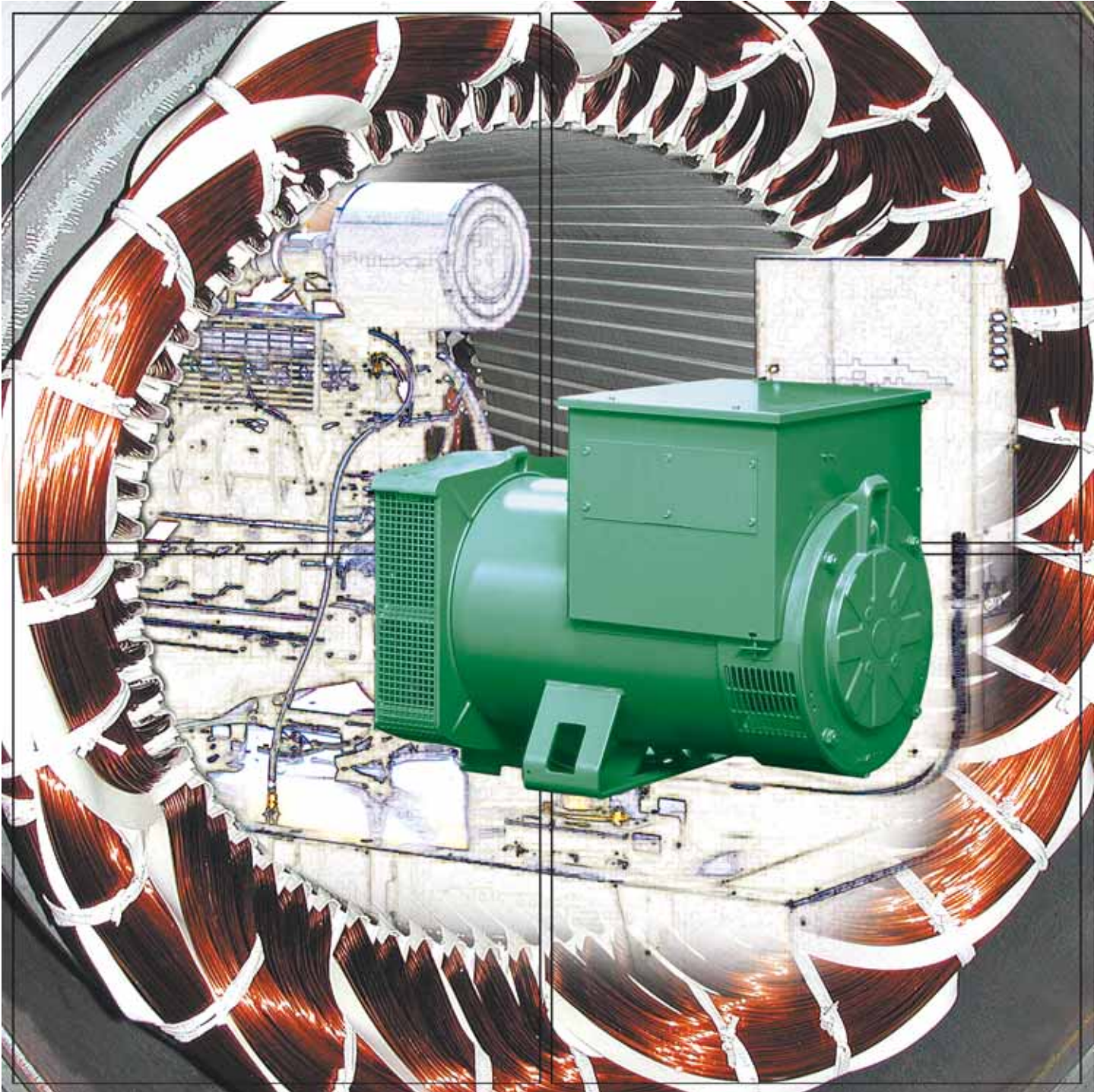




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**PARTNER alternators,
a world of energy.**

There is currently an enormous increase in energy requirements throughout the world and it is essential to respond to this demand with the greatest respect for environmental constraints.

The essential link between the drive system and the output, at the heart of each energy producing unit, is LEROY-SOMER's **PARTNER** range alternator, responding fully to market needs.

Whether it is a matter of supplying electrical power on-board ship, supplying electricity to deprived regions or even avoiding interruptions in a poor-quality mains supply, **PARTNER** range alternators are suitable for all drive systems, responding with certainty to the needs of the user, whatever they may be.



Construction sites
Rental



Telecommunications
Internet



Leroy-Somer ...

PARTNER range alternators are the result of LEROY-SOMER's 50 years' experience as specialists in rotating electrical machines and in particular low, medium and high-voltage alternators.

The LEROY-SOMER range extends from 1 kVA to 20 MVA and is backed up by a world-wide industrial network structured around 9 factories in Europe, Americas and Asia.

Innovation, in-depth technological knowledge, reliability of products and local service are the requirements that LEROY-SOMER's personnel combine on a daily basis to satisfy their customers... and to remain world leaders in alternator production for the long term.



Mobile generator sets
Containers

Military



**Throughout the world,
one alternator in 4
in the 10 to 2500 kVA
range is from
LEROY-SOMER**



Cogeneration



Marine



Expertise

recognised in all fields

Standby / Public body



Standby / Hotel



Standby / Hospital



LEROY-SOMER offers a range of alternators that is perfectly matched to market requirements.

PARTNER alternators cover the power range 10 to 2500 kVA, low voltage (690 V), 50/60 Hz,

to meet the most demanding operating conditions:

- Compatibility with different drive systems, such as diesel-powered or gas-powered engines.
- High performance levels required (electric motor starts, distorting loads).
- Clean or extreme environmental conditions (damp, corrosion), etc.



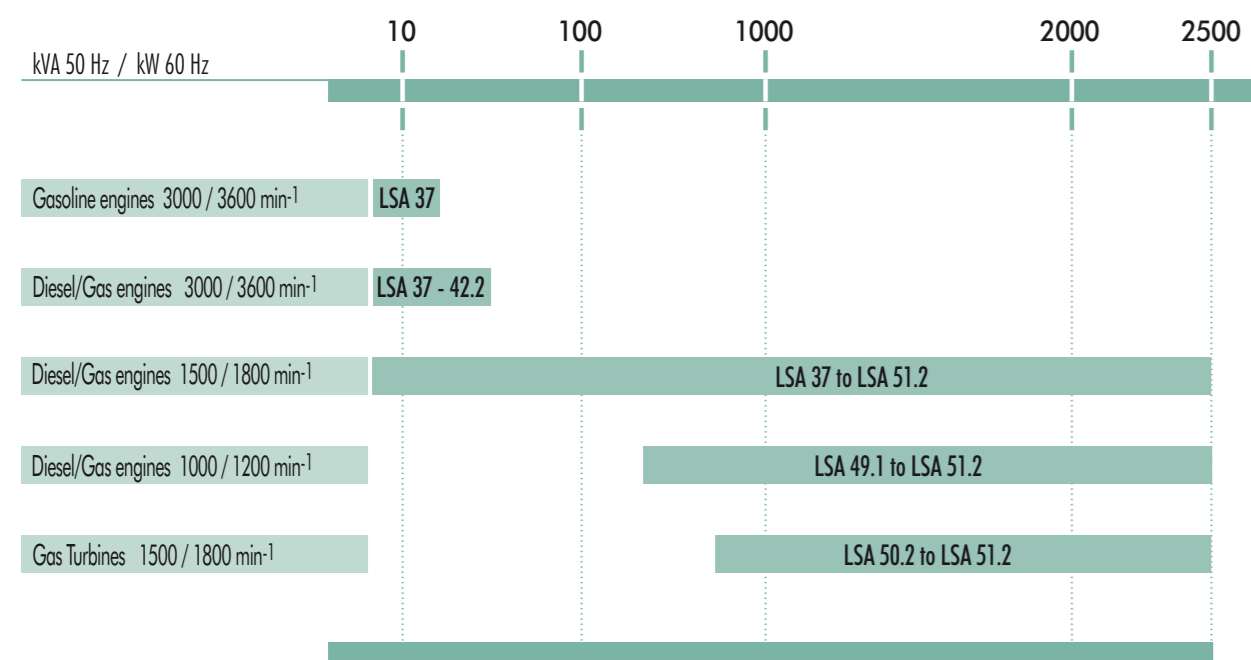
PARTNER[®] alternators

Performance, adaptability

The PARTNER alternator: modular construction for greater flexibility

PARTNER alternators are designed to the highest specifications. Starting with the standard product and adding modules or amending the design as necessary means that **PARTNER** alternators are in perfect balance with the demands of genset assemblers and users alike.

A range of alternators developed for different drive systems



A PARTNER range alternator for every customer requirement

Type of PARTNER alternator	Drive speed min ⁻¹			Voltage		Number of wires		Power range kVA / kW
	1000 / 1200	1500 / 1800	3000 / 3600	Single-phase	Three-phase	6 wires	12 wires	
LSA 37	•	•	•	• (D/R)	•	•	•	5 ... 33
LSA 42.2	•	•	•	• (D/R)	•	•	•	15 ... 56
LSA 43.2	•	•	•	• (D/R)	•	•	•	35 ... 88
LSA 44.2	•	•	•	• (D/R)	•	•	•	90 ... 175
LSA 46.2	•	•	•	• (R)	•	•	•	180 ... 340
LSA 47.2	•	•	•	•	•	•	•	350 ... 660
LSA 49.1	•	•	•	•	•	•	•	290 ... 1000
LSA 50.2	• (*)	•	•	•	•	•	•	560 ... 1800
LSA 51.2	•	•	•	•	•	•	•	1200 ... 2475

(D/R): D = Dedicated, R = Reconnected
(*) version 50.1

Compliance with international standards

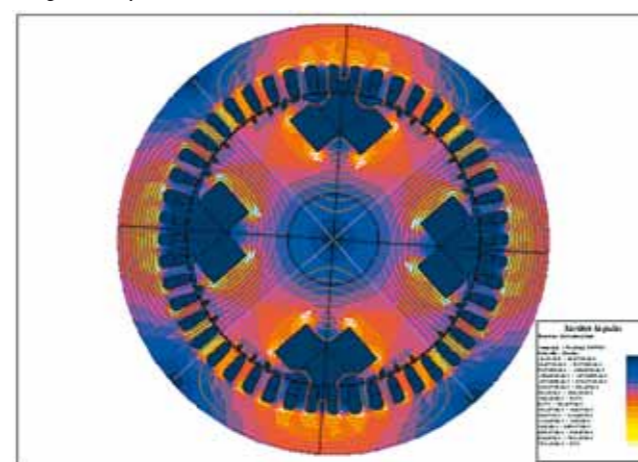
PARTNER alternators comply with the requirements of the main standards currently in force: IEC60034, ISO 8528 - 3, NEMA, CSA, UL 1446 (system isolation), UL1004B on request....

The alternators can be integrated into products that will carry the CE mark, and comply with the European standard on interference suppression, EN 55011, group 1, class B (standard throughout the EU).

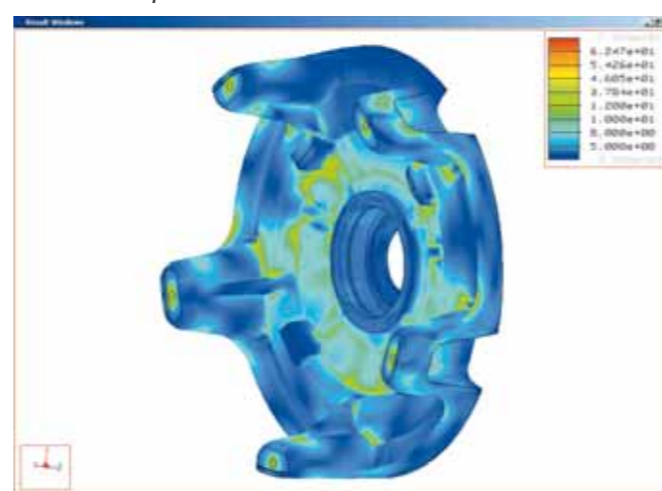
Type approvals exist with certain of the main organisations for marine classification.

Top of the range specifications

Magnetic optimisation



Mechanical optimisation



Developed with the aid of the most powerful software using finite element analysis, PARTNER alternators offer top of the range electrical and mechanical performance:

- Available levels of performance, starting capacity and reactance mean that the alternator can be optimally dimensioned relative to the application.
- The compact, rigid and robust mechanical structure is compatible with the levels of vibration encountered in engines.
- The different excitation and regulation systems offered by LEROY-SOMER allow you to choose the right solution for your application.

PARTNER® alternators adapted to your requirements

Compatibility with drive systems

PARTNER alternators are compatible with engine drive systems, whether in regard to electrical power, torsional compatibility, coupling characteristics or dynamic operation in conjunction with the engine. The LAM (Load Adjustment Module), which is integral with R438, R448 and R449 AVRs, facilitates load acceptance of the engine. Alternators can be manufactured in both double and single bearing versions with a range of easily interchangeable configurations.



An environmentally conscious protection system

The standard protection for PARTNER alternators is IP23.

Windings are insulated to class H.

The high level of winding protection (VPI: vacuum and pressure impregnation) is suitable for clean environments up to 95% relative humidity even for marine applications in engine rooms.

Options :

- retrofitted filters on air inlets and outlets
- protection for windings in harsh environments
- space heaters,
- stator thermal protection,
- IP 55 range (water-cooled or air-cooled).



Alternators dedicated to your specific application

Due to the use of modules or design modifications, LEROY-SOMER alternators provide solutions to the most exacting applications including:

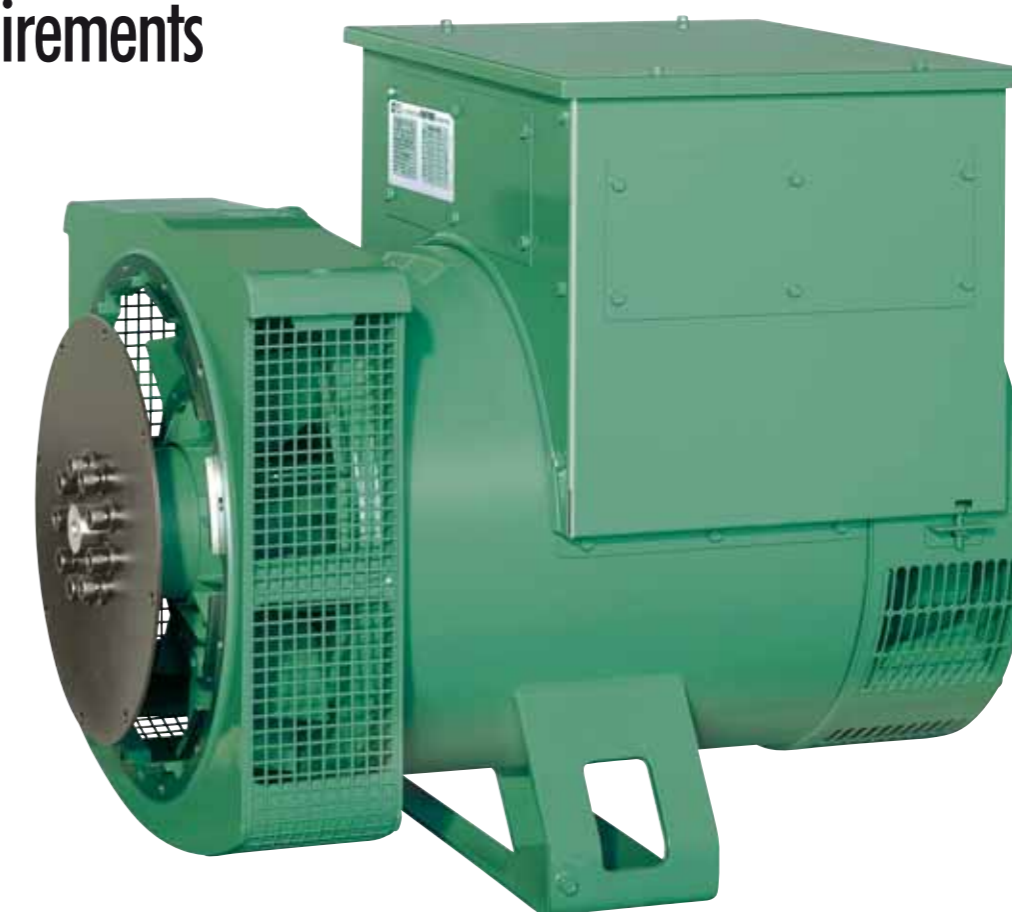
- Marine
- Telecommunications / Internet
- Cogeneration
- Railways
- Agriculture (Gearlec and Tractelec ranges)
- Civil and military aviation (400Hz, 400Hz/28V ranges)
- Oil and gas (IP 55 range)
- Military, etc.



Optimum windings for greater performance

Several types of windings are available in 50Hz and 60Hz versions to optimise performance according to the voltage required on site and the demands of the application.

PARTNER alternators are provided with a 2/3 winding pitch as standard, and are therefore perfectly suited to installations with distorting loads.



Large and adaptable terminal box

The generously proportioned terminal box allows easy access for installation and maintenance.

The voltage regulator can be reached via side-mounted or front-mounted access panels.

It becomes a simple and straightforward matter to alter the voltage by reconnection and to connect the neutral.

Current transformers can also be easily integrated for the purpose of parallel operation, measurement or protection.



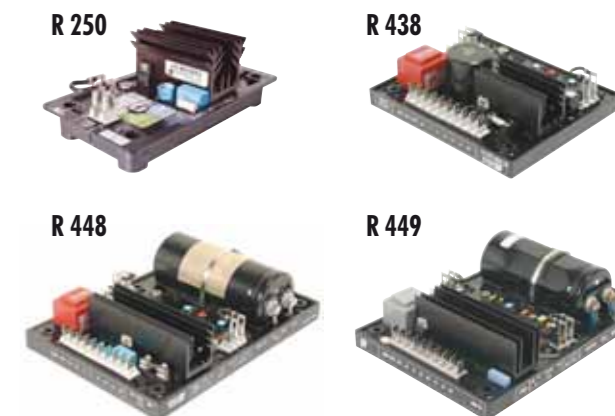
Choosing the right excitation system for your needs

LEROY-SOMER offers an incomparable range of excitation systems without sliprings or revolving field brushes, the main systems being:

- ACC, with capacitor excitation for low-power, single-phase applications,
- Shunt, for three-phase and standard single-phase applications,
- AREP and Shunt+PMG for three-phase applications when discriminating protection or short-circuit capacity are required.

The AREP system, patented by LEROY-SOMER, is an original and powerful system based on two auxiliary windings integrated into the alternator's stator, thus providing the alternator with reliability, compactness and performance on starting and short-circuit.

Reliable and powerful automatic voltage regulators



Developed and manufactured by LEROY-SOMER, R-series automatic voltage regulators are transistor controlled and monitored, thereby providing quality regulation regardless of load distortions.

The voltage accuracy is +/- 0.5% in a steady state and at constant speed.

With numerous features fitted as standard, R-series automatic voltage regulators (other than the R250) can be upgraded with modules for parallel operation (current transformer, power factor adjustment and R726 voltage matching) and for three-phase detection (R731).

Encapsulated in resin, R-series regulators have optimum resistance to vibration and harsh atmospheric conditions.

Regulator type according to alternator type and excitation system

Type alternator	Excitation	Shunt	Shunt + PMG	AREP
LSA 37	R 250
LSA 42.2	R 250	R 438
LSA 43.2	R 250	R 438	R 438	R 438
LSA 44.2	R 250	R 438	R 438	R 438
LSA 46.2	R 250	R 448	R 448	R 448
LSA 47.2	R 250	R 448	R 448	R 448
LSA 49.1	...	R 448	R 448	R 448
LSA 50.2	...	R 448 V50	R 448 V50	R 448 V50
LSA 51.2	...	R 449	R 449	R 449



PARTNER alternators are manufactured at seven production sites, each specialising in a particular power range. These sites are equipped with the latest, most efficient production tools designed specifically for the tasks of alternator manufacture, such as rotor and stator winding, and impregnation under vacuum and pressure.

Processes such as stamping magnetic steel laminations, casting foundry parts or producing automatic voltage regulators are carried out at other factories in the group.

Production capacity, supply logistics and production flows are all designed to meet the most exacting quality standards and delivery deadlines in the interests of customer satisfaction.

A high-performance industrial tool



Choose reliability and environmental protection

An in-depth knowledge of the processes, continuous monitoring throughout the process and thorough testing of all products before despatch, guarantee the quality of **PARTNER** range alternators.

This high level of quality is confirmed by ISO 9001 certification delivered by DNV.

In addition, LEROY-SOMER has made the environment one of its daily priorities, as part of the ISO 14001 approach.



In addition to the continuous attention devoted to the design and manufacture of its products, LEROY-SOMER offers a whole range of services aimed at providing consultants, genset assemblers and users with a global yet easily accessible resource of the utmost quality.

The support you need wherever you need it.

Wherever you are in the world, LEROY-SOMER engineers are with you every step of the way, helping you to define your project and select the products best suited to your needs, as well as providing technical input.

They are armed with the latest and most powerful tools, providing you with a fast and efficient service that takes account of the special conditions under which you operate. You can also visit our web site www.leroy-somer.com whenever you need technical information.

LEROY-SOMER can also assist you when plant is being commissioned as well as during maintenance, in order to optimise performance of the alternators and make sure they are operating correctly.

Additionally, LEROY-SOMER can train your technical staff on its own premises or at yours.



Constant commitment

<http://alternateurs.leroy-somer.com>



Alternators on "Guaranteed Availability"

LEROY-SOMER has developed on your behalf the plans known as "Guaranteed Availability" and "Rapid Assembly Centre", whereby particular alternators can be shipped within 2 to 5 days in defined quantities to enable you to respond immediately to specific and urgent requirements.



A world specialist in alternators, electrical motors and industrial processes, **LEROY-SOMER** employs 8,000 people in 38 factories across the world.

LEROY-SOMER, with its industrial expertise, innovative ability and customer service, fits perfectly into the "Industrial Automation" division of the **EMERSON** international group, which is classed among the leading industrial groups in the world.

The dynamism of an international group



A worldwide presence, close at hand

The commercial and service network developed by **LEROY-SOMER** extends across the whole globe and comprises 470 entirely customer-oriented installations.

This local presence guarantees fast and efficient service in the commercial, technical and maintenance fields (spare parts and after-sales service).

Synergies which are of direct benefit to end users

LEROY-SOMER's expertise in each of the basic techniques of electrical rotating machines is present both internally and via partnerships with universities and laboratories.

The strength of **LEROY-SOMER** is also demonstrated in its capacity to train employees in the company's activities and maintain consistent industrial organisation and quality methods throughout all production locations.