

OAT OUTSIDE AIR SENSOR

This sensor is used to measure the outside air temperature to allow the DDC system to coordinate the mechanical systems with actual building load conditions, enabling such strategies as free cooling, optimum start/stop, and supply temperature reset.

The housing is made from PVC electrical fittings which shield the probe from direct sunlight. The probe is manufactured to industrial standards. There are three thermistor based models, and one RTD version to provide compatibility with the majority of DDC systems. The sensors are accurate enough that calibration is not usually required.



Sensor Property	Specification
Thermistor Accuracy	+/-0.2C
Platinum RTD Accuracy	+/-0.4C
Thermistor range	-70C to 150C
Probe Material	Stainless
Cable Properties	FT4, 80C, 600V

Construction

The sensor probe is made from stainless steel which is welded, ground down, and finally pressure tested before assembling. The probe is then baked and epoxy sealed to provide long term protection from moisture.

The sensor housing is a PVC electrical enclosure which is UL approved for outdoor use. The housing extends over the probe to protect from sunlight radiation.



The sensor lead extends 12" from the enclosure, making it long enough to reach a junction box and terminate inside the building. The thermistor models are accurate to 0.2C while the platinum RTD is accurate to 0.5C.

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Installation

The OAT3000 sensor can be mounted on the outside of the building using the following guidelines:

- Choose a spot on the north face which will be out of sunlight for as much of the day as possible.
- Mount the sensor where it can be serviced, staying away from exhaust ducts. Point the probe down wards to avoid catching rain

To install the sensor, drill a 3/4" (20mm) hole through the wall, and pipe the sensor to an electrical junction box on the inside of the wall. The sensor has a female 1/2" NPT threaded fitting to accept a short length of 1/2" pipe or PVC. Two conductors are required, 18ga, unshielded twisted pair is common.

Sensor	DDC System	Part#
10K thermistor, curve 3	Andover, AAM, Siebe, Multinet	OAT3000-7
10K thermistor, curve 2	ALC, Trane, CSI, Solidyne, Delta	OAT3000-24
1000 ohm platinum RTD	Honeywell, Johnson, L&S	OAT3000-12
3k thermistor	Alerton	OAT3000-6
100k thermistor	Landys&Gyr Powers	OAT3000-9

Example: a outdoor sensor for Andover = OAT3000- 7