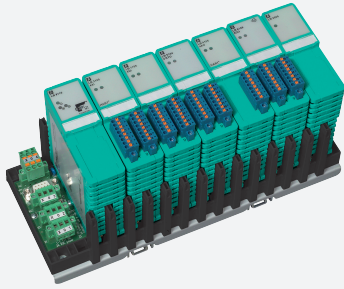


FOUNDATION Fieldbus Modular I/O

FF MIO



- For 20 analog or 40 digital channels
- Sensors in Zone 0/Div. 1 (depending on module assembly)
- Installation in Zone 2 or safe area
- HART communication via service bus
- For FOUNDATION Fieldbus H1
- Configured via the process control system
- Non-volatile memory for configuration and parameter settings
- Quick communication set-up
- Permanently self-monitoring
- Outputs drive to safe state in case of failures
- Module can be exchanged under voltage



Function

FF Modular I/O connects conventional field signals to FOUNDATION Fieldbus H1. It makes use of established reliable hardware and employs standard FF multi-function blocks. It supports NAMUR or switch type inputs as well as solenoid outputs, temperature signals or supply circuits for 2- or 4-wire transmitters, proportional valves and positioners. In contrast to dedicated digital input devices the FF Modular I/O combines analog and digital I/O in one device.

The modular approach enables a very compact solution, offering up to 40 digital, or 20 analog, or any combination of analog and digital inputs and outputs. The FF Modular I/O is installed locally near the instrumentation. The fieldbus cable serves as backbone. A selection of housing materials and accessories enables installation in Zone 2, Zone 22, Div. 2, or safe area.

Technical Data

Supply

Connection	backplane LB9035A	
Rated voltage	U _r	24 V DC
Power consumption	max. 39 W , available output power for Zone 2 applications 5 W (5V), 20 W (12V), else 5 W (5V), 35 W (12V)	
Auxiliary energy	24 V DC Trunk load 10 mA according to FF standard.	
Redundancy	no	

Fieldbus interface

FOUNDATION Fieldbus		
Connection	plug-in screw connector on the backplane	
Baud rate	31.25 kBit/s , MBP	
Protocol	H1 to IEC 1158-2	
Station connection	directly at the trunk or via spur protector	
Number of stations per bus line	1 or 2, depending on the required response times	
Number of channels per station	max. 20 analog, max. 40 digital	
Bus length	max. 1900 m (must not be exceeded by the sum of all trunk and spur lines)	
Spur length	max. 120 m (depending on the number of field devices. Modular I/O station = 1 field device)	
Addressing	via PCS (software)	
Redundancy	no	

Indicators/settings

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

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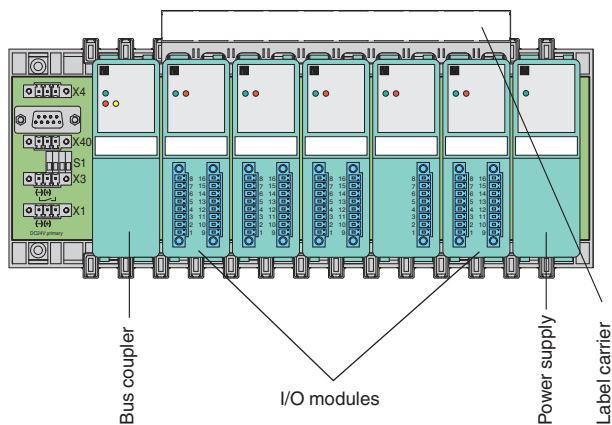
Singapore: +65 6779 9091
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Technical Data

LED indication	Com unit LB8110*: LED green (power supply): on = operating, fast flash = cold start LED red (collective alarm): on = internal fault, flashing = no fieldbus LED yellow (operating mode): flashing = active Power supply LB9006C: LED green (power supply): off in case of loss of 24 V or 12 V or 5 V I/O modules (refer to the table with compatible modules for order codes): Power LED green: supply Diagnostic LED red: module fault, red flashing: communication error Status LED red: line fault Status LED yellow: signal (Live Zero status)	
Directive conformity		
Electromagnetic compatibility		
Directive 2004/108/EC		EN 61326-1
Conformity		
Degree of protection		IEC 60529
Fieldbus standard		IEC 61158-2
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
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
Mechanical specifications		
Degree of protection		IP20
Dimensions		275 x 127 mm (10.8 x 5 inch)
Data for application in connection with hazardous areas		
Certificate		PF 08 CERT 1234 X
Marking		Ⓜ II 3 G Ex nA IIC T4
Directive conformity		
Directive 94/9/EC		EN 60079-0 , EN 60079-15
General information		
System information		For use in hazardous areas (e. g. Zone 2, Zone 22 or Div. 2) an appropriate enclosure is required.
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 .

Assembly



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Accessories

	DTM LB/FB	
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Components

Compatible I/O modules

I/O modules with non-intrinsically safe circuits			
Order code	Description	Channels	Suitable sensors or field devices
LB1008A	Digital Input	8	mechanical contacts, NAMUR proximity switches, 2-wire initiators
LB3005A2	HART Transmitter Power Supply, Input Isolator	4	transmitters for pressure, differential pressure, level, flow, temperature, etc.
LB4005A2	HART Output Isolator	4	proportional valves, I/P converters, local indicators
LB4005C2	HART Output Isolator with Shutdown Input	4	proportional valves, I/P converters, local indicators
LB5004A	RTD Converter	4	2, 3, 4 wire RTD (Pt100), slide wire sensors etc.
LB5005A	Thermocouple Converter	4	thermocouples U, B, E, T, K, S, R, L, J, N, Pallaplat and mV sources
LB6005A	Relay Output	4	switching voltage: 230 V
LB6006A	Relay Output	8	switching voltage: 24 V
LB6008	Digital Output	8	valves, LEDs, and audible alarms
LB6008A	Digital Output with Shutdown Input	8	valves, LEDs, and audible alarms
LB6010A	Digital Output	4	valves, LEDs, and audible alarms
LB6010E	Digital Output with Shutdown Input	4	valves, LEDs, and audible alarms

I/O modules with intrinsically safe circuits			
Order code	Description	Channels	Suitable sensors or field devices
LB1108A	Digital Input	8	mechanical contacts, NAMUR proximity switches, 2-wire initiators
LB3105A2	HART Transmitter Power Supply, Input Isolator	4	transmitters for pressure, differential pressure, level, flow, temperature, etc.
LB4105A2	HART Output Isolator	4	proportional valves, I/P converters, local indicators
LB4105C2	HART Output Isolator with Shutdown Input	4	proportional valves, I/P converters, local indicators
LB5104A	RTD Converter	4	2, 3, 4 wire RTD (Pt100), slide wire sensors etc.
LB5105A	Thermocouple Converter	4	thermocouples U, B, E, T, K, S, R, L, J, N, Pallaplat and mV sources
LB6108A	Digital Output with Shutdown Input	8	valves, LEDs, and audible alarms
LB6108C	Digital Output with Shutdown Input	8	valves, LEDs, and audible alarms
LB6110A	Digital Output	4	valves, LEDs, and audible alarms
LB6110E	Digital Output with Shutdown Input	4	valves, LEDs, and audible alarms
LB6111A	Digital Output	4	valves, LEDs, and audible alarms
LB6111E	Digital Output with Shutdown Input	4	valves, LEDs, and audible alarms
LB6112A	Digital Output	4	valves, LEDs, and audible alarms
LB6112E	Digital Output with Shutdown Input	4	valves, LEDs, and audible alarms
LB6113A	Digital Output	4	valves, LEDs, and audible alarms
LB6113E	Digital Output with Shutdown Input	4	valves, LEDs, and audible alarms
LB6114A	Digital Output	4	valves, LEDs, and audible alarms
LB6114E	Digital Output with Shutdown Input	4	valves, LEDs, and audible alarms
LB6115A	Digital Output	4	valves, LEDs, and audible alarms
LB6115ES	Digital Output with Shutdown Input	4	valves, LEDs, and audible alarms