SF00, SF01, SF10, SF20
STRAP-ON TEMPERATURE SENSORS

PRODUCT DATA

GENERAL

The SF00, SF01, SF10, and SF20 Strap-On Temperature Sensors are used for temperature measurement on warm/hot water pipes or solar collectors.

The sensors are suitable for use in systems using Ni 1000, Pt 1000, NTC 10k, or NTC 20k temperature sensing elements.

FEATURES

- **Ni 1000, Pt 1000, NTC 10k, or NTC 20k temperature sensing element**
- **Wide sensing range**
- **High accuracy**

SPECIFICATION

Nominal value	
Ni 1000	1000 Ω at 0 °C (32 °F)
Pt 1000	1000 Ω at 0 °C (32 °F)
NTC 10k	10 kΩ at 25 °C (77 °F)
NTC 20k	20 kΩ at 25 °C (77 °F)
Accuracy	
Ni 1000	±0.4 °C at 0 °C (32 °F)
Pt 1000 (IEC751 Class B)	±0.3 K at 0 °C (32 °F)
NTC 10k, NTC 20k	±0.2 K at 25 °C (77 °F)
Sensitivity	
Ni 1000	≈ 6.18 Ω / K
Pt 1000	≈ 3.85 Ω / K
NTC 10k	-440 Ω / K at 25 °C (non-linear)
NTC 20k	≈ -934.5 Ω / K at 25 °C (non-linear)
Time constant	< 30 s
Electrical connection	
SF00/SF01/SF10/SF20	terminals for 2 x 1.5 mm² cable
Ambient limits (housing)	
Storage temperature	-30...+70 °C (-22…+158 °F)
Humidity	5…95% rh, non-condensing
Safety (terminal box)	
Protection class	IP54 / IP65 as per EN 60529
Flame retardant	UL94-V0 rated plastic enclosure T_{max} = 120 °C (enclosure)
Dimensions	See Fig. 1 on pg. 2

DIMENSIONS

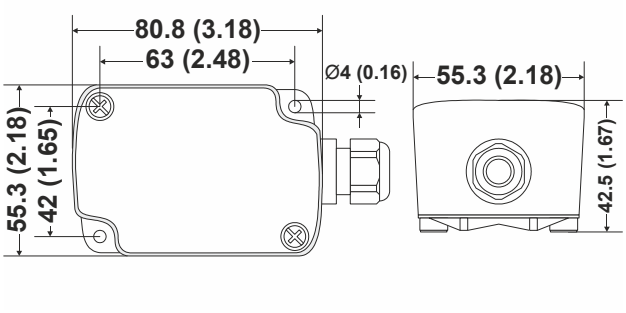

Fig. 1. Housing, dimensions in mm (inches)

MODELS

part	sensor type	operating temp.	IP rating
SF00-B54	Pt 1000	-30 … +110 °C (-22 … +230 °F)	IP54
SF00-B65	Pt 1000		IP65
SF01-B54	Ni 1000		IP54
SF01-B65	Ni 1000		IP65
SF10-B54	NTC 10kΩ		IP54
SF10-B65	NTC 10kΩ		IP65
SF20-B54	NTC 20kΩ		IP54
SF20-B65	NTC 20kΩ		IP65

INSTALLATION

wiring run	max. length
sensor to controller	200 m (660 ft)

Offset due to wire resistance per 10 m of distance from sensor to controller, when using the SF00-Bxx (Pt 1000):

type of wire	temperature offset Pt 1000
0.5 mm² (AWG20)	0.18 °C (0.324 °F)
1.0 mm² (AWG17)	0.09 °C (0.162 °F)
1.5 mm² (AWG15)	0.06 °C (0.108 °F)

NOTE: Use shielded wiring in areas with high EMI. Keep 15 cm (5.9") minimum distance between sensor lines and 230 Vac power lines.

ELECTRICAL CONNECTION

The wiring of the temperature sensor must be in accordance with the overall wiring circuit diagram.

The terminals are not polarized. Thus, connecting the wires in reverse will not result in any malfunction.

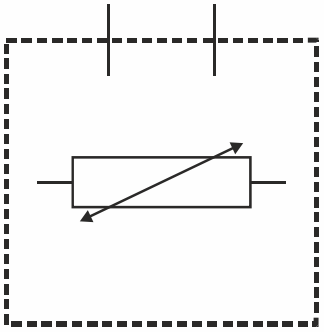

Fig. 2. SF00, SF01, SF10, SF20 wiring

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