OCTOGON

MANUAL

TEKB

TEMPERATURE TRANSMITTER WITH PROBE

Operating manual



Document	Version	Date	Applies to
Operating manual	V00x	11/2026	TEKB, Pt100, output 4 ... 20 mA, M12 connector

This operating manual describes use, safety, installation, electrical connection, configuration, technical data and dimensions of the TEKB temperature transmitter with probe.

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1 General

1.1 Use

Compact temperature transmitter with Pt100 probe and 4 … 20 mA output – for machine building, hydraulics and sanitary applications, in ranges from –200 to +250 °C.

Applications: machine, plant and tank building; drive technology, hydraulics; food, beverages, dairy, brewery; pharma, surfactants, biotechnology.

Use the transmitter only for this purpose and only within the values given in chapter 5. Before installing, check that the wetted materials are suitable for the medium in all operating conditions; the operator is responsible for the suitability for the application.

1.2 Safety instructions

Warning Risk of injury from overpressure and hot media. Read this manual before installation. Installation, connection and configuration only by qualified staff. The installation must be depressurised when installing and removing the device; with high-pressure or high-temperature media, medium may escape during installation or in case of a mechanical failure. Make sure that no medium escapes at the installation point. Keep to the pressure resistance and temperatures given in chapter 5. Do not put a damaged device into operation.

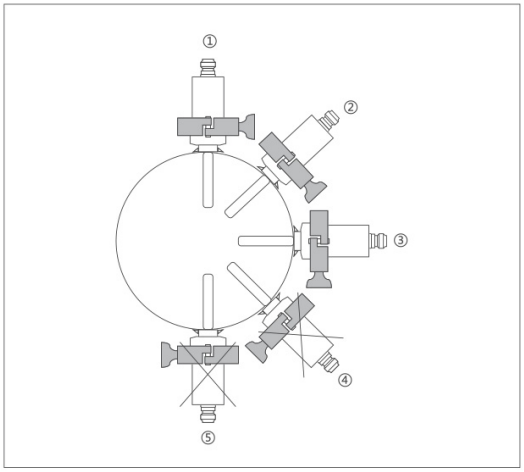
1.3 Device

Feature	Version
Design	temperature transmitter with probe, stainless steel housing
Sensing element	Pt100, class A to IEC 60751
Output	4 … 20 mA, 2-wire
Process connection	thread G1/4 male with ED seal · sanitary thread G1/2 male or M12 × 1.5 male · sanitary clamp OD 50.5 mm
Electrical connection	M12 × 1 connector, 4-pin
Manufacturer type	TM112

2 Installation

2.1 Mounting position

Choose the mounting position so that the installation adapter is self-draining. Do not install the device in positions 4 and 5.



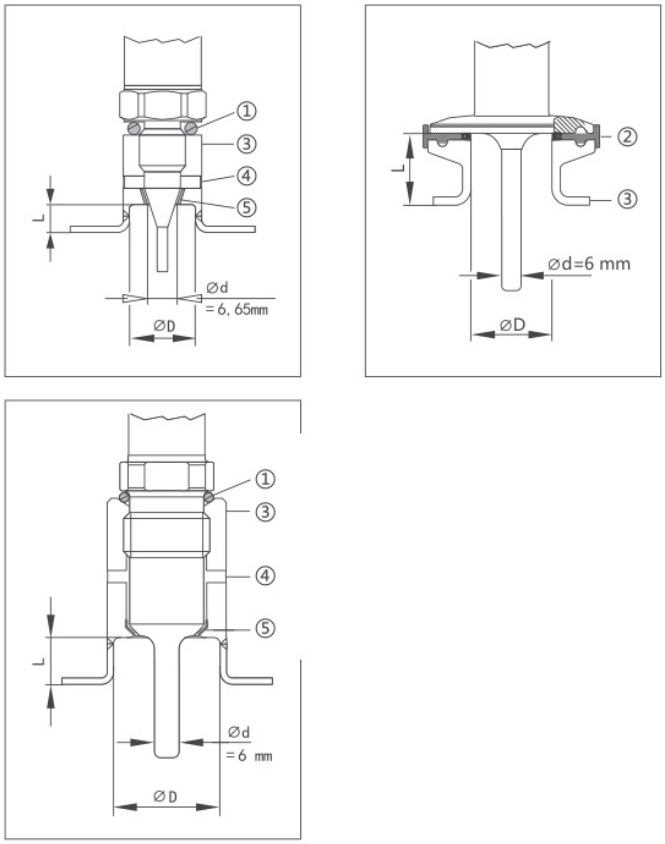
Mounting positions on the pipe – positions 4 and 5 not permitted

Screw the device in at the hexagon, width across flats 22. The pressure resistance of the probe is 40 bar for Ø 6 mm and 100 bar for Ø 8 mm.

2.2 Sanitary installation

When installed correctly, the sensor is suitable for cleaning in place (CIP). The following applies:

- Keep to the application limits (temperature, resistance of the materials) given in chapter 5.
- Use a self-draining installation fitting.
- The leak hole must be clearly visible and, on vertical pipes, face downwards.
- Fittings in the tank must allow direct water-jet cleaning without dead spaces.
- To avoid dead spaces that cannot be cleaned effectively: L < (D – d).



Sanitary installation, dimensions L, D and d

No.	Part
1	sealing ring between housing and pipe connection
2	sealing ring
3	adapter
4	leak hole
5	PEEK sealing ring

3 Electrical connection

The transmitter works as a 2-wire 4 ... 20 mA current loop and is supplied via the loop (12 ... 30 V DC, protected against reverse polarity and overload). It is connected via the M12 × 1 connector, 4-pin:

Pin	Assignment	Connection
1	supply 24 V DC	L+
2	temperature signal 4 ... 20 mA	via evaluation unit / display to L–

Pins 3 and 4 are not assigned. Switch off the supply before connecting.

4 Configuration

The parameters of the integrated transmitter (e.g. the measuring range) can be set individually with free PC software. Software and PC connection on request from octogon. Measuring range and probe length can be specified to customer requirements when ordering.

5 Technical data

5.1 Versions

Feature	Versions
Measuring range, standard	–20 … +80 °C · –20 … +100 °C · 0 … +100 °C
Measuring range, high / low temperature	–50 … +100 °C · –50 … +150 °C · 0 … +150 °C · –50 … +200 °C · –50 … +250 °C · –100 … +100 °C · –200 … +100 °C – with 50 mm cooling neck
Output	4 … 20 mA, 2-wire
Probe	Ø 6 or Ø 8 mm · length L 25, 50, 75 or 100 mm
Process connection	thread G1/4 male with ED seal · sanitary thread G1/2 male or M12 × 1.5 male · sanitary clamp OD 50.5 mm
Electrical connection	M12 × 1 connector, 4-pin

Measuring range and probe length also to customer specification. With thermowell: choose thread G1/2; smaller threads come without thermowell.

5.2 Measurement and precision

Feature	Value
Sensing element	Pt100, class A to IEC 60751
Measuring range	–200 … +250 °C, sub-ranges per version
Accuracy	± (0.2 K + 0.5 % of full scale)
Linearity	< 0.5 %
Resolution	0.1 K
Temperature effect	0.1 K / 10 K
Response time	t50 2.3 s · t90 5.4 s

5.3 Temperatures

Feature	Value
Measuring range, standard	–20 … +100 °C
Measuring range, high / low temperature	–200 … +250 °C, with 50 mm cooling neck
Ambient temperature	–25 … +80 °C

5.4 Mechanical properties

Feature	Value
Housing	stainless steel, Ø 17.8 mm
Wetted parts	stainless steel 304
Probe	Ø 6 or Ø 8 mm
Probe pressure resistance	Ø 6 mm: 40 bar · Ø 8 mm: 100 bar
Protection class	IP65

5.5 Electrical properties

Feature	Value
Supply voltage	12 … 30 V DC
Output	4 … 20 mA, 2-wire
Protection	reverse polarity, overload
Configuration	via PC software
Electrical connection	M12 × 1 connector, 4-pin

5.6 Process connection

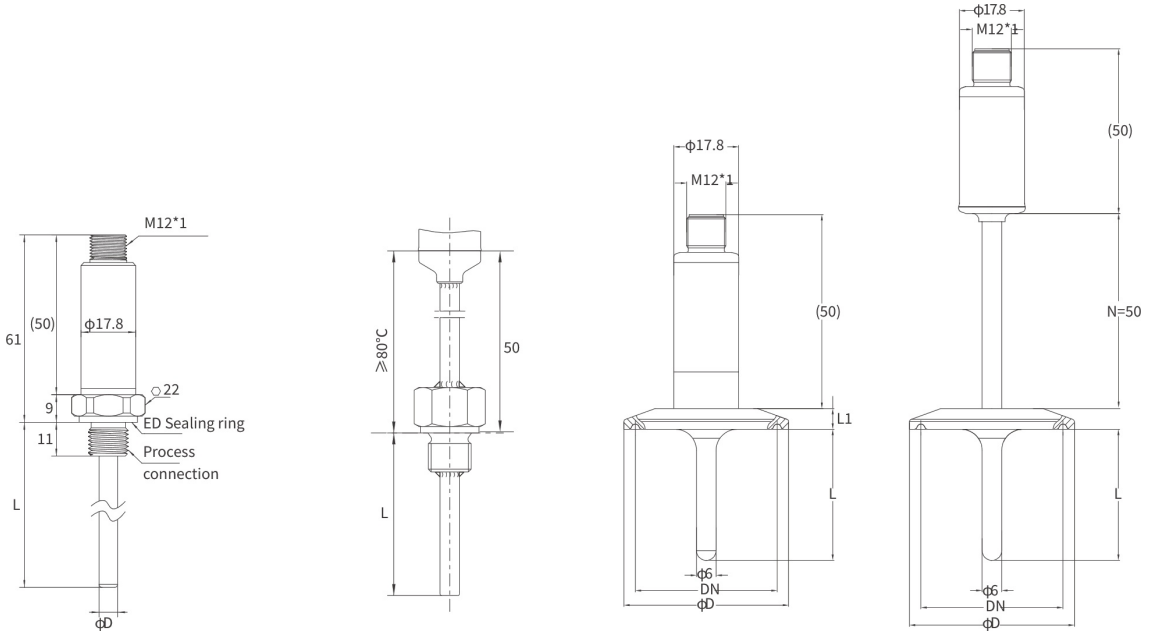
Feature	Value
Thread	G1/4 male with ED seal
Sanitary thread	G1/2 male or M12 × 1.5 male, welding sleeve see dimensional drawing
Sanitary clamp	OD 50.5 mm
Width across flats	SW 22

6 Commissioning and maintenance

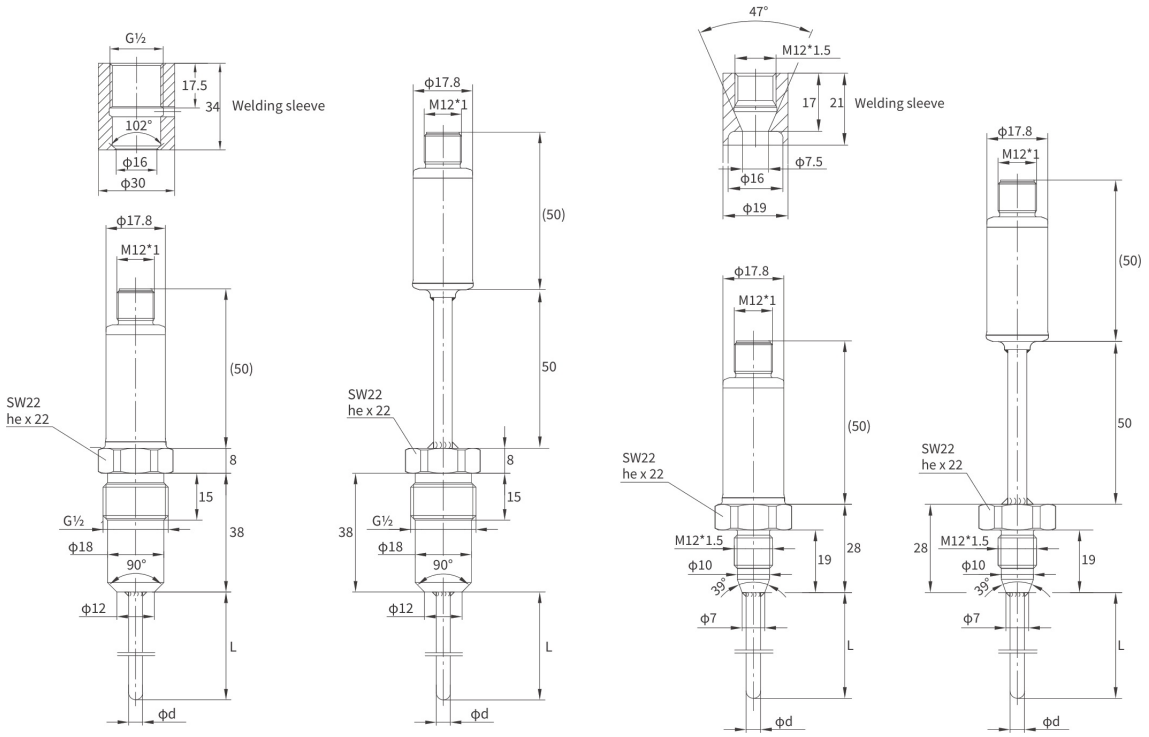
After installation check the installation point for leaks, then switch on the supply and check the signal at the evaluation unit. Check at regular intervals: tightness, firm fit, condition of connector and cable. Replace a damaged device.

7 Dimensions

Dimensions in mm. L = probe length (selectable), Ø D (thread) or Ø d = probe diameter Ø 6 or Ø 8 mm; for the clamp Ø D = outer diameter, DN = nominal width. N = cooling neck, ED = ED seal, SW = width across flats.



Left thread with ED seal, right sanitary clamp – each standard version (–20 ... +100 °C) and high / low temperature version (–200 ... +250 °C) with cooling neck



Sanitary thread with welding sleeve: left G1/2, right M12 × 1.5 – each standard and high / low temperature version

Standard	Pipe nominal width for clamp Ø D 50.5 mm	PN (MPa)
DIN 32676, pipe DIN 11866 series A	DN 25 ... 40	2.5
DIN 32676, pipe DIN 11866 series B	21.3 ... 33.7	2.5
DIN 32676, pipe DIN 11866 series C	1″ ... 1 ½″	2.5
Clamp, inch tube	1″ ... 1 ½″	1.38
ISO 2852	DN 25 ... 38	1.6