

Outside Air Sensors

Features



- IP65 Housing
- Wide range of element types

Specification

Output types:	
Thermistor	Resistive
Active	4-20mA or 0-10Vdc (selectable)
Accuracy:	
Thermistor	±0.2°C (0°C to 70°C)
PT100a	±0.35°C (0°C to 100°C)
PT1000a	±0.35°C (0°C to 100°C)
NI1000	±0.35°C (0°C to 100°C)
Probe material	Brass
Housing:	
Material	ABS (flame retardant type VO)
Dimensions	55mm x 90mm dia.
Mounting holes	4mm spaced 85mm apart
Protection	IP65
Ambient range	-10°C to +80°C
Country of origin	UK

Product Codes

TT-531-A	(10K3A1) Trend, Seachange, Honeywell Aquatrol
TT-531-B	(10K4A1) Andover, Delta Controls, York <40°C, Siebe
TT-531-C	(20K6A1) Honeywell
TT-531-D	(PT100a) Serck
TT-531-E	(PT1000a) Cylon
TT-531-F	(NI1000a) Sauter
TT-531-G	(Ni1000a/TCR(LAN1)) Siemens, Landis & Staefa
TT-531-H	(SAT1) Satchwell
TT-531-K	(STA1) Landis & Staefa
TT-531-L	(TAC1) TAC
TT-531-M	(2.2K3A1) Johnson Controls
TT-531-N	(3K3A1) Alerton
TT-531-P	(30K6A1) Drayton
TT-531-Q	(50K6A1) Ambiflex
TT-531-R	(100K6A1) York >40°C
TT-531-S	(SAT2) Satchwell
TT-531-T	(SAT3) Satchwell
TT-531-V	(SAT4) Satchwell
TT-531-W	(SIE1) Siebe
TT-531-Y	(STA2) Landis & Staefa
TT-531-Z	(10K NTC) Carel

Active output:

TT-531-CVO

4-20mA/0-10Vdc selectable output

TT-531-CVO-C

4-20mA/0-10Vdc selectable output custom temp. scaling

Technical Overview

The TT-531 range of outside air temperature sensors, contain either a high quality thermistor, Nickel or Platinum sensing element.

The element is housed in an IP65 rated enclosure, with a 10mm diameter brass cap containing the sensing element located externally in the shadow of the lid to avoid solar gain in most applications. Outside air sensors should always be situated in a sheltered position on a north facing wall.

The TT-531-CVO (active output), combines 4 preset ranges and selectable output mode, customised output range scaling enabling a choice of outputs and ranges on one unit.

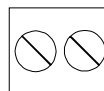
Installation

NB Avoid mounting the sensor in direct sunlight. If the sensor is to be mounted in direct sunlight, the TT-532 version of the outside air sensor should be used, as this has a radiation shield.

1. It is recommended that the unit be mounted with the cable entry at the bottom.
2. If the cable is fed from above then into the cable gland at the bottom, it is recommended that a rain loop be placed in the cable before entry into the sensor.
3. Remove the front cover by twisting the lid and separating from the main body.
4. Using the base of the housing as a template mark the hole centres. Drill two pilot holes at 85mm centres in the surface to which the sensor is to be mounted.
5. Fix the sensor to the wall using appropriate screws.
6. The housing is designed to make it easy for an electrical screwdriver to be used if desired.
7. Feed the cable through the waterproof gland and terminate at the terminal block. Leaving some slack inside the housing, tighten the cable gland onto the cable to ensure water tightness.
8. Replace the lid after the electrical connections have been made.

Connections

Resistive output:



Connections are made via the 2-way terminal block. Connections for the thermistor/platinum and nickel element are polarity independent.

4-20mA/0-10Vdc:

For full connection and specification please refer to the TT-CVO datasheet.

Trend Scaling

IQ1xx and early IQ2x series (without type 5, characterise)
Thermistor A (10K3A1 TYPE 2 linearise thermistor volts)

(-10 to +40°)		(-10 to +110°)	
Brange	-10	Brange	-10
Trange	40	Trange	110
F	8.47	F	8.47
G	7.42	G	5.55
H	6.11	H	2.65
I	4.73	I	1.12
J	3.48	J	0.49

IQ1xx and early IQ2x series (with type 5, characterise)

(-10 to +40°C)		
	Resistance input	Temp. Output
1	5.32	40.0
2	5.89	37.5
3	6.53	35.0
4	7.24	32.5
5	8.05	30.0
6	8.96	27.5
7	10.00	25.0
8	11.16	22.5
9	12.49	20.0
10	14.00	17.5
11	15.71	15.0
12	17.67	12.5
13	19.90	10.0
14	22.47	7.5

Trend Scaling (continued)

15	25.40	5.0
16	28.79	2.5
17	32.66	0.0
18	37.18	-2.5
19	42.35	-5.0
20	55.30	-10.0

Upper	40.0
Lower	-10.0
Exp	3
Points used	20
Input type	3(kohms)

(-10 to +110°C)

	Resistance Input	Temp. Output
1	0.51	110.0
2	0.60	104.0
3	0.72	98.0
4	0.86	92.0
5	1.03	86.0
6	1.25	80.0
7	1.53	74.0
8	1.87	68.0
9	2.31	62.0
10	2.87	56.0
11	3.60	50.0
12	4.54	44.0
13	5.77	38.0
14	7.40	32.0
15	9.57	26.0
16	12.49	20.0
17	16.47	14.0
18	21.93	8.0
19	29.53	2.0
20	55.30	-10.0

Upper	110.0
Lower	-10.0
Exp	3
Points used	20
Input type	3(kohms)