

PRODUCT INFORMATION

UNITROL® 1000 FLEXplus Systems

The standard control for your synchronous machine



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

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The systems are pre-designed, mounted and tested according to ABB's strictest production guidelines. Editable drawings and engineering software are provided by ABB for later on-site configuration.

Product description:

Following rapid transition towards standard applications, the solution is gathering all features needed for an excitation system. The pre-packaged 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.

The system includes an I/Os extension via the AC500 programmable logic control. Optionally the system can be ordered with an earth fault relay to enhance the overall safety of the overall unit.

Benefits:

- Optimized solution between project costs and late configuration possibilities. The system enables the user to provide an engineered solution based on an ABB standard system
- Supporting UNITROL 1020 FULL single or dual channel systems with all software options of UNITROL 1000 Series included
- PSS – Power System Stabilizer as an option
- CMT 1000 Commissioning tool applicable to the standard system, reducing dramatically onsite configuration time
- I/O Extension with AC500 enabling additional engineering capability

UNITROL® 1000 Supportline
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Why to choose ABB's UNITROL 1000 FLEXplus Systems:

- UNITROL® 1020 FULL fonctionnalités
 - All regulation types available: AVR/FCR/PF/VAR/Limiters
 - Automatic synchronization
 - MODBUS TCP Communication
 - Rotating Diode Monitoring (RDM)
 - Reactive Load Sharing via RS485
- **I/O extension up to 30 additional I/Os with external programmable logic controller over field bus**
- **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 with a single channel system, a failure would cause a trip of the system.
- **Power System Stabilizer (PSS) function:** installed units require to be updated to newer standards. When PSS is required by the grid authority of the region or country, 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.
- **Premounted and tested systems:** all of our systems are already mounted, wired and tested when leaving our factory to your site. This reduces onsite fixes and possible confusions between wiring of protection and switches. The systems can be mounted into existing or new cabinets easily.
- **Grid code compliance:** additionally to the hardware delivery, ABB can offer you a regulation optimization and grid connection studies. You will receive a configuration proposal from our engineers to ensure the performance of your equipment meets the requirements set by the grid authority.
- **Support for remote commissioning:** Our experienced commissioning engineers will support you either remote or onsite. Ask us for an offer.

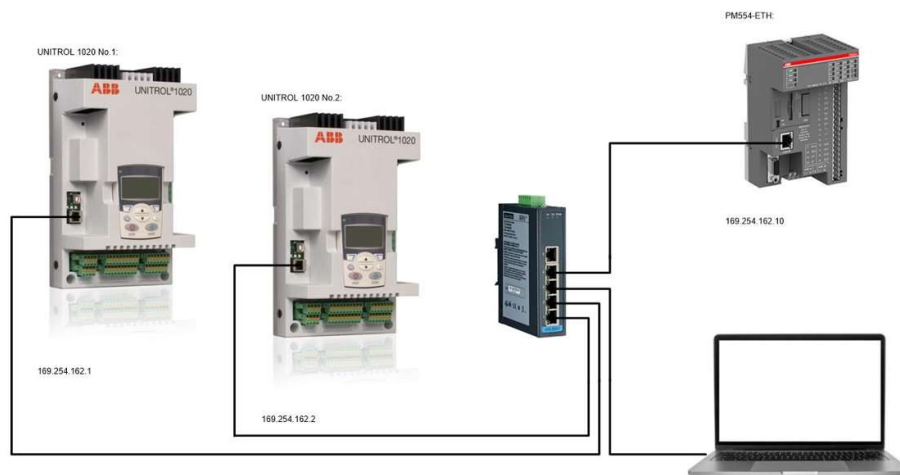


Figure 1: Concept of I/O extension with AC500 for UNITROL 1000 FLEXplus systems

Customer's feedback:

"I was able to use this modular UNITROL 1000 FLEXplus platform to fully design my excitation system. With the number of options available, it made my job easier with fewer engineering steps to be considered. Even if the system contains slightly more than what I needed initially, the cost savings compared to an engineered solution and the possibility for further add of components made my decision clear."

Request product information and quote:

ABB Switzerland – Excitation and synchronization
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UNITROL® 1000 FLEXplus Systems				
Features	Single Channel (1CH)		Dual Channel (2CH)	
	Fplus-AUX	Fplus-CT	Fplus-AUX	Fplus-CT
	Aux / Battery	CT Boosting	Aux / Battery	CT Boosting
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 x 955 x 168			
Weight (kg)	Contact ABB			
Hardware	Main Excitation supply	Shunt, PMG, Auxiliary Windings		
	CT Boosting during fault with I_e current limiter ECL-10	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	DC Input: 20 Vdc to 30 Vdc		
	Control Supply back up	Back up by excitation supply		
	Analog / Digital IOs	Galvanic insulated IOs		
	Excitation ON/OFF with pulse logic	•		
	Direct AVR IO Configuration	Support for late configuration at site		
	AVR	•		
	FCR	•		
	Functions	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)		○		
Earth fault relay	○			

Ordering information:

Order description	Order number	1-CH/ 2-CH	PSS	Earth fault relay
UNITROL 1020 FPLUS-AUX-1CH	3BHE059249R0136	1-CH	none	none
UNITROL 1020 FPLUS-CT-1CH	3BHE059249R0126	1-CH	none	none
UNITROL 1020 FPLUS-AUX-2CH	3BHE059249R0236	2-CH	none	none
UNITROL 1020 FPLUS-CT-2CH	3BHE059249R0226	2-CH	none	none
UNITROL 1020 FPLUS-AUX-1CH-PSS	3BHE059249R0137	1-CH	PSS	none
UNITROL 1020 FPLUS-CT-1CH-PSS	3BHE059249R0127	1-CH	PSS	none
UNITROL 1020 FPLUS-AUX-2CH-PSS	3BHE059249R0237	2-CH	PSS	none
UNITROL 1020 FPLUS-CT-2CH-PSS	3BHE059249R0227	2-CH	PSS	none
UNITROL 1020 FPLUS-E-AUX-1CH	3BHE059249R0156	1-CH	none	YES
UNITROL 1020 FPLUS-E-CT-1CH	3BHE059249R0146	1-CH	none	YES
UNITROL 1020 FPLUS-E-AUX-2CH	3BHE059249R0256	2-CH	none	YES
UNITROL 1020 FPLUS-E-CT-2CH	3BHE059249R0246	2-CH	none	YES
UNITROL 1020 FPLUS-E-AUX-1CH-PSS	3BHE059249R0157	1-CH	PSS	YES
UNITROL 1020 FPLUS-E-CT-1CH-PSS	3BHE059249R0147	1-CH	PSS	YES
UNITROL 1020 FPLUS-E-AUX-2CH-PSS	3BHE059249R0257	2-CH	PSS	YES
UNITROL 1020 FPLUS-E-CT-2CH-PSS	3BHE059249R0247	2-CH	PSS	YES

Document references

The documents are available on MyExcitation, accessible here after successful registration:

<https://library.abb.com/r?cid=9AAF617137>

Related common documents

Document Title	Document Number:
UNITROL® 1000 FLEX Systems – Function description	3BHS892478 E41
UNITROL 1020 User Manual	3BHS335648 E82
UNITROL 1020 Modbus Reference Manual	3BHS358281 E80

FLEXplus System Aux. Supply - Single Channel – Earth fault relay

Document Title	Document Number:
UNITROL 1020 FPLUS -AUX-1CH Layout Drawing	3BHS892478 E02
UNITROL 1020 FPLUS -AUX-1CH Circuit Diagram	3BHS892478 E22
UNITROL 1020 FPLUS -AUX-1CH Test Report	3BHS892478 E32

FLEXplus System Aux. Supply and CT Boosting - Single Channel – Earth fault relay

Document Title	Document Number:
UNITROL 1020 FPLUS -CT-1CH Layout Drawing	3BHS892478 E01
UNITROL 1020 FPLUS -CT-1CH Circuit Diagram	3BHS892478 E21
UNITROL 1020 FPLUS -CT-1CH Test Report	3BHS892478 E31

FLEXplus System Aux. Supply - Dual Channel – Earth fault relay

Document Title	Document Number:
UNITROL 1020 FPLUS -AUX-2CH Layout Drawing	3BHS892478 E04
UNITROL 1020 FPLUS -AUX-2CH Circuit Diagram	3BHS892478 E24
UNITROL 1020 FPLUS -AUX-2CH Test Report	3BHS892478 E34

FLEXplus System Aux. Supply and CT Boosting - Dual Channel – Earth fault relay

Document Title	Document Number:
UNITROL 1020 FPLUS -CT-2CH Layout Drawing	3BHS892478 E03
UNITROL 1020 FPLUS -CT-2CH Circuit Diagram	3BHS892478 E23
UNITROL 1020 FPLUS -CT-2CH Test Report	3BHS892478 E33