

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 k Ω at 25 °C (77 °F) |
| NTC 20k | 20 k Ω 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/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

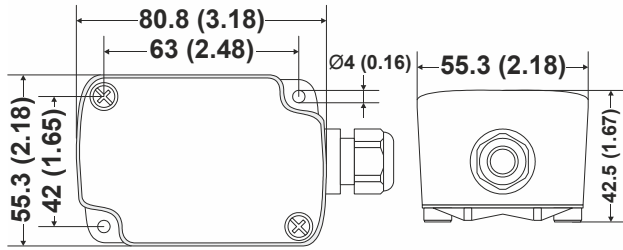


Fig. 1. Dimensions of SF00/SF01/SF10/SF20 in mm (inches)

MODELS

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

| type of wire | temperature offset Pt 1000 |
|-----------------------------|----------------------------|
| 0.5 mm ² (AWG20) | 0.18 °C (0.324 °F) |
| 1.0 mm ² (AWG17) | 0.09 °C (0.162 °F) |
| 1.5 mm ² (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.

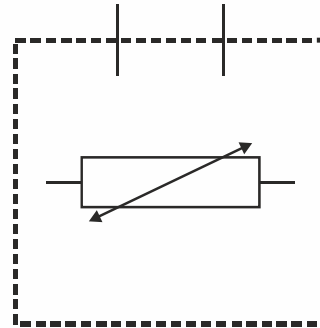


Fig. 2. SF00, SF01, SF10, SF20 wiring

Honeywell

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