

Product Information TFP-06**FOOD**

Temperature Sensor without thread

Application/Specified usage

- Installation in thin-walled pipes and vessels
- No product contacting of the sensor (with thermowell)
- Demounting the sensor without opening the process

Application examples

- Process monitoring in pipes
- Temperature measurement in pressure pipes
- Measurement of paste products in pipes

Hygienic design/Process connection

- Hygienic and easy sterilizable installation by weld-in sleeve (e.g. EMK-25/76) or weld-in thermowell (e.g. ESH-KM12/...).
- CIP-/SIP-cleaning up to 140 °C / 284 °F
- Product contacting materials compliant to FDA
- Sensor and head completely made of stainless steel

Features

- Variable insertion depths
- Integrated transmitter (optional)
- Different types of electrical connections possible

Options/Accessories

- Pt100 chip with other classes of accuracy (1/3B, 1/10B)
- Fast response sensor tip 3 mm and 4 mm
- Fixed cable in other lengths and material available

Temperature sensor TFP-06



Specification

Process connection		gap-free with weld-in sleeve, e.g. EMK-25/76 or weld-in thermowell, e.g. ESH-KM12/...
Insertion length EL	standard	50...500 mm
Materials	thermowell	stainless steel 1.4404 / AISI 316L
Operating pressure	with weld-in sleeve with weld-in thermowell	10 bar / 145 psi maximum 50 bar / 725 psi maximum
Temperature ranges	ambient sensor tip	-50...85 °C / -58...185 °F -50...250 °C / -58...482 °F
Sensing resistor	acc. to DIN EN 60751	Pt100
Electrical connection	fixed cable 2,5 m fixed cable 2,5 m (≥ 90 °C / 194 °F)	LIYY 4 x 0,25 mm ² PTFE 4 x 0,14 mm ²
Protection class	TFP-06-IP68	IP68

Accuracy classes of temperature sensors | Tolerances for Pt100 acc. to DIN EN 60751

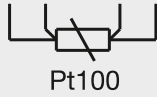
Pt100	A	1/3 B	1/10 B
0 °C / 100 Ω	±0,15 K / ±0,06 Ω	±0,10 K / ±0,04 Ω	±0,03 K / ±0,01 Ω
100 °C / 138,5 Ω	±0,35 K / ±0,13 Ω	±0,27 K / ±0,10 Ω	±0,08 K / ±0,03 Ω

Electrical connection

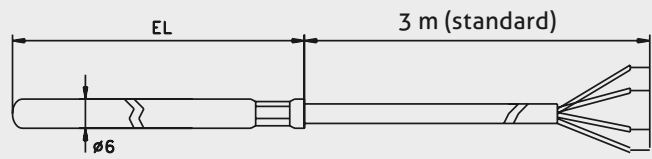


Fixed cable connection with 1 x Pt100

wh ye bn gn standard
rd rd wh wh PTFE



Dimensional drawing

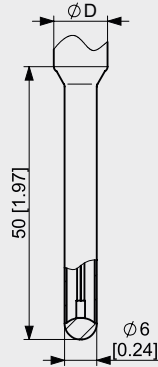


Sensor tip diameter and response time

All temperature sensors are available with smaller sensor tips, to ensure a shorter response time. The mentioned times were measured by immersing a temperature sensor from room temperature into boiling water. The response times given are typical measured values and may vary due to factors such as process connection, immersion length and medium.

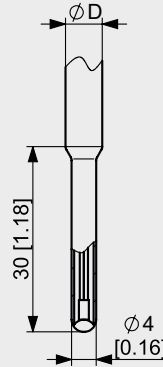
ø 6 mm

$t_{50} \leq 1.8 \text{ s}$
 $t_{90} \leq 5.2 \text{ s}$
D: 8, 10, 12 mm



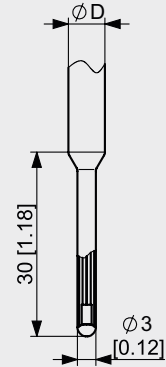
ø 4 mm

$t_{50} \leq 1.2 \text{ s}$
 $t_{90} \leq 3.5 \text{ s}$
D: 6, 8, 10 mm



ø 3 mm

$t_{50} \leq 0.8 \text{ s}$
 $t_{90} \leq 2.2 \text{ s}$
D: 6 mm



Note



When using weld-in thermowells we recommend to use heat-conductive paste too. This can reduce the response time up to 50 %.

Mechanical Connection / Installation

- Check the compatibility of the sensor length to the used thermowell.

Conventional Usage

- Not suitable for applications in explosive areas.
- Not suitable for applications in security-relevant equipments (SIL).

Transport / Storage

- No outdoor storage
- Dry and dust free
- Not exposed to corrosive media
- Protected against solar radiation
- Avoiding mechanical shock and vibration
- Storage temperature -55...90 °C / -67...194 °F
- Relative humidity maximum 98 %

Standards and Guidelines

- You have to comply with applicable regulations and directives.

Cleaning / Maintenance

- In case of using pressure washers, don't point nozzle directly to electrical connections!

Note on CE

- Applicable directives:
Electromagnetic Compatibility Directive 2014/30/EU
- Compliance with the applicable EU directives is identified by the CE label on the product.
- The operating company is responsible for complying with the guidelines applicable to the entire installation.

Reshipment

- Sensors shall be clean and free of media or heat-conductive paste and must not be contaminated with dangerous media!
- Use suitable transport packaging only to avoid damage of the equipment!

Disposal

- Electrical devices should not be disposed of with household trash. They must be recycled in accordance with national laws and regulations.
- Take the device directly to a specialized recycling company and do not use municipal collection points.

Order Code

TFP-06

Sensor without connecting head, with 3 m PVC-cable, other lengths: on request

TFP-06-IP68

Sensor without connecting head, protection class IP68, with 3 m PTFE-cable, other lengths: on request

Sensor length EL in mm

050...500

xxx

special length

Diameter thermowell in mm

6

Diameter sensor tip in mm

X no reduction

3

4

Accuracy Class

A

1/3B

1/10B

Transmitter

X

without

TFP-06 /

100 /

6 /

X /

A /

X