

VFF Series IMMERSION TEMPERATURE SENSOR

PRODUCT DATA



GENERAL

The VFF Immersion Temperature Sensor is used in heating, cooling or domestic hot water applications requiring fast response temperature measurement.

TYPES

OS no.	Sensor element / sensor length	Sensing range
VFF00-75P65	PT1000 / 75 mm	-20...+140 °C (-4...+284 °F)
VFF00-220P65	PT1000 / 220 mm	
VFF00-300P65	PT1000 / 300 mm	
VFF10-75P65	NTC10kΩ / 75 mm	-20...+110 °C (-4...+230 °F)
VFF10-220P65	NTC10kΩ / 220 mm	
VFF10-300P65	NTC10kΩ / 300 mm	
VFF20-75P65	NTC20kΩ / 75 mm	-20...+140 °C (-4...+284 °F)
VFF20-220P65	NTC20kΩ / 220 mm	
VFF20-300P65	NTC20kΩ / 300mm	

FEATURES

- Fast response time
- Operating range of -20...+140 °C (with NTC10kΩ: -20... +110 °C)
- Easy installation
- Adjustable well length
- Stainless steel body material

SPECIFICATIONS

Nominal value

VFF00 (PT1000)	1000 Ω at 0 °C
VFF10 (NTC10kΩ)	10 kΩ at 25 °C
VFF20 (NTC20kΩ)	20 kΩ at 25 °C

Accuracy

VFF00 (PT1000)	IEC751 Class B ±0.3 °C at 0 °C (32 °F)
VFF10 (NTC10kΩ)	±0.2 °C at 25 °C (77 °F)
VFF20 (NTC20kΩ)	±0.2 °C at 25 °C (77 °F)

Sensitivity

VFF00 (PT1000)	≈ 3.85 Ω / K
VFF10 (NTC10kΩ)	≈ -440 Ω / K at 25 °C (non-linear)
VFF20 (NTC20kΩ)	≈ -934.5 Ω / K at 25 °C (non-linear)

Response time

$\tau_{63} < 2.5$ seconds (using brass / stainless steel well)

Well

Pressure rating PN16 (nominal)

Max. flow rate in water at

16 bar and < 140°C (VFF10: <110 °C)

75 mm length	8 m/s
220 mm length	1.5 m/s
300 mm length	0.5 m/s

Medium

Mineral and synthetic oil, glycol-water mixture, domestic hot water, swimming pool water

Material

Stainless steel, 1.4571

Dimensions

ø 4 mm, length ~ 75/220/300 mm

Outlet size

R1/2"

Tightening torque

10 ±2 Nm, 13-mm wrench

Cable

Length 2.5 m

Protection class

IP 65

ELECTRICAL CONNECTION

The wiring of the temperature sensor must be in accordance with the overall wiring circuit diagram. The terminals are not polarized; thus, even if the wires are connected in reverse, no malfunction will occur.

DIMENSIONS

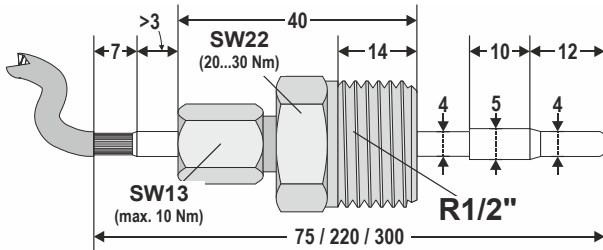


Fig. 1. Dimensions (in mm)

MOUNTING

NOTE: Do not dismount the device by pulling the connection cable – which is sheathed with silicone and therefore easily damaged by mechanical stress.

Screw the device into place with a max. torque of 10 ± 2 Nm. The device should be inserted so that the tip is well past the laminar flow at the inner wall of the pipe (min. 25 mm) – ideally at the middle of the pipe, though this may result in excessive mechanical stress of the well in the event of high flow rates. See also Fig. 2 through Fig. 4.

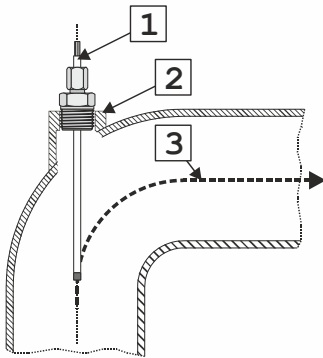


Fig. 2. \leq DN50, elbow pipe

1. Temperature sensor (max. torque = 10 ± 2 Nm)
2. Weld junction with the screw thread
3. Direction of flow

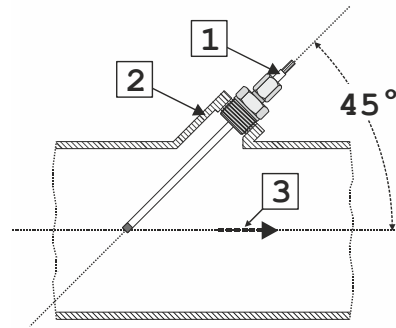


Fig. 3. \leq DN50, straight pipe

1. Temperature sensor (max. torque = 10 ± 2 Nm)
2. Weld junction with the screw thread
3. Direction of flow

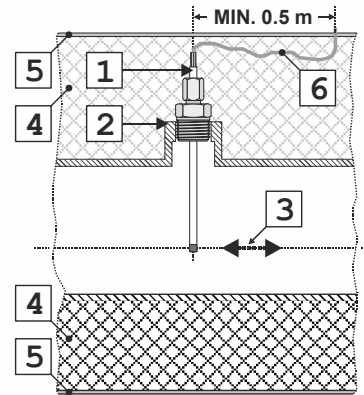


Fig. 4. DN65...150, coldwater application

1. Temperature sensor (max. torque = 10 ± 2 Nm)
2. Weld junction with the screw thread
3. Flow in either direction
4. Insulation material
5. Water vapor barrier
6. Minimum 0.5 meter through insulation material before exit.

Honeywell

Manufactured for and on behalf of the Connected Building Division of Honeywell Technologies Sàrl, Rolle, Z.A. La Pièce 16, Switzerland by its Authorized Representative:

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