DEBONAIR®
Duct Temperature Sensor Accessory

Installation Instructions

Part Number 33CSSEN-DS

IMPORTANT: Read entire instructions before installing the sensor.

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.

The duct temperature sensor is used with Debonair thermostats with an outdoor air or duct temperature sensor wiring terminal. The duct temperature sensor can be used with 33CS250-FS, 33CS400-01 and 33CS450-01 thermostats.

PACKAGE CONTENTS

CONTENTS	QUANTITY
Duct Sensor	1
Rubber Grommet	1
Wire Nut	3

INSTALLATION

Step 1 — Sensor Location — The duct sensor is mounted in the return air duct when used as a duct sensor. Locate in the center of the return air duct, after all branches have entered the duct, to provide an average return-air temperature. 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 duct 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 in conformance with the standard recommendations.
3. The remote sensor should be connected to the thermostat using solid conductor CAT 5, CAT 5e, or CAT 6 type network communication cable. This is an unshielded cable with 4 twisted pairs of 24-gage solid wire. The cable length should not exceed 250 ft. DO NOT use stranded cable.
4. The sensor wiring MUST be completely separated from the thermostat or any other control wiring and must NOT be in the same conduit as high voltage wiring. Do not use building metalwork as a ground. Use only unshielded wire.

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

⚠ CAUTION

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 an unshielded cable with 4 twisted wire pairs of 24-gage solid wire from the thermostat to the sensor. Be sure to follow wiring requirements.
6. Connect ORANGE wire to RS+5 terminal on thermostat. Connect BLUE wire to RS terminal on thermostat. Connect BROWN wire to RS GND terminal on thermostat. See Fig. 1.
7. Connect RED wire of duct sensor to ORANGE wire from thermostat. Connect BLACK wire of duct sensor to BROWN wire from thermostat. Connect WHITE wire

from duct sensor to BLUE 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.

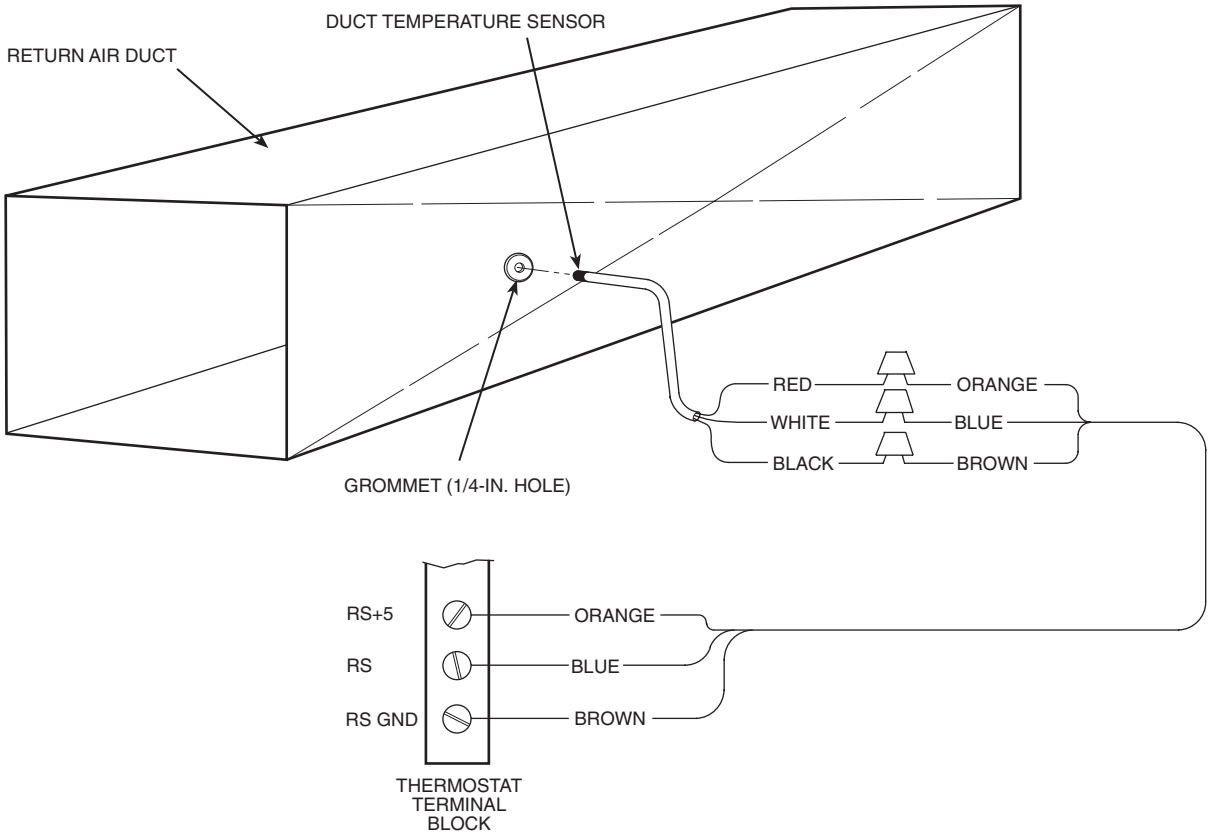

Fig. 1 — Duct Sensor Installation