Features

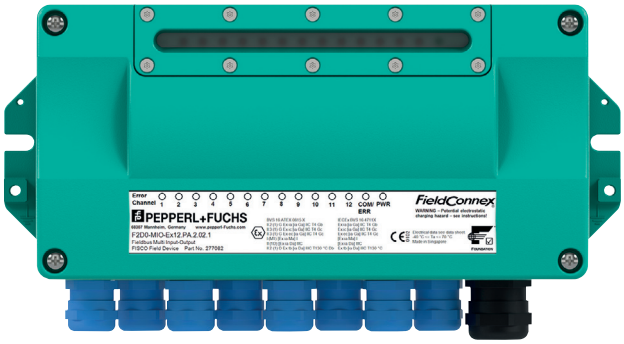
- For discrete inputs and outputs
- Aluminum cast iron, IP66
- Configurable cable entries for bus lines and field signal lines
- International approvals
- For PROFIBUS PA
- Installation in Zone 1/Div. 1, intrinsically safe
- Sensors in Zone 0/Div. 1
- Monitors sensor condition
- Removable terminals
- Power, Com, Diagnostics, and Error LEDs
- Test points for easy troubleshooting

Function

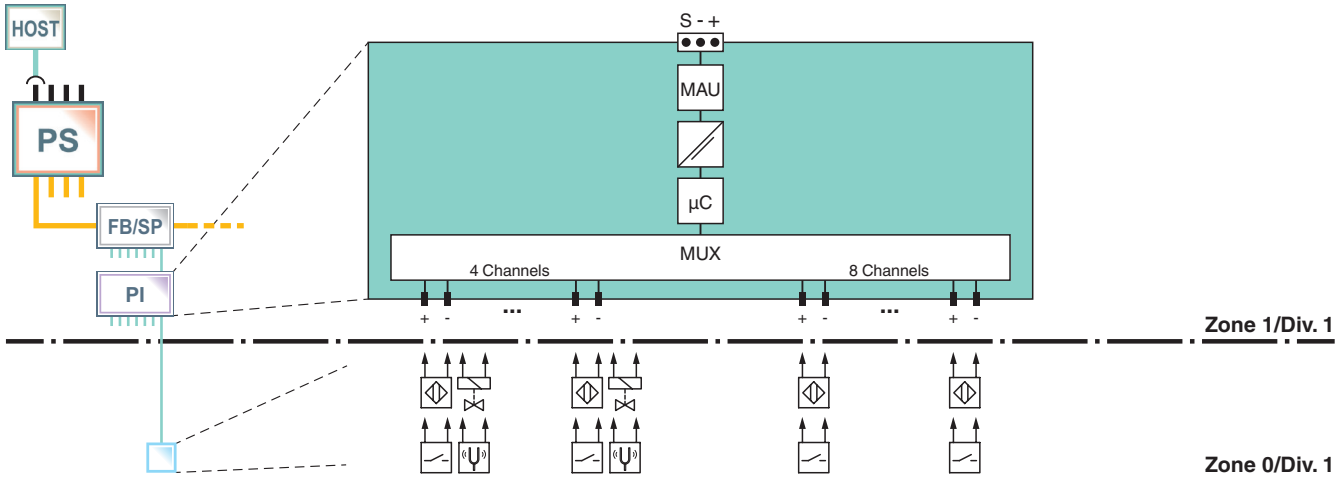
This fieldbus junction box holds a multi-input/output (MIO) for transferring signals from discrete inputs and valves to the control system. The MIO offers the same functionality as the components FD0–VC–Ex* and FD0–BI–*. The fieldbus junction box can be installed in Zone 1/Div. 1 with sensors and actuators located in Zone 0/Div. 1.

The housing, type F2, is made of sturdy cast aluminum for installation in rough environments. Fieldbus and field device entrances can be selected individually from a range of cable glands. Optionally, either screw terminals or spring terminals can be chosen.

Assembly



Connection



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General specifications	
Design / Mounting	Outside installation
Electronic component	Binary multi-input/output R8D0-MIO-Ex12.PA* For technical data on installed electronic component see data sheet.
Fieldbus interface	
Fieldbus type	PROFIBUS PA
Galvanic isolation	
Foundation Fieldbus/Field circuit	safe galvanic isolation acc. to EN 60079-11, voltage peak value 375 V
Directive conformity	
Electromagnetic compatibility	
Directive 2014/30/EU	EN 61326-1:2013
Low voltage	
Directive 2014/35/EU	EN 61010-1:2010
Standard conformity	
Galvanic isolation	EN 60079-11
Electromagnetic compatibility	NE 21:2011
Degree of protection	IEC 60529
Fieldbus standard	IEC 61158-2
Shock resistance	EN 60068-2-27
Vibration resistance	EN 60068-2-6
Ambient conditions	
Ambient temperature	-40 ... 70 °C (-40 ... 158 °F) hazardous area
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Relative humidity	≤ 95 % non-condensing
Shock resistance	15 g , 11 ms
Vibration resistance	10 g , 10 ... 150 Hz
Corrosion resistance	acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications	
Connection type	plug-in terminals , spring terminal and screw terminal
Core cross-section	
Bus	up to 2.5 mm^2
Inputs	up to 2.5 mm^2
Cable diameter	see table 2
Cable gland	sensor inputs M16, fieldbus M20
Housing material	EN 1780-1 46000 , ISO AlSi9Cu3(Fe) , anodized
Degree of protection	IP66
Mass	1800 g
Mounting	panel mounting
Data for application in connection with hazardous areas	
EU-type examination certificate	BVS 16 ATEX E 075 X
Marking	⟨Ex⟩ II 2 (1) G Ex ib [ia Ga] IIC T4 Gb , ⟨Ex⟩ II 3 (1) G Ex ic [ia Ga] IIC T4 Gc , ⟨Ex⟩ II 3 (1) G Ex ec [ia Ga] IIC T4 Gc , ⟨Ex⟩ I (M1) [Ex ia Ma] I , ⟨Ex⟩ II (1) D [Ex ia Da] IIIC , ⟨Ex⟩ II 2 (1) D Ex tb [ia Da] IIIC T130 °C Db
Bus	FISCO see EC-Type Examination Certificate
Directive conformity	
Directive 2014/34/EU	EN 60079-0:2012 , EN 60079-7:2015 , EN 60079-11:2012 , EN 60079-31:2014
International approvals	
FM approval	pending
IECEx approval	IECEx BVS 16.0051X
Approved for	Ex ib [ia Ga] IIC T4 Gb , Ex ic [ia Ga] IIC T4 Gc , Ex ec [ia Ga] IIC T4 Gc , [Ex ia Ma] I , [Ex ia Da] IIIC , Ex tb [ia Da] IIIC T130 °C Db
Certificates and approvals	
Marine approval	pending
General information	
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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Type Code/Order Designation

Housing type

F2 Field housing, aluminum, IP66

Function

MIO Multiple inputs and outputs

Hazardous area protection

Ex Intrinsically safe (Ex ia) rated inputs and outputs

Number of channels

12 12 inputs and outputs

Fieldbus type

FF FOUNDATION Fieldbus

PA PROFIBUS PA

Terminal options

1 Screw terminals, pluggable

2 Spring terminals, pluggable

Cable entry options

00 1 x M20, 8 x M16 stopping plugs, plastic

01 n/a

02 1 x M20, 8 x M16 cable glands, plastic

03 1 x M20, 8 x M16 cable glands, nickel-plated brass

04 1 x M20, 8 x M16 cable glands, stainless steel

05 5 x M20 cable glands, plastic

F2	-	D0-MIO	-	Ex	12	.		.		.	
A	-	B	-	C	D	.	E	.	F	.	G

Example:

F2D0-MIO-Ex12.FF.1.02: Multi-input/output in aluminum housing with cable glands made of plastic and 12 inputs/outputs with pluggable screw terminals.

Note:

Contact your Pepperl+Fuchs representative to check the availability of individual variants.

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Overview of System Components

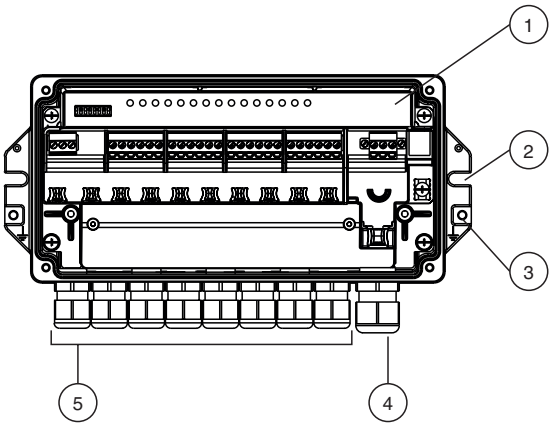

Figure 1: F2D0-MIO*

1 For details on the electronic unit see datasheet on R8D0-MIO-*
2 Notch for fixing the device housing with screw M6
3 Grounding point
4 Cable gland for fieldbus connection, fix with spanner, size see table 2, AF2
5 8 cable glands for up to 12 spur inputs/outputs, fix with spanner, size see table 2, AF1

Dimensions

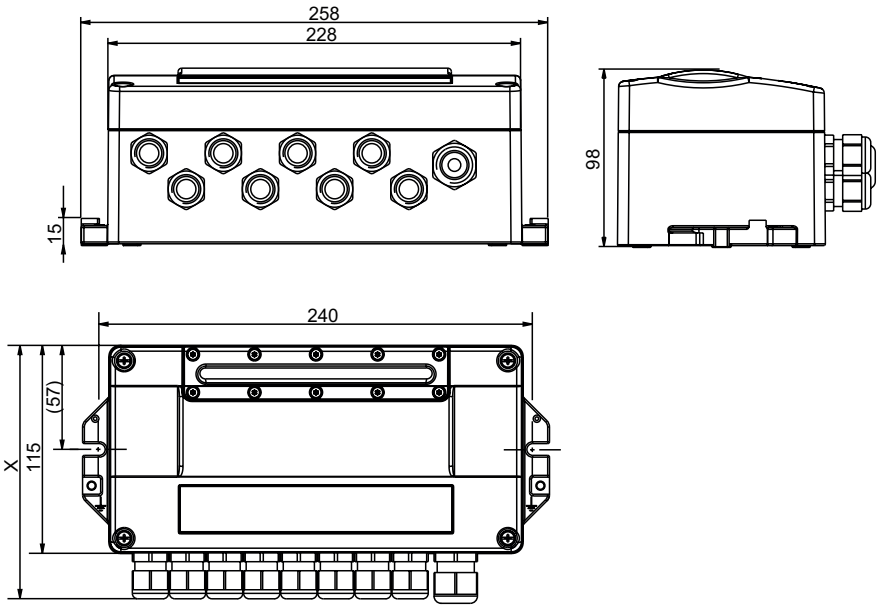

Figure 2: F2D0-MIO* All dimensions in mm without tolerance indication.

X Height depending on the cable connection type used, see table 1

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Electrical Connection

Table 1: Variations of cable connections, housing types, and temperature ranges

Cable entry option	Type of cable connection	F2 housing, outside dimension "X" (mm)	Temperature range for use in hazardous area (°C)	Temperature range for use in safe area (°C)
00	M16 stopping plugs, plastic	121.5	-40 ... +70	-40 ... +70
01	n/a	--	--	--
02	M16 & M20 cable glands, plastic	146	-40 ... +70	-40 ... +70
03	M16 & M20 cable glands, nickel-plated brass	146	-40 ... +70	-40 ... +80
04	M16 & M20 cable glands, stainless steel	146	-40 ... +70	-40 ... +80
05	M20 cable glands, plastic	146	-40 ... +70	-40 ... +70

Table 2: Cable diameter depending on cable glands, spanner sizes

Cable entry option	CH1 ... CH12 Multiple Inputs/Outputs			Fieldbus		
	Description	Cable diameter (mm)	AF1 (mm)	Description	Cable diameter (mm)	AF2 (mm)
00	M16 stopping plug, plastic	--	19	M20, stopping plug, plastic	--	19
01	n/a	--	--	n/a	--	--
02	M16 cable gland, plastic	4 ... 8 mm	19	M20 cable gland, plastic	6 ... 12 mm	19
03	M16 cable gland, nickel-plated brass	4 ... 12 mm	22	M20 cable gland, nickel-plated brass	4 ... 12 mm	22
04	M16 cable gland, stainless steel	4 ... 12 mm	22	M20 cable gland, stainless steel	4 ... 12 mm	24
05	M20 cable gland, plastic	6 ... 12 mm	24	M20 cable gland, plastic	6 ... 12 mm	24

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