

TE-6300 Series Temperature Sensors Catalog Page

Description

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 VAV Modular Assembly (VMA) 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

Refer to the TE-6300 Series Temperature Sensors Product Bulletin (LIT-216320) for important product application information.

Features and Benefits

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

- **Full Line of Versatile Sensors**—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.
- **Single Assembly Ordering**—Simplifies ordering; provides a complete assembly in one box.
- **Models Featuring an Integral National Pipe Thread (NPT) Adaptor**—Increase sensor connection strength, which eliminates the need for a special adaptor.
- **Models with a Stainless Steel Sensor Probe**—Protect the sensor while increasing corrosion resistance.
- **Metal Enclosure (TE-63xxE, TE-63xxM, and TE-63xxV Models)**—Meets plenum requirements.
- **Models Featuring a Retainer for the Sensor Holder**—Allow you to lock the sensor holder into the conduit box.
- **Brushed Stainless Steel Mounting Plate**—Offers a durable, aesthetically pleasing design.
- **Low Profile Flush Mount Design (TE-63xxF Models)**—Provides a tamper-proof installation ideally suited for schools, sporting complexes, retailers, prisons, and more.

All TE-6300 Series Temperature 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) internal thread insulated quick-connect terminations on leads

TE-63xxE Models

The TE-63xxE (economizer mount) models:

- provide a stainless steel mounting flange
- include two hex-head self-drilling screws for mounting
- meet UL 1995 plenum use requirements

TE-63xxF Models

The TE-63xxF (flush mount) models:

- provide a low profile when installed in an electrical box
- thermally isolate sensor from the wall with a foam pad
- offer a rugged stainless steel cover
- provide 22 AWG (0.6 mm diameter) lead wires with low voltage installation

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 either a direct-mount or 1/2-14 NPT threaded well sensor holder for mounting in TE-6300W Series Thermowells (well models; order the thermowell separately)
- provide optional well sensor holders (order separately) to mount duct models in thermowells
- 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 internal NPT for connecting to conduit
- provide aluminum mounting plate and 1/2-14 internal NPT hub mounting options for the duct and duct-averaging models
- use the 1/2-14 internal NPT to mount the outdoor air models directly to rigid conduit
- include sensor holders to mount duct models in thermowells (order thermowell separately)
- offer an optional accessory metal cover and gasket kit (order separately) to replace the plastic cover to meet UL 1995 plenum

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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) in 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) in 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) internal thread insulated quick-connect terminations on leads
- meet UL 1995 plenum use requirements

Repair Information

If the TE-6300 Series Temperature Sensor fails to operate within its specifications, replace the unit. For information on replacement temperature sensors and replacement sensor probes, refer to the TE-6300 Series Temperature Sensors Product Bulletin (LIT-216320).

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Selection Chart

TE-6300 Temperature Sensor Models (Part 1 of 2)

Sensor	Mounting Style	Probe Length in. (mm)	Product Code Number	
Nickel (1k ohm)	Adjustable	8 (203)	TE-6311A-1	
		Averaging ¹	8 ft (2.4 m)	TE-6315M-1
				TE-6315P-1
				TE-6315V-2
			17 ft (5.2 m)	TE-6316M-1
			TE-6316P-1	
		TE-6316V-2		
	Duct	4 (102)	TE-631GM-1	
		8 (203)	TE-6311M-1	
			TE-6311P-1	
		18 (457)	TE-631JM-1	
	Flange (VAV)	4 (102)	TE-631GV-2	
		8 (203)	TE-6311V-2	
	Flush	N/A	TE-6310F-0	
			TE-6310F-1	
	Outdoor air	3 (76)	TE-6313P-1	
	Strap-mount	3 (76)	TE-631S-1	
	Wall ²	N/A	TE-6314P-1	
	Well	6 (152)	TE-631AM-1 ³	
			TE-631AM-2	
TE-631AP-1				
8 (203)		TE-6312M-1		
		TE-6312P-1		
Platinum (1k ohm)	Adjustable	8 (203)	TE-6351A-1	
	Duct	4 (102)	TE-635GM-1	
		8 (203)	TE-6351M-1	
			TE-6351P-1	
		18 (457)	TE-635JM-1	
	Flange (VAV)	4 (102)	TE-635GV-2	
		8 (203)	TE-6351V-2	
	Flush	N/A	TE-6350F-0	
			TE-6350F-1	
	Outdoor air	3 (76)	TE-6353P-1	
	Strap-mount	3 (76)	TE-635S-1	
	Wall ²	N/A	TE-6324P-1	
	Well	6 (152)	TE-635AM-1 ³	
			TE-635AM-2	
			TE-635AP-1	
		8 (203)	TE-6352M-1	
	TE-6352P-1			

TE-6300 Temperature Sensor Models (Part 2 of 2)

Sensor	Mounting Style	Probe Length in. (mm)	Product Code Number
Platinum Equivalent	1k ohm Averaging ¹	10 ft (3 m)	TE-6327P-1
		20 ft (6.1 m)	TE-6328P-1
	100 ohm Averaging ¹	10 ft (3 m)	TE-6337P-1
		20 ft (6.1 m)	TE-6338P-1
Thermistor (2.2k ohm)	Adjustable	8 (203)	TE-6341A-1
	Duct	8 (203)	TE-6341P-1
	Flange (VAV)	4 (102)	TE-634GV-2
		8 (203)	TE-6341V-2
	Outdoor Air	3 (76)	TE-6343P-1
	Wall ²	N/A	TE-6344P-1
	Well	6 (152)	TE-634AM-2
		8 (203)	TE-6342M-1
	Thermistor (10k ohm) Type II	Adjustable	8 (203)
Duct		4 (102)	TE-636GM-1
		8 (203)	TE-6361M-1
			TE-6361P-1
		18 (457)	TE-636JM-1
Flange (VAV)		4 (102)	TE-636GV-2
		8 (203)	TE-6361V-2
Flange (economizer)		2 (51)	TE-6369E-2
		6 (152)	TE-636ME-2
		8 (203)	TE-6361E-2
		12 (305)	TE-636NE-2
Flush		N/A	TE-6360F-0
			TE-6360F-1
Outdoor air		3 (76)	TE-6363P-1
Strap-mount		3 (76)	TE-636S-1
Well		6 (152)	TE-636AM-1 ³
	8 (203)	TE-636AM-2	
	TE-6362M-1		

- Two TE-6001-8 Element Holders come with the platinum equivalent averaging sensors. Order separately to use with a nickel averaging sensor.
- Order the TE-1800-9600 Mounting Hardware separately to mount the wall unit to a wallbox.
- TE-631AM-1, TE-635AM-1, and TE-636AM-1 include TE-6300-612 Threadless Brass Sensor Holder/Well Adaptor for retrofit to TE-6300W-103 or WZ-1000-5 Thermowells.

Optional Accessories (Part 1 of 2)

Product Code Number	Description
F-1000-182	Thermal conductive grease for element wells (8 oz. [0.23 kg])
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	Averaging sensor mounting bracket (order in multiples of ten)
TE-6001-13	Metal cover and gasket kit (order in multiples of five)
TE-6300-101	12 in. (305 mm) 1k ohm nickel probe (cut to an appropriate length) ¹
TE-6300-103	1/2-14 NPT plastic sensor holder without retainer (order in multiples of ten)
TE-6300-105	12 in. (305 mm) 1k ohm platinum Class A probe (cut to an appropriate length) ¹
TE-6300-601	8 in. (203 mm) 1k ohm nickel probe
TE-6300-603	3 in. (76 mm) 1k ohm nickel probe
TE-6300-605	1/2-14 NPT threaded plastic sensor holder/well adaptor with retainer (order in multiples of ten)

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Optional Accessories (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-6300-611	1/2-14 NPT threaded brass sensor holder/well adaptor (order in multiples of ten)
TE-6300-612	Threadless brass sensor holder/well adaptor (order in multiples of ten)
TE-6300-613	IMC kit with metal plugs and clamp connector (order in multiples of ten)
TE-6300-614	Cable tie mounting kit, 0.50 to 2.625 in. (12.7 to 66.7 mm) bundle diameter (order in multiples of ten)
TE-6300-615	Cable tie mounting kit, 11 in. (280 mm) maximum bundle diameter
TE-6300-616	8 in. (203 mm) 1k ohm platinum Class A probe
TE-6300-617	3 in. (76 mm) 1k ohm platinum Class A probe
TQ-6000-1	4 to 20 mA output transmitter for use with the 100 ohm platinum sensor
TE-6300W-101 ²	Thermowell, brass with copper bulb, 2.38 in. (60.5 mm) immersion depth, with thermal grease, direct mount, no adaptor required, for use with 6 in. (150 mm) probe model TE-63xAM-2
TE-6300W-102 ²	Thermowell, stainless steel, 2.38 in. (60.5 mm) immersion depth, without thermal grease, direct mount, no adaptor required, for use with 6 in. (150 mm) probe model TE-63xAM-2
TE-6300W-103	Thermowell, brass with copper bulb, 2.38 in. (60.5 mm) immersion depth, with thermal grease, threadless adaptor required, for use with 6 in. (150 mm) probe models TE-63xAM-1 (adaptor included) and TE-63xAP-1 (adaptor included)
TE-6300W-110	Thermowell, stainless steel, 4.50 in. (114.3 mm) immersion depth, without thermal grease, 1/2-14 NPT adaptor required, for use with 8 in. (200 mm) probe models TE-63x2M-1 (adaptor included) and TE-63x2P-1 (adaptor included)

- Cut 12 in. (305 mm) probes to a minimum of 3 in. (76 mm).
- Direct-mount thermowells TE-6300W-101 and TE-6300W-102 can be used only with the TE-6300M Sensors.

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 ¹				Brushed aluminum/beige
T-4000-2139	■			
T-4000-2140	■		■	
T-4000-2144		■		Brown and gold/beige
T-4000-2639	■			
T-4000-2640	■		■	
T-4000-2644		■		Brushed aluminum/white
T-4000-3139	■			
T-4000-3140	■		■	
T-4000-3144		■		

- Without Johnson Controls logo

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Technical Specifications

TE-6300 Series Temperature Sensors (Part 1 of 2)		
Sensor Reference Resistance	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)
Sensor Accuracy	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 (TE-635xx)	EN 60751 Class A, ± [0.15 + 0.002 * T °C], ±0.19C° at 21°C (±0.35F° at 70°F)
	100 ohm platinum Class A	
	1k ohm platinum Class B (TE-632xx)	EN 60751 Class B, ± [0.30 + 0.005 * T °C], ±0.41C° at 21°C (±0.73F° at 70°F)
	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)	
Sensor Temperature Coefficient	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°) 3,850 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)
Electrical Connection	10k ohm thermistor	Nonlinear NTC, Johnson Controls Type II
	TE-63xxE	22 AWG (0.6 mm diameter) x 6 in. (152 mm) long
	TE-63xxM	
	TE-63xxP	
	TE-63xxF	22 AWG (0.6 mm diameter) x 12 ft (3 m) braided-copper wires, low voltage insulation, half-stripped ends
	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	22 AWG (0.6 mm diameter) x 10 ft (3 m) long plenum-rated cable, with 2-position plug terminal block for 1/4 in. (6.35 mm) external tab terminals on 0.197 in. (5 mm) centers
Materials	TE-63xxV	
	Probes	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: 0.25 in. (6.35 mm) O.D. stainless steel
	TE-63xxA	Mounting adaptor plate and gland: thermoplastic
	TE-63xxF	Flush mount: stainless steel
	TE-63xxM	Enclosure: corrosion-protected steel Well sensor holder: 0.875 in. (22.2 mm) hex brass
	TE-63xxP	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
	TE-63xxE	Mounting flange: stainless steel
Operating Conditions	TE-63xxV	
	TE-63xxA	-50 to 140°F (-46 to 60°C)
	TE-63xxF	32 to 104°F (0 to 40°C)
	TE-63xxE	-50 to 220°F (-46 to 104°C)
	TE-63xxM	
	TE-63xxP	Enclosure: -50 to 122°F (-46 to 50°C) Sensor probe: -50 to 220°F (-46 to 104°C)
TE-63xS	Sensor probe: -50 to 220°F (-46 to 104°C)	
TE-63xxV	Wire harness: -50 to 122°F (-46 to 50°C)	

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TE-6300 Series Temperature Sensors (Part 2 of 2)		
Shipping Weight	TE-63xxA	0.2 lb (0.09 kg)
	TE-63xxE	
	TE-63xxF	0.25 lb (113.4 kg)
	TE-63xxM	Duct averaging: 0.9 lb (0.41 kg) Duct mount: 0.4 lb (0.18 kg) Well insertion: 0.5 lb (0.23 kg)
	TE-63xxP	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)
	TE-63xS	Strap mount: 0.2 lb (0.09 kg)
	TE-63xxV	Duct averaging: 0.7 lb (0.32 kg) Duct mount: 0.2 lb (0.09 kg)
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-63xxE	Duct mount: 2.5 x 1.50 in. (57 x 38 mm) plus 2, 6, 8, or 12 in. (51, 152, 203, or 305 mm) element
	TE-63xxF	Flush mount: 4-1/2 x 2-3/4 in. (114 x 70 mm)
	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