

Outside Air Sensor, 4 to 20 mA

Product Description

The Outside Air Sensor provides a 4 to 20 mA input for temperature control to a controller.

Product Number

536-768 -58°F to 122°F (-50°C to 50°C) range

Required Tools

- Power screwdriver with standard screw chuck or medium flat-blade screwdriver
- Wire cutter/stripper
- Drill and drill bits

Expected Installation Time

Two hours

Prerequisites

- The appropriate field wiring, within the maximum wiring run length for the individual field panel or equipment controller, should be pulled through the conduit to a utility box near the sensor location.
- Verify the distance between the utility mounting box and the outlet end of the pulling elbow. If the distance is less than 22 inches (56 cm), follow **Option A**. If the distance is greater than 22 inches (56 cm), and less than six feet (1.8 m), follow **Option B**.

NOTE: The distance between the utility mounting box and the pulling elbow cannot exceed six feet (1.8 m).

- The preferred sensor location is the north side of the building, in the shade, where the sensor is protected from direct or indirect sunlight and drafts from exhaust vents, etc.

Instructions

NOTE: All wiring must comply with National Electrical Code (NEC) and local regulations.

Option A Installation

NOTE: If replacing an existing sensor, disconnect the positive (+) 26V supply lead of the field wiring from the controller termination board or block.

1. Use an existing opening or drill an opening through the outside wall for 1/2-inch (13 mm) rigid conduit. The sensor must be located three to six inches (7.5 to 15 cm) from the wall
2. Feed the sensor leads through the rigid conduit to the utility box located on the inside of the building. Thread the pulling elbow/sensor assembly onto the conduit as shown in Figure 1.
3. Rotate the sensor so that the shield points down and shades the sensing element from direct and indirect sunlight.

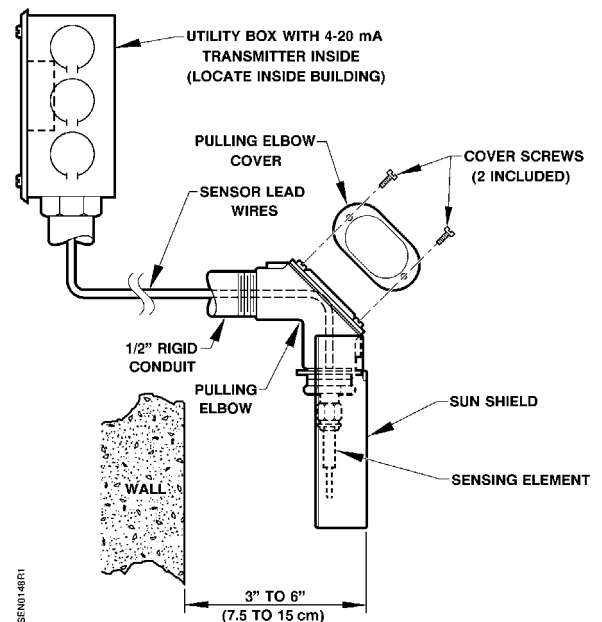


Figure 1. Outside Air Sensor, Option A Installation.

Instructions, Continued

- Connect the sensor leads, at the utility box, to the appropriate transmitter wires. See Figure 2 and Table 1.
- Connect the field wiring from the controller to the transmitter. The positive (+) 26V supply lead goes to the PWR wire of the transmitter and negative signal lead goes to the SIG wire. See Figure 2 and Table 1.
- Remove the protective cover from the double-sided tape on the transmitter, and mount the unit onto the utility box cover. Install the utility box cover onto the utility box.
- Connect the field wiring at the controller. See Figure 2.

The installation is now complete.

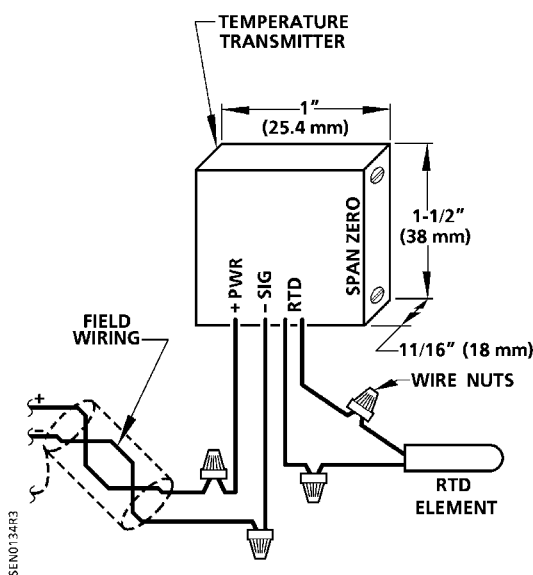


Figure 2. Analog Temperature Transmitter Wiring Connections for 100 ohm RTD Sensors (Option A).

NOTE: Some Siemens Building Technologies controllers may require a shield termination.

Option B Installation

NOTE: If replacing an existing sensor, disconnect the positive (+) 26V supply lead of the field wiring from the controller termination board or block.

- Use an existing opening or drill an opening through the outside wall for 1/2-inch (13 mm) rigid conduit. The sensor must be located three to six inches (7.5 to 15 cm) from the wall.

- Remove the pulling elbow cover.
- Pull the sensor lead wires from the pulling elbow. Thread the pulling elbow/sensor assembly onto the conduit as shown in Figure 3.
- Rotate the sensor so that the shield points down and shades the sensing element from direct and indirect sunlight.
- Cut off the excess sensor wire leads approximately one inch (25 mm) from the pulling elbow and strip 3/8-inch (9.5 mm) of insulation from the ends of the leads.
- Pull the intermediate wiring from the utility box to the pulling elbow. The maximum length for this intermediate wiring is six feet (1.8 m).
- Connect the intermediate wiring to the sensor wiring as shown in Figure 3.

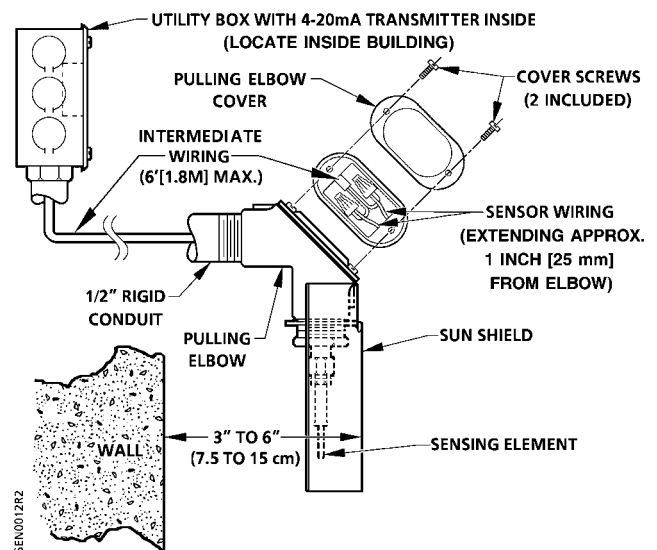


Figure 3. Outside Air Sensor, Option B Installation.

- Replace the pulling elbow cover and gasket. Ensure that the gasket seals the pulling elbow.
- Connect the intermediate wiring from the sensing element to the appropriate transmitter wires. See Figure 4 and Table 1.
- Connect the field wiring from the controller to the transmitter. The positive (+) 26V supply lead goes to the PWR wire of the transmitter and negative signal lead goes to the SIG wire. See Figure 4 and Table 1.

Instructions, Continued

11. Remove the protective cover from the double-sided tape on the transmitter, and mount the unit onto the utility box cover. Install the cover onto the utility box.

12. Connect the field wiring at the controller. See Figure 4 and Table 1.

The installation is now complete.

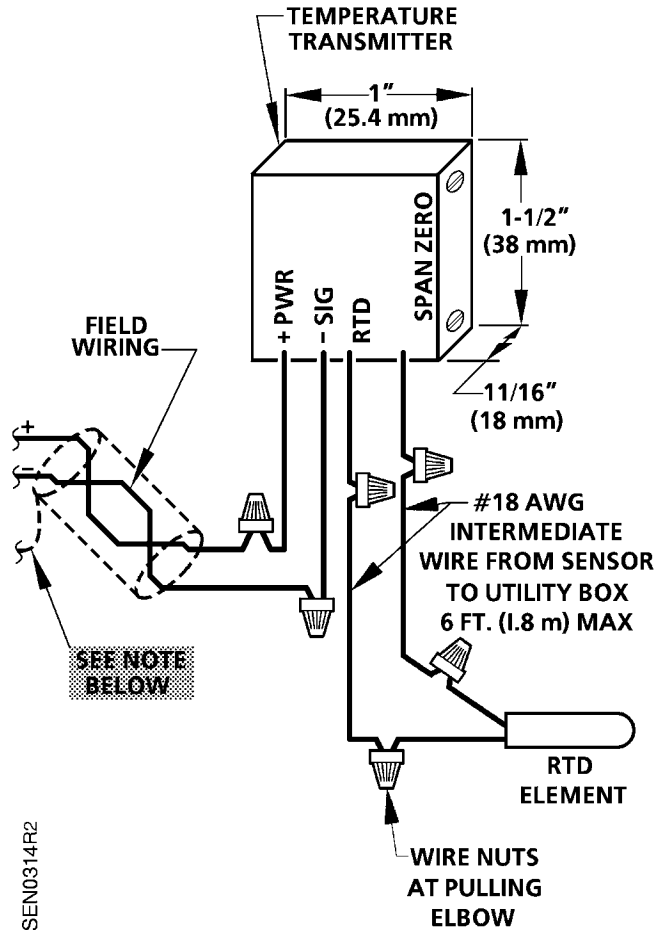


Figure 4. Analog Temperature Transmitter Wiring Connections for 4 to 20 mA Sensors (Option B).

- NOTE:** 1. Some Siemens Building Technologies controllers may require a shield termination.
 2. For individual panel wiring details, see the appropriate hardware manual.

Table 1. Transmitter Lead Wire Color Codes.

| Terminal | PWR | SIG | RTD | |
|----------|-----|-------|-------|--------|
| Option 1 | Red | Brown | Black | Orange |
| Option 2 | Red | Black | White | White |

NOTE: Wire colors vary by transmitter supplier.

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