

Features

- 4 ... 12 outputs Ex ic (FISCO or Entity) or non-incendive (Div 2)
- Advanced fault isolation at the spur
- Segment Protector in Zone 2/Div. 2
- Instruments in Zone 2/Div. 2 or Zone 1/Div. 1
- For FOUNDATION Fieldbus H1 and PROFIBUS PA
- Advanced Diagnostics at the spur
- Power, Com, Diagnostics, and Error LEDs
- T-connector for easy installation and maintenance
- Test points for easy troubleshooting

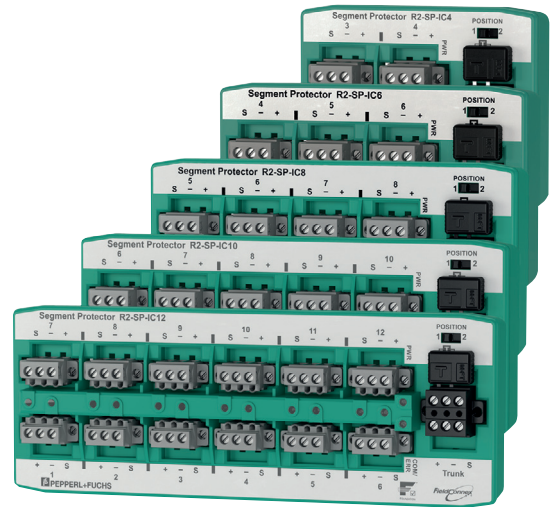
Function

The R2 Segment Protector with integrated diagnostics, a device coupler for DIN rail installation, connects 4 ... 12 instruments to the segment with intrinsic safety (Ex ic, Zone 2/Div. 2). Device connections in Zone 1/Div. 1 require additional methods of ignition protection. Short-circuit, jabber, and bounce protection isolates most fault condition types from the segment. The short-circuit limit is adjustable for maximum load with Ex ic for gas groups IIB and IIC.

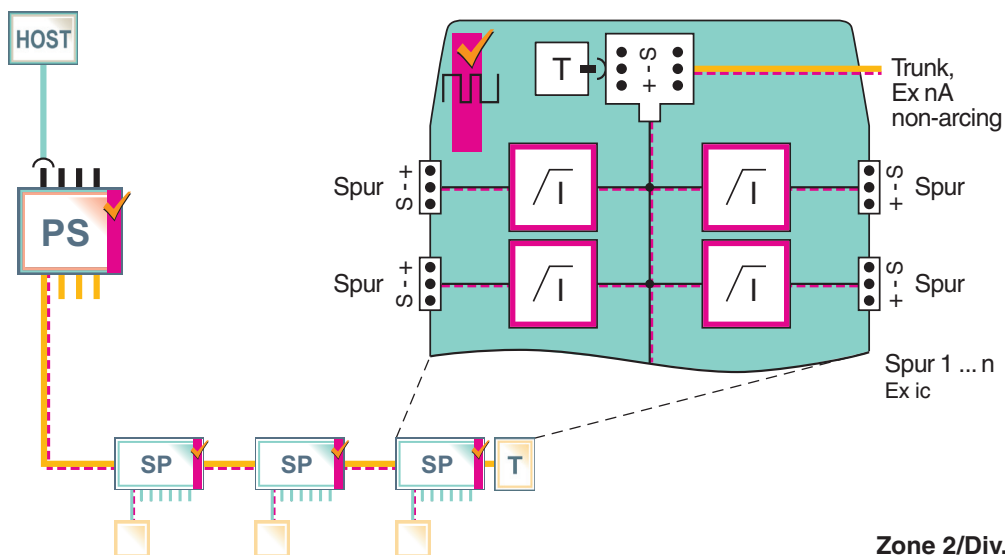
The T-connector at the trunk allows for exchange of a Segment Protector with no effect on the remaining segment. The terminator is mounted at the 'T' and removed for network extensions ensuring proper termination.

Short circuit protection ensures proper operation of the segment in case of unwanted faults at the spur. Intrinsic safety at the spur enables work on devices with hot work permit. The integrated fieldbus terminator features a high-availability design.

Assembly



Connection



Zone 2/Div. 2

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

Pepperl+Fuchs Group
www.pepperl-fuchs.com

USA: +1 330 486 0002
pa-info@us.pepperl-fuchs.com

Germany: +49 621 776 2222
pa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091
pa-info@sg.pepperl-fuchs.com

General specifications		
Design / Mounting	Cabinet installation	
Fieldbus interface		
Main cable (Trunk)		
Rated voltage	9 ... 31 V DC 10.5 V DC minimum input voltage acc. to FF-846	
Rated current	≤ 4.5 A	
Outputs		
Number of outputs	see table "Technical data depending on model"	
Number of devices per output	1	
Rated voltage	≤ 31 V	
Rated current	≤ 32 mA switch 1, position 1 ≤ 43 mA switch 1, position 2	
Short-circuit current	46 mA jumper 1, position 2 57 mA jumper 1, position 1	
Self current consumption	see table "Technical data depending on model"	
Voltage drop main cable/outputs	≤ 1.2 V	
Voltage drop trunk In/Out	0 V	
Terminating resistor	external type M-FT 100 Ω +/- 10 %	
Surge protection	Trunk overvoltage protection if voltage exceeds typ. 39 V, max. 41 V	
Indicators/operating means		
Switch	configuration of short-circuit current/rated current	
LED PWR	green: Fieldbus voltage > 10 V and fieldbus terminator is deactivated	
LED COM/ERR	yellow: flashing: fieldbus communication status and physical layer diagnostic status	
LED SPURS	red: 2 Hz flashing in short-circuit condition	
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU	EN 61326-1:2013	
Standard conformity		
Electromagnetic compatibility		
Degree of protection	NE 21:2011	
Fieldbus standard	IEC 61158-2	
Climatic conditions	IEC 60721	
Shock resistance	EN 60068-2-27	
Vibration resistance	EN 60068-2-6	
Ambient conditions		
Ambient temperature	-50 ... 70 °C (-58 ... 158 °F)	
Storage temperature	-50 ... 85 °C (-58 ... 185 °F)	
Relative humidity	< 95 % non-condensing	
Shock resistance	15 g 11 ms	
Vibration resistance	1 g, 10 ... 150 Hz	
Corrosion resistance	acc. to ISA-S71.04-1985, severity level G3	
Mechanical specifications		
Connection type	pluggable , screw terminal or spring terminal	
Core cross-section	see table 2	
Housing material	Polycarbonate	
Degree of protection	IP20	
Mass	see table "Technical data depending on model"	
Dimensions	see table "Technical data depending on model"	
Mounting	DIN rail mounting	
Data for application in connection with hazardous areas		
EU-Type Examination Certificate	TÜV 12 ATEX 098651 X	
Marking	 II 3 G Ex nA [ic] IIC T4 Gc  II (3 D) [Ex ic Dc] IIIC	
Supply		
Maximum safe voltage	U _m	35 V
Outputs		
Voltage	U _o	32 V
Current	I _o	46 mA switch 1, position 1 65 mA switch 1, position 2
Inductance	L _o	0.125 mH switch 1, position 1 0.25 mH switch 1, position 2
Capacitance	C _o	60 nF
Directive conformity		
Directive 2014/34/EU	EN 60079-0:2012 , EN 60079-11:2012 , EN 60079-15:2010	

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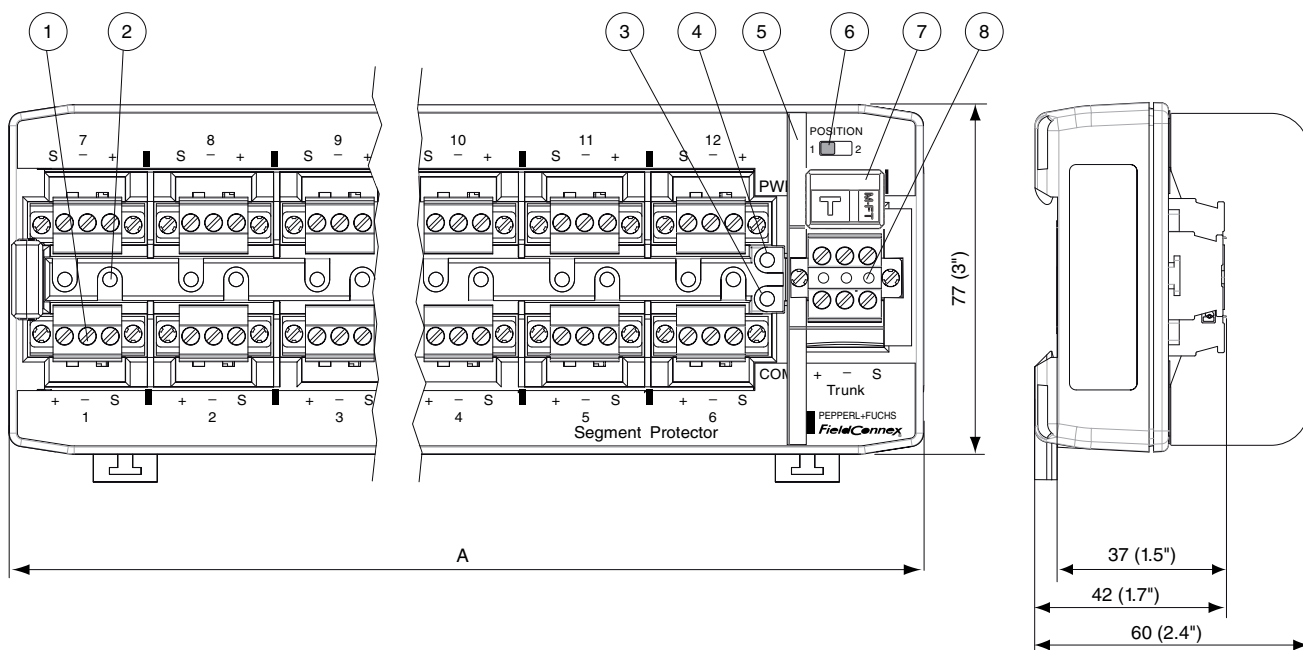
USA: +1 330 486 0002
pa-info@us.pepperl-fuchs.com

Germany: +49 621 776 2222
pa-info@de.pepperl-fuchs.com

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pa-info@sg.pepperl-fuchs.com

International approvals	
UL approval	E326119
Control drawing	116-0406
Approved for	Class I, Division 2, Groups A, B, C, D
IECEX approval	IECEX TUN 12.0015X
Approved for	Ex nA [ic] IIC T4 Gc [Ex ic Dc] IIC
Certificates and approvals	
Marine approval	DNV A-14038
General information	
Supplementary information	Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable. For information see www.pepperl-fuchs.com .

Dimensions



All dimensions in millimeters (mm) and inches (") and without tolerance indication.

Description:

- 1 Connection spur 1
- 2 LED ERR spur 1 (red, short circuit)
- 3 LED COM/ERR (communication/diagnostics)
- 4 LED PWR (power)
- 5 Separation wall ACC-R2-SW.3
- 6 Switch, short circuit current selection
- 7 Terminator M-FT, removable
- 8 T-connector T-CON.3

Housing height "A" see table "Technical data depending on model".

Electrical connection

Table 1: Technical data depending on model

	R2-SP-IC4*	R2-SP-IC6*	R2-SP-IC8*	R2-SP-IC10*	R2-SP-IC12*
Number of outputs	4	6	8	10	12
Housing height (A)	93 mm (3.7")	121 mm (4.7")	148 mm (5.8")	177 mm (7")	205 mm (8")
Mass	130 g	180 g	230 g	280 g	330 g
Quiescent current	max. 15 mA	max. 17 mA	max. 17 mA	max. 19 mA	max. 19 mA
Power loss at 31 V input	470 mW**	530 mW**	530 mW**	590 mW**	590 mW**

** + 10 mW per spur at 20 mA load

Table 2: Wire cross section

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

Wire cross section		Trunk terminals	Spur terminals
Screw terminal	flexible wire	0.2-2.5 mm ²	0.2-2.5 mm ²
	rigid wire	0.2-2.5 mm ²	0.2-2.5 mm ²
Spring terminal	flexible wire	0.5-2.5 mm ²	0.2-2.5 mm ²
	rigid wire	0.5-2.5 mm ²	0.2-2.5 mm ²

Installation note

see manual

Type Code/Order Designation

Type of housing

R2 DIN mounting rail housing for cabinet installation

Function

SP Segment Protector

Explosion protection method

IC Ex ic, non-incendive field wiring rated spur outputs

Number of outputs (equipped with screw terminals)

- 04** 4 spurs
- 06** 6 spurs
- 08** 8 spurs
- 10** 10 spurs
- 12** 12 spurs

Alternative terminal options

1 Spring terminals (instead of screw terminals)

R2	-	SP	-	IC		.	
A	-	B	-	C	D	.	E

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Scope of Delivery

Type code	Description
1 x M-FT	Fieldbus Terminator
1 x T-CON.3	T-Connector
1 x TP-CON.3 per output	Fieldbus plug sockets with test points

Accessories



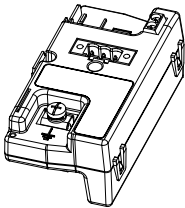
Fieldbus terminator M-FT
(packing unit: 3 pieces)



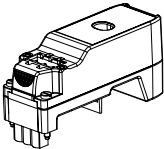
T-connector T-CON.3
(packing unit: 4 pieces)



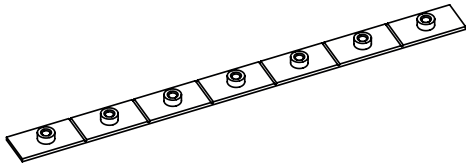
Fieldbus plug sockets with test points TP-CON.3
(packing unit: 4 pieces)



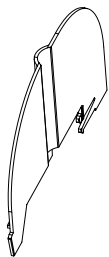
Trunk surge protector TCP-LBF-IA1.36.IE*
Installation on trunk connection of fieldbus coupler, for example Segment Protector



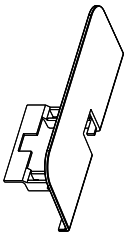
Spur surge protector SCP-LBF-IA1.36.IE*
Installation on spur connection of fieldbus coupler, for example Segment Protector



Grounding rail ACC-LBF-EB.6
Installation on spur surge protectors SCP-LBF-IA1.36.IE*



Separation wall ACC-LBF-SW.3
Installation on trunk surge protector TCP-LBF-IA1.36.IE* for Ex ic spur applications
(packing unit: 3 pieces)



Separation wall ACC-R2-SW.3 for Ex ic spur applications
(packing unit: 3 pieces)

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