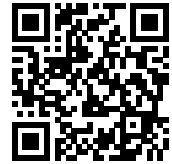


FM33xx-B310 | Thermocouple Fieldbus Modules with PROFIBUS interface



i **Product status:** regular delivery

The FM33xx-B310 Fieldbus Modules allow 12 or 32 thermocouples to be connected to a module. The connecting circuitry for these multiple thermocouples is housed in a compact, splash-proof housing and has a PROFIBUS DP interface with a transmission rate of 12 Mbaud. Data are mainly exchanged cyclically, although acyclic services ("DP-V1") are also available for parameterization and diagnosis.

The module's circuit can operate thermocouple sensors using a 2-wire connection. Linearization over the full temperature range is realized with the aid of a microprocessor. The temperature range can be selected freely. The error LEDs indicate a broken wire. Compensation for the cold junction is made through a temperature measurement in the connecting plugs. This means that standard extension leads can be connected. The Fieldbus Modules have back-voltage protection circuitry to protect against external voltages applied to the thermocouple inputs. Voltages of up to 230 V AC are withstood without damage to the module. Those thermocouple inputs that are not affected remain functionally operative or are only affected for a short time.

The extended parameterization may be carried out either via the fieldbus or, using the KS2000 software tool, through the configuration interface. The parameters are stored in the module. The status of the Fieldbus Module is indicated via LEDs.

The different versions of the FM33xx-B310 Fieldbus Module differ in terms of the number of available thermocouple input channels (12 or 32 channels), the type of thermocouple that is implemented (type J or K), and the housing type (clip-on housing A or add-on housing B). The add-on housing (type B) features two locking latches and a continuous rubber seal to provide an IP65 connection to the socket element. In addition, housing type B features two cast brackets with holes for attaching the FM module to mounting plates (through-hole mounting).

Product information

Technical data

Technical data	FM3312-B310	FM3332-B310
Fieldbus	PROFIBUS DP	
Data transfer rates	max. 12 Mbaud	
Configuration possibility	via KS2000 or the controller	
Connection	fieldbus: DIN 45322, 6-pin, screw type, thermocouples: industrial plug-in connection (Han24E), 2-wire connection	fieldbus: DIN 45322, 6-pin, screw type, thermocouples: industrial plug-in connection (Han64D), 2-wire connection
Number of channels	12 thermocouple channels	32 thermocouple channels
Cable length	max. 10 m	
Sensor types	type J, K, mV measurement	
Measuring range	type J: -10...+900°C; type K: -100...+1370°C	
Resolution	0.1°C per digit	
Conversion time	approx. 250 ms	
Measurement error/ uncertainty	< ±0.5% (of the full scale value)	
Input filter	5 variations, configurable	
Power supply	24 V DC (-15%/+20%)	
Current consumption	typ. 90 mA/max. 120 mA	typ. 100 mA/max. 130 mA
Bit width in the process image	input: 4 x 16 bit data, optional: 4 x 8 bit control/status	
Electrical isolation	channels/control voltage: 500 V, between the channels: no, control voltage/fieldbus: 100 V (PROFIBUS)	
Contacts	hard gold plated	
Dimensions (W x H x D)	type A: 120 mm x 52 mm x 129 mm, type B: 150 mm x 52 mm x 129 mm	
Weight	type A: 950 g, type B: 1030 g	
Operating/storage temperature	0...+55°C/-25...+85°C	
EMC immunity/emission	conforms to EN 61000-6-2/EN 61000-6-4	
Protect. rating/installation pos.	housing to IP65 (PROFIBUS connector: IP67)/variable	
Approvals/markings	CE, UL	

Ordering information

Ordering information	FM33xx-B310
FM3312-B310-0000	Fieldbus Module, 12-channel, PROFIBUS, thermocouple, type K, housing type A (industrial plug-in connector, Han24B)
FM3312-B310-0010	Fieldbus Module, 12-channel, PROFIBUS, thermocouple, type J, housing type A (industrial plug-in connector, Han24B)

FM3312-B310-1000	Fieldbus Module, 12-channel, PROFIBUS, thermocouple, type K, housing type B (add-on housing AGG + locking bracket)
FM3312-B310-1010	Fieldbus Module, 12-channel, PROFIBUS, thermocouple, type J, housing type B (add-on housing AGG + locking bracket)
FM3332-B310-0000	Fieldbus Module, 32-channel, PROFIBUS, thermocouple, type K, housing type A (industrial plug-in connector, Han24B)
FM3332-B310-0010	Fieldbus Module, 32-channel, PROFIBUS, thermocouple, type J, housing type A (industrial plug-in connector, Han24B)
FM3332-B310-1000	Fieldbus Module, 32-channel, PROFIBUS, thermocouple, type K, housing type B (add-on housing AGG + locking bracket)
FM3332-B310-1010	Fieldbus Module, 32-channel, PROFIBUS, thermocouple, type J, housing type B (add-on housing AGG + locking bracket)
