



- 8-channel
- Inputs EEx ia IIC
- Device installation in Zone 1, Zone 2, or Zone 22
- Module can be exchanged under voltage in Zone 1 (hot swap)
- Inputs for 2-wire transmitters or current sources
- Lead breakage (LB) monitoring and short-circuit (SC) monitoring for each field circuit
- EMC acc. to NAMUR NE 21

Function

The RSD-CI-Ex8 supplies up to eight 2-wire transmitters in the hazardous area and transfers the analogue 0/4 mA ... 20 mA measurement values over the fieldbus to the safe area.

It can also be used for intrinsically safe separation of up to eight 0 mA ... 22 mA signals (current sources). Current signals are transferred over the fieldbus to the safe area.

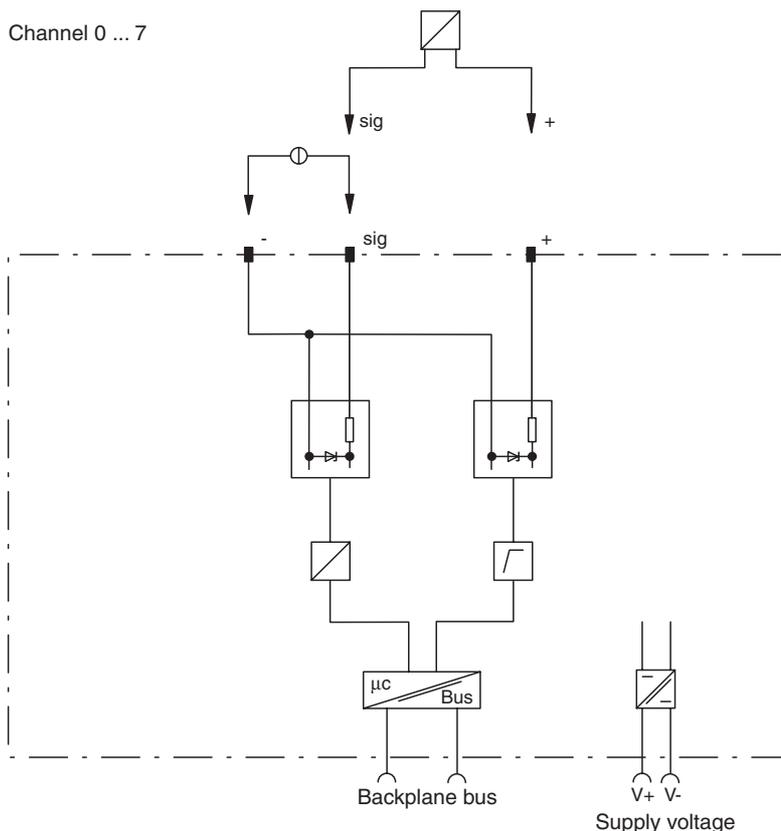
The inputs are galvanically isolated from the bus and the power supply.

In the hazardous area, at least 15.5 V are available for the transmitters at a current flow of 20 mA.

Application

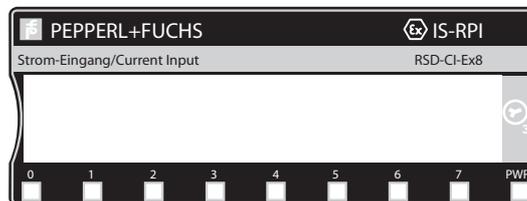
- Feeding of 2-wire transmitters and transfer of the measurement current
- Intrinsically safe isolation of current signals

Connection



Composition

Front View



- LED PWR green: Power-ON module is operating
- LED 0 ... 7 flashing red: lead breakage or short-circuit
- LED 0 red: internal fault (module) or Power-ON test

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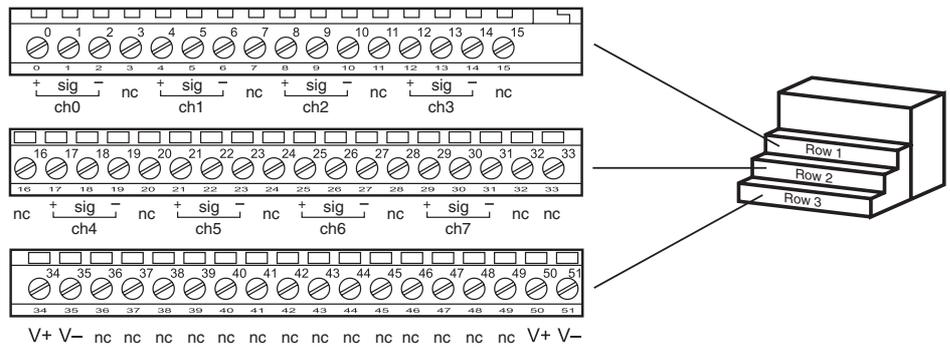
Supply		
Connection		terminals 34, 50 V+; 35, 51 V-
Rated voltage		8.88 ... 9.5 V
Power loss		5.2 W
Power consumption		8.5 W
Internal bus		
Connection		backplane bus
Interface		manufacturer specific bus
Cycle time		1.6 ms
Input		
Connection		terminals 0+, 1 sig, 2-; 4+, 5 sig, 6-; 8+, 9 sig, 10-; 12+, 13 sig, 14-; 17+, 18 sig, 19-; 21+, 22 sig, 23-; 25+, 26 sig, 27-; 29+, 30 sig, 31-
Input signal		4 ... 22 mA (2-wire) ; 0 ... 22 mA (current source)
Transmitter supply voltage		15.5 V at 20 mA
Line monitoring		breakage $I \leq 3.6$ mA; short-circuit $U \leq 4$ V
Transfer characteristics		
Resolution		16 Bit
Step response		4 ms (0 % ... 99 % of measured value at smallest filter constant)
Deviation		0,1 % of input signal range at 25 °C (298 K)
Influence of ambient temperature		0.005 % K of input signal range
Directive conformity		
Electromagnetic compatibility		
Directive 2004/108/EC		EN 61326-1:2006
Explosion protection		
Directive 94/9/EC		EN 60079-0: 2006, EN 60079-11: 2007, EN 60079-26: 2007, EN 61241-0: 2006, EN 61241-11: 2006
Standard conformity		
Insulation coordination		EN 50178
Electrical isolation		EN 60079-11:2007
Electromagnetic compatibility		NE 21:2006
Protection degree		IEC 60529
Climatic conditions		IEC 60721
Ambient conditions		
Classification		3K3
Ambient temperature		-20 ... 70 °C (253 ... 343 K)
Storage temperature		-20 ... 100 °C (253 ... 373 K)
Relative humidity		95 % non-condensing
Shock resistance		15 g peak, 11 ms period
Vibration resistance		2 g , 10 ... 500 Hz according to IEC 60068-2-6
Damaging gas		acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications		
Connection type		terminals
Core cross-section		≤ 2.5 mm ²
Protection degree		IP20, for in-situ installation a separate housing is required with a minimum of IP54
Mass		approx. 250 g
Mounting		DIN rail mounting
Data for application in connection with Ex-areas		
EC-Type Examination Certificate		DMT 98 ATEX E 017 X , for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection		 II (1)2G Ex ib[ia] IIC T4  II (1)D [Ex iaD]
Supply		only in connection with the power units RSD2-PSD2-Ex4.34, RSA6-PSD-Ex4.34
Input		
Voltage	U_o	23.7 V
Current	I_o	92.5 mA
Power	P_o	548 mW
External capacitance	C_o	66 nF
External inductance	L_o	2.5 mH
Voltage	U_i	28 V
Current	I_i	110 mA
Internal capacitance	C_i	negligible
Internal inductance	L_i	negligible
Internal bus		customer specific
Statement of conformity		

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Group, category, type of protection, temperature classification	Ex II 3D IP54 T 90°C
Electrical isolation	
Input/input	no electrical isolation
Input/power supply	safe electrical isolation acc. to EN 60079-11: 2007, voltage peak value 60 V
Input/Internal Bus	safe electrical isolation acc. to EN 60079-11: 2007, voltage peak value 60 V
Internal bus/power supply	safe electrical isolation acc. to EN 60079-11: 2007, voltage peak value 60 V

Electrical connection

Terminal base assignment



Supplementary information

EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity and instructions have to be observed. For information see www.pepperl-fuchs.com.

Notes

- Signalling of lead breakage/short-circuit via the internal bus to the control system and red flashing fault-LEDs for each channel
- Lead breakage/short-circuit monitoring via the bus is disabled channel per channel
- Rated supply current range 4 mA ... 20 mA
- Total supply current range 0 mA ... 22 mA
- Input filter programmable
- Alarm for measuring overrange
- Alarm for measuring underrange
- Alarm for wire breakage
- Alarm display configurable for each individual channel
- The input filter-cutoff frequency is programmable
- 1 power supply channel for 1 module
- The inputs have a common supply (minus)
- The module has to be powered via the intrinsically safe power supplies RSD2-PSD2-Ex4.34 or RSA6-PSD-Ex4.34

In order to reach the EMC protection class screened power lines and screens for the individual channels have to be used. The electric strength of the wire insulation has to be ≥ 500 V.