

# Temperature Sensor

## TFP-17, TFP-18

### General Discription

Temperature measurement with temperature sensors Pt100 operates on the basis of the change in resistance of platinum as a function of temperature fluctuations.

The electrical connection is made by a 2, 3 or 4-wire system, depending on the input of the display unit. As an optional alternative these temperature sensors can be connected to a 4-20mA current input by means of an integral two-wire transducer mpu-4, -4p (two-wire current loop).

The temperature sensor TFP-17 is suitable for measurements of gaseous media like air.

The temperature sensor TFP-18 can be mounted in each 6mm clamp screw. According to the clamp screws EMK-25/76 resp. KEV-25/76 you will get a hygienic measurement point without gaps (certified by EHEDG-advice).

### Features

- terminal box of PA6 plastic material
- highly resistance to chemical agents
- suitable in food and drug industry
- sensing resistor installed in protecting tube (1.4571)
- fast response

### Options

- two-wire input transducer mpu-4, -4p (programmable)
- faster responding sensor tip  $\varnothing 3$  oder  $\varnothing 4 \times 20$ mm
- other insertion lengths
- other sensing resistors or thermocouples (e.g. Pt1000)
- other accuracy classes (e.g. 1/10DIN B)
- Negele certificate of accuracy acc. to national standards of DKD



TFP-17/050



TFP-18/101

### Specification

Connector	cable entry	PG11
	terminal	4-pin (1xPt100), 2x4-pin (2xPt100)
Type of protection		IP65
Material	connecting head	Polyamid PA6 30% fibre glass reinforced
	protection tube	SS 1.4571 or 1.4435, $\varnothing 6$ mm
Insertion length	TFP-17	50mm
	TFP-18	100,150 and 250mm (...1000mm)
Fitting	TFP-17	wall mounting
	TFP-18 without gaps	e.g. KEV-25/76 clamp screw $\varnothing 25$ mm
Sensing resistor	1x or 2x	Pt100 class A acc. to DIN IEC 751
	tolerances class A	0°C: $\pm 0,15$ K, 100°C: $\pm 0,35$ K
Head temperature / Sensing tip		-50...+90°C/-50...+250°C/-30°Cm. Umformer
Operating pressure		max. 10bar
Option two-wire input transformer mpu-...	(TFP-17/051, TFP-18/..1)	
Range	standard	-10...40°C, 0...100°C, 0...150°C
Output	2-wire current loop	4-20mA is equivalent to range
Supply	2-wire current loop	15...36V DC



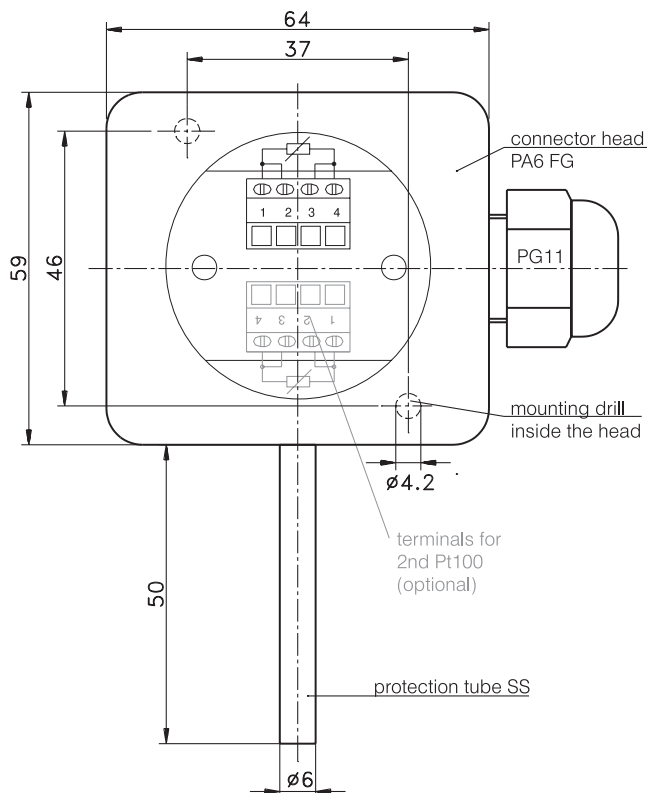
Temperature Sensor TFP-18/101 with integrated programmable input transducer mpu-4p

## Order Designation

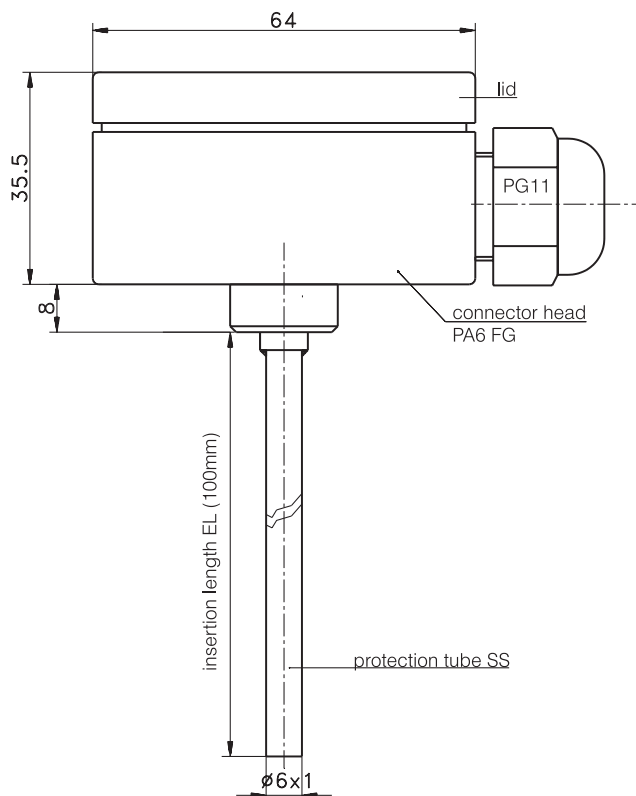
Model	Sensor TFP-17	Sensor TFP-18		
insertion length [mm]	50mm	100mm	150mm	250mm
1xPt100 without mpu	TFP-17/050	TFP-18/100	TFP-18/150	TFP-18/250
1xPt100 with mpu	TFP-17/051	TFP-18/101	TFP-18/151	TFP-18/251
2xPt100 without mpu	TFP-17/052	TFP-18/102	TFP-18/152	TFP-18/252

- Please declare the measurement range for the temperature sensors with integrated two-wire input transducer **mpu**.  
Standard ranges: -10...+40°C / 0...+100°C / 0...+150°C or special range.

## Dimensioned Drawing TFP-17/050



## Dimensioned Drawing TFP-18/...

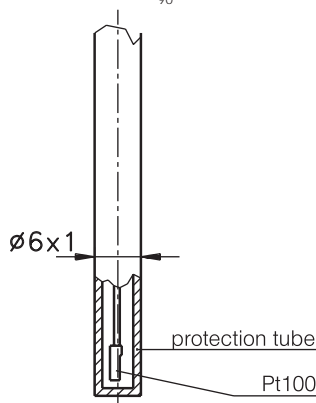


## Sensor tips and responding times

All temperature sensors are available with tapering tips to ensure faster responding times. The times specified below relate to a Pt100-sensor dipped in boiling water.

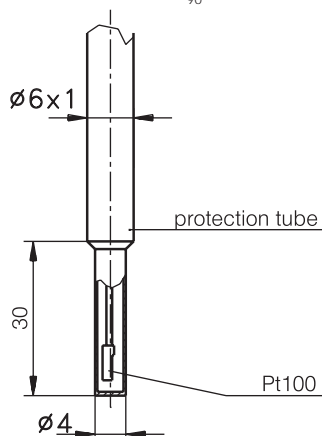
### Sensor tip $\varnothing 6\text{mm}$

50%-time:  $t_{50} \leq 3,0\text{s}$   
90%-time:  $t_{90} \leq 8,0\text{s}$



### Sensor tip $\varnothing 4\text{mm}$

50%-time:  $t_{50} \leq 2,4\text{s}$   
90%-time:  $t_{90} \leq 6,5\text{s}$



### Sensor tip $\varnothing 3\text{mm}$

50%-time:  $t_{50} \leq 0,5\text{s}$   
90%-time:  $t_{90} \leq 1,5\text{s}$

