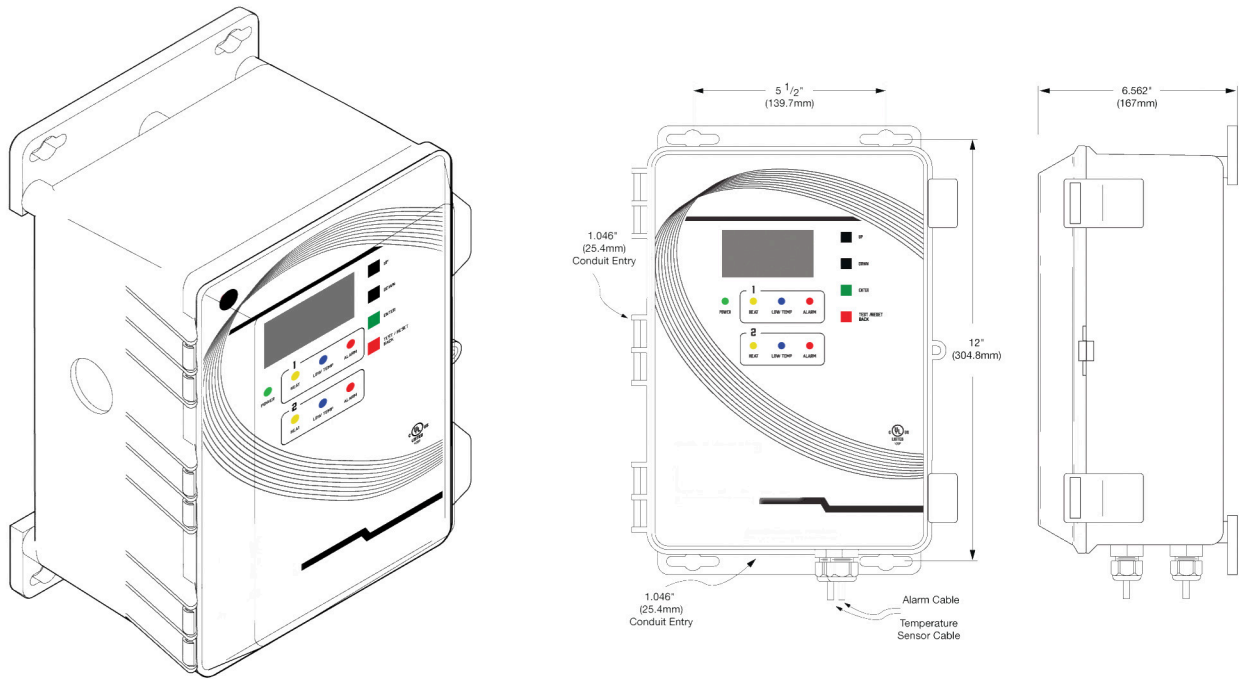


Electronic Dual-Point General Purpose Heat Trace Controller



DESCRIPTION

The 2PHTC Dual Channel Heat-Trace Control is a dual-point microprocessor-based heat-trace control thermostat. It is ideal for applications which require two independent heater-control Channels with Ground-Fault Equipment Protection (GFEP). Ideal uses include freeze protection, hot water temperature maintenance, grease line trace, tank heating, and other temperature monitoring and control applications.

The 2PHTC Heat-Trace Control operates from the heater's power source. A universal power supply allows the 2PHTC to operate from 100 V ac to 277 V ac. It can independently or jointly control two resistive loads up to 30 amps each.

The temperature setpoints are adjustable from -99.9 °F to 999 °F (-73.3 °C to 537.7 °C) to a tenth degree resolution.

The 2PHTC comes with two 100K ohm Thermistor temperature sensors with 20 ft. jacketed cables. The included sensors have an operating range of -40 °F to 230 °F (-40 °C to 110 °C). The 2PHTC can also use 2-, 3-, or 4-wire RTD sensors for systems requiring high-temperature sensing. Two temperature sensor inputs are provided, and the channels can operate independently or from one sensor.

The 2PHTC monitors temperature, load current, and ground leakage current. Alarms include high temperature, low temperature, high load current, low load current, ground fault, sensor fault, internal fault, and power fail. These alarms are easy to adjust and observe from the front panel. The 2PHTC can be set to energize or de-energize the heaters during a sensor fault.

The 2PHTC Heat-Trace Control includes integral GFEP for each channel. This eliminates the extra expenses associated with having to provide separate GFEP components in the circuit panel. The 2PHTC normally disconnects power immediately to the affected zone when ground fault current exceeds the set value. But 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 2PHTC performs a self-test of the GFEP circuits when power is first applied, along with a load ground fault test, and this repeats periodically thereafter at an adjustable interval.

Specifications

General

Certifications UL 60730–1, UL 1053, 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 9.0" (W) 12 4/5" x (H) x 5 9/10" (D)
 229 mm (W) x 325 mm (H) x 150 mm (D)
 Ingress protection NEMA 4X, IP66
 Cover attachment Polycarbonate cover
 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)
 Two 1.046" holes to accommodate 3/4" conduit fittings for power wiring connections

Material Polycarbonate
 Weight 5.8 lb. (2.63 kg)
 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 heat ON Adjustable –99.9 °F to 999 °F (–73.3 °C to 537.7 °C)
 Default 38 °F (3.33 °C)

Temperature setpoint heat OFF Adjustable –99.9 °F to 999 °F (–73.3 °C to 537.7 °C)
 Default 40 °F (4.44 °C)

Low–temperature alarm threshold –99.9 °F to 999 °F (–73.3 °C to 537.7 °C)
 Default 35 °F (–1.7 °C) Disabled

Low–temperature alarm delay 0 s to 3000 s
 Default 300 s

High–temperature alarm threshold –99.9 °F to 999 °F (–73.3 °C to 537.7 °C)
 Default 140 °F (60 °C) Disabled

High–temperature alarm delay 0 s to 3000 s
 Default 300 s

Low–current alarm threshold 0.0 A to 10.0 A
 Default 0.1 A Enabled

Low–current alarm delay 0 s to 300 s
 Default 5 s Enabled

High–current alarm threshold 0.0 A to 55.0 A
 Default 30.0 A Disabled

High–current alarm delay 0 s to 600 s
 Default 300 s

Ground fault limit current 1.0 mA to 300.0 mA
 Default 30 mA

Self–test interval 1 h to 250 h
 Default 24 h Enabled

Temperature Unit °F or °C
 Default °F

User Interfaces

Pushbuttons UP, DOWN, ENTER, TEST / RESET BACK
 DIP switches RTD wiring configuration
 Panel lockout

Remote Interface

Alarm relay Isolated DPDT AMP Class 2 contact per channel

Indicators

Status indicator Power (Green)
 Heater (Yellow)
 Low temperature (Blue)
 Summary alarm (Red)
 Display 2.7" OLED graphic 128x64

Summary alarm relay reporting Low temperature
 High temperature
 Low load current
 High load current
 High ground fault current
 Stuck relay
 Sensor fault
 Internal fault

Control Ratings

Temperature accuracy +/- 2 °F (1 °C)

Temperature Sensors

Temperature inputs (Included) Two Thermistors: 100k ohms at 25 °C, range –40 °F to 230 °F (–40 °C to 110 °C), 20ft Lead (25076)
 RTD Sensor: Platinum, Alpha = 0.00385, ITS–90, 100 ohms at 0 °C
 Input supports 2–wire, 3–wire, or 4–wire connection
 Sensor operates at 1 mA

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.

Range Adjustable 1 mA to 300 mA, Default 30 mA

Automatic self–test Verifies GFEP functionality every 24 hr. and whenever the load is energized

Power

Supply voltage 100 – 277 V ac 50/60 Hz
 Controller power consumption 7 W maximum, 2.2 W idle
 Load rating, each channel 30 A, 100 – 277 V ac resistive

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