ENERGY-SAVING motors
During International Conferences, countries have shown their WILLINGNESS to commit to a further reduction in greenhouse gas emissions into the atmosphere.

Increased energy efficiency is a major factor in controlling electricity consumption, which is responsible for 30% of the (CO₂) emissions in the European Community.

The future of our planet depends on a partnership approach to energy saving by all PRODUCERS and USERS of energy.
ENERGY-SAVING for ALL APPLICATIONS

• CHEMICALS, PETRO-CHEMICALS
• INDUSTRY
• FOOD PROCESSING
• ENVIRONMENT, SANITATION
• IRON & STEEL,
• PAPER & BOARD,
• SUGAR REFINERIES,
• INDUSTRIES: Automotive, Textile, Timber, etc

LEROY SOMER:
MASTERY OF ENERGY
The new LEROY-SOMER high-efficiency motors reduce both energy consumption and manufacturing costs. The reduction in absorbed energy and the increased life of motors result in substantial economies. The LS ES and FLS ES motor installation dimensions are identical to those of motors in the standard range, ensuring interchangeability.

LEROY-SOMER has a complete and unique offer consisting of motors specially designed to operate with electronic frequency inverters and speed reducers. These product ranges are manufactured using basic technical principles, resulting in drive systems which are ideally suited to market requirements.

Increased efficiency of rotating machines

DRIVING

MOTORS with ALUMINIUM or CAST IRON frame, 0.09 kW to 750 kW

LS and FLS Standard Ranges

EFF 1

Increased overall efficiency of the installation

POWER TRANSMISSION

GEARED MOTORS

Gearboxes with helical gears such as COMPABLOC, ORTHOBLOC etc, with very high efficiency, are world leaders in the transmission market due to their very compact dimensions and low maintenance. These products contribute to significant energy savings (25%).

EFF 2

EQUIPMENT

VARIABLE SPEED DRIVES

Induction motors used in conjunction with speed drives can be optimised by adapting the speed, torque or power to the load: the power absorbed by the installation is therefore reduced. Variable speed control also presents an important opportunity for savings in industry.

Increased efficiency of the installation

ENERGY-SAVING

THE COMPLETE, UNIQUE OFFER

ENERGY-SAVING

LEROY-SOMER’S COMMITMENT

OUR INTERNATIONAL DUTY

Energy is essential to industry, to competition and to jobs.

Economic growth and energy consumption are becoming the two main guiding forces in the rational use of energy and preservation of the environment.

Electric motors represent nearly 70% of electrical consumption in industry.

ENERGY-SAVING LAWS

In April 1999, LEROY-SOMER undertook to comply with the ACCORD SIGNED under the auspices of the European Commission to promote high-efficiency electric motors. LEROY-SOMER is also participating in the United Kingdom’s project (ECA: Enhanced Capital Allowance) which encourages industrial firms to invest in energy-saving technologies from 1st April 2001.

NORTH AMERICAN LAWS

Since October 1997, LEROY-SOMER’s special ranges of induction motors, in aluminium and cast iron, have met the requirements of NORTH AMERICAN LAWS:

• EPAC for the United States
• NRCan for Canada

EUROPEAN ACCORD

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ENERGY-SAVING
CUSTOMER BENEFITS

REDUCED OPERATING COSTS

The actual cost of a motor during its lifetime (generally over 10 years) consists of its purchase price (2 to 3%), the cost of servicing and maintenance (1 to 2%), but primarily the cost of the energy it consumes (> 95%).

As LEROY-SOMER LS ES and FLS ES (Eff1) motors consume less energy, the related operating costs are considerably reduced.

- Example of the 45 kW motor (currently installed in heavy industry, for example)
  Using a conventional motor:
  - Efficiency = 91.5%, i.e. absorbed power = 49.2 kW
  LEROY-SOMER FLS ES motor:
  - Efficiency = 94.5 %, i.e. absorbed power = 47.6 kW
  - GAIN : 1.6 kW
  - ANNUAL SAVINGS: 1.6 kW x 0.35F* x 8000 hrs/yr = 4480 F per year (682.9 €)
  *(price of kW/h)

The extra cost of the “energy-saving motor” pays for itself in less than 10 months.

INCREASED MOTOR SERVICE LIFE

The increased efficiency of motors manufactured by LEROY-SOMER is the result of:
- Elongation of the magnetic circuit
- Use of laminations with very low losses
- Optimisation of the winding geometry
- Reduction of ventilation losses

ENERGY-SAVING
EUROPEAN ACCORDS

LEROY-SOMER are manufacturing a new generation of HIGH-EFFICIENCY INDUCTION MOTORS, conforming to the EUROPEAN ACCORD signed with the European Energy Commission.

CONTRACTUAL EFFICIENCY VALUES at 50 Hz

The above diagram demonstrates that after a certain number of hours of use, the point of equilibrium (return on investment) is achieved; beyond this point, the extra purchase cost is largely compensated for by the reduction in operating costs.

RANGES CONCERNED

2 or 4-pole motors, 3-phase, from 1.1 to 90 kW, 400 V, 50 Hz, S1 duty
IP54 and 55
Ventilated IC 411
Type N
Frame size 90 to 280
foot mounted and / or flange (FF) or face (FT) mounted
With or without protection and / or heating accessories.

THE OFFER

LEROY-SOMER have undertaken a complete overhaul of their conventional induction motor range and now offer, since January 2000, two new ranges of products bearing the Eff2 and Eff1 labels.

- LS and LS ES: Aluminium housing
- FLS and FLS ES: Cast iron housing
### ELECTRICAL CHARACTERISTICS

**Type** | **Rated power** | **Rated speed** | **Rated current** | **Power factor** | **Efficiency** | **Moment of inertia** | **Rated torque** | **Rated torque at 150%** | **Rated power at 150%** |
<table>
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<td>87</td>
<td>1.0</td>
<td>0.85</td>
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**Dimensions**

- **Footprint (FF)**:
  - LF 100: 320 x 320 x 150
  - LF 125: 350 x 350 x 150
  - LF 160: 400 x 400 x 200

- **Flange (FF)**:
  - FF 100: 50 x 50
  - FF 125: 63 x 63
  - FF 160: 80 x 80

### Dimensions of motors

- **Type**: LS ES 90 L
- **Rated power**: 0.75 kW
- **Rated speed**: 3000 rpm
- **Rated current**: 2.5 A
- **Power factor**: 0.84
- **Efficiency**: 87%
- **Moment of inertia**: 1.0 kg cm²
- **Rated torque**: 0.85 Nm
- **Rated torque at 150%**: 1.10 Nm
- **Rated power at 150%**: 1.10 kW

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**Note**: The above information is a sample representation and may not correspond to the actual data provided in the image. For precise details, please refer to the original document or product specifications.
CAST IRON FRAME MOTORS

Mains Supply: 230 V / 400 V or Δ400 V

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<thead>
<tr>
<th>Type</th>
<th>Rated power</th>
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Dimensions of flanges (FF)

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Main shaft extensions

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Energy-Saving

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Dimensions of foot and / or flange mounted motors. (Face mounted motors on request)
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