

C7600A,C Solid State Humidity Sensors

PRODUCT DATA



APPLICATION

The C7600A,C Solid State Humidity Sensors sense relative humidity in air and are used with controllers that can process a 4 to 20 mA signal (see Table 1).

FEATURES

- Sensor enclosed in rugged glass-fiber reinforced plastic case.
- Compact size and lightweight construction for easy mounting in duct or on wall.
- Cover vents allow air flow to humidity sensing element inside.
- 4 to 20 mA output to relative air humidity.
- Can be used indoors or outdoors.
- The C7600A provides 4-20 mA output inversely proportional to air relative humidity.
- The C7600C provides 4-20 mA output directly proportional to air relative humidity.

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SPECIFICATIONS

IMPORTANT

Specifications given herein do not include normal manufacturing tolerances. Therefore, individual units may not exactly match listed specifications. Also, this product is tested/calibrated under closely controlled conditions. Minor differences in performance can be expected if those conditions are changed.

Models: Series 1000 (C7600A100X and C7600C100X) are in the black case and series 2000 (C7600A200X and C7600C200X) are in the smaller grey case (see figure on page 1). Refer to Table 1.

Table 1. C7600A,C Solid State Humidity Sensor Models.

Model	Use With
C7600A	W7600 or controller requiring 4-20 mA reverse acting input
C7600C	H775 or controller requiring 4-20 mA direct acting input

Dimensions: See Fig. 1 and Fig. 2.

Mounting: Duct-mounted indoors, or wall-mounted outdoors in a location protected from rain, snow, or direct sunlight. A duct mounting kit^a is available for the 2000 series sensor models (C7600A2xxx and C7600C2xxx).

Case: Compact, rugged, lightweight plastic case.

Terminals: Two 1/4 in. (6 mm) quick-connect terminals.

Electrical Ratings:

Input: 12 to 40 Vdc.

Output: 4 to 20 mA signal. The relationship of output current vs. relative humidity is shown in Table 2 and in Fig. 3 and Fig. 4 on page 3.

Maximum Power Consumption (at 24V): 0.50 VA.

Electrical Connections: Two 1/4 in. quick-connect terminals.

Ambient Temperature Ranges:

Operating: 32°F to 125°F (0°C to 52°C).

Shipping: -40°F to +150°F (-40°C to +66°C).

Table 2. C7600 Output Current vs. Humidity.

Model	Relationship ^a
C7600A	$I = -0.16 \times RH + 20$
C7600C	$I = +0.16 \times RH + 4$

^a I = sensor output (in mA); RH = percent relative humidity.

Humidity:

Operating Range: 10 to 90 percent RH, non-condensing.

Time Constants:

Airflow: 500 fpm.

Time: 15 minutes.

Approvals:

Underwriters Laboratories Inc. Flammability Rating:

C7600A: UL94V-0.

C7600C: UL94-5V.

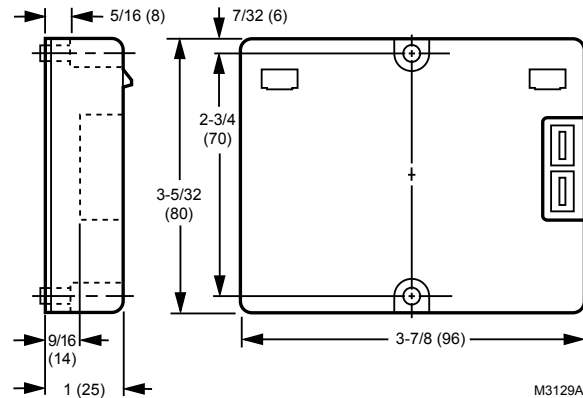


Fig. 1. C7600A1xxx and C7600C1xxx Humidity Sensor dimensions in inches [mm].

^a Honeywell part number 50053060-001

ORDERING INFORMATION

When purchasing replacement and modernization products from your TRADELINE® wholesaler or distributor, refer to the TRADELINE® Catalog or price sheets for complete ordering number.

If you have additional questions, need further information, or would like to comment on our products or services, please write or phone:

1. Your local Honeywell Automation and Control Products Sales Office (check white pages of your phone directory).
2. Honeywell Customer Care
1885 Douglas Drive North
Minneapolis, Minnesota 55422-4386

In Canada—Honeywell Limited/Honeywell Limitée, 35 Dynamic Drive, Toronto, Ontario M1V 4Z9.

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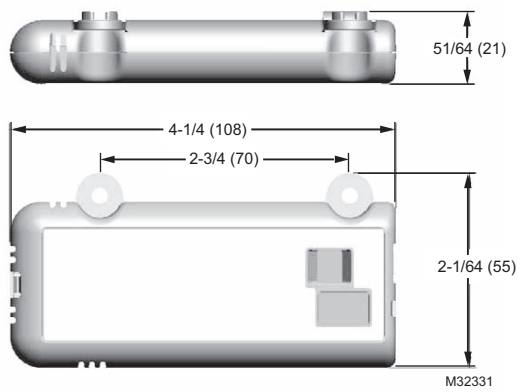


Fig. 2. Approximate dimensions of C7600A2xxx and C7600C2xxx Enthalpy Sensors in inches (mm).

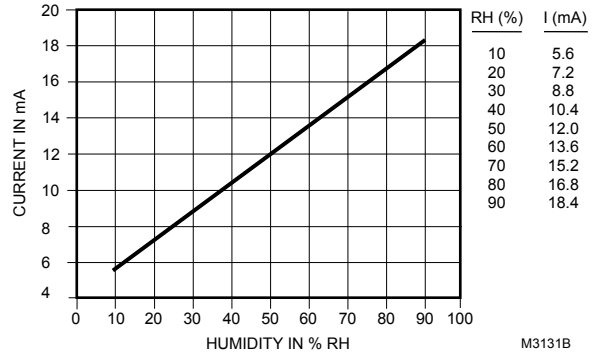


Fig. 4. C7600C output current vs. relative humidity.

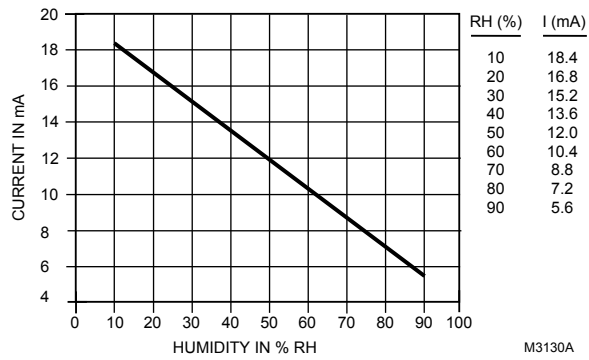


Fig. 3. C7600A output current vs. relative humidity.

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 ratings given in instructions and on the product to ensure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. After installation is complete, check out product operation as provided in these instructions.



CAUTION

**Electrical Shock or Equipment Damage Hazard.
Can shock individuals or short equipment circuitry.**

Disconnect power supply before installation.

IMPORTANT

All wiring must agree with applicable codes, ordinances and regulations.

Follow specific instructions furnished by the equipment manufacturer. If unavailable, follow the procedure below.

Location

The sensor can be mounted in any position where it is exposed to freely circulating air (with at least 500 fpm airflow) and proper protection.

Mounting Outdoors

IMPORTANT

When selecting the location, make certain the sensor is not exposed to rain, snow, or direct sunlight.

1. Select a location properly protected.
2. Attach the sensor to the wall with two 1/8 in. (3 mm) diameter screws.
3. Wire as shown in the Wiring section.

Mounting in Return Air Duct (See Fig. 7)

Use the mounting instructions specific to the sensor model series, (Series 1000 or series 2000).

Series 1000 mounting instructions

NOTE: Installers need to supply the following: sheet metal cutter or snips; drill with 1/16 in. (2 mm), 1/8 in. (3 mm) and 1/2 in. (13 mm) bits; screwdrivers; 1/2 in. (13 mm) rubber grommet; eight self-tapping sheet metal screws; and two 1/8 in. (3 mm) by 3/4 in. (19 mm) machine screws with lock washers and nuts.

1. Cut a 5 in. (127 mm) by 6 in. (152 mm) rectangular hole in one side of the return air duct.
2. Center the sensor on a 6 in. (152 mm) by 7 in. (178 mm) piece of sheet metal. Mark locations for mounting screws and for a hole for the control wire.

3. Drill two 1/8 in. (3 mm) mounting holes for the sensor and one 1/2 in. (13 mm) hole for the control wire.
4. Drill eight starting holes in the sheet metal rectangle for self-tapping sheet metal screws.
5. Center sheet metal rectangle over opening in duct so there is a 1 in. (25 mm) overlap on all four sides. Then mark the eight sheet metal screw locations on the duct.
6. Drill eight starting holes in the duct for self-tapping sheet metal screws.
7. Attach sensor to sheet metal rectangle with 1/8 in. (3 mm) by 3/4 in. (19 mm) machine screws, washers and nuts. Attach machine screws from sheet metal outside to eliminate protrusions and possible sharp edges.
8. Place a rubber grommet in the sheet metal 1/2 in. (13 mm) hole to protect control wires from abrasions.
9. Put the control wires through the 1/2 in. (13 mm) hole and wire as shown in the Wiring section.
10. Attach sheet metal rectangle to duct with self-tapping sheet metal screws. Make sure that airflow over the sensor is as shown in Fig. 7.

Series 2000 mounting instructions

NOTE: The series 2000 sensors can be mounted using the duct mount sensor kit, Honeywell part number 50053060-001.

The Series 2000 sensors can be mounted directly to the sheet metal using self tapping sheet metal screws or in the air stream using the duct mounting kit. Use #6 or #8 screws (screws are not provided and must be obtained separately).

Use the dimensions in Fig. 2 on page 3 as a guide. The sensor must be mounted to allow air flow through the sensor housing vent slots on the end or side.

The duct mounting kit contains a rod to hold the sensor in the duct, a flange to secure the sensor rod to the duct wall and to fill the hole, and a gasket to prevent air from leaking through the duct wall. The rod has slots for threading the wire to prevent loose or hanging wire in the duct and can be adjusted for 6 or 12 inch length. The flange has extended relief for ease of mounting.

Wiring



CAUTION

**Electrical Shock or Equipment Damage Hazard.
Can shock individuals or short equipment circuitry.**

Disconnect power supply before installation.

IMPORTANT

All wiring must agree with applicable codes, ordinances and regulations.

Follow wiring information furnished by the controller manufacturer or refer to Fig. 5 and 6 for typical wiring hookups. Note and follow polarity markings.

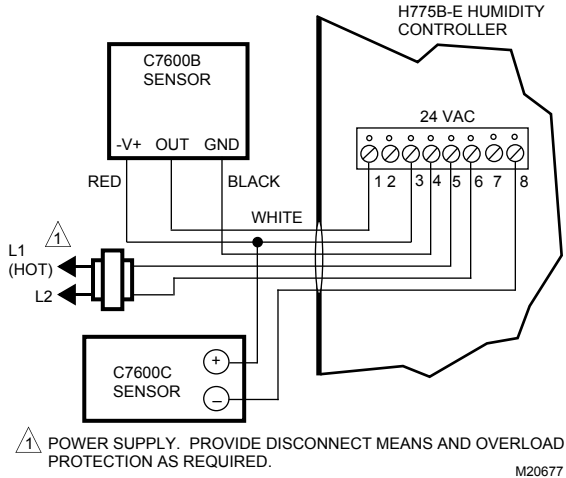


Fig. 5. Wiring C7600C and C7600B Wall-mounted Sensors to H775B-E Humidity Controller.

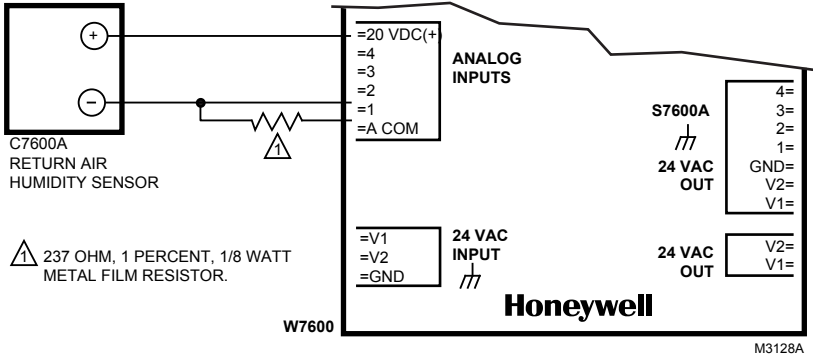


Fig. 6. Wiring C7600A Humidity Sensor to W7600 Control Module.

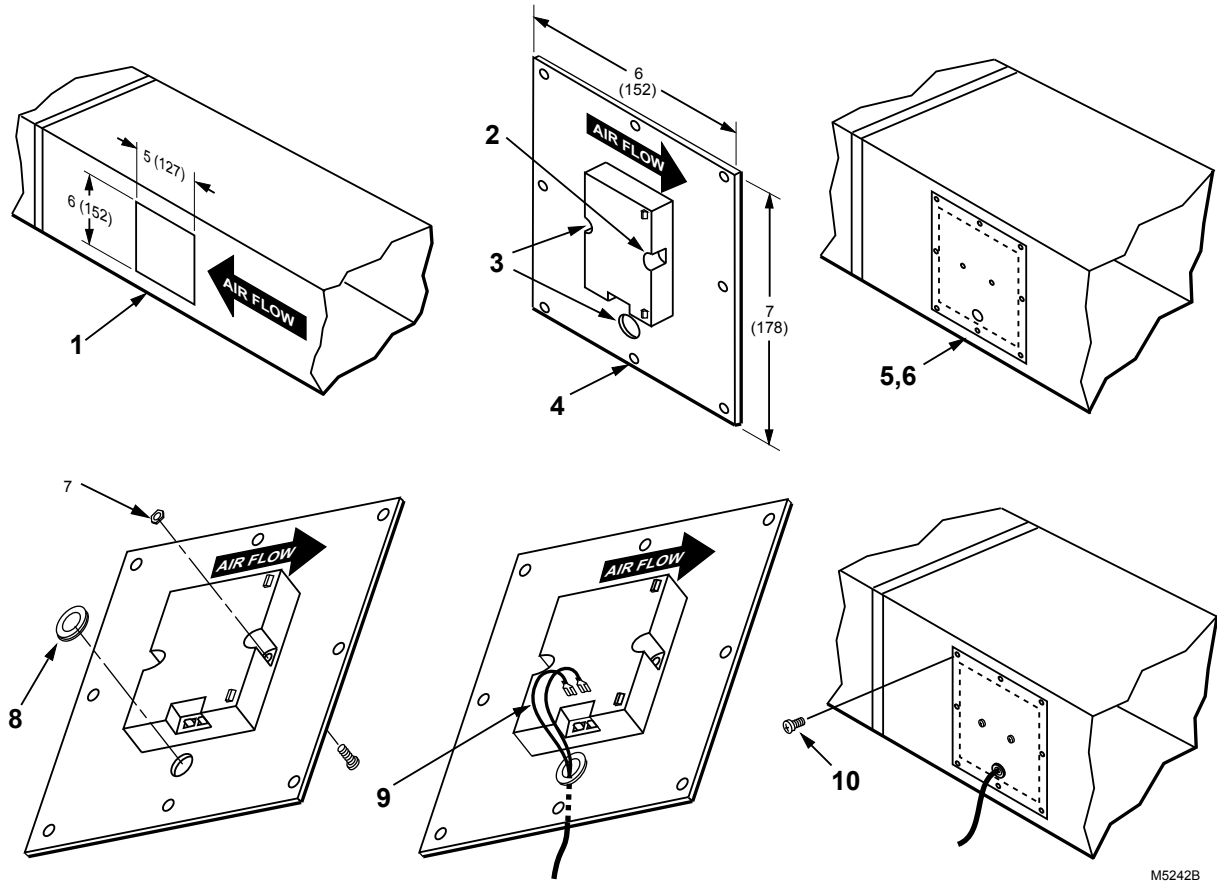


Fig. 7. Installing C7600A Solid State Humidity Sensor in return air duct.

Automation and Control Solutions

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