

REFERENCE CATALOGUE 2011-2012



- High voltage squirrel cage motors
- High voltage slip-ring induction motors

ABOUT EMZ

EMZ Elektro-Maschinen-Zentrale GmbH has been a leading supplier for electrical drive equipment since 1952. Our family company, which is now managed successfully by the second generation, has always focused on reliability and continuity. Constant improvement of our products and our performance guarantee a positive and supportive collaboration for our customers.

Nowadays we serve various branches such as cement, chemicals, paper and steel on a global basis. Moreover, our qualified technicians provide individual consultation during all stages of your project.

EMZ PERFORMANCE SPECTRUM

Electric motors (for high and low voltage)

- Three-phase squirrel cage motors up to 15,000 kW
- Three-phase slip-ring induction motors up to 15,000 kW
- DC motors up to 2,500 kW

Gear motors

- Helical gear motors
- Worm gear motors
- Bevel gear motors

Transformers (for high and low voltage)

- Oil transformers up to 20,000 kVA
- Cast resin transformers up to 6,000 kVA
- Dry transformers up to 1,000 kVA

Power electronics

- Frequency converters
- Inverters

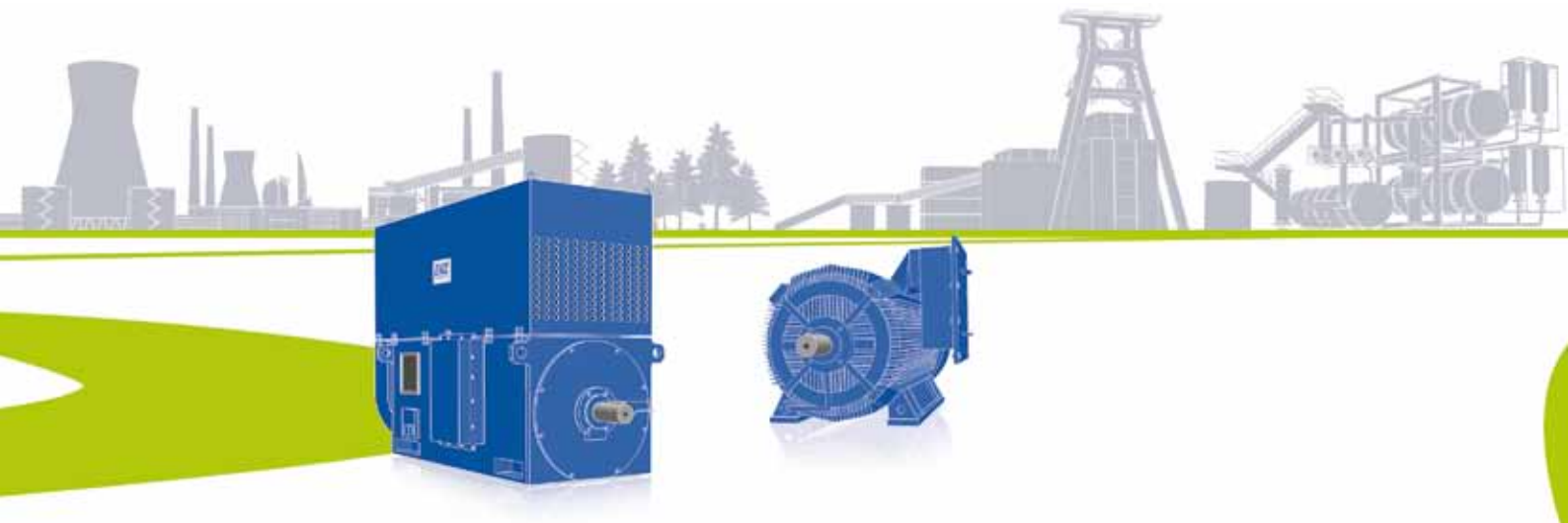
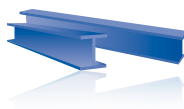


TABLE OF CONTENTS



→ **CEMENT**
Pages 4 to 9



→ **STEEL**
Pages 10 to 13



→ **OIL & GAS**
Pages 14 to 17



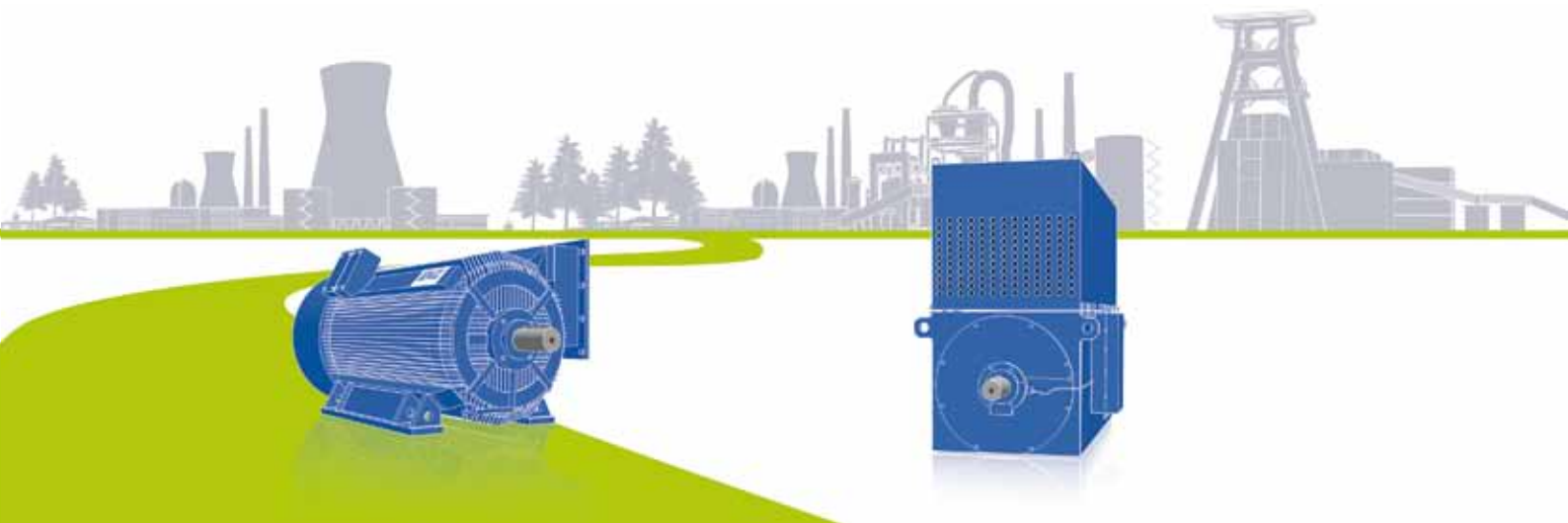
→ **WOOD & PAPER**
Pages 18 to 21



→ **POWER PLANTS**
Pages 22 to 25



→ **VARIOUS DRIVES**
Pages 26 to 29



CEMENT



Overview:

- Individual reproduction of a 1,700 kW motor
- Air-freight shipment of a 1,500 kW motor to Namibia
- 4,200 kW motor for cement plant in Tunisia
- Breakdown of a 4,400 kW ball mill drive in Poland





CEMENT

Individual reconstruction of a 1,700 kW motor for a ball mill drive

In 2010 EMZ delivered a spare motor for a total of 3 cement mill drives. The original motors were installed in a German cement plant over 40 years ago.

The 1700kW motor has an electrical and mechanical interchangeable design and can be installed on-site without any modifications.

Three-phase high voltage slip-ring induction motor

Brand	EMZ
Output	1,700 kW
Voltage	10,000 V
Speed	995 rpm
Safety class	IP23
Cooling system	IC31
Weight	8,600 kg

Application: Cement mill

Customer: German cement plant



CEMENT

Urgent delivery of a high voltage slip-ring induction motor to Namibia by air freight

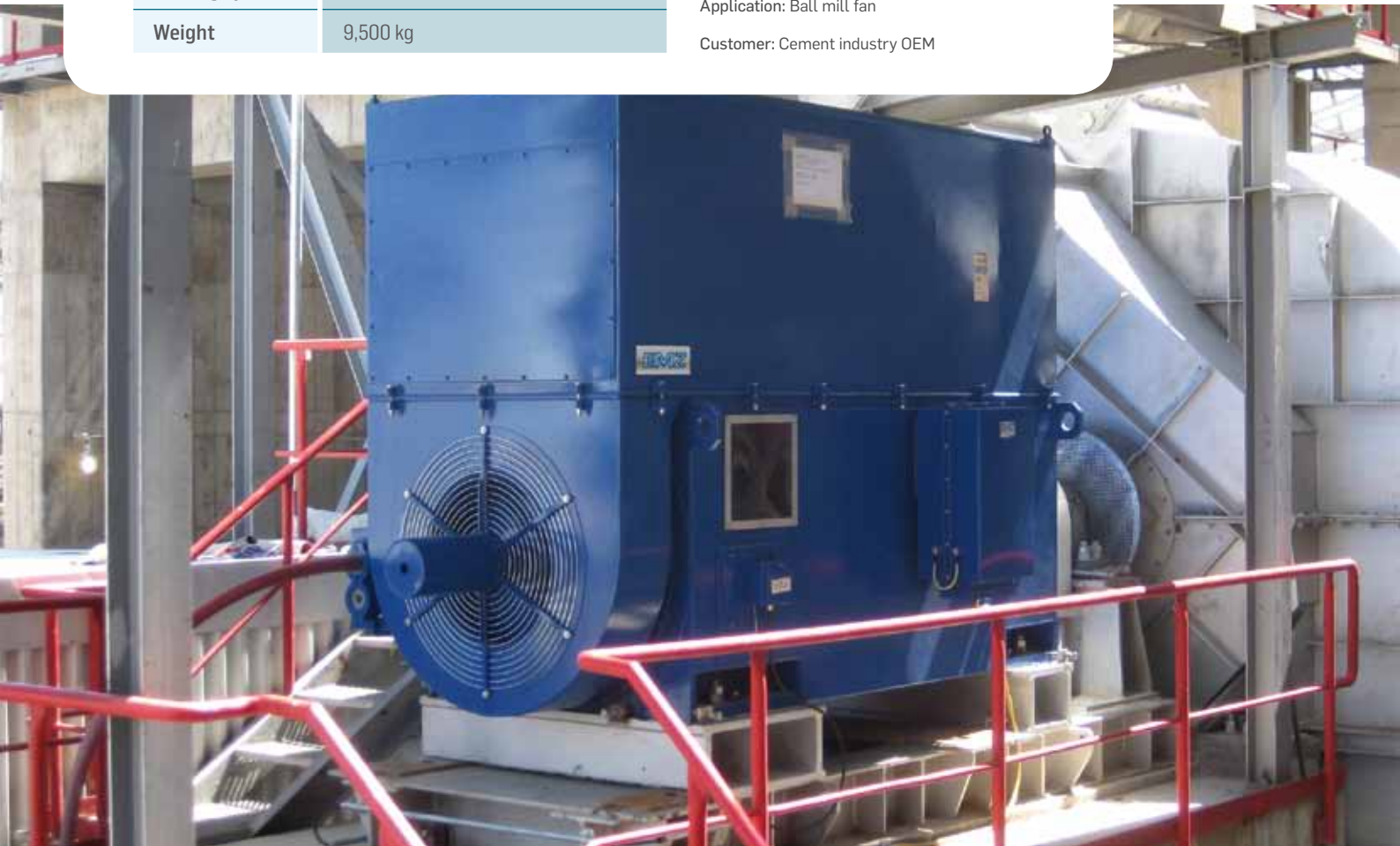
In March 2011 EMZ delivered a brand new 1,500 kW slip-ring induction motor including suitable transformer and starter to Namibia. The entire equipment was available from our stock and was ready for dispatch within one week.

The drive was put into operation by our own personnel on-site to drive a ball mill fan in a cement plant.

Three-phase high voltage slip-ring induction motor

Brand	EMZ
Output	1,500 kW
Voltage	6,000 V
Speed	989 rpm
Safety class	IP55
Cooling system	IC611
Weight	9,500 kg

Application: Ball mill fan
Customer: Cement industry OEM





CEMENT

4,200 kW motor for cement plant in Tunisia

In April 2011 EMZ delivered a 4,200 kW motor from stock to Tunisia to replace a defective cement mill drive.

Based on the very short delivery time of one week, the end client could restart production without further delay.

Three-phase high voltage slip-ring induction motor

Brand	EMZ
Output	4,200 kW
Voltage	6,000 V
Speed	995 rpm
Safety class	IP55
Cooling system	IC611
Weight	14,600 kg

Application: Cement mill

Customer: Cement plant in Tunisia



CEMENT

Breakdown of a 4,400 kW ball mill drive in Poland

After the breakdown of a ball mill drive in a cement plant in Poland, EMZ was able to supply a brand new replacement motor from stock. The picture shows three available slip-ring induction motors ready for dispatch from our stock in Recklinghausen.

The state-of-the-art design and minimum overall size of the motor made it possible for the operating company to install it on the existing foundation. Owing to the small frame size of our motors, the end client was able to install it on the existing foundation.

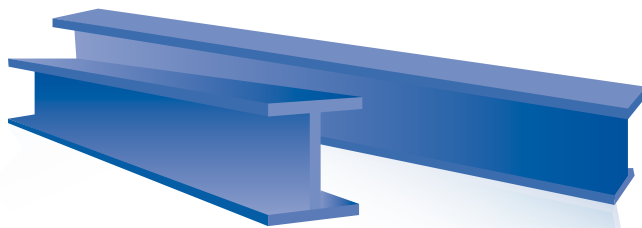
High voltage slip-ring induction motor

Brand	EMZ
Output	4,400 kW
Voltage	6,300 V
Speed	993 rpm
Safety class	IP55
Cooling system	IC611
Weight	16,600 kg

Application: Ball mill drive
Customer: Polish cement plant



STEEL



Overview:

- 1,200 kW main drive for wire-rolling mill
- 1,950 kW motor for Italian steel plant





STEEL

1,200 kW main drive for wire-rolling mill

In January 2011 EMZ supplied an interchangeable 1,200 kW slip-ring induction motor for a wire-rolling mill.

The motor was mechanically adapted to the existing foundation. The electrical design took the special requirements of the load peaks of a steel wire-rolling mill into account.

Three-phase high voltage slip-ring induction motor

Brand	EMZ
Output	1,200 kW
Voltage	5,000 V
Speed	740 rpm
Safety class	IP55
Cooling system	IC616
Weight	9,500 kg

Application: Rolling mill

Customer: Wire-rolling mill in Germany



STEEL

1,950 kW motor for Italian steel plant

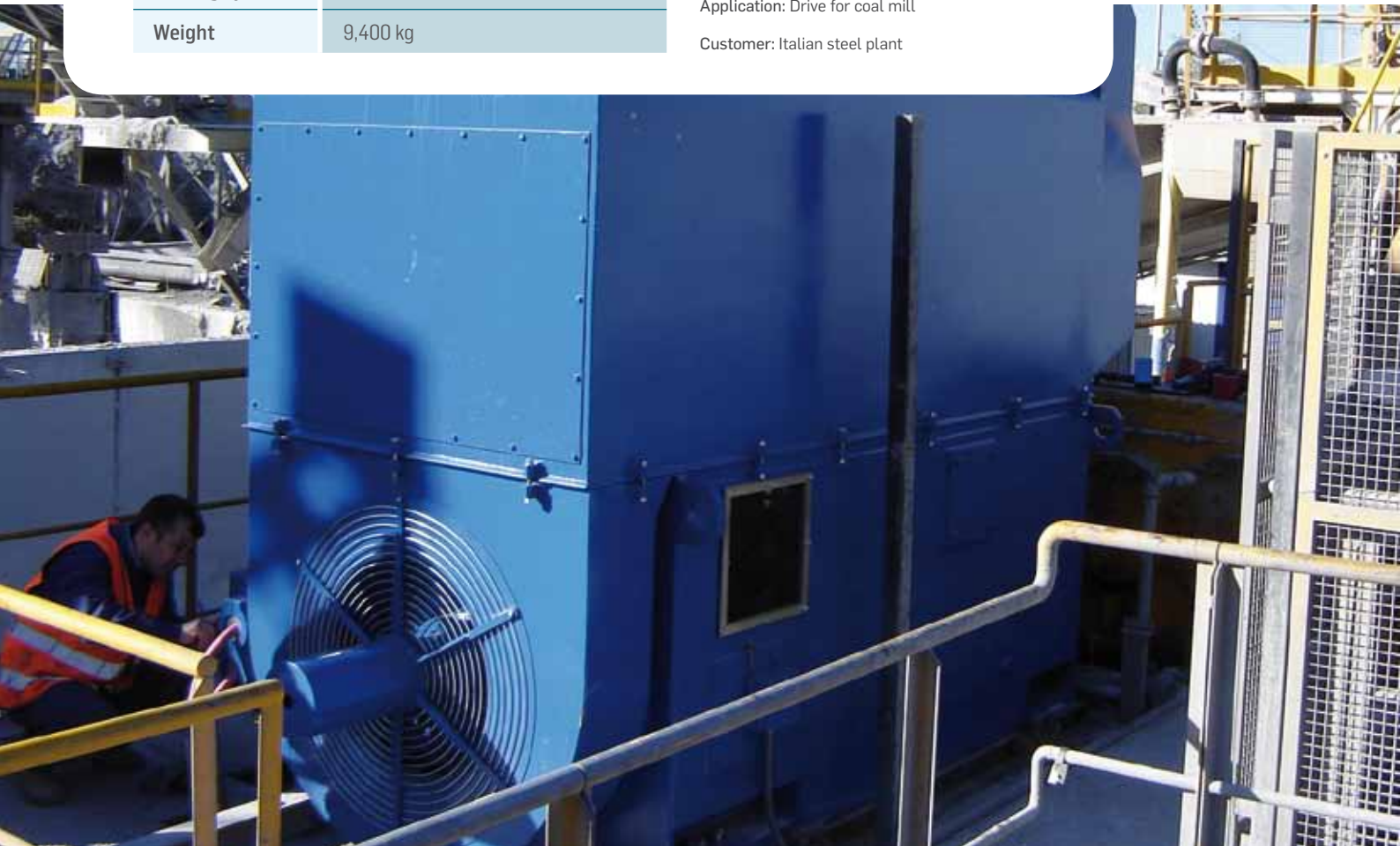
After the breakdown of a coal-mill drive in an Italian steel plant, a 1,950 kW slip-ring induction motor was delivered within one week. The mounting dimensions and the design of the top-mounted heat exchanger were adapted to meet the customer's individual specifications.

Three-phase high voltage slip-ring induction motor

Brand	EMZ
Output	1,950 kW
Voltage	6,000 V
Speed	989 rpm
Safety class	IP55
Cooling system	IC611
Weight	9,400 kg

Application: Drive for coal mill

Customer: Italian steel plant



OIL & GAS



Overview:

- 630 kW pump drive for oil field in Lower Saxony
- 6,000 kW slip-ring induction motor for compressor-test bench





OIL & GAS

630 kW pump drive for oil field in Lower Saxony

Siemens Germany ordered a completely overhauled and modified pump drive for an oil field in Lower Saxony. The delivery included installation and commissioning by our own service personnel on-site.

Scope of EMZ services

- Alignment of maximum frame size to 560 mm
- Adaptation of the fixing holes to meet the existing dimensions
- Modification of 6 kV motor connection to Pflister Euromold connectors
- Laser alignment of motor
- Direction of rotation checked for entire system
- Vibration analysis of the complete system

Three-phase high voltage squirrel cage motors

Brand	VEM
Output	630 kW
Voltage	6,000 V
Speed	2,973 rpm
Safety class	IP23
Weight	3,500 kg

Application: Pump drive

Customer: Siemens Germany



OIL & GAS

6,000 kW slip-ring induction motor for compressor-test bench

In April 2011 EMZ supplied a 6,000 kW slip-ring induction motor to a well-known German compressor manufacturer.

This individual machine can be operated as a slip-ring induction motor, supplied with 10kV at 50Hz, as well as a Variable Frequency Drive fed by a frequency converter with 11kV at 60Hz.

Three-phase high voltage slip-ring induction motor with continuous contact brushes

Brand	EMZ
Output	6,000 kW
Voltage	11,000 V VFD
Speed	1,800 rpm
Safety class	IP55
Cooling system	IC81W
Weight	17,700 kg

Application: Drive in testing facility

Customer: German compressor manufacturer



WOOD & PAPER



Overview:

- Prompt delivery of a 2,000 kW motor to Turkey
- New production of a 2,500 kW motor for Slovenia





WOOD & PAPER

Prompt delivery of a 2,000 kW motor to Turkey

In May 2011 EMZ modified and supplied a 2,000 kW three-phase squirrel cage motor from stock for a refiner drive within 4 working days.

To meet the technical requirements, the ABB Motor was modified with a second shaft end for mounting a pony motor. Also the stator windings were reconnected from 10,000 kW Star to 6,000 kW Delta.

Three-phase high voltage squirrel cage motor

Brand	ABB
Output	2,000 kW
Voltage	6,000 V
Speed	1,485 rpm
Safety class	IP55
Cooling system	IC81W
Weight	6,800 kg

Application: Refiner drive
Customer: Wood industry in Turkey



WOOD & PAPER

New production of a 2,500 kW motor for Slovenia

In September 2011 EMZ delivered a 2,500 kW squirrel cage motor to a paper mill in Slovenia as a refiner drive.

Three-phase high voltage squirrel cage motor

Brand	EMZ
Output	2,500 kW
Voltage	6,300 V
Speed	990 rpm
Safety class	IP55
Weight	16,000 kg

Application: Refiner drive

Customer: Paper manufacturer in Slovenia



POWER PLANTS



Overview:

- 520 kW cooling water pump drives for German nuclear power plant
- 1,700 kW fan drive for Egyptian power plant





POWER PLANTS

520 kW cooling water pump drives for German nuclear power plant

In 2010 EMZ received an order for three pump drives for intermediate circuit cooling water pumps in a German nuclear power plant.

The motors had to be designed to be 100% mechanically-interchangeable and were delivered and installed in September 2011. The machines fulfilled all safety applications and acceptance tests.

High voltage squirrel cage motor

Brand	ATB/Schorch
Output	520 kW
Voltage	10,500 V
Speed	993 rpm
Safety class	IP55
Cooling system	IC511
Weight	5,000 kg

Application: Intermediate circuit cooling water pump
Customer: German nuclear power plant



POWER PLANTS

1,700 kW fan drive for Egyptian power plant

EMZ supplied a 1,700 kW three-phase squirrel cage motor for an Egyptian power plant in 2010.

The high voltage motor was designed to be installed on the existing foundation without modifications. Owing to the fan's extremely large external moment of inertia, our experts selected a special rotor design to ensure a reliable run-up.

Three-phase squirrel cage motor

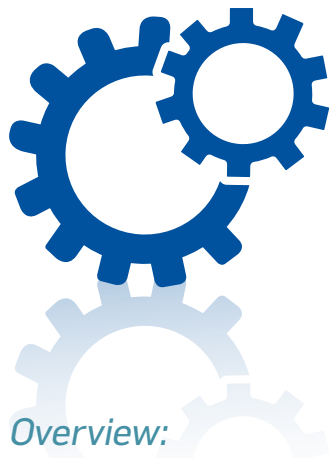
Brand	EMZ
Output	1,700 kW
Voltage	6,000 V
Speed	990 rpm
Cooling system	IC24W
Weight	8,300 kg

Application: Fan drive

Customer: Power plant in Egypt



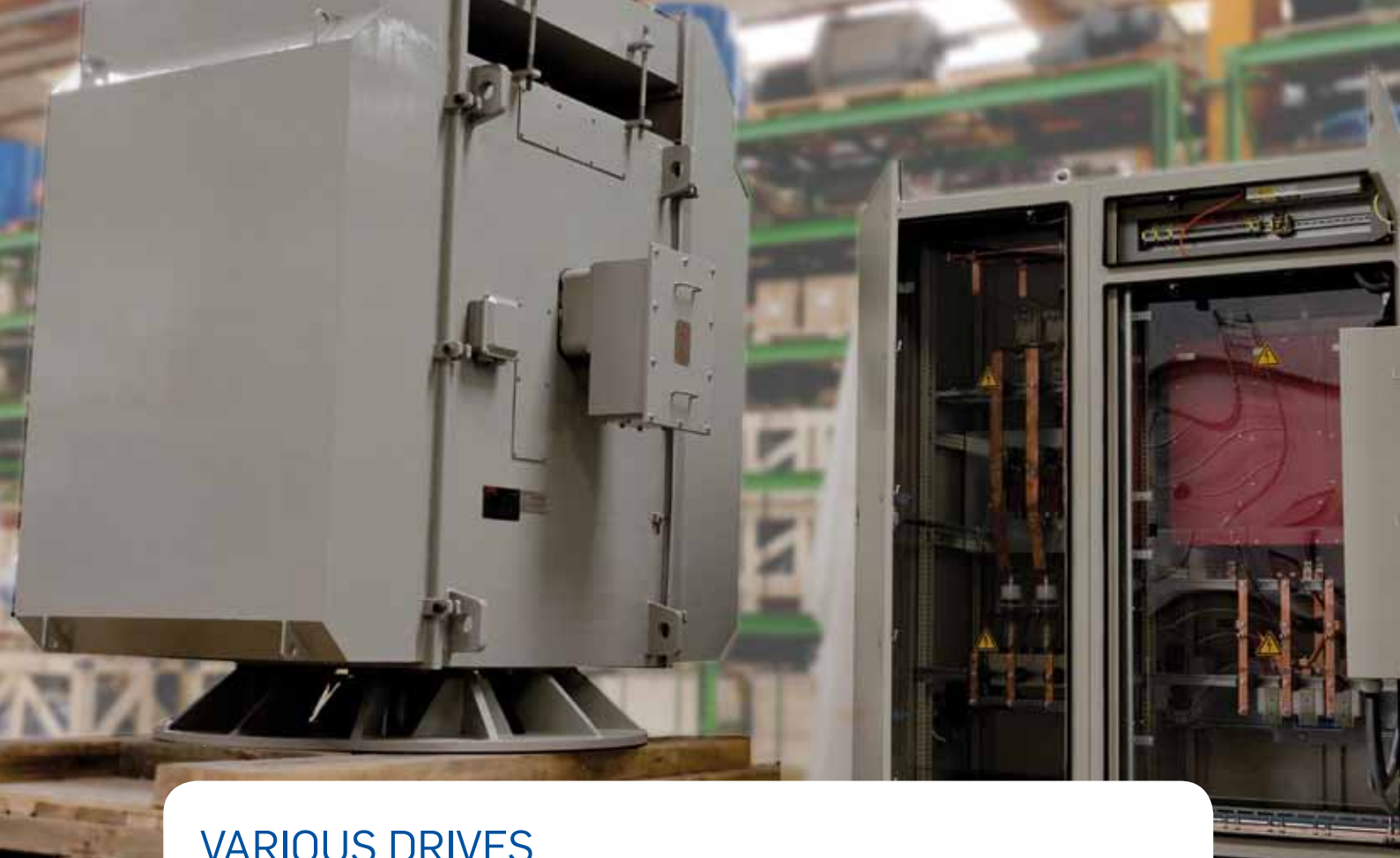
VARIOUS DRIVES



Overview:

- 1,500 kW fan drive for body-flying installation
- 355 kVA rotating motor generator set





VARIOUS DRIVES

1,500 kW fan drive for body-flying installation

In December 2010 EMZ received an order to supply a complete drive unit for a 1,500 kW fan drive for a new body-flying unit.

In August 2011 the motor was delivered with a high voltage soft starter and the complete switchgear. The body-flying unit will be installed in France and put into operation at the end of 2011.



Bodyflying in practice.

High voltage squirrel cage motor

Brand	EMZ
Output	1,500 kW
Voltage	6,000 V
Speed	990 rpm
Safety class	IP55
Weight	11,500 kg

Application: Fan drive

Customer: Switzerland OEM



VARIOUS DRIVES

355 kVA rotating generator set

In June 2011 EMZ produced an individual rotating generator set. The motor including generator was mounted on a self-supporting base frame – directly coupled to a gearbox. The motor is started by a soft starter, all monitoring and measuring instruments are installed in a switch cabinet. The series-connected adaption transformer allows 10 additional test voltages in the range between 200 V and 575 V.

Rotating motor generator set

Brand	EMK / Leroy-Somer
Output	355 kVA
Voltage	400 V - 50 Hz // 460 V - 60 Hz
Speed	1,500 / 1,800 rpm
Safety class	IP54 / IP23
Cooling system	IC411 / IC01
Weight	4,500 kg

Application: Testing facility for environmental simulation

Customer: Schunk Group



YOUR NOTES

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Naturally our catalogues are also available in printed form.

Other EMZ catalogues:

- EMZ Reference Catalogue
- EMZ Anniversary Brochure
- EMZ Low Voltage Motor Catalogue
- EMZ High Voltage Motor Catalogue

Catalogue request

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EMZ Product Portfolio:

Electric motors (for high and low voltage)

- Three-phase squirrel cage motors up to 15,000 kW
- Three-phase slip-ring induction motors up to 15,000 kW
- DC motors up to 2,500 kW

Gear motors

- Helical gear motors
- Worm gear motors
- Bevel gear motors

Transformers (for high and low voltage)

- Oil transformers up to 20,000 kVA
- Cast resin transformers up to 6,000 kVA
- Dry transformers up to 1,000 kVA

Power electronics

- Frequency converters
- Inverters

Rotating frequency converter 50/60 Hz

- e.g. for network simulation in testing facilities