

Immersion Sensors

Features

- IP65 Housing
- Wide range of element types



Specification

Output types:	
Thermistor	Resistive
Active	4-20mA or 0-10Vdc (selectable)
Accuracy:	
Thermistor	±0.2°C (0°C to 70°C)
PT100a	±0.35°C (0°C to 100°C)
PT1000a	±0.35°C (0°C to 100°C)
NI1000	±0.35°C (0°C to 100°C)
Probe:	
Material	Brass
Dimensions	150mm x 6mm dia.
Housing:	
Material	ABS (flame retardant type VO)
Dimensions	55mm x 90mm dia.
Protection	IP65
Ambient range	-10°C to +80°C
Country of origin	UK

Product Codes

TT-541-A	(10K3A1) Trend, Seachange, Honeywell Aquatrol
TT-541-B	(10K4A1) Andover, Delta Controls, York <40°C, Siebe
TT-541-C	(20K6A1) Honeywell
TT-541-D	(PT100a) Serck
TT-541-E	(PT1000a) Cylon
TT-541-F	(NI1000a) Sauter
TT-541-G	(Ni1000a/TCR(LAN1)) Siemens, Landis & Staefa
TT-541-H	(SAT1) Satchwell
TT-541-K	(STA1) Landis & Staefa
TT-541-L	(TAC1) TAC
TT-541-M	(2.2K3A1) Johnson Controls
TT-541-N	(3K3A1) Alerton
TT-541-P	(30K6A1) Drayton
TT-541-Q	(50K6A1) Ambiflex
TT-541-R	(100K6A1) York >40°C
TT-541-S	(SAT2) Satchwell
TT-541-T	(SAT3) Satchwell
TT-541-W	(SIE1) Siebe
TT-541-Y	(STA2) Landis & Staefa
TT-541-Z	(10K NTC) Carel

Active output:

TT-541-CVO
4-20mA/0-10Vdc selectable output

TT-541-CVO-C
4-20mA/0-10Vdc selectable output custom temp. scaling

Suffix (at extra cost):

-250mm
250mm Probe length

Technical Overview

The TT-541 range of temperature sensors are used for the detection of liquid temperature in pipes. Units contain either a high quality thermistor, Nickel or Platinum sensing element.

The TT-541 sensing element is housed in a 150mm long brass probe fitted to an IP65 rated enclosure for direct mounting into a brass or stainless steel pocket (type TT-PO511 or TT-PO521).

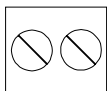
The TT-541/CVO (active output), combines 4 preset ranges and selectable output mode, customised output range scaling enabling a choice of outputs and ranges on one unit.

Installation

1. It is recommended that the unit be mounted with the cable entry at the bottom.
2. 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.
3. Remove the front cover by twisting the lid and separating from the main body.
4. Insert the probe into the pocket and secure with the grub screw provided within the pocket.
5. Feed the cable through the waterproof gland and terminate at the terminal block. Leaving some slack inside the housing, tighten the cable gland onto the cable to ensure water tightness.
6. Replace the lid after the electrical connections have been made.

Connections

Resistive output:



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

4-20mA/0-10Vdc:

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

Trend Scaling

IQ1xx and early IQ2x series (without type 5, characterise)
Thermistor A (10K3A1 TYPE 2 linearise thermistor volts)

(-10 to +40°)		(-10 to +110°)	
Brange	-10	Brange	-10
Trange	40	Trange	110
F	8.47	F	8.47
G	7.42	G	5.55
H	6.11	H	2.65
I	4.73	I	1.12
J	3.48	J	0.49

IQ1xx and early IQ2x series (with type 5, characterise)

(-10 to +40°C)		
	Resistance input	Temp. Output
1	5.32	40.0
2	5.89	37.5
3	6.53	35.0
4	7.24	32.5
5	8.05	30.0
6	8.96	27.5
7	10.00	25.0
8	11.16	22.5
9	12.49	20.0
10	14.00	17.5
11	15.71	15.0
12	17.67	12.5
13	19.90	10.0
14	22.47	7.5
15	25.40	5.0
16	28.79	2.5
17	32.66	0.0
18	37.18	-2.5
19	42.35	-5.0
20	55.30	-10.0

Upper	40.0
Lower	-10.0
Exp	3
Points used	20
Input type	3(kohms)

(-10 to +110°C)		
	Resistance input	Temp. Output
1	0.51	110.0
2	0.60	104.0
3	0.72	98.0
4	0.86	92.0
5	1.03	86.0

Trend Scaling (continued)

6	1.25	80.0
7	1.53	74.0
8	1.87	68.0
9	2.31	62.0
10	2.87	56.0
11	3.60	50.0
12	4.54	44.0
13	5.77	38.0
14	7.40	32.0
15	9.57	26.0
16	12.49	20.0
16	16.47	14.0
17	21.93	8.0
18	29.53	2.0
19	55.30	-10.0

Upper	110.0
Lower	-10.0
Exp	3
Points used	20
Input type	3(kohms)