

Part Number P474-0430


**IMPORTANT:** Read entire instructions before installing the sensor.

### ACCESSORY CONTENTS

ITEM	NUMBER
Duct Sensor	1
Rubber Grommet	1
Wire Nut	3

### SAFETY CONSIDERATIONS

Read and follow manufacturer instructions carefully. Follow all local electrical codes during installation. All wiring must conform to local and national electrical codes. Improper wiring or installation may damage sensor.

Recognize safety information. This is the safety alert symbol . When the safety alert symbol is present on equipment or in the instruction manual, be alert to the potential for personal injury.

Understand the signal words DANGER, WARNING, and CAUTION. These words are used with the safety alert symbol. DANGER identifies the most serious hazards which will result in severe personal injury or death. WARNING signifies a hazard which could result in personal injury or death. CAUTION is used to identify unsafe practices which would result in minor personal injury or property damage.

### GENERAL

The Duct Temperature Sensor measures indoor air temperature in the return air duct. The sensor measures temperature with a range of 0° to 150 F. The duct temperature sensor may also be used as a remote temperature sensor.

### INSTALLATION

**Step 1 — Sensor Location** — The duct sensor is mounted in the return air duct when used as a duct sensor. The duct sensor is mounted in an indoor location when used as a remote temperature sensor.

When used as a remote temperature sensor, the sensor should be mounted:

- approximately 5 feet from the floor
- close to or in a frequently used room, preferably on an inside partitioning wall
- on a section of wall without pipes or ductwork

The sensor should **NOT** be mounted:

- close to a window, on an outside wall, or next to a door leading to the outside
- where exposed to direct light and heat from a lamp, the sun, a fireplace, or any other temperature-radiating object which may cause a false reading

- close to or in direct airflow from supply registers or return air grilles
- in areas with poor air circulation (such as behind a door or in an alcove)

**Step 2 — Wiring Requirements** — The remote temperature sensor wiring has the following requirements:

1. All system wiring must be in compliance with all applicable local and national codes.
2. All sensor wiring should be color coded for ease of maintenance and service. Three wires are required.
3. All wiring should be 18-, 20-, or 22-gage, **unshielded** wire. The maximum distance between the sensor to the thermostat for 18-gage wire is 150 feet. The maximum distance between the sensor to the thermostat for 20-gage wire is 300 feet. The maximum distance between the sensor and the thermostat for 22-gage wire is 450 feet.

NOTE: Thinner wire is used for longer distances.

**IMPORTANT:** Do not use shielded wire. Do not run sensor wiring in the same conduit as the 24-v thermostat wiring. Electrical interference may cause the sensor to give incorrect temperature readings.

**Step 3 — Install Sensor** — Perform the following procedure to install the sensor in the return air duct:

### WARNING

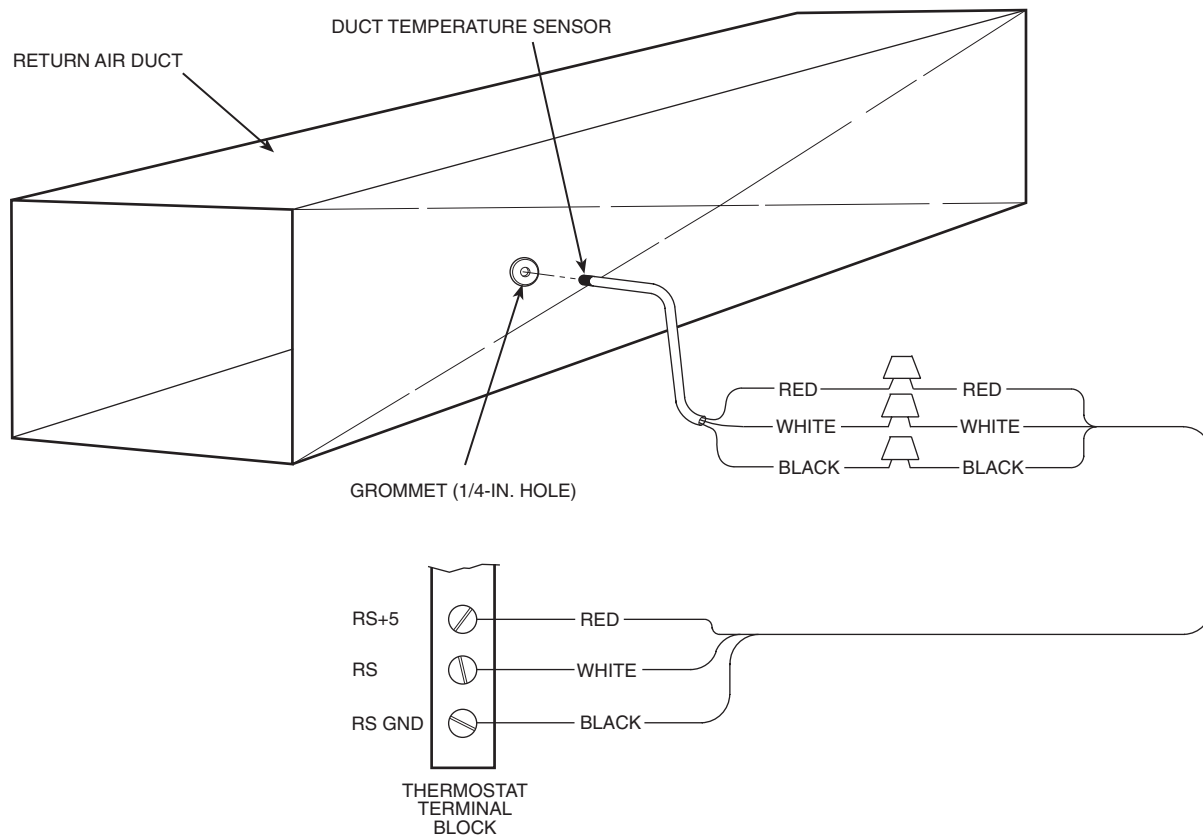
Turn off power to thermostat before wiring. Death or injury from electric shock could result

1. Select location in return air ductwork for sensor. Mark location in center of duct. See Fig. 1.
2. Drill a 1/4-in. hole in ductwork at marked location.
3. Push rubber grommet into hole in ductwork until grommet snaps into place.
4. Push duct sensor through grommet into return air duct.
5. Run a 3-conductor wire from the thermostat to the sensor. Be sure to follow wiring requirements in Step 2. Do not run wiring in same conduit as the 24-v thermostat wiring.
6. Connect RED wire to RS+5 terminal on thermostat. Connect WHITE wire to RS terminal on thermostat. Connect BLACK wire to RS GND terminal on thermostat. See Fig. 1.
7. Connect RED wire of duct sensor to RED wire from thermostat. Connect BLACK wire of duct sensor to BLACK wire from thermostat. Connect WHITE wire from duct sensor to WHITE wire from thermostat. Wire nut and tape all connections.

**Step 4 — Configure the Thermostat** — Depending on the type of thermostat, the thermostat may need to be configured for use with the duct temperature sensor.

Some thermostats will automatically detect the sensor wired to the thermostat terminal block and use the temperature sensor

output. Other thermostats may need to be configured for use with a duct or remote temperature sensor. Refer to the Advanced Setup section in the thermostat installation instructions for thermostat configuration information.



**Fig. 1 — Duct Sensor Installation**



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