

# TE-6300 Series Temperature Sensors

## Product Bulletin

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The TE-6300 Temperature Sensor line provides economical solutions for a wide variety of temperature sensing needs, including wall-mount, outdoor-air, duct, strap-mount, well-insertion, duct-averaging, and Variable Air Volume (VAV) flange-mount duct-probe applications. The TE-6300 line offers both a metal and a plastic enclosure for the most popular models.

Sensors are available in the following types:

- 1k ohm thin-film nickel
- 1k ohm nickel averaging
- 1k ohm thin-film platinum
- 100 ohm platinum equivalent averaging
- 1k ohm platinum equivalent averaging
- 2.2k (2,252) ohm thermistor
- 10k ohm thermistor, Johnson Controls® Type II



**Figure 1: TE-6300 Series Temperature Sensors**

Each sensor is packaged with the necessary mounting accessories to maximize ordering and installation ease and reduce both commissioning time and cost.

**Table 1: Features and Benefits**

Features	Benefits
<b>Full Line of Versatile Sensors</b>	Supports all your temperature sensing needs from a single supplier: wall-mount, outdoor-air, duct, duct-averaging, strap-mount, well-insertion, and flange-mount duct-probe.
<b>Single Assembly Ordering</b>	Simplifies ordering; provides a complete assembly in one box.
<b>Models Featuring an Integral NPT Adaptor</b>	Increase sensor connection strength, which eliminates the need for a special adaptor.
<b>Models with a Stainless Steel Sensor Probe</b>	Protect the sensor while increasing corrosion resistance.
<b>Metal Enclosure (TE-63xxM Models Only)</b>	Meets plenum requirements.
<b>Models Featuring a Retainer for the Sensor Holder</b>	Lock the sensor holder into the conduit box.

## Product Overview

**IMPORTANT:** The TE-6300 Series Temperature Sensors are intended to provide an input to equipment under normal operating conditions. Where failure or malfunction of the sensor could lead to personal injury or property damage to the controlled equipment or other property, additional precautions must be designed into the control system. Incorporate and maintain other devices, such as supervisory or alarm systems or safety or limit controls, intended to warn of or protect against failure or malfunction of the sensor.

All TE-6300 Series sensors are two-wire, passive, resistance-output devices.

### **TE-63xxA Models**

The TE-63xxA (adjustable length) models:

- provide a thermoplastic mounting flange and gland nut to adjust the length of the probe
- include two hex-head self-drilling screws for mounting
- come equipped with a 10 ft (3 m) plenum-rated cable with 1/4 in. (6.35 mm) female insulated quick-connect terminations on leads

### **TE-63xxM Models**

The TE-63xxM (metal enclosure) models:

- come with a corrosion-protected steel enclosure with a 0.88 in. (22 mm) hole for a 1/2 in. (12.7 mm) conduit fitting
- include two hex-head self-drilling screws for mounting the duct and duct averaging models
- offer (for well models only) either a direct-mount or 1/2-14 NPT threaded well sensor holder for mounting in TE-6300W Series thermal wells. (Order the thermal well separately.)
- provide optional well sensor holders (order separately) to mount duct models in thermal wells
- meet UL 1995 plenum use requirements
- offer optional accessory kit (order separately) to replace plastic hole plug and wiring bushing to meet International Mechanical Code (IMC) requirements

### **TE-63xxP Models**

The TE-63xxP (plastic enclosure) models:

- provide a thermoplastic conduit box with 1/2-14 NPT female thread for connecting to conduit

- provide aluminum mounting plate and 1/2-14 NPT threaded hub mounting options for the duct and duct-averaging models
- use the 1/2-14 NPT female thread to mount the Outdoor Air models directly to ridged conduit
- provide optional sensor holders (order separately) to mount duct models in thermal wells
- offer an optional accessory metal cover kit (order separately) to replace the plastic cover to meet UL 1995 plenum use requirements
- include a replaceable sensing probe on duct-probe, outdoor-air, and well-insertion models

### **TE-63x4P Wall Mount Models**

The TE-63x4P (plastic enclosure) models:

- come with a white thermoplastic ventilated cover with a brushed aluminum face plate and a steel mounting plate for surface mounting
- include faceplates for both horizontal and vertical mounting
- offer an accessory mounting kit for mounting to a standard electrical box
- offer optional covers

### **TE-63xS Models**

The TE-63xS (Strap-Mount) models:

- provide a 1/4 in. (6.35 mm) diameter stainless steel probe without an enclosure
- include three cable ties for mounting to pipe up to 2-5/8 in. (67 mm) diameter
- come equipped with a 10 ft (3 m) plenum-rated cable
- meet UL 1995 plenum use requirements
- offer an accessory mounting kit for mounting to a pipe up to 11 in. (280 mm) diameter

### **TE-63xxV Models**

The TE-63xxV (VAV flange mount) models:

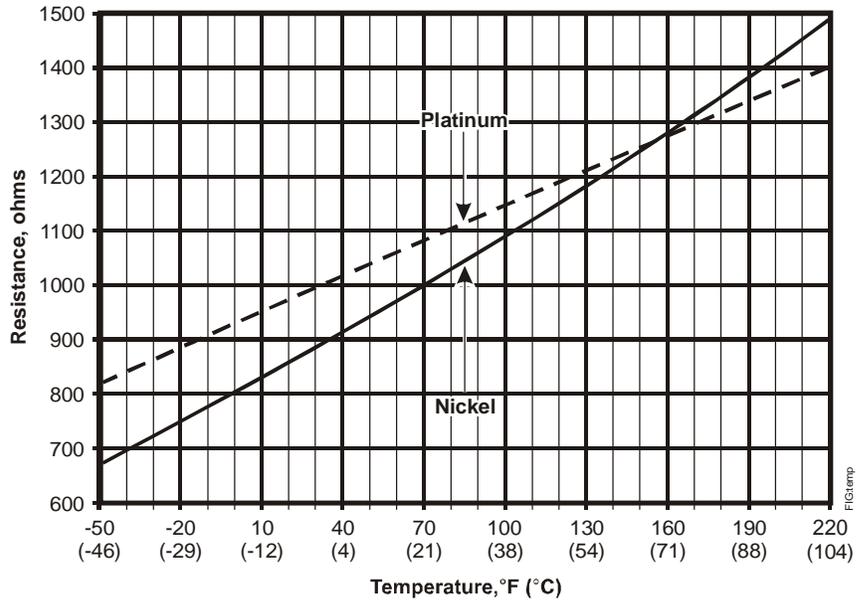
- provide a stainless steel mounting flange with two hex-head self-drilling mounting screws
- come equipped with a 10 ft (3 m) plenum rated cable with 1/4 in. (6.35 mm) female insulated quick-connect terminations on leads
- meet UL 1995 plenum use requirements

**Additional Product Information**

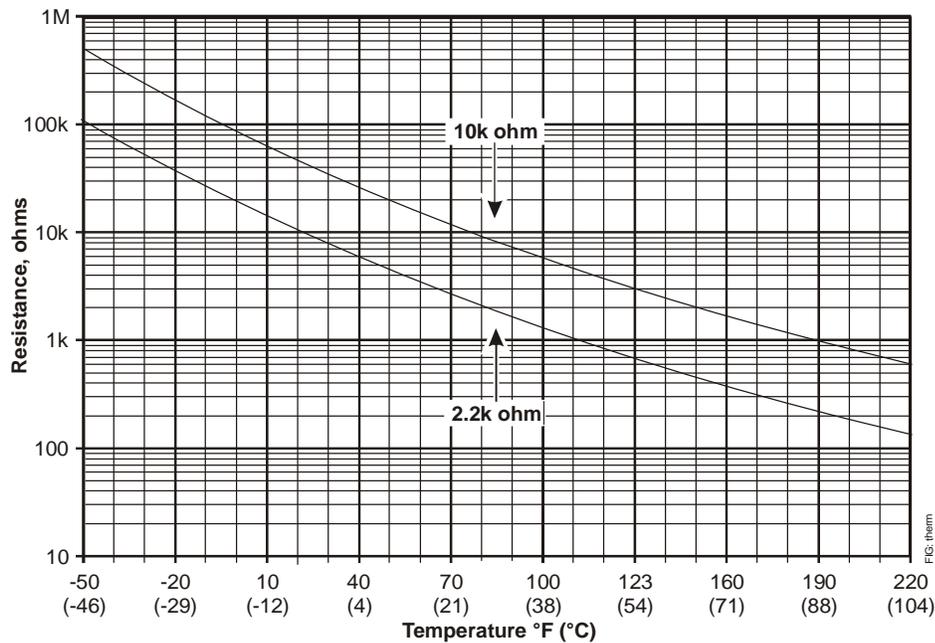
See Figure 2 for nickel and platinum sensor Resistance/Temperature (R/T) response characteristics. See Table 2 for all sensor Temperature/Resistance values.

**Note:** Figure 2 shows 1k ohm platinum sensor characteristic. For 100 ohm platinum sensor characteristic, divide the resistance value by 10.

See Figure 3 for 2.2k and 10k ohm thermistor sensor R/T response characteristics.



**Figure 2: Nickel and Platinum Temperature Response**



**Figure 3: Thermistor Sensor Response**

**Table 2: Nominal Values for: Nickel (Ni), Platinum (Pt)<sup>1</sup>, and Thermistor Sensors**

Temperature		Resistance (ohms)			
°F	°C	1k Ni	1k Pt <sup>1</sup>	Thermistor	
				2.2k	10k
-50	-46	674	821	109,905	489,981
-40	-40	699	843	75,487	366,185
-30	-34	725	865	52,584	233,990
-20	-29	751	887	37,123	165,085
-10	-23	777	908	26,544	117,978
0	-18	803	930	19,210	85,349
10	-12	830	952	14,063	62,464
20	-7	858	974	10,408	46,221
30	-1	885	996	7,783	34,562
40	4	914	1,017	5,879	26,103
50	10	942	1,039	4,482	19,903
60	16	971	1,061	3,449	15,313
70	21	1,000	1,082	2,676	11,883
80	27	1,030	1,104	2,094	9,298
90	32	1,060	1,125	1,651	7,333
100	38	1,090	1,147	1,312	5,827
110	43	1,121	1,168	1,050	4,663
120	49	1,152	1,190	846	3,757
130	54	1,184	1,211	686	3,048
140	60	1,216	1,232	560	2,488
150	66	1,248	1,254	460	2,043
160	71	1,281	1,275	380	1,687
170	77	1,314	1,296	315	1,401
180	82	1,348	1,317	263	1,170
190	88	1,382	1,339	221	982
200	93	1,417	1,360	186	828
210	99	1,452	1,381	158	701
220	104	1,487	1,402	134	597

1. For 100 ohm platinum sensors, divide resistance values by 10.

## Applications

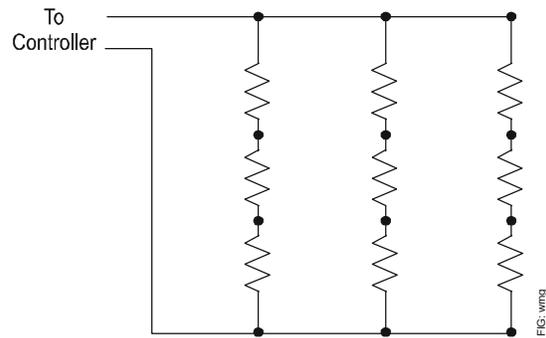
### Averaging Sensing

Series-parallel wiring arrangements of four (2 x 2), nine (3 x 3), sixteen (4 x 4), or more sensors provide an average temperature reading in an area or large duct when one sensor cannot provide a representative reading. (See Figure 4.)

A series-parallel arrangement requires the same number of parallel-connected sensors as there are series-connected sensors. For example:

- with four sensors, connect two parallel legs with two sensors in series in each leg
- with nine sensors, connect three parallel legs with three sensors in series in each leg

**Note:** All sensors in a series-parallel network must be of the same sensor type and value. For example, use all 100 ohm platinum or all 1k ohm nickel sensors.



**Figure 4: Nine-Sensor Series-Parallel Wiring**

For specific TE-6300 Series Temperature Sensor applications, see Table 3.

**Table 3: TE-6300 Series Temperature Sensor Applications (Part 1 of 2)**

Application	Nominal Probe Length, in. (mm)	Sensor Type	Application Notes
<b>Duct Probe</b>	4 (102) 8 (203) 18 (457)	1k ohm Thin-Film Nickel 1k ohm Thin-Film Platinum 2.2k ohm Thermistor 10k ohm Thermistor Type II	<ul style="list-style-type: none"> <li>• Ideal in freezer lockers or for mounting outside of the sensed area.</li> <li>• Available with plastic enclosure, metal enclosure, flange mount, or with mounting bracket for adjustable length.</li> <li>• Use TE-63xxM or TE-63xxV models for plenum applications.</li> <li>• Use TE-6300-613 accessory kit with TE-63xxM models to meet IMC requirements.</li> <li>• Use TE-6001-13 metal cover kit with TE-63xxP models to meet UL 1995 plenum requirements.</li> <li>• Order an optional TE-63xxP model accessory: 12 in. (300 mm) probe.</li> </ul>
<b>Duct Averaging Element</b>	8 ft (2.4 m) 10 ft (3 m) 17 ft (5.2 m) 20 ft (6.1 m)	1k ohm Nickel Wire 100 ohm Platinum Equivalent Wire 1k ohm Platinum Equivalent Wire	<ul style="list-style-type: none"> <li>• Use to sense duct temperature where stratification can occur, such as mixed air ducts.</li> <li>• Duct averaging models come in three styles: plastic enclosure, metal enclosure, or flange mount.</li> <li>• Use about 1 ft (0.3 m) of sensor per sq ft (0.09 m<sup>2</sup>) of duct cross section.</li> <li>• Use a series-parallel sensor network to cover larger ducts.</li> <li>• Use a TE-6001-8 element holder (recommended) when installing an averaging sensor in a duct.</li> <li>• Use TE-63xxM or TE-63xxV models for plenum applications.</li> <li>• Use TE-6300-613 kit with TE-63xxM models to meet IMC requirements.</li> <li>• Use the TE-6001-13 metal cover kit with TE-63xxP models to meet UL 1995 plenum requirements.</li> </ul>
<b>Outdoor Air</b>	3 (76)	1k ohm Thin-Film Nickel 1k ohm Thin-Film Platinum 2.2k ohm Thermistor 10k ohm Thermistor, Type II	<ul style="list-style-type: none"> <li>• Use to sense outside ambient temperature to determine efficient heating and cooling strategies.</li> <li>• Mount the sensor out of direct sunlight and away from exhaust vents or equipment that can cause inaccurate temperature sensing.</li> </ul>
<b>Strap-Mount</b>	3 (76)	1k ohm Thin-Film Nickel 1k ohm Thin-Film Platinum 10k ohm Thermistor, Type II	<ul style="list-style-type: none"> <li>• Clamp the probe directly to a pipe or the device to be sensed.</li> <li>• Mount the probe away from fans or radiant heat that can affect measurement of the sensed device.</li> <li>• Use for plenum applications.</li> <li>• Order an accessory mounting kit or use readily available hardware for pipe up to 11 in. (280 mm) diameter.</li> </ul>

**Table 3: TE-6300 Series Temperature Sensor Applications (Part 2 of 2)**

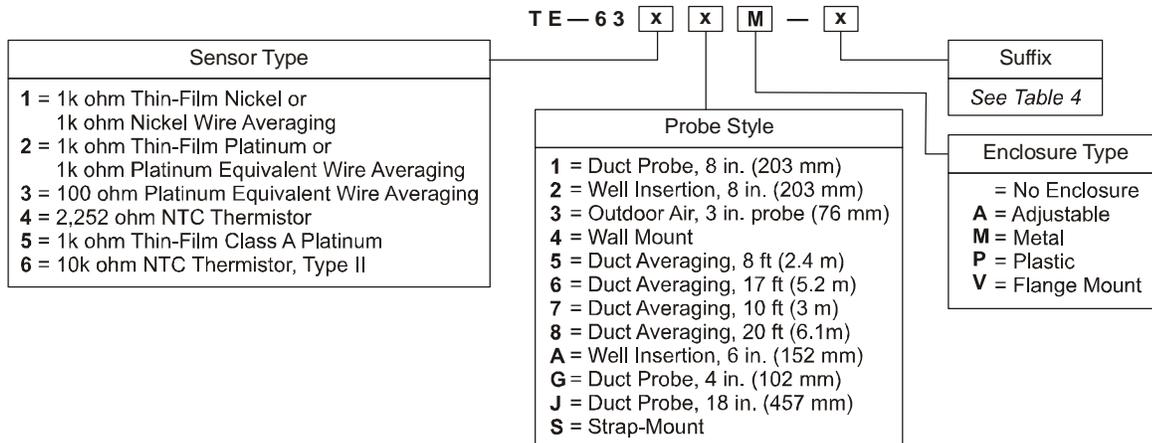
Application	Nominal Probe Length, in. (mm)	Sensor Type	Application Notes
Wall Mount	N/A	1k ohm Thin-Film Nickel 1k ohm Thin-Film Platinum 2.2k ohm Thermistor	<ul style="list-style-type: none"> <li>Use to sense room or space temperature.</li> <li>Order an accessory cover with a thermometer or to match the style of existing installations.</li> <li>Mount the sensor on an inside wall, out of direct sunlight and away from radiant heat.</li> </ul>
Well Insertion Probe	6 (152) 8 (203)	1k ohm Thin-Film Nickel 1k ohm Thin-Film Platinum 2.2k ohm Thermistor 10k ohm Thermistor Type II	<ul style="list-style-type: none"> <li>Available with plastic or metal enclosure.</li> <li>Threaded sensor holder has 1/2-14 NPT threads; threadless holder accommodates setscrew-type wells.</li> <li>Mount the thermal well at an angle so condensation runs out of the well. If not possible, seal the sensor holder and the wiring end of the sensor probe with RTV silicone sealant.</li> <li>Use TE-63xxM models for plenum applications.</li> <li>Use TE-6001-13 metal cover kit with TE-63xxP models to meet UL 1995 plenum requirements.</li> <li>Use the accessory 12 in. (305 mm) probe with the TE-63xxP sensor in longer wells.</li> <li>Order compatible thermal wells, using Table 5 and Table 6 or Table 7.</li> </ul>

**Ordering Information**

To order a TE-6300 Series temperature sensor, contact the nearest Johnson Controls representative. Specify the desired sensor product code number from Table 4 and accessories from Table 5, depending on the model.

**Note:** Use the TE-63xxM or TE-63xxV model to meet plenum requirements where UL1995 rating is accepted, or replace the existing plastic cover on the TE-63xxP models with the TE-6001-13 Metal Cover Kit.

Use the TE-63xxM model and a TE-6300-613 Accessory Kit to replace the plastic bushing to meet International Mechanical Code (IMC) requirements.



**Figure 5: Ordering Template**

**Note:** Not all possible combinations are available. See Table 4 for available models.

**Table 4: Product Ordering (Part 1 of 2)**

Sensor	Mounting Style	Probe Length in. (mm)	Product Code Number	
<b>Nickel (1k ohm)</b>	Adjustable <sup>1</sup>	8 (203)	TE-6311A-1	
		8 ft (2.4 m)	TE-6315M-1	
			TE-6315V-2 <sup>1</sup>	
		17 ft (5.2 m)	TE-6316M-1	
			TE-6316V-2 <sup>1</sup>	
		Duct	4 (102)	TE-631GM-1
	8 (203)		TE-6311M-1	
			TE-6311P-1	
	Flange	4 (102)	TE-631GV-2	
		8 (203)	TE-6311V-2	
			18 (457)	TE-631JM-1
	Outdoor Air	3 (76)	TE-6313P-1	
	Strap-Mount	3 (76)	TE-631S-1	
	Wall <sup>2</sup>	N/A	TE-6314P-1	
	Well	6 (152)	TE-631AM-2	
		8 (203)	TE-6312M-1	
	<b>Platinum (1k ohm)</b>	Adjustable	8 (203)	TE-6351A-1
		Duct	4 (102)	TE-635GM-1
8 (203)			TE-6351M-1	
			TE-6351P-1	
Flange		4 (102)	TE-635GV-2	
		8 (203)	TE-6351V-2	
			18 (457)	TE-635JM-1
Outdoor Air		3 (76)	TE-6353P-1	
Strap-Mount		3 (76)	TE-635S-1	
Wall <sup>2</sup>		N/A	TE-6324P-1	
Well		6 (152)	TE-635AM-2	
		8 (203)	TE-6352M-1	
<b>Platinum Equivalent</b>	1k ohm Averaging <sup>1</sup>	10 ft (3 m)	TE-6327P-1	
		20 ft (6.1 m)	TE-6328P-1	
	100 ohm Averaging <sup>1</sup>	10 ft (3 m)	TE-6337P-1	
		20 ft (6.1 m)	TE-6338P-1	

**Table 4: Product Ordering (Part 2 of 2)**

Sensor	Mounting Style	Probe Length in. (mm)	Product Code Number
<b>Thermistor (2.2k ohm)</b>	Adjustable	8 (203)	TE-6341A-1
	Duct	8 (203)	TE-6341P-1
	Flange	4 (102)	TE-634GV-2
		8 (203)	TE-6341V-2
	Outdoor Air	3 (76)	TE-6343P-1
	Wall <sup>2</sup>	N/A	TE-6344P-1
	Well	8 (203)	TE-6342M-1
		6 (152)	TE-634AM-2
<b>Thermistor (10k ohm) Type II</b>	Adjustable	8 (203)	TE-6361A-1
	Duct	4 (102)	TE-636GM-1
		8 (203)	TE-6361M-1
			TE-6361P-1
	Flange	18 (457)	TE-636JM-1
		4 (102)	TE-636GV-2
		8 (203)	TE-6361V-2
	Outdoor Air	3 (76)	TE-6363P-1
	Strap-Mount	3 (76)	TE-636S-1
	Well	6 (152)	TE-636AM-2
8 (203)		TE-6362M-1	

1. Two TE-6001-8 Element Holders come with the platinum equivalent averaging sensors. Order separately to use with a nickel averaging sensor.
2. Order the TE-1800-9600 Mounting Hardware separately to mount the wall unit to a wallbox.

**Table 5: Optional Accessories<sup>1</sup>**

Product Code Number	Description
F-1000-182	Thermal Conductive Grease for element wells [8 oz.(.23 kg)]
T-4000-xxxx	Wall Mount Cover (see Table 9)
T-4000-119	Allen Head Tool for Wall Mount Cover Screws (order in multiples of 30)
TE-1800-9600	Mounting Hardware for mounting the wall mount unit to a wall box
TE-6001-8	Element Holder for mounting an averaging sensor (order in multiples of 10)
TE-6001-13	Metal Cover and Gasket Kit (5 per package)
TE-6300-101	12 in. (305 mm) (1k ohm) Nickel Probe (cut to an appropriate length) <sup>2</sup>
TE-6300-105	12 in. (305 mm) (1k ohm) Platinum Class A Probe (cut to an appropriate length) <sup>2</sup>
TE-6300-103	1/2-14 NPT Plastic Sensor Holder without retainer (order in multiples of 10)
TE-6300-104	12 in. (305 mm) (2.2k ohm) Thermistor Probe (cut to an appropriate length) <sup>2</sup>
TE-6300-613	IMC Kit, Metal Knockout Plug, Metal Clamp Connector (order in multiples of 10)
TE-6300-614	Cable Tie Mounting Kit, 0.50 to 2.625 in. (12.7 to 66.7 mm) Bundle Diameter (10 per package)
TE-6300-615	Cable Tie Mounting Kit, 11 in. (280 mm) Maximum Bundle Diameter
TQ-6000-1	4 to 20 mA Output Transmitter for use with the 100 ohm platinum sensor
TE-6300W-102	6 in. (152 mm) Stainless Steel Well (direct mount)
TE-6300W-101	6 in. (152 mm) Brass Well (direct mount with thermal grease included)
TE-6300W-110	8 in. (203 mm) Stainless Steel Well

1. For accessory usage, see Table 6, Table 7, and Table 8.
2. Cut 12 in. (305 mm) probes to a minimum of 3 in. (76 mm).

**Table 6: Typical Accessory and Replacement Part Usage for TE-6300M Models**

Product Code Number	Description	TE-6311M-1	TE-6312M-1	TE-6315M-1	TE-6316M-1	TE-631AM-2	TE-631GM-1	TE-631JM-1	TE-6351M-1	TE-6352M-1	TE-635AM-2	TE-635GM-1	TE-635JM-1	TE-6361M-1	TE-6362M-1	TE-636AM-2	TE-636GM-1	TE-636JM-1	TE-634AM-1	
		TE-6001-8	Averaging Bracket			X	X													
TE-6300-611	Brass 1/2-14 NPT Holder		X							X					X					
TE-6300-613	IMC Kit	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
TE-6300W-110	8 in. (203 mm) Stainless Steel Well		X							X					X					
TE-6300W-101	6 in. (152 mm) Brass Well (direct mount with thermal grease included)					X					X					X				X
TE-6300W-102	6 in. (152 mm) Stainless Steel Well (direct mount)					X					X					X				X

**Table 7: Typical Accessory and Replacement Part Usage for TE-6300P Models**

Product Code Number	Description	TE-6311P-1	TE-6313P-1	TE-6314P-1	TE-6351P-1	TE-6353P-1	TE-6324P-1	TE-6327P-1	TE-6328P-1	TE-6337P-1	TE-6338P-1	TE-6341P-1	TE-6343P-1	TE-6344P-1	TE-6361P-1	TE-6363P-1
T-4000-119	Allen Head Tool			X			X								X	
TE-1800-9600	Mounting Hardware			X			X								X	
TE-6001-8	Averaging Bracket							X	X	X	X					
TE-6001-13	Metal Cover Kit	X	X		X	X		X	X	X	X	X	X		X	X
TE-6300-101	12 in. (305 mm), 1k ohm Nickel Probe	X														
TE-6300-105	12 in. (305 mm), 1k ohm Platinum Class A Probe				X											
TE-6300-104	12 in. (305 mm), 2.2k ohm Thermistor Probe											X				
TE-6300-601	8 in. (203 mm), 1k ohm Nickel Probe	X														
TE-6300-616	8 in. (203 mm), 1k ohm Platinum Class A Probe				X											
TE-6300-603	3 in. (76 mm), 1k ohm Nickel Probe		X													
TE-6300-617	3 in. (76 mm), 1k ohm Platinum Class A Probe					X										
TE-6300-605	Plastic 1/2-14 NPT Holder	X			X							X			X	X
TE-6300-606	8 in. (203 mm), 2.2k ohm Thermistor Probe											X				
TE-6300-607	3 in. (76 mm), 2.2k ohm Thermistor Probe												X			
TQ-6000-1	4 to 20 mA Output Transmitter									X	X					

**Table 8: Typical Accessory and Replacement Part Usage for TE-63xS Models**

Product Code Number	Description
F-1000-182	Thermal Conductive Grease for element wells, (8 oz.)
TE-6300-614	Cable Tie Mounting Kit, 0.50 to 2.625 in. (12.7 to 66.7 mm) Bundle Diameter (10 per package)
TE-6300-615	Cable Tie Mounting Kit, 11 in. (280 mm) Maximum Bundle Diameter

**Table 9: T-4000 Covers Available for the Wall-Mount TE-63x4P Series**

Product Code Number	Horizontal Johnson Controls Logo	Vertical Johnson Controls Logo	Thermometer, with °F/°C Scale	Faceplate/Cover Color
T-4000-2138 <sup>1</sup>				Brushed Aluminum/Beige
T-4000-2139	X			
T-4000-2140	X		X	
T-4000-2144		X		Brown and Gold/Beige
T-4000-2639	X			
T-4000-2640	X		X	
T-4000-2644		X		Brushed Aluminum/White
T-4000-3139	X			
T-4000-3140	X		X	
T-4000-3144		X		

1. Without Johnson Controls logo

## Repair Information

If the TE-63xxA, TE-63xxM, TE-63xS, or TE-63xxV Series temperature sensor fails to operate within its specifications, replace the unit. For a replacement temperature sensor, see Table 4 and contact the nearest Johnson Controls representative. For a replacement sensor probe for TE-63xxP duct, well, and outdoor-air models, see Table 10.

**Table 10: Replacement Parts (Part 1 of 2)**

Product Code Number	Description
TE-6300-601	8 in. (203 mm), 1k ohm Nickel Probe
TE-6300-616	8 in. (203 mm), 1k ohm Platinum Class A Probe
TE-6300-603	3 in. (76 mm), 1k ohm Nickel Probe
TE-6300-617	3 in. (76 mm), 1k ohm Platinum Class A Probe
TE-6300-605	1/2-14 NPT Threaded Plastic Sensor Holder with Retainer (10 per package)

**Table 10: Replacement Parts (Part 2 of 2)**

Product Code Number	Description
TE-6300-606	8 in. (203 mm), 2.2k ohm Thermistor Probe
TE-6300-607	3 in. (76 mm), 2.2k ohm Thermistor Probe
TE-6300-609	Threadless Plastic Sensor Holder with Retainer (10 per package)
TE-6300-611	1/2-14 NPT Threaded Brass Sensor Holder (Order in multiples of 10)
TE-6300-612	Threadless Brass Sensor Holder (Order in multiples of 10)

## Technical Specifications

### TE-6300 Series Temperature Sensors (Part 1 of 3)

<b>Sensor Reference Resistance</b>	1k ohm Nickel	1k ohms at 70°F (21°C)
	1k ohm Nickel Averaging	
	1k ohm Platinum	1k ohms at 32°F (0°C)
	100 ohm Platinum Averaging	100 ohms at 32°F (0°C)
	1k ohm Platinum Averaging	1k ohms at 32°F (0°C)
	2.2k ohm Thermistor	2,252 ohms at 77°F (25°C)
	10k ohm Thermistor	10.0k ohms at 77°F (25°C)
<b>Sensor Accuracy</b>	1k ohm Nickel	±0.34F° at 70°F (±0.19C° at 21°C)
	1k ohm Nickel Averaging	±3.4F° at 70°F (±1.9C° at 21°C)
	1k ohm Platinum Class A	±0.35F° at 70°F (±0.19C° at 21°C), DIN Class A
	1k ohm Platinum Class B	±0.73F° at 70°F (±0.41C° at 21°C), DIN Class B
	100 ohm Platinum Averaging	±1.0F° at 70°F (±0.58C° at 21°C)
	1k ohm Platinum Averaging	
	2.2k ohm Thermistor	±0.36F° (±0.2C°) in the range: 32 to 158°F (0 to 70°C)
10k ohm Thermistor	±0.9F° (±0.5C°) in the range: 32 to 158°F (0 to 70°C)	
<b>Sensor Temperature Coefficient (see Table 2)</b>	1k ohm Nickel	Approximately 3 ohms/F° (5.4 ohms/C°)
	1k ohm Nickel Averaging	
	1k ohm Platinum	Approximately 2 ohms/F° (3.9 ohms/C°) 3850 ppm/K
	100 ohm Platinum Averaging	Approximately 0.2 ohms/F° (0.39 ohms/C°)
	1k ohm Platinum Averaging	Approximately 2 ohms/F° (3.9 ohms/C°)
	2.2k ohm Thermistor	Nonlinear, Negative Temperature Coefficient (NTC)
	10k ohm Thermistor	Nonlinear NTC, Johnson Controls Type II
<b>Electrical Connection</b>	TE-63xxM	22 AWG (0.6 mm diameter) x 6 in. (152 mm) long
	TE-63xxP	
	TE-63xxP Nickel Averaging	18 AWG (1.0 mm diameter) x 6 in. (152 mm) long
	TE-63xS	22 AWG (0.6 mm diameter) x 10 ft (3 m) long plenum-rated cable
	TE-63xxA, TE-63xxV	22 AWG (0.6 mm diameter) x 10 ft (3 m) long plenum-rated cable with 0.25 in. (6.35 mm) female quick-connect terminals

### TE-6300 Series Temperature Sensors (Part 2 of 3)

<b>Materials</b>	<b>Probes</b>	Nickel Averaging: 0.094 in. (2.4 mm) Outside Diameter (O.D.) copper tubing Nickel Averaging Adaptor 0.25 in. (6.35 mm) O.D. Brass Platinum Averaging Probe: 0.19 in. (4.8 mm) Aluminum tubing All Others (except Averaging):0.25 in. (6.35 mm) O.D. Stainless Steel
	<b>TE-63xxA</b>	Mounting Adapter Plate and Gland: Thermoplastic
	<b>TE-63xxM</b>	Enclosure: Corrosion-Protected Steel Well Sensor Holder: 0.875 in. (22.2 mm) Hex Brass
	<b>TE-63xxP</b>	Conduit box and Shield: Rigid Thermoplastic Mounting Plate: Aluminum Sensor Holder: Rigid Thermoplastic Wall Mount Base Plate: Corrosion-Protected Steel Wall Mount Cover: Rigid Thermoplastic (White) Wall Mount Face Plate: Brushed Aluminum
	<b>TE-63xxV</b>	Mounting Flange: Stainless Steel
<b>Operating Conditions</b>	<b>TE-63xxA</b>	-50 to 140°F (-46 to 60°C)
	<b>TE-63xxM</b>	-50 to 220°F (-46 to 104°C)
	<b>TE-63xxP</b>	Enclosure: -50 to 122°F (-46 to 50°C) Sensor Probe: -50 to 220°F (-46 to 104°C)
	<b>TE-63xS</b>	Sensor Probe: -50 to 220°F (-46 to 104°C)
	<b>TE-63xxV</b>	Wire Harness: -50 to 122°F (-46 to 50°C)
<b>Shipping Weight</b>	<b>TE-63xxA</b>	0.2 lb (0.09 kg)
	<b>TE-63xxM</b>	Duct Averaging: 0.9 lb (0.41 kg) Duct Mount: 0.4 lb (0.18 kg) Well Insertion: 0.5 lb (0.23 kg)
	<b>TE-63xxP</b>	Duct Averaging: 0.5 lb (0.23 kg) Duct Mount: 0.4 lb (0.18 kg) Outdoor Air: 0.5 lb (0.23 kg) Wall Mount: 0.2 lb (0.09 kg) Well Insertion: 0.35 lb (0.16 kg)
	<b>TE-63xS</b>	Strap-Mount: 0.2 lb (0.09 kg)
	<b>TE-63xxV</b>	Duct Averaging: 0.7 lb (0.32 kg) Duct Mount: 0.2 lb (0.09 kg)

### TE-6300 Series Temperature Sensors (Part 3 of 3)

Dimensions (H x W x D)	TE-63xxA		2.17 in. (55 mm) diameter plus 4 or 8 in. (102 or 203 mm) element
	TE-63xxM	Duct Averaging:	1.87 x 1.87 x 1.80 in. (47.5 x 47.5 x 45.8 mm) plus 8 or 17 ft (2.4 or 5.2 m) element
		Duct Mount:	1.87 x 1.87 x 1.80 in. (47.5 x 47.5 x 45.8 mm) plus 4, 8, or 18 in. (102, 203, or 457 mm) element
		Well Insertion:	1.87 x 1.87 x 1.80 in. (47.5 x 47.5 x 45.8 mm) plus 6 or 8 in. (152 or 203 mm) element
	TE-63xxP	Duct Averaging:	5.97 x 1.38 x 2.75 in. (152 x 35 x 70 mm) plus 8, 10, 17, or 20 ft (2.4, 3.0, 5.2, or 6.1 m) element
	Duct Mount:	5.97 x 1.38 x 2.75 in. (152 x 35 x 70 mm) plus 6 or 8 in. (152 or 203 mm) probe	
	Outdoor Air:	5.97 x 3.47 x 4.46 in. (152 x 88 x 113 mm)	
	Wall Mount:	2.09 x 3.12 x 1.80 in. (53 x 79 x 46 mm)	
	Well Insertion:	5.97 x 1.38 x 2.75 in. (152 x 35 x 70 mm) plus 6 or 8 in. (152 or 203 mm) probe	
TE-63xS	Strap-Mount:		0.25 in. (6.4 mm) diameter x 3.00 in. (76 mm) long
TE-63xxV	Duct Averaging:		2.25 x 1.50 in. (57 x 38 mm) plus 8 or 17 ft (2.4 or 5.2 m) element
	Duct Mount:		2.25 x 1.50 in. (57 x 38 mm) plus 4 or 8 in. (102 or 203 mm) element

*The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the local Johnson Controls office. Johnson Controls, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.*



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