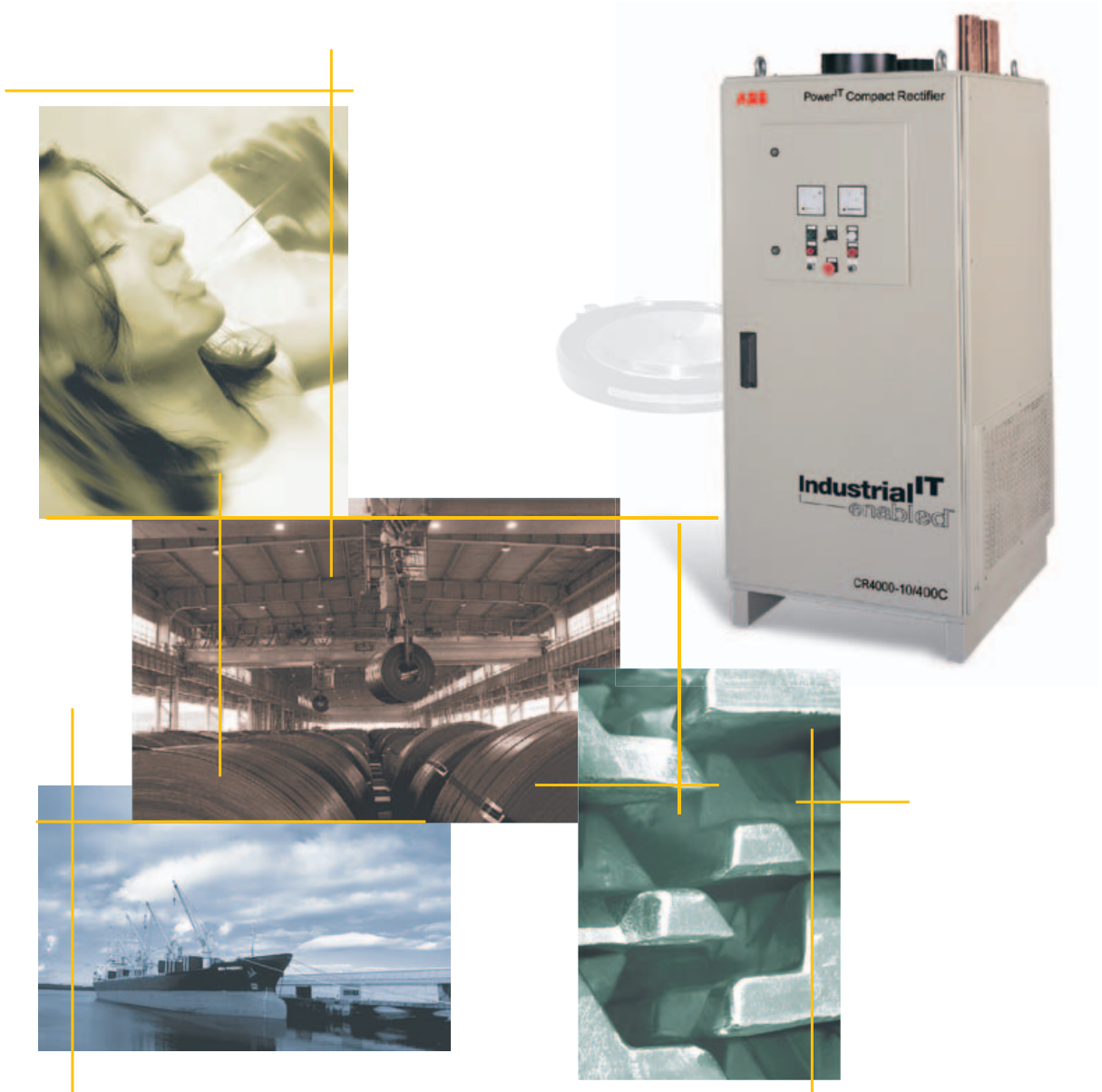
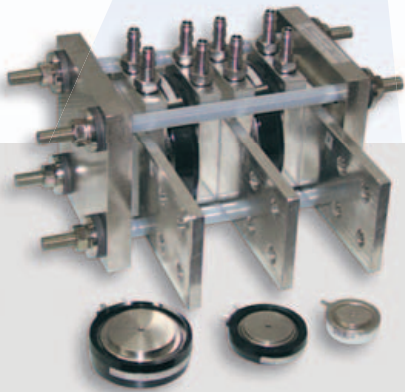


Power^{IT} Compact Rectifier

Air- and water-cooled compact thyristor rectifiers for industrial applications





Decades of experience - thousands of ABB rectifiers in operation worldwide

ABB, the worldwide leading supplier for many years in the area of rectifier installations. Many thousands of systems are successfully in operation in different application areas. As each ABB rectifier is built on the sound knowledge and experience of our engineers, an ABB rectifier is the optimum solution for you.



Remote Operator Panel

With the strengths of ABB, you have a dependable system partner at your side, both today and in the future. By considering ABB as a partner already at the planning phase, the success of your project is guaranteed from the beginning. Comprehensive systems design, professional electromechanical and control system engineering guarantee successful and on-time commissioning.

Power IT Compact Rectifiers are sold and delivered through the worldwide ABB network, meaning you are always ensured to receive local service and support.

Compact, reliable and efficient

The Power^{IT} Compact Rectifiers are based on a proven design that is optimized down to the smallest detail. All components are selected for maximum efficiency and reliability. The basis technology is traditional thyristor technique combined with a very flexible 16-bit digital microprocessor control unit that offers advanced control and monitoring routines.

The Power IT Compact Rectifiers are delivered as complete, cabinet-mounted units, including controller, operator panel and cooling system. Everything is ready and prepared for fast, simple installation and start-up.

A wide range of applications

The Power^{IT} Compact Rectifiers are utilized in a broad range of applications within different industries. To protect surfaces on vessels, offshore installations and land-based facilities, we deliver "Impressed Current Cathodic Protection Systems" in sizes from 100A to 1000A. For surface treatment and for process lines in the steel industry, Power IT Compact Rectifiers from 1000A up to 10'000A are utilized. For chemical and metallurgical industries, we deliver rectifiers for refining processes up to 30'000A or more. In the water purification and treatment industry, Power IT Compact Rectifiers are widely used in various electrolysis processes.

Power^{IT} Compact Rectifiers:

Based on standard units, a lot of options allow for full flexibility

- **Tailor-made interfaces to customer specific control systems**
- **Analog and digital IOs on different voltage and current levels**
- **Serial communication interface RS485 for full access to your rectifier**
- **Cooling and enclosure according to your requirements**

Wide range of options matching your needs

The Power^{IT} Compact Rectifiers can be used for many different industrial applications. The units - based on our standard configuration - are available with several features to exactly fit into your process.

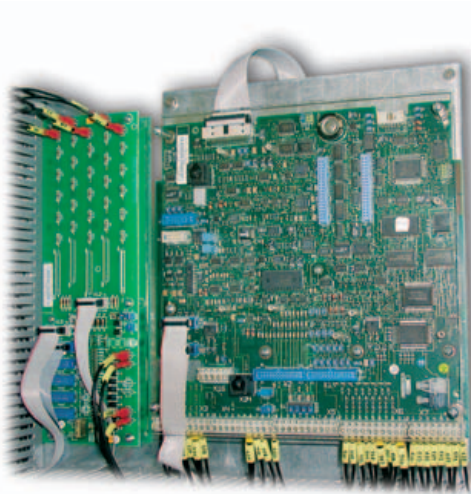


ABB DCS500 Digital Thyristor Controller

Power^{IT} Compact Rectifiers are available in air-cooled, combined air-/water-cooled and water-cooled versions.

The air-cooled rectifiers have an open forced air-cooling system by using a fan. The combined solution uses water-cooling for the semiconductors and air-cooling for the transformer. For the third type, water-cooling is applied for both, semiconductors and transformer. The complete cooling system with pumps, heat exchanger and necessary valves can be provided in different versions. Air- and water-cooled transformers are placed in the same cabinet as the rectifier part, making the Power IT Compact Rectifier easy to install. For higher voltages, the oil-cooled transformer is installed external to the cabinet.

Local control or integrated in a total automation solution

The DCS500 control system is designed for units, such as Power IT Compact Rectifiers. It includes many self-diagnostic functions. The rectifier is delivered with an operator panel having status and alarm lamps, operating switches and analog instruments or if needed optionally digital displays to present the rectifier data. As an option, the controller unit can be equipped with two serial outputs - one is utilized for connection of the programming terminal and the other (RS 485) for external communications.



HCLV 12.5kA 35V bipolar 12 pulse

Technical Summary

General Data

	Standard	Options* ¹
Input	220, 380, 400, 480, 600Vac 50/60Hz	other low / medium voltage
Output	up to 15'000A at 5 .. 50V up to 8'000A at 50 .. 500V higher currents with paralleling	bipolar
Control	0 .. 100% of In	0 .. 100% of Un
Ripple	<5% at rated values	-
Pulses	6 / 12 pulse	-

Ambient, Enclosure and Cooling

	Standard	Options* ¹
Temperature	-10°C .. 40°C +2° .. 40°C (water-cooled units only)	extended range available
Humidity	max. 90%	-
Altitude	max. 1000m above sea level	-
Enclosure	IP20	IP21, IP22, IP23 IP54 (purely water-cooled only)
Cooling	forced air combined water/forced air	water only
Control	ABB DCS500 digital controller	integration of customer specific PLCs and interfaces available
Standards	IEC146	others upon request

Indication and Operation

	Standard	Options* ¹
Meters	Analog Current/Voltage	Digital Current/Voltage
Lamps	Ready, On, Off, Trip, Alarm	Anodic* ³ , Cathodic* ³
Switches	On/Off, Reset, Emergency Stop	Anodic/Cathodic* ³ , Local/Remote
Control	I-Ref	I-Ref A* ³ , I-Ref C* ³ U-Ref, U-Ref A* ³ , U-Ref C* ³
Analog In*²	-	I-Ref, I-Ref A* ³ , I-Ref C* ³ U-Ref, U-Ref A* ³ , U-Ref C* ³
Digital In	-	Local/Remote, Anodic/Cathodic* ³
Analog Out*²	-	Current/Voltage signals
Digital Out	-	Ready, On, Trip, Alarm, Anodic/Cathodic* ³
Communication	-	Serial Interface RS485
Panels	Local Operator Panel	Remote Operator Panel Detailed Faults Panel Detailed DCS Operator Panel

*¹ The shown options are typical examples. Other features are available upon request.

*² Analog I/Os: 0-20mA, 4-20mA, 0-10V

*³ Only available on bipolar units

PowerIT Compact Rectifiers:

Advantages combined
in one product

- "All-in-one" compact design
- Easy to use, install, operate and maintain
- Proven design and quality of components
- Ready for fast installation and start-up
- Flexible, digital microprocessor control
- Short delivery time

ABB - your Partner for Success

ABB is a leading worldwide supplier of state-of-the-art high-power converter technology for electrolytic, non-ferrous and chemical processes.

ABB maintains local centers for high-power converters in many countries of the world. This local presence ensures full support, including engineering, installation, commissioning, training and service every day of the year throughout the life cycle of the plant. ABB is one of the world's leading technology groups and supplies best high-power converters wherever DC power is needed for an industrial process. Backed by ABB's vast experience and resources in electrical engineering and power electronics, we are able to supply everything from a single device to large turnkey converter installations complete with switchgear, regulating transformers, power factor compensation and filters, network plant process control and DC busbar systems.

ABB rectifier installations guarantee safe operation and a reliable supply of DC current to your plant. They therefore make an important contribution to your economic success.

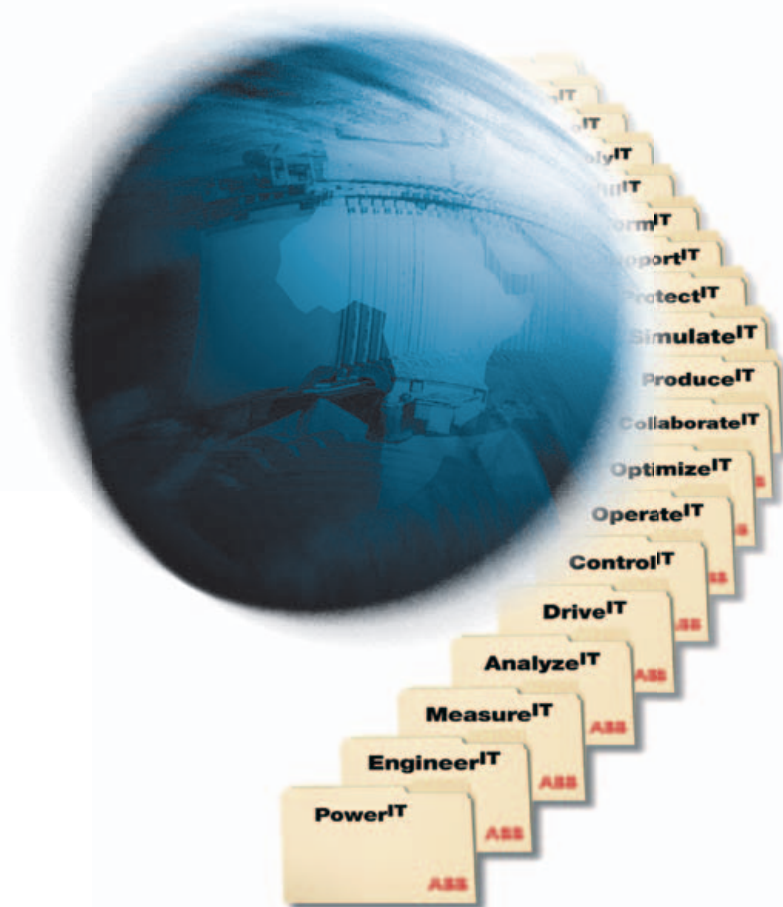


ABB Switzerland Ltd

Power Electronics

ATPR

5300 Baden/Turgi

Switzerland

Telephone +41 58 589 38 09

Fax +41 58 589 20 90

E-Mail pes@ch.abb.com

Internet www.abb.com/powerelectronics