

High Accuracy Button Temperature Sensor

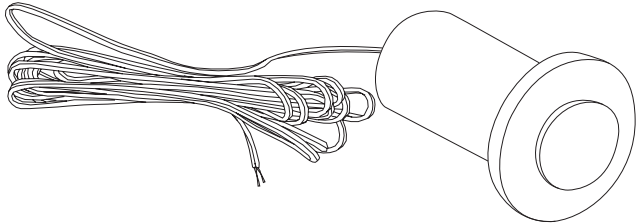
Installation Instructions

INTRODUCTION

The High Accuracy Paintable Button Style Flush-Mount Thermistor and RTD Wall Sensors provide precision room temperature sensing for building automation systems. The sensor drastically decreases the footprint of the traditional box sensor so that it becomes virtually invisible once it is painted to match the decor. The active sensing element is made of a highly stable, precision thermistor material or platinum RTD. This design is intended for interior use only is bonded to a plastic paintable housing.

BEFORE INSTALLATION

Read these instructions carefully before installing and commissioning the temperature sensor. Failure to follow these instructions may result in product damage. Do not use this device in an explosive or hazardous environment, with combustible or flammable gases, as a safety or emergency stop device or in any other application where failure of the product could result in personal injury. **Follow electronic discharge precautions during installation and do not exceed the device ratings.**



MOUNTING

The temperature sensor installs directly into any wall. Select a suitable installation area in the wall. Do not place the device where the sensor may be subject to air stratification, vibrations, excessive moisture or rapid temperature changes.

Once a suitable location is selected, drill a 25.4mm (1.0") for ceiling tiles or a 27mm (1.0625") hole for drywall mounting of the sensor. Remove the adhesive tape cover from the backside lip of the sensor to expose the adhesive. Slide the sensor into the drilled hole until the sensor is flush against the wall. Secure the sensor to the wall with the adhesive ring on the backside of the sensor housing lip as shown in Figure 1.

Make wiring connections as per the "Wiring" illustrations.

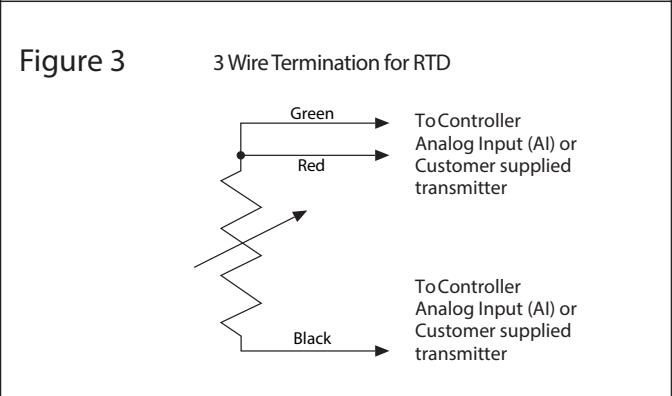
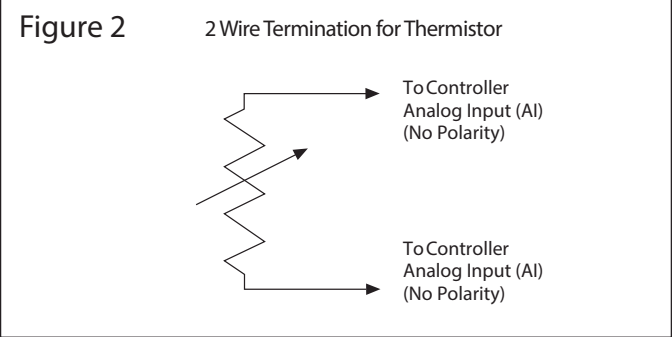
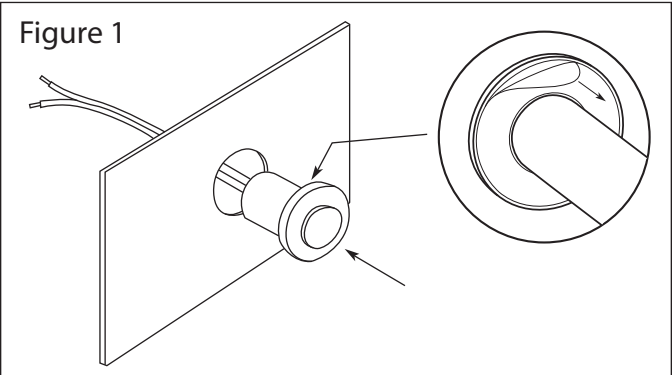
WIRING

- Use 18-24 AWG shielded wiring for all connections. Do not locate the device wires in the same conduit with wiring used to supply inductive loads such as motors. Make all connections in accordance with national and local codes.
- Pull at least six inches of wire into the enclosure, then complete the wiring connection according to the wiring diagrams below.
- Thermistors are a 2 wire hook up and are not polarity sensitive. See Figure 2.
- RTD's are a 3 wire hook up. See Figure 3.

TYPICAL WIRE RESISTANCE VALUES

When using low resistance sensors, long wire runs can add significant error to the readings. Use the following chart to determine errors due to wire resistance or consider using a 1000 ohm sensor or a transmitter for better accuracy. Locate the type of wire being used. Multiply the total length of the wire (distance from the controller to the sensor and back) by the number found in the chart below for total resistance.

GAUGE WIRE TYPE	18 AWG	22 AWG	24 AWG
STRANDED (OHMS/FOOT)	5.85 mΩ	14.75 mΩ	23.29 mΩ
SOLID (OHMS/FOOT)	6.4 mΩ	15.85 mΩ	25.72 mΩ



SPECIFICATIONS:

Sensor Type Various Thermistor or RTD
 Sensor Accuracy..... **RTD Class A:** $\pm 0.15^{\circ}\text{C}$ ($\pm 0.27^{\circ}\text{F}$) @ 0°C (32°F)
 RTD 1/3 DIN: $\pm 0.1^{\circ}\text{C}$ ($\pm 0.18^{\circ}\text{F}$) @ 0°C (32°F)
 RTD 1/10 DIN: $\pm 0.03^{\circ}\text{C}$ ($\pm 0.054^{\circ}\text{F}$) @ 0°C (32°F)
 NTC Thermistor Type 39: $\pm 0.05^{\circ}\text{C}$ ($\pm 0.09^{\circ}\text{F}$), 0 to 70°C (32 to 158°F)
 NTC Thermistor Type 55: $\pm 0.03^{\circ}\text{C}$ ($\pm 0.054^{\circ}\text{F}$), 0 to 70°C (32 to 158°F)
 NTC Thermistor Type 40/46: $\pm 0.1^{\circ}\text{C}$ ($\pm 0.18^{\circ}\text{F}$), 0 to 70°C (32 to 158°F)
 Temperature Range..... -40 to 60°C (-40 to 140°F)
 Wire Material **RTD:** FT-4, 22 AWG, 3 Wire
 Thermistor: PVC insulated, parallel bonded, 22 AWG, 2 Wire
 FT: Plenum rated FT-6
 Wire Length **ZW:** 1.05m (5')
 FT: 3m (10')
 Enclosure..... White plastic, paintable, interior use only
 IP30 (NEMA 1)
 Termination Pre-stripped pigtails
 Approvals CE
 Country of Origin..... Canada

NOTE: The sensor accuracies listed in the specifications section apply to the sensing element only prior to product assembly and may not be reflected in the complete assembly.

Due to the measurement uncertainty, it is possible, that the true resistance value of the single delivered sensor at 0°C can be out of the defined tolerance class. Profiling each assembly to take into consideration lead wire and the attachment method should be completed.

DIMENSIONS

