

Outdoor Air Temperature Sensor

Product Description

The outdoor air sensor provides a temperature input to a controller.

Product Number

Product Number	Sensing Element
QAC2030U	10K Ω NTC Type II
QAC2032U	10K Ω NTC Type III
QAC2012U	1K Ω Pt (385 α)
QAC2020U	1K Ω Ni Siemens
QAC2021U	1K Ω Ni JCI

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

- Review these instructions before beginning.
- 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), follow *Option B*.
- The preferred sensor location is the north side of the building, in the shade. The sensor must be protected from direct or indirect sunlight and drafts from exhaust outlets, etc.

Installation

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

Option A Installation

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 cm 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 sensor onto the rigid 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.
4. Connect the sensor leads to the field wiring inside the utility box. See Figure 1.
5. Connect the field wiring to the controller as shown in the wiring diagram. See Figure 3.

The installation is now complete.

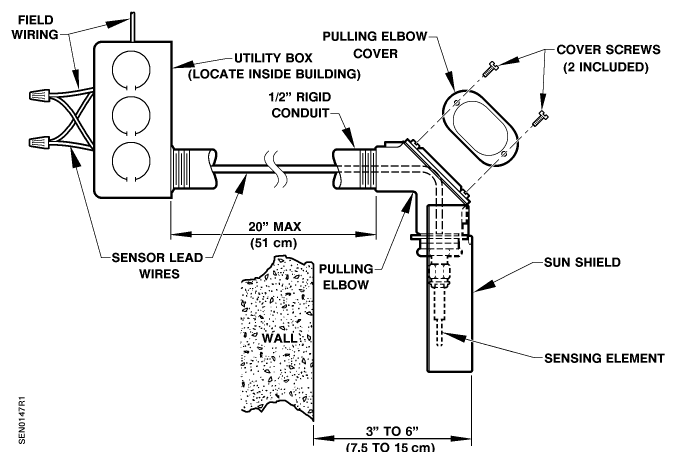


Figure 1. Outside Air Sensor, Option A Installation.

Option B Installation

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. Remove the pulling elbow cover and gasket.
3. Pull the sensor lead wires from the pulling elbow and thread the pulling elbow/sensor assembly onto the conduit as shown in Figure 2.
4. Rotate the sensor so that the shield points down and shades the sensing element from direct and indirect sunlight.
5. 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.
6. Pull the field wiring to the pulling elbow.
7. Connect the field wiring to the sensor wiring as shown in Figure 2.
8. Replace the pulling elbow cover and gasket. Ensure that the gasket seals the pulling elbow.
9. Connect the field wiring at the controller as shown in the wiring diagram. See Figure 3.

The installation is now complete.

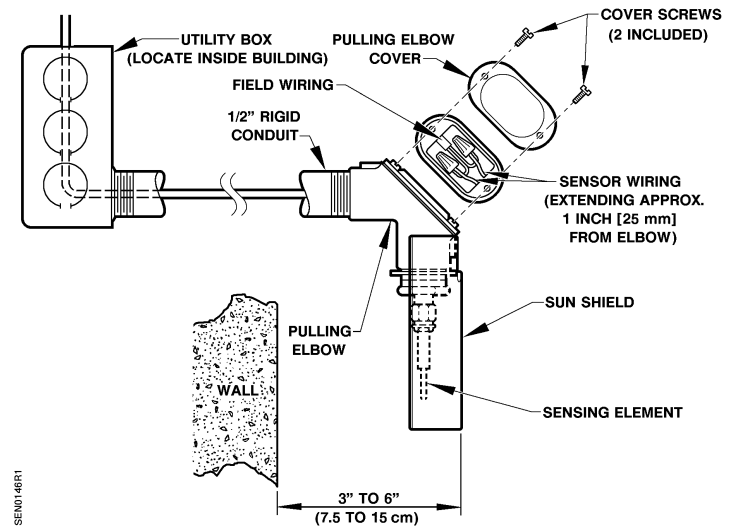


Figure 2. Outside Air Sensor, Option B Installation.

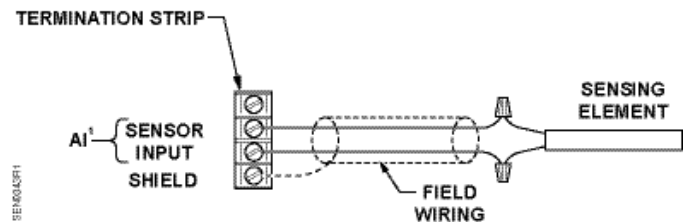


Figure 3. Wiring Diagram.

1. Configure the analog input (AI) point for sensor input.

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