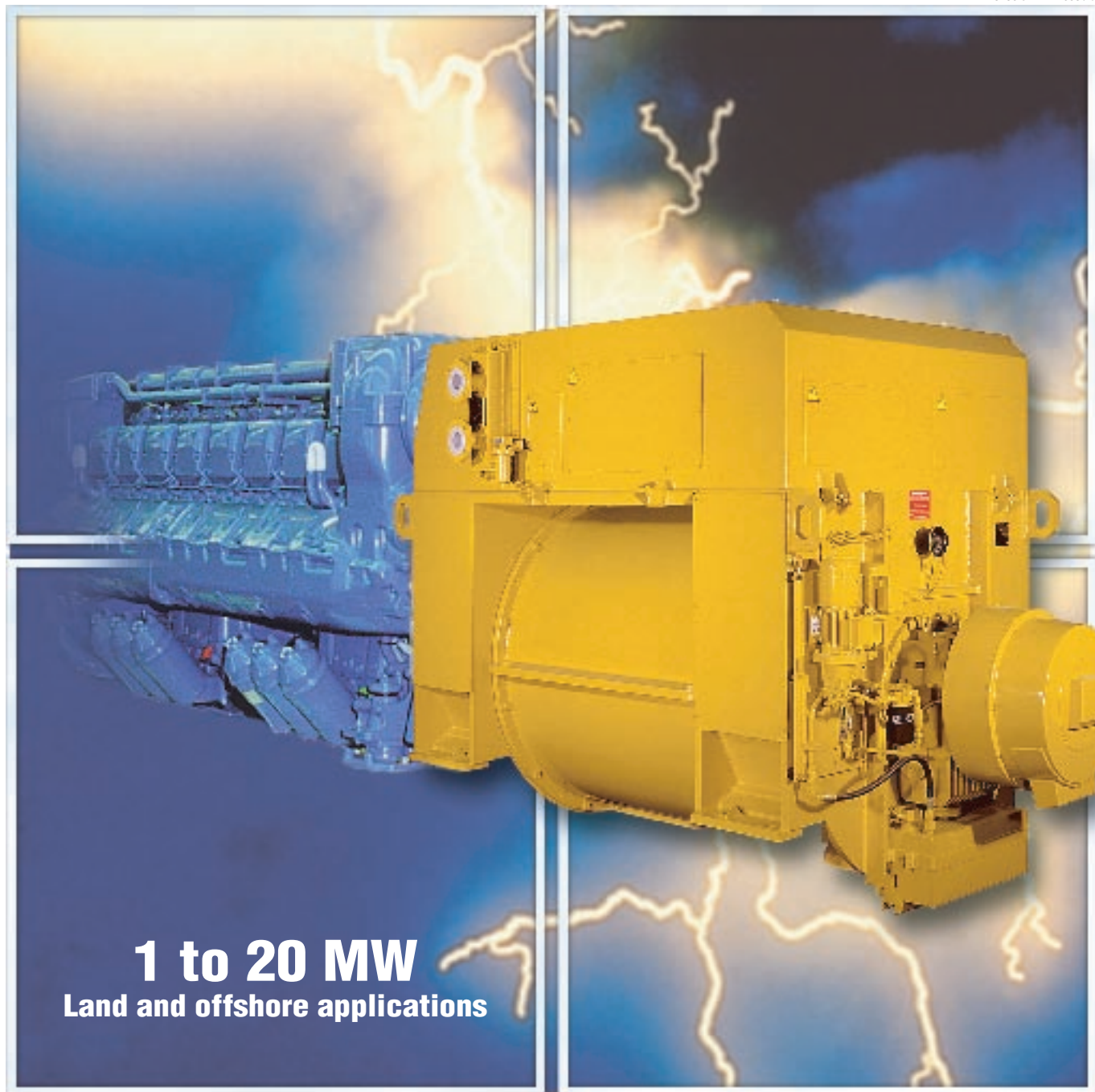




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1 to 20 MW
Land and offshore applications

POWER ALTERNATORS

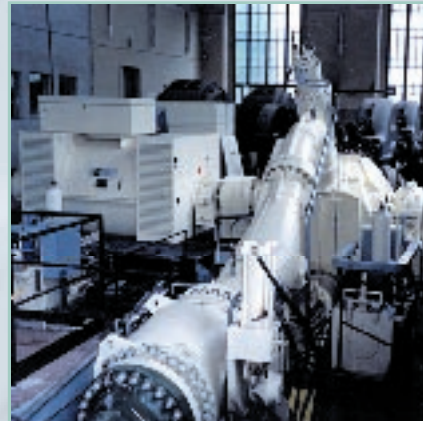
Generating Progress

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.

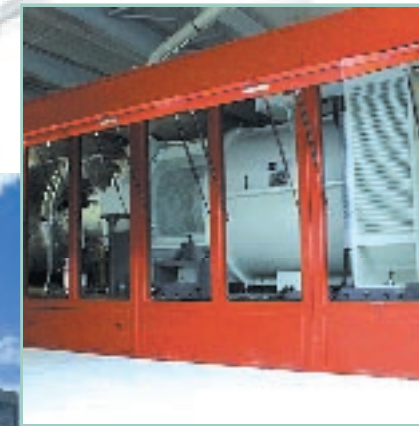
The essential link between the drive system and the output, at the heart of each energy producing unit, is LEROY-SOMER's **POWER** range alternator, responding fully to market needs.

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, **POWER** range alternators are suitable for all drive systems, responding with certainty to the needs of the user, whatever they may be.

Hydraulic application



Gas or steam turbine application



More than 50,000
1 to 20 MW
"POWER" alternators
are in use
throughout the world.

Expertise

recognised in all fields

Diesel or gas engine applications

Leroy-Somer ...

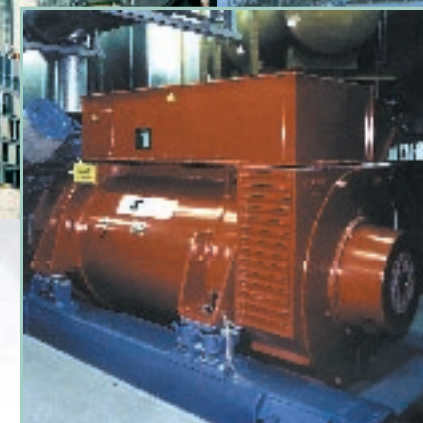
POWER range alternators are the result of LEROY-SOMER's 50 years' experience as specialists in rotating electrical machines and in particular low, medium and high-voltage alternators.

The LEROY-SOMER range extends from 1 kW to 20 MW and is backed up by a world-wide industrial network structured around 8 factories in Europe, North America 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.



Marine application:
Electrical propulsion/Marine



LEROY-SOMER offers a range of alternators that are perfectly suited to market requirements.

POWER range alternators cover a power range from 1 to 20 MW responding to the most demanding operating constraints:

- speed of rotation (333 rpm to 1800 rpm) and adaptation to various drive systems
- voltages from 380 V to 15 kV
- healthy or extreme environmental conditions (humidity, corrosion, etc).



Power

across the whole range

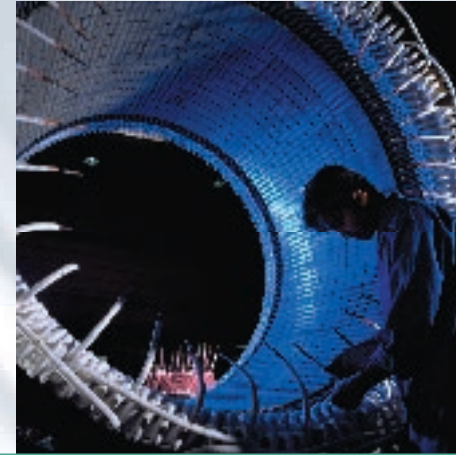
POWER range alternators: modularity to adapt better

The originality of **POWER** range alternators lies in their modular design which enables them to adapt to all types of application, but also to all environments.

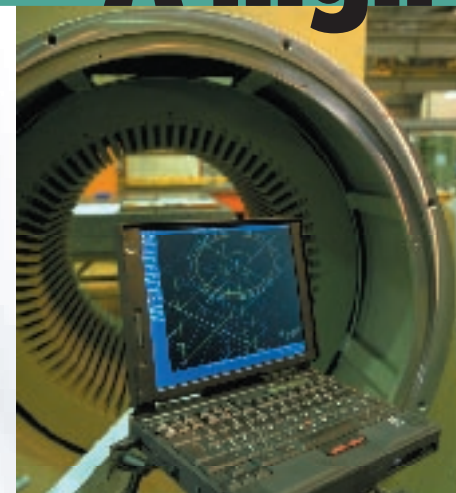
From a basic module, LEROY-SOMER engineers can create alternators which match the requirements of packagers and final users perfectly.

POWER range alternators are produced on a 25,000 m² dedicated site at ORLEANS (France). This site incorporates high-performance production tools specific to the alternator application: stamping magnetic laminations, machining, mechanical welding, winding, impregnation under high vacuum and pressure.

The plant production output is organised so as to satisfy the most stringent demands for quality and short delivery times, while dealing with a wide range of alternator dimensions and weights (2 to 80 tonnes).



A high-performance industrial tool



Go for reliability

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

This high level of quality is demonstrated by the achievement of ISO 9001 certification from the DNV, which has been held since 1994.

A range of alternators developed for different drive systems

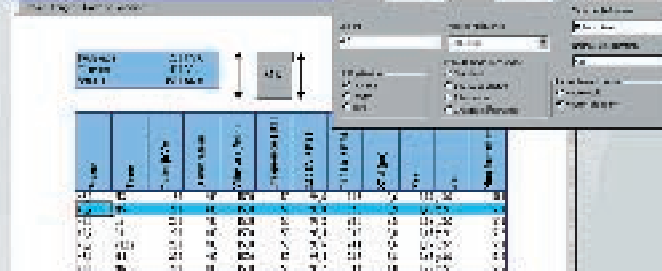


Sizes according to your requirements

A POWER range alternator for every customer requirement

Max. Power MVA 50Hz / MW 60 Hz	Drive speed rpm								Voltage V or kV				Type of POWER alternator
	1500 1800	1000 1200	750 900	600 720	500 600	428,5 514	375 450	333 400	< 690 V	3 to 6.6 kV	10 to 13.8 kV	15 kV	
≤ 1.6	•	•	•						•	•	•		LSA 50
≤ 2.2	•	•	•	•					•	•	•		LSA 52
≤ 3	•	•	•	•	•				•	•	•		LSA 53
≤ 4	•	•	•	•	•				•	•	•		LSA 54
≤ 9.5	•	•	•	•	•	○			○	•	•	•	LSA 56
≤ 17	•	•	•	•	•	•	•		○	•	•	•	LSA 58
≤ 13			•	•	•	•	•		•	•	•		LSA 60
≤ 20			•	•	•	•	•		•	•	•		LSA 62

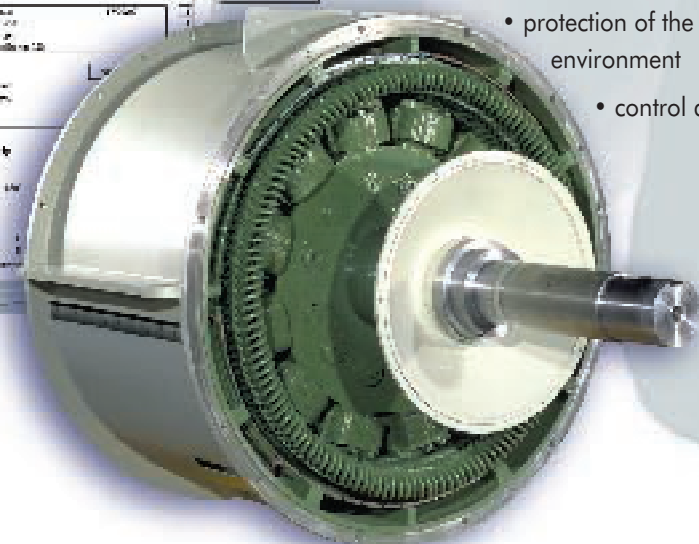
○ under restriction



The core of the alternator is defined according to the specification criteria: power, drive system and environment.

A set of modules selected according to your own specifications are added to the core to complete the build:

- connection to the drive system
- adaptation to the packager chassis
- protection of the alternator according to the environment
- control and protection devices.



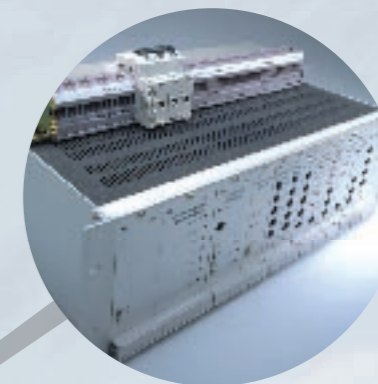
POWER alternators

adapted to your requirements



Excitation

LEROY-SOMER offers a complete range of excitation systems, including our patented AREP system which is a simple, high-performance system helping to increase the reliability of the energy-generating system.



Regulation

The R449, R610 & R630 AVRs, developed and manufactured by LEROY-SOMER, are ideal for the range of POWER alternators and all operating modes. They control voltage, power factor, production of reactive power, excitation current, etc.



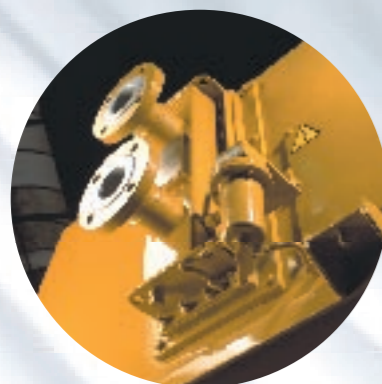
Terminal box

The six ends of the winding can be accessed via the terminal box. This simplifies connection and also enables the neutral to be brought out and protection and measurement transformers to be installed.



Monitoring

The electrical part is fully monitored by a system of temperature and current measurement points on the windings. In addition, mechanical parameters such as vibration, temperature of the bearings and overspeed can also be monitored.



Cooling / protection

The method of protection is adapted to the application: air cooled for everyday situations, cooled by air/air or air/water exchangers in harsh environments (marine, off-shore, etc)



Construction

The alternator is positioned horizontally or vertically depending on the application.

With single-bearing or two-bearing horizontal construction, the frame size and the position of the mechanically-welded mounting feet are adapted to the engine and to its base frame. In this way, excellent mechanical withstand is achieved.

A gearbox can be mounted to adapt to the speed of the drive system.



Bearings

The bearings are selected by LEROY-SOMER for their long service life. The type of bearing (ball bearing or sleeve bearing) and their size are defined by the drive speed, the weight of the rotating part and environmental and maintenance constraints

Bearing lubrication

Frequency of lubrication depends on the application.

All ball bearings have grease nipples. Sleeve bearings may be fitted with a lubrication unit within the context of specific configurations such as high speed, tilted supports, high forces, etc.

Apart from the continuous attention given to its products and their production, LEROY-SOMER offers a whole range of services which provide consultants, packagers and users with a world-wide service of impeccable quality, available close at hand.



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.

Constant commitment

Support that you understand, wherever you are

Wherever you are, LEROY-SOMER engineers can provide support on a daily basis during pre-engineering, project definition and supply of technical machinery.

They have at their disposal modern, high-performance tools to ensure that you receive prompt service.

They can also assist you during commissioning and maintenance of the installations, in order to optimise the performance of LEROY-SOMER alternators and ensure that they operate correctly.

In addition, LEROY-SOMER can organise the training of your technicians, either in our premises or on site. The company has at its disposal modern, high-performance computer tools to provide you with prompt service and to take into account of any operating constraints (load impacts, distorting loads, difficult environments, etc).

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.

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.



MOTEURS LEROY-SOMER 16015 ANGOULÊME CEDEX - FRANCE

338 567 258 RCS ANGOULÊME
S.A. au capital de 62 779 000 €

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