

1 Applications

The EPI-LX-TH/THPR programmable/non-programmable thermostats can be used in conjunction with the EPI-LX-R power supply series for the STEP Warmfloor™ radiant heat system. Temperature is measured in 15 minute cycles by the thermostat's microprocessor, which determines the amount of pulsing (system on/off) needed for each subsequent interval. The EPI-LX-TH/THPR thermostat and EPI-LX-R power supplies are connected together using a 3 conductor cable that is supplied with each EPI-LX-R power supply. Up to 20 EPI-LX-R power supplies can be connected to one EPI-LX-TH/THPR thermostat.

The EPI-LX-TH/THPR programmable/non-programmable thermostats are designed to pulse the supply voltage of the EPI-LX-R power supply in a manner to help closely match the system heat output with the heating needs for that zone and to prevent temperature overshoot typical with other heating systems. The pulsing operation, depicted below in Figure A, is based upon the users programmed set point and the measured ambient temperature. If the ambient temperature is below the set point, the EPI-LX-TH/THPR thermostat will pulse the EPI-LX-R power supply to heat up the zone.

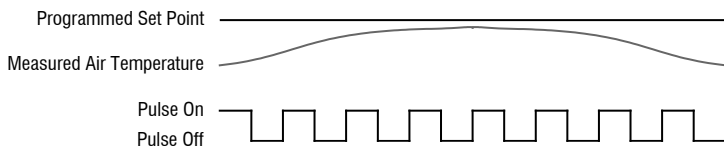


Figure A
EPI-LX-TH/THPR Pulsing Characteristics

The high energy efficiencies achieved with a STEP Warmfloor™ system controlled by an EPI-LX-TH/THPR thermostat are due to the continuous pulsing operation of the system. This continuous pulsing allows the system to continuously add the right amount of heat to maintain a constant and comfortable environment. With a traditional forced air on/off controlled heat system, the system is on and off for long durations requiring significant heat input each time the thermostat calls for heat. This results in a variable and drafty environment with low energy efficiencies compared to radiant heat. The EPI-LX-TH/THPR thermostat maximizes the efficiency of the STEP Warmfloor™ system by only requiring the system to gently replace the heat that is lost from the zone.

NOTE: The EPI-LX-TH/THPR programmable/non-programmable thermostats are designed for total heating applications and only call for the amount of heat necessary to heat the space. Consequently, the floor may not feel noticeably warm to the touch. When only floor warming is desired, particularly in summer months when used concurrently with cooling systems, floor temperature control mode (with optional floor sensor) is recommended.

2 Supplied Parts

- 1 One (1) thermostat w/ power base
- 2 Two (2) plastic anchors

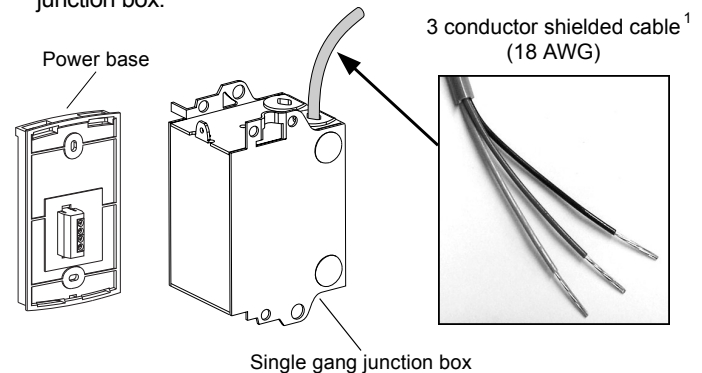
- 3 Two (2) mounting screws
- 4 One (1) miniature screwdriver

Optional

- 5 One (1) EPI-LX-SEN floor sensor (ordered separately – used for floor temperature control mode when applicable)

3 Installation Guidelines

- ▶ For a new installation, choose a location about 5 ft. (1.5 m.) above the floor.
- ▶ The thermostat must be installed on an inside wall in a place most representative of the zone it controls.
- ▶ Avoid locations where there are air drafts (top of staircase, air outlet), dead air spots (behind a door), direct sunlight or concealed chimney or stove pipes (unless a floor sensor is being used).
- ▶ The thermostat is designed to be flush mounted in a single gang junction box.

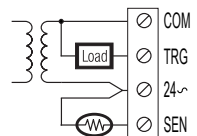


¹ Can be installed in the wall without the use of a conduit, as it only carries a low voltage signal. Do not splice cable – only use a full new length.

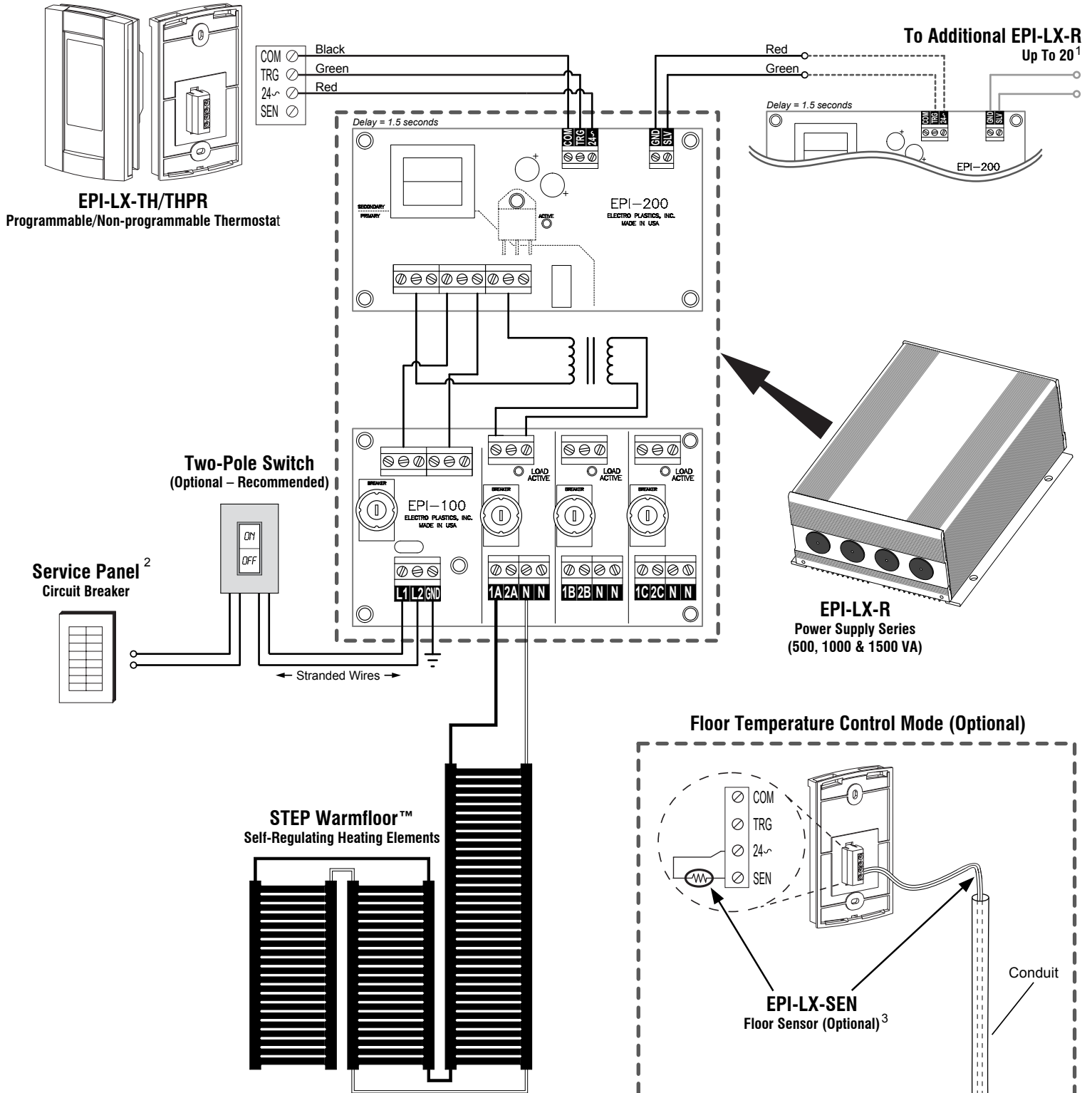
4 Installation Procedure

The installation must be carried out by an electrician and comply with local electrical codes.

- 1 Turn off power to the heating system at the main electrical panel to avoid electrical shock.
- 2 Wire the power base according to your application. See the wiring diagram in Section 5.
- 3 For floor temperature control mode (optional), connect the floor sensor between the (24~) and (SEN) terminals.
- 4 Secure the power base to the wall using the provided screws and wall anchors.
- 5 Configure the switches located on the control module. Refer to the User Guide.
- 6 Install the control module onto the power base.
- 7 Apply power to the STEP Warmfloor™ heating system.
- 8 Verify the installation by checking that the EPI-LX-R power supply can be turned on or off using the thermostat.



5 Wiring Diagram



¹ Up to 20 EPI-LX-R power supplies can be connected to one EPI-LX-TH/THPR thermostat.

² Terminals marked with an "L2" can be used as neutral terminals. For certain areas, NEC requires AFCI circuit breakers on 120 volt systems. To simplify wiring and circuit breakers, use 230 volts.

6 Technical Specifications

Maximum load: 0.5 A / 24 VAC

Heating cycle length: 15 minutes

Operating temperature: 32°F to 122°F (0°C to 50°C)

Storage: -4°F to 122°F (-20°C to 50°C)

Size (H • W • D): 4.89 x 2.76 x 0.91 in (124 x 70 x 23 mm)

Wire gauge: 18 AWG, Maximum distance = 50 ft (15.25 m)

³ The EPI-LX-SEN floor sensor should be connected between the terminals marked (24~) and (SEN) on the EPI-LX-TH/THPR thermostat. The sensor wire should run through a conduit (or hose) on an inside wall in a place most representative of the zone being heated. The end of the conduit should be placed in such a way so that the tip of the sensor is in contact with the floor surface.

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