



TE-63xS Series Strap-Mount Temperature Sensors

Installation Instructions

TE-631S-1, TE-635S-1

TE-636S-1

Part No. 24-4034-239, Rev. D

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Applications

IMPORTANT: The TE-63xS Series Strap-Mount Temperature Sensors is 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.

IMPORTANT : Le TE-63xS Series Strap-Mount Temperature Sensor est destiné à transmettre des données entrantes à un équipement dans des conditions normales de fonctionnement. Lorsqu'une défaillance ou un dysfonctionnement du sensor risque de provoquer des blessures ou d'endommager l'équipement contrôlé ou un autre équipement, la conception du système de contrôle doit intégrer des dispositifs de protection supplémentaires. Veiller dans ce cas à intégrer de façon permanente d'autres dispositifs, tels que des systèmes de supervision ou d'alarme, ou des dispositifs de sécurité ou de limitation, ayant une fonction d'avertissement ou de protection en cas de défaillance ou de dysfonctionnement du sensor.

Installation

IMPORTANT: Do not install the TE-63xS Series Strap-Mount Temperature Sensor probe in ambient temperatures beyond the specified -50 to 220°F (-46 to 104°C) temperature range. Installing the temperature sensor in ambient temperatures beyond this range may damage the unit and void the warranty.

Dimensions

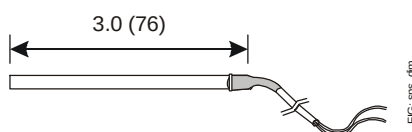


Figure 1: Sensor Dimensions, in. (mm)

Mounting

Location Considerations

Consider the following mounting location guidelines:

- Avoid areas subject to excessive vibration, electrical noise, direct sunlight, or the effects of radiant heat.
- Keep electrical wiring as short as possible to minimize temperature error.

Mounting the Sensor

See Figure 2 and mount the temperature sensor as follows:

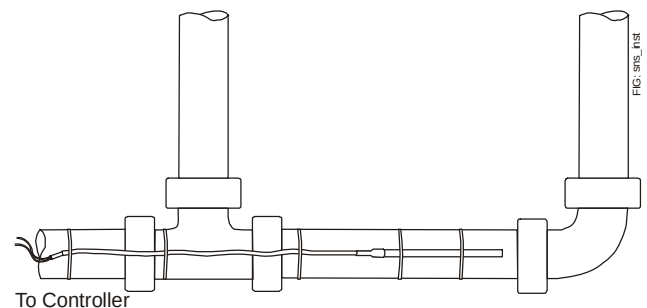


Figure 2: Installing the Strap-Mount Sensor

1. Mount the probe to the pipe using cable ties (three included) or adjustable pipe clamps. Use thermal conductive compound, F-1000-182 (order separately), or equivalent, between the sensor and pipe for best performance.

Note: Use Accessory Kit TE-6300-615 for pipe sizes larger than 2 in. (51 mm) and up to 10 in. (250 mm) and -40 to 220°F (-40 to 104°C) temperature range.

IMPORTANT: If using adjustable metal pipe clamps, do not overtighten the clamps. Overtightening the clamps may damage the sensor or cable.

2. Wire the sensor to the controller.

Wiring

For 1k ohm nickel temperature sensors, wire resistance can cause approximately 1F° (0.56C°) of error for every 250 ft (76 m) run of 18 AWG (1.0 mm diameter) wire, or every 100 ft (31 m) run of 22 AWG (0.6 mm diameter) wire. To minimize error due to field wiring, limit total resistance of all nickel temperature sensor wiring to 3 ohms.

The 10k ohm thermistor applications tolerate relatively long wiring before the wire resistance adds significantly to total resistance measured at the controller. As a general rule, a 150 ft (46 m) two-wire 18 AWG (1.0 mm diameter) run contributes 2 ohms of error, or less than 1F° (0.56C°) error over the sensor operating temperature range.

Refer to the appropriate controller documentation for recommended sensor wiring.



CAUTION: Risk of Property Damage.

Do not apply power to the system before checking all wiring connections. Short circuited or improperly connected wires may result in permanent damage to the equipment.

MISE EN GARDE : Risque de dégâts matériels.

Ne pas mettre le système sous tension avant d'avoir vérifié tous les raccords de câblage. Des fils formant un court-circuit ou connectés de façon incorrecte risquent d'endommager irrémédiablement l'équipement.

IMPORTANT: Use copper conductors only. Make all wiring connections in accordance with local, national, and regional regulations. Do not exceed the TE-63xS Series Strap-Mount Temperature Sensor's electrical ratings.

Repair Information

If the TE-63xS Series Strap-Mount Temperature Sensor fails to operate within its specifications, replace the unit. For a replacement sensor, contact the nearest Johnson Controls® representative.

Technical Specifications

TE-63xS Series Strap-Mount Temperature Sensors

Models	TE-631S-1	1k ohm Thin-Film Nickel Temperature Sensor
	TE-635S-1	1k ohm Thin-Film Platinum Temperature Sensor
	TE-636S-1	10k ohm Thermistor Johnson Controls Type II Temperature Sensor
Sensor Reference Resistance	1k ohm Nickel	1k ohms at 70°F (21°C)
	1k ohm Platinum	1k ohms at 32°F (0°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 Platinum	±0.35F° at 70°F (±0.19C° at 21°C), DIN Class A
	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 Platinum	Approximately 2 ohms/F° (3.9 ohms/C°) 3850 ppm/K
	10k ohm Thermistor	Nonlinear Negative Temperature Coefficient, Johnson Controls Type II
Electrical Connections		22 AWG (0.6 mm Diameter) x 10 ft (3 m) Long Plenum-Rated Cable, White Leads
Probe Materials		1/4 in. (6.4 mm) Outside Diameter x 3 in. (76 mm) Stainless Steel
Operating Temperature Limits	Cable	-50 to 140°F (-46 to 60°C)
	Probe	-50 to 220°F (-46 to 104°C)

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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