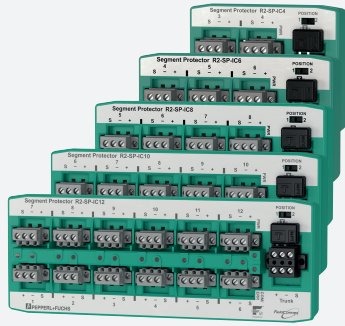


# Segment Protector

## FieldConnex® Fieldbus

### R2-SP-IC\*



- 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

Segment protector, junction box for fieldbus with short-circuit and fault protection, field junction box, electronic component for control cabinet installation



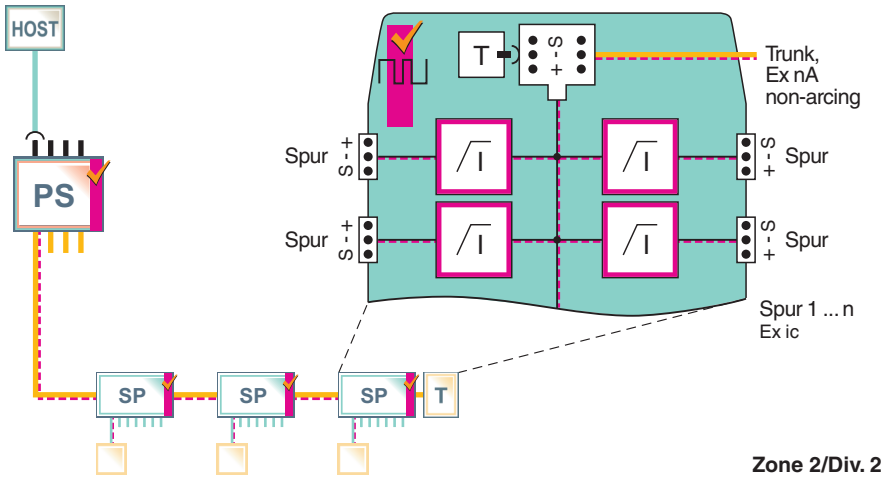
## Function

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.

## Connection



## Technical Data

### General specifications

Design / Mounting	Cabinet installation
Installation in hazardous area	Zone 2 / Div. 2

### Fieldbus connection

Main cable (Trunk)	
Rated voltage	9 ... 31 V DC 10.5 V DC minimum input voltage acc. to FF-846
Rated current	max. 4.5 A

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## Technical Data

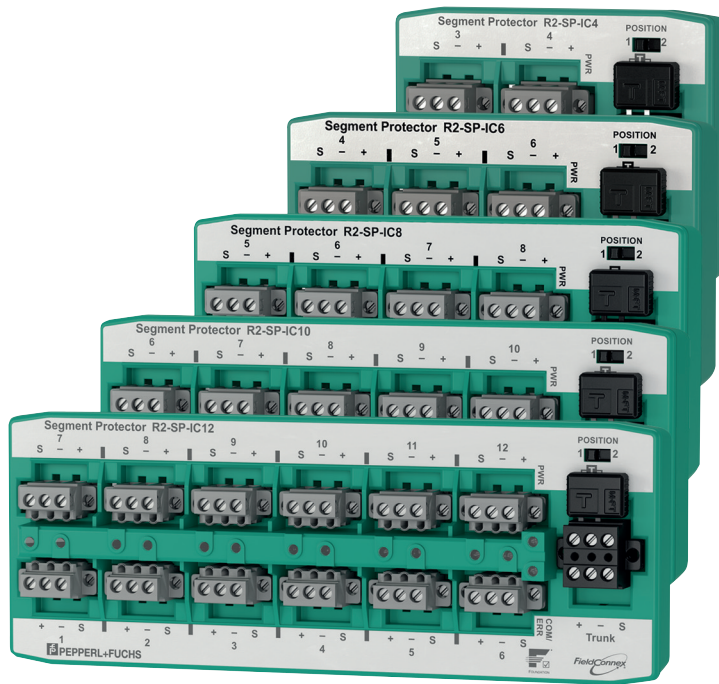
<b>Outputs</b>		
Number of outputs		see table "Technical data depending on model"
Number of devices per output		1
Rated voltage		max. 31 V
Rated current		max. 32 mA switch 1, position 1 max. 43 mA switch 1, position 2
Short-circuit current		46 mA switch 1, position 1 57 mA switch 1, position 2
Self current consumption		see table "Technical data depending on model"
Voltage drop main cable/outputs		max. 1.2 V
Voltage drop trunk In/Out		0 V
Terminating resistor		external type M-FT 100 $\Omega$ +/- 10 %
Surge protection		Trunk overvoltage protection if voltage exceeds typ. 39 V, max. 41 V
<b>Indicators/operating means</b>		
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
<b>Directive conformity</b>		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
<b>Standard conformity</b>		
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
<b>Ambient conditions</b>		
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
<b>Mechanical specifications</b>		
Connection type		screw terminal , pluggable or spring terminal , pluggable
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
<b>Data for application in connection with hazardous areas</b>		
EU-type examination certificate		TÜV 12 ATEX 098651 X
Marking		Ⓜ II 3G Ex nA [ic] IIC T4 Gc Ⓜ II (3)D [Ex ic Dc] IIIC
<b>Supply</b>		
Maximum safe voltage	$U_m$	35 V
<b>Outputs</b>		
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

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## Technical Data

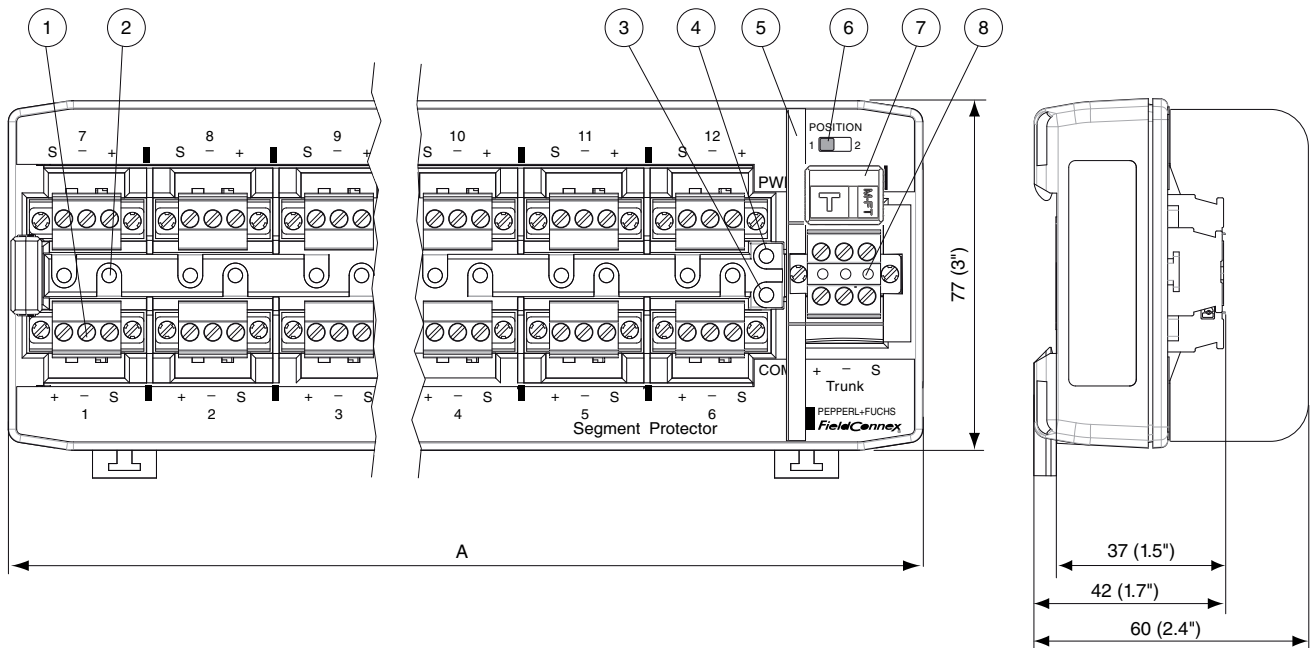
Capacitance	$C_o$	60 nF
Directive conformity		
Directive 2014/34/EU		EN IEC 60079-0:2018+AC:2020 , EN 60079-11:2012 , EN 60079-15:2010
<b>International approvals</b>		
UL approval		E106378
Control drawing		116-0406
Approved for		Class I, Division 2, Groups A, B, C, D
IECEX approval		
IECEX certificate		IECEX TUN 12.0015X
IECEX marking		Ex nA [ic] IIC T4 Gc [Ex ic Dc] IIIC
<b>General information</b>		
Supplementary information		Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable. For information see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .

## Assembly



**Additional Information**

**Dimensions and Assembly**



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".

**Installation**

see manual

**Electrical Connection**

**Table 1: Technical data depending on model**

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

\*\* + 10 mW per spur at 20 mA load

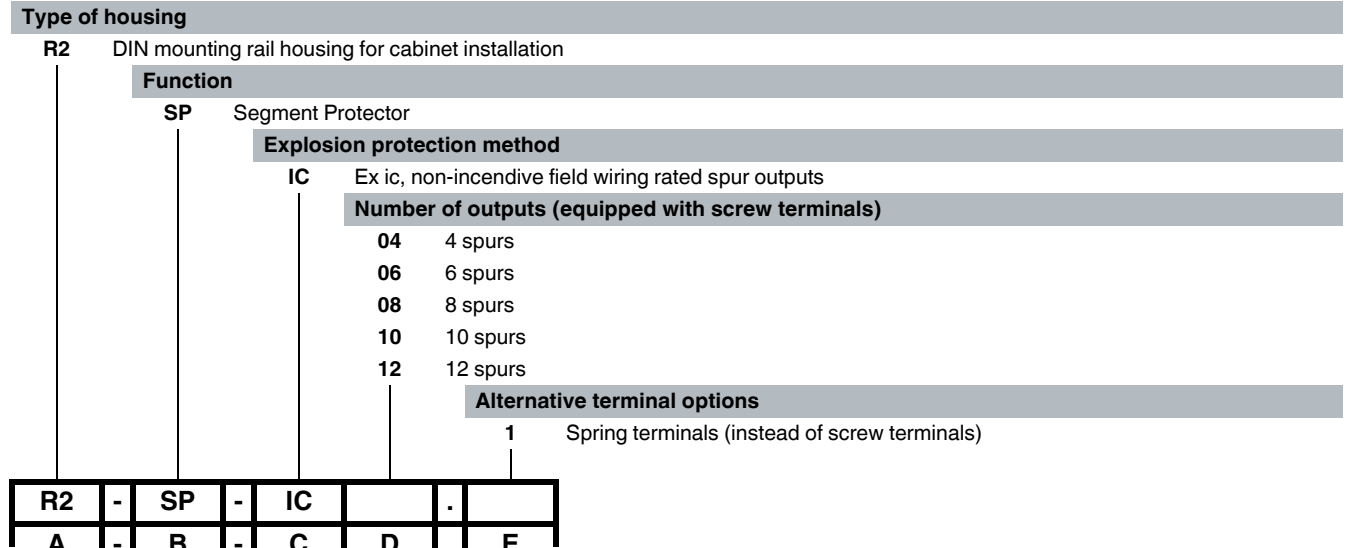
**Table 2: Wire cross section**

Wire cross section		Trunk terminals	Spur terminals
Screw terminal	flexible wire	0.2-2.5 mm <sup>2</sup>	0.2-2.5 mm <sup>2</sup>
	rigid wire	0.2-2.5 mm <sup>2</sup>	0.2-2.5 mm <sup>2</sup>

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Spring terminal	flexible wire	0.5-2.5 mm <sup>2</sup>	0.2-2.5 mm <sup>2</sup>
	rigid wire	0.5-2.5 mm <sup>2</sup>	0.2-2.5 mm <sup>2</sup>

## Type Code



## Delivery

**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

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