



(Accessories
TT-DFP & TT-PO-521)

Technical Overview

The TT-544 range of remote probe temperature sensors are perfect for tight locations, hard to access areas or for applications where the usual duct (TT-D) or immersion (TT-I) sensor will not fit. A 150mm probe is used with either the TT-PO-521 or TT-DFP duct flange plate.

Units contain either a high quality thermistor, Platinum or Nickel sensing element. Sensor types compatible with most controls manufacturers' equipment are available.

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.

Features and Benefits

- Wide range of sensing element types
- 2m Screened flying lead as standard
- Perfect for tight locations
- Can be used as a duct or immersion sensor

Product Codes

TT-554 Remote probe sensor

Sensing Element (add type to above code)

Passive output:

-A	(10K3A1) Trend, Cylon, Distech
-B	(10K4A1) Andover, Delta Controls
-C	(20K6A1) Honeywell
-D	(PT100a) Serck
-E	(PT1000a) Cylon
-F	(NI1000a) Sauter
-G	(Ni1000a/TCR(LAN1)) Siemens
-L	(TAC1) TAC
-M	(2.2K3A1) Johnson Controls
-P	(30K6A1) Drayton
-Z	(10K NTC) Carel

Active output:

-CVO	4-20mA/0-10Vdc selectable output
-CVO-C	4-20mA/0-10Vdc selectable output with custom temp. scaling -10 to +100°C

Suffix (at extra cost):

-65	65mm Probe length
-250	250mm Probe length

Accessories:

TT-DFP	Duct flange plate
TT-PO-521	Stainless steel immersion pocket

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	Stainless steel
Dimensions	150 x 6mm

Lead length

2m

Protection

IP65

Environmental:

Housing:	-10 to +60°C
	0 to 95% non-condensing
Media:	-30 to +100°C

Weight

125g

Country of origin

UK

Conformity (CVO types only)

EMC, CE & UKCA Marked

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.



Installation

Duct Mounting:

1. Select a location in the duct where the sensor probe will give a representative sample of the prevailing air condition.
2. Using the TT-DFP. Drill a 7mm diameter hole and use the flange as a template to mark the hole centres. Drill then using the screws supplied fix to the duct. Insert the probe to the desired depth and tighten the grub screw.

Immersion:

1. In a suitable accessible location, fit a ½" BSPT boss. Care should be taken to ensure that the pocket/sensor tip in centre of the flow for accurate temperature measurement.
2. Apply thread seal sealant and screw the TT-PO-521 pocket in to the boss and tighten. Insert the remote sensor probe into the pocket and tighten the grub screw to retain the sensor.

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.

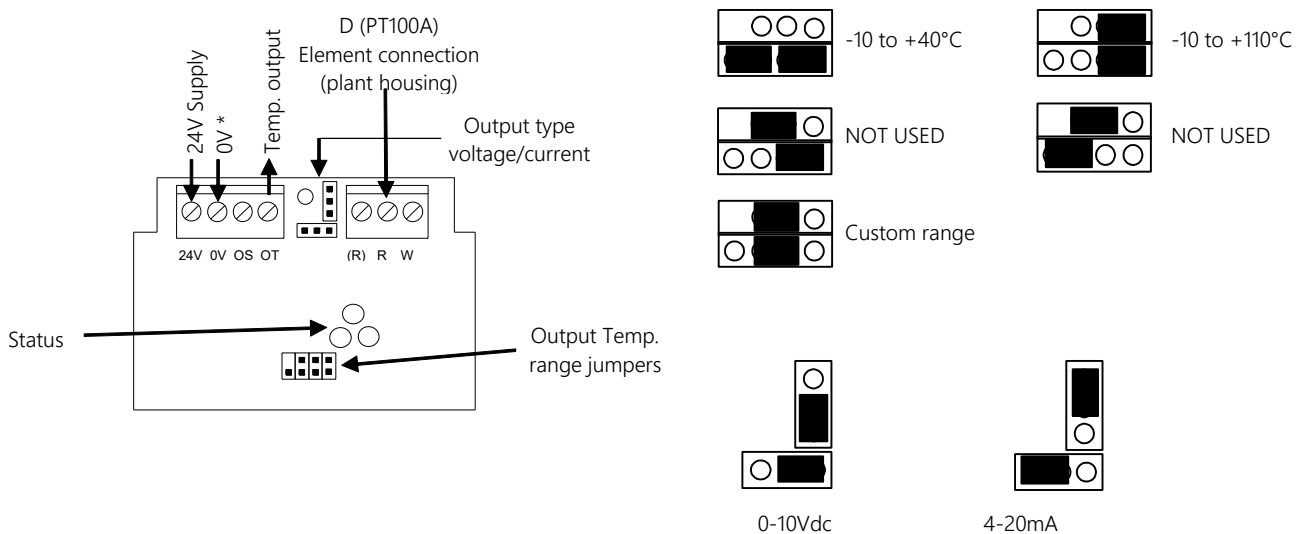
Thermistor:

The pre-stripped 2-wire connections are polarity independent and should be terminated as required. No terminal block is provided.

Platinum and nickel types:

The pre-stripped 2 or 3-wire connections are polarity independent and should be terminated as required. No terminal block is provided.

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.

Temperature vs Resistance Charts

	A	B	C	D	E	F	G	L	M	P	Z
	10K3A1	10K4A1	20K6A1	PT100A	PT1000A	NI1000	LAN1	TAC1	2.2K3A1	30K6A1	10K NTC
°C	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω
-50	6678528	441667	-	80.3	803	743	790.8	-	150395	2497k	-
-40	335671	239831	-	84.3	843	791	826.8	-	75593	1219k	-
-30	176683	135233	-	88.2	882	842	871.7	-	39789	622911	-
-20	96974	78930	-	92.2	921	893	913.4	-	21839	331876	-
-15	72895	61030	-	-	-	-	934.7	-	16416	24785	-
-10	55298	47549	-	96.1	961	946	856.2	-	12453	183697	42218
-5	42314	37316	-	-	-	-	978.0	-	9529	138502	33784
0	32650	29490	70204	100.0	1000	1000	1000.0	5085.0	7353	105305	27197
1	31030	28157	66525	-	-	-	1004.4	-	6988	99787	-
2	29500	26891	63059	-	-	-	1008.9	-	6643	94588	-
3	28054	25689	59793	-	-	-	1013.3	-	6318	89689	-
4	26688	24547	56713	-	-	-	1017.8	-	6010	85069	-
5	25396	23462	53809	-	-	-	1022.3	4078	5719	60713	22023
6	24173	22430	51070	-	-	-	1026.7	-	5444	76604	-
7	23016	21450	48484	-	-	-	1031.2	-	5183	72726	-
8	21921	20517	46044	-	-	-	1035.8	-	4937	69064	-
9	20885	19631	43739	-	-	-	1040.3	-	4703	65608	-
10	19904	18787	41563	103.9	1039	1056	1044.8	3294	4482	62347	17933
11	18974	17983	39506	-	-	-	1049.3	-	4273	59257	-
12	18092	17219	37562	-	-	-	1053.9	-	4075	56346	-
13	17257	16490	35724	-	-	-	1058.4	-	3886	53585	-
14	16465	15797	33986	-	-	-	1063.0	-	3708	50978	-
15	15714	15136	32342	-	-	-	1067.6	2676	3539	45811	14684
16	15001	14507	30786	-	-	-	1072.2	-	3378	46178	-
17	14325	13906	29213	-	-	-	1076.8	-	3226	43969	-
18	13623	13334	27918	-	-	-	1081.4	-	3081	41877	-
19	13053	12788	26598	-	-	-	1086.0	-	2940	39895	-
20	12494	12268	25346	107.8	1078	1112	1090.7	2188	2814	38019	12087
21	11943	11771	24160	-	-	-	1095.3	-	2690	36240	-
22	11420	11297	23036	-	-	-	1100.0	-	2572	34554	-
23	10923	10845	21970	-	-	-	1104.6	-	2460	32955	-
24	10450	10413	20959	-	-	-	1109.3	-	2353	31438	-
25	10000	10000	20000	109.8	1098	-	1114.0	1800.0	2252	30000	10000
26	9572	9606	19090	-	-	-	1120.0	-	2156	28635	-
27	9165	9229	18226	-	-	-	1123.4	-	2064	27339	-
28	8777	8869	17405	-	-	-	1127.1	-	1977	26108	-
29	8408	8525	16626	-	-	-	1132.9	-	1893	24939	-
30	8056	8197	15886	111.7	1117	1171	1137.6	1488	1814	23828	8315
35	6530	6754	12697	-	-	-	1161.5	1237	1471	19046	6947
40	5325	5594	10211	115.5	1155	1230	1185.7	1034	1199	15317	5831
45	4367	4656	8260	-	-	-	1210.2	-	983.4	12390	4916
50	3601	3893	6719	119.4	1194	1291	1235.0	740.0	810.9	10079	4163
55	2985	3271	5496	-	-	-	1260.1	-	672.2	8243	3540
60	2487	2760	4518	123.2	1232	1353	1285.4	540	560.1	6777	3023
65	2082	2339	-	-	-	-	1311.1	-	468.9	5600	2591
70	1751	1990	-	127.1	1271	1417	1337.1	400	394.5	4650	2230
75	1480	1700	-	-	-	-	1363.5	-	333.3	3879	1926
80	1256	1458	-	130.9	1309	1483	1390.1	300	282.9	3251	1669
85	1070	1255	-	-	-	-	1417.1	-	241.1	2737	1451
90	916.1	1084	-	134.7	1347	1549	1444.4	230	206.3	2313	1266
95	787.0	939.6	-	-	-	-	1472.0	-	177.2	1963	1109
100	678.6	817.2	-	138.5	1385	1618	1500.0	180.0	152.8	1672	973
105	587.3	713.0	-	-	-	-	1528.3	-	132.3	1430	-
110	510.1	624.1	-	142.3	1423	1688	1557.0	-	114.9	1228	-
115	444.5	547.9	-	-	-	-	1586.0	-	100.1	1058	-
120	388.6	482.5	-	146.1	1461	1760	1625.4	-	87.51	914.6	-
125	340.8	426.0	-	-	-	-	-	-	76.75	793.2	-
130	300.0	377.2	-	149.8	1498	1833	-	-	67.52	690.2	-
140	234.1	298.1	-	153.6	1536	1909	-	-	52.72	527.4	-
150	184.8	238.0	-	157.3	1573	1987	-	-	41.61	407.7	-
200	-	-	-	157.8	1758	-	-	-	-	-	-
250	-	-	-	194.1	1941	-	-	-	-	-	-
300	-	-	-	212.0	2121	-	-	-	-	-	-
350	-	-	-	229.7	2297	-	-	-	-	-	-
400	-	-	-	247.0	2470	-	-	-	-	-	-

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