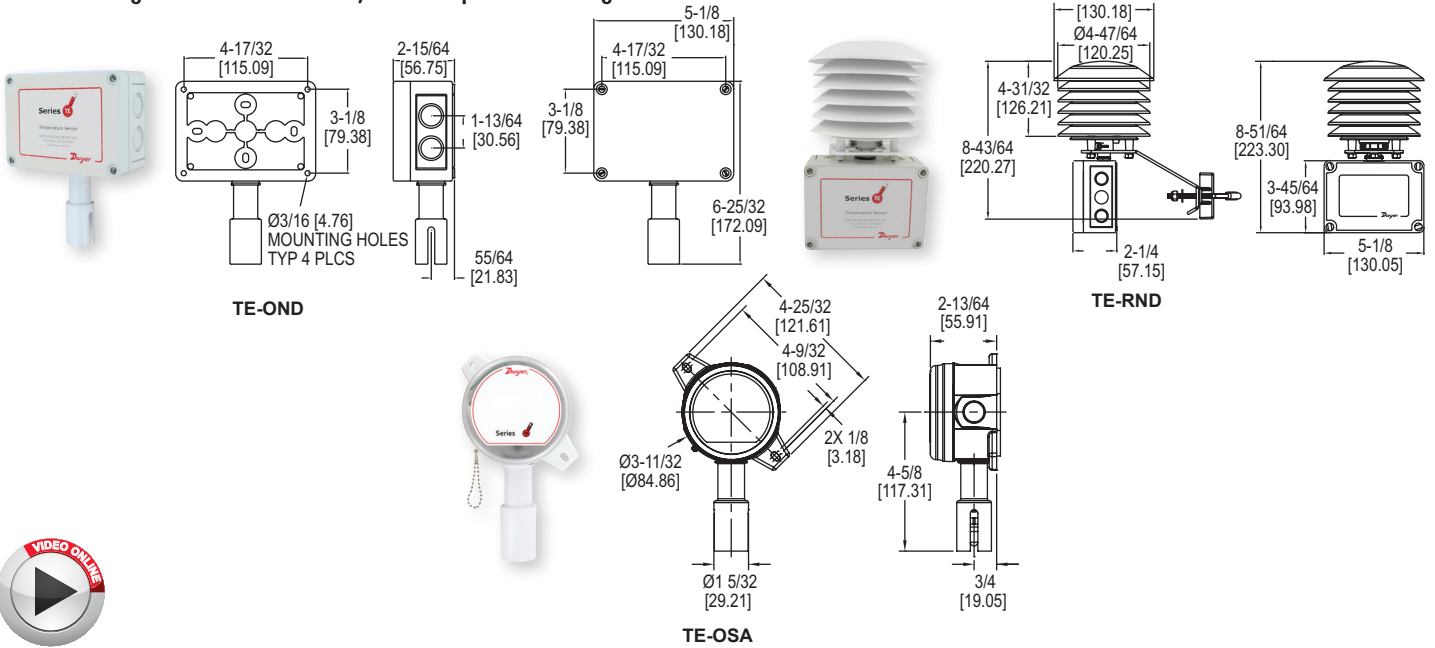




SERIES TE-OND/TE-RND/TE-OSA

# OUTDOOR TEMPERATURE SENSORS

Protection Against Radiated Heat, Weatherproof Housing



The Series TE-OND/TE-RND/TE-OSA Outdoor Temperature Sensors are offered different configurations to increase measurement accuracy by reducing radiated heat effects. For applications where the north side of the building is accessible, the TE-OND/TE-OSA can be used to protect against low levels of radiated heat.

### FEATURES/BENEFITS

- Weatherproof for outdoor installation
- Radiation shield available to eliminate heating effects following installation in direct sunlight
- Terminal connector eliminates need for wire nuts

### APPLICATIONS

- Building automation
- Outdoor temperature reference

MODEL CHART							
Model	Sensor Type	°C	°F	A - 10k Ω type III thermistor Green/Green	B - 10k Ω type II thermistor Red/Green	C - 3k Ω thermistor Black/Black	D - PT100 Ω RTD Yellow/Yellow
TE-OND-A	10k Ω type III thermistor	-55	-67.0	607800.00	963849.00	289154.70	78.32
TE-OND-B	10k Ω type II thermistor	-50	-58.0	441200.00	670166.00	201049.80	80.31
TE-OND-C	3k Ω thermistor	-45	-49.0	323600.00	471985.00	141595.50	82.29
TE-OND-D	PT100 Ω RTD	-40	-40.0	239700.00	336479.00	100943.70	84.27
TE-OND-E	PT1000 Ω RTD	-35	-31.0	179200.00	242681.00	72804.30	86.25
TE-OND-F	20k Ω thermistor	-30	-22.0	135200.00	176974.00	53092.20	88.22
TE-OND-G	10k Ω type III thermistor with 11k Ω shunt	-25	-13.0	102900.00	130421.00	39126.30	90.19
TE-OND-H	10k Ω type II thermistor	-20	-4.0	78910.00	97081.00	29124.30	92.16
TE-OND-I	3k Ω thermistor	-15	5.0	61020.00	72957.00	21887.10	94.12
TE-OND-J	PT100 Ω RTD	-10	14.0	47540.00	55329.00	16598.70	96.09
TE-OND-K	PT1000 Ω RTD	-5	23.0	37310.00	42327.00	12698.10	98.04
TE-RND-A	10k Ω type III thermistor	0	32.0	29490.00	32650.00	9795.00	100.00
TE-RND-B	10k Ω type II thermistor	5	41.0	23460.00	25392.00	7617.60	101.95
TE-RND-C	3k Ω thermistor	10	50.0	18780.00	19901.00	5970.30	103.90
TE-RND-D	PT100 Ω RTD	15	59.0	15130.00	15712.00	4713.60	105.85
TE-RND-E	PT1000 Ω RTD	20	68.0	12260.00	12493.00	3747.90	107.79
TE-RND-F	20k Ω thermistor	25	77.0	10000.00	10000.00	3000.00	109.74
TE-RND-G	10k Ω type III thermistor with 11k Ω shunt	30	86.0	8194.00	8057.00	2417.10	111.67
TE-RND-H	10k Ω type II thermistor	35	95.0	6752.00	6531.00	1959.30	113.61
TE-RND-I	3k Ω thermistor	40	104.0	5592.00	5326.00	1597.80	115.54
TE-RND-J	PT100 Ω RTD	45	113.0	4655.00	4368.00	1310.40	117.47
TE-RND-K	PT1000 Ω RTD	50	122.0	3893.00	3602.00	1080.60	119.40
TE-OSA-A	10k Ω type III thermistor	55	131.0	3271.00	2986.00	895.80	121.32
TE-OSA-B	10k Ω type II thermistor	60	140.0	2760.00	2488.00	746.40	123.24
TE-OSA-C	3k Ω thermistor	65	149.0	2339.00	2083.00	624.90	125.16
TE-OSA-D	PT100 Ω RTD	70	158.0	1990.00	1752.00	525.60	127.08
TE-OSA-E	PT1000 Ω RTD	75	167.0	1700.00	1480.00	444.00	128.99
TE-OSA-F	20k Ω thermistor	80	176.0	1458.00	1255.00	376.50	130.90
TE-OSA-G	10k Ω type III thermistor with 11k Ω shunt	85	185.0	1255.00	1070.00	321.00	132.80
		90	194.0	1084.00	915.50	274.65	134.71
		95	203.0	939.30	786.60	235.98	136.61
		100	212.0	816.80	678.60	203.58	138.51
		105	221.0	712.60	587.60	176.28	140.40
		110	230.0	623.60	510.60	153.18	142.29
		115	239.0	547.30	445.30	133.59	144.18
		120	248.0	481.80	389.60	116.88	146.07
		125	257.0	425.30	341.90	102.57	147.95
		130	266.0	376.40	301.00	90.30	149.83
		135	275.0	334.00	265.80	79.74	151.71
		140	284.0	297.20	235.30	70.59	153.58
		145	293.0	265.10	208.90	62.67	155.46
		150	302.0	237.00	186.10	55.83	157.33

### SPECIFICATIONS

**Accuracy:** Thermistor temperature sensor:  $\pm 0.22^{\circ}\text{C}$  @  $25^{\circ}\text{C}$  ( $\pm 0.4^{\circ}\text{F}$  @  $77^{\circ}\text{F}$ ); RTD temperature sensor: DIN class A:  $\pm 0.15^{\circ}\text{C}$  @  $0^{\circ}\text{C}$  ( $\pm 0.28^{\circ}\text{F}$  @  $32^{\circ}\text{F}$ ).  
**Temperature Limits:** Operating:  $-40$  to  $302^{\circ}\text{F}$  ( $-40$  to  $150^{\circ}\text{C}$ ).  
**Sensor Curves:** See Resistance vs. Temperature Table.  
**Housing Material:** Polycarbonate.  
**Enclosure Rating:** TE-OND/TE-RND: NEMA 4X (IP65); TE-OSA: NEMA 3R (IP54).  
**Weight:** 0.65 lb (295 g).

### RESISTANCE VS TEMPERATURE TABLE

#### Temperature Resistance Curves (Ω)

°C	°F	Temperature Resistance Curves (Ω)						
		A - 10k Ω type III thermistor Green/Green	B - 10k Ω type II thermistor Red/Green	C - 3k Ω thermistor Black/Black	D - PT100 Ω RTD Yellow/Yellow	E - PT1000 Ω RTD Red/Red	F - 20k Ω thermistor Green/Blue	G - 10k Ω type III thermistor with 11k Ω shunt Red/White
-55	-67.0	607800.00	963849.00	289154.70	78.32	783.2	2394000.00	10804
-50	-58.0	441200.00	670166.00	201049.80	80.31	803.1	1646200.00	10732
-45	-49.0	323600.00	471985.00	141595.50	82.29	822.9	1145800.00	10638
-40	-40.0	239700.00	336479.00	100943.70	84.27	842.7	806800.00	10517
-35	-31.0	179200.00	242681.00	72804.30	86.25	862.5	574400.00	10364
-30	-22.0	135200.00	176974.00	53092.20	88.22	882.2	413400.00	10172
-25	-13.0	102900.00	130421.00	39126.30	90.19	901.9	300400.00	9938
-20	-4.0	78910.00	97081.00	29124.30	92.16	921.6	220600.00	9654
-15	5.0	61020.00	72957.00	21887.10	94.12	941.2	163500.00	9320
-10	14.0	47540.00	55329.00	16598.70	96.09	960.9	122280.00	8933
-5	23.0	37310.00	42327.00	12698.10	98.04	980.4	92240.00	8495
0	32.0	29490.00	32650.00	9795.00	100.00	1000.0	70160.00	8012
5	41.0	23460.00	25392.00	7617.60	101.95	1019.5	53780.00	7489
10	50.0	18780.00	19901.00	5970.30	103.90	1039.0	41560.00	6937
15	59.0	15130.00	15712.00	4713.60	105.85	1058.5	32340.00	6369
20	68.0	12260.00	12493.00	3747.90	107.79	1077.9	25360.00	5798
25	77.0	10000.00	10000.00	3000.00	109.74	1097.4	20000.00	5238
30	86.0	8194.00	8057.00	2417.10	111.67	1116.7	15892.00	4696
35	95.0	6752.00	6531.00	1959.30	113.61	1136.1	12704.00	4184
40	104.0	5592.00	5326.00	1597.80	115.54	1155.4	10216.00	3707
45	113.0	4655.00	4368.00	1310.40	117.47	1174.7	8264.00	3271
50	122.0	3893.00	3602.00	1080.60	119.40	1194.0	6722.00	2875
55	131.0	3271.00	2986.00	895.80	121.32	1213.2	5498.00	2521
60	140.0	2760.00	2488.00	746.40	123.24	1232.4	4520.00	2206
65	149.0	2339.00	2083.00	624.90	125.16	1251.6	3734.00	1929
70	158.0	1990.00	1752.00	525.60	127.08	1270.8	3100.00	1685
75	167.0	1700.00	1480.00	444.00	128.99	1289.9	2586.00	1472
80	176.0	1458.00	1255.00	376.50	130.90	1309.0	2166.00	1287
85	185.0	1255.00	1070.00	321.00	132.80	1328.0	1822.60	1126
90	194.0	1084.00	915.50	274.65	134.71	1347.1	1540.00	986.8
95	203.0	939.30	786.60	235.98	136.61	1366.1	1306.40	865.4
100	212.0	816.80	678.60	203.58	138.51	1385.1	1112.60	760.3
105	221.0	712.60	587.60	176.28	140.40	1404.0	951.00	669.2
110	230.0	623.60	510.60	153.18	142.29	1422.9	815.80	590.1
115	239.0	547.30	445.30	133.59	144.18	1441.8	702.20	521.4
120	248.0	481.80	389.60	116.88	146.07	1460.7	606.40	461.6
125	257.0	425.30	341.90	102.57	147.95	1479.5	525.60	409.5
130	266.0	376.40	301.00	90.30	149.83	1498.3	N/A	363.9
135	275.0	334.00	265.80	79.74	151.71	1517.1	N/A	324.2
140	284.0	297.20	235.30	70.59	153.58	1535.8	N/A	289.4
145	293.0	265.10	208.90	62.67	155.46	1554.6	N/A	258.9
150	302.0	237.00	186.10	55.83	157.33	1573.3	N/A	232.0