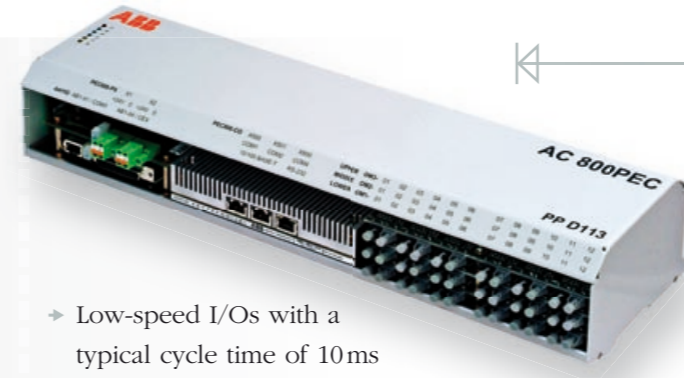


AC 800PEC Control Platform

The control part of the MEGATROL system uses the high-end process control system AC 800PEC, belonging to the Control^{IT} product line. The AC 800PEC is a modular high-speed control system, with modules arranged according to the required I/O configuration and process. It excels with very high processing speed, providing:

- Very fast analog and digital process I/Os with a typical cycle time of 25 μs
- Fast closed-loop control and regular process logic implemented in one controller



- Low-speed I/Os with a typical cycle time of 10 ms
- Very fast analog/digital conversion and nominal/actual value comparison, directly on the peripheral I/O module

The AC 800PEC is fully integrated into ABB's Control^{IT} software environment.

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MEGATROL Control Terminal

The MEGATROL Control Terminal is used for monitoring and controlling Static Excitation System and Static Frequency Converter. It can be located at the system's door panel for local control and/or in the central control room for remote operation.

The Control Terminal is a powerful industrial PC with a user-friendly Human Machine Interface (HMI) that runs independently from the system's control platform. All communication is done via Ethernet connections.

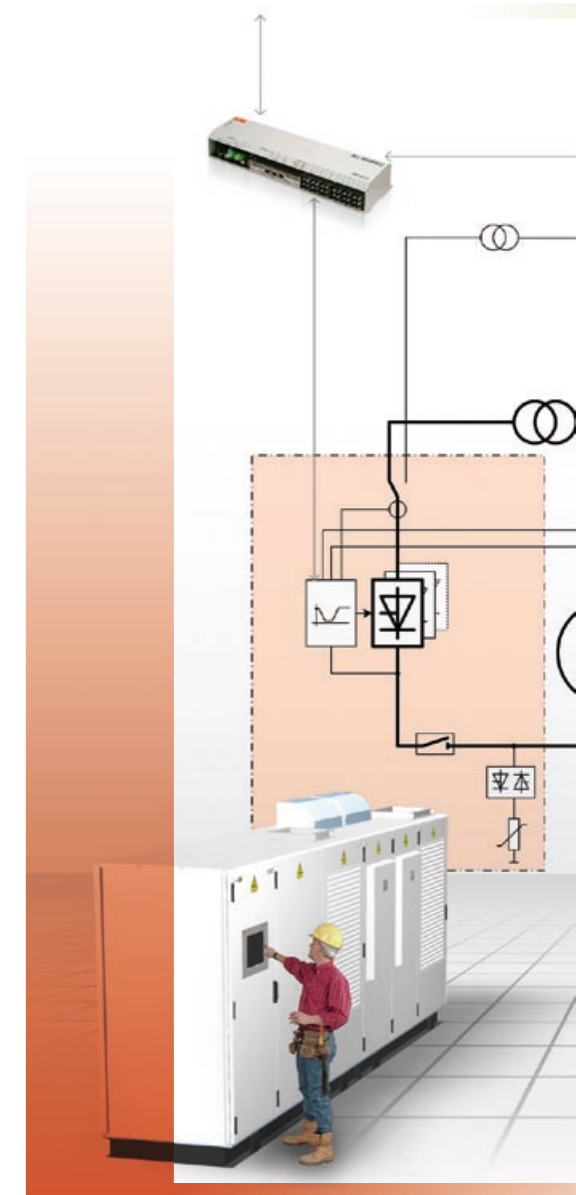
The LCD touch screen provides the operator with a range of selectable screens showing information on the actual status of the systems in graphical and numerical form.



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MEGATROL

The Power Package



Industrial^{IT}
enabled



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UNITROL® 6000 Static Excitation

The UNITROL® 6000 supplies the generator with the necessary field current during machine start-up and normal load conditions. It also ensures fast and safe action during any network fault condition close or distant to generator terminals. Various closed-loop controllers come into action during start-up and synchronizing sequence until normal on-line operation is reached. An integrated Power System Stabilizer (PSS) function contributes then to the network stability. Control limiters for field and stator current, as well as generator load angle protect the generator and the excitation equipment.

As a standard, controller functions are doubled in two identical channels, one in operation and the other one in standby ready for bumpless changeover. Depending on customer requirements, the power converter contains a single or redundant thyristor bridges.



Features and benefits

- State-of-the-art but proven technology
- Highly efficient contribution to network stability
- Redundant control to meet highest availability expectations
- Flexible power converter redundancy
- User-friendly Control Terminal

Technical data for 1 running converter bridge

Max. Rated Field Voltage:	720 V _{AC}	1080 V _{AC}	1350 V _{AC}	1500 V _{AC}
Max. Continuous Current:	4150 A _{DC}	4050 A _{DC}	3290 A _{DC}	3010 A _{DC}
Max. Ceiling Current (10s):	6440 A _{DC}	5050 A _{DC}	4080 A _{DC}	3440 A _{DC}
Max. Ambient Temperature:	45°C			
Protection Class:	IP31			

MEGATROL Static Excitation and Static Frequency Converter

MEGATROL is the product package from ABB's Center of Excellence for Power Electronics and MV Drives in Switzerland. Static Frequency Converter and Static Excitation use the AC 800PEC controller, which complements the 800xA control platform with a powerful controller dedicated to power electronics applications.

Product advantages/Customer benefits

Industrial^{IT}

ABB's Industrial^{IT} means increased standardization and seamless interaction of different ABB products. UNITROL® 6000 and MEGADRIVE-LCI both bear the 'Industrial^{IT} Enabled' symbol, a special mark indicating that such systems can be easily integrated into the Industrial^{IT} architecture in a 'plug & produce' manner.

Open control system

ABB offers an open communication strategy, enabling connection to higher-level process controllers. UNITROL® 6000 and MEGADRIVE-LCI can be provided with all major fieldbus adapters for smooth integration, monitoring and controlling of different processes, according to customer requirements.



Container dimensions:
Length: 9.32m
Depth: 3m
Height: 3.95m

One control platform

The benefits resulting from the common AC 800PEC control platform are:

- Same SW tool
- Less training for maintenance staff
- Less spare parts
- One common MEGATROL interface to power plant control (on request)

One container

Particularly for gas turbine stations, it is an advantage to get converter and excitation mounted and cabled in a common container resulting in:

- Space saving
- Reduced cabling
- Easy & fast site installation and commissioning
- Easy handling

MEGADRIVE-LCI Static Frequency Converter

Gas turbines or machines in pumped storage power plants have often to be started and run-up quickly at short notice. The MEGADRIVE-LCI Static Frequency Converter uses the generator as motor to run it up to a certain speed. For gas turbines, this is above the ignition speed from where the turbine can accelerate the generator independently up to rated speed and synchronize it to the power network. For pumped storage power plants, the MEGADRIVE-LCI accelerates the generator up to rated speed and synchronizes it to the power network.

ABB has more than 30 years of experience in the design and manufacturing of static frequency converters, which became the standard starting technology for heavy-duty gas turbines and pumped storage hydro turbines.

MEGADRIVE-LCI converters are available up to 30 MW or higher on request.



Features and benefits

- One MEGADRIVE-LCI converter can start several generators
- Unlimited number of starts
- Encoderless control for high availability and reduced maintenance costs
- Fuseless design for high reliability and less spare parts
- User-friendly Control Terminal

Technical data for 5MW converter

Output Current:	1930 A
Output Voltage:	1820 V
Power & Duty Cycle:	5.0MW continuous
Max. Ambient Temperature:	40°C (55°C with derating)
Protection Class:	IP31