

Features

- Interface between the I/O modules and the PCS/PLC
- Com unit for 80 analog or 184 digital channels
- Communication via MODBUS RTU
- Mounting in Zone 2, Class I/Div.2 or in the safe area
- HART communication via service bus
- Configuration via FDT 1.2 DTM
- Non-volatile memory for configuration and parameter settings
- Self configuration in redundant systems
- Permanently self-monitoring
- Outputs drive to safe state in case of failures
- Module can be exchanged under voltage

Function

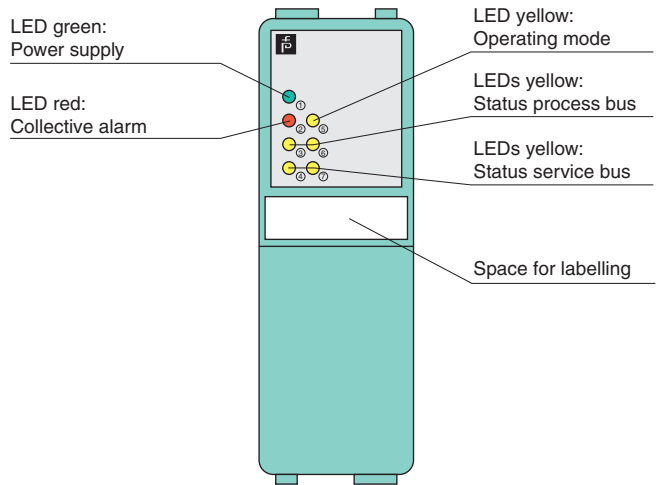
The MODBUS RTU com unit forms the interface between the I/O modules on the backplane and the process control system.

It supports all single width and dual width I/O modules. Thereby signals from NAMUR sensors, mechanical contacts, high-power solenoid drivers, power relays, sounders, and alarm LEDs are transported to the higher-level bus system.

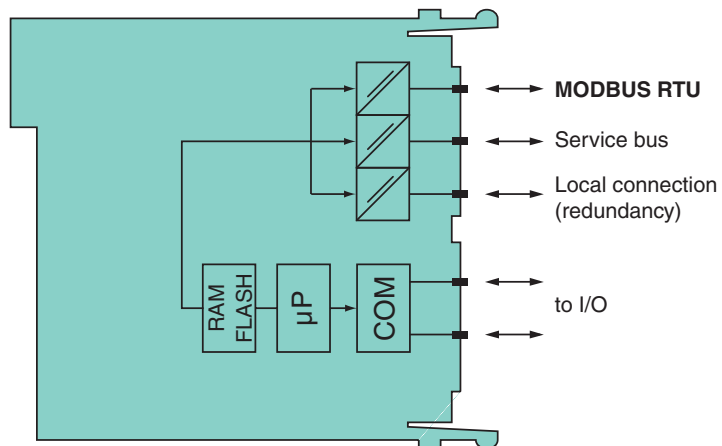
The com unit can be easily configured via DTM and supports redundancy as well as HART.

Assembly

Front view



Connection



Zone 2
Div. 2

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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

Supply		
Connection		backplane bus
Rated voltage	U_r	5 V DC , only in connection with the power supplies LB9***
Power dissipation		1.8 W
Power consumption		1.8 W
Fieldbus interface		
Fieldbus type		MODBUS RTU
MODBUS RTU		
Connection		9-pin Sub-D socket via backplane
Baud rate		max. 38.4 kBit/s
Number of stations per bus line		≤ 245 (MODBUS), ≤ 119 (service bus)
Number of channels per station		≤ 80 analog, ≤ 184 digital (standard configuration)
Number of stations per bus segment		≤ 31 (RS-485 standard)
Number of repeaters between Master and Slave		max. 3
Supported I/O modules		all LB remote I/O modules
Bus length		≤ 1200 m (FOL, 38.4 kBd), ≤ 1200 m (copper cable, 38.4 kBd)
FOL (fiber optic link)		additional hardware required
Addressing		via configuration software
MODBUS address		standard compliant (factory standard setting: 126)
Service bus address		max. 119 , redundancy address = base + 128 (automatic)
HART communication		via service bus
Redundancy		system dependent
Internal bus		
Connection		backplane bus
Redundancy		via backplane
Indicators/settings		
LED indication		LED 1 (power supply): On = operating, fast flash = cold start LED 2 (collective alarm): On = internal fault, flashing = no Modbus RTU connection LED 3 (status process bus): flashing = Modbus receive channel active LED 4 (status service bus): flashing = service bus receive channel active LED 5 (operating mode): flashing 1 (1:1 ratio) = active, normal operation; flashing 2 (7:1 ratio) = active, simulation LED 6 (status process bus): flashing = Modbus response channel active LED 7 (status servicebus): flashing = service bus response channel active
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1
Conformity		
Electromagnetic compatibility		NE 21
Degree of protection		IEC 60529
Fieldbus standard		IEC 61158-2
Environmental test		EN 60068-2-14
Shock resistance		EN 60068-2-27
Vibration resistance		EN 60068-2-6
Damaging gas		EN 60068-2-42
Relative humidity		EN 60068-2-56
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Storage temperature		-25 ... 85 °C (-13 ... 185 °F)
Relative humidity		95 % non-condensing
Shock resistance		shock type I, shock duration 11 ms, shock amplitude 15 g, number of shocks 18
Vibration resistance		frequency range 10 ... 150 Hz; transition frequency: 57.56 Hz, amplitude/acceleration ± 0.075 mm/1 g; 10 cycles frequency range 5 ... 100 Hz; transition frequency: 13.2 Hz amplitude/acceleration ± 1 mm/0.7 g; 90 minutes at each resonance
Damaging gas		designed for operation in environmental conditions acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications		
Degree of protection		IP20 (module) , mounted on backplane
Connection		via backplane
Mass		approx. 120 g
Dimensions		32.5 x 100 x 102 mm (1.28 x 3.9 x 4 inch)
Data for application in connection with hazardous areas		
Certificate		PF 08 CERT 1234 X

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Marking	⊕ II 3 G Ex nA IIC T4 Gc
Directive conformity	
Directive 2014/34/EU	EN 60079-0:2009 EN 60079-11:2007 EN 60079-15:2010
International approvals	
ATEX approval	PF 08 CERT 1234 X
UL approval	E106378
Control drawing	116-0321
Approved for	cUL (Canada): CL I Zn. 2 IIC; IS circuits for CL I Zn. 0 IIC ULus (USA): CL I Div. 2 Grp. A, B, C, D; IS circuits for CL I, II, III Div. 1 Grp. A, B, C, D, E, F, G
IECEX approval	BVS 09.0037X
Approved for	Ex nA IIC T4 Gc
EAC approval	Russia: RU C-IT.MIII06.B.00129
Marine approval	
Lloyd Register	15/20021
DNV GL Marine	TAA0000034
American Bureau of Shipping	T1450280/UN
Bureau Veritas Marine	22449/B0 BV
General information	
System information	The module has to be mounted in appropriate backplanes (LB9***) in Zone 2 or outside hazardous areas. Here, observe the corresponding declaration of conformity. For use in hazardous areas (e. g. Zone 2, Zone 22 or Div. 2) the module must be installed in an appropriate enclosure.
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable. For information see www.pepperl-fuchs.com .

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