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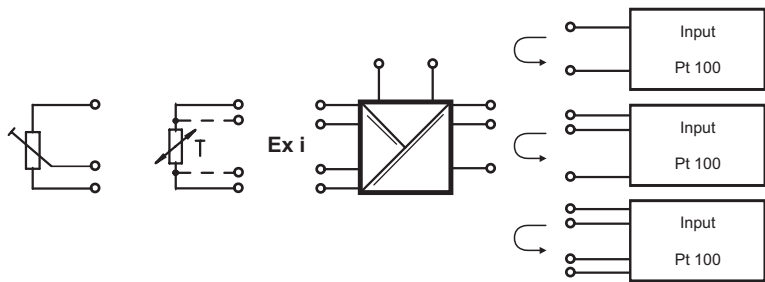
### Resistance Isolator for Pt 100 Type 9180/0

- World-wide unique dual channel solution
  - space saving, only 8.8 mm per channel
- For 2-, 3- and 4-wire circuits
- Intrinsically safe input [EEx ia] IIC
- Galvanic isolation between input, output and power supply
- 1 and 2 channels
- Installation possible in Zone 2

	Zones					
	0	1	2	20	21	22
Ex i interfaces	X	X	X	X	X	X
Installation in			X			X



Basic function: analog input, Ohm, 1 and 2 channels.  
 The resistance isolators are used for intrinsically safe operation of Pt 100 resistance thermometer or other resistance sensors.  
 The measured value is transferred to the output



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**Selection Table**

Version	Channels	Measuring range	Connection type	Order number
Resistance Isolator Type 9180	1	18 ... 391 Ω	Screw terminals	<b>9180/10-77-11s</b>
			Spring cage terminals	<b>9180/10-77-11k</b>
	2	18 ... 391 Ω	Screw terminals	<b>9180/20-77-11s</b>
			Spring cage terminals	<b>9180/20-77-11k</b>

**Technical Data**

Certificates	BVS 05 ATEX E 176 X		
Explosion protection	⊕ II (1) GD [EEx ia] IIC/IIB and ⊕ II 3 G EEx nAC T4		
Installation	in Zone 2, Div. 2 and in the safe area		
Safe maximum values (CENELEC)	Max. voltage $U_o$	6.5 V	
	Max. current $I_o$	16.4 mA	
	Max. power $P_o$	27 mW (linear characteristic)	
	Max. capacitance $C_o$ for IIC / IIB	25 μF / 570 μF	
	Max. inductance $L_o$ for IIC / IIB	120 mH / 450 mH	
	Internal capacitance $C_i$ and inductance $L_i$	negligible	
	Insulation voltage $U_m$	250 V	
	Further information and combinations of values, see certification.		
Power supply	Nominal voltage $U_N$	24 V DC	
	Voltage range	18 V ... 31.2 V	
	Nominal current (at $U_N$ ) 1 / 2 channels	27 mA / 37 mA	
	Power consumption (at $U_N$ ) 1 / 2 channels	≤ 650 mW / 890 mW	
	Power losses (at $U_N$ ) 1 / 2 channels	≤ 600 mW / 720 mW	
	Indication	LED green „PWR“	
	Polarity reversal protection	yes	
	Undervoltage monitoring	yes (no faulty module / output states)	
Galvanic isolation	Test voltage under regulations EN 50020		
	Ex i input to output	1.5 kV AC	
	Ex i input to power supply	1.5 kV AC	
	Ex i input to configuration interface	1.5 kV AC	
	Ex i input to error-contact	1.5 kV AC	
	Test voltage under regulations EN 50178		
	Output to power supply	350 V AC	
	Output to configuration interface	350 V AC	
	Outputs to each other	350 V AC	
	Error-contact to power supply and outputs	350 V AC	
	There is no galvanic isolation between the Ex i input channels		
Ex i Input	Connection type (no. of wires)	2-, 3-, 4-wire circuits	
	Setup via DIP switch		
	Sensor current	≤ 0.25 mA	
	Max. conductor resistance	≤ 50 Ω at 2-wire circuits	
		≤ 100 Ω at 3- and 4-wire circuits	
	Measurement range	18 Ω ... 391 Ω	
	Resolution average	10 mΩ	
Output	Output signal	= Input signal (Resistance)	
	Settling time (10% ... 90%) multiplexer operation	< 10 ms	
	Response time (input = output)	< 1 sec	
	Sensor current	200 μA ... 5 mA	
	Connection type (no. of wires)	2, 3, 4-wire circuits	

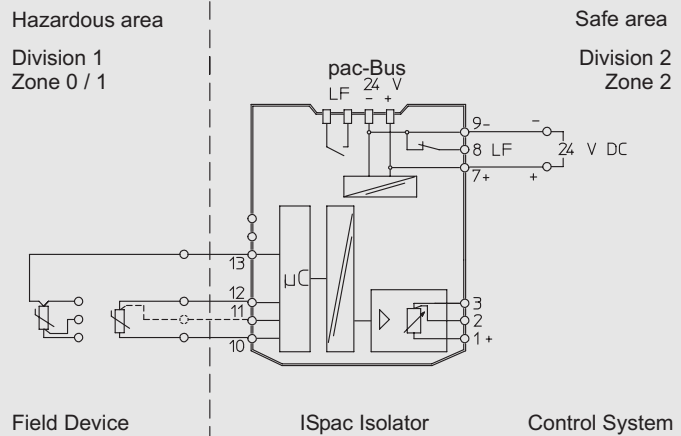


### Technical Data

Error detection Ex i Input	Open-circuit > 394 Ω Short-circuit < 16 Ω Behaviour of output Open-circuit > 10 kΩ Short-circuit > 10 kΩ Settings (switch LF) activated / deactivated Error detection LED red „LF“ each channel Error messaging and power supply failure - Contact (30 V / 100 mA), closed to ground in case of error - pac-Bus, floating contact (30 V / 100 mA)
Error limits	Accuracy, typical data expressed as % of basic range at U <sub>N</sub> , 23 °C Middle measurement error ≤ 0.1 % Temperature influence ≤ 0.1 % / 10 K
Electromagnetic compatibility	Tested under the following standards and regulations: EN 61326-1 Use in industrial environment; NAMUR NE 21
Ambient conditions	Ambient temperature - 20 °C ... + 60 °C / + 70 °C (see instructions) Storage temperature - 40 °C ... + 80 °C Relative humidity (no condensation) ≤ 95 %

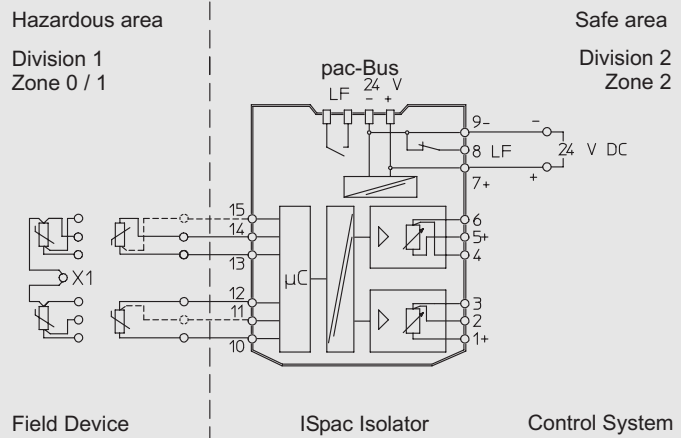
### Connection diagram

#### 1 channel 9180/1



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#### 2 channels 9180/2



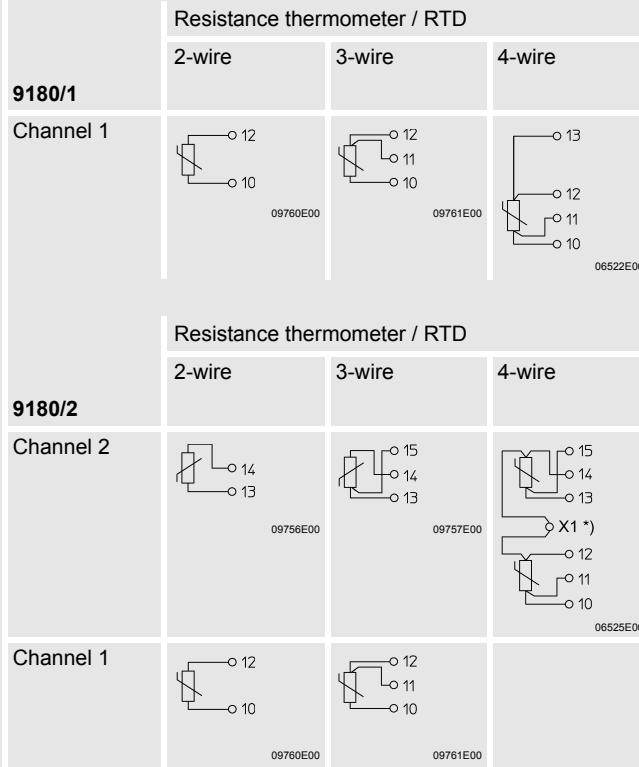
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Note: X1 is an external terminal



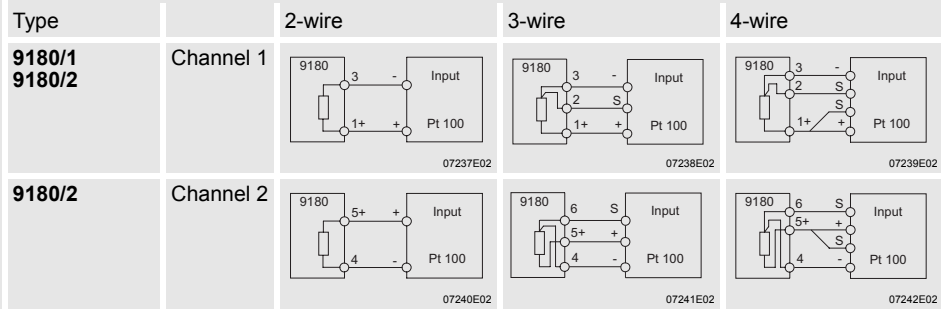
### Technical Data

#### Configuration input



\*) The connection of two sensors in 4-wire scheme requires an additional external terminal X1.

#### Configuration output

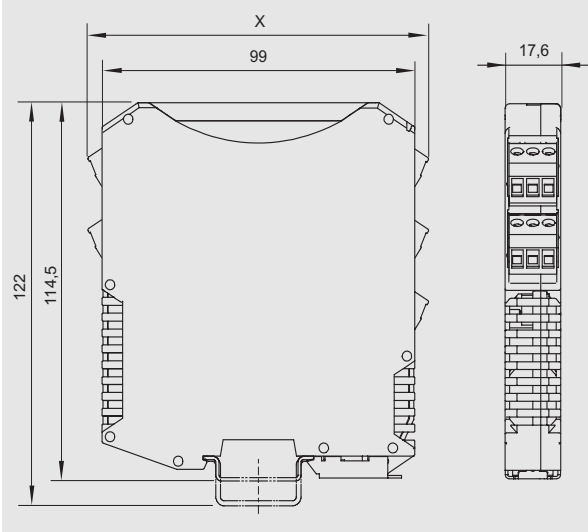


#### Mechanical data

	Screw terminals	Spring cage terminals	Insulation displacement connectors
<b>Connection one wire</b>			
- rigid	0.2 ... 2.5 mm <sup>2</sup>	0.2 ... 2.5 mm <sup>2</sup>	--
- flexible	0.2 ... 2.5 mm <sup>2</sup>	0.2 ... 2.5 mm <sup>2</sup>	0.5 ... 1 mm <sup>2</sup>
- flexible, end covering sleeves (without / with plastic sleeving)	0.25 ... 2.5 mm <sup>2</sup>	0.25 ... 2.5 mm <sup>2</sup>	--
<b>Connection two wires</b>			
- rigid	0.2 ... 1 mm <sup>2</sup>	--	--
- flexible	0.2 ... 1.5 mm <sup>2</sup>	--	--
- flexible, end covering sleeves	0.25 ... 1 mm <sup>2</sup>	0.5 ... 1 mm <sup>2</sup>	--
<b>Weight</b>	approx. 160 g		
<b>Mounting type</b>	on DIN rail acc. to EN 50022 (NS35/15; NS35/7.5) or in pac-Carrier		
<b>Mounting position</b>	horizontal or vertical		
<b>Casing protection class</b>	IP 30		
<b>Terminal protection class</b>	IP 20		
<b>Casing material</b>	PA 6.6		
<b>Fire protecting class (UL-94)</b>	V0		



**Dimension drawings (all dimensions in mm) - subject to alterations**



	Dimension X
Screw terminals	108 mm
Spring cage terminals	128 mm
Insulation displacement connectors	131 mm

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We reserve the right to make alterations to the technical data, weights, dimensions, designs and products available without notice. The illustrations cannot be considered binding.