Outside Air Temperature Sensors TE-O

Description

The TE-O range of outside air temperature sensors are designed to interface with a wide variety of HVAC control equipment. Units are available with a high quality thermistor element or platinum element.

The housing has a quick release lid for ease of installation and the sensor sealed into a brass lug mounted into the side of the housing.

Features

- IP65 Flame retardant ABS housing
- Brass sensor lug
- Wide choice of sensor options

Technical Specification

Sensor Type:	Thermistor or RTD element - see order codes for options
Accuracy:	Thermistor - ±0.2°C, 0...70°C RTD - Class A ±0.15°C @ 0°C, ±0.35°C @ 100°C
Housing:	Flame retardant ABS
Probe:	Brass Lug
Protection:	IP65
Terminals:	Rising clamp 0.5-2.5mm² cable
Ambient:	-20°C to +50°C, 0-95% RH non-condensing

Order Codes

TE-OT	Outside Air Temperature Sensor - 10KΩ @ 25°C
TE-OA	Outside Air Temperature Sensor - 10KΩ @ 25°C
TE-OTAC	Outside Air Temperature Sensor - 1.8KΩ @ 25°C
TE-OSAT	Outside Air Temperature Sensor - 5025Ω @ 25°C
TE-O3K	Outside Air Temperature Sensor - 3KΩ @ 25°C
TE-OH	Outside Air Temperature Sensor - 20KΩ @ 25°C
TE-OD	Outside Air Temperature Sensor - 30KΩ @ 25°C
TE-OP	Outside Air Temperature Sensor - 50KΩ @ 25°C
TE-O100	Outside Air Temperature Sensor - 100Ω @ 0°C
TE-O1K	Outside Air Temperature Sensor - 1000Ω @ 0°C

Other sensor types available. Contact us for details

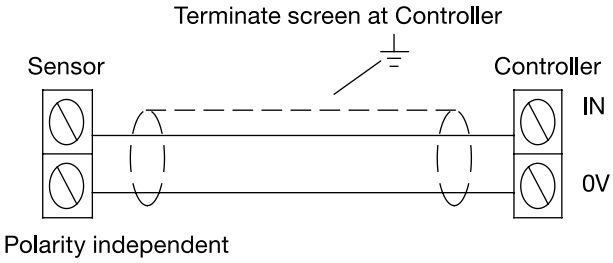
Installation

The TE-O sensor should be installed by a suitably qualified technician in conjunction with any guidelines for the equipment which it is to be connected to. Field wiring should be installed to satisfy the requirements set out by the manufacturer of the equipment that the sensor is being connected to. As a general rule, screened cable should be used to connect the sensor to a BMS or other controller. Please note that none of the TE-O sensors are suitable for use with mains voltage.

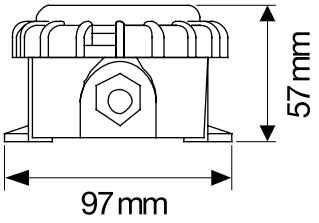
Choose a location out of direct sunlight preferably on a north facing wall. Mark the position of the 2 fixing holes with 85mm fixing centres. Drill 2 pilot holes in the positions marked. Mount the housing with 2 screws supplied

Wiring

Connect wires into the two way terminal block on the printed circuit board. Do not over-tighten the terminal screws as excessive force can cause damage to the terminal block and housing.



Housing Dimensions



BMS Compatibility

Element Type	Manufacturer	Room	Outside	Duct	Immersion	Clamp	Bullet
10K3A1 Type T	Aquatrol	●	●	●	●	●	●
	Honeywell	T8120B	T7416A T7043E	●	T7106A T7043F	T7044C	T7076D
	Johnson	●	●	TE-6361V TE-636GV-1	●	●	●
	Satchwell	●	DOT10K2 DOS10K2	DDT10K1	DWT10K1 DST10K1	●	●
	Seachange	SEN/PTR/ROM	SEN/PR/OAT	SEN/PR/DCT	SEN/PR/IMM	SEN/PR/CLP	SEN/FL
	Trend	TE-TS	TE-TO	TE-TD	TE-TI	TE-TC	●
10K4A1 Type A	Andover	TTS-S Series	●	TT-O Series	TT-I Series	TT-ST	●
	Delta Controls	●	●	●	●	●	●
	Siebe	●	●	●	●	●	●
	York <40°C	●	●	●	●	●	●
20K6A1 Type H	Honeywell	T7460H, T7470A, DRF20-S, RF20 T4712	AF20, DAF20, T7416A1022	LF20	VF20T, VF20NT, VF20L, VF20LN, WPF20, T7425A	VF20A, WPF20A	KFT20, KFT20B, DKF20
PT100 Type 100	Sauter	EGT430/F011	●	EGT466/F011 EGT447/F011	●	●	EGT456/F011
	Serck	●	●	●	●	●	●
	Siemens/ Landis & Staefa	QAA100 QAA2010	QAC2010	FK-TP/200 QAM2110	QAE2110		QAP2010
PT1000 Type 1K	Honeywell	T7412	T7416A1014	T7411	T7413	T7414	
	Sauter	EGT430/F101	EGT401/ F101	EGT446/F101 EGT447/F101		EGT411/ F101	EGT456/F101
	Serck	●	●	●	●	●	●
	Siebe	TS-5811	●	●	●	●	●
	Cylon	●	●	●	●	●	●
Ni1000 Type N1K	Sauter	EGT330/F101	EGT301/ F101	EGT346/F101 EGT347/F101 EGT348/F101	EGT346/F101 EGT347/F101 EGT348/F101	EGT311/ F101	EGT354/F101 EGT356/F101
Ni1000/ TK5000 Type LAN	Siemens/ Landis & Staefa	QAA24/25/ 26/27, QAA64	QAC22	QAM2120	QAE2120	QAD22 QAD26	QAP21 QAP22 QAZ21
SAT	Satchwell	DRT, DU, DUS, DUSF	DOT0002 DOS0002	DDT0001	DWT0001 DST0001	●	DDU
TAC	TAC	●	●	●	●	●	●
3K3A1 Type 3K	Alerton	MS-1000 Series, TS-1050	●	●	●	●	●
30K6A1 Type D	Drayton	A701	A702	●	A703	A704	●
50K6A1 Type P	Ambiflex	●	●	●	●	●	●
100K6A1 Type Y	York >40°C	●	●	●	●	●	●
SIE	Barber Colman	●	●	●	●	●	●
	Siebe	●	●	●	●	●	●

Outside Air Temperature Sensors TE-O

Thermistor Temperature Range

10K3A1 - Type T	
Thermistor, temp coef. -ve	
Temp°C	Ω
–50	667828
–40	335671
–30	176683
–20	96974
–15	72895
–10	55298
–5	42314
0	32650
1	31030
2	29500
3	28054
4	26688
5	25396
6	24173
7	23016
8	21921
9	20885
10	19904
11	18974
12	18092
13	17257
14	16465
15	15714
16	15001
17	14325
18	13623
19	13053
20	12494
21	11943
22	11420
23	10923
24	10450
25	10000
26	9572
27	9165
28	8777
29	8408
30	8056
35	6530
40	5325
45	4367
50	3601
55	2985
60	2487
65	2082
70	1751
75	1480
80	1256
85	1070
90	916.1
95	787.0
100	678.6
105	587.3
110	510.1
115	444.5
120	388.6
125	340.8
130	300.0
140	234.1
150	184.8
160	–
170	–
180	–
190	–
200	–

10K4A1 - Type A	
Thermistor, temp coef. -ve	
Temp°C	Ω
–50	441667
–40	239831
–30	135233
–20	78930
–15	61030
–10	47549
–5	37316
0	29490
1	28157
2	26891
3	25689
4	24547
5	23462
6	22430
7	21450
8	20517
9	19631
10	18787
11	17983
12	17219
13	16490
14	15797
15	15136
16	14507
17	13906
18	13334
19	12788
20	12268
21	11771
22	11297
23	10845
24	10413
25	10000
26	9606
27	9229
28	8869
29	8525
30	8197
35	6754
40	5594
45	4656
50	3893
55	3271
60	2760
65	2339
70	1990
75	1700
80	1458
85	1255
90	1084
95	939.6
100	817.2
105	713.0
110	624.1
115	547.9
120	482.5
125	426.0
130	377.2
140	298.1
150	238.0
160	–
170	–
180	–
190	–
200	–

20K6A1 - Type H	
Thermistor, temp coef. -ve	
Temp°C	Ω
0	71120
1	67324
2	63749
3	60385
4	57218
5	54397
6	51429
7	48032
8	46258
9	43938
10	41719
11	39640
12	37676
13	36020
14	34067
15	32409
16	30841
17	29388
18	27954
19	26625
20	25387
21	24178
22	23047
23	21977
24	20962
25	20000
26	19085
27	18225
28	17404
29	16824
30	16384
31	16189
32	14491
33	13847
34	13235
35	12654
36	12010
37	11578
38	11076
39	10600
40	10148
41	9721.1
42	9314.5
43	8826.8
44	8557.5
45	8205.3
46	7899.3
47	7548.9
48	7243.1
49	6951.2
50	6672.6
51	6404.0
52	6148.9
53	5904.6
54	5671.4
55	5448.6
56	5235.7
57	5092.3
58	4837.8
59	4651.6
60	4473.9
61	–
62	–
63	–
64	–

PT100A - Type 100	
Thermistor, temp coef. +ve	
Temp°C	Ω
–50	80.3
–40	84.3
–30	88.2
–20	92.2
–15	
–10	96.1
–5	
0	100.0
5	
10	103.9
15	
20	107.8
25	109.8
30	111.7
35	
40	115.5
45	
50	119.4
55	
60	123.2
65	
70	127.1
75	
80	130.9
85	
90	134.7
95	
100	138.5
105	
110	142.3
115	
120	146.1
125	
130	149.8
140	153.6
150	157.3
160	161.0
170	164.8
180	168.5
190	172.2
200	175.8
210	179.5
220	183.2
230	186.8
240	190.5
250	194.1
260	197.7
270	201.3
280	204.9
290	208.5
300	212.0
310	215.6
320	219.1
330	222.7
340	226.2
350	229.7
360	233.2
370	236.7
380	240.1
390	243.6
400	247.0
401	–
402	–
403	–

PT1000A - Type 1K	
Thermistor, temp coef. +ve	
Temp°C	Ω
–50	803
–40	843
–30	882
–20	921
–15	
–10	961
–5	
0	1000
5	
10	1039
15	
20	1078
25	
30	1117
35	
40	1155
45	
50	1194
55	
60	1232
65	
70	1271
75	
80	1309
85	
90	1347
95	
100	1385
105	
110	1423
115	
120	1461
125	
130	1498
140	1536
150	1573
160	1611
170	1648
180	1685
190	1722
200	1758
210	1795
220	1832
230	1868
240	1905
250	1941
260	1977
270	2013
280	2049
290	2085
300	2121
310	2156
320	2191
330	2227
340	2262
350	2297
360	2332
370	2367
380	2401
390	2436
400	2470
401	–
402	–
403	–

Thermistor Temperature Range (continued)

NI1000 - Type NIK	
Thermistor, temp coef. +ve	
Temp°C	Ω
–50	743
–40	791
–30	842
–20	893
–15	
–10	946
–5	
0	1000
5	
10	1056
15	
20	1112
25	
30	1171
35	
40	1230
45	
50	1291
55	
60	1353
65	
70	1417
75	
80	1483
85	
90	1549
95	
100	1618
105	
110	1688
115	
120	1760
125	
130	1833
140	1909
150	1987
160	2066
170	2148
180	2232
190	–
200	–
201	–
202	–
203	–
204	–
205	–

Ni1000/TK5000 Type LAN	
Thermistor, temp coef. +ve	
Temp°C	Ω
–50	790.8
–40	826.8
–30	871.7
–20	913.4
–15	934.7
–10	956.2
–5	978.0
0	1000.0
1	1004.4
2	1008.9
3	1013.3
4	1017.8
5	1022.3
6	1026.7
7	1031.2
8	1035.8
9	1040.3
10	1044.8
11	1049.3
12	1053.9
13	1058.4
14	1063.0
15	1067.6
16	1072.2
17	1076.8
18	1081.4
19	1086.0
20	1090.7
21	1095.3
22	1100.0
23	1104.6
24	1109.3
25	1114.0
26	1120.0
27	1123.4
28	1128.1
29	1132.9
30	1137.6
35	1161.5
40	1185.7
45	1210.2
50	1235.0
55	1260.1
60	1285.4
65	1311.1
70	1337.1
75	1363.5
80	1390.1
85	1417.1
90	1444.4
95	1472.0
100	1500.0
105	1528.3
110	1557.0
115	1586.0
120	1625.4
125	–
130	–
135	–
140	–
150	–
170	–
180	–
190	–

Type SAT	
Thermistor, temp coef. -ve	
Temp°C	Ω
–50	9719
–40	9584
–30	9349
–20	8968
–15	8708
–10	8396
–5	8031
0	7614
1	7525
2	7434
3	7341
4	7246
5	7150
6	7053
7	6954
8	6853
9	6752
10	6649
11	6545
12	6440
13	6334
14	6228
15	6121
16	6013
17	5905
18	5786
19	5684
20	5580
21	5471
22	5362
23	5254
24	5147
25	5039
26	4933
27	4827
28	4721
29	4617
30	4513
35	4012
40	3545
45	3117
50	2730
55	2386
60	2082
65	1816
70	1585
75	1385
80	1213
85	1064
90	937
95	828
100	734
105	654
110	585
115	525
120	474
125	429
130	391
140	329
150	281
160	–
170	–
180	–
190	–
200	–

Type TAC	
Thermistor, temp coef. -ve	
Temp°C	Ω
0	5085
5	4078
10	3294
15	2676
20	2188
25	1800
30	1488
35	1237
40	1034
50	740
60	540
70	400
80	300
90	230
100	180
110	–
120	–
130	–

3K3A1 - Type 3K	
Thermistor, temp coef. -ve	
Temp°C	Ω
–50	200348
–40	100701
–30	53005
–20	29092
–15	21868
–10	16589
–5	12694
0	9795
1	9309
2	8850
3	8416
4	8006
5	7619
6	7252
7	6905
8	6577
9	6266
10	5971
11	5692
12	5428
13	5177
14	4940
15	4714
16	4500
17	4297
18	4105
19	3916
20	3748
21	3583
22	3426
23	3277
24	3135
25	3000
26	2871
27	2749
28	2633
29	2522
30	2417
35	1959
40	1598
45	1310
50	1080
55	895.5
60	746.2
65	624.7
70	525.5
75	444.0
80	376.9
85	321.2
90	274.8
95	236.1
100	203.6
105	176.2
110	153.0
115	133.3
120	116.6
125	102.2
130	89.95
140	70.23
150	55.44
160	–
170	–
180	–
190	–
200	–

Thermistor Temperature Range (continued)

30K6A1 - Type D		50K6A1 - Type P		100K6A1 - Type Y		Type SIE	
Thermistor, temp coef. -ve		Thermistor, temp coef. -ve		Thermistor, temp coef. -ve		Thermistor, temp coef. -ve	
Temp°C	Ω	Temp°C	Ω	Temp°C	Ω	Temp°C	Ω
–50	2497K	–50	4168K	–50	8337K	–50	10732
–40	1219K	–40	2033K	–40	4067K	–40	10517
–30	622911	–30	1038K	–30	2077K	–30	10172
–20	331876	–20	553243	–20	1106K	–20	9654
–15	245785	–15	409689	–15	819378	–15	9320
–10	183697	–10	306183	–10	612366	–10	8933
–5	138502	–5	230842	–5	461683	–5	8496
0	105305	0	175508	0	351017	0	8044
1	99787	1	166310	1	332619	1	7910
2	94588	2	157644	2	315288	2	7807
3	89689	3	149480	3	298959	3	7702
4	85069	4	141779	4	283558	4	7596
5	60713	5	134521	5	269041	5	7489
6	76604	6	127669	6	255337	6	7381
7	72726	7	121207	7	242414	7	7271
8	69064	8	115105	8	230210	8	7161
9	65608	9	109344	9	218688	9	7050
10	62347	10	103903	10	207807	10	6938
11	59257	11	98761	11	197521	11	6825
12	56346	12	93901	12	187803	12	6712
13	53585	13	89307	13	178613	13	6598
14	50978	14	84962	14	169924	14	6485
15	48511	15	80851	15	161702	15	6370
16	46178	16	76961	16	153923	16	6256
17	43969	17	73280	17	146560	17	6141
18	41877	18	69794	18	139588	18	6028
19	39895	19	66492	19	132984	19	5913
20	38019	20	63364	20	126729	20	5798
21	36240	21	60400	21	120799	21	5686
22	34554	22	57589	22	115179	22	5573
23	32955	23	54925	23	109850	23	5461
24	31438	24	52398	24	104796	24	5349
25	30000	25	50000	25	100000	25	5238
26	28635	26	47724	26	95449	26	5128
27	27339	27	45564	27	91128	27	5019
28	26108	28	43513	28	87026	28	4910
29	24939	29	41565	29	83129	29	4803
30	23828	30	39714	30	79428	30	4696
35	19046	35	31744	35	63489	35	4185
40	15317	40	25529	40	51058	40	3707
45	12390	45	20650	45	41301	45	3271
50	10079	50	16799	50	33598	50	2875
55	8243	55	13740	55	27479	55	2521
60	6777	60	11297	60	22593	60	2206
65	5600	65	9334	65	18669	65	1929
70	4650	70	7751	70	15502	70	1685
75	3879	75	6466	75	12932	75	1472
80	3251	80	5419	80	10837	80	1287
85	2737	85	4560	85	9121	85	1127
90	2313	90	3855	90	7710	90	986
95	1963	95	3271	95	6543	95	866
100	1672	100	2787	100	5574	100	760
105	1430	105	2384	105	4767	105	670
110	1228	110	2046	110	4092	110	590
115	1058	115	1762	115	3525	115	522
120	914.6	120	1523	120	3047	120	462
125	793.2	125	1321	125	2642	125	410
130	690.2	130	1149	130	2299	130	365
140	527.4	140	878.2	140	1756	140	290
150	407.7	150	678.8	150	1357	150	233
160	-	160	–	160	–	160	–
170	-	170	–	170	–	170	–
180	-	180	–	180	–	180	–
190	-	190	–	190	–	190	–
200	-	200	–	200	–	200	–