Temperature transmitters

TS 100

Version: 05.01.2015

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Technical Specifications

Temperature measuring range

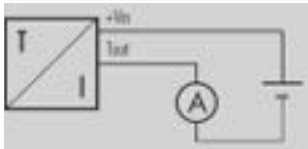
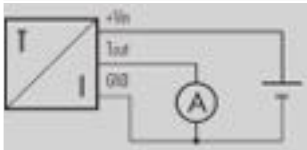
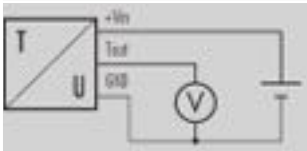
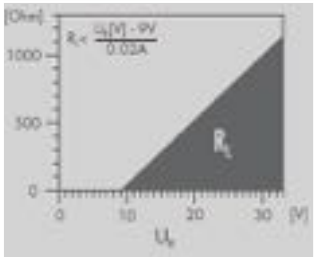
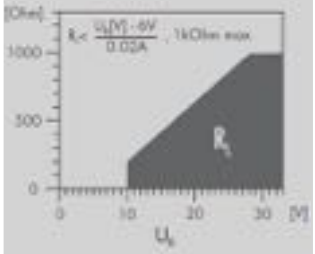
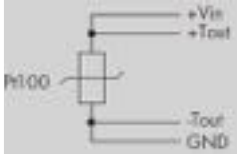
Standard, (1)	0 ... 70°C
Lower end of range	-50°C
Upper end of range	150°C
Temperature span, (2)	> 30°C
Accuracy, (2)	
0 ... 70°C	≤ ± 1°C
-25 ... 85°C	≤ ± 1.5°C
-50 ... 150°C	≤ ± 2°C

(1) Other temperature measuring ranges on request
(2) Measuring range 15 ... 30°C must be contained
(3) Probe, electronics, calibration

Temperature and pressure range

Operating range	0 ... 850 bar
Operating temperature	-25 ... 85°C
Process temperature	-50 ... 150°C
Storage temperature	-25 ... 85°C

Electrical specifications

	4 ... 20 mA	0 ... 20 mA	0 ... 5 V / 0 ... 10 V
Power supply	9 ... 33 VDC	15 ... 30 VDC	15 ... 30 VDC
Supply influence	< 0.1% FS	< 0.1% FS	< 0.1% FS
Current consumption			3 mA
Circuit diagram			
Load resistance			R_L > 10kOhm
Load influence	< 0.1% FS	< 0.1% FS	< 0.1% FS
4 wires (passive)			

Qualifications

	Description	Level	Typical interferences
EN 61000-4-2	Electrostatic discharge	4 kV contact 8 kV air	
EN 61000-4-3	Irradiated RF	10V/m (0.08 ... 1 GHz)	Radio sets, wireless phones
EN 61000-4-4	Transients (burst)	2 kV	Motors, valves
EN 61000-4-6	Conducted RF	10 V (0.15 ... 80 MHz)	Frequency converters

Physical specifications

Materials	
Probe	Stainless steel (316L / 1.4435)
Housing	Stainless steel (316L / 1.4404)
Seals	Viton
Cable	PUR, FEP, PE

Equipment

Overview

10.00.0091	Accessories overview
HART001	Cable Socket Connector
HART058	Cable Socket Connector micro

Ordering information

			X. XXXX.	XXXX.	XX.	XXX
Type						
	TS 100	290				
.						
Temperature measuring range						
	Measuring range specified by customer any tange between -50...150°C delta ≥ 30°C, 15...30°C must be included		98			
Probe						
	G 1/2 M, Ø 3.5 x 25.5 mm (standard) (Fig. 3)		71			
	G 1/2 M, Ø 5 x 100 mm (Fig. 4)		96			
	G 1/2 M, Ø 5 x 200 mm (Fig. 5)		97			
	G 1/4 M, Ø 3.5 x 17 mm (Fig. 1)		95			
	G 1/4 M, Ø 5 x 32 mm (Fig. 2)		70			
	M 10, Ø 3.5 x 17 mm (Fig. 6)		98			
	Customized probes available		99			
Electrical connection						
	DIN-43650, demountable, IP 65 (Fig. 10), (1)			01		
	DIN-43650, demountable, IP 65, with metal threaded part			66		
	Binder 723, 5-pin, IP 67 (Fig. 11), (1)			03		
	MIL C26482, 10-6, IP 40 (Fig. 13), (1)			06		
	PE cable, IP 67, black (Fig. 14), (2), (3)			13		
	PUR cable, IP 67, black (Fig. 14), (2), (4)			15		
	FEP cable, IP 67, black (Fig. 14), (2)			21		
	Customized connection available			99		
Output signal						
	4 ... 20 mA			05		
	0 ... 20 mA			00		
	0 ... 5 VDC			46		
	0 ... 10 VDC			47		
	4 wires (passive)			70		
	Costumized			99		
Accuracy						
	According to specifications				3	
Temperature range						
	-50 ... 100°C				1	
	-50 ... 150°C (with cooling fins)				2	
Option 1						
Option 2						
	Electronics packed in gel					D
Option 3						

(1) Cable socket connector not included

(2) Please specify the required cable length

(3) Suitable for drinking water (food approved)

(4) For operating temperature > 50°C, PE or FEP cable must be used

Technical drawings

Probe

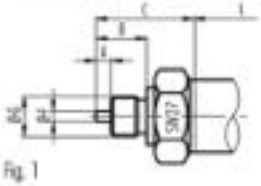


Fig. 1

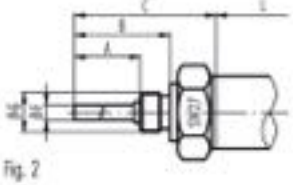


Fig. 2

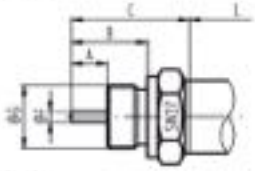


Fig. 3

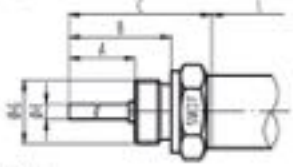


Fig. 4

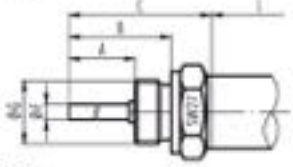


Fig. 5

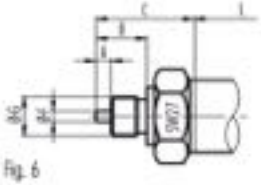
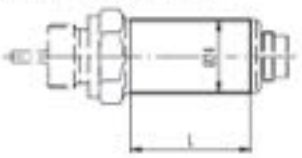


Fig. 6

Probe	A	B	C	Ø-F (Probe)	Ø-G (Thread)
Fig. 1	5	17	32.5	3.5	G 1/4 M
Fig. 2	22	32	47.5	5	G 1/4 M
Fig. 3	12	25.5	39.5	3.5	G 1/2 M
Fig. 4	88	100	113.5	5	G 1/2 M
Fig. 5	188	200	213.5	5	G 1/2 M
Fig. 6	5	17	32.5	3.5	M 10

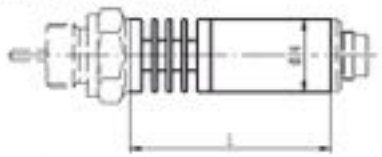
Dimensions

Version for media temperature up to 100°C



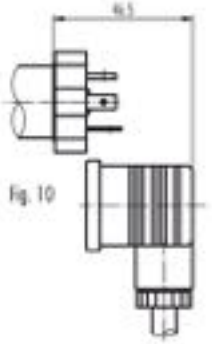
L = 40 mm for connector DIN 43650 (Fig. 10)
L = 45 mm for all other versions

Version for media temperature up to 150°C



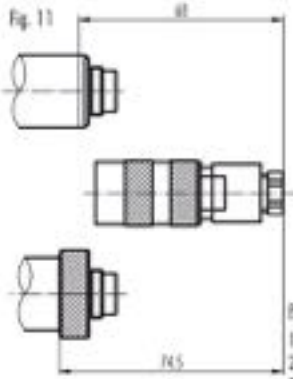
L = 67 mm for connector DIN 43650 (Fig. 10)
L = 72 mm for all other versions

Electrical connection



Pin	2-Wire	3-Wire	4-Wire
1	+Vin	+Vin	+Vin
2	Iout	Iout	+Iout
3		GND	GND
⏚			-Iout

Fig. 10

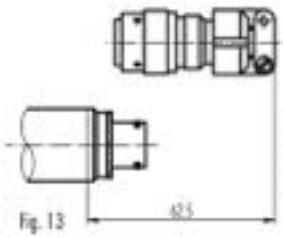


Pin	2-Wire	3-Wire	4-Wire
1			+Vin
2	Iout	Iout	+Iout
3	+Vin	+Vin	-Iout
4		GND	GND

Fig. 11

Cable socket connector

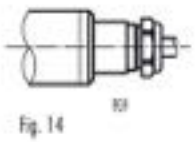
Fig. 12



Pin	2-Wire	3-Wire	4-Wire
A	+Vin	+Vin	+Vin
B		GND	GND
C			+Iout
D	Iout	Iout	-Iout

Fig. 13

Cable socket connector



Colour	2-Wire	3-Wire	4-Wire
white	+Vin	+Vin	+Vin
green	Iout	Iout	-Iout
yellow		GND	GND

Fig. 14

Specifications may change without notice.

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