Honeywell

Duct, Immersion, Outdoor, and Strap-On Temperature Sensors

INSTALLATION INSTRUCTIONS



C7041B,C



C7021F, C7031G, C7041F, T775-SENS-OAT



C7031D, C7041D



Strap-on

SENSOR APPLICATIONS

Table 1. Electronic Sensor Application Guide

Model	Application	Output	Element Insertion Length
C7021F	Outdoor	10K ohm NTC @ 77 F	—
C7031D	Immersion	1097 ohms @ 77 F	5 in. (127 mm)
C7031G	Outdoor	3484 ohms @ 77 F	—
C7041B	Duct	20 K ohm NTC @ 77 F	6 in. (152) or 12 in. (305 mm)
C7041C	Duct	20 K ohm NTC @ 77 F	18 in. (457 mm)
C7041D	Immersion	20 K ohm NTC @ 77 F	5 in. (127 mm)
C7041F	Outdoor	20 K ohm NTC @ 77 F	—
C7041K	Strap-On	20 K ohm NTC @ 77 F	—
T775-SENS-OAT	Outdoor	1097 ohms @ 77 F	—
T775-SENS-STRAP	Strap-On	1097 ohms @ 77 F	—

INSTALLATION

When Installing this Product...

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.

Mounting

The mounting method depends on the particular sensor application. The following procedures include:
- duct applications
- outdoor applications
- immersion well applications
- strap-on applications

NOTE: Also refer to the instructions for the electronic control.

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Duct Mounting (C7041B,C)

IMPORTANT

Select a spot for the sensor that will expose it to average duct air temperature. Avoid locations where stratification can cause sensing errors.

1. Cut a hole in the duct just large enough to accept the sensing element.
2. Use the sensor's case to mark locations of pilot holes for the mounting screws.
3. Drill pilot holes and fasten the sensor to the duct.

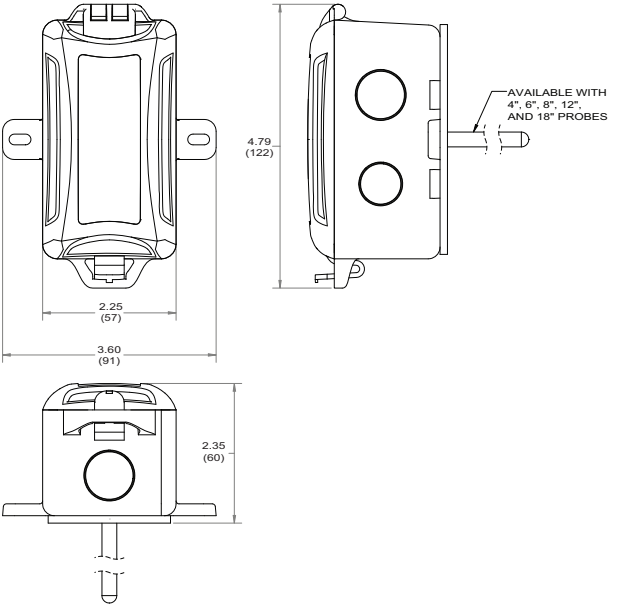


Fig. 1. C7041B,C Dimensions in inches (mm).

Outdoor Mounting (C7021F, C7031G, C7041F; T775-SENS-OAT)

The outdoor air temperature sensors have a weatherproof enclosure. Mount the sensor where it can sense average outdoor air temperature. All mounting hardware is provided with the sensor. Be sure to mount the sensor out of direct sunlight with the sensor probe point down. Normally, the north side of a building provides a suitable location.

NOTE: C7021F, C7031G, C7041F, and T775-SENS-OAT are weatherproof for outdoor use. Knockouts allow for 1/2 in. conduit connection.

1. Remove and set aside the wiring box cover.
2. Mount the sensor to a standard 1/2 in. conduit.

   NOTE: Mount sensor so that the element points down.

3. Make wiring connections using two wire nuts.
4. Reattach the wiring box cover.

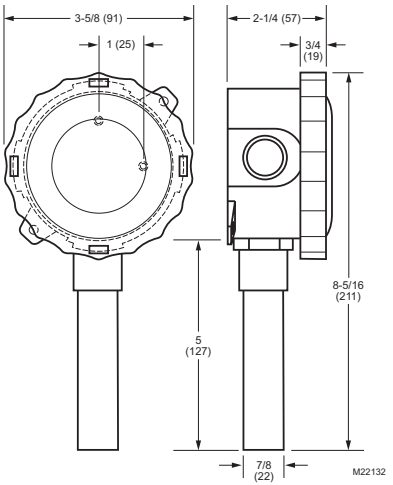


Fig. 2. C7021F, C7031G, C7041F, T775-SENS-OAT Dimensions in inches (mm).

Immersion Well Mounting (C7031D, C7041D)

NOTE: The C7041D uses the 50001774-001 Well Assembly. See Fig. 5 for dimensions.

The C7031D Sensor includes an immersion well. The C7041D Sensor does not include a well. For the C7041D, order the well as an accessory (part no.: 50001774-001).

When used on a boiler, follow the manufacturer instructions for location. If a tapped hole is not provided for the immersion well, provide one as follows:

1. Drain boiler and drill a 23/32 in. (18 mm) hole at the selected location.
2. Cut threads in the hole with a 1/2 in. (13 mm) by 14 NPT tap.

In other installations, mount the immersion well in an elbow with a heel outlet as shown in Fig. 3.

1. Drain the system, if you have not already done it, and open the tapped hole.
2. Put pipe joint compound on the threads of the immersion well and screw it into the tapped hole or elbow, tightening it securely.
3. Refill the system and check for leaks.

Mount the C7031D/C7041D into the well:

NOTE: Mounting using previously installed Honeywell wells (part no.: 32005960-001) requires an adapter (part no.: 50001775-001).

1. When an adapter is required, first thread it into the well no more than one or two turns.
2. Slide the sensor into the well.
3. Rotate the sensor to thread it tightly into the adapter and the adapter tightly into the well.

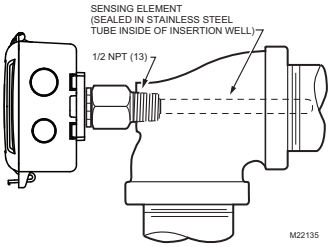


Fig. 3. Method of Mounting C7031D/C7041D Sensor.

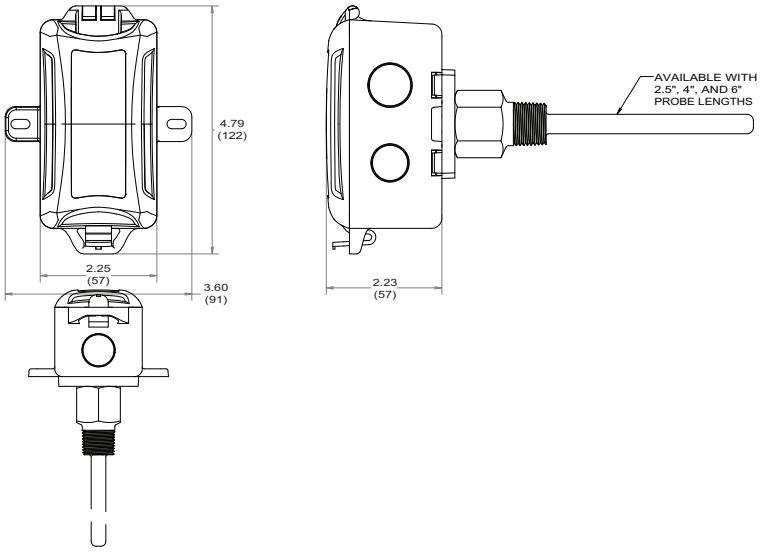


Fig. 4. C7031D, C7041D Dimensions in inches (mm).

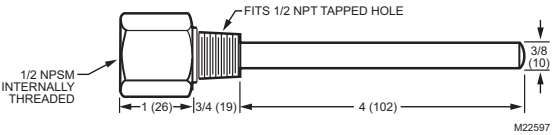


Fig. 5. 50001774-001 Immersion Well Dimensions in inches (mm).

Strap-on Mounting (C7041K, T775-SENS-STRAP)

The Sensor mounts on metal pipes from 1-5/8 inch to 5 inches in diameter using the straps supplied. Clean the pipe surface where the sensor makes contact before mounting. If necessary, remove pipe insulation at the installation point. Thermal compound is recommended. Locate the sensor on the discharge pipe within 3 ft. (0.9 m) of the boiler. See Fig. 6.

NOTE: Insulation around the contact area increases sensor accuracy.

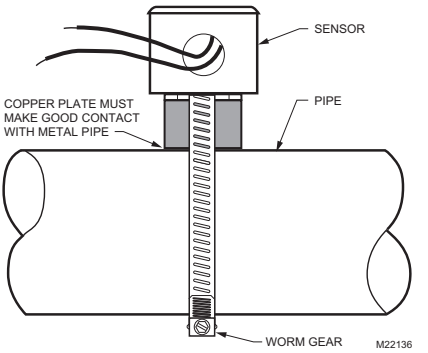


Fig. 6. Strap-on Mounting of Sensor.

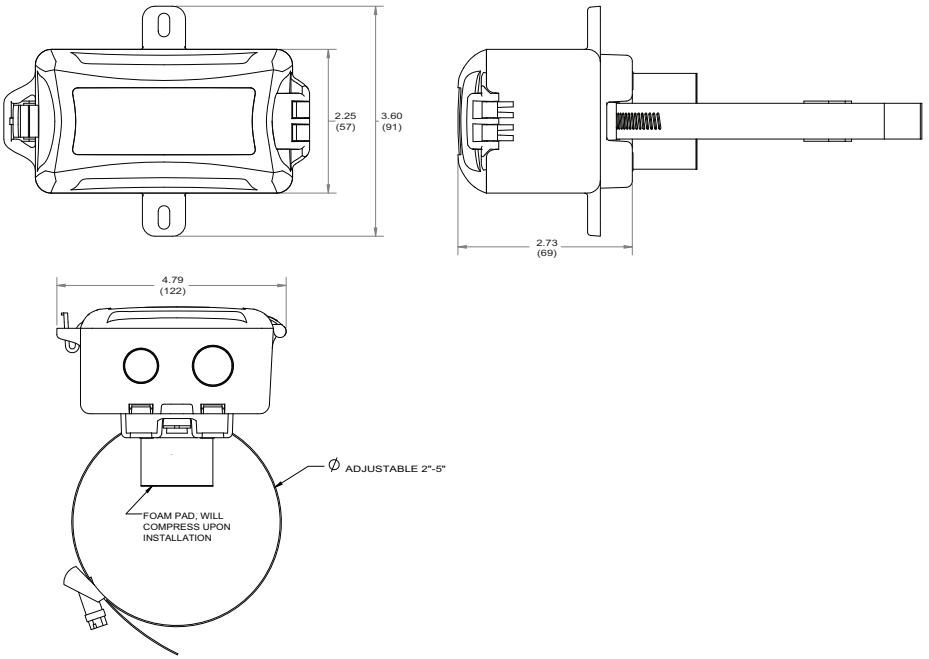


Fig. 7. Strap-on Dimensions in inches (mm).

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