

news

THE EUROPEAN MAGAZINE OF LEROY-SOMER

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SEPTEMBER 2008

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Europe is turning white

Energy savings and white certificates

By 2016, the Member States of the European Union are obliged to improve their energy efficiency by 9% – i.e. a saving of 1% a year for 9 years. To achieve this, several countries have adopted a system which has already proved itself in the UK: white certificates. A new argument in favour of high-efficiency motors and speed control.

The European Union is not a model of energy efficiency: according to the experts, energy consumption in Europe is said to be approximately 20% higher than actual requirements.

To promote more efficient use of energy, in April 2006 the European Commission adopted a directive imposing on the Member States an energy saving target of 9% in 9 years, by means of energy services and other measures for improving energy efficiency (2006/32/EC).

Each Member State translated this directive into a "national energy efficiency action plan", submitted to the Commission in June 2007. In these plans, the States detail the actions that will be implemented to achieve the energy savings of 9% required by 2016.



A system that has proved itself

To achieve their targets for rational energy use, several European countries have opted in particular for a system of Energy Saving Certificates, also known as white certificates.

The white certificate system does not replace other national policies and measures: it is in addition to them, giving access to potential new energy savings, in homes and industry in particular.

The principle of white certificates is simple. The State requires certain parties in the energy sector (generally energy suppliers or distributors) to demonstrate that they have been able to persuade their customers to make energy savings. A certain level of accumulated energy saving enables

them to obtain a white certificate.

In the majority of national systems, organisations not able to demonstrate that this objective has been achieved are liable for payment of a penalty to the State. Also in the majority of systems, the certificates are transferable: if the necessary investment is too great, the parties concerned can acquire the required certificates from other bodies that have made an energy saving greater than their obligation.

The certificate system guarantees that the country's overall target in terms of energy saving has been achieved; the exchange possibility is intended to guarantee that the most accessible sources of energy saving are exploited and that the total saving is made at the lowest cost.

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The pioneers

Several European countries have already set up a system of white certificates. The UK opened the way well before directive 2006/32/EC was issued, through its first energy efficiency programme (Energy Efficiency Commitment) for the period 2002–2005. During this period, all electricity or gas suppliers serving more than 15,000 customers, i.e. 11 companies, were to have persuaded their customers, by means of various incentives, to reduce their energy consumption, or otherwise be liable for financial penalties. In this way the country hoped to reduce its total consumption by 62 TWh between 2002 and 2005. The result exceeded expectations: the target was exceeded by 25%. The programme was renewed for the period 2005–2008, with a more ambitious target of 130 TWh to be saved over 3 years. The necessary investment on the part of the energy suppliers involved in the UK is evaluated at £1.2 billion.

Italy has had the same type of system in place since January 2005. Unlike most other countries, which are concentrating their efforts on gas and electricity suppliers, Italy has chosen to target distribution companies. Electricity and gas distributors that serve over 100,000 customers, i.e. around thirty companies, are required to obtain a certain number of white certificates each year.

In France, the white certificate system came into force in July 2006 with other measures aimed at reducing the country's final energy intensity (the ratio between its energy consumption and economic growth) by 2% a year on average by 2015 (the POPE act – the French Energy Policy Guidance Programme). Over an initial period of three years, extending from 1st July 2006 to 30 June 2009, France aims to save 54 TWh – a target that could be revised upwards for the following period. By the end of February 2008, 220 certificates had been issued to 58 recipients, for a total of 14 TWh, i.e. 26% of the final target.

A growing number of countries are following the example of these few pioneers. Thus, Belgium (Flanders) has imposed an energy saving requirement for energy network operators, with no negotiability of certificates. Other countries such as Denmark and the Netherlands have also committed themselves to a white certificate approach. This is doubtless only a beginning.

EFF1 motors and white certificates

Like several other countries, France has produced a list of standard actions ("standardised operations") which, when implemented, enable a predefined number of white certificates to be obtained. Replacement of conventional motors by new high-efficiency (EFF1) motors or installation of electronic speed control devices are some of the standard measures recommended by the French order – nothing surprising when it is known that an EFF1 class motor enables energy losses to be reduced by almost 40%. Speed control is also a very effective measure in terms of energy saving, for centrifugal applications such as pumps or fans for example. A 50% reduction in the speed of rotation can lead to an energy saving of 87.5% with respect to the rated power.

Change of e-mail address !

The companies' internal and external communication passes through increasingly complex electronic networks where the notions of speed, reliability and security are paramount. To meet these 3 criteria, Emerson has deployed a new communication network, covering the 5 continents, which the different divisions in the group are integrating progressively. This will be the case for Leroy-Somer in the next few months, and one of the consequences will be that the e-mail addresses of your usual contacts will change.

The address : jean.dupont@leroysoyer.com
will become : jean.dupont@emerson.com

Although the old address will still remain valid for a few months, we recommend that you amend the list of your Leroy-Somer contacts as soon as you receive the first e-mails with

.....@emerson.com

Sources and links of interest

- Site of the White Certificate project in Europe – EuroWhiteCert: <http://www.eurowhitecert.org>
- White Certificates: Concept and Market experiences – EuroWhiteCert project brochure: http://www.ewc.polimi.it/documents/EWC_brochure.pdf
- Comparison of four national systems (Italy, France, UK and Denmark), Ea Energy Analyses, Denmark, November 2007: <http://www.eaenergianalyse.dk/dokumenter/White%20certificates%20report%2019%20Nov%2007.pdf>
- World Energy Council report on energy efficiency policies around the world: http://www.worldenergy.org/publications/energy_efficiency_policies_around_the_world_review_and_evaluation/3_evaluation_of_energy_efficiency_policies_and_measures/1195.asp

Doeschot and Leroy-Somer: a successful collaboration!



Doeschot, experience and know-how

Doeschot bv, a company located in Alkmaar, has been in business since 1896 constructing machines. The company has sound experience and recognised know-how, and employs 35 people. Since 1988, it has been designing and producing machines for the food industry, in particular for treating cheese (waxing the blocks of cheese, coating the cheeses, paraffining, washing, drying), as well as a compact automated treatment line. All this includes continuously adapting the machines to customers' wishes and requirements.

The fixed fire extinguishing system for tunnels is another important department. Developed and produced by Doeschot, this system enables the ordinary person to fight fires in tunnels. In addition it has a professional part for use by fire-fighters. More than half the tunnels in the Netherlands are already equipped with this VRC system or will be soon.

I-Cube, an intelligent pallet sorting system

The intelligent pallet sorting system is the most recent creation: christened I-Cube, it is the fruit of collaboration between Doeschot, Storax and Wics. I-Cube has a modular

structure, for both mechanics and controls. The software is fully configurable and enables customised solutions to be implemented. These can subsequently be adapted quite easily to meet future developments. The software consists of a WMS application incorporating a PLC control system.

As standard, I-Cube offers the following functions: I/O, transfers, carousel, sorting, sort cancellation, preliminary sort, division into zones, removal (pallet towards employee and not the reverse), and pallet clock function (e.g. for freezer tunnels).



As required, the controls can be integrated into external systems, such as an ERP or WMS application. The operating report function gives a continuous overview of the I-Cube status. In addition, by successive zooming, the operator can obtain a schematic representation of the position of each pallet in the I-Cube and the corresponding information.

I-Cube forms an integral part of an overall logistical and administrative process. Shuttles, chain conveyors and vertical transport units enable the pallets, after the scanning station, to be arranged according to criteria indicated by the customer. The shuttles operate at variable speed according to the load. They also have non-slip transmissions. All positions are monitored by absolute encoders.

As an option, it is possible to choose closed track profiles (food quality). The system allows logical handling in all formats: no maximum surface area on the ground, no maximum number of layers in height. It is suitable for a temperature range of -40° to $+25^{\circ}\text{C}$. In other words: it is the user who sets the limits!

Performance and modularity of Leroy-Somer geared motors

For this system, Doeschot uses Leroy-Somer geared motors. These highly efficient transmissions are available in a number of variants. This is an important advantage, since each project has to satisfy different constraints. The extensive range of Leroy-Somer adapted motors is also a great asset for satisfying these constraints.

In addition, Leroy-Somer offers an excellent quality/price ratio and provides technical support if necessary. For Doeschot, reliability of deliveries is essential and Leroy-Somer satisfies this requirement perfectly.

The foundations of a long and fruitful collaboration have therefore been laid!



For further information:



Doeschot
Koelmalaan 326
NI-1812 PS ALKMAAR
info@doeschotbv.nl
www.doeschot.nl

Wics
www.wics.nl

The new vibration classes

To provide users with increased comfort and reduce effects harmful to the environment, the standards are changing towards a reduction in the vibration levels required on rotating machines. The main amendments made to standard EN 60034-14 confirm this change. However, many other phenomena capable of causing harmful vibratory behaviour, in particular structural resonance, must also be taken into consideration.

Standard EN 60034-14 changed in June 2004, replacing the version of June 2000. This standard relates to measurement of the vibration level and is applicable to certain categories of rotating machines, in particular 3-phase electric motors, during factory acceptance tests.

The test conditions are basic: off-load, without being coupled to a load or a driven machine. Therefore the aim of the standard is to set a limit on the motor vibration level caused essentially by unbalance. In this way it quantifies in the factory the performance level of the balancing of the rotor when this is mounted in its bearings at the heart of the stator.

To define the balancing class of the rotor alone according to the rotating machine, it is first necessary to refer to standard ISO 1940.

Previously, standard EN 60034-14 had 3 level classes: N (normal class), R (reduced class) and S (special class). The current version has been simplified and makes provision for only 2 classes, class A and class B. Level A applies when no required level is specified.

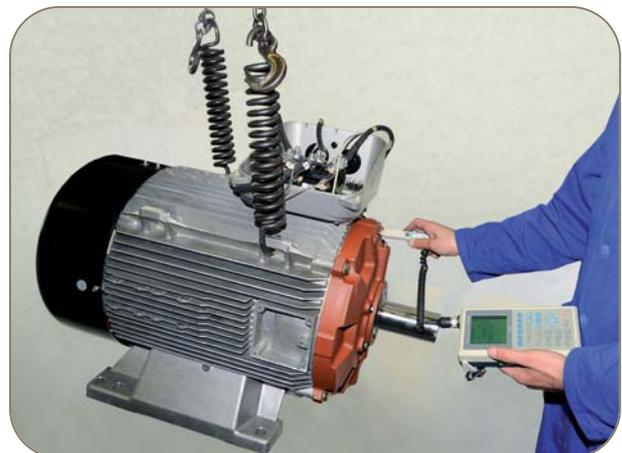
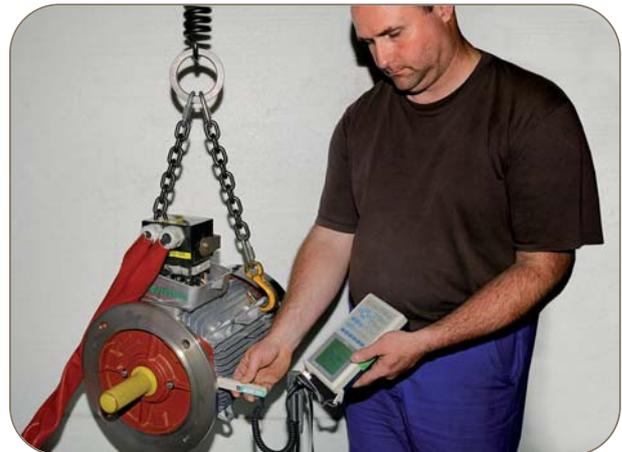
The new vibration levels laid down are overall lower than those of the previous versions of standards in order to reduce the harmful mechanical vibration effects.

The applicable rotation speed range has been increased up to 15,000 rpm. This is why the ideas of vibratory movement and acceleration have been introduced.

Nevertheless, in accordance with paragraph 8.1 of the standard, if the rotation speed remains between 600 and 3600 rpm, only the vibratory speed measurement is mandatory.

On account of the very limited nature of this standard, reference to standard ISO 10816 -3 for on-site vibration measurements must not be forgotten. This is because imbalance is no longer the main cause of vibrations encountered in industry. Today, balancing techniques in the factory and on site are fully mastered.

On the other hand, on load in a mechanical installation or a machine, other effects occur which can cause significant



Motor suspended for vibration measurement

vibration levels on the entire machine:

- incorrect alignment at assembly
- resonance of mechanical structures: support, frame, etc.
- dynamic behaviour of the driven components

In addition, the installations are increasingly light whilst being subjected to greater forces.

The service subsidiaries or Leroy-Somer after-sales service centres are fully equipped to assist you in identifying and correcting the phenomena causing the vibration levels on your installations.

The Wimborne Marine Power Centre



For over 75 years the worldwide engine market has been dominated by Perkins. They have been at the forefront of diesel engine technology and thanks to a close collaboration between Sabre and Perkins they have developed a range of engines for the marine industry.

This was the birth of Perkins Sabre and with the expertise and knowledge of both companies they created a line of marine engines that is now the preferred choice by powerboat owners, yachting enthusiasts, fishing boats and many more. With over 30 years of experience in the marine engine field Sabre Engines were very well established in the market and started work on development of marine generators.

In 2000 Sabre engines was purchased by Caterpillar and are now known as Caterpillar Marine Power UK Ltd operating from their Wimborne facility as The Wimborne Marine Power Centre.

In 2003 Leroy Somer were approached by Caterpillar Marine Power UK to provide the alternators for development of their new range of marine generators. Leroy Somer proposed a range of standard marine alternators and developed a range of special alternators to suit their engine range.

Over the forthcoming years Leroy Somer built a stronger partnership with Caterpillar Marine Power UK and continued work on developments with future engines.

As their generators became popular in the marine market, quantities began to increase and In 2006 Caterpillar Marine Power UK increased the power in their marine generator range to over 200 KVA incorporating the Leroy Somer LSA 46.2 range of alternators.

With the backing of such a strong brand Leroy Somer is very proud to be working with Caterpillar Marine Power UK and look forward to building a stronger relationship in years to come.

Towing Waste from the centre of London

These are Caterpillar 3054 gen-sets using LSA43 series generators. "Retainer" used to tow barges filled with rubbish from the centre of London to waste disposal facilities down river and is operated by Cory Environmental Services.



The new headquarters of Leroy Somer UK



Leroy Somer opened their first UK office in 1969 in the centre of London.

It soon became clear that increasing business required more resource and in 1974 a second office was opened in Skelmersdale, therefore, giving a geographical split to serve customers in the North and South of the UK. Since then,

Leroy Somer UK sales have grown dramatically and the need to adapt constantly to the demanding market changes, gives rise for new and larger premises.

The first Skelmersdale office was established at the Gillibrands site and after a few years moved to Pit Hey Place for further expansion, where it has remained until today.

The new challenge was to locate new premises for a combined head office with warehouse and assembly facilities within a 10 miles radius of Skelmersdale and maintain the continuity and benefit of the workforce and location.

After spending several months searching for a

new location, the perfect opportunity was discovered - just a short distance from the original site.

The new facility provides the support base for all our customer needs.

The new premises incorporate:

- The gearbox assembly centre (GAC) for the UK, capable of assembling any combination of geared motor from a complete range of in-line helical, helical bevel and worm gears. The geared motor units can be supplied for



safe and hazardous areas (zone 1, zone 2, zone 21 and zone 22).

- Since 2005, the GAC has been Atex approved and can offer a complete range.
- Stock ranges of AC & DC electric motors, Cast Iron and Aluminium in IP23 and IP55 protection to supplement our Guaranteed Availability System which offers rapid deliveries from our factories.
- Stock ranges of frequency inverters including Digidrive SK (open loop) and Varmeca (integrated inverter motor). Thanks to its simplicity and reliability, Varmeca is one of our most successful products.



The new facility brings together our quality and after-sales department, accounting and sales management centre, reinforcing our existing customer support structure through the two regional offices:

- Southern office based at Stockley Park, Uxbridge:

Motors, geared motor, inverter drives sales with project or system design and support for the southern area
 Alternator sales and technical support for the UK

- Northern regional office based at Skelmersdale:

Motors, geared motors and drives sales with project or system design and support for the northern area
 Spare parts (except alternators) for the all UK

The relocation is now fully completed and operational.

LEROY-SOMER UK



Motors, Gears, Frequency Inverters

Southern Office

8 The Square, Stockley Park
 Uxbridge, Middlesex
 UB11 1FW
 Motors, Gears: 020 8610 6575
 Frequency inverters: 020 8610 6621
 Fax: 020 8610 6886
 E-mail: motorsales.uksouth@leroysoomer.com

Northern Office

Units 1 & 2,
 2 Potter Place, West Pimbo
 Skelmersdale, Lancashire
 WN8 9PW
 Phone: 01695 554 103/102
 Fax : 01695 554 117
 E-mail: motorsales.uknorth@leroysoomer.com

Alternators, Spares & Service

8 The Square, Stockley Park
 Uxbridge, Middlesex
 UB11 1FW
 Phone: 020 8610 6578
 Fax: 020 8610 6886
 E-mail: alternatorsales.uk@leroysoomer.com

Spare Parts

Units 1 & 2,
 2 Potter Place, West Pimbo
 Skelmersdale, Lancashire
 WN8 9PW
 Phone: 01695 554 111/112
 Fax: 01695 554 118
 E-mail: spareparts.uk@leroysoomer.com

Dyneo Solution Launched In The UK

Leroy Somer chose the Drives and Controls exhibition to reveal their latest innovation, the new DYNEO Energy Efficient Solution for today's demanding drives market.

Drives & Controls is the number one UK exhibition for drives and automation, it was the ideal time and venue to launch the DYNEO Solutions incorporating the LSRPM permanent magnet motors spanning ratings from 0.75 up to 400kW.

With over 10,000 visitors attending the Birmingham NEC, the exhibition exceeded their expectations generating enormous interest.

The outcome of which, has been to open many new potential projects taking advantage of the design concept and the numerous benefits of the LSRPM.

- **Efficiency** : Highest levels over the whole speed range,
- **Performance** : Guaranteed and tested,
- **Integration into machines** : Compactness, reduced weight and simplified mounting,
- **Reduced maintenance** : mainly due to the low running temperatures.

The Dyneo Solution is now officially launched !!!



TECHNICAL CHARACTERISTICS OF THE RANGE OF LSRPM MOTORS :

- Radial permanent magnet (LSRPM) rotor technology
- IP55 synchronous motor
- Aluminium alloy housing, in accordance with IEC 60034
- Power: 0.75 to 400kW
- Torque: 1 to 1400Nm
- Speed ranges: 1 to 5500rpm
- Frame size: 90 to 315mm
- Designed to function with Leroy-Somer / Control Techniques drives

Further information can be found at :
www.leroysoomer.com

The Training and Exhibition Centre (CFE)

In the face of rapid changes in Leroy-Somer's main areas of business (the emergence of speed control, new permanent magnet motor technologies, new communication methods, etc.), training has become a strategic issue for the company and a major factor in its competitiveness. It is used not only to cope better with the increasing complexity of rotating machines, but also to update the skills of operators, design offices or salespeople working in the company.



Leroy-Somer has its own centre for training in industrial techniques. This centre, located in Angoulême (France), has an infrastructure of 3000 m² comprising classrooms, training workshops, a 130-seat auditorium and a huge exhibition hall.

Training employees

The CFE organises the training of Leroy-Somer employees. Each year, almost 1500 people receive training for bringing them up to date or acquiring new skills.

In addition, in response to the increasing difficulty of finding the necessary skills in certain areas of expertise, Leroy-Somer runs work-linked training courses for young people who already have a basic diploma. This paid training is spread over two years and alternates theoretical classes at the CFE and practical courses in the factory. It is adapted to the different requirements of the company, from operator to specialist engineer, and at the end of the session gives entitlement to a diploma.

In 15 years, over 1000 young people have received training in this way in 40 different areas of expertise and almost all have joined the company.

Training users

The CFE also gives training courses to users of Leroy-Somer products. Depending on the requirement expressed by the customer, it offers standard or customised training courses. These, carried out on site or on the customer's premises, aim to give the users a complete range of the possibilities of the products used: presentation of performance,



installation and commissioning, introduction to fault diagnosis, training in basic maintenance. When the Leroy-Somer products have been adapted to the customer's particular requirements, the courses are then also adapted accordingly.

Each year, the centre trains over 500 people, amounting to a total of approximately 10,000 hours of training.

Training service partners

Each user must be able to enjoy the same quality of service. For this, subsidiaries and independent service centres have the benefit of specific training, such as learning new maintenance techniques requiring the use of increasingly complex tools.

In addition, a multi-discipline team is currently working on setting up new knowledge acquisition procedures based on information technologies such as e-learning.

Exhibition centre

Finally, the CFE is also a true permanent showcase for Leroy-Somer's know-how. It is the ideal place for welcoming customers and showing them the broad range of Leroy-Somer solutions or for organising conferences or seminars.



VHE 800 HPM

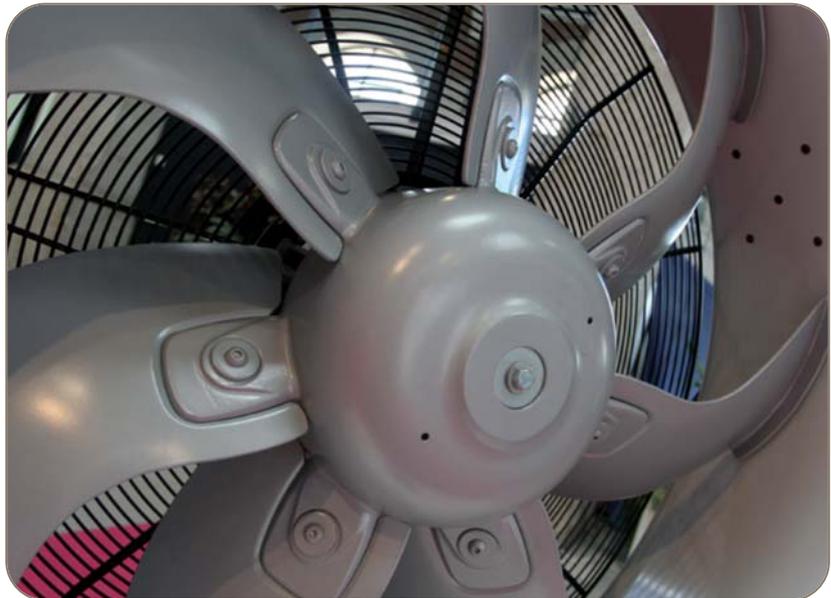
at the meeting of new technologies

For several years, Leroy-Somer has been marketing a VHE range of axial motorised fans, particularly highly-rated in refrigeration and air-conditioning applications since it completely satisfies the main expectations of manufacturers and users: low noise level, excellent efficiency of the motorised fan assembly, reduced size and high mechanical strength due in particular to a Leroy-Somer patent for blade fixing.

Today, we are witnessing irreversible developments in drive system technology. The new VHE 800 HPM range of axial fans is not only perfectly in keeping with the tradition of the VHE series but also has real technological innovations.

Looking at the drive mechanism first, the VHE 800 has adopted the new HPM (hybrid permanent magnet synchronous motor) technology, making it easier to thoroughly integrate the motorised fan. Just like the LSRPM motors that Leroy-Somer also offer for the HVAC markets, this type of drive mechanism has a constant very high efficiency over the entire speed range and is exceptionally compact.

Another major advantage of this new range is the use of control electronics situated remotely (exclusive to Leroy-Somer). Unlike many motorised fans, where the control electronics are integrated on the rear of the motor, the electronic control is attached to the external fan casing out of the air flow which can reach a temperature of 70°C in industrial refrigeration applications. The control consists of a variable speed drive and a component providing a fixed and even heat dissipation.



Mean energy balance and payback for a condenser equipped with 14 motorised fans



The main results of the final report produced by Leroy-Somer and delivered to the user comparing a conventional solution with 6P induction motor (IM6P) and the proposed solution, i.e. a 1000 min⁻¹ HPM motor with control by variable speed drive (BPM 1000 SPC):

- Payback : less than one year for this application but in general of the order of 12 months
- Energy saved : approximately 8000 kWh per month
- TOE saved : approximately 2 TOE per month
- CO2 saved : approximately 500 kg per month
- Saving : approximately 600 EUR per month

The advantages of the VHE 800 HPM range

Technical improvements

- The compactness of the HPM motor reduces the axial dimensions of the motorised fan and makes it easier to integrate into the manufacturer's machine.
- The use of a streamlined rotor reduces the noise level of the assembly.
- A Leroy-Somer patented mounting technique optimises the fixing of the blades. This increases the contact surface and therefore means the stresses are distributed better.

Improvement in performance

- Very high motor efficiency (90% over the entire speed range).
- Considerably greater efficiency of the HPM motor compared with a traditional asynchronous induction motor (see table).

Improvement in reliability

- Use of sensorless technology.



- Being placed outside the air flow, the remote electronics are no longer thermally linked to the motor and therefore no longer have any risk of overheating.



- The variable speed drive is encapsulated in a resin, facilitating better heat exchange with its environment and reduces the risks of external stresses (humidity, vibrations, etc.). It does not include any electrolytic capacitors which have the disadvantage of having a limited service life.



- The steel shell of the fan removes the heat from the variable speed drive by means of the fixed and even heat dissipation component.

Easy accessibility

Being placed outside the shell, the electronics are easily accessible and can be changed quickly due to the use of fast-on connectors.

Technical characteristics

- Use: providing an air flow over an exchanger battery
- Defined for a flow rate of 18 to 25,000 m³/h for differential pressures of between 20 and 120 Pa
- Operating temperature from -35 to + 60°C
- Continuous duty (S1) or intermittent periodic duty (S3) for condensing pressure regulation
- EC plating
- VHE 800 HPM standards: AMCA210-85 – ISO 9227 – NF EN294
- Motor standard: IEC 34
- 3-phase power supply voltages and frequencies: 400 to 480 V +/- 10%, 50 and 60 Hz
- Motor protection: IP55
- Variable speed drive protection: IP65
- HPM 180 motor with output power depending on use:
 - 1.8 kW at 900 min⁻¹ for a torque of 19.1 Nm
 - 0.85 kW at 700 min⁻¹ for a torque of 11.6 Nm
 - 0.225 kW at 450 min⁻¹ for a torque of 4.8 Nm
- 3-way + earth fast-on connector

VHE 800 HPM, an answer to the EuP directive

With the VHE 800 HPM range, you now have the prospect of conforming to the EuP (Energy-using Products) directive.

This European directive aims to improve the energy efficiency of energy-using products over their entire life cycle. It pays particular attention to the product design phase, as this phase is fundamental in the choice of resources used and solutions provided with a view to improving the environmental performance of an energy-using product.

The directive does not lay down requirements for specific products. Instead it defines a legal framework within which "implementation measures" must be drawn up.

Refrigeration units will progressively have to conform to this directive. The various elements of the VHE 800 HPM have been designed in compliance with this new European regulation: 40% reduction in active material, etc.

Zero Failure Objective

Leroy-Somer is expanding its network of service centres in Europe

There have been more than 50 years since the first Leroy-Somer Service Centres saw the light of day in France, followed by Europe and also the entire world via the International Division. Today, more than 330 Service Centres are operational in the world, around a hundred are situated outside of Europe, the company continues to expand the network.

Global expansion and local service

For Leroy-Somer, globalisation of exchanges means going where the market is, everywhere in the world! This deployment strategy, which increases its global presence, is accompanied at the same time by a policy of local services.

Leroy-Somer's service network in Europe is based on a set of service subsidiaries, specialised in both repair in the workshop and carrying out work on site, and on a large number of local partners, approved by Leroy-Somer, complying with the same quality charter. As an example, many of these centres are ATEX certified.

An extensive service

Today, industrial companies expect to have a high-performing machine base whilst reducing stocks and production stoppages. They also wish to continuously improve their processes, in terms of both throughput and productivity. To meet this triple expectation, Leroy-Somer has set up an extensive maintenance programme, based on four complementary types of action.

After a fault has been detected, the purpose of **corrective maintenance** is to repair a machine in order to put it back into service within a short time. Today, Leroy-Somer service centres are equipped to carry out work on

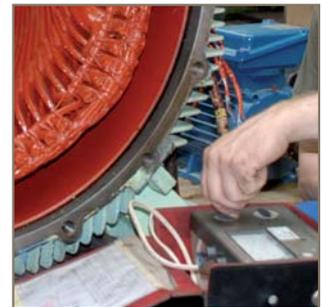
site 24 hours a day, 7 days a week.

In order to avoid this type of unscheduled, generally expensive work as much as possible, as well as the halts in production that can accompany it, Leroy-Somer service centres can offer preventive action. **Routine maintenance** is generally carried out at pre-established time intervals, for example for installations for which a chance stoppage would be particularly costly or dangerous, such as in the medical or nuclear field.

Routine maintenance is carried out with no prior check and is based on a priori knowledge of the average times of use of a component or product. This is not the case with **predictive maintenance**, which is carried out after analysis of various parameters that indicate it is necessary. The main types of check include electrical analysis, vibratory analysis and thermography. This type of programme fully meets the current requirements for total maintenance of a set of machines in service – some customers going as far as requesting Leroy-Somer to put in place a complete preventive system for all the motors in service using CAMM (Computer Aided Maintenance Management).

This method makes it possible to guard against the risks of failure of a process before they cause excessively high costs for the company. **Proactive maintenance**, on the other hand, aims to identify

the initial causes of a failure and propose solutions for improving an entire process. Generally, Leroy-Somer offers this type of action following a recurrent fault being encountered. This is also the opportunity to evaluate modifications liable to improve the performance of the assembly.



A reciprocal commitment

Irrespective of the service partner closest to them, and irrespective of the type of action necessary, each user must be able to enjoy the same quality of service.

Leroy-Somer's partners commit themselves to this by signing a quality charter laying down strict standards as regards employees' abilities, conformity of tools, compliance with procedures and knowledge of Leroy-Somer products.

For its part, Leroy-Somer provides the service centres with various types of technical support including, for example, carrying out particular expert appraisals or a training offer in order to follow up and anticipate current technical developments.

Recently, the company has also reorganised and modernised its spare parts service. All repairs are therefore carried out on the basis of Leroy-Somer approved spare parts – a guarantee of quality and reliability.

The service centres have a dedicated extranet which provides them with many online operational services: spare

parts configurator with online ordering tool, file of repair sheets for each product line, technical documentation, etc.

The service centres also have the benefit of Leroy-Somer's international organisation for availability of new products within short timescales, whether induction or DC motors, geared motors, ATEX motors or frequency inverters. Direct logistics flow combined with the existence of stocks, either in the factory, in the sales subsidiaries or directly at the service centre, ensures deliveries within a time compatible with the degree of urgency.

In the case of geared motors, which have an infinite number of assembly combinations, Leroy-Somer has set up a network of rapid-assembly centres distributed throughout Europe which enables an efficient response to a change in demand, directed increasingly towards providing short delivery times.



Finally, Leroy-Somer guarantees the availability of a set of products and options referenced in a particular catalogue containing over 500,000 part numbers. These products are delivered on the date chosen by the customer (in limited quantity) without any prior inquiry to Leroy-Somer.

Over the next few years, Leroy-Somer's wish is to clearly continue increasing the density of this local network. Leroy-Somer's service centres will therefore be closer than ever to their customers!

The new Dortmund assembly centre

In June, Leroy-Somer opened a new geared motor assembly centre in Dortmund, a fine example of their expansion of an efficient service network throughout Europe.

The aim of this centre is local assembly of customised geared motors, with power and speed exactly matching the customer's application. Assembly is carried out on the basis of a stock of mass-produced components and ensures delivery within a very short time.

The main Leroy-Somer geared motor ranges (Compabloc 3000, Orthobloc 3000, etc.) are assembled in the new Dortmund centre, which also offers a large number of different combinations and assembly options.

Another special feature of the Dortmund centre is that it provides these customers with a particular product selection catalogue based on the different combinations and options that can be produced.



Permanent Magnet Solutions
Dyneo[®]

A concentrate
of technologies



DYNEO[®], an innovative solution to propel your energy savings!

From 0.25 to 550kW, DYNEO[®] combines permanent magnet motor technology with electronic variable speed. DYNEO[®] attains unequalled efficiency levels over the whole speed range generating an extremely rapid return on investment.

Due to its compactness, DYNEO[®] integrates easily into all systems having exceptional performance and the smallest size on the market.

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