

This manual refers to the Model SST-3 control panel manufactured since October 31, 2013, which uses a universal (100 – 277 VAC; 50/60 Hz) power supply. Older units use a voltage-specific power supply and have different wiring configurations.

## SAFETY INFORMATION AND WARNINGS



### Pilot Duty

The SST-3 Adjustable Electronic Thermostat with GFEP cannot be used for Pilot Duty applications.



### Resistive Load Usage Only

This product is not for use with Inductive loads. Inductive loads may create nuisance tripping of the Ground Fault Equipment Protection circuit.



### Abnormal Odor or Smoke

In the event of smoke or a burning or abnormal odor, immediately interrupt power to the unit by turning off the circuit breaker protecting the unit.



### Electrical Shock / Fire Hazard



Any installation involving electric heater wiring must be grounded to earth to protect against shock and fire hazard. Suitable ground fault detection and interrupting systems must be in use at all times to reduce shock and fire hazard and to protect equipment.



Electric wiring to heating elements must be installed in accordance with National Electrical Code (NEC)/Canadian Electrical Code requirements, as well as all other local and applicable electrical codes and any third party standards. Follow the installation instructions contained in this manual and also those provided by the heater manufacturer.

Size the circuit breaker to that of the expected load. The maximum current load for the SST-3 is 30 Amp resistive. This product is intended for use in light commercial applications.

Make certain that the heater shield is properly grounded. Failure to do so may result in damage to the equipment or fire.

Following installation and prior to beginning system operation, refer to and perform the Post-Installation Test described in this manual.



### PRODUCT TESTING RECORD

Use this page to record the results of the Mega-Ohm test procedure in this manual. This record will be a useful resource throughout the life of the product.

#### MEGA-OHM TEST (Page 9)

Follow heat trace cable manufacturer's recommendations or, if not available, use a 500 VDC mega-ohm meter on the heat cable

TEST DATE	AMBIENT TEMPERATURE	READING Target: 20 MΩ or greater Check heat cable manufacturer's documentation



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**Adjustable Electronic Thermostat  
TRACON® Model SST-3 (P/N 24492)  
Installation and Operation Manual**

## **UNPACKING THE UNIT**

Immediately upon receipt, inspect the container and packing material for any noticeable damage. Unpack the unit, taking care not to damage the packing materials. Save the shipping container and related materials until normal operation has been established. If the unit must be returned, take care to ensure that it is repackaged as it was received.

As soon as the unit arrives at your facility, inspect it for mechanical damage. If any of the following problems is found, contact Environmental Technology Inc. Customer Service immediately:

- contents incomplete or incorrect;
- internal or external mechanical damage; or
- defective operation.

ETI Customer Service is available between 8:00 a.m. and 5:00 p.m. Eastern Time at (574) 233-1202 or (800) 234-4239. In the event of shipping damage, keep the packing materials for inspection by the carrier.

## **RETURNS AND REPLACEMENT PART PURCHASES**

Equipment cannot be returned for credit once it has been installed. ETI will repair or replace faulty equipment under warranty. Prior to removal of equipment for warranty return, please contact ETI Technical Support at (800) 234-4239 for troubleshooting assistance.

Before returning a unit to Environmental Technology Inc. obtain a Return Merchandise Authorization from our Customer Service Department, available between 8:00 a.m. and 5:00 p.m. Eastern Time at (574) 233-1202 or (800) 234-4239. If possible, use the original container and packing materials when packing the unit for shipment. It is important to mark the Return Merchandise Authorization clearly on the outside of the shipping container so that it may be correctly processed upon receipt at Environmental Technology.

For more information about replacement parts or for a replacement Data Sheet or Manual, please visit [http:// networketi.com](http://networketi.com).



## INVENTORY

Using the information below, verify that the shipping package contains all of the parts listed. Notify Environmental Technology Inc. Customer Service immediately if there are any discrepancies. Environmental Technology Inc. Customer Service is available between the hours of 8:00 a.m. and 5:00 p.m. Eastern Time at (574) 233-1202 or (800) 234-4239.

Item Number	Item Description
1	TRACON Model SST-3 Adjustable Electronic Thermostat with GFEP
2	Accessory Kit
3	Installation Sheet
4	Instruction Manual (this document)
5	Temperature Probe Assembly

## PRODUCT DESCRIPTION

The TRACON Model SST-3 Adjustable Electronic Thermostat with Ground Fault Equipment Protection (GFEP) circuitry automatically controls heaters for freeze protection, grease line trace and light process control. The SST-3 can be powered from an automatically selected operating voltage from 100 VAC up to 277 VAC and is rated for 30 amps maximum resistive load. An integral 30mA of GFEP provides additional safety and compliance with national and local electrical codes. The unit is housed in an environmentally-sheltered, weather-resistant enclosure for enhanced durability.

### Features and Benefits

- Adjustable setpoint facilitates multiple process control applications
- NEC Class 2 temperature sensor can be located up to 2,000 feet from the control for enhanced installation options
- 3-character display for easy setting and read-out
- Integral 30 mA of GFEP with manual and automatic test features
- Fire Protection Mode maintains heater operation for use in critical fire protection systems
- Durable weather-resistant enclosure permits indoor or outdoor installation
- UL Listed to UL 873 Temperature-Indicating and -Regulating Equipment
- UL Listed to UL 1053 Ground-Fault Sensing and Relaying Equipment

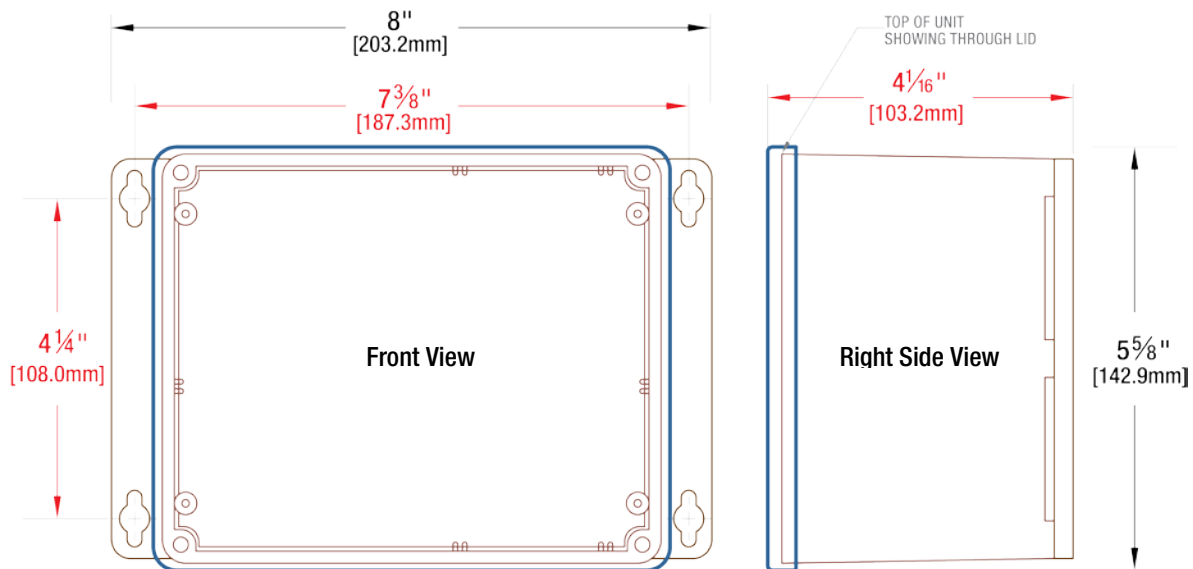
The TRACON Model SST-3 Adjustable Electronic Thermostat with GFEP is permanently connected equipment and does not have an internal disconnect device. A readily accessible disconnect device, short circuit and overcurrent protection shall be provided by the customer; these are not supplied by Environmental Technology Inc. When power is applied, the system will start.

## INSTALLING THE CONTROL

Install this unit in compliance with National Electrical Code (NEC)/Canadian Electrical Code standards, as well as any other local and applicable building and electrical codes and standards. Prior to installing, confirm the facility has properly sized electric service and breakers. For additional information regarding electrical ratings and facility power requirements, refer to the Specifications section of this manual.

This unit is intended for wall mount installation only. The wall used for the installation should be capable of supporting four times the weight of the unit, 12 pounds (5.4kg). Although the weather-resistant enclosure can be installed outside, make sure to install the unit directly to a solid, stable surface. Install the unit per the steps below; instructions for the internal connections — the alarm relay and the temperature probe — are found in the next section.

- The dimensions shown in the Front View (Figure 1 below) include the mounting holes' footprint location, which run from centerline to centerline of the four slotted mounting holes.
- The dimensions shown in the Right Side View include the depth of the enclosure from the back to the front of the clear plastic lid, the distance the unit will protrude from the mounting surface.
- Overall outside dimensions are 8.0 x 5.625" (203.2 x 142.9 mm).



**Figure 1. SST-3 MOUNTING HOLE FOOTPRINT**

To install the control box, perform the steps below.

1. Use the box as a template to determine the mounting hole footprint pattern. Hold the unit against the surface onto which it will be mounted, with the mounting blocks against the wall. Mark the wall through the slotted mounting holes. The remaining marks on the wall show the mounting location.
2. Loosely install one or both of the top mounting bolts as the remaining holes are marked to hold the box in place during the installation process. To ensure accurate and level installation, however, do not



- fully tighten any of the mounting hardware until the locations for all the mounting holes have been determined and marked.
3. Once the four mounting holes have been located and marked, install the box to the wall using properly sized 5/16-inch mounting hardware. Be sure to use mounting hardware appropriate for the job, heavy-duty and long enough to fasten the unit securely to the mounting surface. Make sure to use all four mounting holes. Because conduit will also be installed to protect the cables running from the control box, install the box, but leave the mounting hardware loose enough to work the conduit into place. The conduit will be installed later in this process, at which time all mounting hardware will be securely tightened.

## **PREPARATION AND SYSTEM SET-UP**

With system circuit breaker off, remove the clear plastic unit cover and face plate to access the inside of the unit. Install the power cable, heater cable, temperature probe, alarm relay and conduit. Refer to Table 1 as well as Figures 2, 3 and 4. Replace the clear plastic cover and face plate following installation.

### **INSTALLING THE POWER CABLE**

Install the power cable as shown in Figure 2 and described in Table 1.

### **INSTALLING THE HEATER CABLES**

Install the heater cables in accordance with National Electrical Code (NEC)/Canadian Electrical Code and manufacturers' requirements, as well as all other local and applicable electrical codes and any third party standards. Properly seal and waterproof all cable runs. Position the heater cable so it does not interfere with the temperature probe. Never touch the ends of the yellow leads, or let the yellow leads contact each other or any component inside the control box, once power is applied. Upon conclusion of heater cable installation, perform a Mega-Ohm or "megger" test on the heater cables as directed by the heater cable manufacturer. Record results on page 2 and retain for future reference.

### **INSTALLING THE TEMPERATURE PROBE**

Install the sensor end of the temperature probe as desired for the intended function. Route the temperature probe through conduit or through the weather-tight connection port on the control box. Connect both temperature probe leads to the Temp Probe terminals on the PC board. Refer to Figure 3.

### **INSTALLING THE ALARM RELAY**

Install the alarm relay as described in Table 1 and shown in Figures 2 and 3, especially the paragraph, "Before connecting the alarms relays leads." Then connect the alarm relay leads as desired.

### **INSTALLING THE CONDUIT**

Only UL listed, Type 4X, raintight conduit hubs and cable glands are to be used. The hub is to be connected to the conduit of a rigid conduit system before the hub is connected to the enclosure. Select, measure, cut and install the conduit in accordance with all National Electrical Code (NEC) requirements, all local and applicable building and electrical codes, as well as the manufacturer's instructions. Ensure a sealed, watertight installation.

## SYSTEM SCHEMATIC DIAGRAMS

POWER Cable (provided by customer)	Size for 30 Amp maximum load
HEATER Cable (provided by customer)	Size to system load
ALARM RELAY Wiring (provided by customer)*	No larger than #18 AWG jacketed, 3-conductor*
TEMPERATURE PROBE Wiring	#18 AWG jacketed, 2-conductor

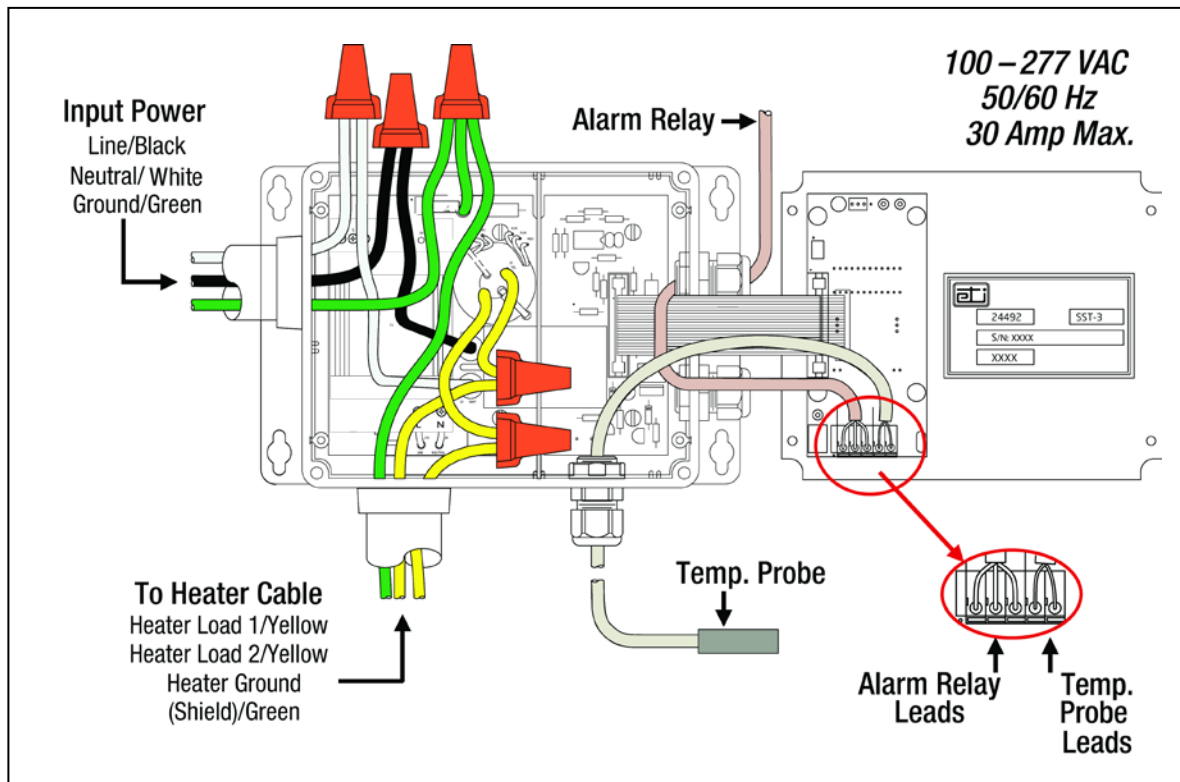
\* See Page 9.

	Wire Lead	Connect To:
INPUT Power (provided by customer)	Line 1	Black
	Line 2 or Neutral	White
	Ground	Green
OUTPUT To Heater (provided by customer)	Heater Load 1	Yellow
	Heater Load 2	Yellow
	Heater Ground (Shield)	Green
OUTPUT To Alarm Relay* (provided by customer)	Hook-Up Wire 1	COM
	Hook-Up Wire 2	Either NC OR NO*

\* See Page 9

**Table 1. CABLE RATINGS AND CONNECTIONS**

Figure 2 presents a schematic diagram of the SST-3.



**Figure 2. REPRESENTATIVE SST-3 SYSTEM SCHEMATIC**

Refer to Figure 3 for useful information regarding the wiring connections on the front panel PC board.



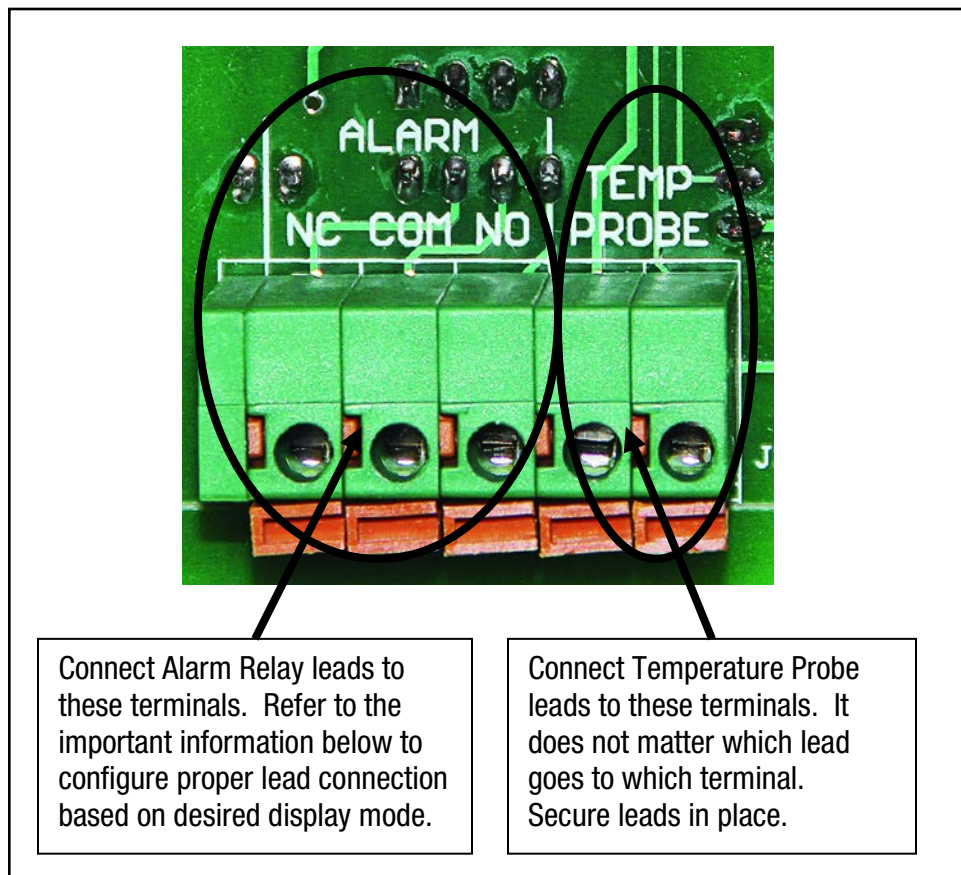


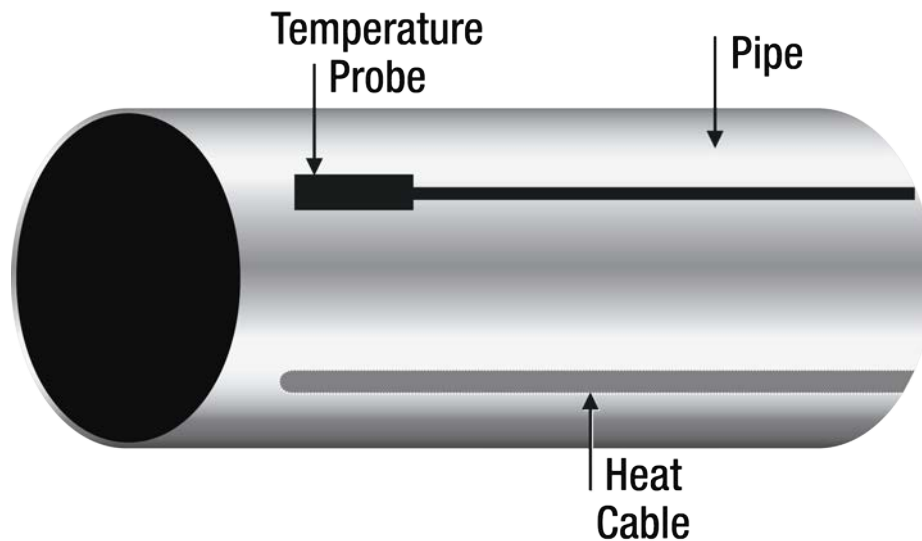
Figure 3. SST-3 FRONT PANEL PC BOARD TERMINALS

**Before connecting the alarm relays leads:**

An alarm or “power off” condition can be communicated in either of two ways and it is important to make the proper alarm relay connections to achieve the desired result. The middle terminal labeled COM (Common) will always be used. Connect one alarm relay lead to the COM terminal. NOTE: If the system uses an external alarm light or indicator to come on to communicate an alarm or “power off” condition, connect the other alarm relay lead to the NC or Normally Closed terminal. However, if the system uses an external alarm light or indicator to go off to signal an alarm or “power off” condition, then connect the other alarm relay lead to the NO or Normally Open terminal. Note: if there are no alarm conditions, then when power is supplied to the unit, the Common and Normally Open contacts close to form a complete circuit; otherwise, the Common and Normally Closed contacts will form a circuit.

If using a three-lead wire, it is not necessary to use all three leads when connecting the alarm relay. Use the COM or Common terminal and either of the other two terminals, as desired, based on the information in this paragraph.

A representative diagram of a temperature sensor for an SST-3 system installation along the length of a pipe is shown below in Figure 4. Note that the heat cable and temperature probe do not cross.



**Figure 4. REPRESENTATIVE SST-3 PIPE INSTALLATION**

If the pipe in Figure 4 were insulated, the insulation would wrap around the pipe, as well as the temperature probe and heat cable.



## POST-INSTALLATION TESTING

Installation errors cause the majority of system problems. Therefore, thoroughly test the system before placing it into service. Simple electrical tests and visual inspection can identify any wiring errors, as well as improper waterproofing. Visually inspect for proper wiring and waterproofing, and confirm that all box joints are sealed and all wiring is properly terminated.

During the post-installation test procedure (described below), the heat cable will activate briefly so that system performance can be accurately simulated. Continuously and carefully monitor the system and its components during the entire testing process. Note that the ambient temperature or general conditions in which the system is being installed affects the test procedure as well. High temperatures can damage certain materials. **Never leave the site during testing. Never leave the system unattended during testing.** If fire or smoke or an abnormal odor is observed during testing, shut off power to the system and suspend the test.

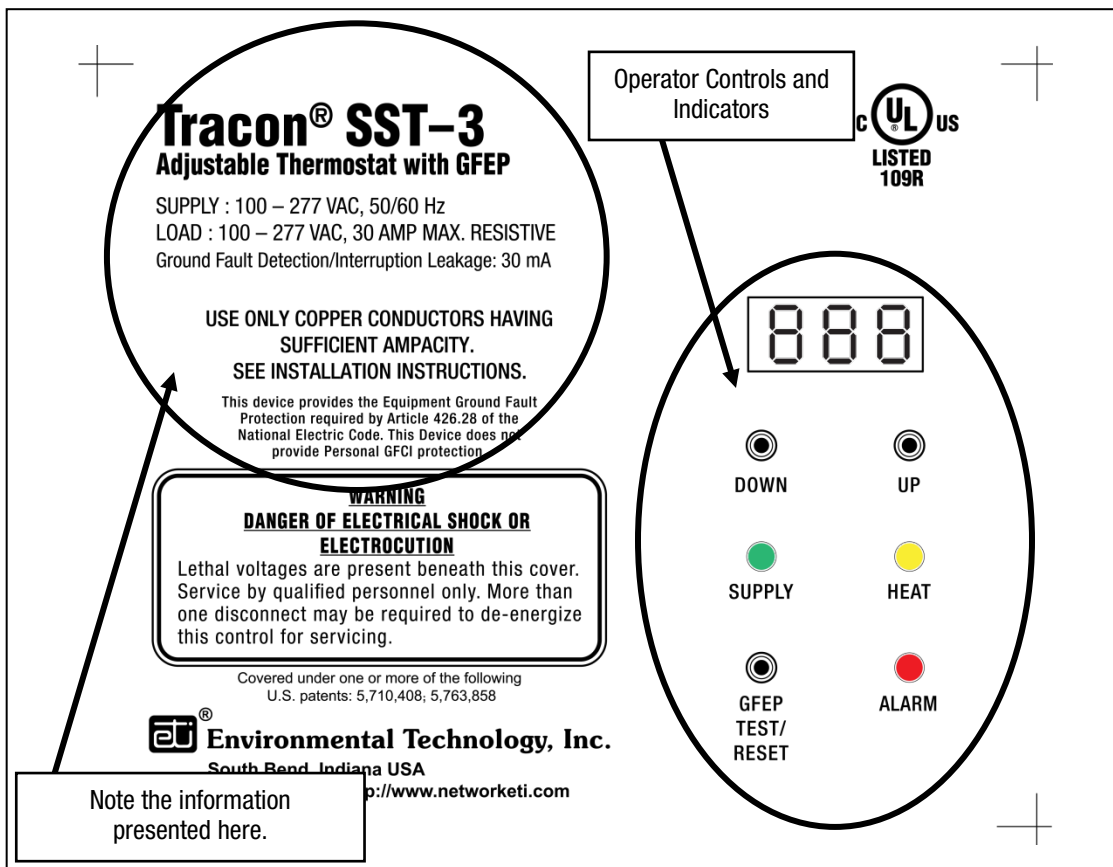
It is the responsibility of the on-site installer to assess the overall safety concerns at the site. To most accurately simulate and measure system performance, leave the heat cable connected to the control during testing. Do not touch bare or exposed metal or wiring. Even if the heaters are disconnected for testing, voltage is still applied to the yellow leads. Therefore, never touch the ends of the yellow leads or let the yellow leads contact each other or any component inside the control box.

### CONTROL TESTING

1. Note the ambient temperature at the point of the SST-3 temperature probe.
2. With unit power on, using the Down control button on the face of the unit, enter a setpoint lower than the current ambient temperature. The green SUPPLY LED light should present a steady light, but no other LED indicator lights should be lit.
3. Next, press the GFEP Test/Reset button on the unit face plate. The red ALARM LED light should pulse on and off, indicating a self-test of the GFEP circuitry, during which time clicking sounds should emanate from the relays inside the unit. The red ALARM LED indicator light should go out once the GFEP self-test is complete.
4. Using the Up control button on the face of the unit, increase the setpoint to be higher than the current ambient temperature at the point of the temperature probe. The HEAT LED indicator light should come on.
5. At the conclusion of this test, set the adjustable temperature setting to the desired operational level by using the Down or Up control buttons on the front of the unit. If the setpoint is above the ambient temperature, the HEAT LED will come on until that temperature is reached, after which only the green SUPPLY LED should be on. The test is complete.

## OPERATION

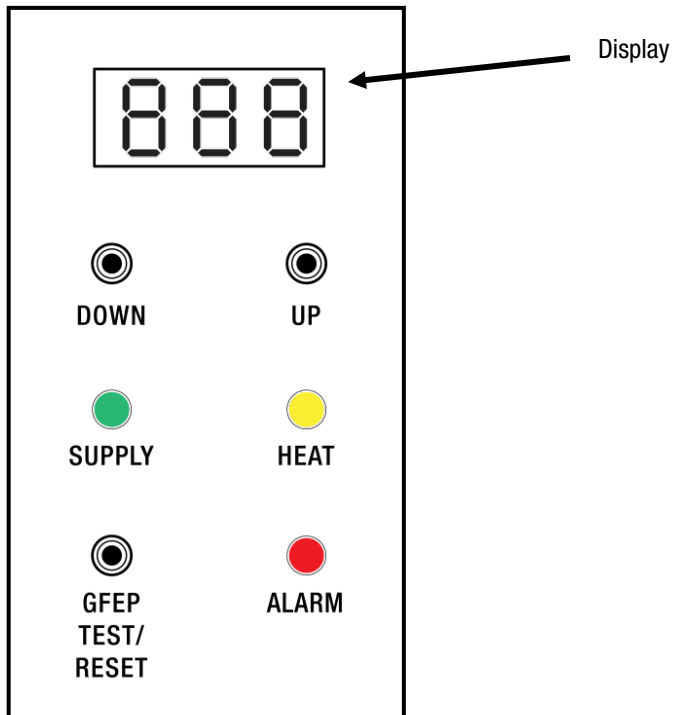
This section presents operating instructions for the unit. Figure 5 shows the front panel of the unit. System information is located on the left side of the panel; Operator controls and indicators are on the right. The controls and indicators are explained in this section.



**Figure 5. THE SST-3 FRONT PANEL**

Note: Because the unit has no ON/OFF power switch, power runs to the unit as soon as facility power is connected to it. When the unit has power, the green SUPPLY LED will be lit. The unit initiates a heating cycle when the temperature probe detects a temperature of less than the setpoint and remains on until a temperature 2°F/1°C above the setpoint is detected.

Operator controls and indicators are explained below. Refer to Figure 6.



**Figure 6. SST-3 OPERATOR CONTROLS AND INDICATORS**

- DISPLAY** Current temperature, temperature setpoint and error codes are displayed here. Press and hold both DOWN and UP control buttons for 1 second to configure. Refer to pages 14 and 15.
- DOWN** Press to decrease temperature setpoint. Press and hold for faster change.
- UP** Press to increase temperature setpoint. Press and hold for faster change.
- SUPPLY** The green SUPPLY LED lights and remains lit as long as power is running to the unit, whether it is currently in a heating cycle or not.
- HEAT** When lit, the yellow HEAT LED indicates a heating cycle in progress.
- GFEP TEST** Press to reset a Ground Fault indication or to initiate a manual test of the Ground Fault circuitry. Press and hold to display ground fault level.
- ALARM** The red ALARM LED indicates a Ground Fault condition or other alarm. This LED will pulse on and off during a GFEP test. Verify the error on the display (see page 17).



## NORMAL OPERATIONS

Under normal operations, when facility power is running to the unit, the green SUPPLY LED is lit. The system will provide heat, indicated by a lit yellow HEAT LED, based on the thermostat setpoint. The display window shows any error condition that might occur. Error codes are explained on page 17. The unit is designed to energize the heaters as soon as the temperature detected by the temperature probe drops below the setpoint. The heaters remain energized until the temperature reaches 2°F/1°C higher than the setpoint, at which time the heaters will shut off. Should it be desired to change the setpoint, do so using the Up and Down control buttons on the front panel of the unit as described on page 13.

## THE DISPLAY WINDOW

The unit has a 3-character display window which provides useful information regarding the function and condition of the system. During the 2-second system initialization process:

- First, the yellow Heat LED lights; display window shows first character
- Next, the red ALARM LED lights; display window shows second character
- Then, both LEDs will come; display window shows third character
- Finally, both LEDs shut off; the firmware version number will be displayed.

The temperature reading will be displayed as one or two digits, followed by an *F* for Fahrenheit or a *C* for Centigrade. Should the temperature be above 100°F, as the display has but three characters, a reading of three digits without a letter following indicates a Fahrenheit reading. A temperature of -10 or less will be indicated by two dashes ( - - ) followed by the *F* or *C*.

If the GFEP Test / Reset button is pressed for at least 1 second, the display will show the current ground fault level in mA instead of the temperature.

If the temperature probe is bad, the window displays  $\text{? ?}$ , the seven-segment character representation of question marks, followed by an *F* or a *C*.

During normal operations, the display window shows the current temperature. If there are current alarm conditions, the display shows the current temperature as well as current alarm conditions.

## CHANGING THE THERMOSTAT SETPOINT

To set or change the thermostat setpoint, perform the steps below. Remember when setting the new value, the display shows the setpoint degrees in the same unit of measure (°F or °C) used to display the current temperature. Depending on the new setpoint and the current temperature at the location of the temperature probe, the yellow HEAT LED might light until the new setpoint level is reached. In addition, the LL or Low Temperature Limit error code might also be indicated until the heaters have warmed up to within 4 degrees of the setpoint. This occurs during initial system start-up or after the power has been off for some time.

1. With power running to the unit, press either the Down or the Up switch. The window displays the current setpoint and the display will blink.



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2. While the display is blinking, press the Down switch to decrease the setpoint, the Up switch to increase the setpoint. Pressing and holding either switch makes the setting change faster.
3. Once the display indicates the new desired setpoint, release the switch. After 3 seconds, the new value will be set. The display stops blinking and shows the current temperature.

### **CHANGING THE TEMPERATURE DISPLAY MODE**

The SST-3 can display temperature either as degrees Fahrenheit or as degrees Centigrade. To toggle from either mode to the other, perform the steps below.

1. Hold down both the Up and Down switches for about one second until the display changes. Display will show units (*FH* or *CE*) for Fahrenheit or Centigrade.
2. Press the Down switch to change the display mode.
3. Press the Up switch to advance the display. Display will show *FP* or *NR*. (See below for Fire Protection Mode.)
4. Press the Up switch to finish.

### **FIRE PROTECTION MODE**

While in the Fire Protection Mode, in the event of a ground fault, the SST-3 will keep the heaters going even with the ground fault. To put the system into, or to take the system out of, the Fire Protection Mode, perform the steps below. As you might see from the description below, the process for changing the temperature display mode above and the process for putting the unit into or out of the Fire Protection Mode are very similar and can both be done at the same time. However, as either one of these actions can be taken independently, allowing changing only one setting without changing the other, the process has been divided into two separate procedures and presented here separately.

1. Hold down both the Up and Down switches for about one second until the display changes. Display will show units (*CE* or *FH*).
2. Press the Up switch to advance. Display will show *FP* for Fire Protection Mode or *NR* for Normal mode.
3. Press the Down switch to change modes, as desired.
4. Press the Up switch to finish.



## **GROUND FAULT OPERATION**

### **USING THE GFEP TEST/RESET BUTTON**

GFEP (Ground Fault Equipment Protection) circuitry is present inside this unit. The system software checks for ground fault conditions continuously at set intervals. If the red ALARM LED is lit, press the GFEP Test/Reset button to clear the situation and to reset the ground fault circuitry. The GFEP will perform a test of the ground fault circuitry, during which time the ALARM LED will blink. Pressing the button will not clear a “hard” fault. Unless the system has been set in Fire Protection Mode, when the ALARM LED is lit, the heaters are turned off and will remain off until the condition is cleared. When the ALARM LED is not lit, the operator may press the GFEP Test/Reset button, as desired, to manually initiate a test of the GFEP circuitry.

During the test, the ALARM LED will blink rapidly for a few seconds while the unit first tests the internal circuitry. Then, the heaters are energized to check for a ground fault. At the end of the test, the heaters shut off.

In the event of a ground fault condition that is not cleared by pressing the GFEP Test/Reset Button, perform the steps below.

1. If the ALARM LED on the control box is still lit after pressing the GFEP Test/Reset Button, remove power from the unit using the service disconnect or the circuit breaker.
2. Perform a “megger” test of the heater cables and compare the results to those obtained during Post-Installation Testing and recorded on page 2 of this manual.
3. Locate and fix the problem, typically found along the run of the heat cable. Contact the heat cable manufacturer for help troubleshooting the heat cable.
4. Restore system power. Because the presence of a ground fault condition is stored in memory, even after repairing the ground fault condition, the ALARM LED might still be lit following restoration of system power. In this case, press the GFEP Test/Reset button again: the LED should go out and normal operations can resume.



## ERROR CODES

Four error codes or conditions can be indicated in the display window of the SST-3. They are explained below.

### **LL** Low temperature limit error

This error code indicates that the temperature has been 4°F/2°C below the setpoint for 30 seconds or longer. This error condition is corrected once the situation is addressed. This condition may be caused by broken or disconnected heaters or insufficient power for an extremely cold weather event. This error code may occur at unit start up if the ambient temperature is below the setpoint.

### **9FA** Ground Fault alarm error

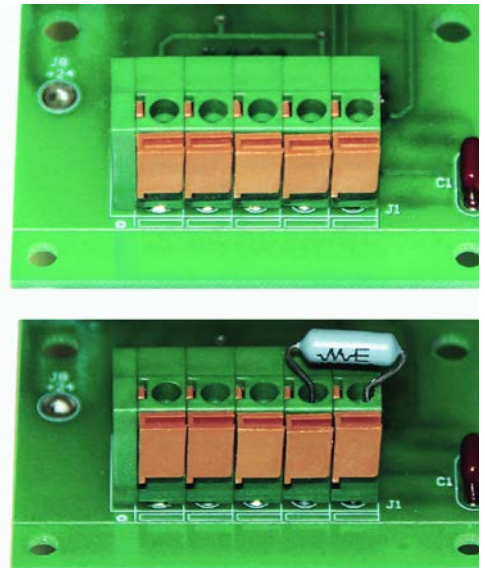
This error code indicates a ground fault condition external to the SST-3 unit. In this case, check the wiring and cables leading to and from the unit. After the problem has been located and corrected, press the GFEP Test/Reset button to confirm that the situation has been resolved.

### **9FC** Ground Fault Circuit error

This error code indicates a failure of the ground fault circuitry internal to the SST-3 unit. Press the GFEP Test/Reset button to clear the situation. If this action does not resolve the situation, contact Environmental Technology Technical Support for possible service options.

### **Prb** Temperature Probe error

This error code indicates that the temperature probe is either bad or not properly connected. Remove power from the unit and make sure the temperature probe is properly connected to the two leads on the right side of the PC board as shown in Figure 3 on page 9. If the temperature probe is properly connected, then either the probe or the unit might require service. To troubleshoot this situation, use a digital voltmeter (DVM) to check the resistance of the probe when disconnected from the circuit. The reading should be about 100K at room temperature. If the reading is very low (3K or less) or very high (9M or higher), the temperature probe is bad. If the probe is OK, substitute a 20K to 200K resistor for the probe connection: if the alarm persists, the problem is likely internal to the unit.



**Figure 7. Probe connection block (top);  
20K resistor in place**

## MAINTENANCE

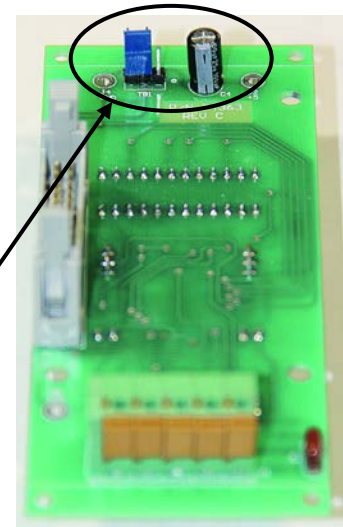
To ensure the best function and results, it is recommended to always keep the area around the temperature probe clean from debris and general obstructions to maximize its sensitivity and effectiveness.

## USING THE JUMPER

A jumper on the PC board is installed over two adjacent pins which allows for the normal operation (“unlocked”) described herein. The jumper may be repositioned (“locked”) to prevent an unauthorized change to the thermostat setpoint.

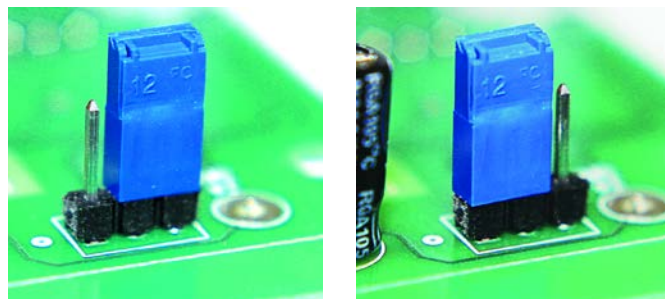
To lock the setpoint, perform the steps below.

1. With power running to the unit, begin by changing the setpoint value to the desired level. Refer to page 14 in this manual. Note: if setpoint cannot be changed, the jumper is likely in the locked position, described below.
2. Shut off power to the unit.
3. Remove the unit faceplate. Retain attaching hardware.
4. Locate the jumper on the PC board. Refer to Figure 8. Position the jumper, as desired, between Pins 1 and 2 or between Pins 2 and 3.
5. Reassemble the unit face plate onto the front of the box.
6. Restore unit power.



Position jumper between Pins 1 and 2 to lock setpoint or leave between Pins 2 and 3. Jumper is shown here in the unlocked position.

**Figure 8.  
JUMPER POSITION ON THE FRONT  
PANEL PC BOARD**



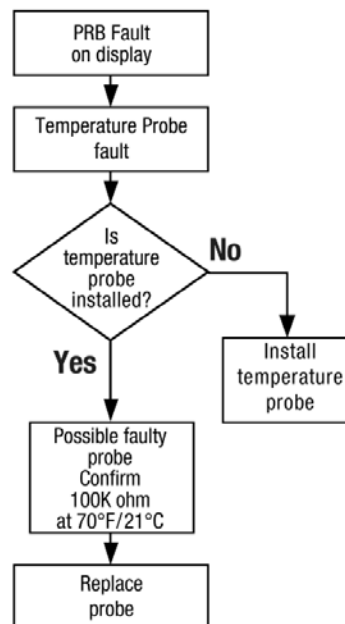
Note the white circle to the edge of the pin/jumper component: pins are counted from it, 1 then 2 then 3.  
The photo on the left shows pin 1 open and pins 2 and 3 jumpered in the “unlocked” setpoint position.  
The photo on the right shows pins 1 and 2 jumpered in the “locked” setpoint position; pin 3 is open.

Use this procedure to lock the setpoint for the first time (the unit ships unlocked). To change the setpoint after it has been locked, it will be necessary to first remove power, reposition the jumper, change the setpoint, then return the jumper to the locked position.

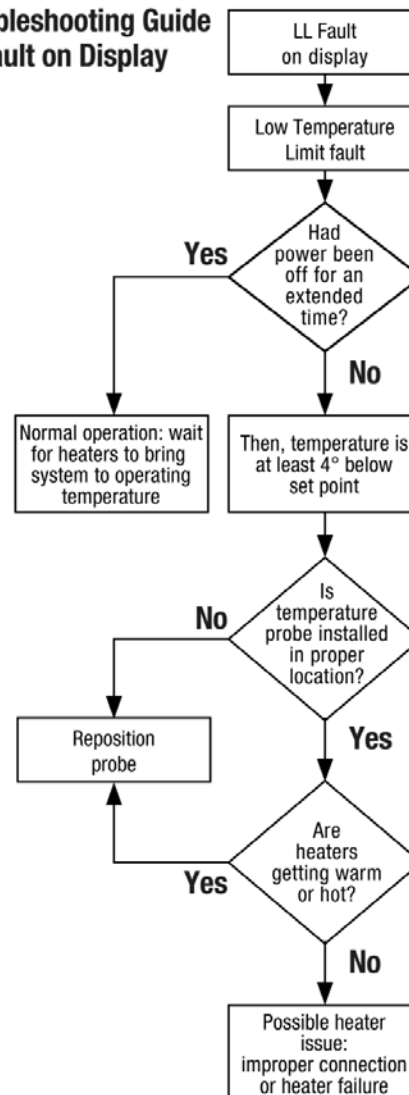
## TROUBLESHOOTING

If any unusual condition occurs with the unit, refer to Troubleshooting Guides in this section. Prior to removal of any equipment, contact Environmental Technology Inc. Technical Support at (800) 234-4239 between 8:00 a.m. and 5:00 p.m., Eastern Time, to begin the troubleshooting process.

### SST-3 Troubleshooting Guide PRB Fault on Display

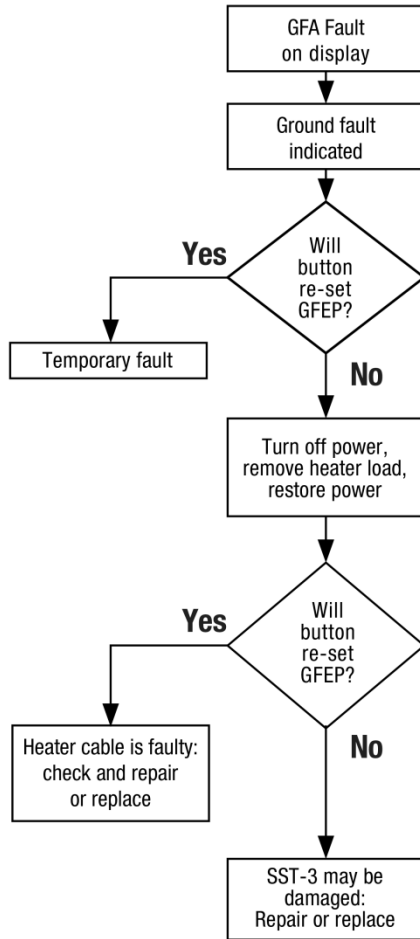


### SST-3 Troubleshooting Guide LL Fault on Display

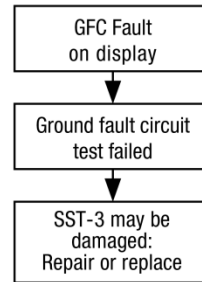


TROUBLESHOOTING FLOWCHARTS 1 and 2

**SST-3  
Troubleshooting Guide  
GFA Fault on Display  
Heater Fault or Wiring Issue**




**SST-3  
Troubleshooting Guide  
GFC Fault on Display  
Internal to Controller**



**TROUBLESHOOTING FLOWCHARTS 3 and 4**

## SPECIFICATIONS

### GENERAL

Areas of Use	Nonhazardous
Approvals	 <ul style="list-style-type: none"> <li>• UL Listed to UL 873 Temperature-Indicating and -Regulating Equipment</li> <li>• UL Listed to UL 1053 Ground-Fault Sensing and Relaying Equipment</li> </ul>

### ENCLOSURE

Protection	IP 66 NEMA 4X
Dimensions	5 1/4" (L) x 8" (W) x 4 1/16" (H) 133.2mm (L) x 203.2mm (W) x 103.2mm (H)
Material	Polycarbonate
Cover Attachment	Polycarbonate cover, machine screws
Weight	3 pounds (1.4kg)
Mounting	Wall Mount
Cable Entries	4: incoming power cable @ 1.05" (27mm) outgoing heater cable @ 1.05" (27mm) outgoing alarm relay @ 1.05" (27mm) incoming temperature probe @ 0.67" (17mm)

### FRONT PANEL INTERFACE

Status Indicator	<p>SUPPLY (green): Power on  HEAT (yellow): Heating cycle in progress  ALARM (red): Ground fault condition or other alarm  ALARM (red, rapid blinking): GFEP test in progress</p>
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**Adjustable Electronic Thermostat  
TRACON® Model SST-3 (P/N 24492)  
Installation and Operation Manual**

**CONTROL**

Supply Voltage	100 – 277 VAC; 50/60 Hz
Heater	100 – 277 VAC; 30 Amp Maximum Resistive Load

**GROUND FAULT EQUIPMENT PROTECTION**

Setpoint	30 mA
Automatic Self-Test	GFEP verified before contactors operate; GFEP tests on start-up of power and automatically every 24 hours
GFEP Manual Test/Reset	GFEP Test/Reset switch on front panel

**WIRE AND CABLE RATINGS**

Power Cable	Size for heater load (30 Amp maximum)
Alarm Relay Wiring	No larger than #18 AWG jacketed, 3-conductor (Only two leads will be used; refer to Figure 3 on page 11.)
Heater Cable	Size for maximum heater load
Temperature Sensor Wiring	#18 AWG jacketed, 2-conductor

**ENVIRONMENTAL**

Operating Temperature	-31°F to +130°F (-35°C to 55°C)
Storage Temperature	-67°F to +167°F (-55°C to 75°C)

**THERMOSTAT SETPOINT**

SST-3 Setpoint Range	+34°F to +150°F (1°C to 65°C)
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## ORDERING INFORMATION

Order Number	Description
24492	TRACON Model SST-3 Adjustable Electronic Thermostat
24493	SST-3 Data Sheet
24497	SST-3 Installation Sheet
24494	SST-3 Instruction Manual (this document)
23731	Accessory Kit
19272	Temperature Probe Assembly

### QUESTIONS AND COMMENTS

For technical help, questions, or comments concerning this product or any of Environmental Technology Inc. products, contact the Customer Service Department between 8:00 a.m. and 5:00 p.m. Eastern Time at:

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