Sontay®
Four Elms Road - Edenbridge
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TT-CVO
4-20mA / 0-10Vdc Temperature Transmitter

Issue Number 7.3
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Features and Benefits

- Wide range of sensor types
- Choice of output type and temperature ranges on one unit
- Custom output range scaling

Technical Overview

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.

Product Codes

Sensor Type:

TT-518	Thimble Sensor
TT-D	Duct Sensor
TT-DA	Duct Averaging Sensor
TT-TDA	True Duct Averaging Sensor
TT-O	Outside Air Sensor
TT-OR	Outside Air Sensor c/w Radiation Shield
TT-I	Immersion Sensor
TT-IH	High Temp. Immersion Sensor
TT-C	Clamp-on Sensor
TT-CD	Direct Clamp-on Sensor
TT-554	Remote Probe Sensor
TT-555	Flying Lead Sensor

(add type to above code):

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

Note:
Please see corresponding temperature datasheet for further specification and full installation instructions.

Specification

Selectable output type:	
0-10Vdc (minimum impedance 2kΩ)	
4-20mA (loop powered)	
Selectable output range:*	
-10 to +40°C	-10 to +110°C
-10 to +160°C	0 to +400°C
Custom range:*	-40 to +400°C
Supply voltage:	
0-10Vdc	24Vac ±15% @ 50Hz *or* 24Vdc +15% -6%
4-20mA	24Vdc +15% -6%
Accuracy:	
TT-TDA only	
Transmitter	±0.2ºC
PRT Element	±0.425°C @ 25°C
Overall	±1.0°C
Others	
Transmitter	±0.2ºC
PRT Element	±0.2°C @ 25°C
Overall	±0.4°C
Sensor type:	
TT-TDA only	PT100B
Others	D (PT100A)
Connectors	Terminals for 0.5-2.5mm² cable
Environmental	See corresponding data sheet for sensor type
Country of origin	UK
Conformity	EMC, CE & UKCA Marked

* Dependent on sensor type

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.

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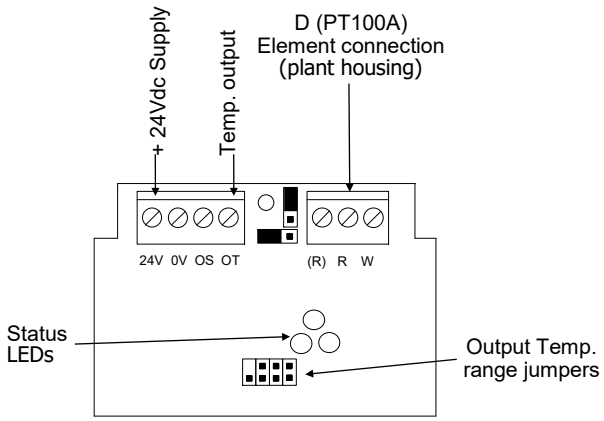
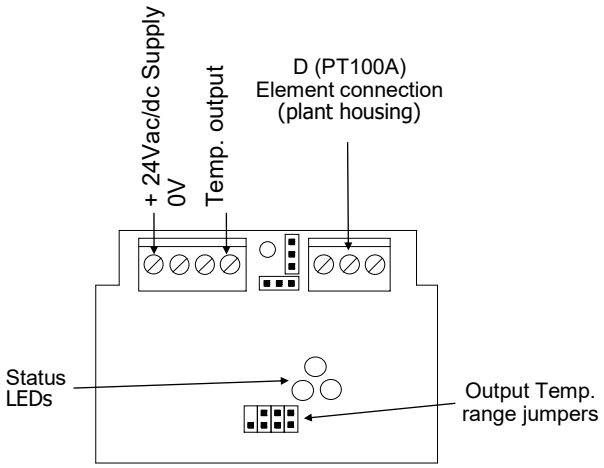
Connections

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

4-20mA output:



0-10Vdc output:



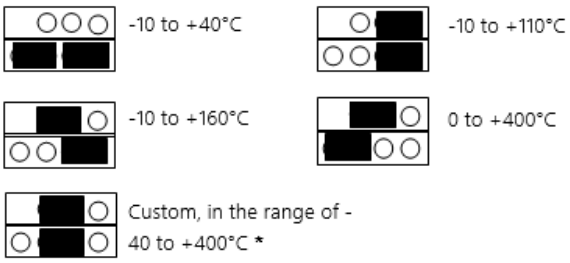
Voltage output Nominal voltage 24Vac/dc.

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.

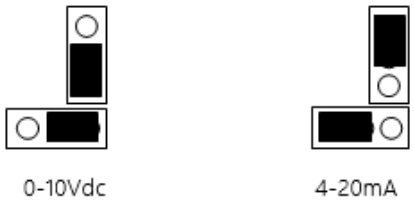
The selectable output temperature ranges are dependent on sensor type, ambient and application.

Jumper Settings

Output temperature range section:



Output signal type:



If the range links are incorrectly set, or missing the output range
Will default to -10 to +40°C

*** Please see actual sensor data sheets for allowed custom range. This is sometimes limited due to the materials used to construct the sensor**

Factory default jumper positions

- Temperature range -10 to +40°C
- Output signal 0-10Vdc

LED Status

3-wire 0-10Vdc or 3-wire 4-20mA

Power supply
Normal:
The green LED indicates the supply condition. If the power supply is normal the green LED is ON continuously. This shows that the TT-CVO is powered correctly.

Low Supply Voltage:
If power supply falls below about 22V the green LED does double flashes twice a second;

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The PCB tries to maintain the correct output but may be unable to achieve the specified voltage or current level. At very low voltages it will stop working.

High Supply Voltage:
If the power supply is above 40V the green LED flashes 6 times a second;

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The PCB tries to maintain the correct outputs but components on the PCB may overheat causing unreliability and ultimately failure.

2-wire 4-20mA output:

Only the red LED is on when the PCB is in 4-20mA loop-powered mode and working correctly. For this to be so these conditions must be met:

- The output select jumper(s) must be set to the 4-20mA position.
- The output load must be an impedance of 500Ω or less.
- The PCB is capable of sourcing the correct output current.
- If using a current output mode, the sensor must only be used with a 24Vdc supply. The sensor may be damaged if supplied with AC.

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