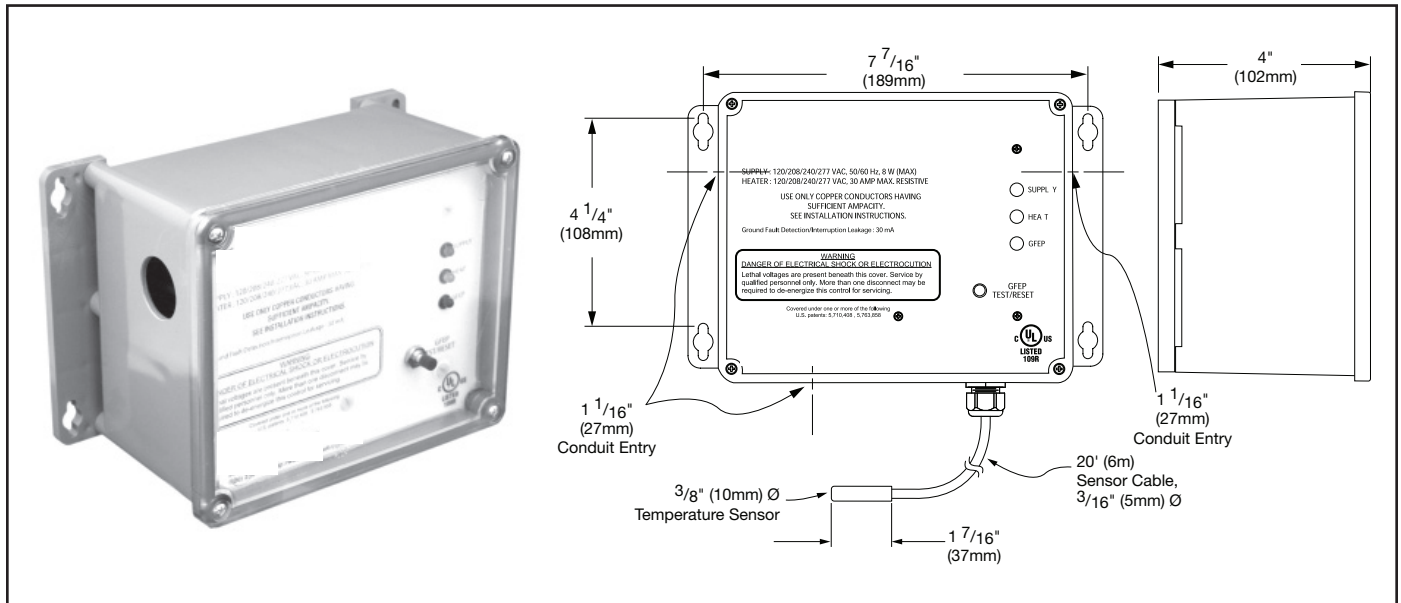


Electronic Thermostat with Ground Fault Equipment Protection

FEATURES & BENEFITS

- Automatic freeze protection
- 40°F (4.4°C) set point
- Automatic supply voltage selection
- Two-pole contactor switches up to 30 AMP heater loads
- Alarm relay with isolated contact
- Integral 30 mA GFEP
- C-UL-US listed
- Simple to install and operate
- Minimum energy costs



DESCRIPTION

This C-UL-US listed Freeze Protection Thermostat replaces electromechanical thermostats in cost-sensitive applications requiring ground fault equipment protection (GFEP). It is listed by Underwriters Laboratories to Standard UL 873 for Temperature-Indicating and -Regulating Equipment.

The thermostat operates heaters at temperatures below 40°F (4.4°C) and turn them off above 42°F (5.5°C). The external temperature sensor (supplied) is a NEC Class 2 device rated for wet locations.

The thermostat features a built-in 30 mA GFEP that is digitally filtered to minimize false tripping. A ground fault must be manually reset with the TEST/RESET switch before heater operation can be resumed. The GFEP function is automatically tested along with the heaters whenever power is applied and once every 24 hours thereafter for additional safety.

The Freeze Protection Thermostat includes an alarm relay with an isolated SPDT 1 AMP contact. The alarm relay is reverse acting and is normally closed unless there is a ground fault condition, GFEP circuitry fails a test, or when there is a bad temperature sensor.

The thermostat operates from automatically selected operating voltages of 120, 208, 240 or 277 volts, single-phase. They control heater loads of up to 30 amps while consuming less than 2 watts when idling. The temperature sensor is an NEC Class 2 device that can be located up to 2,000' (610 m) away from the thermostat. They operate in non-hazardous environments in a temperature range extending from - 40° to 131°F (- 40° to 55°C). The rugged non-metallic enclosure is appropriate for installation in indoor or outdoor locations suitable for NEMA 4x applications.

SPECIFICATIONS

General

Area of use	Nonhazardous locations
Approvals	 Type 873 Temperature Regulating Equipment

Enclosure

Protection	NEMA 4x
Cover attachment	Polycarbonate cover, machine screws
Entries	1 × 3/4" entry (bottom right) for NEC Class 2 connections 3 × 1-1/16" entries (bottom left and left) for supply and load power
Material	Polycarbonate
Mounting	Wall mounted

Front Panel Interface

Status indicator	SUPPLY (green) power applied SUPPLY (green, flashing) bad thermistor HEAT (yellow) call for heat GFEP (red) ground fault condition GFEP (red, flashing) failed GFEP test GFEP (red, flashing, rapid) GFEP test in progress
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Remote Interface

Alarm relay	Isolated SPDT 1 AMP Class 2 contact
Summary alarms	No Power Ground Fault Condition GFEP function test failure Bad or missing Thermistor

Control

Supply voltage	120, 208, 240 or 277 volts, single phase (automatically selected)
Contact type	Two Form A DPST
Maximum ratings	Voltage: 277 VAC Current: 30 amps

Temperature Sensor

Set point	40°F (4.4°C)
Dead band	2°F (1°C)
Sensor type	Thermistor network
Circuit type	NEC Class 2
Lead length	Up to 2,000' (610m) using 12 AWG 2-wire jacketed cable Up to 500' (152m) using 18 AWG 2-wire jacketed cable

Ground Fault Equipment Protection (GFEP)

Set point	30 mA
Automatic self test	Mode A: Verifies GFEP function before contactors operate Mode B: Verifies GFEP function every 24 hours
Manual test/reset	TEST/RESET switch of front panel

Environmental

Operating temperature	-40°F to 130°F (-40°C to 55°C)
Storage temperature	-67°F to 167°F (-55°C to 75°C)

#10 AWG WIRING IS REQUIRED FOR THE FIELD CONNECTIONS

FOR REMOTE ALARM ONLY

120, 208
240, 277 VAC
50/60 Hz

SAFETY GROUND
LINE 2/NEUTRAL
LINE 1

GREEN
WHITE
BLACK

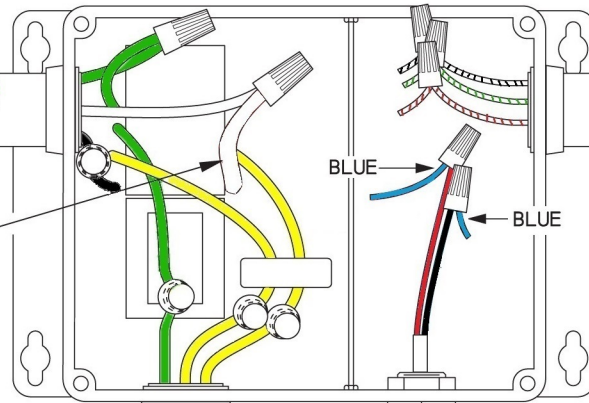
WHITE

ALL GROUND WIRES ARE NOT TO BE TIED TOGETHER IN ONE WIRE NUT. TIE ONE GROUND WIRE FROM THE CONTROLLER TO THE LINE SIDE GROUND & ONE GROUND WIRE FROM CONTROLLER TO LOAD SIDE.

HEATING CABLE
30 AMPS LOAD MAX

HEATER SHIELD/GREEN
HEATER/YELLOW
HEATER RETURN/YELLOW

20' (6M) SENSOR CABLE
2-CONDUCTOR
NEC CLASS 2 CIRCUIT



WHITE/BLACK COMMON
WHITE/GREEN N.O.
WHITE/RED N.C.

ALARM RELAY

CONNECT BLACK SENSOR WIRE TO ONE BLUE WIRE IN SST2 ENCLOSURE, AND CONNECT RED SENSOR WIRE TO THE OTHER BLUE WIRE

EITHER SENSOR WIRE MAY BE ATTACHED TO EITHER BLUE WIRE

IN AMBIENT SENSING SST2-AMB MODEL, SENSOR IS MOUNTED ON SIDE OF ENCLOSURE AND PRE-WIRED. FOR PIPE SENSING APPLICATIONS INSTALL SENSOR ON OPPOSITE SIDE OF PIPE FROM HEATER CABLE. CABLE CAN BE CUT SHORTER OR EXTENDED UP TO 500' IF REQUIRED. FOR EXTENSION USE 2C/#18 JACKETED CABLE