

TE-6300 Series

Temperature Sensor



TE-6300 Series Temperature Sensors

Description

The TE-6300 Temperature Sensor line offers an economical solution for a wide variety of temperature sensing needs, including wall mount, outdoor air, duct, well, or duct averaging applications. Sensors are available in the following types: 1,000 ohm thin-film nickel, 1000 ohm nickel averaging, 1,000 ohm thin-film platinum, 2,200 ohm thermistor, and 1,000 and 100 ohm platinum equivalent averaging. Each sensor is packaged with the necessary mounting accessories, maximizing ordering and installation ease, and This simplified ordering and installation, to reduce cost and commissioning time.

Features

- full line of sensors
- inexpensively priced
- single assembly ordering
- conduit-friendly mounting
- standard PVC enclosures
- stainless steel sensor probe

Applications

See Selection Chart/Sensor Application Matrix on the next page.

To Order

Specify the code number from the Selection Chart on the following page.

Nominal Temperature vs Resistance for Nickel, Platinum (and Platinum Equivalent)*, and Thermistor Sensors

Temperature		Resistance (Ohms)		
°F	°C	Nickel	Platinum	Thermistor
		-50	-46	674
-40	-40	699	843	75466
-30	-34	725	865	52571
-20	-29	751	887	37116
-10	-23	777	908	26539
0	-18	803	930	19208
10	-12	830	952	14062
20	-7	858	974	10408
30	-1	885	996	7784
40	4	914	1017	5880
50	10	942	1039	4484
60	16	971	1061	3450
70	21	1000	1082	2678
80	27	1030	1104	2095

Temperature		Resistance (Ohms)		
°F	°C	Nickel	Platinum	Thermistor
		90	32	1060
100	38	1090	1147	1313
110	43	1121	1168	1051
120	49	1152	1190	847
130	54	1184	1211	687
140	60	1216	1232	561
150	66	1248	1254	461
160	71	1281	1257	380
170	77	1314	1296	316
180	82	1348	1317	264
190	88	1382	1339	221
200	93	1417	1360	187
210	99	1452	1381	158
220	104	1487	1402	135

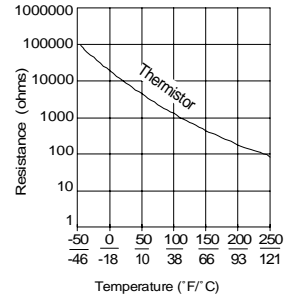
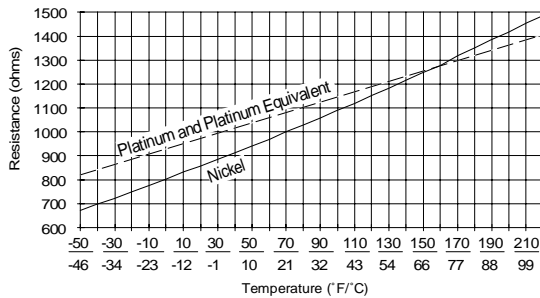
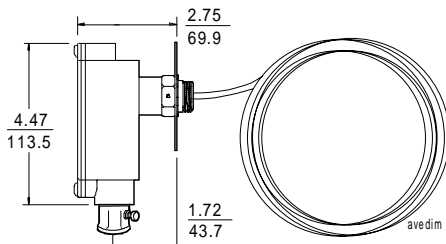
Specifications

TE-6300 Series Temperature Sensor	
Accuracy	
Nickel	±0.34°F @ 70°F (±0.18°C @ 21°C)
Nickel Averaging	±3.0°F @ 70°F (±1.67°C @ 21°C)
Platinum	±0.65°F @ 70°F (±0.36°C @ 21°C) DIN Class B
Platinum Equivalent	Approximately ±1.08°F @ 70°F (±0.56°C @ 21°C)
Thermistor	±0.36°F (±0.2°C) in the range of 32 to 158°F (0 to 70°C)
Temperature Limits	Probe Assembly: -50 to 220°F (-46 to 82°C); Conduit Box: -50 to 122°F (-46 to 50°C)

Product Overview

Duct averaging sensor includes:

- 8 or 17 ft nickel sensor, or 10 or 20 ft platinum sensor
- quick-mount sensor holder
- metal mounting plate with four screws and locknut
- conduit enclosure with cover
- 1/2 in. EMT conduit connector
- two wire nuts

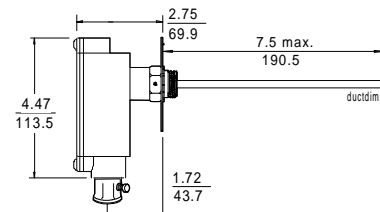


Temperature vs Resistance for the Nickel, Platinum, Platinum Equivalent *, and Thermistor Sensors

* For 100 ohm platinum equivalent sensors, divide the resistance values for the 1,000 ohm platinum sensors by 10.

Duct probe sensor includes:

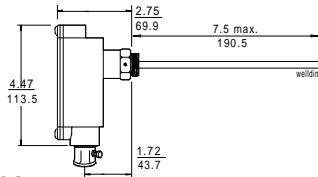
- 8 in. nickel, platinum, or thermistor sensor
- quick mount sensor holder
- metal mounting plate with four screws and locknut
- conduit enclosure with cover
- 1/2 in. EMT conduit adapter
- two wire nuts



TE-6300 Series Temperature Sensor (Continued)

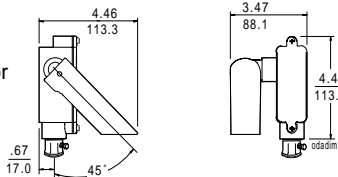
Well insertion sensor includes:

- 6 in. or 8 in. nickel or platinum, 8 in. thermistor
- quick mount sensor holder
- conduit enclosure with cover
- 1/2 in. EMT conduit connector
- wire nuts (2)



Outdoor air sensor includes:

- 3 in. nickel, platinum, or thermistor sensor
- outdoor air shield
- conduit enclosure with cover
- 1/2 in. EMT conduit connector
- wire nuts (2)



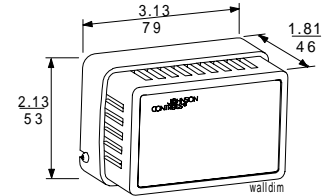
Repair Parts

Code No.	Description
TE-6300-601	8 in. nickel probe
TE-6300-602	8 in. platinum probe
TE-6300-603	3 in. nickel probe
TE-6300-604	3 in. platinum probe
TE-6300-605	Quick-mount sensor holder (10 / package)
TE-6300-606	8 in. thermistor probe
TE-6300-607	3 in. thermistor probe
TE-6300-609	Threadless sensor holder (10 / package)
ADP11A-600R	EMT conduit adapter (10 / package)
T-4000-3139 (a)	White Thermostat Cover

(a) Refer to T-4000 Series Accessories.

Wall mount sensor includes:

- nickel, platinum, or thermistor sensor
- white T-4000 style cover and base with silver faceplate and horizontal logo
- mounting screws (2)
- wall anchors (2)
- wire nuts (2)



Dimensions are given as in./mm

Accessories (Optional)

Code No.	Description
ADP11A-601R	BX adapter (10 / package)
TE-6001-8	Element holder for mounting an averaging sensor (10 / package)
TE-1800-9600	Mounting hardware for mounting wall mount unit to a hand-box
TE-6300-101	12 in. nickel probe that can be cut to the appropriate length
TE-6300-104	12 in. thermistor probe that can be cut to the appropriate length
TE-6300-102	12 in. platinum probe that can be cut to the appropriate length
TQ-6000-1	4-20 mA output transmitter for use with the 100 ohm platinum sensor
WZ-1000-2	6-1/2 in. length, stainless steel well, thermal compound included
WZ-1000-4	6-1/2 in. length, stainless steel well
WZ-1000-5 (a)	4-11/16 in. length, brass well (for TE-631AP-1 and TE-632AP-1 only)

(a) Use the TE-631AP-1 or TE-632AP-1 with these wells.

Selection Chart

Application	Suggested Sensor	Description	Application Notes
Wall Mount	TE-6314P-1 TE-6324P-1 TE-6344P-1	Nickel sensor Platinum sensor 2,2000 ohm thermistor	2-screw wall plate provided for surface mounting. White cover provided. (See Repair Parts chart above for additional covers available.)
Outdoor Air	TE-6313P-1 TE-6323P-1 TE-6343P-1	Nickel, 3 in. probe Platinum, 3 in. probe 2,2000 ohm thermistor, 3 in. probe	Used to sense outside ambient temperature to determine efficient heating and cooling strategies.
Duct Probe	TE-6311P-1 TE-6321P-1 TE-6341P-1	Nickel, 8 in. probe Platinum, 8 in. probe 2,2000 ohm thermistor, 8 in. probe	4-screw mounting plate provided for duct mounting. Can also be used for plenums. Ideal in freezer lockers or where sensor mounting should be located outside of the sensed area. 12 in. probe is available for use in larger ducts.
Duct Averaging	TE-6315P-1 TE-6316P-1 TE-6327P-1 TE-6328P-1 TE-6337P-1 TE-6338P-1	Nickel, 8 ft averaging element Nickel, 17 ft averaging element Platinum, 1,000 ohm, 10 ft averaging element Platinum, 1,000 ohm, 20 ft averaging element Platinum, 100 ohm, 10 ft averaging element Platinum, 100 ohm, 20 ft averaging element	4-screw mounting plate provided for duct mounting. Used in duct where average temperature is needed. Approximately 1 ft of sensor is recommended for each sq ft of duct cross section. TE-6001-8 element holder is recommended when installing an averaging sensor in a duct.
Well Insertion	TE-6312P-1 TE-6322P-1 TE-6342P-1 TE-631AP-1 TE-632AP-1	Nickel, 8 in. probe, threaded holder Platinum, 8 in. probe, threaded holder 2,2000 ohm thermistor, 8 in. probe, threaded holder Note: The 8 in. probes are to be used only with the WZ-1000-2 and WZ-1000-4. Nickel, 6 in. probe, threadless holder Platinum, 6 in. probe, threadless holder Note: The 6 in. probes can to be used only with the WZ-1000-5.	Threaded sensor holder has 1/2 in. NPT threads; threadless holder accommodates set screws. Thermal well should be mounted at an angle so condensation will run out of the well. If not possible, seal the sensor holder and the wiring end of the sensor probe with RTV silicone rubber. 12 in. probe is available for use in longer wells. Compatible Johnson Controls thermal wells are listed in the Accessories (Optional) chart above.

Note: Well sensor probe lengths are longer than accessory well lengths because part of the probe is in the conduit box and sensor holder.