Sontay®
Four Elms Road · Edenbridge
Kent · TN8 6AB · UK

TT-1000
Space Temperature Sensors

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Features & Benefits

- ±0.3°C temperature accuracy
- Fully configurable LCD Display
- Base plate compatible for both EU & North America fixings
- Housing designed to maximize air flow through it, giving fast response times

Technical Overview

The TT-1000-ACT uses a high accuracy 10K3A1 thermistor element, and offers options such as set point adjust, momentary switch and fan speed selection, together with a multi-line backlit LCD display. A 0-10Vdc override status input option is also available, allowing occupancy indication on the display.

4-20mA, 0-10Vdc or 0-5Vdc outputs for temperature are available as standard. A custom output range for temperature can be requested, between -20°C and +50°C.

Product Codes

TT-1000-ACT
Space temperature transmitter ±0.3°C

Suffixes (add to part code)*

-SP	2-Wire resistive set point 0-10kΩ or 11-1kΩ
-MS	Momentary switch
-FS3	Resistive 3-speed fan switch
-FS4	Resistive 4-speed fan switch
-FS5	Resistive 5-speed fan switch
-LCD	Integral LCD
-TR	Custom temperature output range scaling

Accessories

DECOR	Decorators trim plate
GASKET	Insulating gasket (pack of 10)

* Interface Restrictions

- SP only
- MS only
- SP-MS only
- SP-FSx only

Specification

Outputs:		
	Voltage	0-10Vdc or 0-5Vdc
	Current	4-20mA*
Output range		0 to 40°C
Temp. accuracies		±0.3°C
Optional Passive Outputs:		
	Set point	0-10KΩ or 11-1KΩlinear
	Momentary switch	VFC
	Fan Speed	Resistive
Power Supply:		
	Voltage	12-26Vac or 16-26Vdc @60mA max.
	Current	
	(no 0V)	20-26Vdc only @70mA max.
	(with 0V)	12-26Vac or 16-26Vdc @60mA max.
Ambient:		
	Temperature	0 to 50°C
	RH	0 to 95% RH, non-condensing
Housing:		
	Material	ABS (flame retardant)
	Colour	RAL 9003 polished white finish
	Dimensions	115 x 85 x 28mm
Ambient range		-10 to 60°C
Protection		IP30
Country of origin		UK

* If using the -LCD option, when in loop powered mode the back light will not be lit. The transmitter will require a 0V connection for the back light to work (3-wire).

WEEE Directive:
At the end of the products useful life please dispose as per the local regulations.
Do not dispose of with normal household waste.
Do not burn.

CE

The products referred to in this data sheet meet the requirements of EU Directive 2014/30/EU

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

Installation

Antistatic precautions must be observed when handling these sensors. The PCB contains circuitry that can be damaged by static discharge.

1. Select a location on a wall of the controlled space which will give a representative sample of the prevailing room condition. Avoid sitting the sensor in direct sunlight, on an outside wall or near heat sources. An idea mounting height is 1.5m from the floor.

2. Undo the tamperproof screw at the bottom of the housing and remove the front panel from the base.

3. Using the base as a template mark the hole centres and fix to the wall with suitable screws. Alternatively the base plate can be mounted on to a conduit box or standard recessed back box. The base plate is suitable for EU & North America fixings.

4. Feed cable through the hole in the base plate of the housing and terminate the cores at the terminal block as required. Leaving some slack inside the unit.

5. Set jumper links according to output type required and replace the housing to the base plate and tighten the tamperproof screw (if required) through the lug at the bottom of the base plate.

6. Before powering the sensor, ensure that the supply voltage is within the specified tolerances.

   Note: When using the sensor with a 4-20mA output, it is important to make all electrical connections before applying the supply voltage. If the sensor is not connected sequence, then you may see a higher reading than expected (can be as much as 55mA).

7. Allow 3 minutes before checking functionality, and at least 30 minutes before carrying out pre-commissioning checks. This will allow the electronics time to stabilise.

Active temperature transmitters are sensitive electronic devices and care should be taken at all times to ensure that they are not exposed to extreme ambient conditions or incorrect electrical connection. Transmitters should not be exposed to direct moisture contact (e.g. rain) and very high humidity should be avoided wherever possible.

Connections

Left Hand terminal Block:

24V	Supply + 24Vac or Vdc
GND	Supply 0V
OP1	Temperature output (see J11 settings)
OP2	Not used
GND	Common 0v
OP3	Not used
GND	Common 0V
OVRD	0-10Vdc input to indicate occupancy or override.

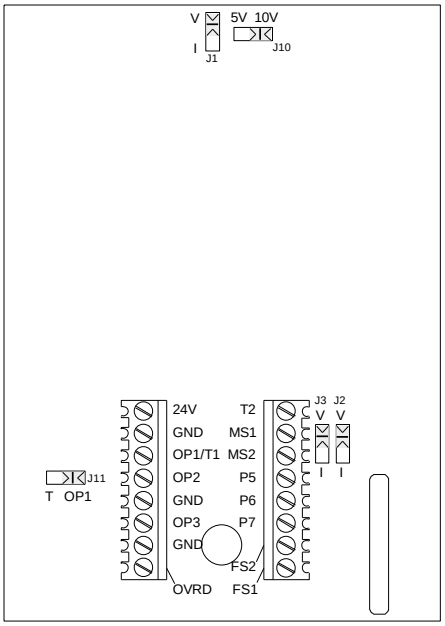
Right Hand Terminal Block (if -T option is selected);

T2	Not used
MS1	Momentary switch VFC output
MS2	Momentary switch VFC output
P5*	Set point
P6*	Set point, wiper
P7*	Set point
FS2	Fan speed switch output, resistive
FS1	Fan speed switch output, resistive

Note: The OVRD input can only be used if voltage output is used, as a common 0V is required.

Voltage output	Nominal voltage	24Vac/dc.
Current output	Loop powered (no 0V connection)	24Vdc supply ONLY.
	3-wire (0V connection)	24Vac/dc
	Please see note in installation section 7 regarding connections.	
	If using the -LCD option, when in loop powered mode the back light will not be lit. The transmitter will require a 0V connection for the back light to work (3-wire).	
-SP*	2-wire 11-1kΩ output is required use terminals P6 and P7	
	2-wire 0-10kΩ output is required, use terminals P5 and P6	

Jumper Settings & Options



J1, J2, J3
These set the outputs to either voltage of current, V for voltage, I for current

J10
If the outputs are set to voltage (jumpers J1, J2 & J3 in the "V" position), the output can be set to either 0-10Vdc or 0-5Vdc.

J11
Selects either active temperature output (current or voltage) or direct thermistor.
OP1 = active temperature output

Fan Speed (if fitted)
The position of the selector switch will cause the resistance between the terminals to alter as shown below.

Switch position	Output
0	Open circuit
1	22.7kΩ
2	26kΩ
3	29.3kΩ
Auto	32.6kΩ

Set point(if fitted)
This is available in two standard values:

-	+
0kΩ	10kΩ
11kΩ	1kΩ

Using an external 1kΩ resistor (not supplied) on the terminals 0-10kΩ, 1-11kΩ can be achieved if required.

Momentary switch (if fitted)
Rated at 24Vac/dc @ 500mA max.

Commissioning

To perform an accurate comparison between a transmitter output and a portable reference, it is essential that the two probes are held adjacent for a minimum of 30 minutes in a stable ambient environment.