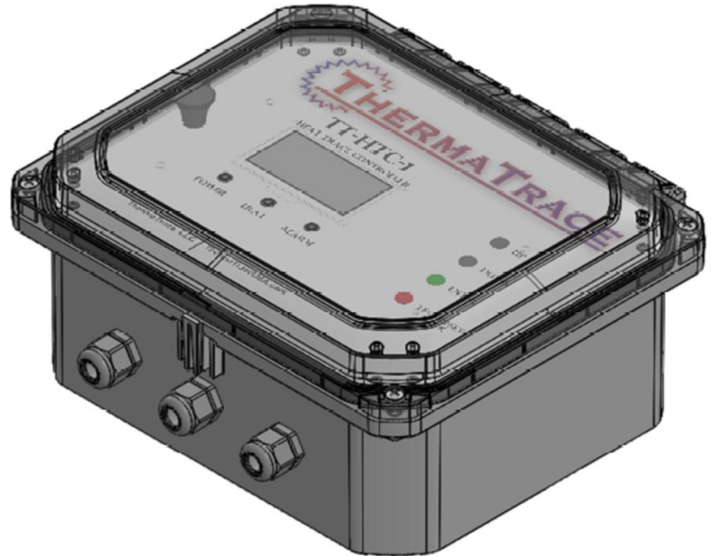
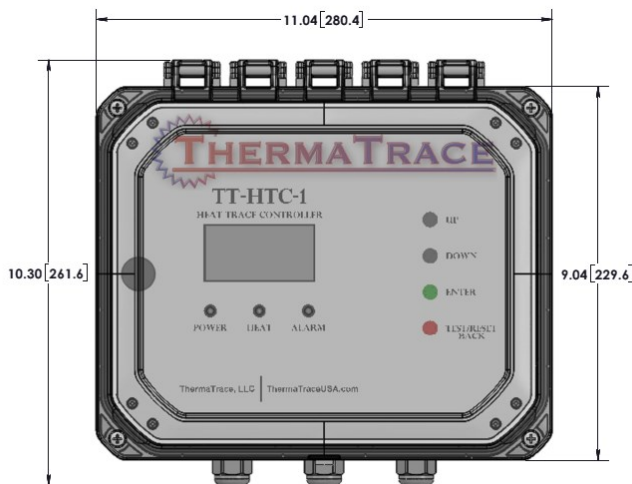


TT-HTC-1

Heat Trace Controller



The TT-HTC-1 Adjustable-Setpoint, Microprocessor-based Heat Trace Controller is the most cost effective system for Heat Trace applications by providing Ground Fault Equipment Protection (GFEP).

Typical applications include Temperature Maintenance, Freeze Protection, and other temperature monitoring and control applications.

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

Temperature Setpoint and Alarms

The temperature setpoint is user adjustable from 0°F to 999°F. Alarms include; High Temperature, Low Temperature, High Current, Low Load Current, Ground Fault, Sensor Fault, Internal Fault, and Power Fail. These alarms are pre-set and are indicated on the front panel by a Common Alarm Indicating Light and defined by accessing the Diagnostics Menu on the display screen .

Sensor Inputs

The TT-HTC-1 can receive inputs from various temperature sensing devices such as: 10K Thermistor, 100K Thermistor; 2-Wire, 3-Wire and 4-Wire RTD's.

Ground-Fault Equipment Protection

The TT-HTC-1 Heat Trace Controller includes integral GFEP. This eliminates the extra expenses associated with having to provide separate GFEP components in the circuit panel.

The TT-HTC-1 disconnects power immediately when ground fault current exceeds 30 mA.

Automatic GFEP Circuit Self-Test

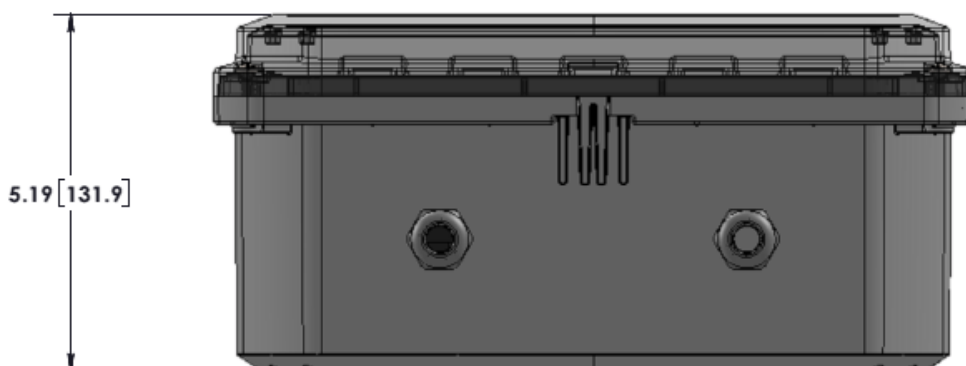
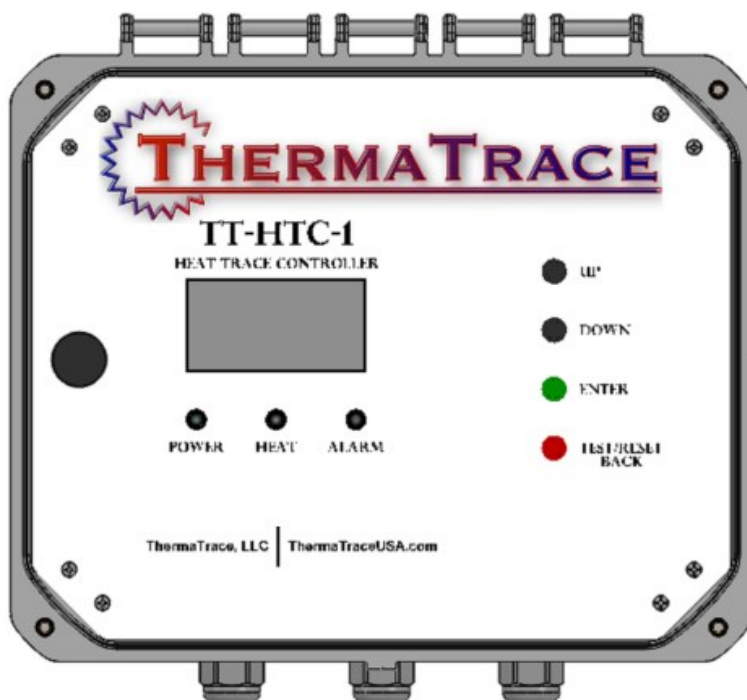
To ensure continued safe operation, the TT-HTC-1 performs a self-test of the GFEP circuit when power is first applied, along with a load ground fault test, and this test cycle is programmable and repeats while power is applied if the load has not been energized.

Bluetooth Connectivity

Bluetooth capability will allow the TT-HTC-1 to connect to our app (downloadable from Google Play Store), enabling the user to monitor Circuit Status, check for Alarms and change operational commands.

ModBus

TT-HTC-1 supports Modbus communications via a three-wire RS 485 connection



SPECIFICATIONS

General

Certifications ETL Tested to UL 60730–1, UL 1053, Listed CSA E60730–1:13

Environmental

Area of use Nonhazardous locations

Operating temperature range –40 °F to 122 °F (–40 °C to 50 °C)

Enclosure

Dimensions 10.00" (W) x 8.40" (H) x 5.2" (D)
264 mm (W) x 213 mm (H) x 133 mm (D)

Ingress protection NEMA 1,2,3,3R,3RX,3S,3SX,3X,4,4X, 5,12,13, IP65, 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 $\frac{3}{4}$ " conduit fitting for power wiring connection

Material Polycarbonate

Weight 3.7 lb.

Mounting Wall mount with flanges

Wiring Terminal 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 setpoint Adjustable –1 °F to 999 °F
Default 40 °F

Low-temperature alarm OFF to 999 °F
Default 35 °F

High-temperature alarm OFF to 999 °F
Default 140 °F

Low-current alarm 0.01 A to 30.0 A
Default 0.1 A Enabled

High-current alarm 0.01 A to 30.0 A
Default 30.0 A

Ground fault Trip 0.01 mA to 999 mA
Default 30 mA

Ground fault Alarm 0.00 mA to 999 mA
Default 25 mA

Self-Test Interval 1 h to 240 h
Default 24 h

Temperature Unit °F or °C
Default °F

User Interfaces

Pushbuttons UP, DOWN, ENTER, TEST / RESET BACK

Remote Interface

Alarm relay Isolated DPDT AMP Class 2 contact

Indicators

Status indicator Power (Green)
Heater (Yellow)
Summary alarm (Red)

Display 2.7" OLED graphic 128x64

Summary alarm relay Low Temperature, High Temperature, Low Load Current, High Load Current, High Ground Fault Current,
Stuck relay
Sensor fault Internal fault

Control Ratings

Temperature accuracy $\pm 2^{\circ}\text{F}$ (1°C)

Temperature Sensors

Temperature inputs Thermistor: 100k ohms at 25°C ,
Thermistor: 10k ohms at 25°C ,
RTD Sensor: Platinum,
Alpha = 0.00385, ITS-90,
100 ohms at 0°C
Input supports 2-wire, 3-wire, or
4-wire connection

GFEP (Ground-Fault Equipment Protection)

Operation Continuously tests ground fault current whenever the load is on; also manually and periodically tests equipment ground fault current with each self-test.

Trip Range Adjustable 001 mA to 999 mA
Default 30 mA

Alarm Range Adjustable 000 mA to 999 mA
Default 25 mA

Automatic self-test Verifies GFEP functionality at every programmed cycle time.

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