

# SF00, SF01, SF10, SF20

## STRAP-ON TEMPERATURE SENSORS

### PRODUCT DATA



### FEATURES

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

### SPECIFICATION

#### Nominal value

|         |                                |
|---------|--------------------------------|
| Ni 1000 | 1000 $\Omega$ at 0 °C (32 °F)  |
| Pt 1000 | 1000 $\Omega$ at 0 °C (32 °F)  |
| NTC 10k | 10 k $\Omega$ at 25 °C (77 °F) |
| NTC 20k | 20 k $\Omega$ at 25 °C (77 °F) |

#### Accuracy

|                          |                              |
|--------------------------|------------------------------|
| Ni 1000                  | $\pm 0.4$ °C at 0 °C (32 °F) |
| Pt 1000 (IEC751 Class B) | $\pm 0.3$ K at 0 °C (32 °F)  |
| NTC 10k, NTC 20k         | $\pm 0.2$ K at 25 °C (77 °F) |

#### Sensitivity

|         |                                                     |
|---------|-----------------------------------------------------|
| Ni 1000 | $\approx 6.18$ $\Omega$ / K                         |
| Pt 1000 | $\approx 3.85$ $\Omega$ / K                         |
| NTC 10k | -440 $\Omega$ / K at 25 °C (non-linear)             |
| NTC 20k | $\approx -934.5$ $\Omega$ / K at 25 °C (non-linear) |

#### Time constant

< 30 s

#### Electrical connection

|                     |                                             |
|---------------------|---------------------------------------------|
| SF00/SF01/SF10/SF20 | terminals for 2 x 1.5 mm <sup>2</sup> 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<sub>max</sub> = 120 °C (enclosure)

#### Dimensions

See Fig. 1 on pg. 2

### 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.

## DIMENSIONS

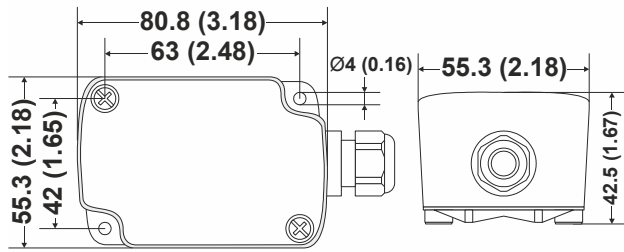


Fig. 1. Housing, dimensions in mm (inches)

## MODELS

| part     | sensor type | operating temp.                      | IP rating |
|----------|-------------|--------------------------------------|-----------|
| SF00-B54 | Pt 1000     | -30 ... +110 °C<br>(-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 mm <sup>2</sup> (AWG20) | 0.18 °C (0.324 °F)         |
| 1.0 mm <sup>2</sup> (AWG17) | 0.09 °C (0.162 °F)         |
| 1.5 mm <sup>2</sup> (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.

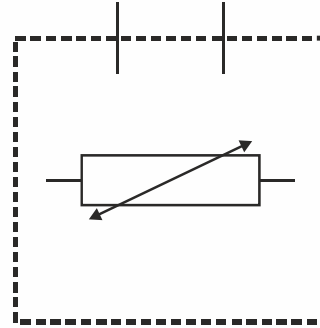


Fig. 2. SF00, SF01, SF10, SF20 wiring

### Home and Building Technologies

Honeywell GmbH  
Böblinger Strasse 17  
71101 Schönaich, Germany  
Phone +49 (0) 7031 637 01  
Fax +49 (0) 7031 637 740  
<http://ecc.emea.honeywell.com>