

Items Included

Quantity	Description	Part Number
1	TRACON MODEL FPT 130 Single-Point Freeze Protection Heat-Trace Control	25169
1	Temperature Sensor	25076
1	FPT 130 Installation Sheet (this document)	25298
1	FPT 130 Installation and Operation Manual	25165

Prior to Installation

1. Read these installation instructions and manual prior to beginning installation.
2. Install this device only if you are a qualified electrician trained to perform such work.
3. Before beginning installation, lay out the system components, the heat trace cable and the temperature probe in their approximate locations to visualize the system and evaluate exact component and junction box placement, as well as required cable and conduit lengths.

Installation

The FPT 130 Automatic Heat-Trace Control should be installed by a qualified, licensed electrician. Installation must conform to all applicable local and national electrical codes and laws. The unit's NEMA 4X IP66 enclosure allows for indoor or outdoor applications.

The FPT 130 controller has an ambient operating temperature range of -40 °F to 131 °F (-40 °C to 55 °C). To avoid potential internal condensation mount the unit out of direct sunlight.

Install the FPT on a fixed, flat, vertical surface using the unit's mounting flanges. The mounting flanges accommodate 1/4" or 6.3 mm fasteners.

The FPT 130's nonmetallic enclosure has one 1.046" hole for conduit entry; this can hold both power and load wiring.

Use only Listed Type 4X IP66 liquid-tight conduit hubs or cable glands. Connect the hub to the conduit system before connecting the hub to the enclosure.

The unit comes with two installed liquid-tight cable glands. One of these fittings is for the temperature sensor cable, and the other is for the alarm relay cable.

The cable glands can accommodate cable diameters 0.08" to 0.24" (2 mm to 6 mm). The temperature sensor may be located up to 2,000' (610m) from the FPT.

There is a removable electrical insulation divider that must be in place when there is power applied to the unit.

All leads should be terminated; no unsecured leads should be left inside the wiring compartment.

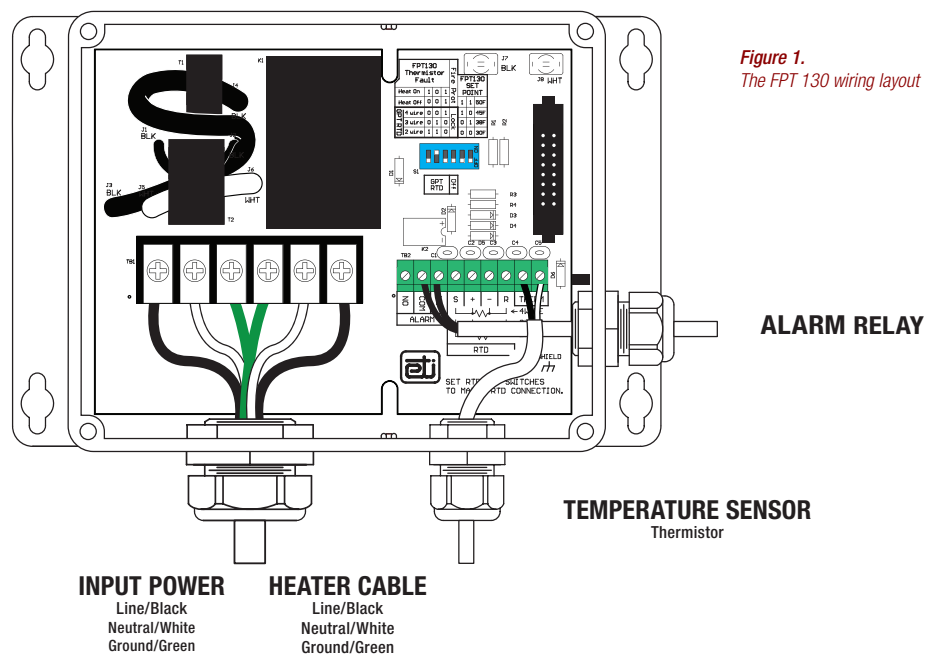


Figure 1.
The FPT 130 wiring layout

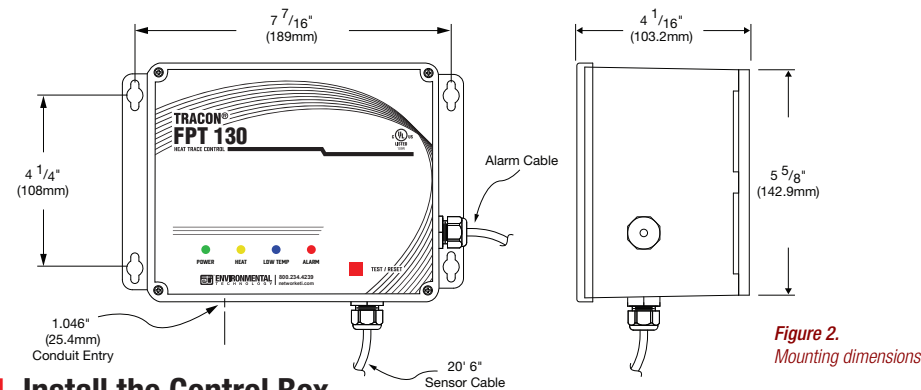


Figure 2.
Mounting dimensions

1. Install the Control Box

Use the box itself as a template to determine the mounting hole footprint. Install the box to a solid, stable surface capable of supporting four times the weight of the box, or about 20 pounds. Use all four mounting holes. Install the control box to the wall using heavy-duty 1/4" or 6.3 mm fasteners long enough to fasten the box securely. Do not fully tighten mounting hardware at this time. Leave the mounting hardware loose enough to work the conduit into place. Hardware will be fully tightened following installation of the conduit.

Note: Perform the following steps with the circuit breaker to the unit OFF. The TRACON FPT 130 is permanently connected equipment and does not have an internal disconnect device. When power is applied, the system will start.

2. Connect the Supply and Load

Feed the Input Supply (Input Power) and the Load (Heater Cable) through the Conduit Entry Hole in the enclosure as shown, then connect the leads, as shown in the Figure 3. Line is black; neutral is white; ground is green.

Note: Both the power and the load require a #10 AWG wire.

3. Install the Temperature Sensor

The FPT 130 comes with a thermistor temperature sensor with a 20 ft. jacketed cable that has an operating range of -40 °F to 230 °F (-40 °C to 110 °C).

Refer to Figure 4.

4. Install the External Alarm

An alarm or power-off condition can be communicated by either opening or closing a relay contact. It is important to make the proper alarm relay connections to achieve the desired result. The middle terminal labeled COM (Common) is used in both wiring configurations. Connect one alarm relay lead to the COM terminal.

If the system needs a contact to close to signal an alarm or power-off condition, connect the other alarm relay lead to the NC (Normally Closed) terminal.

If the system needs a contact to open to signal an alarm or power-off condition, then connect the other alarm relay lead to the NO (Normally Open) terminal.

If the unit has power, and there are no alarm conditions then the NO and COM terminals will be connected. If the unit loses power or an alarm condition occurs then the NC and COM terminals will be connected.

Refer to Figure 5.

5. Setup and Settings Editing

Refer to Figure 6 (upper right).

6. Install the Conduit and Fully Tighten Hardware

Install the conduit runs to the control box. Use only Listed Type 4X IP66 liquid-tight conduit hubs. With cabling routed through conduit and conduit is secure, fully tighten the control box mounting hardware and re-assemble control box panels and cover in their original location.

Note: At this point the circuit breaker to the unit can be turned on providing power to the unit.

Figure 3. Contactor connections

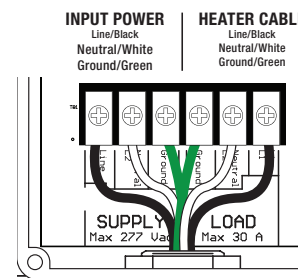


Figure 4. Thermistor sensor connection

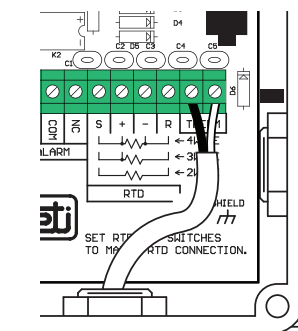
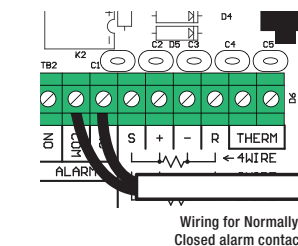


Figure 5. External alarm connection

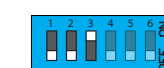


Temperature

Sensor Fault Mode

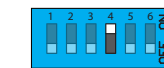


Energize Heaters when sensor fail

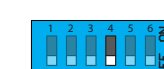


De-energize Heaters when sensor fail

Fire Protection Mode

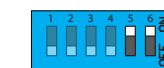


Fire Protection ON

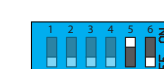


Fire Protection OFF

Temperature Setpoint



50 °F



45 °F



38 °F



30 °F

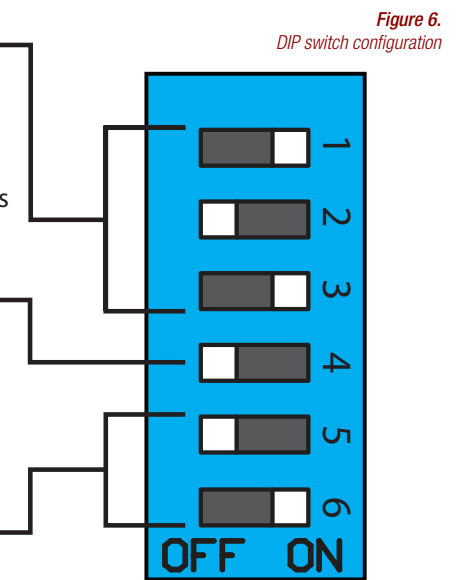


Figure 6.
DIP switch configuration

FPT130 Thermistor Fault		Fire Prot	FPT130 SET POINT	
Heat On	1 0 1		1 1	50F
Heat Off	0 0 1	Lock	0 1	38F
4 wire	0 0 1		1 0	45F
3 wire	0 1 0		0 1	38F
2 wire	1 1 0		0 0	30F

Note: The DIP switches are read at power-up. If any DIP switch is changed while the unit is on, then the power needs to be turned off and on again for the new setting to take effect.



Pilot Duty

The FPT 130 Automatic Heat-Trace Control with GFEP cannot be used for Pilot Duty applications.



Resistive Load Usage Only

This product is not for use with Inductive loads. Inductive loads may create nuisance tripping of the Ground-Fault Equipment Protection circuit.



Abnormal Odor or Smoke

In the event of smoke or a burning or abnormal odor, immediately interrupt power to the unit by turning off the circuit breaker protecting the unit.



Electrical Shock / Fire Hazard

Any installation involving electric heater wiring must be grounded to earth to protect against shock and fire hazard. Suitable ground fault detection and interrupting systems must be in use at all times to reduce shock and fire hazard and to protect equipment.



Electric wiring to heating elements must be installed in accordance with National Electrical Code (NEC)/Canadian Electrical Code requirements, as well as all other local and applicable electrical codes and any third-party standards. This product is intended for commercial and industrial applications. Follow the installation instructions contained in this manual and those provided by the heater manufacturer.



Size the circuit breaker appropriately for the expected load and inrush current. The maximum rated current for the FPT 130 is 30 amps with resistive load.



Heater loads and their controls should not share a circuit branch with other types of equipment. A shared circuit may result in electromagnetic interference that can affect system operation.

Make certain that the heater shield is properly grounded. Failure to do so may result in damage to the equipment or fire.

Following installation and prior to beginning system operation, refer to and perform the Post-Installation Test described in this manual.

CONTACTING ENVIRONMENTAL TECHNOLOGY, INC.

For assistance, contact Customer Service. Office hours are from 8:00 AM until 5:00 PM ET.

Voice (800) 234-4239 (USA and Canada) or (574) 233-1202 (elsewhere)

Fax (888) 234-4238 (USA and Canada) or (574) 233-2152 (elsewhere)

E-mail info@networketi.com

Mail Environmental Technology, Inc.

1850 North Sheridan Street
South Bend, IN 46628

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