



Installation Instructions

ifm efector®

Flow Detection Controller and Sensor

X39641485001

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.

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TECHNOLOGIES

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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 against unsafe practices.

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.

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/national electrical codes.

WARNING

Personal Protective Equipment (PPE) Required!

Failure to wear proper PPE for the job being undertaken could result in death or serious injury. Technicians, in order to protect themselves from potential electrical, mechanical, and chemical hazards, MUST follow precautions in this manual and on the tags, stickers, and labels, as well as the instructions below:

- Before installing/servicing this unit, technicians MUST put on all PPE required for the work being undertaken (Examples; cut resistant gloves/sleeves, butyl gloves, safety glasses, hard hat/bump cap, fall protection, electrical PPE and arc flash clothing). ALWAYS refer to appropriate Safety Data Sheets (SDS) and OSHA guidelines for proper PPE.
- When working with or around hazardous chemicals, ALWAYS refer to the appropriate SDS and OSHA/GHS (Global Harmonized System of Classification and Labeling of Chemicals) guidelines for information on allowable personal exposure levels, proper respiratory protection and handling instructions.
- If there is a risk of energized electrical contact, arc, or flash, technicians MUST put on all PPE in accordance with OSHA, NFPA 70E, or other country-specific requirements for arc flash protection, PRIOR to servicing the unit. NEVER PERFORM ANY SWITCHING, DISCONNECTING, OR VOLTAGE TESTING WITHOUT PROPER ELECTRICAL PPE AND ARC FLASH CLOTHING. ENSURE ELECTRICAL METERS AND EQUIPMENT ARE PROPERLY RATED FOR INTENDED VOLTAGE.

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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.

WARNING

Cancer and Reproductive Harm!

This product can expose you to chemicals including lead and bisphenol A (BPA), which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

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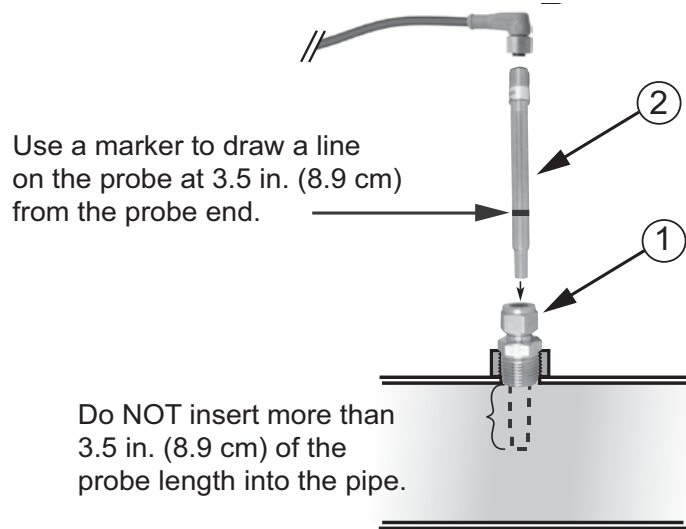
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Important: Before installing the ifm efector® flow detection controller and sensor, use a marker to draw a line on the probe at 3.5-in. (8.9 cm) from the end of the probe. Do not insert more than 3.5-in. (8.9 cm) of the probe length into the pipe. See the following figure.

Figure 1. Installation of ifm efector® flow detection controller and sensor



1. Mount the 1/2-in. NPT adapter in a horizontal or vertical section of pipe. The maximum distance from the control panel must not exceed 29.5 ft (9 m) (see item labeled 1 in the preceding figure). Allow at least five pipe diameters straight run of pipe upstream of the sensor location, and three pipe diameters straight run of pipe downstream of the sensor location.

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Note: In the case of a horizontal pipe, mounting the sensor in the side of the pipe is preferred. In the case of a vertical pipe, mounting the sensor in a place where the water flows upwards is preferred.

NOTICE

Overtightening!

Do not exceed torque specifications as it could result in equipment damage.

2. Insert the flow sensor probe (see item labeled 2 in the preceding figure) through the 1/2-in. NPT adapter so that 3 to 3.5-in. (7.6 to 8.9 cm) of the probe's length extends into the pipe. Tighten the 1/2-in. NPT adapter as needed to prevent leakage and keep the probe from backing out under pressure. **Do not exceed 40 ft·lb (54.2 N·m) of torque on the fitting. Sensor damage can occur if it is overtightened.**

Note: When installed, the tip of the ifm efector® sensor probe must be at least 1-in. (2.54 cm) away from any pipe wall. Do not insert more than 3.5-in. (8.9 cm) of the probe length into the pipe.

3. Adjust the flow switch on the module as needed.

Note: + indicates lower flow.

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Figure 2. Flow switch module



See the chiller's Installation, Operation, and Maintenance manual for the remaining instructions needed to complete installation and adjust the ifm efector® proof of flow system.

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Note: If you are experiencing installation difficulties, malfunctions, or related failures, take photographs of the installation and provide the photographs to your local Trane office to assist with problem analysis.

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