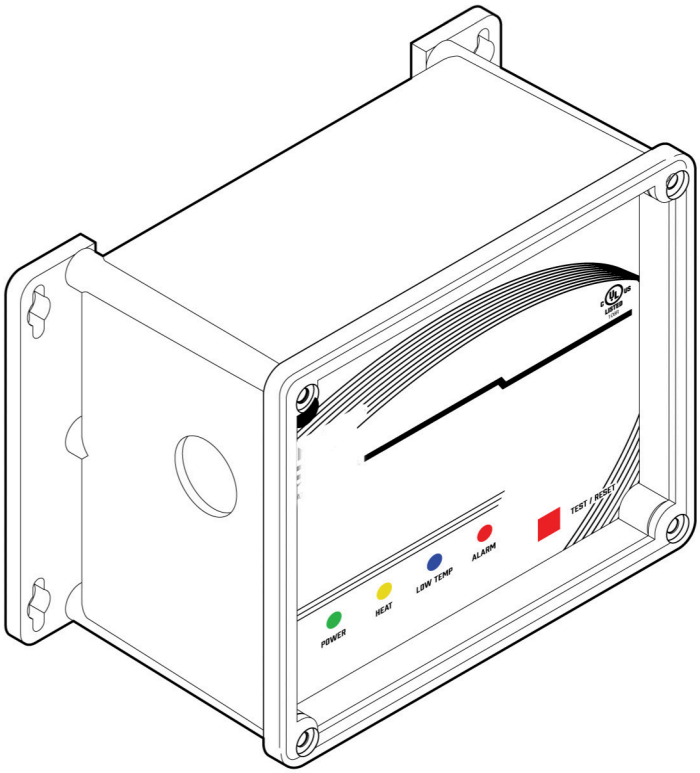
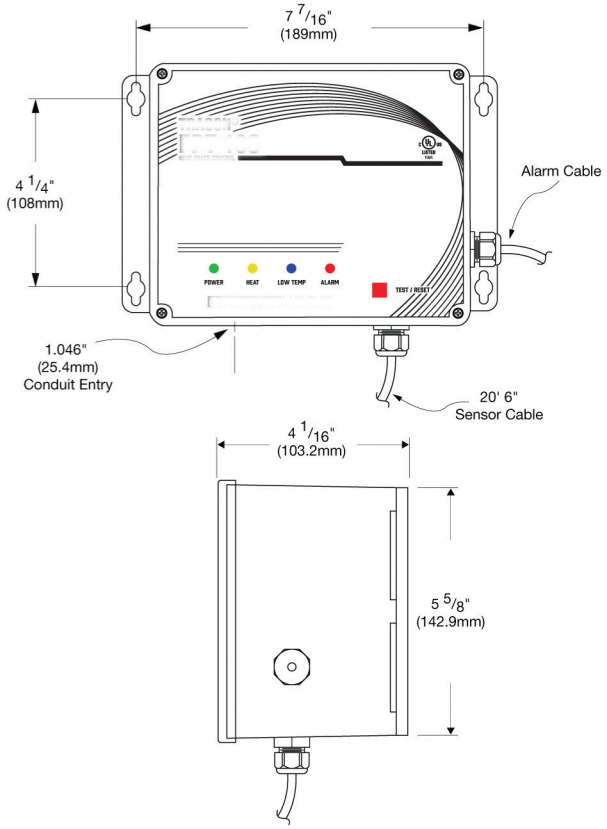
Electronic Single-Point General Purpose Heat Trace Controller





DESCRIPTION

The 1FP Heat–Trace Control is a single–point microprocessor–based heat–trace control thermostat. It is ideal for applications which require Ground–Fault Equipment Protection (GFEP). Ideal uses include freeze protection, and other temperature monitoring and control applications.

The 1FP Heat–Trace Control operates from the heater's power source. A universal power supply allows the 1FP to operate from 100 V ac to 277 V ac, and control a resistive load up to 30 A.

The temperature setpoint is adjustable from 30 °F, 38 °F, 45 °F, or 50 °F (−1.1 °C, 3.3 °C, 7.2 °C, or 10 °C) to a tenth degree resolution.

The 1FP comes with a 100K ohm thermistor temperature sensor with a 20 ft. jacketed cable. The included sensor has an operating range of −40 °F to 230 °F (−40 °C to 110 °C).

The 1FP monitors temperature, load current, and ground leakage current. Alarms include low temperature, low load current, ground fault, sensor fault, internal fault, and power fail. These alarms are pre-set and easy to observe from the front panel.

The 1FP Heat–Trace Control includes integral GFEP. This eliminates the extra expenses associated with having to provide separate GFEP components in the circuit panel.

The 1FP normally disconnects power immediately when ground fault current exceeds 30 mA. If it is set to Fire Protect mode, for critical fire protection systems, then it will generate the alarm but power will be maintained to prevent freezing.

To ensure continued safe operation, the 1FP performs a self–test of the GFEP circuit when power is first applied, along with a load ground fault test, and this test repeats every 24 hours while power is applied if the load has not been energized.

Specifications

General	
Certifications	UL 60730–1, UL 1053, CSA E60730–1:13
Environmental	
Area of use	Nonhazardous locations
Operating temperature	–40 °F to 131 °F (–40 °C to 55 °C)
Enclosure	
Dimensions	8 1/8" (W) x 5 1/2" (H) x 4 3/8" (D) 207 mm (W) x 140 mm (H) x 112 mm (D)
Ingress protection	NEMA 4X, IP66
Cover attachment	Polycarbonate cover, plastic screws
Cable entries	Two liquid-tight cable glands installed for sensor and alarm leads, cable diameter 0.08” to 0.24” (2 mm to 6 mm) One 1.046" hole to accommodate a ¾" conduit fitting for power wiring connection
Material	Polycarbonate
Weight	2.7 lb. (1.22 kg)
Mounting	Wall mount with flanges
Wiring Connector Ratings	
Power	Barrier Strip Terminals for Line, Neutral, and Ground; use 10 AWG wires rated for at least 194 °F (90 °C)
Sensors	Terminal Block, rising cage clamp, 12–28 AWG leads
Alarm relay	Terminal Block, rising cage clamp, 12–28 AWG leads
Parameter Settings	
Temperature setpoints	30 °F, 38 °F, 45 °F, or 50 °F (–1.1 °C, 3.3 °C, 7.2 °C, or 10 °C)
Low–temperature threshold	2 °F (1 °C) below setpoint
Low–current alarm threshold	0.1 A
Low–current alarm delay	5 s
Ground fault limit current	30 mA
Self–test interval	24 h

User Interfaces	
Pushbutton	Test / Reset
DIP switches	Temperature setpoint Thermistor fault mode Fire protection mode
Remote Interface	
Alarm relay	Isolated DPDT AMP Class 2 contact
Indicators	
Status indicator	Power to the unit (Green solid) Calibration error (Green blinking) Call for heat (Yellow solid) Low current alarm (Yellow blinking) Stuck relay (Yellow blinking fast) Low temperature (Blue solid) Sensor fault (Blue blinking) Ground fault (Red solid) GFEP circuit failure (Red blinking)
Summary alarm relay reporting	Low load current High ground fault current Sensor fault Internal fault
Control Ratings	
Temperature accuracy	+/– 2 °F (1 °C)
Temperature Sensors	
Temperature input	(Included) Thermistor, 100k ohms at 25 °C, range –40 °F to 230 °F (–40 °C to 110 °C), 20ft Lead (25076)
GFEP (Ground–Fault Equipment Protection)	
Threshold	30 mA
Automatic self–test range	Verifies GFEP functionality every 24 hr. and when the load is turned on
Power	
Supply voltage	100 – 277 V ac 50/60 Hz
Controller power consumption	5 W maximum, 2 W idle
Load rating	30 A, 100 – 277 V ac resistive

Specifications are at 77 °F (25 °C) unless otherwise stated and are subject to change without notice.