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

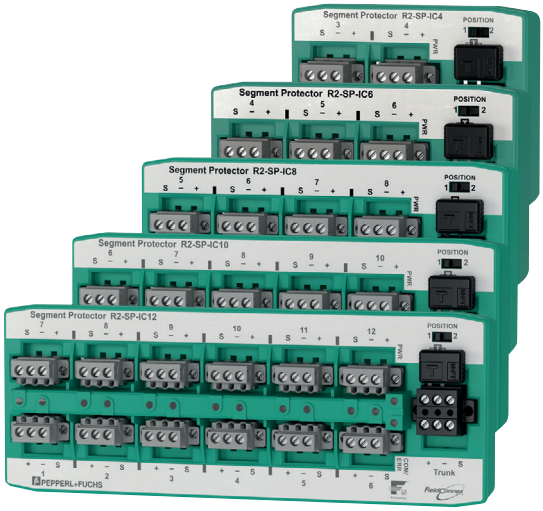
Function

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.

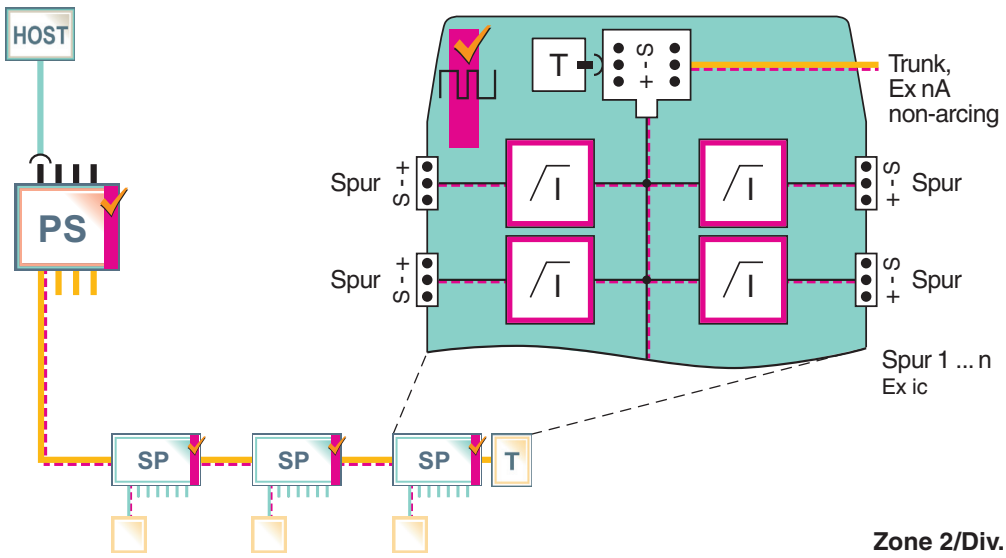
The T-connector at the trunk allows for exchange of a Segment Protector with no effect on the remaining segment. The terminator is mounted at the 'T' and removed for network extensions ensuring proper termination.

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



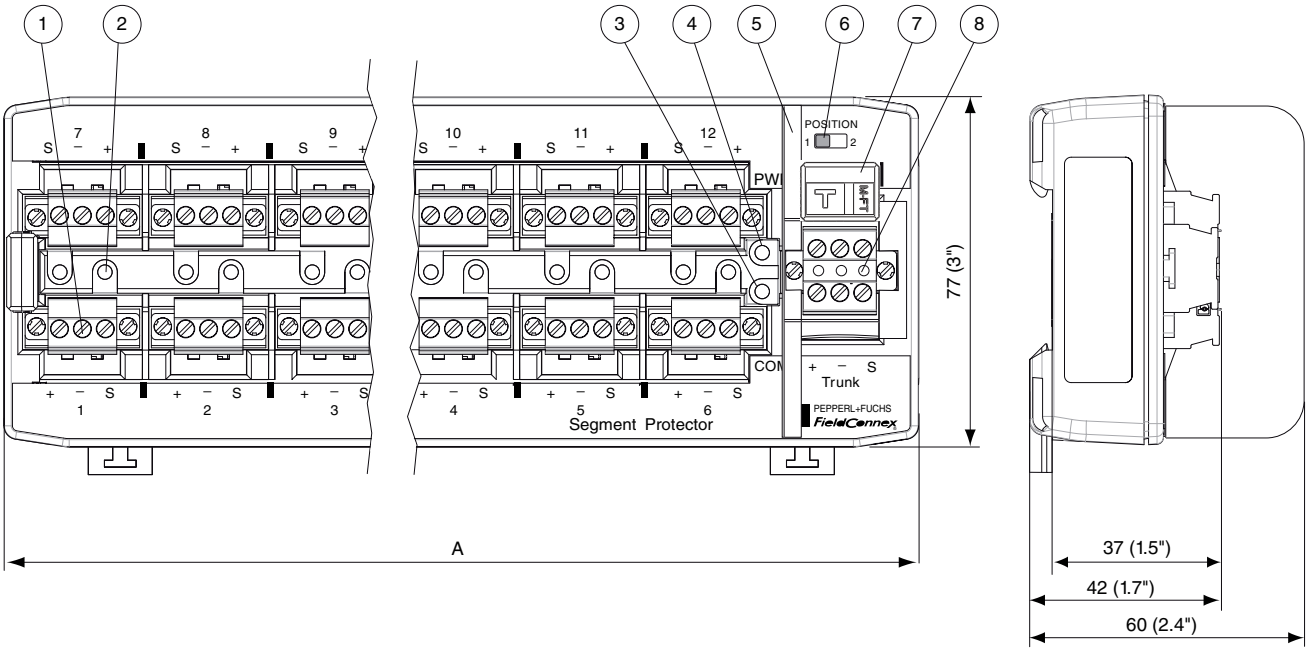
Release date 2015-01-12 17:12 Date of issue 2015-01-12 t158642_eng.xml

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 switch 1, position 1 65 mA switch 1, position 2
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 2004/108/EC		EN 61326-1:2013
Standard conformity		
Electromagnetic compatibility		NE 21:2011
Degree of protection		IEC 60529
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 Ex-areas		
EC-Type Examination Certificate		TÜV 12 ATEX 098651 X
Group, category, type of protection, temperature class		¬ II 3 G Ex nAc [ic] IIC T4
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 94/9/EC		EN 60079-0:2009 , EN 60079-11:2012 , EN 60079-15:2010

Release date 2015-01-12 17:12 Date of issue 2015-01-12 t158642_eng.xml

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 nAc [ic] IIC T4
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

Release date 2015-01-12 17:12 Date of issue 2015-01-12 t158642_eng.xml

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

Release date 2015-01-12 17:12 Date of issue 2015-01-12 t158642_eng.xml

Scope of Delivery

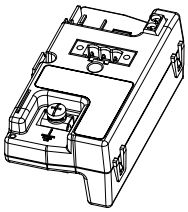
Type code	Description
1 x M-FT	Fieldbus Terminator
1 x T-CON.3	T-Connector
1 x TP-CON.3 per output	Fieldbus plug sockets with test points

Accessories

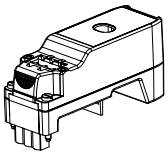
Fieldbus terminator M-FT
(packing unit: 3 pieces)

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

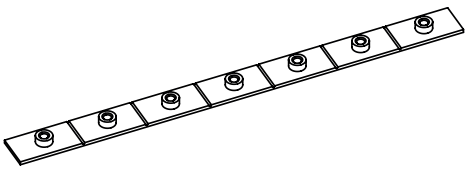
Fieldbus plug sockets with test points TP-CON.3
(packing unit: 4 pieces)



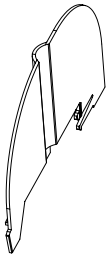
Trunk surge protector TCP-LBF-IA1.36.IE*
Installation on trunk connection of fieldbus coupler, for example Segment Protector



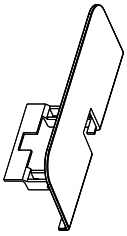
Spur surge protector SCP-LBF-IA1.36.IE*
Installation on spur connection of fieldbus coupler, for example Segment Protector



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)

Release date 2015-01-12 17:12 Date of issue 2015-01-12 t158642_eng.xml