



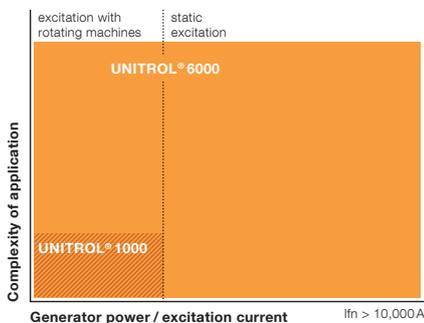
Excitation and Synchronization UNITROL[®] and SYNCHROTRACT[®] product range

UNITROL[®] products and systems

Recommended product selection

Examples

- Turbogenerator
500 MVA
UNITROL 6800
- Hydrogenerator
100 MVA
UNITROL 6080



UNITROL 6000

1 5 Latest generation of automatic voltage regulators (AVR) and static excitation systems (SES) based on AC 800PEC high performance processor family for all kinds and sizes of synchronous generators and motors. Available in two basic types:

UNITROL		6800 SES	6080 SES / AVR
Input data	Max. AC voltage	1,500 V	500/690 V
	Rated frequency	50/60 Hz	50/60–480 Hz ¹⁾
Max. output data	Cont. DC current	< 10,000 A	< 1,600 A
	Ceiling voltage	1,900 V	850 V

¹⁾ > 50/60 Hz for AVRs only; single phase supply for AVRs also available

UNITROL 1000

3 4 AVR series for synchronous generators and motors with exciters. Microprocessor technology and IGBT output stage guarantee a wide application range.

Output current: up to 40 A_{DC}
Supply voltages: up to 300 V_{DC} or 250 V_{AC} (< 400 Hz)

MEGATROL combined solution

2 MEGATROL is a smart and compact solution, combining UNITROL 6800 SES and MEGADRIVE-LCI static frequency converter (SFC). The use of ABB's powerful AC 800PEC controller for both systems results in fewer costs for spare parts and training of maintenance staff for the customer. This is an attractive solution for gas turbine, combined cycle and pumped storage power plant applications.

MEGATROL range	Typical gas turbine size	Max. SFC start power	Max. field current
Light	< 120 MW	3.0 MW	1,500 A
Medium	< 200 MW	5.0 MW	2,000 A
Power	200–400 MW	15.5 MW	6,000 A

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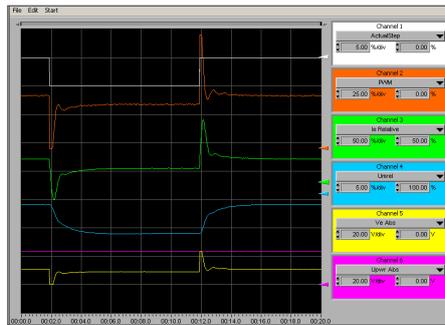
Software products

ECT software (Excitation control terminal software)



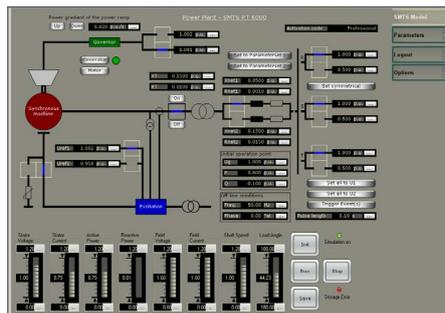
Excitation control terminal software is a user-friendly tool for operation, monitoring and maintenance of UNITROL 6000 excitation systems.

CMT1000 (Commissioning and maintenance tool)



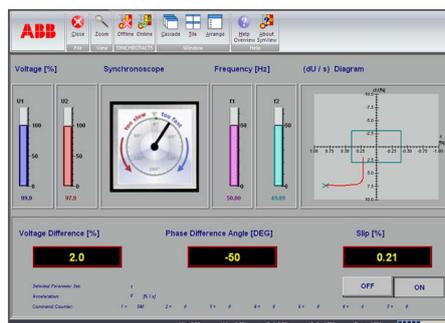
Commissioning and maintenance tool for UNITROL 1000. Enables controlling, monitoring, maintenance and programming of the product.

SMTS Operate (Synchronous machine transient simulation - Real time)



Control terminal for SMTS-RT 6000 synchronous machine simulator. Closed loop real time simulation for UNITROL 6000 excitation tuning, testing and staff training.

SynView



SynView is used for simple and quick commissioning, as well as for maintenance of SYNCHROACT 5 equipment.

SYNCHROTECT® products and systems

SYNCHROTECT 5

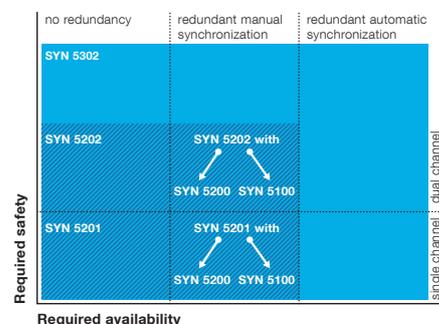
1 2 3 SYNCHROTECT 5 products are used for automatic and manual synchronization of generators with power networks and for paralleling of synchronous lines. Available types:

- SYN 5100 simple synchrocheck
- SYN 5200 synchrocheck with advanced functionality
- SYN 5201 automatic single-channel synchronizing device with frequency and voltage matching
- SYN 5202 automatic dual-channel synchronizing device with synchrocheck in series as second channel
- SYN 5302 redundant automatic dual-channel synchronizing device

Recommended selection for SYNCHROTECT 5 products

Examples

- Nuclear power generator 1,000 MVA SYN 5302
- Hydro power generator 300 MVA SYN 5202 + 5200



SYNCHROTECT CSS

4 SYNCHROTECT CSS (compact synchronizing system) is a standardized, completely wired and tested solution for synchronization of synchronous generators with a network. It uses the proven and reliable SYNCHROTECT 5 devices as the key components. SYNCHROTECT CSS can be used for fully automatic as well as redundant manual synchronization using the traditional measuring instruments including synchroscope.

SYNCHROTECT MSP

5 SYNCHROTECT MSP (modular synchronizing panel) is a customized synchronizing system. It is used to synchronize generators and to parallel lines.

SYNCHROTECT MSP includes:

- Synchronizing system using SYNCHROTECT 5 devices
- Electrical measuring and metering system



One partner – today, tomorrow, everywhere

Excitation systems and synchronizing equipment are allocated to the business unit Power Electronics & MV Drives. ABB's worldwide presence is built on strong local companies. Local engineering centers (LECs) are based all over the world. They are our expertise centers close to the customer. Like this we ensure that our customers in all industries receive fast and accurate service.

© You can find excitation systems LECs in the following countries: Australia, Austria, Brazil, Canada, China, Finland, India, Italy, Poland, South Africa, Spain.



Service

Installation and commissioning

ABB's certified engineers implement professional installation and commissioning of the equipment according to the application requirements, as well as instruct the user on how to operate the excitation system.

Extension, upgrades and retrofits

We design upgrade and modernization offerings to improve performance and extend installation's lifetime, ensuring the best possible return on investment.

Engineering and consulting

Professional advice and timely support are available from ABB and its channel partners along the life cycle of the equipment.

Repairs

Remote diagnostics allow ABB to guide the customer through a fast and efficient fault-finding procedure, as well as analyze system's operation and customer's processes.

Spares and consumables

We quickly deliver genuine ABB spare parts worldwide. Certified spares guarantee full compatibility and are available throughout the lifetime following the life cycle model.

Maintenance

ABB recommends preventive maintenance throughout the lifetime of excitation systems. Regular service, implemented by certified ABB engineers, ensures maximum availability, minimum repair costs, optimized performance and extended lifetime of your installation.

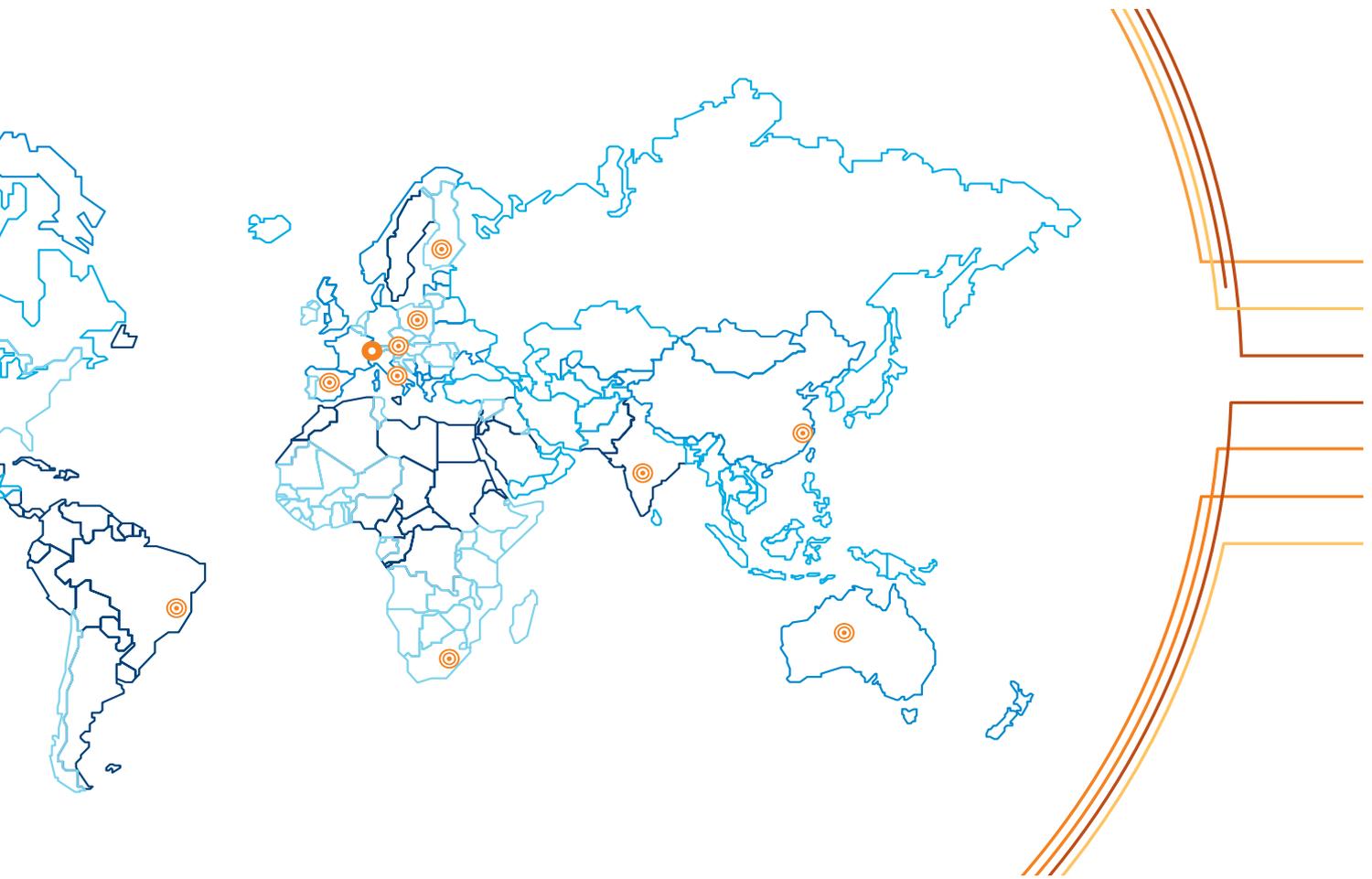
Training

Standard or customized UNITROL and SYNCHROTACT trainings provide service and operation personnel with skills necessary for safe and correct use of ABB products/systems.

ABB life cycle management model



ABB developed the product life cycle management to improve the reliability of operations and support the serviceability of your production assets. All services relating to ABB's power electronic systems are planned according to this model.



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