Sontay®

Outside Air & Outside Air with Radiation Shield Temperature Sensors

Features:

- Weatherproof Housing
- Wide range of sensing element types
- PTFE Radiation shield version to minimize errors from gains of the effects of direct sunlight

Benefits:

- Hinged lid with the facility of tamper proofing
- Uniformity of sensors with other Sontay products

Technical Overview

This range of temperature sensors are used to detect air outside temperature. Units contain either a high quality thermistor, Nickel or Platinum sensing element.

Available in two versions the TT-331 has a 10mm (0.39") diameter cap containing the sensing element located externally in the shadow of the lid to avoid solar gain. It should be situated in a sheltered position on a north facing wall. The TT-332's sensing element is fitted into a PTFE radiation shield, which is designed to provide fast response times to changes in temperature and to protect the element from the direct effects of direct sunlight.

The -CVO active output option combines 4 pre-set ranges and selectable output mode, customised output range scaling enabling a choice of outputs and ranges on one unit.

Tel: +44 (0)1732 861200. - E-mail: sales@sontay.com. - Web: www.sontay.com.

Specification:

Output types:
Passive	Resistive
Active (selectable)	Current 4-20mA *or*
	Voltage 0-10Vdc

Accuracy:
Thermistor	±0.2°C 0 to 70°C (32 to 158°F)
PT100a	±0.2°C @ 25°C (77°F)
PT1000a	±0.2°C @ 25°C (77°F)
NI1000	±0.4°C @ 0°C (32°F)
-CVO	±0.4°C @ 25°C (77°F)

Probe:

TT-331
Material	Brass
Dimensions	10mm dia. (0.39")

TT-332
Material	PTFE
Dimensions	40 x 16mm dia. (1.57 x 0.63")

Housing:
Material	ABS (flame retardant type VO)
Dimensions	75 x 70 x 50mm
	(2.91 x 2.76 x 1.97")

Protection:
Snap-shut lid	IP54
	IP65 (see page 3 note 6)
Ambient range	-30 to 70°C (-22 to 158°F)
Weight	160g (0.35lb)
Country of origin	UK

CE

The TT-xxx-CVO products referred to in this data sheet meet the requirements of EU Directive 2004/108/E

Part Codes:

TT-331 Outside Air Sensor

TT-332 Outside Air Sensor with radiation shield

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

Active output:
-CVO	4-20mA/0-10Vdc selectable output
-CVO-C	4-20mA/0-10Vdc selectable output with custom temp. scaling

Installation:

TT-321

1. Select a suitable location preferably on a north facing wall, ensuring that the sensor is away from direct sunlight and any heat sources.

2. Using the housing as a template mark the hole centres, drill and fix the housing to a flat surface using appropriate screws. The housing is designed to make it easy for an electric screwdriver to be used if desired.
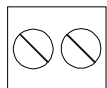
TT-332

1. Select a suitable location, the sensor has a radiation shield that helps minimizes error gains from direct sunlight

2. Using the housing as a template mark the hole centres, drill and fix the housing to a flat surface using appropriate screws. The housing is designed to make it easy for an electric screwdriver to be used if desired.

Common installation:

3. Release the snap-fit lid by gently squeezing the locking tab.

4. Feed the cable through the waterproof gland and terminate the cores at the terminal block (see page 4 for connection details). Leaving some slack inside the unit, tighten the cable gland onto the cable to ensure water tightness.

5. It is recommended that the unit be mounted with the cable entry at the bottom. 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.

6. Snap shut the lid after the connections have been made if IP65 protection is required, secure the lid with two screws provided

Connections:

All connections to BEMS controllers, data recorders etc. should be made using screened cable. Normally, the screen should be earthed at one end only (usually the controller end) to avoid earth hum loops which can create noise. Low voltage signal and supply cables should be routed separately from high voltage or mains cabling. Separate conduit or cable trays should be used. Where possible, the controller's earth should be connected to a FUNCTIONAL EARTH, rather than the mains safety earth. This will provide better immunity to high frequency noise. Most modern buildings have a separate earth for this purpose.
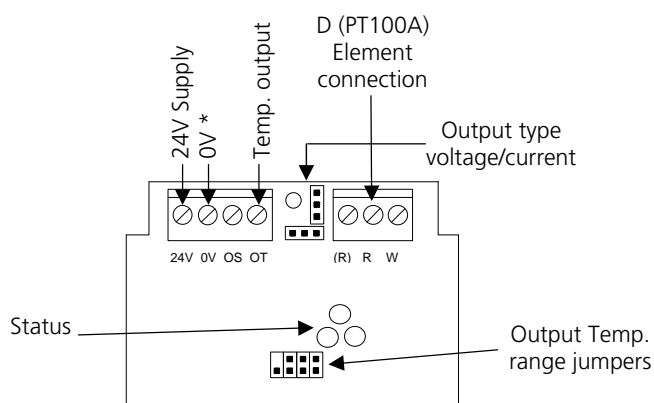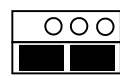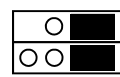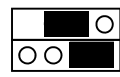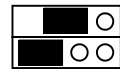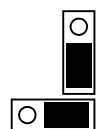
Connections (continued):

Passive output:

Connections are made via the 2-way terminal block. Connections for thermistor, platinum and nickel sensing elements are polarity independent.

Active output:

24V Supply
0V *
Temp. output
D (PT100A) Element connection
Output type voltage/current

24V 0V OS OT   (R) R W

Status

Output Temp. range jumpers

* Not required with 4-20mA output

-10 to +40°C (14 to 104°F)	-10 to +110°C (14 to 230°F)
-10 to +160°C (14 to 320°F)	0 to +400°C (32 to 752°F)

Custom, in the range of -40 to +400°C (-40 to +752°F)

0-10Vdc   4-20mA

Notes:

Voltage output   Nominal voltage 24Vac/dc.

Current output   If using in current output mode, the sensor must only be used with a 24Vdc supply. The sensor may be damaged if supplied with AC.

The selectable output temperature ranges are dependent on sensor type, ambient and application.

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