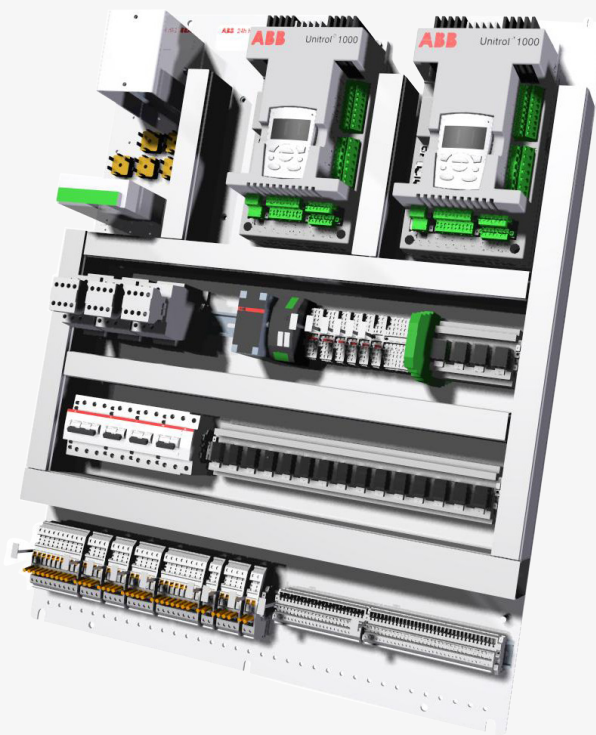


PRODUCT INFORMATION

UNITROL® 1000 FLEX Systems

The standard control for your synchronous machine



- Optimized solution between project costs and later configuration possibilities – drawings available for customers to download and changes
- Supporting UNITROL 1020 FULL single or dual channel systems
- PSS – Power System Stabilizer as an option
- CMT 1000 Commissioning tool applicable to the standard system, reducing dramatically onsite configuration time
- Configurable IOs to adapt to specific project requirements
- On demand product or engineering support available from ABB

The new UNITROL® 1000 FLEX Systems are prepackaged solutions for applications requiring single or dual channel controllers. All systems are fitted with UNITROL® 1020 FULL as a standard device, leveraging the best solution for optimum price and flexible project adjustment constraints.

Product description

Following rapid transition towards standard applications, the solution is gathering all features needed for an excitation system. The prepackaged solution allows you to design your excitation system in the most flexible and cost oriented way.

All versions are designed on a common mechanical basis with various options for IOs and supply modes.

The systems are available featuring single or dual channel UNITROL 1020 FULL devices. By integrating the most complete product of ABB's excitation portfolio, the standard system will be suited perfectly for integration into your control cabinets.

Why to choose ABB's UNITROL 1000 FLEX Systems:

- UNITROL 1020 FULL functionalities
- All regulation types available: AVR/FCR/PF/ VAR/Limiters
- Automatic synchronization
- MODBUS TCP Communication
- Rotating Diode Monitoring (RDM)
- Reactive Load Sharing via RS485

Single or dual channel controllers: the main benefit of a dual channel system is its lower failure rate. The changeover from one channel to the second channel is done automatically and bumplessly thanks to UNITROL 1000 technology. This guarantees higher availability of the overall system. It also allows you to stay online if one of the channels fails. While a single channel failure would cause a trip of the system, the dual channel controller allows you to find root cause and fix issue whilst the system stays running.

Full redundancy: in dual channel applications both the channels have independent power supply and allow to be fully redundant in the operation.

Grid code compliant product:

- Many aging units require to be updated to newer standards.
- When PSS is required by the Grid Authority, UNITROL 1000 has the integrated PSS as an option for both systems and devices. Meaning you are not required to use any additional device to ensure compliancy with the requirements.
- The UNITROL 1000 FLEX System is supporting an alternative excitation power supply which will keep the synchronous generator online in case of a network fault.

Premounted and tested systems: all systems are already mounted, wired and tested when leaving our factory. The systems can be mounted into existing or new cabinets easily. This reduce the engineering and commissioning time, but still offers later configuration on-site by simple configuration and editable documentation.



Table 1. UNITROL® 1000 FLEX Systems

Features	Single Channel (1CH)		Dual Channel (2CH)	
	F-CT-1CH	F-AUX-1CH	F-CT-2CH	F-AUX-2CH
	CT Boosting	Aux / Battery	CT Boosting	Aux / Battery
Hardware				
Max. Excitation current Nominal / Ceiling – CE	20 A / 38 A (3 Phase Input Voltage)			
Max. Excitation current Nominal / Ceiling – UL	15 A / 38 A (3 Phase Input Voltage)			
Maximum nominal input voltage	250 Vac			
Max. ambient temperature	55°C			
UNITROL® 1000 Type	UNITROL® 1020 FULL			
Dimensions WxHxD (mm)	687 × 955 × 168			
Weight (kg)	Contact ABB			
Main Excitation supply	Shunt, PMG, Auxiliary Windings			
CT Boosting during fault with I _e current limiter ECL-10	CT Boosting	N/A	CT Boosting	N/A
Second Supply (during fault) incl. Inrush current limiter	Aux / Battery			
Redundant Exc. Supply terminal for two cables	N/A		•	
Control Supply	AC Input: 20 Vac to 250 Vac DC Input: 20 Vdc to 300 Vdc			
Control Supply back up	Back up by excitation supply			
Analog / Digital IOs	Galvanic insulated IOs			
Excitation ON/OFF with pulse logic	•			
IO Configuration	Custom configuration			
Functions				
AVR	•			
FCR	•			
PF / Var regulator	•			
Reactive load sharing via RS485, VDC	•			
Automatic Synchronizer	•			
Excitation current limiter	•			
PQ / Stator current limiter	•			
V/Hz Limiter	•			
Monitoring / protection	•			
Voltage matching / Synchronization	•			
Remote Control via MODBUS TCP (e.g. for IO extension)	•			
Power System Stabilizer (PSS)	◦			
Ref.				
	F-CT-1CH	F-AUX-1CH	F-CT-2CH	F-AUX-2CH
Order code:	3BHE059249	R6126	R6136	R6226
With PSS:	3BHE059249	R6127	R6137	R6227
			R6227	R6237

Additional information

Related common documents

Document Title	Document Number
UNITROL® 1000 FLEX Systems – Function description	3BHS884149 E41
UNITROL 1020 User Manual	3BHS335648 E82
UNITROL 1020 Modbus Reference Manual	3BHS358281 E80

FLEX System Aux. Supply and CT Boosting – Single Channel

Document Title	Document Number
UNITROL 1000 FLEX F-CT-1CH Layout Drawing	3BHS884149 E01
UNITROL 1000 FLEX F-CT-1CH Circuit Diagram	3BHS884149 E21
UNITROL 1000 FLEX F-CT-1CH Test Report	3BHS884149 E31

FLEX System Aux. Supply – Single Channel

Document Title	Document Number
UNITROL 1000 FLEX F-AUX-1CH Layout Drawing	3BHS884149 E02
UNITROL 1000 FLEX F-AUX-1CH Circuit Diagram	3BHS884149 E22
UNITROL 1000 FLEX F-AUX-1CH Test Report	3BHS884149 E32

FLEX System Aux. Supply and CT Boosting – Dual Channel

Document Title	Document Number
UNITROL 1000 FLEX F-CT-2CH Layout Drawing	3BHS884149 E03
UNITROL 1000 FLEX F-CT-2CH Circuit Diagram	3BHS884149 E23
UNITROL 1000 FLEX F-CT-2CH Test Report	3BHS884149 E33

FLEX System Aux. Supply – Dual Channel

Document Title	Document Number
UNITROL 1000 FLEX F-AUX-2CH Layout Drawing	3BHS884149 E04
UNITROL 1000 FLEX F-AUX-2CH Circuit Diagram	3BHS884149 E24
UNITROL 1000 FLEX F-AUX-2CH Test Report	3BHS884149 E34

Please register here, [myExcitation](#), in order to get access to all available documentation, software tools find the latest product information.

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