

Measurement,
Testing,
Metering,
and **Supervision**
of **electrical networks**

Our industrial response to

CHAUVIN ARNOUX group is a European leader in the measurement field.

With PYRO-CONTROLE, ENERDIS and CHAUVIN ARNOUX Test and Measurement, three French companies specialising respectively in thermal and electrical equipment and portable measurement instruments, it provides **a full range of products** to players in the electricity and electrical engineering markets.

ENERDIS, originally a subsidiary of the Schlumberger group, became independent under this name in 1988, focusing its expertise on the measurement, metering, management, and surveillance of electrical networks. **ENERDIS** joined the Chauvin Arnoux group in 1998 **and has since added to its extended portfolio to offer products and services for measuring power quality and electrical network disturbance.**

The company today benefits from **the technological support of six Research and Development centres** and from the expertise of the sales network of the group's ten subsidiaries in Europe, the United States, and China.

The **ENERDIS** facility in the Paris area **houses the company's Marketing, Sales, and Research and Development activities. The company designs and markets meters, panel meters, converters, relays and analyzers** to meet the needs of industrial and tertiary-sector activities in the metering and supervision of low voltage, medium voltage and high voltage networks.

Thanks to its "special projects" team, made up of engineers and technicians specialising in industrial electronics and computing, **ENERDIS** also provides a made-to-measure service based on customers' specifications.

Enhancing this full line of products and services, the company benefits from **Chauvin Arnoux group's investment**. Every year, **11 % of its sales goes into Research and Development**, to consolidate its technological lead and its reputation as designer and constant innovator, of which ENERDIS projects are a part.

An international dimension and complementary skills



CHAUVIN ARNOUX GROUP

PORTABLE MEASUREMENT INSTRUMENTS

From hand-held testers to electrical power quality monitors, the **CHAUVIN ARNOUX Test & Measurement Division** designs, develops and manufactures hand-held measurement instruments for electrical tradesmen, installers, industries and administrations (French Railroad Authority, automotive, teaching, French Electricity Board, telecommunications, etc). **CHAUVIN ARNOUX®** brand multimeters and testers especially meet the requirements of the electrical engineering sectors, with **METRIX®** brand analyzers and oscilloscopes aimed primarily at the electronics sectors.



GROUP

CHAUVIN ARNOUX



CHAUVIN ARNOUX GROUP

SENSORS AND INDUSTRIAL TEMPERATURE MEASUREMENT AND CONTROL SYSTEMS

PYRO-CONTRÔLE provides tailored and standard thermal process solutions, to meet customers' temperature management and control requirements. An extensive range of temperature sensors and total expertise in the industrial process loop make **PYRO-CONTRÔLE** a vital partner to a host of industries such as chemicals, glass, and metallurgy.



CHAUVIN ARNOUX GROUP

ELECTRICAL EQUIPMENT

ENERDIS provides industry and the services sector with all the fixed switchboard equipment necessary for measuring, testing, protecting, metering and monitoring electrical networks. The **CHAUVIN ARNOUX** and **ENERDIS** brands meet the most basic to the most complex requirements of industrialists and the various players in this electrical sector: switchboard operators, installers, systems integrators and electrical supply companies.



CHAUVIN ARNOUX GROUP

GLOBAL SERVICE OFFERING

With 15 local agencies in France, **MANUMESURE** repairs, maintains and manages electronic instruments regardless of brand. Checking, calibration in accredited laboratories (Cofrac), EMC testing, and on-site pollution control and measurement complete **Manumasure's** range of services.

your energy requirements



Editorial

Managing electrical supply and making it safe involves constant monitoring, checking and protection of the entire network. It also means optimising the cost of power consumption without harming business and without reducing safety or comfort. This is achieved via a global overview, in real time, of the electrical parameters of the entire installation.

The solutions provided by ENERDIS in response to these needs are based on a broad range of products that use the latest technologies in instrumentation (power monitors, meters, transducers, etc.), in supervision and data processing software, and in multi-site, multi-protocol communication resources.

With over fifteen years experience in metering, management, and supervision of electrical networks, ENERDIS is an acknowledged expert in energy management.

*Today, with the increasing liberalisation of the energy market, ENERDIS is also determined to be a key player in the field of electrical network quality and the service provided to its customers. Consulting and expertise in terms of applications make it possible to optimise instrumentation and solutions to be implemented. Measuring the disturbance amplitude accurately, diagnosing its cause and providing suitable **reactive energy compensation** and **harmonic filtering solutions** are the commitments ENERDIS has made for the coming years.*

Patrick KAUFFMANN
Director of ENERDIS



ELECTRICITY COMPANIES

Producers, transport system and electricity supply managers find the solution to their energy metering and network management needs in the broad range of ENERDIS products.

Tariff meters (Trimaran), high-performance power monitors (ENERIUM) and programmable transducers (Triad), designed notably for the supervision of transport/distribution networks are all part of the product range proposed by ENERDIS.

Power quality and disturbography (MAP), relay protection control (Artes), circuit breaker (Actas) and tariff meter calibration (Metes) equipment is another part of these innovative products that meet market requirements and demands.



INTEGRATORS

Installers, switchboard operators: your business consists of designing, building, and installing switchboards. Ours consists of providing you with the best possible solutions to meet your electrical equipment needs while complying with current European standards. Our products ensure your safety when they are installed and the satisfaction of your customers when they are used. They also satisfy your economic requirements.

The products and accessories of our complete line - digital and analogue panel meters (Classic, NE, Logic, etc.), multi-display units (VisuALL), power monitors (Nodus), measurement CTs, power meters (Ulys), measurement relays (Sécurel), etc. - ensure the reliability and quality of your installation.



EQUIPMENT MANUFACTURERS

Are you looking for specific instrumentation for your equipment or for solutions to meet your needs? You will find a solution in our panel meter, transducer, automation and measurement relay range. As the only French manufacturer of analogue panel meters, ENERDIS offers "the" product to meet your format, size, measurement scale, environmental (ATEX), and other constraints.



USERS

Operators in the industrial and services: your power needs are subject to quality, reliability, and cost factors. **To satisfy you, we develop energy management systems (Winthor) that allow you to manage and optimize your power burden, and to reduce and distribute its costs**, whatever the size and number of your operating sites. Organized around your own communication network, this system allows real-time monitoring of multi-fluid burden and provides information for a detailed analysis of it.

Our reactive energy compensation equipment (ENERcap, ENERstat, etc.) provides solutions with which to reduce your energy costs or cope with higher energy requirements.

Energy management needs may be accompanied by requirements in term of electricity supply quality. These call for highly accurate supervision and analysis systems to monitor quality indicators and "trap" disturbance (MAP), and in turn lead to the implementation of harmonic filtering solutions to make sensitive equipment and processes safe.

Control of the **measurement** and

From the integrator (switchboard operator, in

Instruments to **measure, monitor, and protect** MV/LV electrical networks



TRIAD

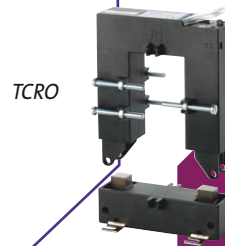


VisuALL

- Digital, analogue, and multi-function panel meters
- Transducers
- Protection relays
- Current transformer and shunts
- Power monitors



Nodus D



TCRO

Electrical power **reconditioning** equipment

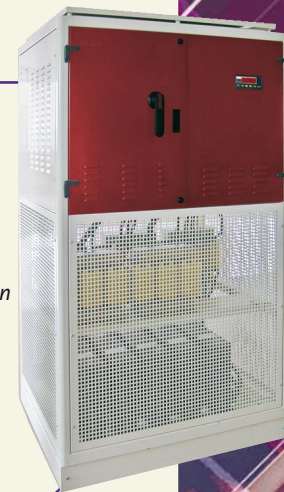
- Power factor correction equipment
- Harmonic filtering system



ENERcap



ENERstat



ENERclean

quality of electrical energy

(installer) to the user (industry and services)

Energy management by remote reading, centralization, and processing.

Analysis and retrieval of data

- Power meters
- Multi-fluid management systems



ULYS



TRIMARAN



ENERIUM



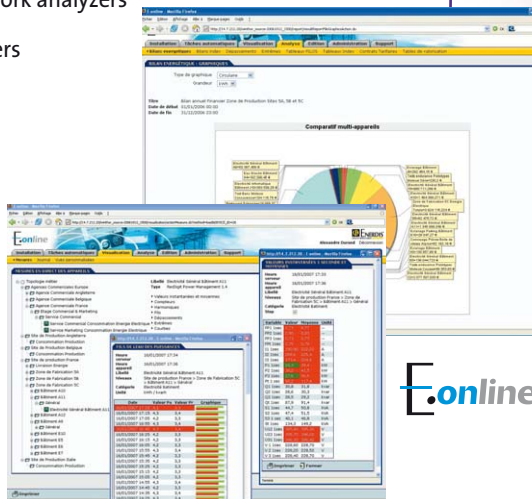
Quality of power supply:

Continual analysis and diagnosis of disturbance in networks

- Network analyzers
- Data loggers



ENERIUM



Our other areas of expertise

- Equipment to calibrate meters and test protection relays and circuit breakers
- Relays for automation in severe environments: nuclear, petrochemical, rail transport
- Digital and analogue meteorological systems

The excellence of a quality system and human expertise

ISO 9001 VERSION 2000 CERTIFICATION

ENERDIS was awarded ISO 9001 version 2000 certification for its entire quality system by the Moody international organization.

This certification, which concerns all **ENERDIS's** design, production, and marketing processes, is part of a continuous improvement approach initiated by the company's teams several years ago. Two internal documents embody this daily commitment by everyone in the CHAUVIN ARNOUX group: the Quality Recommendations and the Quality Constitution.



QUALITY, A DAILY CONCERN

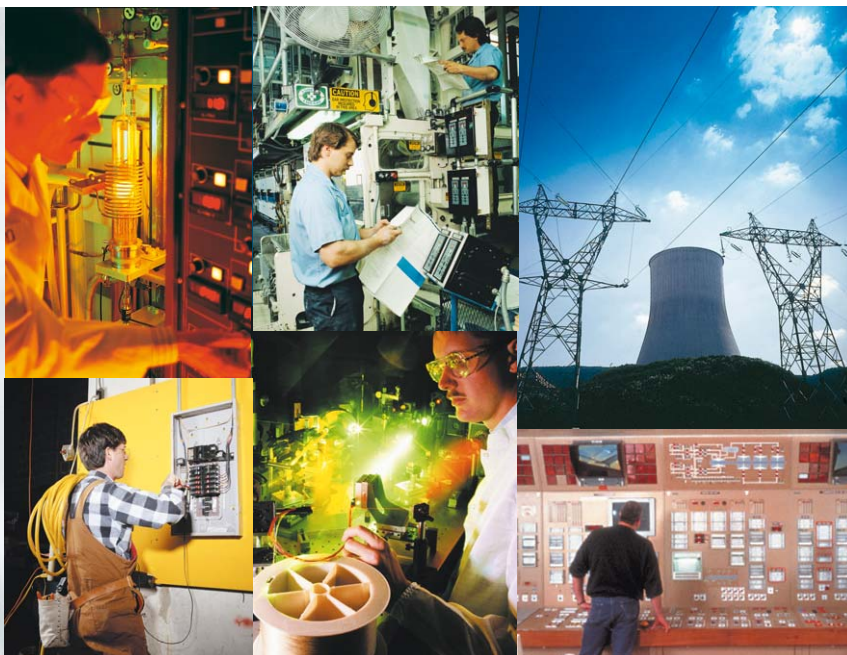


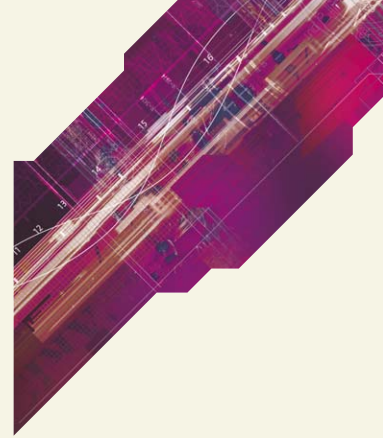
The quality approach of **ENERDIS** in particular and of Chauvin Arnoux group as a whole is a major part of the company's strategy. It is aimed at developing reliable measurement equipment that complies with current safety and metrological standards, and providing solutions that combine

technological evolution with improved product ergonomics. In light of this, **ENERDIS** has anticipated future behavioral patterns in terms of energy and is responding to consumers' needs with a quality approach consistent with sustainable development. The opening of the energy market is an opportunity for **ENERDIS** to become a leading European energy specialist.

*"To meet the specific needs of government agencies and industrialists, **ENERDIS** has set up a Special Projects unit. Made up of specialized engineers and technicians, the unit develops products based on precise specifications from the design phase to implementation at the customer's site. For example, meteorological sensors (wind vanes, anemometers, barometers, hygrometers, etc.) and temperature scanners are designed to meet very precise National Defence requirements. Each project is examined, quantified and finalised in compliance with customer requirements. Thanks to this special projects unit **ENERDIS** retains its technological lead and can offer its customer a practically "turnkey" project."*

Jean-René Evan
Research and Development Manager





We have their confidence

(France and international)



Energy

- CIE (Ivory Coast)
- EDF (France)
- EDL (Lebanon)
- EDM (Mali)
- EDP (Portugal)
- EGAT (Thailand)
- ELECTROLIMA (Peru)
- ELES (Slovenia)
- ENEL (Italia)
- EWR (Saudi Arabia)
- GUANGDONG NPP (China)
- ITAIPU (Brazil)
- KHNP (Korea)
- KOEBERG NPP (South Africa)
- LINGAO NPP (China), etc.
- MEW (Qatar)
- NEK (Bulgaria)
- ONE (Morocco)
- PEA (Thailand)
- PLN (Indonesia)
- PGCI (India)
- RTE (France)
- SONELGAZ (Algeria)
- STEG (Tunisia)
- SONABEL (Burkina Faso)

Industries and integrators

- ALSTOM
- ANGLO ALPHA CEMENT WORKS
- BEGHIN SAY SUGAR REFINERY
- CATERPILLAR
- KANTHAN CEMENT WORKS
- NEW SULZER DIESEL
- SDMO
- SEMT PIELSTIK
- WÄRTSILLA SACM DIESEL, ETC.

Installers

- ABB
- ANSALDO
- AMEC SPIE
- AREVA
- CEGELEC
- CLEMESSY
- EFACEC
- ETDE
- FORCLUM
- IMÉO
- SCHNEIDER ELECTRIC
- SIEMENS

Aeronautics and Defence

- ADP (PARIS AIRPORT AUTHORITY)
- EADS
- THALES

Agrifood

- BEGHIN SAY
- NESTLÉ
- ROQUETTE

Automotive

- MICHELIN
- PSA
- RENAULT
- VALÉO

Chemicals and Petrochemicals

- NOVARTIS
- SAINT-GOBAIN EMBALLAGE
- SANOFI AVENTIS
- SHELL
- TOTAL

Education

- TECHNICAL HIGH SCHOOLS
- UNIVERSITIES

Metallurgy

- ASCOMETAL
- PÉCHINEY
- PUM
- USINOR SACILOR

Hospitals

- Teaching hospitals (Mulhouse, Quimper, Angers)

Telecommunications

- EADS TÉLÉCOM

Services Industry

- Parc des Expositions du BOURGET
- Parc des Expositions de VERSAILLES

Transport

- ADP (Paris Airport Authority)
- CAIRO SUBWAY
- EUROTUNNEL
- PAM (Marseille Port Authority)
- RATP
- Rouen MÉTRO
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- SNCF



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A centralized contact

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