colour and the identifiable symbols. The keypad for direct commands is organized using stylized white pictograms on a black background for immediately-recognizable functions. The "Plug & Play" input terminals enable you to use patented Probox sensors and automatically recognize the measurement accessories connected. Data retrieval and file exchange are simple on a PC or an Android tablet via a wired or WIFI network.

Multi-protocol communication

gateways between products for a global solution



SCOPIX FIELD BUS APPLICATION. PHYSICAL INTEGRITY TEST TO CHECK THE PHYSICAL INTEGRITY OF FIELD BUSES, PARTICULARLY IN THE AUTOMOTIVE SECTOR.

ELINK, THE NETWORK GATEWAY FROM CHAUVIN ARNOUX ENERGY, ENABLES COMMUNICATION BETWEEN ENERIUM POWER MONITORS AND TRIAD2 TRANSDUCERS USING THE IEC 61850 PROTOCOL



Nowadays, instead of a single product, complete solutions are proposed to facilitate communication between products. The Bus function on the Scopix IV (OX 9302) models, designed to assess the physical integrity of the bus used to transmit the electrical signals according to the field protocols and sector of activity (automotive, automation, etc.), has also been launched.

In the short term, this means you no longer have to use analogue transmissions via a 4-20mA link. A single key on the oscilloscope can be used to start analysis which follows 4 standard steps, simplifying the qualification of the data bus, whatever the protocol used (KNX, DALI, CAN, LIN, FlexRay, AS-i, Profibus, etc.).

Chauvin Arnoux Energy's Elink gateway is intended more for the energy market, allowing communication between the brand's Enerium power monitors and Triad2 transducers.

These products are then seen as native products via the IEC 61850 protocol by any supervision system or PLC. This solution interfaces with any equipment already installed to modernize an existing installation.



WORTH KNOWING

For peace of mind while you work, heat is dissipated by conduction via the internal components of the Scopix IV. No need for a fan to cool the instrument!

CLEVER, PRACTICAL ADVANTAGES

In its R&D unit in Paris, Chauvin Arnoux has developed the new C.A 1954 DiaCAM2 thermal camera designed for industrial maintenance, which is packed full of technological and ergonomic intelligence.

Its pistol shape for easy handling is moulded using a single material, in compliance with IP 54 (waterproof and dustproof) and to enable it to withstand 2-metre falls. The camera's focus-free operation with a 38° x 28° field of view and laser pointer automatically ensure that the image is sharp, whatever the distance from the target. The lens is protected by a built-in, slide-down cover. In addition, technicians can record their voice comments directly on the image thanks to the Bluetooth earpiece delivered with the camera. The screen's brightness can be adjusted automatically or manually, with help texts facilitating use of the instrument.

Like the latest measuring instruments from the Group, the C.A 1954 DiaCAM2 thermal camera

is compatible via Bluetooth with other measuring instruments such as thermometers and thermo-hygrometers, allowing you to measure the ambient temperature, humidity and dew point. It can also be used with clamps or multi-meters for electrical measurements.

The engineers and technicians in our R&D teams are creators of portable and fixed innovations, constantly designing the instruments of the future. And there is always more technology to fit into ever-smaller spaces. Improvements

include HMI's inspired by PC or mobile phone environments, in collaboration with the Communication Department, to make it easier to learn how to use the instruments, as well as the development of multi-protocol communication

gateways and software enabling you to instantaneously recover the recorded data on your tablet or PC in preformatted, standardized reports.

This is the age of global solutions and universal communication, a perfect match between essential human intelligence and the rise of artificial intelligence.

This is the age of global solutions and universal communication.

NEW



WWW.OSCILLOSCOPE-METRIX.COM

A website in five languages dedicated to Metrix® oscilloscopes. It presents all the Group's oscilloscopy expertise and offers a selection guide for users.

PREVENTIVE MAINTENANCE: WIDE SCREEN AND EASY HANDLING TO VIEW OVERHEATING IN AN ELECTRICAL CABINET



C.A 1954 DIACAM2 AND LASER POINTER: SHARP IMAGES WHATEVER THE DISTANCE FROM THE INSTRUMENT





Prizes

& awards

More than 350 major patents have been filed by the Chauvin Arnoux Group in the course of its development, giving rise to core instruments such as the multimeter or the multifunction clamp meter, as well as processes now used in shipping, railways and aviation. Chauvin Arnoux is not just a product manufacturer but is positioned as a designer of innovations and portable solutions. The industrial design and dynamic interfaces draw inspiration from our day-to-day work to combine functionality and aesthetics. Here are just some of the prizes won...

2006



ÉTOILE DU DESIGN FROM L'OBSERVEUR DU DESIGN

For the MTX mobile portable digital multimeter

ÉLECTRON D'OR

For the MTX mobile portable digital multimeter

2007

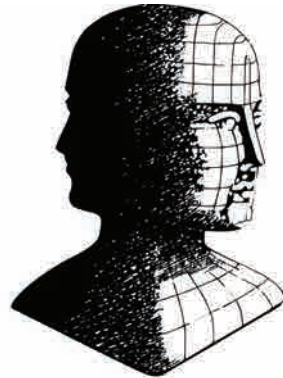
ELECTRICAL PRODUCTS & SOLUTIONS TOP PRODUCTS OF THE YEAR HAND

For the OX range of portable oscilloscopes

2008

JANUS DE L'INDUSTRIE

For the ENERIUM power monitor from Enerdis, which has now become Chauvin Arnoux Energy



JANUS 2008 DE L'INDUSTRIE

2009

EC&M PRODUCT OF THE YEAR

For the L452 process data logger

2010

EC&M PRODUCT OF THE YEAR

For the MX 670 and MX 675 clamp multimeters

2013

TROPHÉE D'OR FROM ELECTRO MAGAZINE

For the PEL 100 logger

TROPHÉE DE BRONZE FROM ELECTRO MAGAZINE

For the Digiflex sensor

2015

TROPHÉE D'OR FROM ELECTRO MAGAZINE

For the ASYC IV multimeter

ELECTRICAL PRODUCTS & SOLUTIONS TOP PRODUCTS OF THE YEAR

For the PEL 105 power and energy logger

2016



label observeur design 2016

OBSERVEUR DU DESIGN PRIZE

The Asyc IV multimeter was exhibited at Caen in Normandy

2016 PRODUCT OF THE YEAR

Awarded to the MTX 3200 Series of multimeters by the American magazine Utility Products Magazine

2017

ELECTRON D'OR

For the C.A 757 multifunction tester





Android Applications which change everything!

More and more connected products are being offered by the Chauvin Arnoux Group which is developing totally free Android applications to make your life simpler.

Earth clamps, power loggers, environmental measurement instruments: each one has an Android application to help you keep an eye on your installations and data in real time, giving you full control of your system.

After winning over the smart phone and tablet markets, Android has become a key element in the industrial field. Chauvin Arnoux, the leader in measurement, could not neglect the many advantages provided by this operating system. Beginning in 2016, our teams of developers have been working to bring you the most modern, easy-to-use tools. These applications help to boost efficiency by avoiding in particular prior transfers on paper or computer before processing. They may also help to improve measurement traceability and archiving, as is the case with GPS data retrieval, addition of comments, etc.

The 1510 application, for example, has been developed to communicate with the Chauvin Arnoux C.A 1510 logger (measurement of CO2, temperature and relative humidity). It allows you to view the measurements in real time and display the recorded data via a Bluetooth link with the product. The multilingual 6417 application, meanwhile, boosts productivity when using the C.A 6417 earth clamp. Measurement of the individual earths in a parallel earth network means dealing with measurement points close to one another, often in very uncomfortable positions for the user.



1510
CO₂, TEMPERATURE & HUMIDITY
LOGGER



ENVIRONMENTAL
MEASUREMENT
LOGGERS



6417
EARTH CLAMP



PEL
POWER AND ENERGY
LOGGER

Distinguishing between them proves tiresome when analysing the data.

By using the connected infrastructure of a smartphone or tablet, the application enables users to find a more comfortable position close to the point of measurement, to use a geolocated map and to add comments and photos before sending everything by email. These functions save significant time during generation of the measurement reports and post-analysis work.



To find all our applications, go to <https://play.google.com> and type Chauvin Arnoux in the search bar

"From the very start of the project, we planned an Android application to view in real time the values measured and recorded by the different products. Luxmeter, thermo-anemometer, thermo-hygrometer, contact thermometer: the whole range is totally connected to one another via Bluetooth. The Environmental Measurement Loggers application provides a remote view of the measurements and their evolution in graph form. It can also be used to take screenshots to which comments can be added, display the recorded data and send them by email. This connectivity between instruments helps to boost efficiency. It's also an excellent tool which facilitates your measurement while highlighting our professional know-how among our customers."

Marc Albrecht,
Product Manager, Chauvin Arnoux Environmental Measurements range

Satisfying the customer! The prime goal of Chauvin Arnoux sales staff



The day is long past when two engineers, René Arnoux and Raphaël Chauvin, handled both the design and commercialization of their single eponymous brand's measuring instruments in a cellar in Montmartre. Today, the Chauvin Arnoux Group has teams of experts in France and internationally, specially trained in each brand to support and advise customers while staying focused on their requirements. The key objective of all Chauvin Arnoux sales staff is customer satisfaction.

UNDERSTANDING THE CUSTOMER'S REQUIREMENTS

In the five companies and ten subsidiaries of the Chauvin Arnoux Group, the teams are trained not only on every product launched, but also in market intelligence, the evolution of the international standards and the customer applications such as energy efficiency, infrared thermography or regulatory inspections. Webinars, product seminars, presentation of market surveys and precise product packages all have their role to play in the daily work of Chauvin Arnoux sales staff. Drawing on the corporate culture initiated by the founders, these teams are driven by passion in their customer relations. For example, who better than scientists could develop the spectroscopy solutions proposed by CA Indatech(*) and understand the market requirements of the chemicals and medical sectors?

"With the multiple offers and sales channels, the arrival of the internet, low-cost Asian competition, etc., the job is increasingly complex but our presence close to our customers remains our great strength."

Quentin Cogé, Chauvin Arnoux Sales Engineer

A FRIENDLY EAR CLOSE TO YOU

At a time when digital applications and social media are everywhere, the company retains its family-based culture, giving priority to customer relations. At CA Manumasure, 12 local technical centres and a fleet of mobile laboratories simplify work on customer sites and in the agencies. In France, a network of five regional sales agencies offers local support for customer projects. Partnership is also one of the Group's intrinsic values. For industry, distribution, the naval sector, rail, T&D, etc., specific market managers develop a policy of support and partnerships. Education is a concrete example of this (see our article on page 26). Internationally, more than 3,000 distributor partners co-ordinated by the Group's travelling sales teams help to support projects on the world markets.

TAILORED PRODUCTS AND QUALITY

Six R&D departments and 7 production sites enable the Chauvin Arnoux Group to design and manufacture the Group's offering. For example, CA Pyrocontrole's site in Lyon handles production of tailored temperature sensors according to the customers' specifications. Similarly, the "Special Developments" team at Chauvin Arnoux Energy (formerly Enerdis) designs and develops specific instruments for the Defence sector. The quality organization, present in each company and at the head office, provides support and supervises compliance with the manufacturing processes and applicable standards. The company is certified ISO 9001 and ISO 140001, and CA Manumasure also has 12 Cofrac accreditations and 2 MASE accreditations (safety of hazardous industrial sites) bearing witness to its laboratories' competence and impartiality. The Group is also a member of the IEC standardization committees.

"Internationally, we often have to travel, mainly to support our local partners during the commercialization of new products, particularly to train them."

Wannis Ammi, Export Manager, Chauvin Arnoux Energy

MORE THAN JUST A PRODUCT: A GLOBAL SOLUTION

Rather than proposing just a product, Chauvin Arnoux mainly offers global solutions. In addition to the product, Chauvin Arnoux, proposes customized support for its customers, as it is a certified training organization. The company develops tools, websites, tutorials and product animations to help customers learn how to use the instruments. In the same way, training seminars, demo breakfasts and professional trade fairs help our teams to remain in constant, direct contact with customers and provide feedback on their expectations.

(*) CA Indatech, founded in 2009, is led by Sylvie Roussel and Fabien Chauchard

Online sales: set up an account, search for what you need, click on the shopping trolley and it's on its way!



THE MOBILE PHONE, THE NEW TOOL FOR SHOPPING, EVEN IN INDUSTRY

The Chauvin Arnoux website naturally benefits from "responsive design". As a result, it can be viewed on a tablet or smart phone, allowing anyone to buy the equipment they need online, even if they are away from their office. European consumers are increasingly using their mobile phones and tablets for shopping. In France, sales via mobiles represented 10% of the e-commerce market in 2015. By 2016, this figure had reached 30%. The future looks bright.

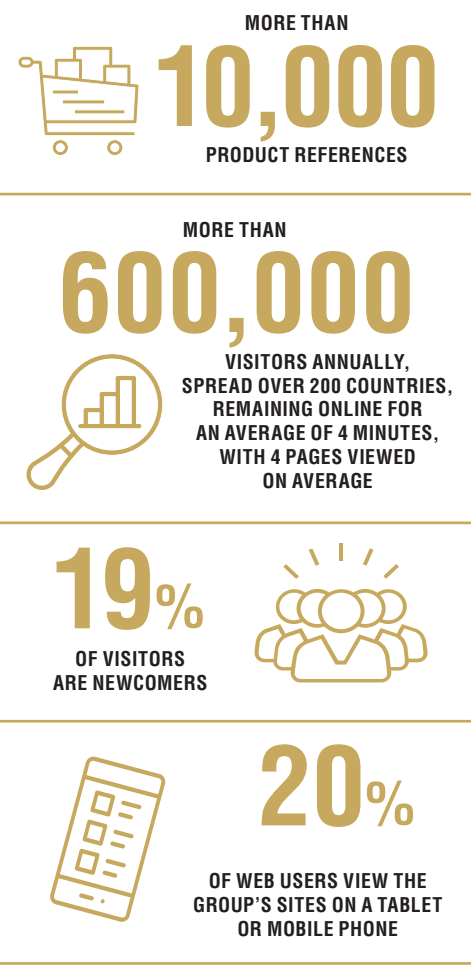
First developed in the English-speaking world and particularly effective, meeting with wide approval among the public, online selling has become an important tool for boosting sales. In the last few years, e-commerce websites have sprung up all over the web and the offering has been expanded. Although it has been slower to take off in B-to-B and B-to-C, e-commerce has enjoyed considerable growth in industry, particularly thanks to the major mail-order firms for business, who have pioneered this approach. At the end of 2018, the Chauvin Arnoux Group will invite you to purchase part of its offering online. This will involve a complementary offering aimed at customers who do not have access to the professional sales networks or who want to buy their products directly from the manufacturer.

Capitalizing on its ten years of experience in online sales via its PromoMeasure website, dedicated to selling reconditioned or demonstration measuring instruments, and to celebrate its 125th anniversary in 2018, Chauvin Arnoux is launching its own e-commerce website. Rather than a dedicated online sales website, Chauvin Arnoux has preferred to set up a selective offering for sales online, whether they involve the Chauvin Arnoux/ Metrix® brands for portable instrumentation, Chauvin Arnoux Energy (for fixed electrical equipment) or the

CA Pyrocontrole brand's temperature control range. The e-commerce site is therefore part of the overall Group website.

INSTRUMENT AVAILABILITY AND QUICK DELIVERY

For the moment, this covers three of the Group's five companies: Chauvin Arnoux, Chauvin Arnoux Energy and CA Pyrocontrole (plus some of CA Manumasure's metrological services later in 2019) with the guarantee that the instruments are available and will be delivered quickly. The aim of this new e-commerce website (<https://www.chauvin-arnoux.com>) is to optimize all the ordering channels (telephone, fax, mail, email, points of sale and internet). The three possible points of entry, by the products (catalogue and news), by the company (companies, searches, orders, country of delivery, etc.) and by contact/identifier, make it easy to navigate in the Group's website. Each product available for sale is clearly shown by a "shopping trolley" e-commerce pictogram. The various options or accessories available are clearly identified. Users register for a customer account and can then access their trolley or purchase history at any time. The only constraint is that the purchaser's country and the country of delivery must be the same.



Trade fairs Stands designed above all for our customers!



FAVOURING A WARM WELCOME, DIALOGUE AND DISCUSSION...

Our main aim is to favour a warm welcome for our visitors and give priority to the quality of the dialogue and experience sharing. Putting the customer at the centre of our preoccupations has been an integral part of the Chauvin Arnoux Group's DNA for 125 years.

INTERACTIVE STANDS IN WHICH THE VISITOR IS AN ACTOR...

A large number of our instruments are available on our stands so you can try them out interactively. To give you a better idea of our products' functions and technological strengths, demonstrations are also proposed by our teams.

Through its 5 companies, the Chauvin Arnoux Group participates in more than 80 professional trade fairs every year in more than 10 countries.

Our presence at these trade fairs has been designed to favour interaction between the Group's customers, products and companies. Because we want our stands to meet your expectations and needs, we have given priority to three complementary objectives: aesthetics, welcome and interactivity.

STANDS WITH A GRAPHIC DESIGN SPECIALLY FOR YOU...

Our stands aim to be aesthetic, graphically interesting and modern. The goal is to communicate the Group's values: history, close relations with customers and innovation. The stands are lively and interactive to encourage visitors to spend a privileged moment in a forward-looking universe, while respecting the Group's "pioneering" past. Our various product ranges are integrated perfectly and strongly highlighted in this graphical universe.



CHAUVIN ARNOUX'S PRODUCTS ARE FREELY ACCESSIBLE FOR TESTING ON OUR STANDS



WORTH KNOWING

SOCIAL MEDIA: INTERACTIVE COMMUNICATION

The Chauvin Arnoux Group and its 5 companies are present on the main social media (Facebook, Twitter and LinkedIn), regularly posting content to foster interaction with the user communities: major events, product launches, attendance at trade fairs, awards received, product demonstrations. Chauvin Arnoux also has its own YouTube channel, containing demonstrations, product presentations and tutorials.



Facebook: <https://www.facebook.com/ChauvinArnouxFrance/>



Twitter: <https://twitter.com/ChauvinArnouxFr>



LinkedIn: <https://www.linkedin.com/company/99353>



YouTube: <https://www.youtube.com/user/chauvinarnoux>

Simplified communication

More relevant content



AT THE CORE OF OUR COMMUNICATION STRATEGY: THE CUSTOMER

At Chauvin Arnoux, we have been developing content to meet your needs for more than 10 years. Relevance and accessibility are the two main criteria underpinning all our content so that you can get the latest news in just a few clicks.

AT THE HEART OF OUR BUSINESS: THE PRODUCT

It is our choice to place you at the core of our communication. Customer relations are essential for the success of a company. The aim of our communication is to give meaning to our products by offering you relevant, attractive, differentiating content. To give you the clearest possible idea of our products' uses and features, we have developed Case Studies. The goal of this type of content is to use practical cases to explain how to use our products in various situations. You can then immediately see how the use of your product fits your own activity. You can find all our Case Studies on our website www.chauvin-arnoux.com in the "Publications" tab.

ACCESS TECHNICAL AND COMMERCIAL INFORMATION ON OUR DEDICATED WEB PAGES



DIGITAL MEDIA, HELPING TO BRING US EVEN CLOSER

Our aim is to extend our responsive, proximity-based communication strategy across the digital media to keep you informed "in real time". To achieve this, we are developing mini-websites for the launches of new products or product ranges. The latest, the Metrix® Oscilloscopes site, focuses on our digital

oscilloscopes with 4 isolated channels and the Scopix IV® range. These mini-sites group all the information on these products and give you access to special content: demonstration videos and real-life situations placing the product in the context of its use. Interactive landing pages also give you access to the information by the shortest route. By making our communication digital, we aim to meet your needs with a single click and without wasting any time.



#2 The Group's companies are evolving alongside you

Indatech A start-up joins the Chauvin Arnoux Group

Indatech, a company already acknowledged as one of the leaders in spectroscopic measurement in pharmaceutical, biotechnological and chemical processes, has become the Chauvin Arnoux Group's newest subsidiary.

Founded in 2009 by Sylvie Roussel (Managing Director) and Fabien Chauchard (Technical Director), Indatech is a young, high-potential company which enjoyed success with very high-speed, multi-point measuring products of which it is the sole manufacturer, an innovation now acknowledged worldwide.

HEARD OF SRS?

Spatially-Resolved Spectroscopy is used for in-line analysis of complex media, measuring the quality of a process (powder, capsule, tablet, etc.) and ensuring it has the right chemical and physical composition (concentration, hardness, etc.). Technical Director Fabien Chauchard developed this technology during research for his thesis at the French National Research Institute of Science and Technology for the Environment and Agriculture (IRSTEA).

Complex media like emulsions or solutions containing solid particles simultaneously absorb and diffuse light. To improve the quality of the data collected and simultaneously obtain details of the physical and chemical properties of the compound measured, specific acquisition systems are required.

It is in this high-tech context that Indatech designs, manufactures and markets spectroscopic process sensors (optical sensors) equipped with SRS technology for checking industrial processes and products. This technology is applicable both to large production facilities capable of manufacturing 600,000 tablets/hour for the pharmaceutical sector and to disposable bioreactors producing cell cultures for biotech companies. Today, by joining the Chauvin Arnoux Group, Indatech has linked up with a solid industrial company whose international reach offers the possibility of extending customer support and services across borders, in the context of Industry 4.0.



Making an idea
into an industrial
success



Sylvie Roussel,
Managing Director,
CA Indatech

"We succeeded in making a prototype based on an idea in a thesis and then a product which needed to be industrialized to boost the credibility of our know-how among the major French and international groups in the pharmaceutical and chemical sectors. That's why we joined the Chauvin Arnoux Group.

Our team is made up primarily of engineers and researchers, all passionately interested in a profession going through a period of major industrial change. We started in a business incubator and have now reach an extremely exciting phase of development. Today, with the application of spectroscopy to cereals and the integration of Tellus into our teams, we are also opening up to the agri-food market. So we're confident as we take this major step."

ASURAYAN



SPECTROSCOPIC PROCESS SENSORS FOR CHECKING INDUSTRIAL PROCESSES AND PRODUCTS IN COMPLIANCE WITH THE GMP PROCESS STANDARDS (FDA AND EMEA).



1893



Foundation of the company by René Arnoux and Raphaël Chauvin

1969



Foundation of Manumasure, a company specializing in metrology and regulatory testing

1997



Metrix and Pyrocontrol join the Chauvin Arnoux Group

1998

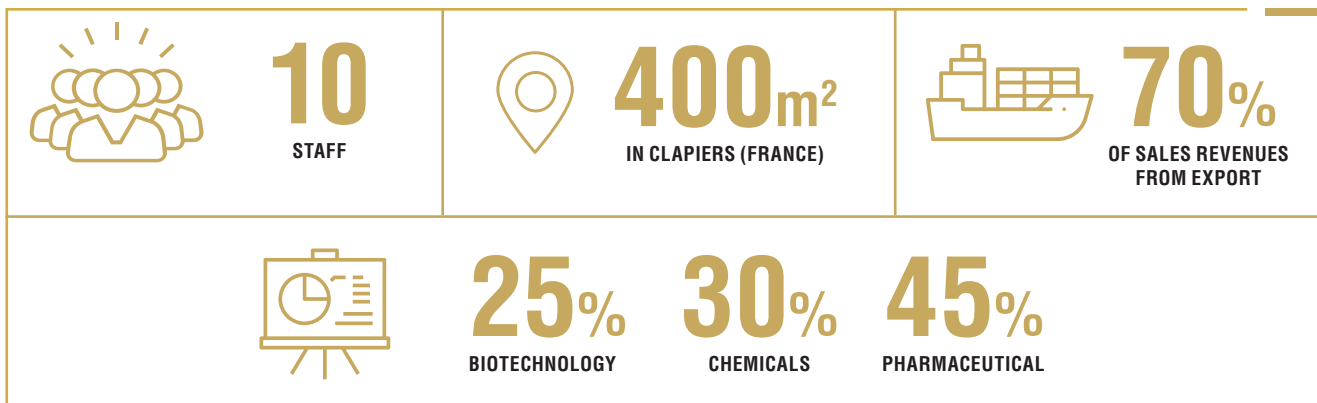


Acquisition of Enerdis, the expert in energy efficiency solutions

2018



Indatech, the leader in spectroscopic measurement, joins the Group



Chauvin Arnoux The right measurements for a healthy environment



FROM A HEALTHY ENVIRONMENT TO THE SEARCH FOR ENERGY PERFORMANCE

Improving energy performance has become a major issue and the thermal regulations are becoming increasingly demanding. Energy consumption will therefore depend on the criteria used for the indoor environment (temperature, lighting, air-conditioning), as well as the way the building is designed and managed. To identify potential causes of heat loss (thermal bridges, insulation faults, etc.), troubleshooting professionals are increasingly using thermal cameras, which provide much richer, more detailed images than the indication given by a simple infrared thermometer. The new C.A 1954 DiaCAM2 thermal camera from Chauvin Arnoux is particularly effective. Using a simple Bluetooth connection, it recovers all the measurements from all the environmental measuring instruments which may be connected to it. This enables users to link the thermograms from the camera to the dew point, humidity and temperature measurements taken by the environmental measuring instruments

Indoor air quality, noise, humidity, dust, heat: whether in public buildings, professional buildings or private areas, our lifestyles mean we spend most of our time indoors. Measuring the quality of the environment in which we live has therefore become a major issue because it concerns everyone.

PRECAUTIONARY PRINCIPLE: A HEALTHY ENVIRONMENT

Whether in a private or professional context, the applicable European regulations define the acceptable thresholds for air pollution, water, noise levels and electromagnetic emissions to safeguard people's well-being and health. The precautionary principle guaranteeing human health is based on particularly demanding regulatory tests. Checking the temperature, measuring the air speed and flow rate, checking the pressure, monitoring air quality, calculating the wind speed, measuring the humidity, locating electromagnetic fields ... for each use and for each professional, Chauvin Arnoux proposes an entire range of solutions. For offices and collective areas, childcare nurseries, hospital accommodation and private homes, Chauvin Arnoux commercializes pro-



C.A 1227 / 1246 / 1110 / 1822 THE ENVIRONMENTAL PRODUCT RANGE

ducts for checking the ambient environment to safeguard people's comfort and health. Thermo-hygrometer, thermo-anemometer, luxmeter, sound-level meter, contact thermometer: all instruments which are used to check the operation of air-conditioning and ventilation systems and measure noise pollution, CO2 levels, humidity and lighting.

CAMERA C.A 1954 DIACAM2 WHEN COUPLED WITH THE DEW POINT VALUE, THE ISOTHERM ALLOWS YOU TO DETECT THE AREAS THREATENED BY MOULD



Chauvin Arnoux is handling the **shift to digital** with its distributor partners



From the manufacturer through to the end-user, everything is done to enable you not only to easily identify our products on our distributor partners' websites, but also to find enhanced content to predefine the design of all your installations. The secret? FAB-DIS.



FAB-DIS is a standardized file format set up seven years ago by the electrical sector with the aim of facilitating data exchanges

between manufacturers and distributors. This ensures that you can find the required information more easily, and that it is reliable, constantly updated and complete!



LIMITING ERRORS, SUPPLYING ALL THE MEDIA

The Chauvin Arnoux Group's five brands exchange a lot of data with its distributors. These data are often the same, but most of the time, they are in very different forms. These multiple formats for identical content are a potential source of errors, however. FAB-DIS proposes a common, structured format (.xls) accessible to all via a single point of entry. This facilitates everyone's work when they need to provide

content for their various media (print, web, etc.) as they only have to complete a single file per product. The data can then be processed quickly and easily, whatever the media, with a very low risk of errors.

TAKING ADVANTAGE OF THE SHIFT TO DIGITAL

Because the data it contains is so rich, FAB-DIS is particularly useful in your daily work, helping you to advise your customers better, choose your offers better and use the products better. With the spread of e-commerce and growing use of the data on tablets and smartphones or, to sum up, now that there is "digital everywhere", it is crucial for the Chauvin Arnoux Group to provide you with content rather than just a reference to order: photos, videos, detailed technical data, certification and verification of our products' compliance with the latest regulatory requirements. This is a major advantage which gives you a good view of the market offering via our distributor

	1 EXCEL FILE
8 ORGANIZED DATA BLOCKS	
	1,500 REFERENCED PRODUCTS

partners' websites and enables you to propose product solutions with all the commercial, marketing and regulatory data as well as the associated media before launching your projects. This saves time and, above all, highlights our professionalism by providing tools with genuine added value.



FIND ALL THE CHAUVIN ARNOUX GROUP'S OFFERING ON OUR DISTRIBUTOR PARTNERS' WEBSITES, WHICH REFERENCE MORE THAN 2,000 PRODUCTS

Chauvin Arnoux Energy

New identity for the energy market



Patricia Rouquette,
T&D Market Manager,
Chauvin Arnoux Energy

Improved visibility and greater internationalization with a new name for the Group's metering and energy intelligence subsidiary: Chauvin Arnoux Energy.



In 2018, Enerdis has become Chauvin Arnoux Energy. CA, for

Chauvin Arnoux, the parent company bearing the owner's name, and Energy to refocus on the company's core expertise. The clarified link to the Group should help to boost the image of the fixed instrumentation branch by capitalizing on its reputation in France, built up over a period of 125 years.

The product markings will be modified gradually, but the organization remains unchanged.

Internationally, the aim of this repositioning is to refocus the brand's communication. In order to differentiate it from the Group's other activities, its specialization in measurement for the energy chain is symbolized by the term "Energy".

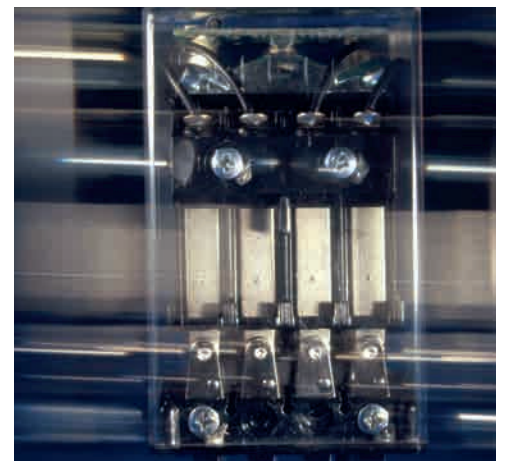
A STRATEGY BUILT AROUND ENERGY

Continuity is being preserved: the product ranges designed and developed by the R&D team at Antony (France) where Chauvin Arnoux Energy is located are not changing, but simply evolving. Chauvin Arnoux Energy designs fixed measuring instruments and equipment for the energy, naval and rail markets, all sectors where the requirements and constraints are very strict.

The energy sector is vast, covering the whole chain from electrical power generation (nuclear, thermal, hydro-electric, renewables, etc.) to transmission across the country as HV/MV/LV/ELV, ending with distribution to the end-users.

The growth of renewable energies has spurred Chauvin Arnoux Energy to expand its "power quality measurement" offering to meet these emerging needs. For example, with wind power, it is essential to monitor its impact on the grid. This led to the design of the MAP range, soon to be followed by other products, because Chauvin Arnoux Energy is anticipating this requirement and providing the right solution at the right time.

"The Chauvin Arnoux Group has proven its competence in this field. The RE 3000N and OKB 184 relays, for example, are K3-qualified because of their good resistance to earthquakes and were chosen right from the start for the French nuclear power stations," explains Patricia Rouquette, T&D Market Manager at Chauvin Arnoux Energy. "Our skills and positive feedback mean that our product offerings are now better focused, including in sectors where the constraints are severe. Thanks to our know-how, our manufacturing quality and our rigorous monitoring, we have excellent visibility. Technically, we can handle it! Incidentally, we have been awarded a prolongation of our Saphir tariff meter's qualification by Enedis."



**NUCLEAR, ENERGY, RAIL, INDUSTRY:
THERE ARE RELAYS FOR EVERY SECTOR**

1, 2, 3... Meter, save!



Monitor your energy consumption in real time and optimize your electrical network with the MEMO meter range, the ideal, economical solution covering all your applications with just a few references!

THE MEMO METERS

MEMO submeters are equipped with an easy-to-read display and offer ideal ergonomics for quick implementation without parameter settings on the single or three-phase feeders with direct connection up to 80 A. Their compact dimensions (DIN modules) make them easy to integrate in an electrical control box or energy data retrieval system thanks to their pulse outputs.



Compliant with the latest thermal regulations and offering Class 1 accuracy, MEMO submeters

are suitable for monitoring all the different uses (lighting, sanitary hot water, heating, etc.) encountered in sectors such as the small tertiary and co-owned residential sectors, marinas, camping sites, etc.

3 MODELS

Simplified stock to cover the most widespread low-voltage electrical feeders.



MEMO MD32

for single-phase networks up to 32 A
Réf. P01330740



MEMO MD65

for single-phase networks up to 65 A
Réf. P01330741



MEMO TD80

for three-phase networks up to 80 A
Réf. P01330745

THE MEMO POWER MONITOR

For industrial applications, the MEMO P200 power monitor is an essential tool which gives maintenance departments a clear, instantaneous view of their electrical network.

Its "all-in-one" screen offers 3 easy-to-read display lines to show the three-phase network's behaviour and a further line dedicated to the total consumption. The MEMO P200 is simple to use and has 4 buttons on its front panel for quick navigation and start-up. Interoperability with any system thanks to the built-in Modbus RS485 output means that the product can be used and controlled remotely. The power monitor is equipped with an on-off output which simplifies interfacing in a supervision or control architecture.

It can manage 4 different tariffs, monitoring your consumption according to the energy price constraints.

2 MODELS

Simplified stock to cover all types of power supply constraints.



MEMO P200

for 24 Vdc power supply
Réf. P01330826

MEMO P200

for 230 Vac power supply
Réf. P01330825

CA Pyrocontrole Standardizing tailored products to serve you better



CA Pyrocontrole is an acknowledged player in the tailored temperature sensor market. As each industry, process and customer site has specific requirements, the sensors are usually unique. Using a resolutely industrial, customer-oriented approach, CA Pyrocontrole is standardizing while retaining its totally-tailored offering.

Standardization offers customers significant advantages:

- Structured expression of the offering, making it easier to understand.
- Shorter design, adaptation and production lead times.
- Benefit from feedback for greater control and quality.

This approach led in 2018 to the production of a new Sensors Catalogue with more than 300 pages organized in 15 product chapters. On the basis of a standardized design, customers or their sales staff can configure the sensor to match their specific needs (choice of materials, lengths, head type, transmitter, etc.).

This catalogue is now the central spar of CA Pyrocontrole's industrial pyrometry offering. It will enable the company to strengthen even further its image as an industrial player in the tailored sensor market.

Furthermore, to reduce its cycle times while retaining close control over its production, the Group has continued investing in additional numerically-controlled lathes. To make them even more responsive, CA Pyrocontrole's machining

activities also draw on the Group's significant resources in Normandy. Standardization will also help us to take full advantage of this complementarity between workshops by facilitating transfers.

This standardization project is a major step for the company. It matches the market's requirements in terms of reduced lead times and greater control over quality.

HEAD OFFICE: MEYZIEU, NEAR LYON (FRANCE)

BUSINESSES: PYROMETRY, INSTRUMENTATION, METROLOGY

COMMERCIAL COVERAGE: 70 COUNTRIES



90
STAFF

40%
CHEMICALS/
PETROCHEMICALS

25%
NUCLEAR

15%
GLASS

10%
METALLURGY

10%
OTHER

PYROmodules id50 innovation: simplifying R&D and reducing maintenance costs in the Petrochemicals sector.

The id50 offering is without any doubt one of the major successes in the standardization of the sensors developed by CA Pyrocontrole. It is above all a modular system where each part of a sensor can be changed without affecting the other technical parts: head, assembly, sensor, etc.

Developed for new installation work and for Atex d/ia temperature sensor maintenance, the PYROmodules id50 system is challenging habits, simplifying R&D and reducing maintenance costs.

An innovative, economical solution which also enables you to:

- Design tailored temperature sensors to match the specifications of your application.
- Take a different approach to maintenance work. The id50 innovation gives makes it possible to only replace the faulty parts, using one of the id50 modules.
- Save money by changing only the faulty part

Another major advantage of this smart system is that the id50 modules can be installed on all types of Atex sensors, whatever the brand, while maintaining their Atex certification.



DOWNLOAD THE PYROMODULES ID50 BROCHURE



Stéphane Guillemenot
Logistics Manager,
CA Pyrocontrole

WHAT IS YOUR ROLE AS LOGISTICS MANAGER?

"It's my job to ensure that the supply chain is properly managed, monitoring its implementation, operational management and compliance with the sequence of tasks in the field. This means making the flows as smooth as possible, scheduling the orders, optimizing our raw materials procurement and organizing business follow-up."

One of my goals is to set up solutions to help CA Pyrocontrole enter a new phase by combining quality and responsiveness, while giving priority to customer satisfaction (Industrial Pyrometry and Nuclear)."

WHAT IS THE LOGISTICS DEPARTMENT'S POSITION AT CA PYROCONTROLE ?

"It has a central role in our highly specific activities. We are particularly closely linked to R&D and Sales. We have to be able to gather the information from the right places to meet our customers' needs."

WHAT ARE THE MAJOR INITIATIVES HELPING CA PYROCONTROLE TO TAKE THIS NEW STEP?

"The structuring initiatives resulting from our strategy for 'standardization of tailored products' such as the new Sensors Catalogue, the id50 innovation and Group synergy, are really key factors for success."



A NEW CATALOGUE FOR A NEW DIMENSION!

This totally redesigned catalogue presents all the expertise and diversity of CA Pyrocontrole's temperature sensors offering.

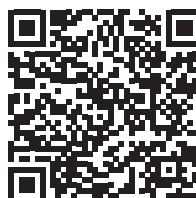
Sheathed sensors with interchangeable elements compliant with AMS 2750, ATEX, etc.

Discover all CA Pyrocontrole's solutions and use the product configurator linked to each sensor to customize your sensor according to your own criteria.

Check it out!



DOWNLOAD THE PDF VERSION OF THE CATALOGUE



NEW

To save time, CA Manumasure is coming to you!

CA Manumasure, the Group's metrology and regulatory testing branch, is relying on proximity and customer confidence.

With its 12 technical centres spread all over France to keep close to customers and its vehicle fleet to visit them, CA Manumasure handles measuring instrument metrology and measurements on site or in the lab, also proposing an electrochemistry offering. Equipped with mobile laboratories, the teams travel to customers' sites to provide the required metrology services and regulatory tests (air, water, noise). Our teams come to you to deal with your requests.

MULTIPLE, SHARED INTERESTS

- Optimization of equipment downtime.
- Direct dialogue with the customer concerning the instrument dysfunction.
- No risk of damage to the equipment due to transport.

CA Manumasure has now succeeded in exporting its offering beyond the French national market, providing services in the overseas French departments and territories, as well as other countries like Switzerland, Belgium and African states.

ASK FOR A QUOTE ONLINE



Developed in 2017, the online quotation form is a tool which is part of the new strategy for CA Manumasure's website.

Enter your various requirements online to obtain a price offer as quickly as possible. Metrology, installation inspections, environmental measurements, etc.: you can gain access to all these services with just a few clicks.

The online quotation tool saves you considerable time. For CA Manumasure, this very successful new tool improves its customer service and enables it to offer proactive services linked to your activities.

MANAGE YOUR INSTRUMENT FLEET WITH OUR NEW SOFTWARE

New instrument fleet management software will be commercialized in the second half of 2018 to help you with regular calibration of your measuring instruments. This new software, designed entirely in-house to meet customers' requirements as closely as possible, will give you access to multiple applications:

MANAGEMENT

- Fleet inventory.
- Identification of the instruments.
- Possibility of viewing and extracting the life cycle tracking datasheet in PDF format.

OPTIMIZATION

- Scheduling of the operations by site / department / individual.
- Optimization of the intervals between calibration operations and customized advice.
- Real-time location of the instruments.

CONTROL

- Automatic email reminders for instrument calibration.
- Identification of instruments whose calibration is late.
- Statistics on the fleet's status between two dates (year, quarter, etc.).
- Simple and fast with the graphical tools offered by the software.



For your online quotation: www.manumasure.com/formu/devis.php

DISCOVER OUR COFRAC ACCREDITATIONS



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TÉL: 01 75 61 01 80
FAX: 01 47 33 28 02
E-MAIL: INFO@MANUMESURE.FR

BUSINESSES:
METROLOGY – ENVIRONMENTAL
MEASUREMENT – INSTALLATION
INSPECTIONS – INDUSTRIAL
MAINTENANCE



100
STAFF

26 000
ON-SITE OPERATIONS/YEAR
36 000
LABORATORY OPERATIONS/YEAR

12
TECHNICAL
CENTRES



1
MOBILE TEAM
OF EXPERTS



THE IDENTITY OF THE CA MANUMESURE BRAND

Our visual identity flocked on our vehicles is easy to identify and symbolizes the precision of our measurements and the support provided by our teams for your projects.

Our global metrology and regulatory testing offering enables us to work in three sectors: industry, the environment and health.

Our 12 COFRAC accreditations in our labs and on customer sites in the electrical, mechanical, physical and electrochemical fields, plus our two MASE accreditations (safety management on hazardous industrial sites) bear witness to our impartiality and the technical expertise which we offer you.

Our 12 technical centres spread over the whole of France and our mobile fleet enable us to stay close to you while maintaining the ability to meet your needs as quickly as possible.



Our goals are to promote and strengthen CA Manumasure's identity and know-how alongside you.

Fully equipped, they enable us to go out to meet you and provide you with the expertise you expect: metrology and characterization of your equipment on your site, regulatory testing of air, water and noise or inspection of your electrical installations.

The mobility of our team helps to boost the company's visibility. Our fleet of 30 vehicles, including mobile laboratories, commercial vehicles, troubleshooting vehicles, etc., is constantly on the road in France to meet you, while giving us greater visibility and brand recognition.

We are strengthening our presence alongside you in the field and on the market



WORTH KNOWING

ELECTROCHEMICAL MEASUREMENTS

CA Manumasure proposes a complete range of standard reference solutions:

- pH buffer solutions.
- Redox buffer solutions.
- Standard reference solutions for conductivity measurements.



Regis Raelina
France and Export
Sales Manager,
CA Manumasure

"We are determined to keep growing and always go higher. We are on a market where the only thing we don't know is what its limits are. Our main strategy involves constantly seeking to adapt while anticipating the requirements linked to that market. For CA Manumasure to grow, we need innovation but we also have to develop our human capital. That capital is the result of the links between CA Manumasure and the Chauvin Arnoux Group."

"The online quotation tool is a great example of our Group philosophy. Its roots lie in internal discussions. The Communication Department then stepped in to develop and implement it so that it is referenced in the search engines and therefore appears as one of the replies to people's queries on the web. This has encouraged us to constantly rethink our business, seeking innovations on a market where the potential matches our objectives."

#3 Our skills track the market trends

The Chauvin Arnoux Group outside **our borders**

Once again with the aim of satisfying our customers, including internationally, the company is producing communication media and some product interfaces in 14 languages:

- French
- English
- Dutch
- Romanian
- Russian
- Czech
- Polish
- Turkish
- Thai
- Vietnamese
- Spanish
- Swedish
- Finnish
- Portuguese

The international catalogue presenting the new products and top instruments from the Chauvin Arnoux Metrix brands is translated into 14 languages. The Group has chosen this approach to make it easier for all our customers to understand the specifications and product performance data, wherever they may be.

Moreover, some catalogues are customized with the logos and general details (address, telephone number) of our suppliers, such as Kwx BVBA, Sadinter-Sogecomex, Micronix, etc.



INTERNATIONAL CATALOGUE IN THAI



1975



Foundation of the Italian subsidiary

1987



Opening of the Spanish and British subsidiaries

2000



Chauvin Arnoux starts doing business in China through its subsidiary Chauvin Arnoux Pujiang

2002

Opening of a subsidiary in Lebanon to cover the Middle East

2003



Foundation of the Swedish subsidiary to cover Scandinavia



Michel Gilger

Managing Director of Chauvin Arnoux Pujiang Enerdis (China)

"We are on a market where we have to adapt our business methods. The main aim is to cover the whole territory, which is why we have divided this market into 3 geographical areas: north, centre and south. Each of these areas is led by a Sales Manager. The purpose of this organization is ensure we are present on the market, but also to respond as quickly as possible to our customers' requests so that we can give them quality service. Our products are considered top-of-the-range which means we have to highlight their superior technical features. To achieve this, our sales teams are supported by our technicians so that we can constantly raise our performance on this increasingly competitive market. Our future objective is to develop our distribution system by increasing our partnerships with local distributors. Thanks to a network of 30 distributors across the whole country, we are determined to step up our presence on a market whose growth is in line with our goals."

MULTILINGUAL FIRMWARE

In international markets, understanding the firmware is essential. This is why multilingual firmware has been developed for the Qualistar+ range, for example. The firmware gives users access to a simplified interface available in 27 languages. This is a unique performance feature because none of the competing products offers a firmware interface with as many linguistic possibilities.



QUALISTAR+ MULTILINGUAL SIMPLIFIED INTERFACE

CHAUVIN ARNOUX ADAPTS TO EACH MARKET

With 10 subsidiaries worldwide, Chauvin Arnoux is an established player on the international scene. Its Chinese subsidiary Chauvin Arnoux Pujiang Enerdis needs to grow constantly to meet the market's requirements as closely as possible.

Chauvin Arnoux, an active partner for **education**



Drawing on its close, privileged links with the French National Education System, the Chauvin Arnoux Group supports the players in education by participating in a large number of events, publishing the review *Les Cahiers de l'Instrumentation* and taking advantage of a measuring instrumentation offering adapted to the teaching requirements. Measurement Certification and a special website for students and teachers have been set up to accompany the professionals of tomorrow.

Every year, the Chauvin Arnoux Group acts as a partner supporting a large number of events linked to the education sector to promote technological, professional and scientific education, by lending measuring instruments, proposing members of top management to participate in juries or supplying prizes.

THE CLUB DU MESURAGE (MEASUREMENT CLUB), POOLING SKILLS

In 2000, Chauvin Arnoux set up the "Club du Mesurage" (Measurement Club), a genuine think tank working at the interface between schools and business to create a constant flow of information concerning the changes to the standards, the new market requirements and the applications, particularly when they are new.

Open to all teachers, this Club fosters genuine debates, but it also creates a crossroads pooling the skills of two communities which share two objectives:

- Mastery of measuring techniques in order to understand and explain them better,
- Information prior to the changes to ensure that pupils and students are quickly operational when they start their first job.

The articles of the "Club du Mesurage" were filed in 2000, bringing together school inspectors and Chauvin Arnoux staff members. The club is under the aegis of the National Education inspectors for Science and Industrial Techniques. The club meets annually and works with the Editorial Committee to produce the Chauvin Arnoux's magazine for the Education Sector, "*Les Cahiers de l'Instrumentation*".

"LES CAHIERS DE L'INSTRUMENTATION": THE EDUCATION MAGAZINE

The magazine *Les Cahiers de l'Instrumentation* ("Instrumentation Review", published annually) is a collection of practical exercises for teachers and their students which set up situations involving measuring, test and energy control solutions and instruments in case studies.

Dedicated to initial and higher scientific, professional and technological education and designed by teachers and school inspectors, this magazine helps teachers and their students to gain an idea of the scientific processes and instruments on the market. This magazine is funded by the Chauvin Arnoux Group, which also handles the layout and free delivery to teachers.

DEDICATED MEASUREMENT CERTIFICATION FOR STUDENTS AND TEACHERS

To deal with the new constraints and accompany tomorrow's professionals, Chauvin Arnoux has set up a Measurement Certification programme in co-operation with the French National Education System.

The aim of this certification is to validate the students' knowledge concerning the role of measurement and how to handle it. It is intended for students doing A-levels and higher education diplomas in the electrical engineering, energy and maintenance sectors.



 **See our Measurement Certification:**
<http://certification-mesure.chauvin-arnoux.com/>

APPLICATION MEASUREMENTS... SIMULATION EXERCISES FOR EDUCATION

Chauvin Arnoux's Application Measurements website aims to simulate real-life situations in various sectors of activity: industry, tertiary, habitat, power generation, transmission and distribution, infrastructure, renewable energy and vehicles. In each application, the instruments are linked to their measurement principle, their standards and the reference frameworks. Video tutorials and simplified user guides have also been developed for this purpose. This application is freely accessible to support students in their everyday work.



DISCOVER THE SITE!

A COMMON RESEARCH AND INNOVATION LABORATORY TO OPTIMIZE ENERGY EFFICIENCY IN INDUSTRY

The team at Poitiers University's Laboratory of Computing and Automation for Systems (LIAS) has joined up with Chauvin Arnoux to set up IONESCO, a "LabCom" (common laboratory) dedicated to energy efficiency. LabComs are part of an initiative launched several years ago by the French National Research Agency to foster links between SMEs and universities.

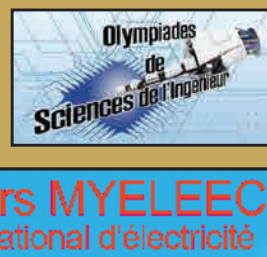
The research carried out in the IONESCO LabCom will help to design smart developments and technologies for incorporation into future industrial measuring instruments by sharing expertise between young engineers, science students and the R&D teams of the industrial company Chauvin Arnoux.



 **PARTNER OF NUMEROUS EDUCATIONAL EVENTS EVERY YEAR**

WORTH KNOWING

Sponsoring, partnerships, exam juries, etc.



New horizons for measurement



A COMPLETE RANGE OF STANDARD REFERENCE SOLUTIONS FOR PH, REDOX AND CONDUCTIVITY MEASUREMENT

The Chauvin Arnoux Group is constantly seeking new markets, new potential and new offerings for development. In this context, the Chauvin Arnoux Group is expanding its expertise and positioning itself on multiple, varied markets alongside electrical measurement. Far from its usual hunting grounds among electrical signals, Chauvin Arnoux is facing the challenges of tomorrow.

FROM THE MEDICAL SECTOR TO THE BIOPHARMACEUTICAL INDUSTRIES



Through its subsidiary CA Indatech, specialized in classic spectroscopy and hyperspectral imaging, Chauvin Arnoux meets the requirements of the pharmaceutical and chemical industries. CA Indatech develops and produces optical sensors for real-time, in-line testing of processes based on turbid liquids, powders and solids with non-destructive in-line measuring tools offering very high throughput.

Chauvin Arnoux, meanwhile, is proposing a new "Electrochemistry" range, including pH-meters for checking pharmaceutical products.

CA Manumasure provides metrological testing and periodic qualification of the equipment in medical analytical laboratories, hospital laboratories, the pharmaceutical and cosmetic industries and test and measurement equipment. CA Manumasure also proposes comprehensive management of measuring instrument fleets.



TELLUS, FOR ASSESSING CROP QUALITY, ANALYSING CEREALS, OIL SEEDS, FLOURS AND LIQUIDS IN LESS THAN ONE MINUTE.

AGRI-FOOD



Chauvin Arnoux designs grain analysers, as well as pH-meters for monitoring the evolution of numerous products (milk, cheese, wine) or defining their quality (tomatoes, etc.). Chauvin Arnoux's thermo-hygrometers and thermal cameras can be used to check that the development or storage constraints are respected...

The Tellus grain and oil-seed analyser can be used to assess the quality of the harvest and analyse cereals, oil-seeds, flours, liquids, etc., in under one minute.

From agriculture to fish-farming, our pH-meters are used to check the pH of the soil and water for abundant, healthy crops... Chauvin Arnoux's oximeters can be used to check water quality by measuring the level of dissolved oxygen.

FOR CEMENT WORKS...

CA Pyrocontrole develops rugged, reliable measuring instruments for optimizing production, such as dustproof, shockproof temperature sensors which withstand extreme temperatures.

These sensors are also used at each step in cement manufacturing, from crushing through to storage. The relays from Chauvin Arnoux Energy, developed for difficult environments, are easy to install on the processes and automated systems encountered in this sector.



... AND THE ENVIRONMENT

Environmental measurements are needed in all sectors, including the tertiary sector, industry and housing. A large number of instruments are used to monitor environmental data: luxmeters, sound level meters, thermo-hygrometers, etc.

Monitoring the ambient air means living in a healthy environment. The C.A 1510 can be used to check indoor air quality. The use of a thermal camera to diagnose thermal problems also helps to improve the comfort of the people present.

With its 25 years' experience in air quality analysis, metrology and regulatory testing, CA Manumasure also provides the following operations in compliance with the applicable standards:

- Noise level measurements on the property lines of industrial sites.
- Sampling and analysis of water quality according to specifications and quality control of aqueous effluent and rainwater.

Indoors or outdoors, CA Manumasure covers all types of measurements: air, water, gas, noise, dust, pollutants or hazardous substances.



IN THE FIELD, CHECK THE HUMIDITY AND TEMPERATURE ANYWHERE WITH THE C.A 1246 LOGGER THERMO-HYGROMETER



MEASURE AIR SPEED AND FLOW-RATE IN ALL SITUATIONS WITH THE C.A 1227 LOGGER THERMO-ANEMOMETER



WORTH KNOWING

CA MANUMASURE HAS COFRAC "TESTS" ACCREDITATION

as per the "LAB REF 22 Air Quality, Fixed-source Emissions" reference framework and in compliance with the QAL2 and AST procedures.

Environmental measurements:

- Air and water analysis
- Noise measurement



Nuclear A market with a great future at the Chauvin Arnoux Group



François Drouin
Managing Director, CA Pyrocontrôle

Involved in the market ever since the first French nuclear power plants were commissioned, the Chauvin Arnoux Group continues to supply its products for maintenance, improved safety as in the case of the projects set up at the ASN's request after the Fukushima accident, and extension of the existing nuclear plants' life spans. The civilian nuclear sector requires suppliers to comply with strict specifications in terms of qualification, traceability, quality and durability. The longevity of the Chauvin Arnoux Group, which has just celebrated its 125th anniversary, is a guarantee of solid, long-lasting products ideal for this market's needs. The positive feedback from operation of the equipment offered by Chauvin Arnoux has won the trust of its customers, enabling it to remain a supplier whose experience and reliability are widely acknowledged.

Chauvin Arnoux Energy is present on the electrical installations of nuclear generation sites by means of its measurement and supervision product offering: auxiliary relays for critical applications, measurement transducers, analogue and digital panel meters. More particularly, the K3-qualified(*) instantaneous relays in the RE3000N and OK-B184 ranges are suitable for automation and command-control applications on nuclear power plants. These products, present in their tens of thousands since the plants opened, have demonstrated their reliability and are still manufactured in the Chauvin Arnoux Group's French factories.

CA Pyrocontrôle, meanwhile, another company in the Chauvin Arnoux Group, is involved in temperature measurement at the strategic points in a nuclear installation, from the reactor building to the machine sets, as well as the auxiliary buildings, with tailored solutions or mass-produced standard products. Its range of sensors qualified as K1, K2 or K3(*) can be used to measure the temperatures of the different reactor systems with fast-response sensors for precise, instantaneous measurements in the primary loop, surface sensors fitted on the crucial safety systems and sensors measuring the temperature at the bottom of the tank. These sensors are qualified to withstand the most extreme conditions in terms of irradiation, earthquake, temperature and pressure.

Internationally, the Chauvin Arnoux Group's products are also used in nuclear plants in Belgium, China, Korea, South Africa and the UK (Hinkley Point EPR).

The experience built up by the Chauvin Arnoux Group in handling the strict requirements for nuclear plants has opened up other markets such as Naval applications.

(*) K1: Withstands earthquakes, ageing due to irradiation, accidental irradiation, thermodynamic and chemical shocks
K2: Withstands earthquakes and ageing due to irradiation
K3: Withstands earthquakes

"The company is particularly active on this market, developing and qualifying products for projects based on EPR, the 3rd generation reactor. In China, Taishan Unit 1 is equipped with CA Pyrocontrôle sensors from the primary circuit – the most sensitive and closely-monitored part – via the ventilation and primary pump sensors through to the secondary circuit. Two new Hualong projects have been launched with each of the Chinese operators: Fuqing 5 & 6 with CNNC and Fangchenggang with CGNPC. The Hualong (dragon in Chinese) is the third-generation reactor based entirely on Chinese technology. Success stories like these have enabled CA Pyrocontrôle to spread to other sensitive industries: the Ariane ELA4 launch will be equipped with cryogenic sensors using technology developed from the nuclear sensors."



WORTH KNOWING

NAVAL APPLICATIONS CHAUVIN ARNOUX HAS THE WIND IN ITS SAILS

The Chauvin Arnoux Group has been working with NAVAL GROUP (formerly DCNS) for many years. On this sensitive market, the expertise offered by its companies has enabled the Chauvin Arnoux Group to propose complementary, customized product ranges and metrological follow-up services (digital wind networks, critical measuring equipment, etc.).



#4 125 years

Entrepreneurs ready for the challenges of tomorrow

LEFT TO RIGHT, AT THE GROUP'S 125TH ANNIVERSARY CELEBRATIONS IN PARIS: MR. WINTHROP SMITH (CEO), MR. DANIEL ARNOUX, MR. AXEL ARNOUX (CHAIRMAN OF CHAUVIN ARNOUX), MR. WOLFGANG ARNOUX AND MR. PATRICK YAICLE (MANAGING DIRECTOR)

From the first universal tester invented at the beginning of the last century to the Scopix IV digital oscilloscope commercialized under the Metrix® brand, Chauvin Arnoux's 125-year history is dotted with several thousand major innovations in the measurement field.

In 1893, René Arnoux and his friend Raphaël Chauvin co-founded the company which continues to bear their names. It bore witness to their passion for electrical measurement and the physical sciences.

A small warehouse in Montmartre in the heart of Paris was the first home of the creative development by these two enthusiasts who also worked with the scientists Pierre and Marie Curie; other inventor friends accompanying

them on their entrepreneurial quest enabled Chauvin Arnoux to become a major world-wide French group two centuries later.

Today, in 2018, Chauvin Arnoux is celebrating its 125 years of development, innovation and discovery. A common leitmotiv unites the 5 entities which handle the development and commercialization of the instrumentation and solutions offering: MEASUREMENT



Chauvin Arnoux
Portable and laboratory electrical measurement



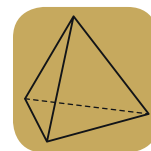
Chauvin Arnoux Energy
Measurement, metering and energy performance



CA Manumasure
Measurement for regulatory testing and metrology

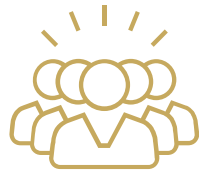


CA Pyrocontrol
Temperature measurement in industrial processes



CA Indatech
Quality control measurement using spectroscopy in the laboratory and in-line processes

HEAD OFFICE:
190 RUE CHAMPIONNET
PARIS 18^E - FRANCE



1,000

EMPLOYEES, INCLUDING
150 SALES STAFF



100

MILLION EUROS IN SALES
REVENUES, INCLUDING 55%
FROM INTERNATIONAL BUSINESS

DIRECTORS:
MR. AXEL ARNOUX
(CHAIRMAN),
MR. WINTHROP SMITH
(CEO),
MR. PATRICK YAICLE
(MANAGING DIRECTOR)



11%

OF REVENUES
REINVESTED IN R&D

6

R&D CENTRES:
PARIS, ANTONY,
LYON, ANNECY,
ITALY (MILAN),
USA (DOVER)

7

INTEGRATED PRODUCTION SITES:
IN NORMANDY (PONT-L'EVÊQUE,
VIRE, VILLEDIEU-LES-POÊLES),
LYON, SHANGHAI (CHINA),
MILAN (ITALY) AND DOVER (USA)

LATE 19TH AND 20TH CENTURY: THE AGE OF MAJOR DISCOVERIES AND INNOVATIONS

1838

Invention of the patented "Arnoux system" in the rail sector.
An articulated process based on radial axles, used on the
Sceaux line (France) until 1940.

1905

Invention of the magneto ohmmeter. In 1923, measurement
became independent of the rotation speed. In aviation,
development by René Arnoux of the rectangular wing equipped
with a stabilizer. This self-stabilizing wing technology with a
raised trailing edge was installed on a biplane in 1909 and on
monoplanes in 1912.

1913

René Arnoux's "Stabilavion" was presented at the Paris Air Show.
This low-winged two-seater, powered by a 55 CV
engine mounted to provide propulsion, was a great success!

1927

Patent for the Universal Tester which would later develop into
today's multimeters.

1934

Invention of the transformer clamp; first clamp ammeter.

1950

The AV 22 Flying Wing was named by the French aviator and
engineer Charles Fauvel in memory of René Arnoux's pioneering
discoveries.

1952

The ultra-lightweight "cellophot posemeter", developed
by Chauvin Arnoux, was incorporated in cameras.

1960

Invention of the Monoc. This was a tester with a single switch
and dial which was the ancestor of many of today's testers.

1982

Chauvin Arnoux launched the CONPA Series of multimeters
offering luxmeter, sound level meter and thermometer functions.

1993

Chauvin Arnoux celebrated its first centenary in Paris,
launching the C.A 6411 / 6413 earth clamps and inaugurating
a new concept: quick testing of interconnected earth loops.



