

Temperature sensor TA17, Construction type 17, flange sensor, 45° cable outlet



Measuring principle	Pt100/Pt1000 in 2-,3- or 4-wire type
Temperature range	Measuring tip: -40...250 °C Cable outlet: -40...120 °C (short time 150°C) Connection cable: -40...120 °C (short time 150°C)
Protection class	IP66/IP68
Mounting	Flange mounting
Material	Sensor tube: stainless steel Adapter: Aluminium anodized
Immersion depth	75 mm, 100 mm (other lengths on request)



Temperature sensor TA17

Application range

Temperature sensors of the TA17 series are especially designed for use in Transport technology for temperature measurement in traction motors, gear boxes, wheelset bearings and compressor- and air conditioning systems.

Measuring principle

Temperature sensors of the TA17 series operate according to the measurement principle / with the measuring element Pt100/Pt1000 in 2-,3- or 4-wire type.

Functioning of platinum measuring elements

With this measuring principle the temperature-sensitive resistance value of the measuring element is acquired. For platinum measuring elements the electrical resistance increases with increasing temperature and decreases with decreasing temperature (temperature linear). Advantages of platinum measuring elements are:

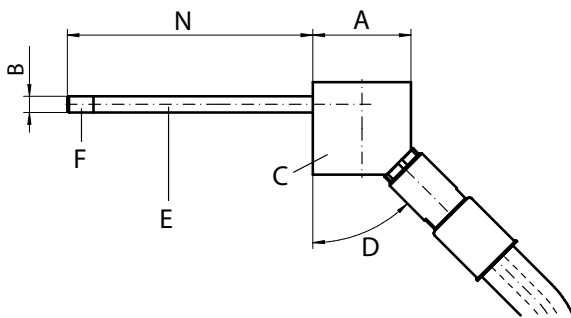
- accurate and reproducible thermoelectric characteristics
- nearly linear temperature characteristic
- easy to replace (no calibration necessary, corresponding to international standards, e. g. IEC 751 / DIN EN 60751)
- easier handling towards thermocouples as cold junction is not necessary

Specific features

- Compact, robust and closed design
- Easy installation via flange mounting
- Available in different immersion depths
- Easy customisable sensor groups and cable assembly, optionally with increased insulation > 2kVAC
- As 2-, 3- or 4-wire type available
- Maintenance-free
- Weight optimised design; also available with straight or lateral cable outlet (see TA14, TA18)

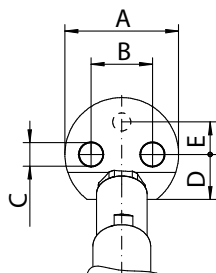
Dimensions, connections and drawings

Dimensions



Explanation to the illustration

- N: Nominal length 75 mm or 100 mm (other lengths on request)
- A: Length 30 mm
- B: $\varnothing 5 \pm 0.05$ mm
- C: Aluminium eloxiert
- D: Angle 45°
- E: Sensor tube stainless steel 1.4301
- F: Measuring tip nickel plated

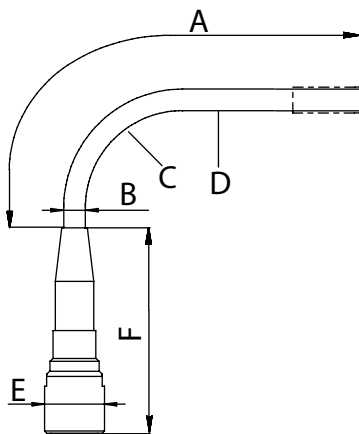


Explanation to the illustration

- A: $\varnothing 32^{-1}$ mm
- B: Length 17 mm
- C: $\varnothing 6.5$ mm
- D: Length 12.5 mm
- E: Length 9 mm

Cable and protection hoses

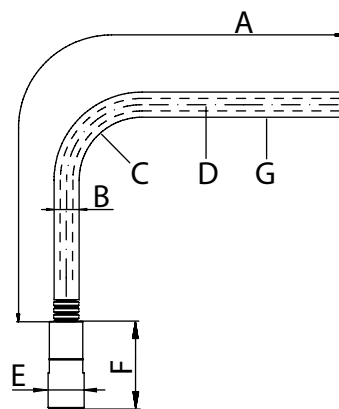
Cable standard (without protective tubing)



Explanation to the illustration

- A: Length (see type code)
- B: Diameter $\varnothing 5 \pm 0.5$ mm
- C: Min. bending radius R25 min.
- D: Cable halogen-free, $0.33 \text{ mm}^2 / 0.34 \text{ mm}^2$
- E: Diameter $\varnothing 14$ mm
- F: Length 26 ± 2 mm

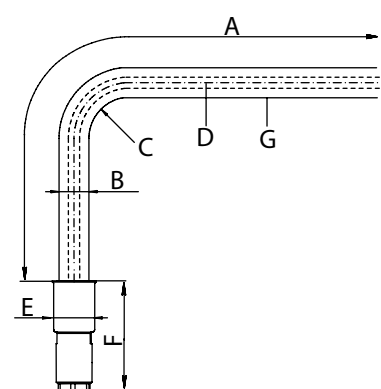
Cable with polyamide protective tubing



Explanation to the illustration

- A: Length (see type code)
- B: Diameter $\varnothing 10 \pm 0.5$ mm
- C: Min. bending radius R25 min.
- D: Cable halogen-free, $0.33 \text{ mm}^2 / 0.34 \text{ mm}^2$
- E: Diameter $\varnothing 14$ mm
- F: Length 36 ± 2 mm
- G: Protection hose polyamide PMA-PCST

Cable with special protective tubing



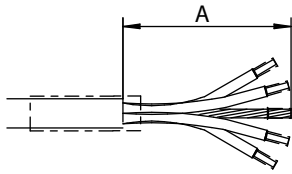
Explanation to the illustration

- A: Length (see type code)
- B: Diameter $\varnothing 13.4 \pm 0.7$ mm
- C: Min. bending radius R40 min.
- D: Cable halogen-free, $0.33 \text{ mm}^2 / 0.34 \text{ mm}^2$
- E: Diameter $\varnothing 15$ mm
- F: Length 33 ± 2 mm
- G: Protection hose textile-reinforced (Eaton GH585)

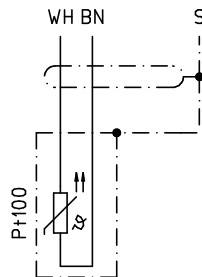
Connection

Standard connection is a cable end (see next Fig.). Other customised connections (e. g. plug connectors, terminal box, etc.) are available on request. Also available combined with other sensors in one sensor group (cable harness for temperature and/or speed).

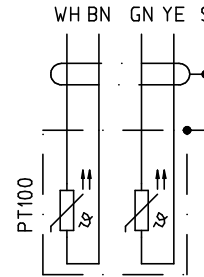
Cable end



2-wire type



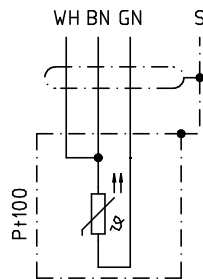
2 x Pt100 as 2-wire type



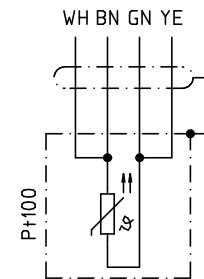
Explanation to the illustration

A: wire length 80 ±10 mm

3-wire type



4-wire type



Technical Data

Electrical connection	
Measuring current	Recommended 2.5 mA; max. 10mA (note self heating)
Connection	Fixed connection cable, 0.33 mm ² shielded, halogen-free (other on request)
Recommended cable length	≤ 100 m
Cross section used	Standard: 0.33 mm ²
Output channels / Sensor elements	1 or 2 (see type code)

Signal acquisition	
Measuring principle	Pt100/Pt1000 in 2-,3- or 4-wire type
Temperature range	Measuring tip: -40...250 °C Cable outlet: -40...120 °C (short time 150°C) Connection cable: -40...120 °C (short time 150°C)
Accuracy / Tolerance class	DIN EN 60571: class B (other classes on request)
Transmission behaviour	Temperature linear
Response time	In water >0.2 m/s: t 0.5 = 5 s / t 0.9 = 12 s

Environmental influences	
Storage temperature	-40...120 °C
Protection class	IP66/IP68
Vibration resistance	DIN EN 61373: 30 g eff. @ 20 ... 500 Hz (Random)
Shock resistance	DIN EN 61373: 1.000 m/s ² @ 6 ms
Insulation voltage	500 VAC, 50 Hz @ 1 min
Isolation resistance	>200MΩ @ 500V/DC
Fire protection class	EN45545, DIN5510, NF F 16-101
Applied standards	EN50155, DIN EN 60571

Mechanical quantities	
Material	Measuring tip: Brass nickel-plated Sensor tube: stainless steel Adapter: Aluminium anodized
Mounting	Flange mounting
Immersion depth	75 mm, 100 mm (other lengths on request)
Installation position	Any (note possible liquid inlet)
Weight	Depending on connection: approx. 400 g with 2 m cable (special protection hose) and connector HAN 3 HPR

Other	
Approvals	CE

Type code

Type code structure										
TA	P	1	17	-14	11	-X	05	-L3	S0	Example: TAP117-1411-X05-L3S0
	Measuring principle / Measuring element									
	Number of measuring elements									
	Construction type									
	Nominal length N (immersion depth)									
	Sensor tube diameter									
	Electrical connection									
	Cable length									
	Wire type design									
	Shielding									

Type code type TA17										
Measuring principle / Measuring elements	P	Pt100								
	PT	Pt1000								
Number of measuring elements	1	One measuring element								
	2	Two measuring elements								
Construction type	17	Flange sensor, 45° cable outlet								
	171	Flange sensor, 45° cable outlet, increased insulation resistance								
Nominal length N (immersion depth)	14	75 mm								
	15	100 mm								
		Customised lengths on request								
Sensor tube diameter	06	Ø 12 mm								
	11	Ø 05 mm								
		Customised diameters von 4...12 mm on request								
Electrical Connection	-X	Standard cable end (without protection hose)								
	-XP	Cable end with polyamide protection hose								
	-XGS	Cable end with special protection hose (steel mesh)								
	-XGT	Cable end with special protection hose (textile-reinforced)								
Sheath length	05	Sheath length 2.0 m, halogen-free								
	07	Sheath length 5.0 m, halogen-free								
	09	Sheath length 10.0 m, halogen-free								
Wire type design	---	Without code means 2-wire								
	L3	3-wire type								
	L4	4-wire type								
Shielding	---	Without code: Shielding is attached to the sensor housing								
	S0	Shielding is not attached to the sensor housing								
TA	---	Example: TAP117-1406-XGT-05								