

AF00, AF10, AF12 and AF20 OUTSIDE TEMPERATURE SENSORS

PRODUCT DATA



GENERAL

The AF00, AF10, AF12 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 embossed mounting holes (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, NTC12k or NTC 20k temperature sensing elements.

MODELS

OS no.	sensor type	comments	sensing range
AF00-B65	Pt 1000	--	-40...+70 °C (-40...+158 °F)
AF10-B65	NTC 10k	--	
AF12-B65-N	NTC 12k	no logo	
AF20-B65	NTC 20k	--	
AF20-B65-N	NTC 20k	no logo	

FEATURES

- Pt 1000, NTC 10k, NTC12k or NTC 20k temperature sensing element
- Wide sensing range
- High accuracy

SPECIFICATIONS

Nominal value

Pt 1000	1000 Ω at 0 °C (32 °F)
NTC 10k	10 kΩ at 25 °C (77 °F)
NTC 12k	12 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 12k	±0.9 °C at 60 °C (140 °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 12k	≈ -489 Ω / K at 25 °C (non-linear)
NTC 20k	≈ -935 Ω / K at 25 °C (non-linear)

Characteristic

see EN0B-0476GE51

Connection

two-wire (2x0.22 mm²)

Time constant

≤ 8 min.

Enclosure material

polycarbonate/acrylonitrile-butadiene-styrene, UL94-V2 approved

Protection class

IP65 as per EN 60529

Ambient Limits

(wiring box)
Storage temperature -40...+70 °C (-40...+158 °F)
Humidity 5...95% rh, non-condensing

Dimensions

See section "Dimensions" on the next page

DIMENSIONS

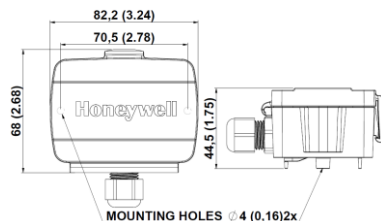


Fig. 1. Housing, dimensions in mm (inches)

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.

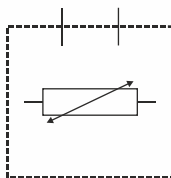


Fig. 3. AF00, AF10, AF20 wiring

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-B65 (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.

DISPOSAL

At the end of their useful life the packaging and product should be disposed of according to local waste guidelines.

Honeywell

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