

Scope of Supply

Ingeteam Power Technology, S.A. Industrial Systems Division is responsible for the complete turnkey electrical project:

- Project management
- Basic and detail engineering
- Supply of drives, control and electrical equipment:

Power transformers
 Cycloconverter - MOTOCON DIRECT*
 Auxiliary DC drives - MOTOCON DC*
 Main motors – manufactured by INDAR (Ingeteam Group)

- Electrical Installation.
- Installation supervision
- Commissioning

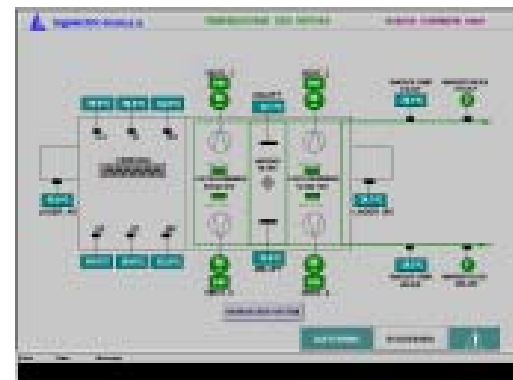
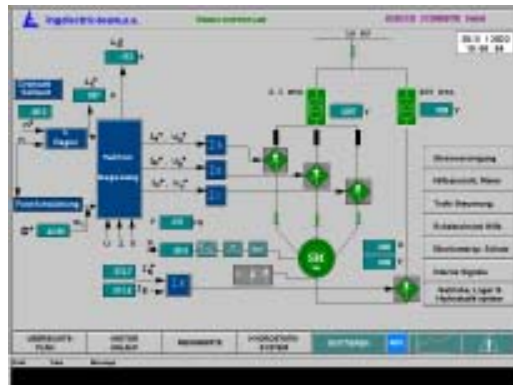
(*) The MOTOCON DIRECT, MOTOCON DC is equipment designed and manufactured by Ingeteam Technology.



Cycloconverter Equipment



Main Motor



After-Sales Services

- Hotline service
- Spare parts in 24 hours
- Direct line with our technical staff
- Remote communication from our offices to the factory automation network

Ingeteam

Modernization Main Drives Section Mill
 Division Special Sections Schwerte (Germany)

Hoesch Hohenlimburg
 Ein Unternehmen von ThyssenKrupp Steel



www.ingeteam.com
industry@ingeteam.com

Ingeteam

Ingeteam
industry

Description of the Mill

Towards the end of the year 2000, Hoesch Hohenlinburg (member of the ThyssenKrupp Steel Group), commissioned Ingeteam GmbH to modernize the main drives for the B2 Roughing Mill and P1 Edger Mill of its Nr. 7 special profile mill plant of Schwerte (Germany).

The upgrading of the installation consists of the replacing of the main drives of both stands based on DC-technique, with a power rating of 1000 kW at 150 rpm by AC synchronous motors of 2500 kW, at 87 rpm base speed and their corresponding cycloconverter equipment.

Danieli (Italy) was awarded the mechanical revamping as well as the automation of the roll change and interface to the existing mill control.

The order comprises the complete supply of the main drives of both mill stands including power transformer, cycloconverter and synchronous motor, as well as the commissioning during the scheduled stillstand.

The engineering and coordination works as well as the commissioning have been carried out by Ingeteam Power Technology, S.A..

Technical Features

Mill technical data

- Mill..... composed of 4 Mill Stands:
 - 1 reversible rougher
 - 2 reversible edgers
 - 1 non-reversible finishing stand
- Output..... 60 tph
- Incoming material at B2.....
 - straight profile: between \varnothing 90 and \varnothing 200 mm
 - profile: between 180x110 mm (width x height), 300 x 125 mm
 - round profiles: 180 \varnothing to 240 mm
 - length: 2500 mm to 8000 mm
- Outgoing material straight, rectangle and round profiles between \varnothing 42 and \varnothing 150 mm

Transformer (per drive)

- Type..... dry
- Quantity..... 1x 4500 KVA/ 1x 400 KVA
- Primary voltage..... 10 KV, \pm 2,5%, \pm 5%
- Secondary voltage..... 1150 V / 400 V
- Connection group..... Ddo / 4%
- Weight..... 9400 kg / 1460 kg

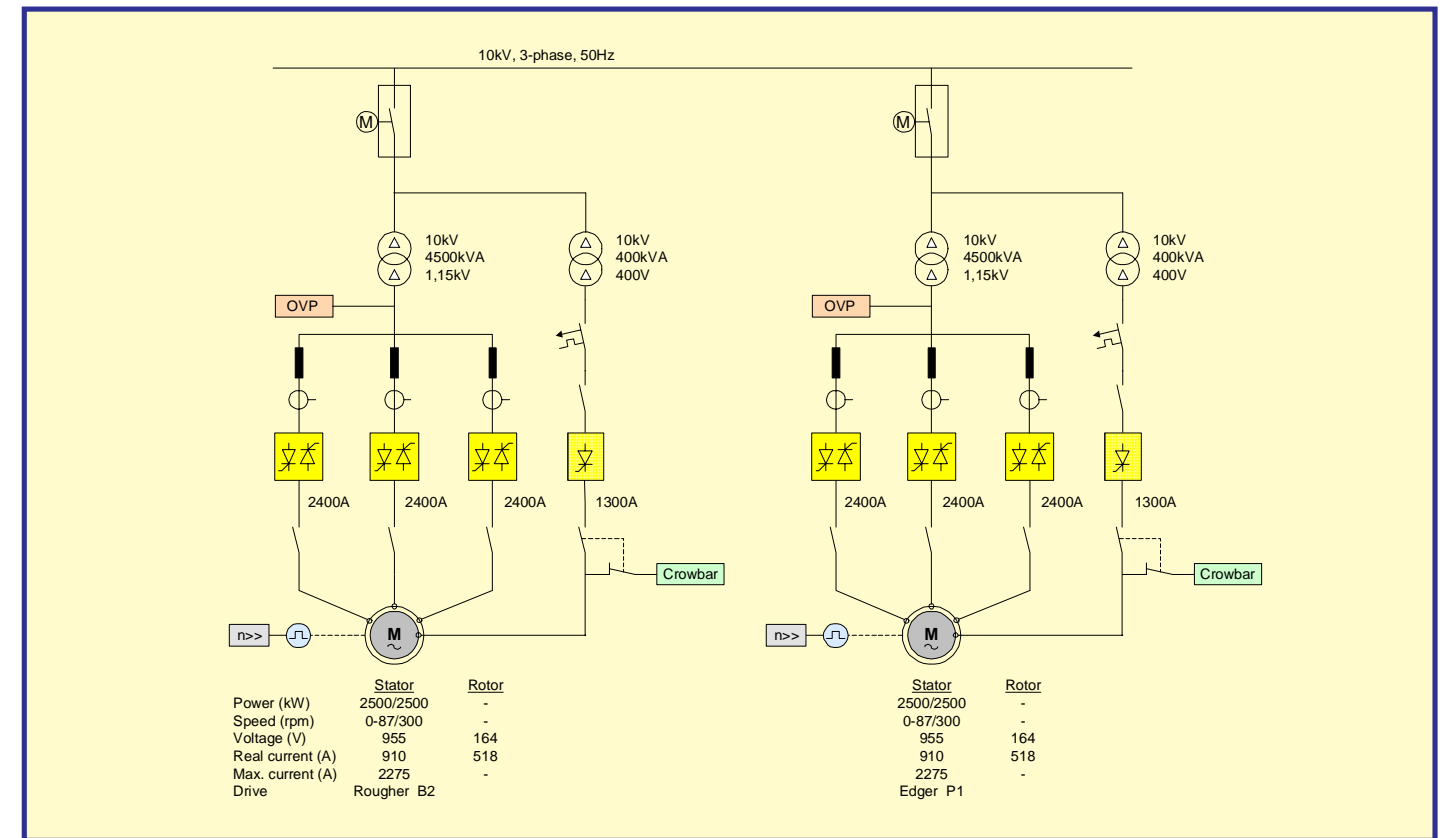
Cycloconverter equipment (per drive)

- Type..... Motocon Direct Cycloconverter
- Rectifiers.....
 - 3 Full-wave, 3-phase regenerative thyristor rectifiers (1x rectifier per stator phase) 2400, 1200 Vac
 - 1 Full-wave, 3-phase thyristor rectifier, 1300 A, 400 Vac
- Control..... digital with 32 bits microprocessor, including necessary I/Os
- Diagnosis system..... Built-in HMI, 17" size, TFT screen

Main motor drive

- Type..... LCA-1400-S/12 (Indar)
- Power..... 0-2500/2500 kW
- Speed..... 0-87/200 rpm
- Frequency..... 0-8,7/20 Hz
- Stator voltage..... 950 Vac
- Stator current..... 905 A
- Excitation voltage..... 164 V
- Excitation current..... 518 A
- Service..... S9
- Insolation/heating..... F/B
- Form..... IM-B3C
- Protection degree..... IP54
- Cooling..... IC-W37A86
- Cooling water incoming temp.... 25° C
- Bearings..... sleeve bearings with oil-forced lubrication 45 l/min.
- Weight..... 53 Tn
- Base frame..... included
- Accessories complete temperature: control in bearings, windings, cooling water and air flow control
- Attached sensors..... Pulse generator and centrifugal speed switch

Main Drive Diagram



Control Diagram

