



Installation Instructions

Five-Volt Differential Duct Static-Pressure Sensor

Ordering number: 4020 1159

X-Code: X39641377001

SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

April 2020

BAS-SVN035B-EN

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Warnings, Cautions, and Notices

Read this manual thoroughly before operating or servicing this unit. Safety advisories appear throughout this manual as required. Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

The three types of advisories are defined as follows:

- WARNING** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
- CAUTION** Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It could also be used to alert
- NOTICE** Indicates a situation that could result in equipment or property-damage only accidents.

Important Environmental Concerns

Scientific research has shown that certain man-made chemicals can affect the earth's naturally occurring stratospheric ozone layer when released to the atmosphere. In particular, several of the identified chemicals that may affect the ozone layer are refrigerants that contain Chlorine, Fluorine and Carbon (CFCs) and those containing Hydrogen, Chlorine, Fluorine and Carbon (HCFCs). Not all refrigerants containing these compounds have the same potential impact to the environment. Trane advocates the responsible handling of all refrigerants-including industry replacements for CFCs such as HCFCs and HFCs.

Important Responsible Refrigerant Practices

Trane believes that responsible refrigerant practices are important to the environment, our customers, and the air conditioning industry. All technicians who handle refrigerants must be certified according to local rules. For the USA, the Federal Clean Air Act (Section 608) sets forth the requirements for handling, reclaiming, recovering and recycling of certain refrigerants and the equipment that is used in these service procedures. In addition, some states or municipalities may have additional requirements that must also be adhered to for responsible management of refrigerants. Know the applicable laws and follow them.

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WARNING

Proper Field Wiring and Grounding Required!
Failure to follow code could result in death or serious injury. All field wiring MUST be performed by qualified personnel. Improperly installed and grounded field wiring poses FIRE and ELECTROCUTION hazards. To avoid these hazards, you MUST follow requirements for field wiring installation and grounding as described in NEC and your local/state electrical codes.

WARNING

Personal Protective Equipment Required!
Installing/servicing this unit could result in exposure to electrical, mechanical and chemical hazards. Before installing/servicing this unit, technicians MUST put on all Personal Protective Equipment (PPE) recommended for the work being undertaken. ALWAYS refer to appropriate SDS sheets and OSHA guidelines for proper PPE. When working with or around hazardous chemicals, ALWAYS refer to the appropriate SDS sheets and OSHA guidelines for information on allowable personal exposure levels, proper respiratory protection and handling recommendations. If there is a risk of arc or flash, technicians MUST put on all necessary Personal Protective Equipment (PPE) in accordance with NFPA70E for arc/flash protection PRIOR to servicing the unit. Failure to follow recommendations could result in death or serious injury.

WARNING

Follow EHS Policies!
Failure to follow instructions below could result in death or serious injury.

- All Trane personnel must follow the company's Environmental, Health and Safety (EHS) policies when performing work such as hot work, electrical, fall protection, lockout/tagout, refrigerant handling, etc. Where local regulations are more stringent than these policies, those regulations supersede these policies.
- Non-Trane personnel should always follow local regulations.

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General Information

The 5-volt differential duct static 0–5 in. wc pressure sensor is compatible with the Tracer UC400, UC600, AH540/541 and MP580/581 controllers. A special connector attaches directly to the termination boards of these controllers. No additional power is required. The pressure sensor has a non-conductive plastic case as required for installation in metal enclosures.

IMPORTANT

Use only the 5-volt differential duct static-pressure sensor (Trane part number 4020 1159) with Tracer UC400, UC600, AH540/541, and Tracer MP580/581 controllers. Other Trane pressure sensors may have conductive cases that can generate incorrect readings due to feedback voltage from ground loops.

Specifications

The pressure sensor conforms to the specifications in [Table 1](#).

Table 1. Sensor specifications

Supply voltage	5 ± 0.25 Vdc
Output	0.25–4.0 Vdc
Range	0–5 in. wc
Burst pressure	415 in. wc (15 psi)
Proof/Over pressure	270 in. wc (9.75 psi)
Media	Dry air
Operating temperature	14°F to 176°F (-10°C to 80°C)
Compensated temperature	14°F to 158°F (-10°C to 70°C)
Storage temperature	-40°F to 185°F (-40°C to 85°C)
Wiring connection	12-inch (305 mm) cable (min) with connector (Amp: 3-643814-3 or equivalent)
Pressure connections	1/8-inch or 3/16-inch outer-diameter plastic fittings

Table 1. Sensor specifications (continued)

Accuracy	± 0.25% FSS best fit straight line
Enclosure	Non-conductive plastic case

Mounting the Sensor

Note: If possible, mount the sensor in the controller enclosure before wiring other inputs and outputs. The sensor mounting location may be in the path of input/output wires, which will make installation more difficult after these wires have been terminated.

To mount the pressure sensor:

1. Use the supplied #6 (3.5 mm) mounting screws to mount the sensor to the raised mounting holes in the controller enclosure, as shown in Figure 1. A custom mounting strategy may be required.
2. Connect the pressure sensor cable to the P1/P2 connector on the unit controller or the duct-static connector on the termination board.

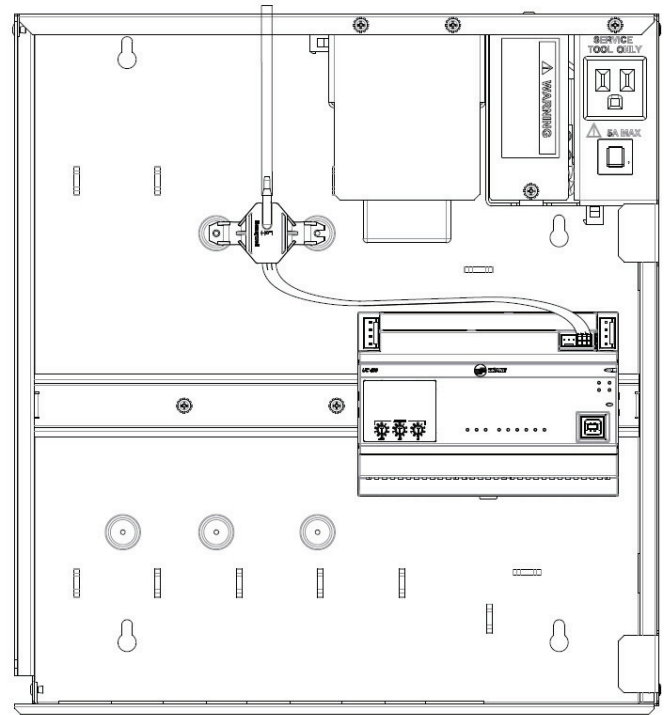
Note: The UC400 can accommodate up to two sensors.

3. Feed the input tubes from the duct-pressure pick-ups through a knockout into the enclosure.

Note: A protective grommet is highly recommended, and may be required by local codes.

4. Connect the input tubes to the sensor.

5. The connectors on the sensor can accept 1/8-inch or 3/16-inch inner-diameter plastic tubing.

Figure 1. Wiring the sensor

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