Honeywell

AF00, AF10, and AF20
OUTSIDE TEMPERATURE SENSORS

PRODUCT DATA

FEATURES

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

Models

OS no.	sensor type	IP rating	comments	sensing range
AF00-B54	Pt 1000	54	--	-40…+70 °C (-40…+158 °F)
AF00-B65	Pt 1000	65	--	
AF10-B54	NTC 10k	54	--	
AF10-B65	NTC 10k	65	--	
AF20-B54	NTC 20k	54	--	
AF20-B65	NTC 20k	65	--	
AF20-B54-N	NTC 20k	54	no logo	

GENERAL

The AF00, AF10, and AF20 Outside Temperature Sensors contain a single sensor element, and are used to detect outside temperature in heating, ventilation, and air conditioning systems enabling weather-related temperature control.

The innovative mounting concept with a mounting bracket (which ensures that the housing is held at the proper distance to the mounting surface for correct measurement) allows for easy installation and unbiased detection of ambient temperature.

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

SPECIFICATION

Nominal value

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

Pt 1000 (IEC751 Class B)	±0.3 °C at 0 °C (32 °F)
NTC 10k	±0.2 °C at 25 °C (77 °F)
NTC 20k	±0.2 °C at 25 °C (77 °F)

Sensitivity

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)

Connection	two-wire (2x0.22 mm^2)
Time constant	≤ 3 min.
Enclosure material	polycarbonate, UL94-V0 approved
Protection class	IP54 / IP65 as per EN 60529

Ambient Limits (wiring box)

Storage temperature	-30...+70 °C (-22…+158 °F)
Humidity	0…95% rh, non-condensing

Dimensions	See Fig. 1 below.

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DIMENSIONS

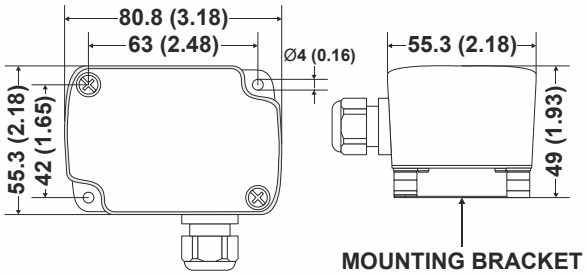

Fig. 1. Dimensions of the outside temperature sensor in mm (inches)

WIRING

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 AF00 (Pt 1000):

type of wire	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.

Honeywell

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