



## MEGATROL

The power package for gas turbine start-up  
and generator excitation

# UNITROL® 6800

## Static excitation system

The UNITROL 6800 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, proven technology
- + Highly efficient contribution to network stability
- + Redundant control for highest availability expectations
- + Flexible power converter redundancy
- + User-friendly Control Terminal

### Excitation converter rating for MEGATROL Power, Medium and Light

MEGATROL Configuration	Power / Medium				Light		
<b>Rated Field Voltage:</b>	720 V <sub>AC</sub>	1080 V <sub>AC</sub>	1350 V <sub>AC</sub>	1500 V <sub>AC</sub>	353 V <sub>AC</sub>	474 V <sub>AC</sub>	533 V <sub>AC</sub>
<b>Rated Field Current:</b>	4050 A <sub>DC</sub>	3200 A <sub>DC</sub>	2375 A <sub>DC</sub>	1706 A <sub>DC</sub>	1406 A <sub>DC</sub>	1076 A <sub>DC</sub>	1446 A <sub>DC</sub>
<b>Ceiling Current (10s):</b>	6480 A <sub>DC</sub>	5120 A <sub>DC</sub>	3800 A <sub>DC</sub>	2730 A <sub>DC</sub>	2250 A <sub>DC</sub>	1721 A <sub>DC</sub>	2314 A <sub>DC</sub>
<b>Max. Ambient Temperature:</b>	45 °C						
<b>Protection Class:</b>	IP31						

For applications other than MEGATROL, UNITROL 6800 excitation systems are available for field current up to 10 kA.

### UNITROL 6800 static excitation system in MEGATROL Power configuration



# MEGATROL

## Static excitation and static frequency converter in one package

### Open control system

ABB offers an open communication strategy, enabling connection to higher-level process controllers. UNITROL 6800 and MEGADRIVE-LCI can be provided with all major fieldbus adapters for smooth integration, monitoring and controlling of different processes, according to customer requirements.

### MEGATROL CS (Cross Start)

MEGATROL CS is a special application solution for MEGATROL. Up to six generators with their related excitation systems and three MEGADRIVE-LCI frequency converters are connected together via Start-up Selection Boards (SSB). MEGATROL CS is able to automatically control the SSB disconnectors, select an available frequency converter for start-up and support all required communication channels during start-up. The selection of the MEGADRIVE-LCI can be preconfigured manually.

### Surprisingly compact solution

The merged functionality of MEGATROL enables a compact mechanical design with the possibility to place the equipment in one container. For gas turbine stations it is particularly advantageous to get converter and excitation mounted and cabled in a common container.

Container dimensions W x H x D (mm)

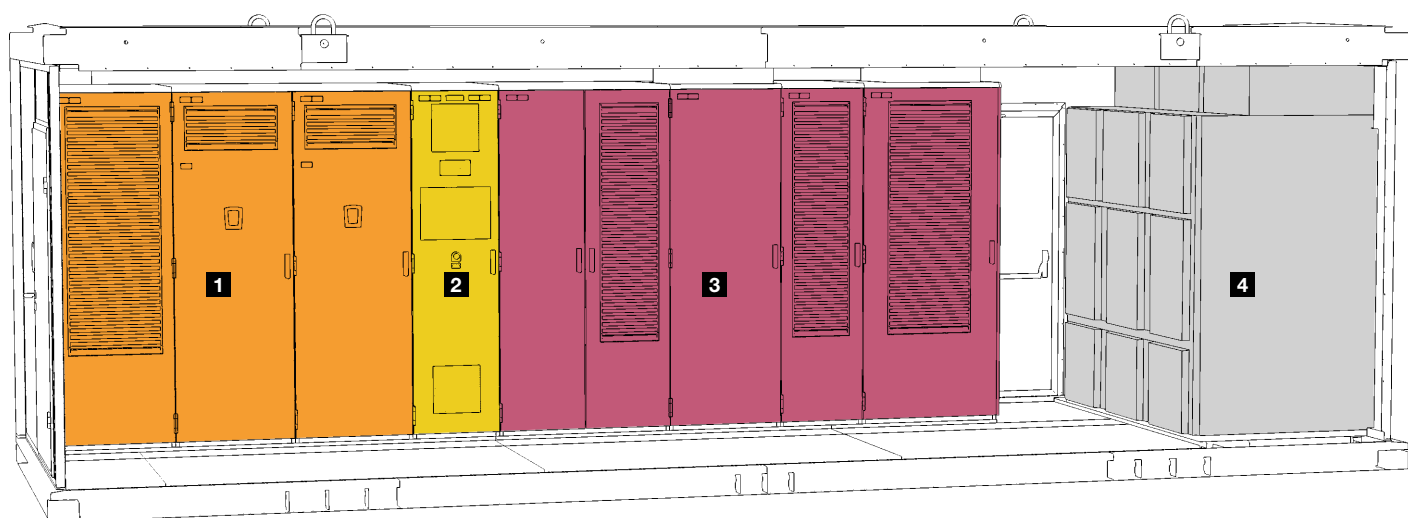
MEGATROL Power 12192 x 3395 x 3500

MEGATROL Medium 9125 x 3395 x 3500

MEGATROL Light 5000 x 3395 x 3500

### Features and benefits of MEGATROL CS

- + Economic solution, where one MEGADRIVE-LCI starts multiple generators
- + High availability thanks to fully redundant starter solution
- + High reliability through patented self-organizing control network with distributed intelligence
- + Network self-heals automatically after the replacement of defective device
- + Scalable and expandable solution



Container solution for MEGATROL Medium configuration: **1** UNITROL 6800 static excitation system **2** Common control cubicle  
**3** MEGADRIVE-LCI static frequency converter **4** MV breaker

# 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.

### Features and benefits

- + One MEGADRIVE-LCI converter can start several generators (Cross Start)
- + 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

### Static frequency converter rating for MEGATROL Power, Medium and Light

MEGATROL Configuration:	Power	Medium	Light
Max. Output Current:	2500 A	1930 A	1500 A
Max. Output Voltage:	5600 V	1820 V	1820 V
Rated Converter Power:	15.5 MW	5.0 MW	2.0 MW
Max. Ambient Temperature:	45 °C (55 °C with derating)		
Protection Class:	IP31		

For applications other than MEGATROL, MEGADRIVE-LCI converters are available up to 72 MW or higher on request.

**MEGADRIVE-LCI static frequency converter in MEGATROL Power configuration**



# MEGATROL

## The power package for starting gas turbines and exciting the generator

MEGATROL combines UNITROL® static excitation system and MEGADRIVE-LCI static frequency converter in a smart and ultra compact solution. It is particularly suitable for gas turbine, combined cycle and pumped storage power plants.

### Product advantages and customer benefits

#### + One control platform AC 800PEC for both systems

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

#### + One Human Machine Interface

- User-friendly interaction in local operation mode

#### + Many common components

- Less spare parts
- Fewer costs in case of repairs

#### + Pre-tested systems and communications

- Fast and easy installation on site

#### + Cross Start

- One frequency converter can start several generators

#### + Merged functionality

- Compact mechanical design

#### + One container solution (optional)

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



# Contact us

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