

### Ordering Information

PACKAGING	SENSOR
706 A Die cast enclosure	1 100-ohm platinum RTD
706 B Polycarb plastic enclosure IP-54	3 1,000-ohm platinum RTD
	4 1,000-ohm nickel RTD
	5 1,000-ohm balco RTD
	7 10,000-ohm NTC thermistor
	10 3,000-ohm NTC thermistor
	12 10,000-ohm NTC thermistor
	13 5,000-ohm NTC thermistor
	15 100,000 NTC thermistor
	17 20,000-ohm NTC thermistor
	18 2,252-ohm NTC thermistor
	21 1,800-ohm NTC thermistor

### Dimensions

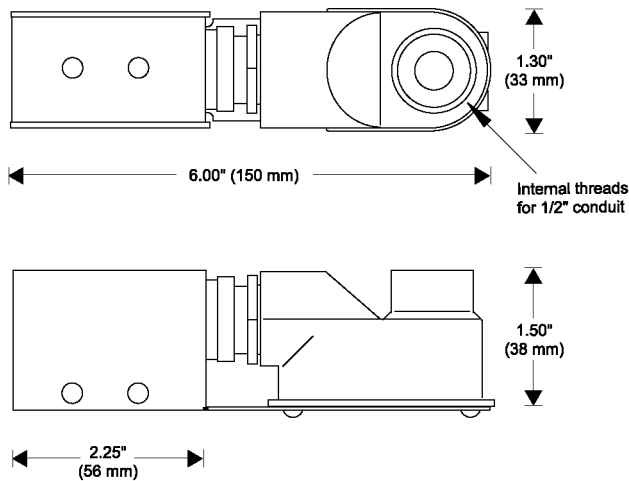


Figure 1. TE 706 A Dimensions

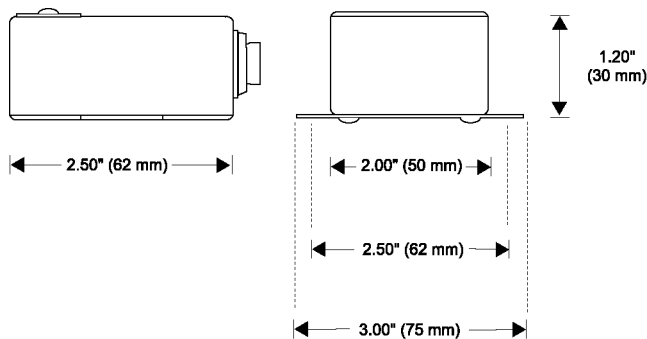


Figure 2. TE 706 B Dimensions

### Specifications

**Platinum RTD Sensors:**  $\pm 0.1\%$  @ 32°F (0°C), Alpha: 385 per DIN 43760

**Nickel RTD Sensors:**  $\pm 0.5^\circ\text{F}$  @ 70°F (21.1°C), 6,000 PPM/K T.C.R.

**Balco RTD Sensors:**  $\pm 0.5^\circ\text{F}$  @ 70°F (21.1°C), 4,300 PPM/K T.C.R.

**Thermistor Sensors:**  $\pm 0.2^\circ\text{C}$  interchangeability @ 77°F (25°C)

**Operating Temperature:** -40°F to 250°F (-40°C to 125°C)

**Probe Material:** 1/4-inch (6.3 mm) O.D., 0.5 mm wall 304 stainless steel

**Plastic Enclosure:** Polycarbonate, 30% glass filled, rated UL 94V-5-0

**Metal Enclosure:** Die cast metal

### Installation

#### Before Installation

- Read these instructions carefully. Failure to do so can result in damage or electrical shock.
- Inspect packaging for signs of damage. If damaged, notify the carrier immediately.
- Verify that the sensor specifications are suitable for the particular application.
- Installers must be trained and qualified technicians.
- **Important:** All wiring must be compatible with applicable codes, ordinances, and instructions.

#### Location

Install the sensor in a location where it will sample the average outdoor air temperature. Installation is recommended along the north side of a building in a shaded area away from devices and exhaust fans and pipes. If possible, mount the sensor below an eaves one foot below the top of the building.

#### Mount the TE 706 A Sensor

1. Remove the two screws from the case and pull the gasket and sun shield off. Set the screws, gasket, and sun shield aside.
2. Thread the outdoor air temperature sensor onto a standard 1/2-inch conduit. Make sure that the element points downward.
3. Connect the wires to the screw terminal block.
4. Reattach the gasket and sun shield to the case and tighten the screws. See Figure 3.

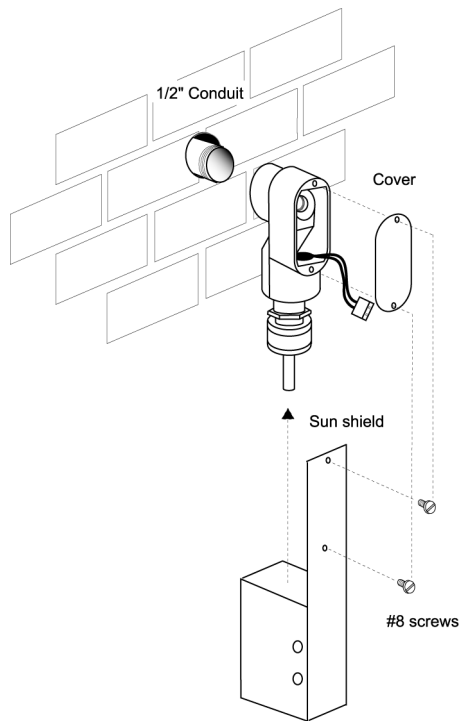


Figure 3. Installing the TE 706 A Sensor

#### Mount the TE 706 B Sensor

1. Hold the sensor against the outside wall where it will be installed and use the flange as a template to mark and drill two holes.
2. Remove the screw from the sensor cover and pull the cover off. Set the screw and cover aside.
3. Connect the wires to the screw terminal block.
4. Reattach the sensor cover and tighten the screw.
5. Fasten the sensor to the outside wall using two screws.

#### Checkout

Allow the sensor to stabilize in the outside air stream for a minimum of five minutes before taking a resistance measurement.

1. Disconnect the sensor lead wires from the controller.
2. Connect an ohmmeter across the lead wires.
3. Ensure that nominal resistance measurements are in accordance with the resistance / temperature curves.
4. Reconnect sensor lead wires to the controller.
5. Check operation of the complete control system.

#### Warranty

See the accompanying data sheet for additional information. For technical or application assistance, contact the nearest office.

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Table 1. Resistance Versus Temperature

°F	°C	Type 1 RTD	Type 3 RTD	Type 4 RTD	Type 5 RTD	Type 7 thermistor	Type 10 thermistor
72	22.2	108.66	1,086.6	1,006.0	1,004.4	11,194	3,392
72.5	22.5	108.76	1,087.6	1,007.5	1,005.5	11,068	3,350
73	22.8	108.87	1,088.7	1,009.0	1,006.6	10,943	3,309
73.5	23	108.98	1,089.8	1,010.5	1,007.6	10,820	3,269
74	23.3	109.09	1,090.9	1,012.0	1,008.7	10,698	3,229
74.5	23.6	109.19	1,091.9	1,013.5	1,009.8	10,578	3,189
75	23.9	109.30	1,093.0	1,015.1	1,011.0	10,459	3,150
75.5	24.1	109.41	1,094.1	1,016.6	1,012.1	10,343	3,112
76	24.4	109.52	1,095.2	1,018.1	1,013.2	10,227	3,074
76.5	24.7	109.62	1,096.2	1,019.6	1,014.3	10,113	3,037
77	25	109.73	1,097.3	1,021.1	1,015.4	10,000	3,000
77.5	25.3	109.84	1,098.4	1,022.6	1,016.5	9,889	2,964
78	25.5	109.95	1,099.5	1,024.1	1,017.6	9,779	2,928
78.5	25.8	110.06	1,100.1	1,025.6	1,018.7	9,671	2,890
79	26.1	110.17	1,101.7	1,027.2	1,019.8	9,563	2,858
79.5	26.4	110.27	1,102.7	1,028.7	1,020.9	9,458	2,823
80	26.7	110.38	1,103.8	1,030.2	1,022.1	9,353	2,789
80.5	27	110.49	1,104.9	1,031.7	1,023.2	9,250	2,756
81	27.2	110.60	1,106.0	1,033.3	1,024.3	9,148	2,723
81.5	27.5	110.70	1,107.0	1,034.8	1,025.4	9,045	2,690
82	27.8	110.81	1,108.1	1,036.3	1,026.5	8,943	2,658

Table 2. Resistance Versus Temperature

°F	°C	Type 12 thermistor	Type 13 thermistor	Type 15 thermistor	Type 17 thermistor	Type 18 thermistor	Type 21 thermistor
72	22.2	11,307	5,654	113,080	22,825	2,546	2,005
72.5	22.5	11,169	5,584	111,680	22,525	2,515	1,983
73	22.8	11,031	5,515	110,300	22,226	2,484	1,962
73.5	23	10,896	5,448	108,960	21,935	2,454	1,941
74	23.3	10,762	5,381	107,620	21,645	2,424	1,920
74.5	23.6	10,631	5,316	106,320	21,362	2,394	1,899
75	23.9	10,501	5,251	105,020	21,080	2,365	1,879
75.5	24.1	10,374	5,188	103,760	20,806	2,336	1,859
76	24.4	10,247	5,124	102,480	20,532	2,308	1,839
76.5	24.7	10,123	5,062	101,240	20,266	2,280	1,819
77	25	10,000	5,000	100,000	20,000	2,252	1,800
77.5	25.3	9,880	4,940	98,800	19,741	2,225	1,791
78	25.5	9,760	4,880	97,600	19,483	2,198	1,762
78.5	25.8	9,643	4,821	96,420	19,232	2,171	1,743
79	26.1	9,526	4,763	95,260	18,981	2,145	1,725
79.5	26.4	9,412	4,706	94,120	18,737	2,119	1,707
80	26.7	9,298	4,649	92,980	18,494	2,094	1,689
80.5	27	9,187	4,616	92,320	18,257	2,069	1,671
81	27.2	9,077	4,583	91,660	18,020	2,044	1,653
81.5	27.5	8,969	4,507	90,140	17,790	2,020	1,636
82	27.8	8,861	4,431	88,620	17,560	1,996	1,619