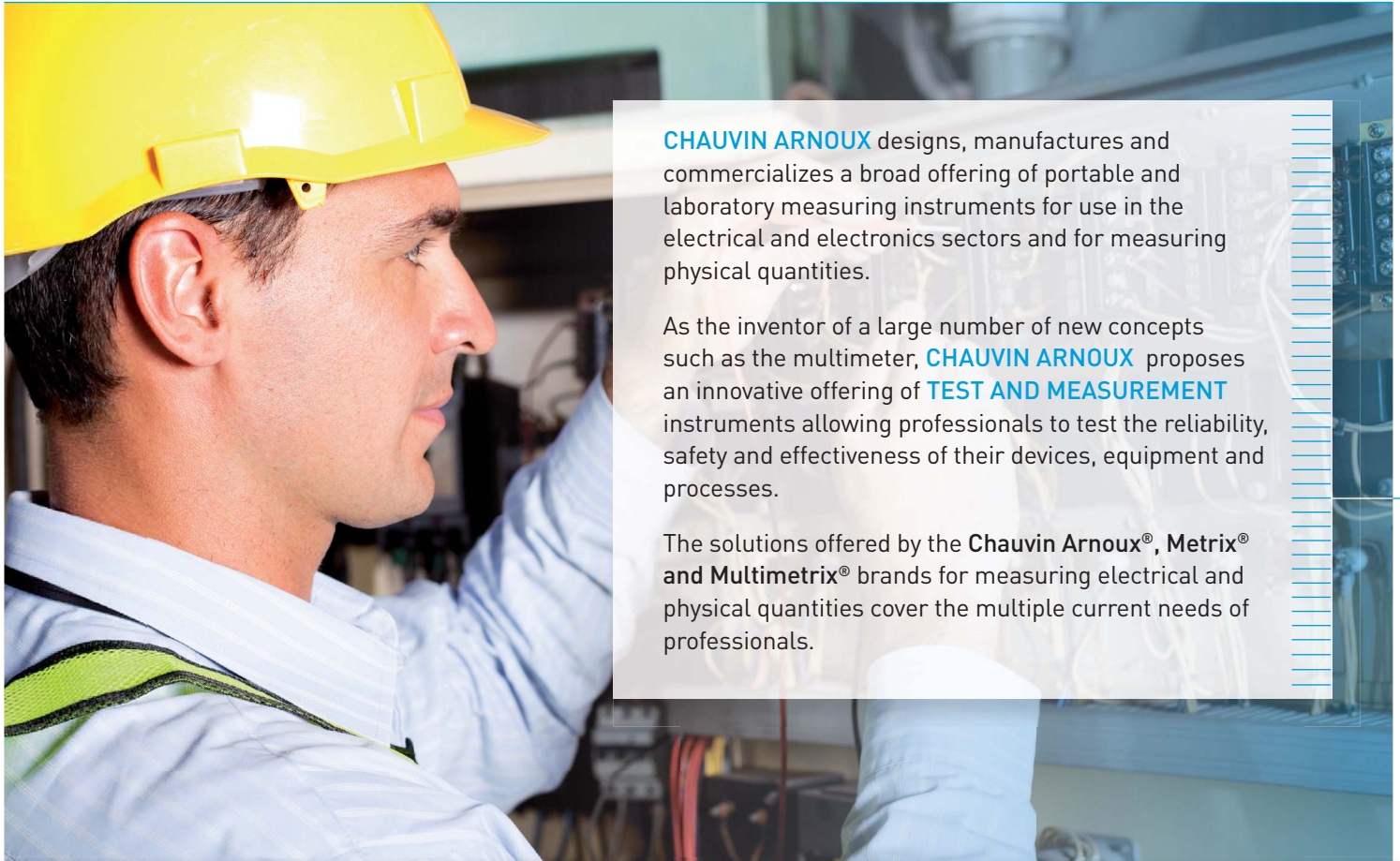


TEST & MEASUREMENT INSTRUMENTS



CHAUVIN ARNOUX Test & Measurement

The specialist for measurement of electrical and physical quantities.



CHAUVIN ARNOUX designs, manufactures and commercializes a broad offering of portable and laboratory measuring instruments for use in the electrical and electronics sectors and for measuring physical quantities.

As the inventor of a large number of new concepts such as the multimeter, **CHAUVIN ARNOUX** proposes an innovative offering of **TEST AND MEASUREMENT** instruments allowing professionals to test the reliability, safety and effectiveness of their devices, equipment and processes.

The solutions offered by the **Chauvin Arnoux®**, **Metrix®** and **Multimetrix®** brands for measuring electrical and physical quantities cover the multiple current needs of professionals.

CHAUVIN ARNOUX's advantages



INNOVATION

When combined with our investments in R&D, our mastery of the whole industrial process and our ability to understand the market's requirements and monitor the changes in international standards enable us to propose an innovative offering for the market.



LONG-TERM SUPPORT

The long history of our company, stretching back more than 120 years, demonstrates our ability to support you and evolve with you over the long term.

Due to its diversity, the **CHAUVIN ARNOUX Test & Measurement** offering covers applications in a wide range of sectors, including the Energy market, industrial companies, certification organizations, installation and maintenance companies and education.



PROXIMITY

A dense network of specialists spread across all five continents and backed by technical experts is available to support you in your projects.







TRAINING

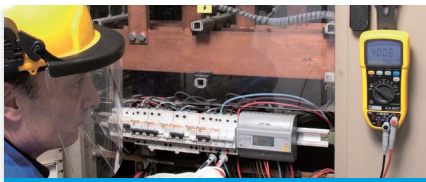
CHAUVIN ARNOUX is a certified training organization which proposes training modules in harmonics, thermography and electrical safety all over the world via its subsidiaries.

See all our training courses at www.chauvin-arnoux.fr

Our Key sectors

- | | | | |
|---|--|---|---|
|  <h2>ELECTRICAL SECTOR</h2> <ul style="list-style-type: none"> • Electricity production, transmission and distribution. • Self-employed electricians and installation and maintenance companies in the industrial, tertiary and residential sectors. • Inspection and testing firms. |  <h2>INDUSTRY</h2> <ul style="list-style-type: none"> • Extraction, transformation. • Machine and equipment manufacturing. • Agri-food, chemicals, pharmaceuticals. • Transport (automotive, aviation & rail). • Telecommunications. |  <h2>R&D AND LABORATORIES</h2> <ul style="list-style-type: none"> • Design of electrical and electronic apparatus. • Design of machines and equipment. • Metrological laboratories. |  <h2>EDUCATION & PUBLIC SECTOR</h2> <ul style="list-style-type: none"> • Administration and local authorities. • Initial and higher education. • Research, Defence. • Health |
|---|--|---|---|

Our professions



Low-voltage electrical measurements

- Voltage testers, multimeters and multimeter clamps



Electrical safety measurements and tests

- Earth/ground and insulation testers, micro-ohmmeters
- Electrical installation, equipment machine and switchboard testers
- Ratiometers



Measurement, recording & analysis of electrical power & energy values

- Wattmeters
- Energymeters & electrical power quality analysers
- Solar installation analysers



Measurement of physical quantities

- Temperature measurement and recording, thermographic cameras
- Tachometers, luxmeters, sound level meters, field meters, manometers
- Indoor air quality



Instruments for electronic devices

- Portable and benchtop oscilloscopes, function generators
- Power supplies
- Spectrum analysers and calibrators

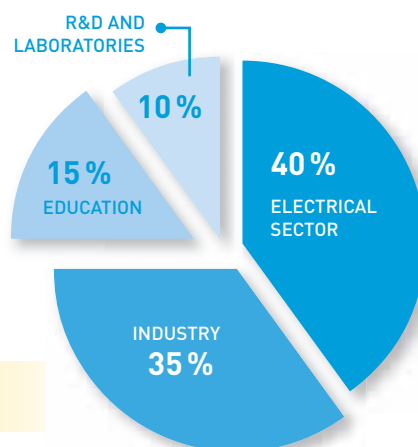


Training equipment

- Thermography, power, harmonics, electrical safety and microwave training benches
- Decade boxes, etc.

A few figures

- 50 R&D engineers
- 400 patents filed
- 25 products developed every year



Distribution of CHAUVIN ARNOUX's business per market

Founded in 1893 by Raphaël Chauvin and René Arnoux, CHAUVIN ARNOUX is an expert in the measurement of electrical and physical quantities in the industrial and tertiary sectors.

Total control of product design and manufacturing in-house enables the Group to innovate constantly and to propose a very broad product and service offering meeting all its customers' needs.

The Group's quality policy enables it to deliver products which comply with the specifications, as well as the international and national standards, in the metrological, environmental and user-safety sectors.

A few figures



CHAUVIN ARNOUX is a major force on the measurement market in France and internationally.

Locations

7 production sites

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

10 subsidiaries

- Germany
- Austria
- China
- Spain
- Italy
- Lebanon
- Sweden
- Switzerland
- United Kingdom
- United States



CHAUVIN ARNOUX Test & Measurement

a CHAUVIN ARNOUX Group company

PYROCONTROLE proposes tailored solutions for the temperature measurement and control requirements of all process industries. A wide range of sensors and total mastery of the industrial process chain make **PYROCONTROLE** an essential partner for industries such as the nuclear sector, petrochemicals, glass-making, metallurgy, etc.

Temperatures
in industrial
processes



Portable test
and measurement
instrumentation



Metering,
measurement
and energy
performance



Metrology
and regulatory
testing

ENERDIS designs measuring instruments for electrical switchboards and develops smart systems for electricity metering and mastery of energy flows in order to keep consumption under control.

MANUMESURE is the CHAUVIN ARNOUX Group company specialized in metrology and regulatory testing. Its offering is structured around three major market segments: Industry, Environment and Health.



CHAUVIN ARNOUX Test & Measurement

Our know-how



Electrical network measurement and testing, from production through to consumption

From the production plant through to the points of consumption, electricity follows a complex path which it needs to travel safely for the equipment and the people around it while complying with the applicable standards. To supply high-quality energy, the actors in the sector perform numerous measurement and maintenance operations.

CHAUVIN ARNOUX proposes a wide range of on-site instruments for these operations.

ELECTRICAL SAFETY

This involves checking the essential features of the earthing circuit, the insulation resistance values, continuity, the conductors and the protective systems.

Earth testers, clamps, insulation testers, bi-function or multi-function installation testers and thermographic cameras are all crucial tools in these circumstances.

CHAUVIN ARNOUX also proposes a range of specific instruments for transmission and distribution systems: **earth testers for networks of pylons, micro-ohmmeters and ratiometers.**



ELECTRICAL POWER QUALITY

The quality of the electricity supplied is a critical technical feature for ensuring nominal operation of an electrical installation. CHAUVIN ARNOUX's Qualistar® network and power analysers can be used to perform a thorough survey of the quality of the electricity supplied.

GENERAL LOW-VOLTAGE ELECTRICAL MEASUREMENTS

For spot measurements and tests in the field, CHAUVIN ARNOUX proposes ranges of multimeters and multimeter clamps under the CHAUVIN ARNOUX® and Metrix® brands whose functions, safety and rugged designs have been widely acknowledged.

Diagnostics and tests

To guarantee the safety of people and property, each country defines a set of regulations concerning electrical installations and equipment. To check compliance with the applicable regulations, the operations necessary usually include visual checks and tests.

The CHAUVIN ARNOUX Test & Measurement offering is ideal for the measurements performed in the context of these tests.



ELECTRICAL SAFETY OF INSTALLATIONS, MACHINES AND SWITCHBOARDS

Bi-function or multi-function installation testers, machine testers and thermographic cameras can be used to **perform the measurements before commissioning or at regular intervals.**

ENERGY DIAGNOSTICS

The installation's consumption is assessed using the power loggers and analysers. They allow you to size the points of consumption and establish a load profile.

The energy survey is completed by measurements with hygrometers, luxmeters and thermographic cameras.

ENVIRONMENTAL TESTING

Chauvin Arnoux® luxmeters, sound level meters, electromagnetic field testers, contact and no-contact thermometers can be used to measure the air quality, lighting, exposure to noise and electromagnetic fields so that the hazards facing people can be assessed.

THERMAL DIAGNOSTICS OF BUILDINGS

Chauvin Arnoux® thermographic cameras can be used to detect any faults or anomalies due to thermal bridges, insulation and sealing problems.



Preventive and corrective maintenance

Maintenance teams set up industrial process monitoring plans. By means of tests and measurements, they aim to identify and correct anomalies on the installations before they slow down or halt production.

Chauvin Arnoux® instruments are widely used in maintenance programmes.

Education and Research & Development laboratories

Committed to the training of professionals, **CHAUVIN ARNOUX** has developed a close relationship with the Education and Research sector.

The “Club du Mesurage” (Measurement Club) is evidence of this: comprising members drawn both from the teaching profession and **CHAUVIN ARNOUX** employees, its purpose is to share the concerns of Education and Industry in terms of measurement.

Industrial process monitoring plans cover:

- Electrical safety of the installation or machine
- Thermal monitoring
- Harmonic disturbances caused by the industrial process
- Maintenance of the machines' electronic command-control systems
- The various physical parameters

The **CHAUVIN ARNOUX** Test & Measurement offering is ideally suited to these operations



SECONDARY / HIGHER EDUCATION AND PROFESSIONAL TRAINING

From the simplest, for initial training, to the most complex, used daily by professionals, **the ranges of instruments from Chauvin Arnoux® and Metrix® are ideal for the electronics and electrical engineering training curriculum:**

- technical high schools,
- Physics/Chemistry classes in general high schools,
- universities,
- technical colleges,
- engineering schools,
- professional training organizations.

EDUCATION EQUIPMENT AND SIMULATION CASES

Alongside its traditional measuring instruments, **CHAUVIN ARNOUX** proposes educational equipment for demonstrating simple phenomena — decade boxes, current shunts, cosphimeters, training oscilloscopes — or simulating an environment:

- electrical installation case,
- power and harmonics case,
- microwave test bench,
- infrared thermography test bench, etc.

CHAUVIN ARNOUX Test & Measurement

Quality, standards and ecological responsibility

CHAUVIN ARNOUX has invested in means and resources designed to meet its customers' requirements throughout the product life cycle, from production through commercialization to after-sales support.

ISO 9001 and ISO 14001 standards International regulations



CHAUVIN ARNOUX is **ISO 9001**-certified for its design, manufacturing and commercialization processes.

Our **ISO 14001** certification demonstrates our determination to reconcile business and respect for the environment.

Ecoconception label



CHAUVIN ARNOUX is committed to an **Eco-design approach** (**Ecoconception** in French) for the development of its products. In particular, this approach involves targets in terms of end-of-life product recycling and re-use. The choice of materials, the products' electricity consumption, the size of the printed circuits and the manufacturing methods all contribute to achievement of these targets.

CHAUVIN ARNOUX has succeeded in adapting its manufacturing processes in order to reduce its environmental impact and fulfil the requirements of the RoHS standard on restricting the use of certain hazardous substances.

But CHAUVIN ARNOUX is determined to go well beyond the applicable standards in this field.

International regulations

We design products which comply with the European regulations and directives such as:

- REACH concerning the use of chemicals
- IEC/EN 61010 concerning electrical safety
- IEC/EN 61326-1 concerning electromagnetic compatibility

In our laboratories, we perform strict Quality tests and inspections at each stage in the design and manufacturing processes: **functional and metrological tests, mechanical tests, climatic tests, electromagnetic compatibility tests, electrical safety tests, ageing tests, etc.**

CHAUVIN ARNOUX Test & Measurement

References



ENERGY

CIE, GROUPE EDF, EDL, EDM, EDP, EGAT, ELES, ENEL, EWR, GUANGDONG NPP, LINGAO NPP, MEW, NEK, PLN, PGC, SONELGAZ, STEG.

ELECTRICITY

Installers :
AMEC, CEGELEC, FORCLUM, CYMI, COLASRAIL, EIFFAGE, INEO, SPEI.

INDUSTRY

Aviation and defence:
AENA, AIRBUS, DCNS, EADS, THALES.

Agri-food industry:
BEGHIN SAY, NESTLÉ, ROQUETTE.

Automotive industry:
MICHELIN, PSA, RENAULT, VALEO, BMW, VOLVO.

Electrical sector:
ABB, SCHNEIDER, SIEMENS.

Chemicals and petrochemicals:
NOVARTIS, OVM, REPSOL, SAINT-GOBAIN EMBALLAGE, SANOFI AVENTIS, SHELL, TOTAL.

Telecommunications:
BOUYGUES TELECOM, A1, TELEFONICA, ORANGE.

Transport:
AIR FRANCE, IBERIA, ÖBB, RATP, SNCF, TMB.

EDUCATION

Engineering schools
French national education system:
technical high schools, technical colleges, universities.

CERTIFICATION ORGANIZATIONS

APAVE, DEKRA, INDUSTRIEL, SOCOTEC, VERITAS, TÜV.

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The other 3 companies in the Group

