

TE1 - Temperature System with Field Housing

Field housing in stainless steel

Wetted parts in acid-proof, stainless steel or PEEK

Maintenance-free, hygienic, conical tightening metal-to-metal or metal-to-PEEK

EHEDG approval

Process temperature -50...250°C

Pt100 sensors, 2-wire (single or duplex element)

DIN A or B (1/1 or 1/3) elements

Standard or fast response sensor tip

Process connection or surface mounted sensor

Optional transmitter (4...20 mA, HART, Profibus PA)

Defined weld-in position (gland or M12 position)



Description

The TE1 Pt100 temperature measurement system has a stainless steel field housing in excellent finish.

The system complies standard industrial process connections as well as hygienic connections with high cleanability and bacteria tightness.

Fast response sensor tips ensures accurate measurements. Standard DIN A or B, single or double elements connected via 2-, 3- or 4 wires can be supplied according to customers wishes.

The surface mounted sensor is used in processes where media contact is unwanted. The sensor tip is spring loaded ensuring a tight connection with the weld-in sleeve, mounted flush in the tank wall.

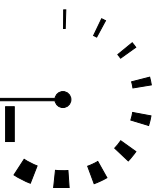
The M12 process connection can be supplied with a PEEK cone for tightening (chuck cone). The FDA-approved PEEK material has very unique characteristics, such as high elasticity, non-floating and extremely resistant against abrasive and corrosive media. That makes it ideal for hygienic process applications.

The system can be supplied with one of four configurable temperature transmitters either with a standard 4...20 mA, 4...20 mA/HART® output or Profibus® PA interface.

The non-hygienic G1/2 process connections are used in the general industry such as measurements on water and steam whereas the hygienic connections are ideal in CIP systems, breweries, dairies and in the pharmaceutical industry.

**BOURDON
HAENNI**

made to measure



Technical Data

Environmental conditions

Media temperature, std.	-50...250°C, note {3}
Media, Surface mounted sensor	-20...150°C
Ambient temperature (or ambient temperature for the transmitter)	-20...85°C
Humidity	< 100% RH, condensing
Protection class	IP 67

Sensor element

Sensor type	Pt100, Class A or B
Accuracy	DIN/EN/IEC 60751
1/3 DIN B:	$\pm 1/3 \times (0.3 + 0.005 \times t) \text{ } ^\circ\text{C}$
1/1 DIN A:	$\pm (0.15 + 0.002 \times t) \text{ } ^\circ\text{C}$

Sensor tube, connection and housing

Material	Stainless steel
Housing, $\varnothing 55 \text{ mm}$	W.1.4301 (AISI 304)
Wetted parts	W1.4404 (AISI 316L) Other materials upon request
PEEK (Poly Aethar Aethar Keton)	-50...250°C ; FDA approved
Media pressure	Max. 16 bar
Time constant t_{50} (in water)	Sensor tip: $\varnothing 6 \text{ mm}$ 3.0 sec. $\varnothing 4 \text{ mm}$ 2.5 sec. $\varnothing 3 \text{ mm}$ 1.3 sec.
Mechanical tolerances	ISO 2768-m

Disposal of product and packing

According to national laws or by returning to Bourdon-Haenni

Application photos, examples



Accessories and replaceable process connections for TE1

Please refer to "Accessories, universal" data sheet

Ordering Details - TE1 Temperature Sensor with Field Housing

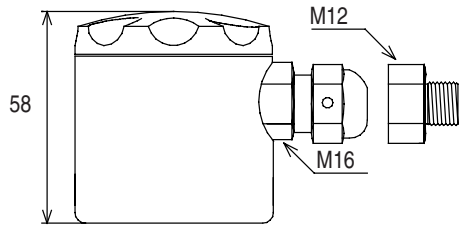
	TE1x	xxxx	xxxx	xxxx
Sensor tip	4' digit			
Normal response sensor tip, 6 mm	1			
Fast response sensor tip, 4 mm, Note {1}	2			
Fast response sensor tip, 3 mm, Note {1}	3			
As customer specification	S			
Process Connection, note {2}	5' digit			
Sensor tube without thread	1			
Surface mounted sensor tip, 10 x 6 mm sensor tip	2			
G1/2A Male nipple, ISO 228/1	3			
G1/2A Male nipple, Hygienic, ISO 228/1	4			
M12 Male nipple, Hygienic, ISO 228/1	5			
M12 Male nipple, Hygienic, PEEK cone, 5 x 3 mm sensor tip	6			
As customer specification	S			
Sensor tube dimension	6' digit			
ø6 mm x 1 mm, AISI 316L, max. length 600 mm	1			
As customer specification	S			
Sensor element	7' digit			
Pt100, 1/3 DIN B, single, specified accuracy 0...150°C	3			
Pt100, 1/3 DIN B, duplex, specified accuracy 0...150°C	4			
Pt100, 1/1 DIN A, single, specified accuracy -20...150°C	7			
Pt100, 1/1 DIN A, duplex, specified accuracy -20...150°C	8			
As customer specification	S			
Sensor insert type	8' digit			
Sensor tube with embedded sensor element, 2-wire	1			
As customer specification	S			
Cooling neck	9' digit			
No cooling neck		0		
Cooling neck, 50 mm, Note {3}		1		
Cooling neck, 100 mm, Note {3}		2		
Electrical connection	10' digit			
M12 plug, 4 pole		1		
Gland M16, plastic		2		
Gland M16, plastic, with ventilation		3		
Gland M16, nickel plated brass		4		
Gland M16, nickel plated brass, with earth connection terminal		5		
As customer specification		S		
Terminal block or transmitter	11' digit			
Terminal block			1	
Transmitter, Note {4}			2	
Certificates	12' digit			
Not specified			0	
Material 3.1.b (EN 10204)			1	
Calibration certificate			2	
Material 3.1.b (EN 10204) and calibration certificate			3	
Sensor tube length (L)	13...16' digit			
Length in mm. Observe max. lengths and special sensors				xxxx

Notes:

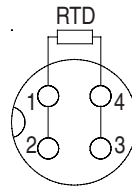
- {1} Sensor tip 4 mm and 3 mm: Single, 2-wire sensor element only.
Max. sensor tube length 300 mm. Max. sensor tip length 30 mm
- {2} Welding part is not included
- {3} Cooling neck is necessary if the ambient temperature at the housing exceeds the max. temperatures for head and/or transmitter, or for an insulated tank.
- {4} Please specify FlexTop transmitter type and configuration.

Dimensional Drawings

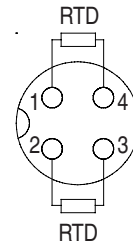
[mm]



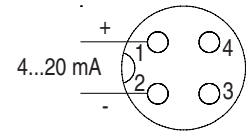
Stainless steel housing, $\varnothing 55$ mm



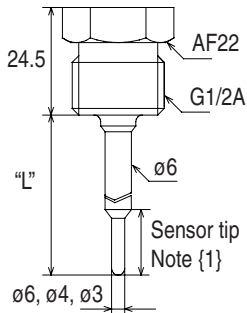
M12 plug,
single element



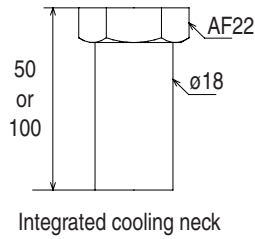
M12 plug,
duplex element



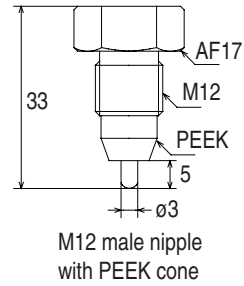
M12 plug,
integrated transmitter



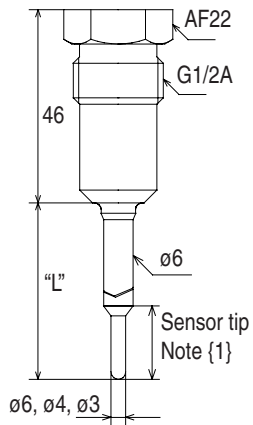
G1/2A male nipple



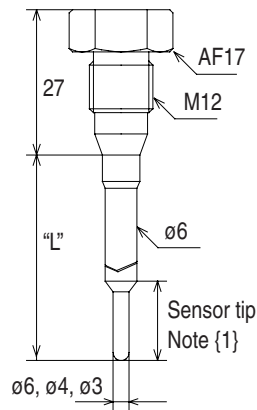
Integrated cooling neck



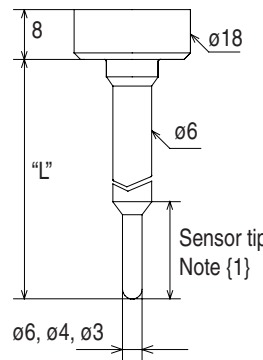
M12 male nipple
with PEEK cone



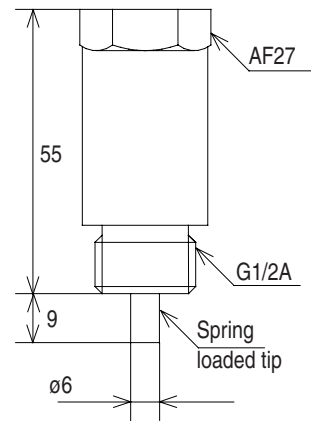
G1/2A male nipple, hygienic
(welding part PM020)



M12 male nipple, hygienic
(welding part PM031)

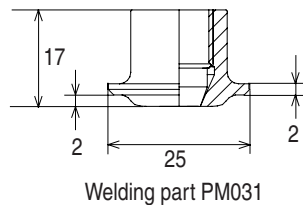
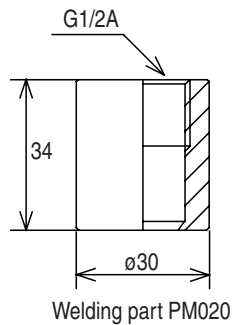


Sensor tube without thread

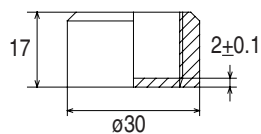


Surface mounted sensor
(welding part PM200)

Accessories - examples



Welding part PM031



Welding part PM200

Refer to the "Accessories, Universal" data sheet for further accessories

UK/2004-10-01 This data sheet may only be reproduced in full.