



# 4-20mA / 0-10Vdc Temperature Transmitter

Date of Issue: 29/11/2019



#### **Features & Benefits**

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

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

Outside Air Sensor TT-O

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):

4-20mA/0-10Vdc selectable output -CVO

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

temp. scaling

## **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 -40 to +400°C

Custom range:\* Supply voltage:

0-10Vdc 24Vac ±15% @ 50Hz or

24Vdc +15% -6%

4-20mA 24Vdc +15% -6%

Accuracy:

TT-TDA only

±0.2°C Transmitter

PRT Element ±0.425°C @ 25°C Overall

±1.0°C

Others

Transmitter ±0.2°C ±0.2°C @ 25°C PRT Element

±0.4°C Overall

Sensor type:

TT-TDA only PT100B

Others D (PT100A)

Connectors Terminals for 0.5-2.5mm<sup>2</sup> cable

Environmental See corresponding data sheet for

sensor type

Country of origin

\* Dependent on sensor type

#### Note:

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

**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.

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





# 4-20mA / 0-10Vdc Temperature Transmitter

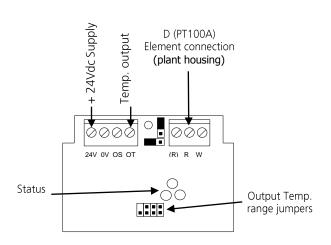
Issue Number: 7.2 Date of Issue: 29/11/2019

#### **Connections**

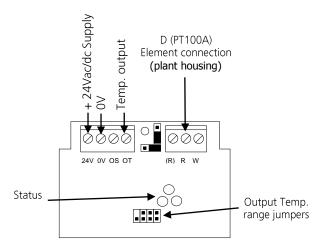


Antistatic precautions must be observed when handling these sensors. The PCB contains circuitry that can be damaged by static discharge.

### 4-20mA output:



### 0-10Vdc output:



Voltage output Nominal voltage 24Vac/dc.

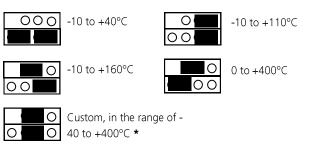
Current output If using in current output mode, the sensor must only be used with a 24Vdc supply. The sensor may be damaged if supplied

with AC.

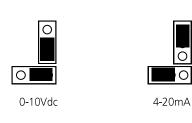
The selectable output temperature ranges are dependent on sensor type, ambient and application.

#### **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  $^{\circ}\text{C}$ 

\* 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



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#### **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;

\*\_\*\_\_\_\*\_\*\_\*\_\*\_\*\_\*

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;

\*\_\*\_\*\_\*

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.

Whilst every effort has been made to ensure the accuracy of this specification, Sontay cannot accept responsibility for damage, injury, loss or expense from errors or omissions. In the interest of technical improvement, this specification may be altered without notice.