

# Power<sup>IT</sup> Compact Rectifier

## Success Story: Metal Treatment and Finishing Plant



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### BACKGROUND

In metal treatment and finishing plants, small rectifiers are used for various applications such as pickling, degreasing, and plating.

Our customer is a large steel plant in the Americas with several other plants around the world. Our rectifiers are replacing existing units in his Cold Rolling mill for the degreasing and plating process.

### SUCCESS FACTORS

The replacement of 16 units in a running plant is a challenge for all involved parties. The ABB Compact Rectifier was chosen due to our large know how in rectifier applications, our good relationship with the customer and over 100 year of experience in large industries.



Another advantage is the DCS600 controller with its removable control and display panel CDP312 (see picture on the left), which has shown its reliability

in various DC motor drives or excitation systems. The customer is very familiar with the controller as it is installed in his existing drives. No additional training is needed for the plant personnel and the same spares can be used. The communication to the plant control is done via Modbus and ensures complete access to the rectifiers in the plant.

### TECHNICAL SUMMARY

#### Basic Data

- Rated supply voltage: 460 Vac 3-ph
- Rated frequency: 60 Hz
- DC current: 5'000 A
- DC voltage: 24 V and 36 V
- Output: Unipolar
- Ripple: < 5 % at full output power
- Control: 0 ... 100% of In
- Number of pulses: 6
- Cooling: air-cooling
- Degree of protection: IP20
- Controller: ABB DCS 600

### MAIN FEATURES

ABB Compact Rectifiers are manufactured on highest quality standards based on proven designs. The picture on the left shows our proven stack technology and Kompak Power Module. All components are carefully selected for maximum efficiency and lifelong operation.



The Power<sup>IT</sup> Compact Rectifiers are complete all-in-one, cabinet-mounted rectifier units including LV-transformer, rectifier, cooling, controller and communication facilities.

### KOMPAK POWER MODULE

The Kompak is the Power Module of the rectifier and consists mainly of a casing, which houses the power section. The AC and DC bus bar connection points are located at the back of the casing together with the RC snubber circuit. The cooling fan is mounted underneath the KOMPAK. The direction of the forced cooling air is from the bottom to the top.



The power section is based inside the casing and consists of three assemblies with mounting clamp thyristors, optional fuses, top and bottom bus bar connection as well as aluminium air-cooled heat sinks together.

The Kompak can also be equipped with two optional power interface boards – the measuring board SDCS-PIN-51 and the pulse transformer board SDCS-PIN-41A of the DCS600 controller.



**Power Electronics**

High Power Rectifiers

#### ABB Switzerland Ltd

Baden/Turgi  
Switzerland

Tel: +41 58 589 38 09

Fax: +41 58 589 20 90

E-Mail: [pes@ch.abb.com](mailto:pes@ch.abb.com)

Internet: [www.abb.com/rectifiers](http://www.abb.com/rectifiers)