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TT-359
Direct Clamp-on Temperature Sensors

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Features & Benefits

- Weatherproof Housing
- Wide range of sensing element types
- Shaped Dia-cast zinc probe
- Strap included (suitable up to 5" in diameter
- Enables temperature sensing in pipe work systems where immersion sensors are not practical
- Hinged lid with the facility of tamper proofing

Technical Overview

The TT-359 range of temperature direct clamp-on sensors are used on pipe work systems to detect liquid temperature where fitting an immersion sensor is not practical. The sensing element is enclosed in a moulded nickel contact bar on the underside of the main housing. Units contain either a high quality thermistor, Nickel or Platinum sensing element.

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

TT-351 Clamp-on Sensor

Sensing Element (add type to above code)
Passive output:

-A	(10K3A1) Trend, Cylon, Distech
-B	(10K4A1) Andover
-C	(20K6A1) Honeywell
-D	(PT100a) Serck
-E	(PT1000a) Cylon
-F	(NI1000a) Sauter
-G	(Ni1000a/TCR(LAN1)) Siemens
-H	(SAT1) Satchwell
-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
-W	(SIE1) Siebe
-Y	(STA2) Landis & Staefa
-Z	(10K NTC) Carel
-DC	Delta Controls

Active output:

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

Suffix (at extra cost):

-5M	5m cable

Specification

Output types:		
	Passive	Resistive
	Active (selectable)	Current 4-20mA or
		Voltage 0-10Vdc
Accuracy:		
	Thermistor	±0.2°C 0 to 70°C
	PT100a	±0.2°C @ 25°C
	PT1000a	±0.2°C @ 25°C
	NI1000	±0.4°C @ 0°C
	-CVO	±0.4°C @ 25°C
Probe material		Nickel
Housing:		
	Material	ABS (flame retardant type VO)
	Dimensions	75 x 70 x 50mm
Protection:		
	Snap-shut lid	IP54
		IP65 (See installation notes)
Ambient range		-10 to +90°C
Weight		180g
Country of origin		UK

CE

The TT-359-CVO products referred to in this data sheet meet the requirements of EU Directive 2014/30/EU

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Installation

1. Select a location in the system where the liquid temperature is to be measured, where the moulded nickel bar will make good contact with the surface of the pipe and wrap the clip around the pipe and pass through one of the slots between the mounting bar & housing and tighten the clip.

   Note: If an installation requires contact between galvanized materials (such as zinc) and copper in a moist or humid environment, rapid corrosion of the zinc lug may occur. Even runoff water from copper or brass surfaces can contain enough dissolved copper to cause rapid corrosion. If the use of copper in contact with galvanized items is unavoidable, precautions should be taken to prevent electrical contact between the two metals.

2. It is recommended that a fine layer of heat transfer compound between the 2 surfaces.

3. Release the snap-fit lid by gently squeezing the locking tab and feed the cable through the waterproof gland. Terminate the cores at the terminal block, leaving some slack inside the unit and tighten the cable gland onto the cable to ensure water tightness.

4. If the sensor is to be mounted outside, 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.

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

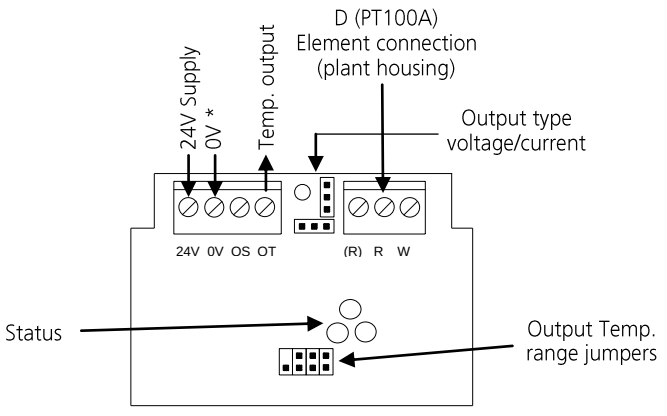
Connections

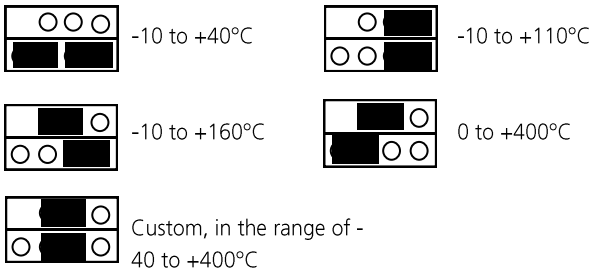
All connections to BEMS controllers, data recorders etc. should be made using screened cable. Normally, the screen should be earthed at one end only (usually the controller end) to avoid earth hum loops which can create noise. Low voltage signal and supply cables should be routed separately from high 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.

Passive output:

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

Active output:





* Not required with 4-20mA output

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.