# TDF-27 & THF-45/50/105/140/230

Temperature sensor Pt 100

## Your benefits

- High precision:
  **Lower measuring error**
- Short response time:
  **Exact actual values**
- Different types:
  **Flexibler Einsatz**

## Applications

- Metering of heat and/or cooling consumption in building management
- Metering of heat and/or cooling consumption in district heating supply

## Properties

- Direct immersion sensors or pocket sensors
- Temperature sensor Pt 100
- Head sensor with silicon cable
- Paired delivery
- Standard EN 1434
- CE Conformity according to European Measuring Instruments Directive (MID)

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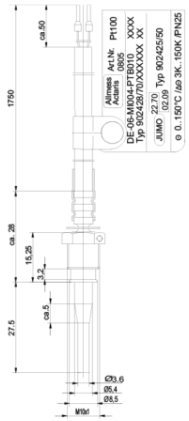
# Technical Data

| | Direct immersion sensor TDF-27 (old TDF-50) | Pocket sensor THF-45 | Pocket sensor THF-50 | Head sensor THF-105/140/230 |
|---|---|---|---|---|
| Measuring resistor | Pt 100 | Pt 100 | Pt 100 | Pt 100 |
| Resistor acc. to | EN 60751 / EN 1434 | EN 60751 / EN 1434 | EN 60751 / EN 1434 | EN 60751 / EN 1434 |
| Connection diagram | 2-wires | 2-wires | 2-wires | 2- or 4-wires |
| Temperature measuring range (approved measuring range) | 0 to 150 °C | 0 to 150 °C | 0 to 150 °C | 0 to 150 °C |
| Measuring tolerance | Class B | Class B | Class B | Class B |
| Temperature difference | 3 to 150 K | 3 to 150 K | 3 to 150 K | 3 to 150 K |
| Response time T0,5 | 2s | 2 s (mounted in pocket: 15 s) | 2 s (mounted in pocket: 15 s) | ⩽6 s (mounted in pocket: ⩽12 s) |
| Ambient temperature | 0 to +70 °C | 0 to +70 °C | 0 to +70 °C | 0 to +70 °C |
| Sensor diameter | 3,6/5,4mm | 5,2mm | 6mm | 6mm |
| Sensor length | 27,5 mm (immersion depth) | 45mm | 50mm | 105/140/230mm |
| Connection thread | M10x1 | - | - | - |
| Cable type | Silicon | PVC | Silicon | Silicon |
| Wire cross-section | 2x0,34mm$^2$ | 2x0,22mm$^2$ | 2x0,34mm$^2$ | 2x0,75mm$^2$ |
| Cable length | 1,75m | 1,6m | 1,75m | 3m |
| Tightness | IP65 | IP65 | IP65 | IP65 |
| Pressure | IP65 | PN 25 | PN 25 | PN 25 |

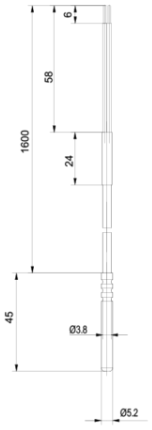
| | Flow sensor adapter | Pockets | Single pockets | Single pockets |
|---|---|---|---|---|
| Connection thread | G½ (M10x1) G⅜ | G½ | G½ (M10x1) | G½B |
| Installation length | - | 50/85mm | 33/75mm | 85/120/210mm |
| Material | Brass | Steel (St. 35) | Brass | Steel (St. 35) |

# Massbilder

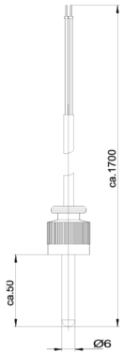
### Direct immersion sensor TDF-27



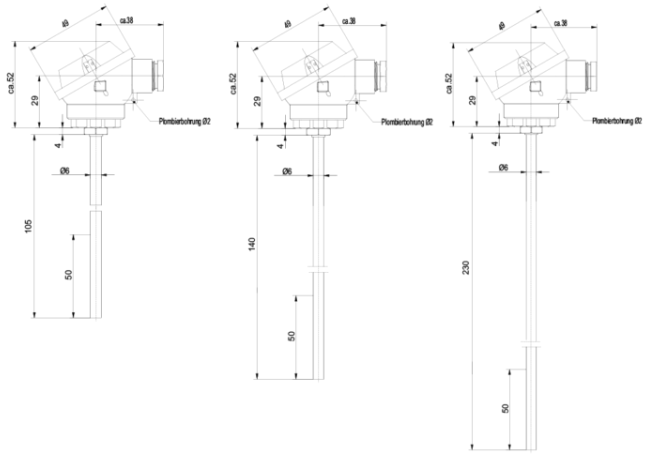

### Pocket sensor THF-45



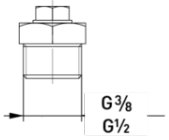

### Pocket sensor THF-50



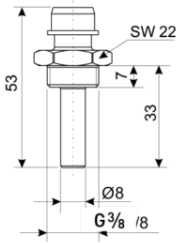

### Head sensor THF-105/140/230



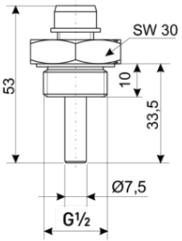

### Flow sensor adapter VFA



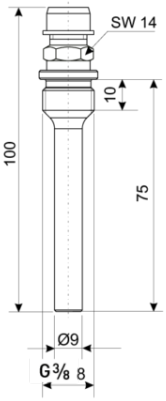

### Pocket G⅜ x 33



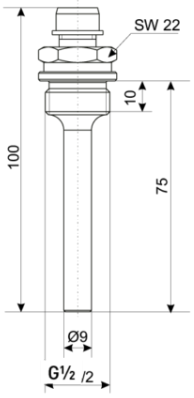

### Pocket G½ x 33



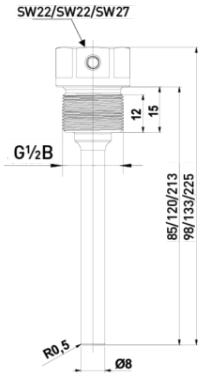

### Pocket G⅜ x 75



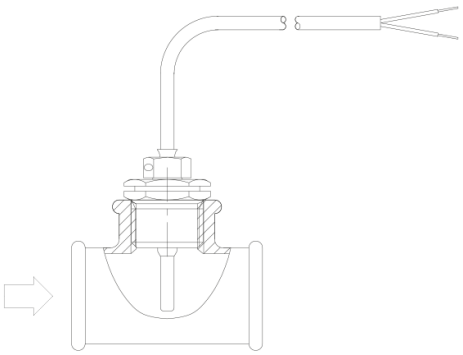

### Pocket G½ x 75




### Pocket G½B x 85/120/210

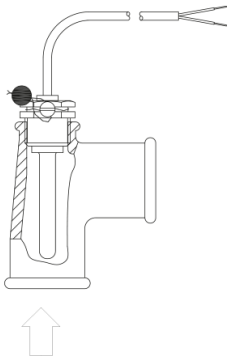


# Installation type of temperature sensors, Installation recommandations



**Example 1**

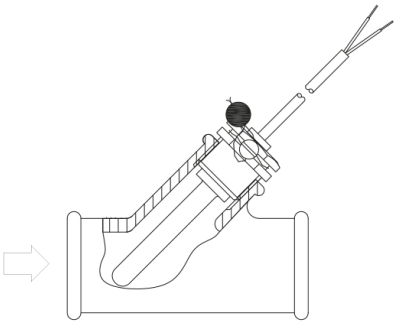
Direct immersion sensor, mounted in a T-fitting with connecting nipple



**Example 2**

Pocket sensor, mounted in a T-fitting with pocket

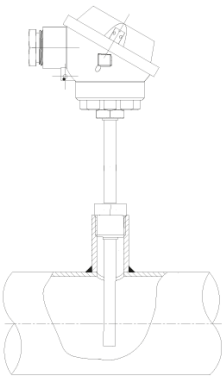
- Pay attention to the direction of flow



**Example 3**

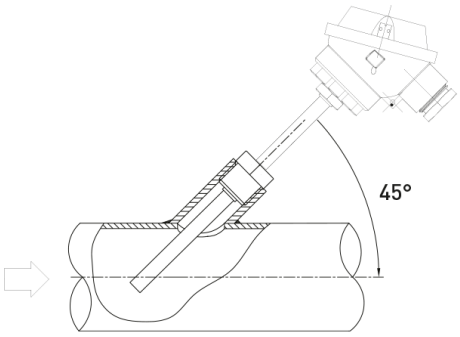
Pocket sensor, mounted in a T-fitting with a 45° angle with pocket

- Pay attention to the direction of flow



**Example 4**

Head sensor, mounted in a T-fitting




**Example 5**

Head sensor, mounted in a T-fitting with a 45° angle

- Pay attention to the direction of flow

# Installation requirements

### Sensor mounting

The cables of the flow and return flow sensor should always be the same length and cross section in order to prevent differing cable resistance (exception: head sensor and calculation unit in a 4-wire system). In accordance with EN 1434-2 Section 3.3.4, the supplied cable of the flow and return flow sensor must not be shortened or lengthened. The sensors are twin sensors. They are supplied in pairs and must also be used in pairs for the same calculation unit. The active part of the sensor must be located in the middle of the pipework; with the tip preferably directed against the flow.

### Installation recommendations

Pay attention to the symmetrical positioning of flow and return flow sensors, i.e. the two sensors of a measuring system must be installed in the same manner (e.g. both in the pipe bend). Don't mix direct installations with installation in pockets. This ensures that the temperature difference is recorded with the best possible accuracy.

### Pocket mounting

When installing the immersion sleeves, make sure their entire length is completely flushed by hot water.
Important: Always consider cable insulation when dimensioning. Provide sufficient space to ensure the sensor can be easily removed from the permanently mounted immersion sleeve.
In order to achieve the best possible measuring accuracy, only use original immersion sleeves provided by the manufacturer in combination with the supplied temperature sensors.

### Insulation

Cable insulation must allow permanent access to the locking screw of the sensor immersion sleeve and ensure the sensor can be disassembled effortlessly for service and maintenance tasks.