SensorsONE
Measurement Instrumentation Products

Temperature transmitters

TS 100

CE

CUSTOMER BENEFITS

- Customised matching of the temperature measuring range
- Standardized output signal for simple implementation
- Fast customization thanks to modular product design
- Compact and reliable design

Technical Specifications

TEMPERATURE MEASURING RANGE

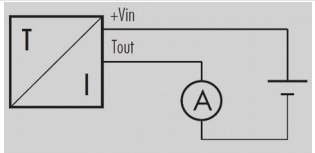
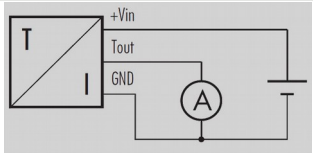
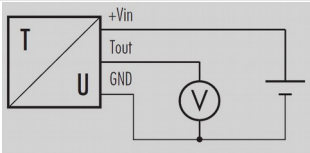
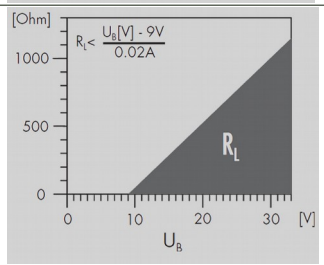
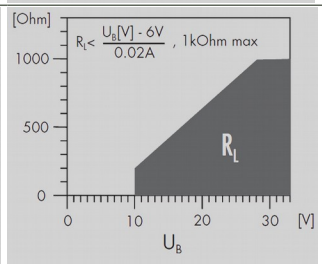
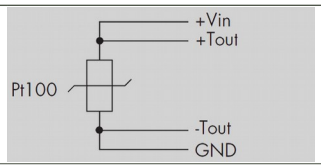
Standard, (1)	0 ... 70°C
Lower end of range	-50°C
Upper end of range	150°C
Temperature span, (2)	> 30°C
Accuracy, (3)	
0 ... 70°C	≤ ± 1°C
-25 ... 85°C	≤ ± 1.5°C
-50 ... 150°C	≤ ± 2°C

(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 DIN43650
HART058	Cable Socket Connector DIN 43650, Micro

Ordering information

			X.	XXXX.	XXXX.	XX.	XXX
Type							
	TS 100	290					
.							
Temperature measuring range							
	Measuring range specified by customer any range 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, with metal threaded part (Fig. 10), (1)				01		
	M16 (Binder 723), 5-pins, 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

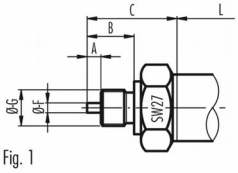


Fig. 1

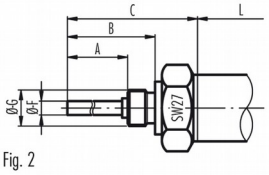


Fig. 2

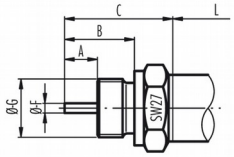


Fig. 3

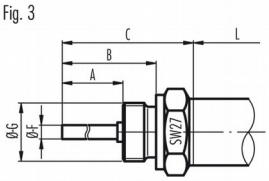


Fig. 4

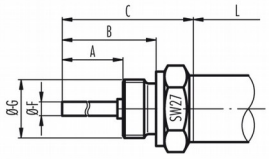


Fig. 5

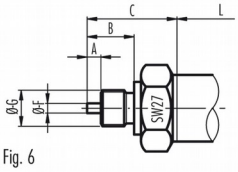
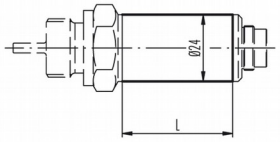


Fig. 6

Probe	A	B	C	Ø-F (Probe)	Ø-G (Thread)
Fig. 1	6.3	19.8	32.5	4	G 1/2 M
Fig. 2	2.8	19.8	32.5	4	1/2 NPT M

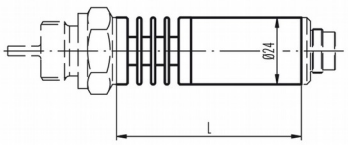
Dimensions

Version for media temperature up to 100°C



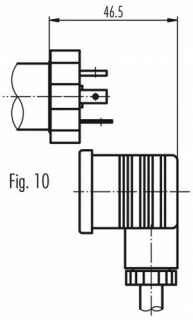
L = 45 mm

Version for media temperature up to 150°C



L = 72 mm

Electrical connection



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

Fig. 10

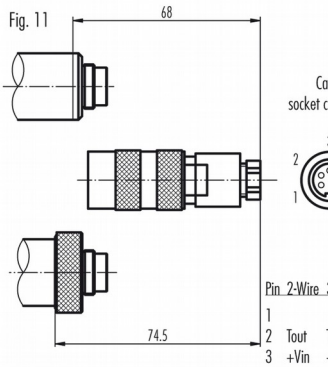


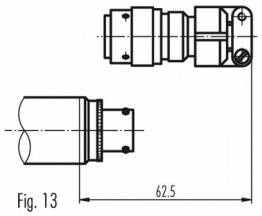
Fig. 11

Cable socket connector

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

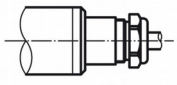
Fig. 12

Cable socket connector



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

Fig. 13



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

Fig. 14