



# Temperature Sensor with Double-Pt100 and two Transmitters

## Application

- redundant temperature measurement in a UHT-plant
- synchronous measurement for a local display and for a recorder

## Features

- two galvanically isolated analog outputs
- redundant measurement system in one sensor
- costs and time saving for wiring because of integrated 2-wire transmitters

## Options

- programable transmitters mpu-4p
- Pt100 chip with other classes of accuracy (1/3B, 1/10B)
- sensor tips with diameter 3mm and 4mm
- spacer for high temperature up to 250°C (option h)
- readymade connecting cable for M12 plug-in

## Specification

Process connection	thread G1/2"	thermowell
	TFP-60	e.g. ESH-G1/2"/050
	G1/2" hygienic	weld-in fitting
	TFP-61	e.g. EMZ-132
	M12 hygienic	weld-in fitting
	TFP-62	e.g. EMK-032
	thread G3/8"	thermowell
	TFP-68p	e.g. ESP-G
	without thread	weld-in fitting
Torque	TFP-61	5-20Nm
	TFP-62	5-10Nm
Insertion length	standard	50, 100, 150, 250mm
	Materials	head
Operating pressure		stainless steel
		SS (1.4305)
Temperature range	ambient	-40...+80°C
	sensor tip	-50...+250°C
Sensing resistor	acc. ITS 90	2xPt100 class A
Electr. connection		M12 plug-in
		SS (1.4305) 4 pins.
Protection class		IP69K

## Specification of transmitters mpu-4, -4p

Temperature range	ambient	-40...+80°C
Ranges	standard	-10...40°C, 0...50°C
	mpu-4p	0...100/150/200°C
Accuracy		programmable
Temperature drift	zero, span	<±0,1% of full scale
Supply		<0,01% o.f. scale/K
Output	analog	8...35VDC
Temperature range	ambient	4-20mA
	storage	-40...+85°C
Humidity	without condensate	-40...+120°C
		0...98%



Temperature sensor TFP-61 / 050 with 2xmpu-4 and weld-in fitting EMZ

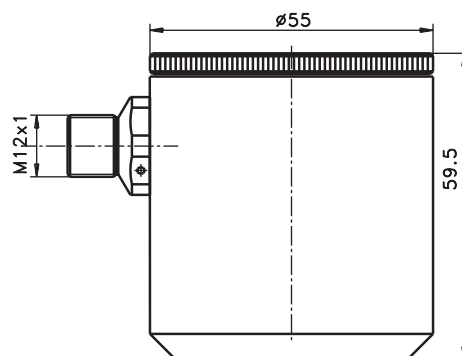
## Mounting instructions:

Adequate process adapters please see in the following product informations:

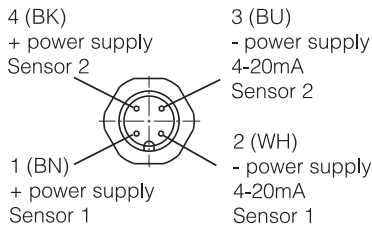
- TFP-60 > Temp. Sensor 1/2" standard (chapter 2)
  - TFP-61 > Temp. Sensor 1/2" hygienic (chapter 2)
  - TFP-62 > Temp. Sensor M12 hygienic (chapter 2)
  - TFP-68p > Pharma-Temp. Sensor ESP (chapter 2)
  - TFP-69 > Temp. sensor without thread (chapter 2)
- see also: *CLEANadapt* (chapter 1)

## Drawing of the higher connecting head

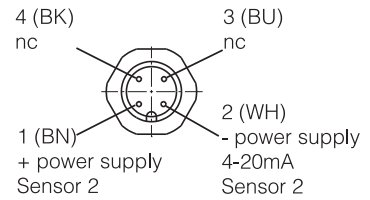
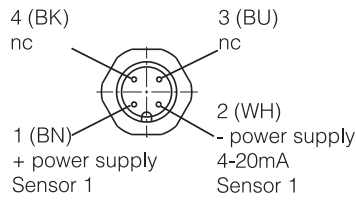
For adequate drawings of each process connection, please see the separate product information (see table above).



## Electrical connection 1xM12 plug-in



## Electrical connection 2xM12 plug-in (option)



## Order code

- TFP-60 Temperature sensor with thread G1/2" standard
- TFP-61 Temperature sensor with thread G1/2" hygienic
- TFP-62 Temperature sensor with thread M12x1.5 hygienic
- TFP-68p Temperature sensor with thread G3/8" for ESP
- TFP-69 Temperature sensor without thread

### Spacer (for TFP-60, TFP-61 and TFP-62 only)

- x without
- h with spacer (extension of 92mm)

### Sensor length in mm (not for TFP-68p: see product information TFP-ESP!)

- 50
- 100
- 150
- 250
- xxx special length (up to max. 2500mm)

### Protection tube diameter in mm

- 6 standard
- 8 (for TFP-60, TFP-61 und TFP-69 only)
- 10 (for TFP-60, TFP-61 und TFP-69 only)
- 12 (for TFP-60, TFP-61 und TFP-69 only)

### Sensor tip in mm

- 6 standard
- 4 standard for sensor length ≤20mm
- 3

### Accuracy

- A
- 1/3B
- 1/10B

### Electrical connection

- M12 1xM12 plug-in
- 2xM12 2xM12 plug-in

### 1. Transmitter

- mpu-4
- mpu-4p (programmable)

### Range

- 10...40°C
- 0...50°C
- 0...100°C
- 0...150°C
- 0...250°C

xx...yy special range

### 2. Transmitter

- mpu-4
- mpu-4p (programmable)

### Range

- 10...40°C
- 0...50°C
- 0...100°C
- 0...150°C
- 0...250°C

xx...yy special range

## Example:

TFP-61 / h / 100 / 6 / 6 / A / M12 / mpu-4 / 0...100°C / mpu-4 / 0...100°C