**Important Safety Information**

This is a safety-alert symbol. The safety-alert symbol (惊叹号) is used alone or with a signal word (DANGER, WARNING, or CAUTION) to alert you to potential hazards that could result in death or serious injury.

This symbol identifies hazards which, if not avoided, could result in death or serious injury.

This symbol identifies hazards which, if not avoided, could result in minor or moderate injury.

This symbol identifies practices, actions, or factors that could result in property damage or damage to the equipment.

**WARNING**

Read this manual BEFORE using this equipment. Failure to read and follow all safety and operating instructions and warnings in this manual could result in death, serious personal injury, property damage, or damage to the equipment. Keep this manual for future reference.

**WARNING**

Installation must be performed by qualified persons, in accordance with local codes, ANSI/NFPA 70 (NEC Article 424) and CEC Part 6 Section 62 where applicable. Prior to installation, please consult the local codes in order to understand what is acceptable. To the extent this information is not consistent with the local codes, the local codes should be followed. Regardless, electrical wiring is required from a circuit breaker or other electrical circuit to the control. It is the customer’s responsibility to perform these installation steps. Please be aware local codes may require this product to be installed by an electrician.

**WARNING**

To prevent the risk of personal injury and/or death, make sure power is not applied to the product until it is fully installed and ready for final testing. All work must be done with power disconnected and the circuit being worked on.

To reduce the risk of electric shock, do not connect to a circuit operating at more than 150 V to ground.

**WARNING**

• Connect the wire from the heating mat or cable power lead.

Floor Heating Mat or Cable Power Lead Installation

The shielded power lead can be installed with or without electrical conduit (recommended for added protection against nails or screws), depending on code requirements.

1. Remove one of the knock-outs in the electrical box to route the power lead. If electrical conduit is not required by code, install a wire collar to secure the power leads where they enter the box. If conduit is required by code, install ½” (minimum) conduit from the bottom plate up to the electrical box. For multiple power leads (multiple cables), install 1¼” conduit. Secure a steel nail plate over the cutout in the bottom plate to protect the wires against baseboard nails later.

2. Secure a steel nail plate over the cutout in the bottom plate to protect the wires against baseboard nails later.

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SunStat Relay Rough-in Wiring

A short and 24 VAC supplied between the Away and Com terminal will switch the thermostat between the Away temperature and regular operation.

SunStat Sensor Installation

The SunStat Sensor can be installed with or without electrical conduit depending on code requirements. Conduit is recommended for added protection against nails and screws.

1. Connect the sensor in the same conduit as the power leads to avoid possible interference. Open a separate knock-out in the bottom of the thermostat box. Feed the sensor (and conduit, if used through the knock-out, down through the cut-out in the bottom plate, and out into the floor where the heating cable will be installed.

2. If the sensor wire needs to be secured to the wall stud, wait until after the wire and mat or cable sensor is completely installed.

3. At the sensor location, measure at least 1” into the heated area for each side where the sensor will be attached to the floor. Be sure to place the sensor exactly between two of the heating wires. Ensure the sensor wire does not cross over the heating wires.

4. Do not locate the sensor outside the heating area or in a gap between heating wires that is wider than the rest of the floor. Do not locate the sensor where direct sun, not-water piping, heat duct, or lighting below will cause inaccurate temperature readings. Do not locate the sensor where an insulting item such as a rug is likely to be placed.

5. To make sure the sensor tip does not create a high spot in the floor, it may be necessary to chisel a channel into the floor and lay the sensor tip into the channel. Glue the tip into place.

6. Do not pull the sensor wire or remove the black cable protector. Strip the wire ends to ½” long.

**WARNING**

Make sure 120 VAC is supplied to 120 VAC cables and 240 VAC is supplied to 240 VAC cables. Otherwise, dangerous over-heating and a possible fire hazard could result. Do not exceed 15-amps on this control.

**WARNING**

During initial wiring, cut the power lead conduit and the others for the thermostat (these holes should be directly below the electrical box(es)).

**WARNING**

Refer to the instructions provided with the SunStat Relay C3 for additional details.

**WARNING**

SunStat Sensor Installation

1. The SunStat Sensor can be installed with or without electrical conduit depending on code requirements. Conduit is recommended for added protection against nails and screws.

2. Do not place the sensor in the same conduit as the power leads to avoid possible interference. Open a separate knock-out in the bottom of the thermostat box. Feed the sensor (and conduit, if used through the knock-out, down through the cut-out in the bottom plate, and out into the floor where the heating cable will be installed.

3. If the sensor wire needs to be secured to the wall stud, wait until after the wire and mat or cable sensor is completely installed.

4. At the sensor location, measure at least 1” into the heated area for each side where the sensor will be attached to the floor. Be sure to place the sensor exactly between two of the heating wires. Ensure the sensor wire does not cross over the heating wires.

5. Do not locate the sensor outside the heating area or in a gap between heating wires that is wider than the rest of the floor. Do not locate the sensor where direct sun, not-water piping, heat duct, or lighting below will cause inaccurate temperature readings. Do not locate the sensor where an insulting item such as a rug is likely to be placed.

6. To make sure the sensor tip does not create a high spot in the floor, it may be necessary to chisel a channel into the floor and lay the sensor tip into the channel. Glue the tip into place.

7. Do not pull the sensor wire or remove the black cable protector. Strip the wire ends to ½” long.

Thermostat Wiring

Before connecting the wires to the back of the thermostat, detach the display front from the base. While holding the base section in place, pull the lower half of the display front towards you to pivot it away from the base.

Use the wire nuts included with the thermostat:

1. Connect the green wire from the power supply to the ground wire from the floor heating power lead. If the electrical box is metal, use 1¼” (minimum) conduit, attach ground wire to an external ground wire to the bonding screw.

2. Connect the white wire from the Load D1 or the thermostat to the black wire from the heating mat or cable power lead. If 120 VAC connections, the black (L) hot conductor from the breaker panel. The N wire connects to the white (N) neutral conductor. For 240 VAC connections, connect L2 to one side of the 240 VAC supply from the breaker panel and the L2 to the other.

**WARNING**

Make sure the wire connections are securely tightened using the screws on the side.

Connect the sensor wires to the SENSORS terminals on the thermostat. These connections are not polarized.

Connect (com) to the sensor wire and connect (away) to the heating mat or cable power lead.

Connect the Com wire at the relay to the Com terminal on the thermostat.

Connect the AWAY wire to the AWAY terminal on the thermostat.

Connect the COM terminal to the appropriate conductors from a home automation system. Refer to the instructions for the home automation control before making these connections.

**WARNING**

Make sure the wire connections are secured by securely tightening the screws on the side. Otherwise, acting could occur, causing dangerous overheating and a possible fire hazard.

Secure any added security wrap each wire nut connection with electrical tape.

**Finish Thermostat Installation**

Ensure all connections are secure. Carefully press the wires tight into the electrical box. Do not use the control to push them.

Use the included screws to attach the thermostat to the wall and to the wiring box. Do not over tighten.

When re-attaching the display front, line up the top edge with the base, then rotate the bottom towards the base. Ensure the pins are not bent when connecting.

**Finishing Thermostat Installation**

1. Connect the ground wire from the power supply to the ground wire from the floor heating power lead. If the electrical box is metal, use 1¼” (minimum) conduit, attach ground wire to an external ground wire to the bonding screw.

2. Connect the black (L) hot conductor from the breaker panel. The N wire connects to the white (N) neutral conductor. For 240 VAC connections, connect L2 to one side of the 240 VAC supply from the breaker panel and the L2 to the other.

**Finishing Thermostat Installation**

1. Connect the ground wire from the power supply to the ground wire from the floor heating power lead. If the electrical box is metal, use 1¼” (minimum) conduit, attach ground wire to an external ground wire to the bonding screw.

2. Connect the black (L) hot conductor from the breaker panel. The N wire connects to the white (N) neutral conductor. For 240 VAC connections, connect L2 to one side of the 240 VAC supply from the breaker panel and the L2 to the other.

**Finishing Thermostat Installation**

1. Connect the ground wire from the power supply to the ground wire from the floor heating power lead. If the electrical box is metal, use 1¼” (minimum) conduit, attach ground wire to an external ground wire to the bonding screw.

2. Connect the black (L) hot conductor from the breaker panel. The N wire connects to the white (N) neutral conductor. For 240 VAC connections, connect L2 to one side of the 240 VAC supply from the breaker panel and the L2 to the other.

**Finishing Thermostat Installation**

1. Connect the ground wire from the power supply to the ground wire from the floor heating power lead. If the electrical box is metal, use 1¼” (minimum) conduit, attach ground wire to an external ground wire to the bonding screw.

2. Connect the black (L) hot conductor from the breaker panel. The N wire connects to the white (N) neutral conductor. For 240 VAC connections, connect L2 to one side of the 240 VAC supply from the breaker panel and the L2 to the other.

**Finishing Thermostat Installation**

1. Connect the ground wire from the power supply to the ground wire from the floor heating power lead. If the electrical box is metal, use 1¼” (minimum) conduit, attach ground wire to an external ground wire to the bonding screw.

2. Connect the black (L) hot conductor from the breaker panel. The N wire connects to the white (N) neutral conductor. For 240 VAC connections, connect L2 to one side of the 240 VAC supply from the breaker panel and the L2 to the other.
**Time & Date**

**TIME**
- **Current time**
- **Touch to change date and time**
- **Current time**
- **Touch to change date and time**
- **Schedule is enabled**
- **Touch to change schedule**
- **Current floor or room temperature**
- **The floor or room temperature**
- **Control** setting in the **Setup menu** determines which temperature is displayed. **Room Max** or **Floor Max** appear below if the target temperature is being limited by another setting.

**Operation**

**Power Up**
- Switch on the circuit power supply at the breaker.
- The **SunStat Command** will load stored settings into memory.

**Heating Operation**
- By default, the SunStat Command controls the heating system to maintain a selected floor temperature. This can be switched to temperature control in the Setup menu. Floor and Room maximum settings are also available to limit temperatures.

**GFCI Testing and GFCI Light Operation**
- Press the Test button on the GFCI monthly to verify that the GFCI function is operational. The GFCI light will flash red after pressing the Test button. To resume normal operation, press the Reset button.
- If pressing test does not display a flashing red GFCI light, protection is lost and the unit will need replacement.
- If the GFCI light continues to flash after pressing the reset button, protection is lost and the unit will need replacement.
- If the GFCI trips during normal operation, press the Reset button to resume operation. If it trips again, the electric floor heating system should be inspected and tested by a qualified technician.
- If the GFCI light alternates between hi and low brightness or is off, the sensor and power lead wiring may need to be checked by a certified electrician.
- If the GFCI light continues to flash after pressing the reset button, protection is lost and the unit will need replacement.
- If the GFCI light continues to flash after pressing the test button, protection is lost and the unit will need replacement.
- If the GFCI light continues to flash after pressing the test button, protection is lost and the unit will need replacement.
- **Display**
- The display menu allows you to customize preferred display units, brightness, color themes and language options. A Clean Screen feature enables cleaning without affecting operation.

**Toolbox Menu**

**Error**
- If the display is currently an error, it will display as the first item.

**Heat Hours**
- Displays the heating duration by day or month.

**Room Offset**
- This feature can offset operation to account for over or under heating present at the sensor location.

**Software Version**
- Displays product software version.

**Load Defaults**
- Select 'Yes' to reload the factory default settings.