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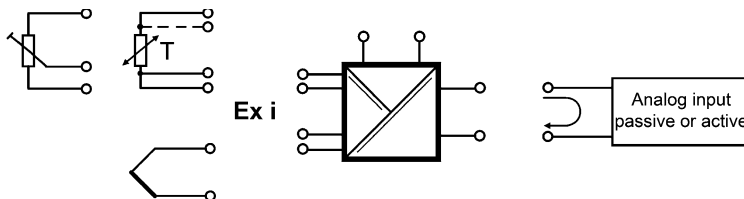
Temperature Transmitter (Field Circuit Ex i) Type 9182

- One unit for nearly all temperature sensors individually configurable
- Intrinsically safe input [EEx ia] IIC
- 1 and 2 channels
- Galvanic isolation between input, output, power supply and configuration interface
- Open-circuit and short-circuit monitoring and messaging (can be switched off)
- Versions with limit value signalling (relay) or passive output available
- Simple configuration with PC or DIP-switches
- Installation possible in Zone 2 and Div. 2

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Basic function: temperature input, Ω , 1 and 2 channels.

The temperature transmitter is used for intrinsically safe operation of temperature sensors. Most currently available sensors can be connected, such as Pt 100, Pt 500, Pt 1000, Ni 100, thermocouples and resistance transmitters. The parameters can be set using suitable software or alternative via DIP-switches.



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Selection table				
Version	Channels	Output	Limit value contact (per channel)	Ordering code
Temperature transmitter type 9182	1	0/4 mA ... 20 mA	without	9182/10-51-11.
			2 NO contacts	9182/10-51-12.
		without	2 NO contacts	9182/10-50-12.
		passiv	without	9182/10-59-11.
	2	0/4 mA ... 20 mA	without	9182/20-51-11.
		without	2 NO contacts	9182/20-50-12.
Add. to ordering code				
	Screw terminal			9182/...-...-...s
	Spring clamp terminal			9182/...-...-...k
	Insulation displacement connectors			9182/...-...-...q
For type 9182/...-...-12. configuration is only possible with PC-software 9199, not with DIP-switches				

Technical Data																											
Certificates	DMT 02 ATEX E 243 X																										
Other certificates	USA (FM, UL), Canada (CSA), Brazil (UL do Brasil), Russia (VNIIEF), Belarus (Promatomnadzor), Shipping (DNV)																										
Explosion protection	⊕ II (1) GD [EEx ia] IIC/IIB and ⊕ II 3 G EEx nAC II T4																										
Installation	In Zone 2, Div. 2 and in the safe area																										
Safe maximum values (CENELEC)	<table border="0"> <tr> <td>Max. voltage U_o</td> <td>6.5 V</td> </tr> <tr> <td>Max. current I_o</td> <td>19.7 mA</td> </tr> <tr> <td>Max. power P_o</td> <td>32 mW (linear characteristic)</td> </tr> <tr> <td>Max. connectable capacitance C_o for IIC / IIB</td> <td>25 μF / 570 μF</td> </tr> <tr> <td>Max. connectable inductance L_o for IIC / IIB</td> <td>90 mH / 330 mH</td> </tr> <tr> <td>Internal capacitance C_i and inductance L_i</td> <td>negligible</td> </tr> <tr> <td>Insulation voltage U_m</td> <td>250 V</td> </tr> </table> <p>Further information and combinations of values, see certification.</p>	Max. voltage U_o	6.5 V	Max. current I_o	19.7 mA	Max. power P_o	32 mW (linear characteristic)	Max. connectable capacitance C_o for IIC / IIB	25 μ F / 570 μ F	Max. connectable inductance L_o for IIC / IIB	90 mH / 330 mH	Internal capacitance C_i and inductance L_i	negligible	Insulation voltage U_m	250 V												
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Technical Data

Configuration	Interface:	Version Software Connection Settings	RS 232 C IS pac Wizard 9199 4-pole plug on front all module functions and diagnostics			
	Switch: (only 9182/0-5.-11)	Version Settings	12 + 4-pole DIP switch • Pt 100; thermocouple B, E, J, K, N, R, T with each approx. 90 measurement ranges (°C + °F) • Pt 100 in 2-, 3- or 4-wire connection • Output signal 0/4 mA ... 20 mA • Line fault detection activated / deactivated			
I.S. input	The input parameters can be set via PC software or DIP switch (only type 9182/0-5.-11.).					
Input: resistance thermometer	Types	Standard	Basic range [°C]	Min. span	Middle resolution	Middle measurement error
	Pt 100 Pt 500 Pt 1000	IEC 60751	- 200 ... + 850	50 K	0.1 K	0.35 K
	Ni 100 Ni 500 Ni 1000	DIN 43760	- 60 ... + 180	31 K	0.1 K	0.25 K
Input: thermocouple	Type of circuit	2-, 3-, 4-wire connection				
	Linearity	Temperature / resistor				
	Measuring current	≤ 0.25 mA				
Input: thermocouple	Max. line resistor each core	50 Ω (2-wire connection) 100 Ω (3-, 4-wire connection)				
	Types	Standard	Basic range [°C]	Min. span	Middle resolution	Middle measurement error
	B	IEC 60584	250 ... 1800	314 K	0.1 K	1.2 K
	E		- 200 ... 1000	36 K	0.1 K	0.2 K
	J		- 200 ... 1200	42 K	0.1 K	0.2 K
	K		- 200 ... 1370	63 K	0.1 K	0.3 K
	N		- 200 ... 1300	75 K	0.1 K	0.3 K
	R		- 50 ... 1767	171 K	0.1 K	0.7 K
	S		- 50 ... 1767	185 K	0.1 K	0.8 K
	T	- 200 ... 400	60 K	0.1 K	0.3 K	
	L	DIN 43710	- 200 ... 900	55 K	0.1 K	0.3 K
	U		- 200 ... 600	48 K	0.1 K	0.3 K
	XK	GOST	- 200 ... 800	50 K	0.1 K	0.2 K
Input: RTD	Linearity	Temperature / voltage				
	Max. line resistance (sum)	≤ 1000 Ω				
	External references both channels together each channel	Pt 100 2-wire connection (- 40 °C ... + 85 °C) constant temperature (- 40 °C ... + 85 °C)				
	Basic measuring range	Middle resolution		*) with parallel 10 kΩ Shunt; no open-circuit detection		
	50 Ω ... 500 Ω	10 mΩ				
500 Ω ... 10 kΩ	10 mΩ					
10 kΩ ... 100 kΩ *)	10 mΩ					
Type of circuit	3-wire connection					
Sense current	≤ 0.25 mA					



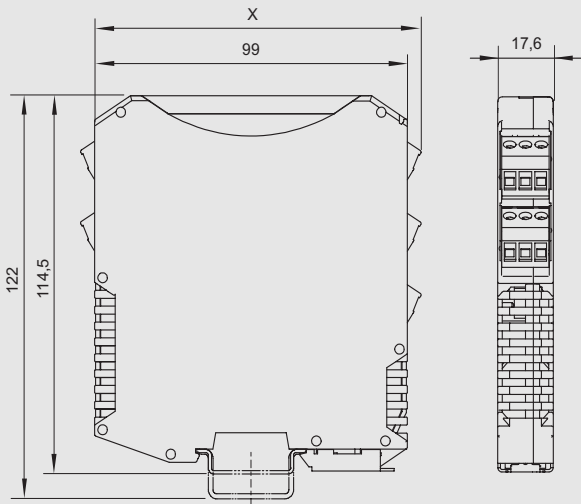
Technical Data		
Output	(only 9182/0-51-1..) Output signal (configurable) Function range Connectable load resistance R_L 1 / 2 channels Resolution Response time (10 % ... 90 %) Delay input - output	0/4 mA ... 20 mA 0 mA ... 21 mA 0 Ω ... 750 Ω / 0 Ω ... 600 Ω 1 μ A 35 ms 500 ms
Passiv output	(only 9182/10-59-11.) Output signal (configurable) Supply voltage Internal voltage drop Minimum load resistance R_L	current depression, 0/4 mA ... 20 mA max. 31,2 V DC 3,0 V 0 Ω at 3 V ... 20 V 200 Ω at 24 V 500 Ω at 30 V
Limit values	(only 9182/0-5.-12.) Messaging Switching voltage Switching current (resistive load) On-resistance Reclosing lockout	2 NO each channel \pm 30 V 100 mA 2,5 Ω (typical < 1 Ω) Reset through DIP-switch or „Power-Off“ (configurable)
Error detection I.S. input	Open-circuit Short-circuit Behaviour of output Settings (switch LF) Error detection Error messaging and power supply failure	for resistance thermometers, thermocouples and RTD > 1 k Ω for resistance thermometers with temperature linearisation and RTD 2,4 mA (configurable 0 mA ... 23 mA or „hold last value“) activated / deactivated LED red „LF“ each channel - 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_N , 23 °C Middle measurement error Temperature influence Logging error externally Power supply effect within voltage range Load resistance effect	see „I.S. input“ measurement error < 0,05 % / 10 K error output signal < 0,05 % / 10 K 0.35 K not measurable not measurable
Electromagnetic compatibility	Tested under the following standards and regulations: EN 61326 (IEC/EN 61000-4-1...6 and 11; EN 55022 Class B); NAMUR NE 21 (IEC/EN 61000-4-1...6, 8 and 11; EN 55022 Class B)	
Ambient conditions	Ambient temperature Storage temperature Relative humidity (no condensation)	- 20 °C ... + 60 °C / + 70 °C (watch instructions) - 40 °C ... + 80 °C \leq 95 %
Connection diagram	Hazardous area	Safe area

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Technical Data					
Configuration input	Thermocouple		Resistance thermometer / RTD		
	Cold junction compensation		2-wire	3-wire	4-wire
	const. temp.	ext. Pt. 100			
Channel 2					
Channel 1					
Configuration output			9182/10-51-12	9182/10-50-12	9182/10-59-11
Channel 1 ①					
			9182/0-51-11	9182/20-50-12	
Channel 2 ②					
Channel 1 ①					
Mechanical data			Screw terminals	Spring clamp terminals	Insulation displacement connectors
Connection one wire					
- rigid			0.2 ... 2.5 mm ²	0.2 ... 2.5 mm ²	--
- flexible			0.2 ... 2.5 mm ²	0.2 ... 2.5 mm ²	0.5 ... 1 mm ²
- flexible, end covering sleeves (without / with plastic sleeving)			0.25 ... 2.5 mm ²	0.25 ... 2.5 mm ²	--
Connection two wires					
- rigid			0.2 ... 1 mm ²	--	--
- flexible			0.2 ... 1.5 mm ²	--	--
- flexible, end covering sleeves			0.25 ... 1 mm ²	0.5 ... 1 mm ²	--
Weight			approx. 160 g		
Mounting type			on DIN rail acc. to EN 50022 (NS35/15; NS35/7.5) or in pac-Carrier horizontal or vertical		
Mounting position			horizontal or vertical		
Casing protection class			IP 30		
Terminal protection class			IP 20		
Casing material			PA 6.6		
Fire protecting class (UL-94)			V0		



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



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

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Accessories and spare parts

Designation	Description	Ordering code
Cold junction compensation	Used to measure the junction temperature with a Pt 100 in 2-wire connection	
	Compact screw terminal (applicable for single or dual channel 9182)	9191/VS-05
	Terminal (DIN rail mounting) for single channel 9182	9191/VS-03
	Terminal (DIN rail mounting) for dual channel 9182	9191/VS-04
Parameterising set IS pac - Wizard	<p>The software is used to commissioning, configuration and diagnosis on the ISpac Isolators Series 9146, 9162 and 9182. The configuration is by means of an IBM compatible standard PC. The user is guided through the device configuration process via a user interface designed comfortably, combined with a full context-sensitive online help feature. An online diagnostic window (device self test, process variable display etc.) is also available.</p> <p>For further information see operating instructions. Supplied: as CD-ROM; Parameterising software incl. parameterising cable.</p> <p>System requirements:</p> <ul style="list-style-type: none"> • IBM compatible PC with MS Windows 98, NT, 2000, XP • CD-ROM drive • RS 232 C interface 	9199/20-01

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.



Customer Specific Set-up Sheet

Order-No.: _____ - Pos.: _____ Pieces: _____

Type	Channels	Output	Trip point contact
<input type="checkbox"/> 9182 / 10 - 51 - 11.	1	0/4...20 mA	none
<input type="checkbox"/> 9182 / 10 - 59 - 11.	1	passive	none
<input type="checkbox"/> 9182 / 20 - 51 - 11.	2	0/4...20 mA	none
<input type="checkbox"/> 9182 / 10 - 51 - 12.	1	0/4...20 mA	2 NO
<input type="checkbox"/> 9182 / 10 - 50 - 12.	1	None	2 NO
<input type="checkbox"/> 9182 / 20 - 50 - 12.	2	None	2 NO per channel

with:

Screw terminal s (standard) Cage clamp terminal k Insulation cutting q

	Standard	Channel 1	Channel 2
Signal Tag	Signal 1/2		
I.S. input			
RTD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sensor type	Pt 100	<input type="checkbox"/> Pt 100 <input type="checkbox"/> Pt 500 <input type="checkbox"/> Pt 1000 <input type="checkbox"/> Ni 100 <input type="checkbox"/> Ni 500 <input type="checkbox"/> Ni 1000	<input type="checkbox"/> Pt 100 <input type="checkbox"/> Pt 500 <input type="checkbox"/> Pt 1000 <input type="checkbox"/> Ni 100 <input type="checkbox"/> Ni 500 <input type="checkbox"/> Ni 1000
Circuit type	3-wire	<input type="checkbox"/> 2-wire <input type="checkbox"/> 3-wire <input type="checkbox"/> 4-wire	<input type="checkbox"/> 2-wire <input type="checkbox"/> 3-wire <input type="checkbox"/> 4-wire
Measurement range	0...400 °C	from _____ to _____ <input type="checkbox"/> °C <input type="checkbox"/> °F <input type="checkbox"/> K <input type="checkbox"/> Ω	from _____ to _____ <input type="checkbox"/> °C <input type="checkbox"/> °F <input type="checkbox"/> K <input type="checkbox"/> Ω
Thermocouple		<input type="checkbox"/>	<input type="checkbox"/>
Type		<input type="checkbox"/> B <input type="checkbox"/> E <input type="checkbox"/> J <input type="checkbox"/> K <input type="checkbox"/> N <input type="checkbox"/> R <input type="checkbox"/> S <input type="checkbox"/> T <input type="checkbox"/> L <input type="checkbox"/> U <input type="checkbox"/> XK	<input type="checkbox"/> B <input type="checkbox"/> E <input type="checkbox"/> J <input type="checkbox"/> K <input type="checkbox"/> N <input type="checkbox"/> R <input type="checkbox"/> S <input type="checkbox"/> T <input type="checkbox"/> L <input type="checkbox"/> U <input type="checkbox"/> XK
CJC-type		<input type="checkbox"/> ext. Pt 100 <input type="checkbox"/> const. temp. _____	<input type="checkbox"/> ext. Pt 100 <input type="checkbox"/> const. temp. _____
Measurement range		from _____ to _____ <input type="checkbox"/> °C <input type="checkbox"/> °F <input type="checkbox"/> K <input type="checkbox"/> mV	from _____ to _____ <input type="checkbox"/> °C <input type="checkbox"/> °F <input type="checkbox"/> K <input type="checkbox"/> mV
Resistance sensor		<input type="checkbox"/>	<input type="checkbox"/>
Range		<input type="checkbox"/> up to 500 Ω <input type="checkbox"/> up to 2.5 kΩ <input type="checkbox"/> up to 10 kΩ <input type="checkbox"/> up to 100 kΩ (+Shunt)	<input type="checkbox"/> up to 500 Ω <input type="checkbox"/> up to 2.5 kΩ <input type="checkbox"/> up to 10 kΩ <input type="checkbox"/> up to 100 kΩ (+Shunt)
Measurement range		from _____ % to _____ %	from _____ % to _____ %
Output (only 9182/*0-51-1*)			
Signal	4...20 mA	<input type="checkbox"/> 0...20 mA <input type="checkbox"/> 4...20 mA	<input type="checkbox"/> 0...20 mA <input type="checkbox"/> 4...20 mA
Fault behaviour	off	<input type="checkbox"/> hold last value <input type="checkbox"/> off <input type="checkbox"/> fixed value: _____ (standard 2.4 mA)	<input type="checkbox"/> hold last value <input type="checkbox"/> off <input type="checkbox"/> fixed value: _____ (standard 2.4 mA)
Trip point settings for contact A (only 9182/*0-5*-12)			
Signalling	deactivated	<input type="checkbox"/> activated <input type="checkbox"/> deactivated	<input type="checkbox"/> activated <input type="checkbox"/> deactivated
Value	25 %	_____ % or absolute: _____	_____ % or absolute: _____
Contact behaviour	<input type="checkbox"/>	<input type="checkbox"/> closes if signal > value <input type="checkbox"/> closes if signal < value <input type="checkbox"/> opens if signal > value <input type="checkbox"/> opens if signal < value	<input type="checkbox"/> closes if signal > value <input type="checkbox"/> closes if signal < value <input type="checkbox"/> opens if signal > value <input type="checkbox"/> opens if signal < value
Hysteresis	1 %	_____ % (0.1...10 %)	_____ % (0.1...10 %)
Lockout function	deactivated	<input type="checkbox"/> activated <input type="checkbox"/> deactivated	<input type="checkbox"/> activated <input type="checkbox"/> deactivated
Trip point settings for contact B (only 9182/*0-5*-12)			
Signalling	deactivated	<input type="checkbox"/> activated <input type="checkbox"/> deactivated	<input type="checkbox"/> activated <input type="checkbox"/> deactivated
Value	75 %	_____ % or absolute: _____	_____ % or absolute: _____
Contact behaviour	<input type="checkbox"/>	<input type="checkbox"/> closes if signal > value <input type="checkbox"/> closes if signal < value <input type="checkbox"/> opens if signal > value <input type="checkbox"/> opens if signal < value	<input type="checkbox"/> closes if signal > value <input type="checkbox"/> closes if signal < value <input type="checkbox"/> opens if signal > value <input type="checkbox"/> opens if signal < value
Hysteresis	1 %	_____ % (0.1...10 %)	_____ % (0.1...10 %)
Lockout Function	deactivated	<input type="checkbox"/> activated <input type="checkbox"/> deactivated	<input type="checkbox"/> activated <input type="checkbox"/> deactivated

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