

TF-65

TF-43

Immersion temperature sensor



Summary

TF-65 and TF-43 temperature sensors are a screw-in immersion sensors for use in HVAC plants.

Application

- HVAC systems – water, brine or air temperature measuring and controls

Function

The sensor uses a sensing element, the signal of which is available at the screw terminals. Default sensor type provided is Pt1000, other sensor types see table below. Temperature range is -30 to +150 °C.

The sensors are intended for operating in an outdoor or industry environment. They do not need any servicing or maintenance.

The sensors are mounted into pockets (pipes) or mounting flange (airducts). Required accessories must be specified in order.

Technical data

Recommended measuring circuit	appr. 1 mA
Measuring range	max. -30 ÷ +150 °C
Ambient temperature	max. -20 ÷ +100 °C
Protection class	TF-65 ... IP65 (according to EN 60529) – with quick-locking screws TF-43 ... IP43 (according to EN 60529) – with snap-on lid
Sensor accuracy	see table below
Terminals	screw terminals for wires 0,14 – 1,5 mm ²

Cover	polyamide, 30% glass fibre
Insulation resistance	> 100 MOhm at 20°C, 500 VDC

Accessories

Mounting flange	MF-15-K mounting flange, plastic
Pocket	TH08-ms/xx Brass immersion sleeve, $T_{\max} = 150\text{ °C}$, $p_{\max} = 10\text{ bar}$ TH08-VA/xx Stainless steel immersion sleeve, $T_{\max} = 600\text{ °C}$, $p_{\max} = 40\text{ bar}$ Dimensions see below (xx Inserted Length = EL)
Connection	screw fittings G1/2"
Dimensions	see below

Sensor types

Type	Ordering	Accuracy
Pt100	on request	DIN EN 60751 class B
Pt1000	default sensor type	DIN EN 60751 class B
Ni1000-6180 (Sauter)	on request	DIN EN 43760 class B
Ni1000-5000 (L&G)	on request	
NTC 1,8 kOhm	on request	DIN EN 44070
LM 235Z (TCR=10 mV/K, 2.73 V at 0 °C; KP10)	on request	

When designing sensor cabling, please note that the cable resistance will cause measuring error. For a 50 m cable and a Pt1000 sensor the error is as follows:

wires 0.50 mm² ... measuring error 0.90 K

wires 0.75 mm² ... measuring error 0.60 K

wires 1.00 mm² ... measuring error 0.44 K.

For other cable lengths, the errors are more or less linear.

When ordering, please state:

Stem length

sensor type – see above, default type is Pt1000

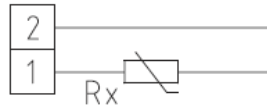
required accessories

Stem lengths

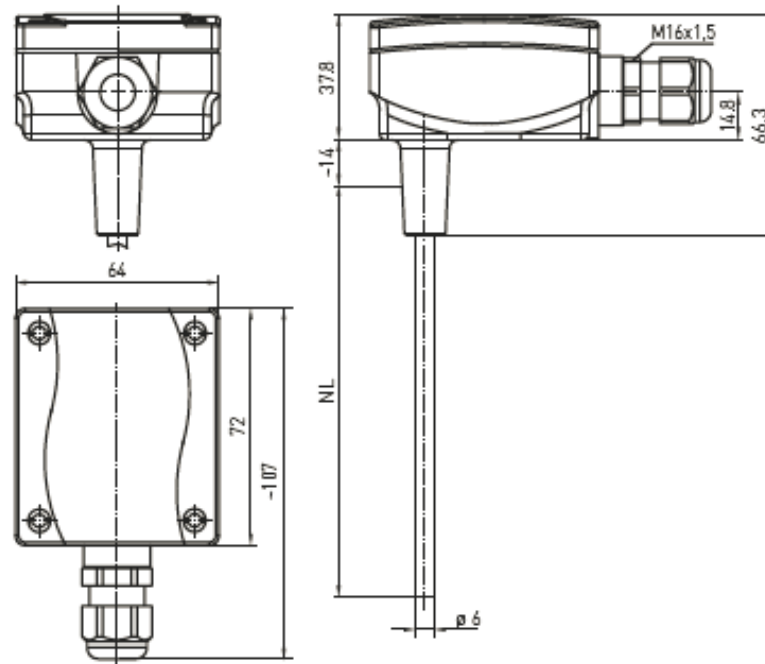
50 mm	on request
100 mm	on request
150 mm	default stem length
200 mm	on request
250 mm	on request

300 mm	on request
350 mm	on request
400 mm	on request

Terminals



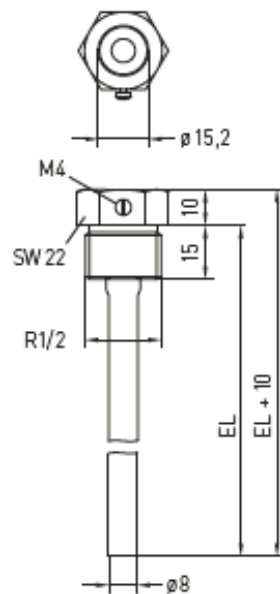
Dimensions



Dimensions are in *mm*.

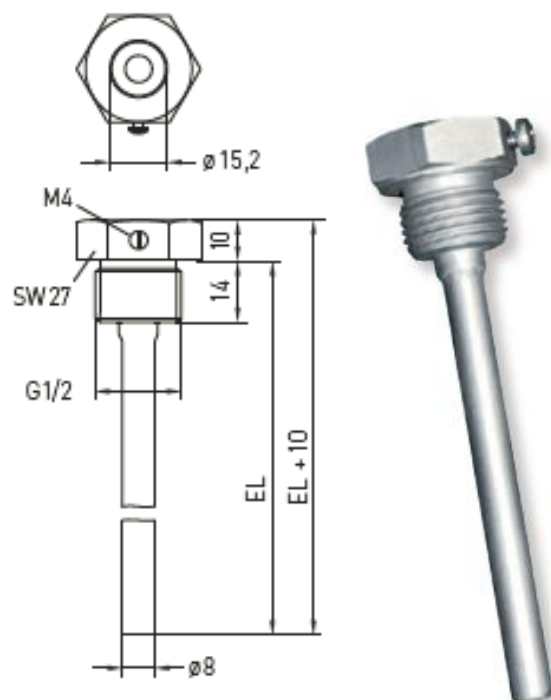
Accessories

TH08-ms/xx



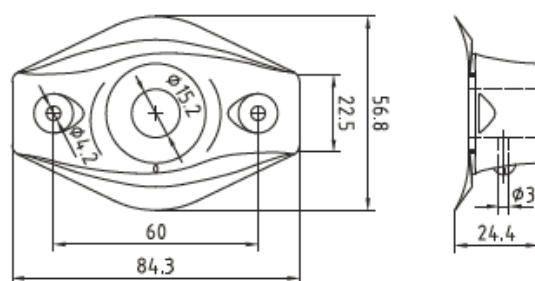
Dimensions are in *mm*.

TH08-VA/xx



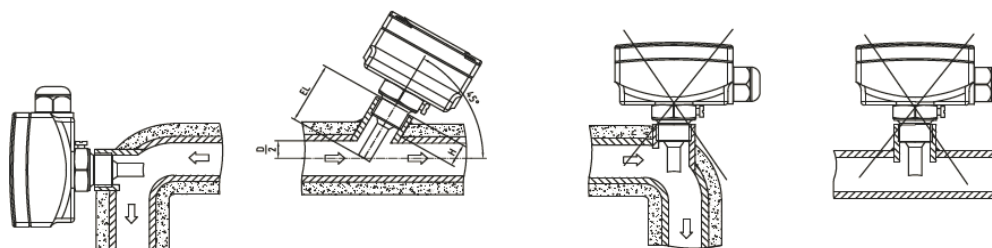
Dimensions are in *mm*.

MF-15-K mounting flange



Dimensions are in *mm*.

Mounting diagram



Changes in versions

03/2015 — Modifying of sensor accuracy table, change in accuracy class and measuring error

05/2016 — Added type of offered measuring element LM 235Z and sensor type TF-43.