

Installation Manual
Snow Melt Unit 0550
Version 2.02

The logo consists of the letters 'HBX' in a bold, black, sans-serif font. The letters are centered between two horizontal red bars. The background of the entire page features a decorative pattern of thin, light-colored lines that create a sense of depth and movement, with a darker, solid-colored triangular shape on the left side.

HBX

SNO-0550

HBX Control Systems Inc.



TABLE OF CONTENTS

Introduction 1-3

Safety Symbols & Warnings 1

Receipt & Inspection 1

Description 2

Technical Data and Dimensions 3-4

Wiring & Installation 5

Wiring 5

Installation 5

Programming SNO-0550 6-13

Navigating the SNO-0550 6

Setup Menu..... 6

Status & Mode Descriptions..... 6

Control Setup..... 7

Status Screen..... 8

Snow Rate Settings..... 9

Design Temperature Settings..... 10

Slab Settings..... 11

System Settings..... 12

Testing Settings..... 13

WiFi Settings..... 13

WiFi System Setup..... 14-17

TMX-0100 Installation Procedure..... 14

Connecting to a Wireless Network..... 15-16

Adding the SNO-0550 to the HBX App..... 17

HBX App Functionality..... 18

Sample Wiring and Diagrams 19-20

Troubleshooting Guide 21-23

Warranty Information 24

HBX SNO-0550 SNOW MELT CONTROLLER

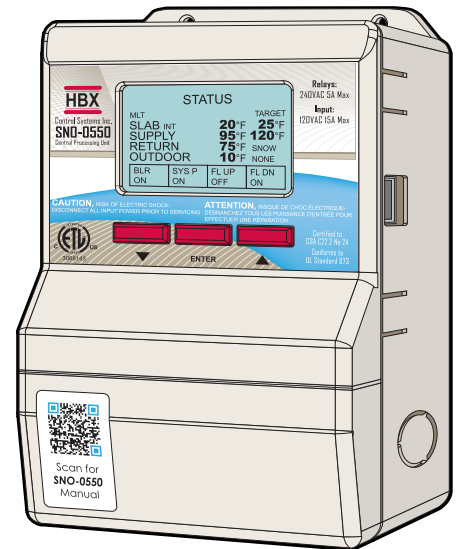
INTRODUCTION

This manual will help with the installation, parameter setting, troubleshooting and general maintenance requirements for the controller. To guarantee the safe and reliable operation of this control, you must first read this manual in detail and take particular note to any and all warnings or caution directives prior to connecting to AC power.

Please consult and install the heating appliance in accordance with manufacture's recommendations.

QR CODE

Each SNO-0550 is labeled with a QR code, which when scanned will link to a digital version of this manual. If this manual is ever lost or damaged, simply scan this with a compatible device to download the latest manual version.



SAFETY SYMBOLS & WARNINGS



Extreme Hazard

This action poses a serious threat that could result in personal injury or death, as well as permanent damage to the equipment. Proceed with caution.



Moderate Hazard

This action may cause personal injury or have adverse effects on the installation process if handled incorrectly.



Disconnect Power Source

The presence of low voltage(24VAC) or high voltage(120VAC) could result in personal injury or permanent damage to components or equipment.



Point of Interest

This point clarifies pertinent information, or brings your attention to an action that may have adverse effects on the installation process.



Drawing Reference

Refer to the specified electrical or mechanical drawing at the back of the manual.



Only suitably qualified individuals with formal training in electrical and Hydronic controls should attempt the installation of this equipment. Incorrect wiring and installation will affect the warranty provided with this unit. Wiring must be completed in accordance with the codes and practices applicable to the jurisdiction for the actual installation.



Use only copper conductor supply wire suitable for at least 105 °C



The HBX SNO-0550 is a microprocessor based controller and as such is not to be regarded as a safety (limit) control. Please consult and install the heating or cooling appliance in accordance with the manufacturer's recommendations.

RECEIPT & INSPECTION

After receiving, inspect the unit for any possible physical damage that may have occurred during transportation.

After unpacking the unit make sure the box contains:

- 1 x Remote Outdoor sensor (Part #OUT-0100)
- 2 x Universal sensors (Part #029-0022)
- 1 x Terminal Screwdriver (2.5mm)
- 2 x Cable ties
- 1 x Manual

HBX SNO-0550 SNOW MELT CONTROLLER

DESCRIPTION

The SNO-0550 is a stand-alone snowmelt control that utilizes a unique sensor technology unmatched by any other snowmelt control system on the market today. This control utilizes proprietary sensor technology to detect falling snow. The snowmelt sensor uses a heater to melt the snow that lands on the sensor. The control then measures actual snow fall rate.

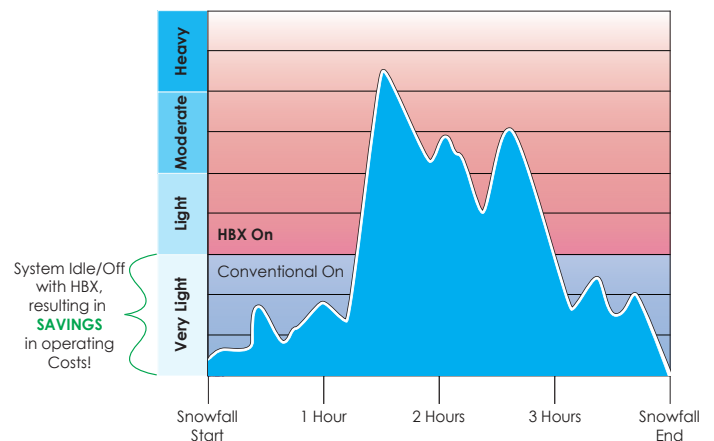
The SNO-0550 consists of numerous exceptional features including settings for your snow fall intensity as well as an adjustable ΔT . This distinctive design incorporates our user friendly programming features, while offering applications and snow melt provisions over and above conventional slab sensing. With the ability to control a system and an injection pump, or a floating action valve for mixing purposes, this value added stand-alone control is suitable for single scale projects, or multi-zone projects that require individual optical sensors for each melt zone.

The SNO-0550 can also be controlled remotely using your smartphone or tablet device with the free HBX Zone App. The HBX Zone App allows you to control your snow melt system with the ability to set snow fall rates, adjust/monitor targets, set slab demands, and the ability to turn on/off your snow melt system anytime, anywhere.

Some features of the HBX SNO-0550 are:

- Pre-set snow conditions
 - Very Light
 - Light
 - Moderate
 - Heavy
- Utilizes optical snow fall settings technology
- Integrated slab sensor (can be installed remotely)
- Injection and mixing valve control
- System pump control
- Warm / Cold weather shutdown
- Smart testing function
- Wi-Fi Enabled with TMX-0100 Thermolinx™ Module
- Remotely access via Apple® and Android™ smartphone or tablet devices

As seen here, based on a “Light” snowfall setting, you can see the HBX sensor will turn on the snowmelt system much later than a conventional sensor. This results in huge savings each snow season if your system can turn on later and turn off sooner.



TECHNICAL DATA & DIMENSIONS

TECHNICAL DATA

Specifications:

- 3 x Thermistor Input (10K Ohm)
- 1 x Demand Input Signal
- 3 x Relay Outputs (240VAC 5A) Dry Contacts
- 1 x 2Amp Dry Contact
- Input: 120VAC +/- 10% 60Hz 15A Max

Weight:

0.408Kg

Dimensions:

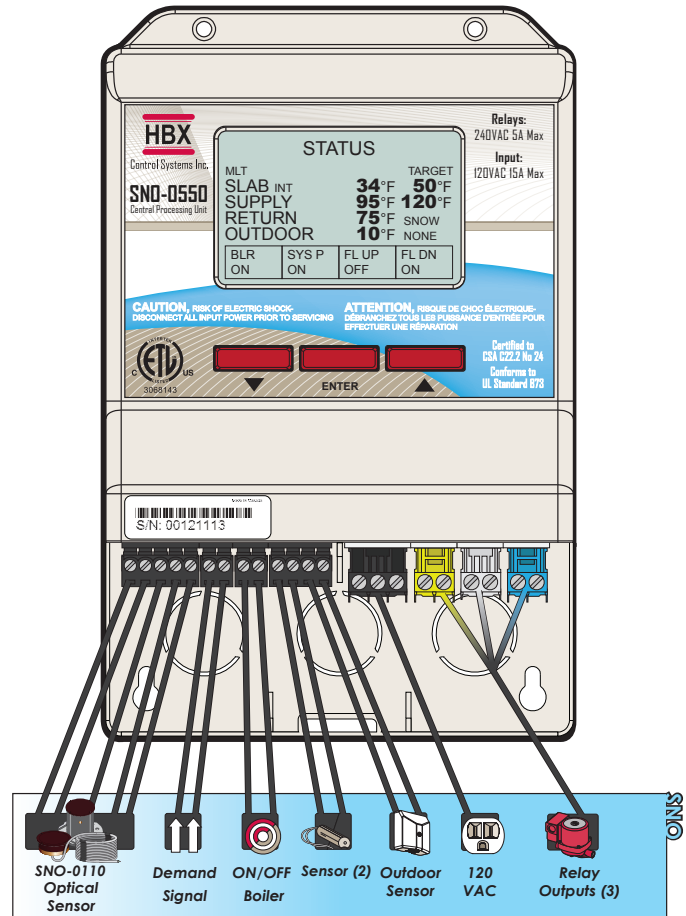
121mm W x 188mm H x 66mm

ETL Listings:

- Meets CSA C22.2 No. 24
- Meets UL Standard 873
- ETL Control No. 3068143

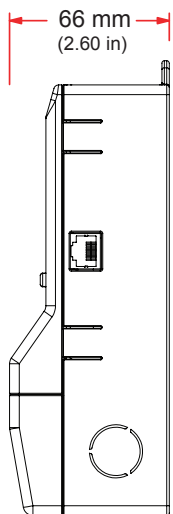
Storage:

50°F to 104°F (10°C to 40°C)

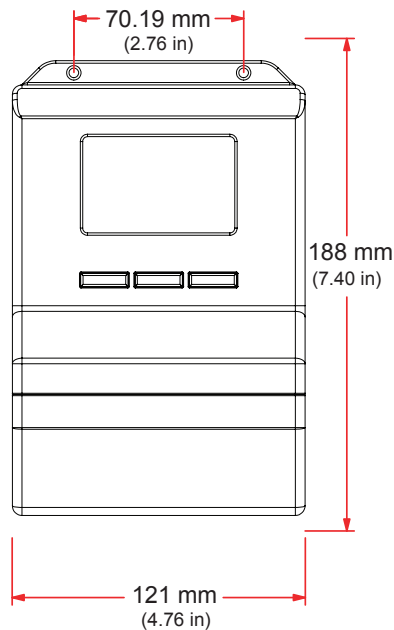


DIMENSIONS

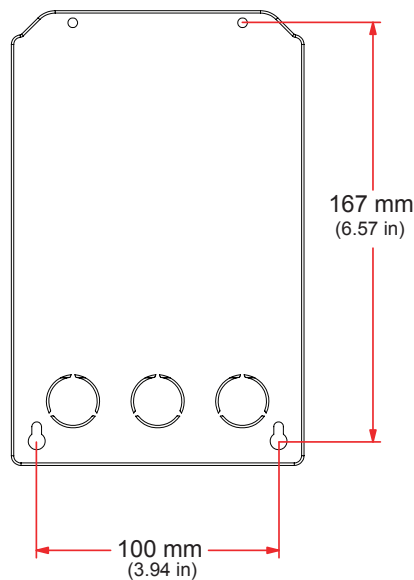
Side View



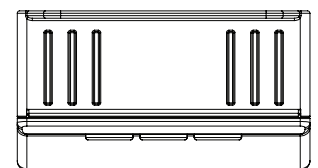
Front View



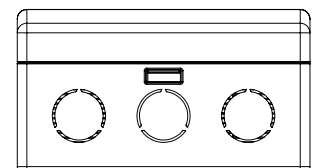
Rear View



Top View

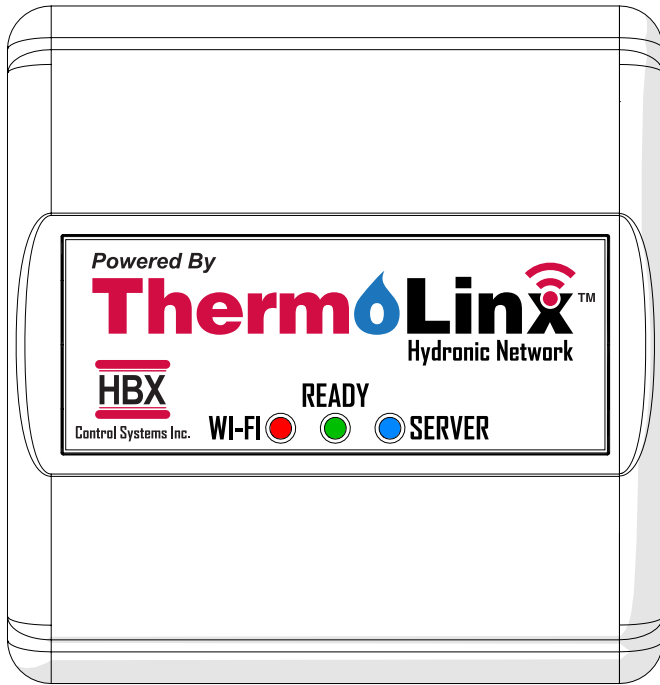


Bottom View



TECHNICAL DATA AND DIMENSIONS

TMX-0100 TECHNICAL DATA



Specifications:

1 x 5VDC input

Weight:

0.1Kg

Dimensions:

60mm W x 62mm H x 28.24mm

ETL Listings:

Meets CSA C22.2 No. 24

Meets UL Standard 873

ETL Control No. 3068143

Storage:

50°F to 104°F (10°C to 40°C)

TMX-0100 RF Info:

Contains IC: 8169A-G2M5477

Contains FFC ID: U3O-G2M5477

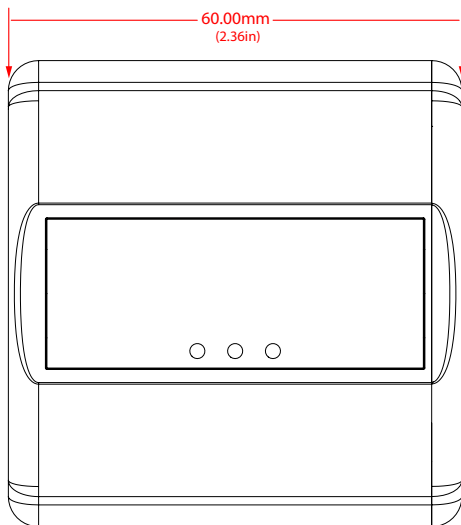
LEDs:

Red - Unit is connected to a WiFi Network

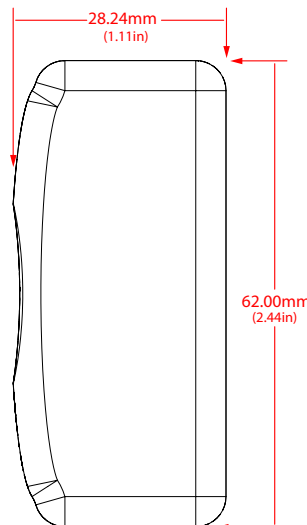
Green - Unit is powered

Blue - Unit is communicating with the server

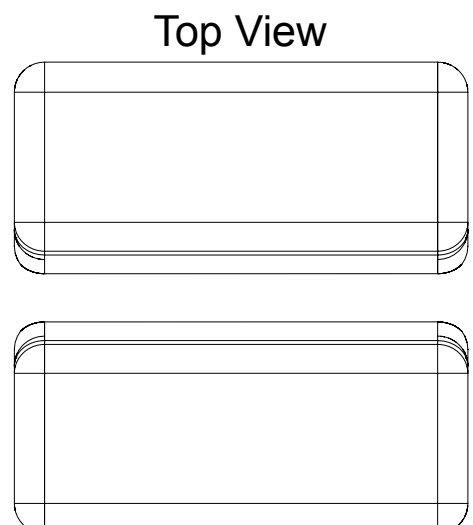
DIMENSIONS



Front View



Side View



Top View

Bottom View

WIRING AND INSTALLATION

Wiring

All thermistor wiring must be with a minimum of 18AWG wire at a maximum of 500ft.

1, 2, 3, 4, 5: Snowmelt Optical Sensor

Connection order: Green - Contact 1, Red - Contact 2, White - Contact 3, Black - Contact 4, Shield - Contact 5.

6, 7: Demand Signal

Apply snow melt demand from a dry contact. For force melt demand, use a momentary switch.

8, 9: Boiler Contacts

Boiler enable contact.

Sensor Inputs

10, 13: System sensor.

11, 13: Return sensor.

12, 13: Outdoor sensor.

14, 15, 16: Power Supply

Apply 120 VAC to power unit.

17, 18: Relay 1


Generally used as a system pump.

19, 20: Relay 2


Generally used as floating action valve up (Open).

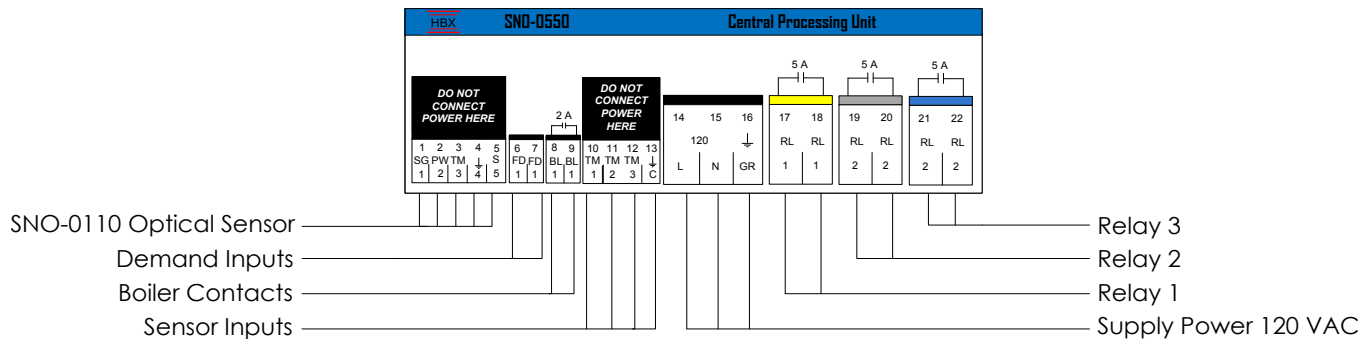
21, 22: Relay 3

For injection mixing, generally used as injection pump. For floating action mixing, generally used as floating action valve down (Closed).

 (Relays 1, 2 and 3 are dry contacts and rated for a maximum of 5A.)

 Please ensure no power is applied to pins 1 - 5 and 10 - 13.

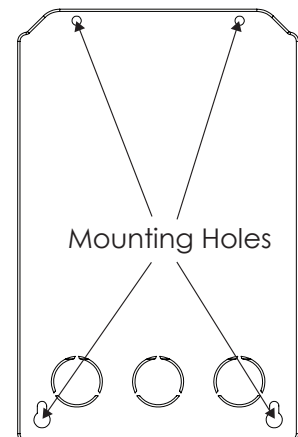
 When the desired sensor location is more than 100 feet from the SNO-0550, the sensor wire can be extended using 18 AWG shielded cable (up to 200 feet). The cable can be shortened if required.



Installation

The SNO-0550 is designed to be wall mounted or installed in a separate electrical enclosure. The unit should be mounted inside and protected from falling water and high humidity conditions. With all the covers in place it is designed to protect any individual from accidental electrical shock. It is not suitable for installation in hazardous locations and should not be placed close to any electromagnetic fields.

- Identify the four mounting holes on the SNO-0550, mark on the wall the desired location of mounting.
- Pre-drill, anchor and fasten four screws for mounting.
- Hang SNO-0550 and fasten tight to desired locations
- Complete wiring connections in accordance with terminal locations.



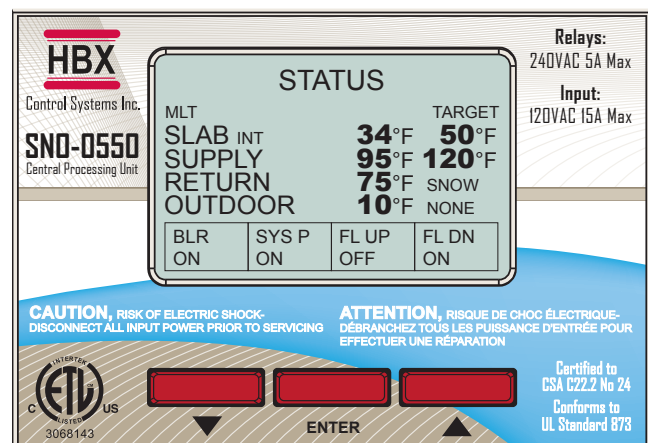
NAVIGATING THE SNO-0550

All programming steps within the SNO-0550 are achieved by using the three buttons (and combination thereof) located below the screen.

The ▼ button is used to scroll down in menu screens and decrease a value within specific options.

The ▲ button is used to scroll up in menu screens and increase a value in specific options.

The **ENTER** button is used to access the setpoint menu and select a setting.



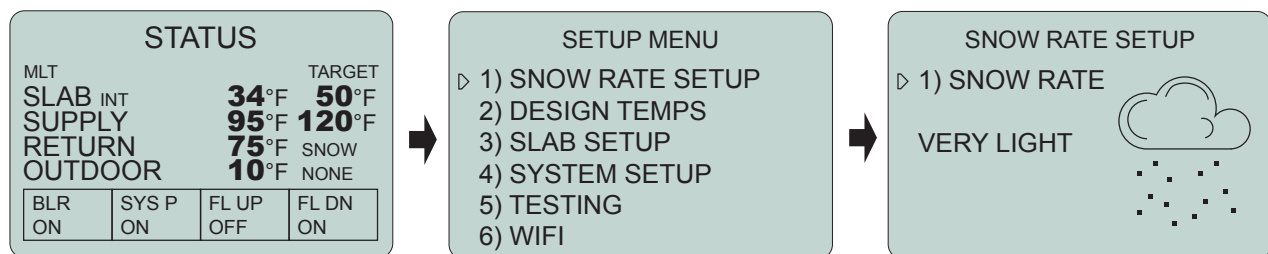
SETUP MENU

The SETUP menu is used for entering the design values, as well as assign different control options. To access the setup menu, push the **ENTER** button on the STATUS screen. Use the ▲ or ▼ buttons to scroll through the various settings.

To select a parameter, align the cursor arrow ▶ with the desired parameter and press the **ENTER** button. the arrow will become solid ►, which indicates that a parameter has been selected.

Adjust the setting to the desired value with the ▲ or ▼ buttons. Once the correct value is set, push the **ENTER** button. This will deselect the parameter.

To go to the previous screen, push and hold the **ENTER** button. If the SETUP menu is left for more than 90 seconds, the display will change to the STATUS screen and the control will resume operation. During SETUP, the control is not operating.



Holding the ▲ and ▼ buttons on the STATUS screen simultaneously for 10 seconds will put the control into forced melt demand.

STATUS & MODE DESCRIPTIONS

ON: Control is awaiting signal from optical sensor or Forced Melt Demand from user.

OFF: Control is in **WWSD/CWSD** or no demand is present (Pins 6-7) when in **DEMAND** mode **STANDBY/IDLE** (See Page 11)

MELT: Control is **ON** and snow was detected by the sensor higher then the intensity setting.

IDLE: Control is **ON** and maintaining the slab at the idle temperature until snow is detected by optical sensor or forced melt demand is given by user.

STANDBY: Control is **ON** but not maintaining a slab temperature. Control will remain **ON** until snow is detected by optical sensor or forced melt demand is given by user.

ANTICIPATE: Control will be **ON** in **STANDBY** or **IDLE** for the amount of time determined by the user in **ANTICIPATE DAYS**.

ANTICIPATE DAYS: If snow is detected during this time control will go in to melt mode. Otherwise the control will be **OFF** after **ANTICIPATE DAYS** has elapsed.

FORCE MELT: When control is **ON** and awaiting snow detection by optical sensor, if demand is given (PINS 6-7) control will go into melt mode. Pressing **UP** and **DOWN** arrow buttons simultaneously for approximately 10 seconds will also override sensor and force melt mode.

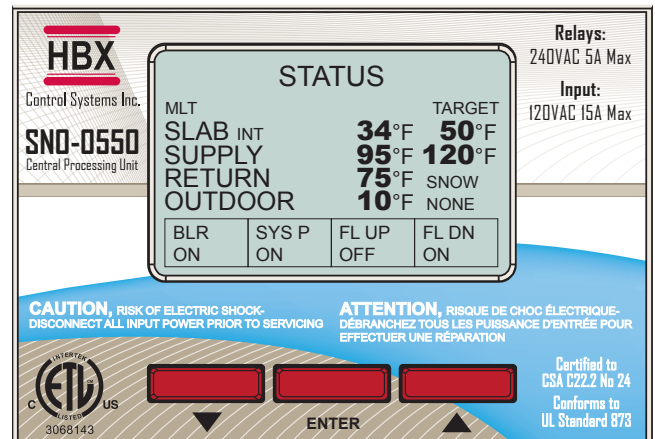
CONTROL SETUP

Multicolour backlit Display

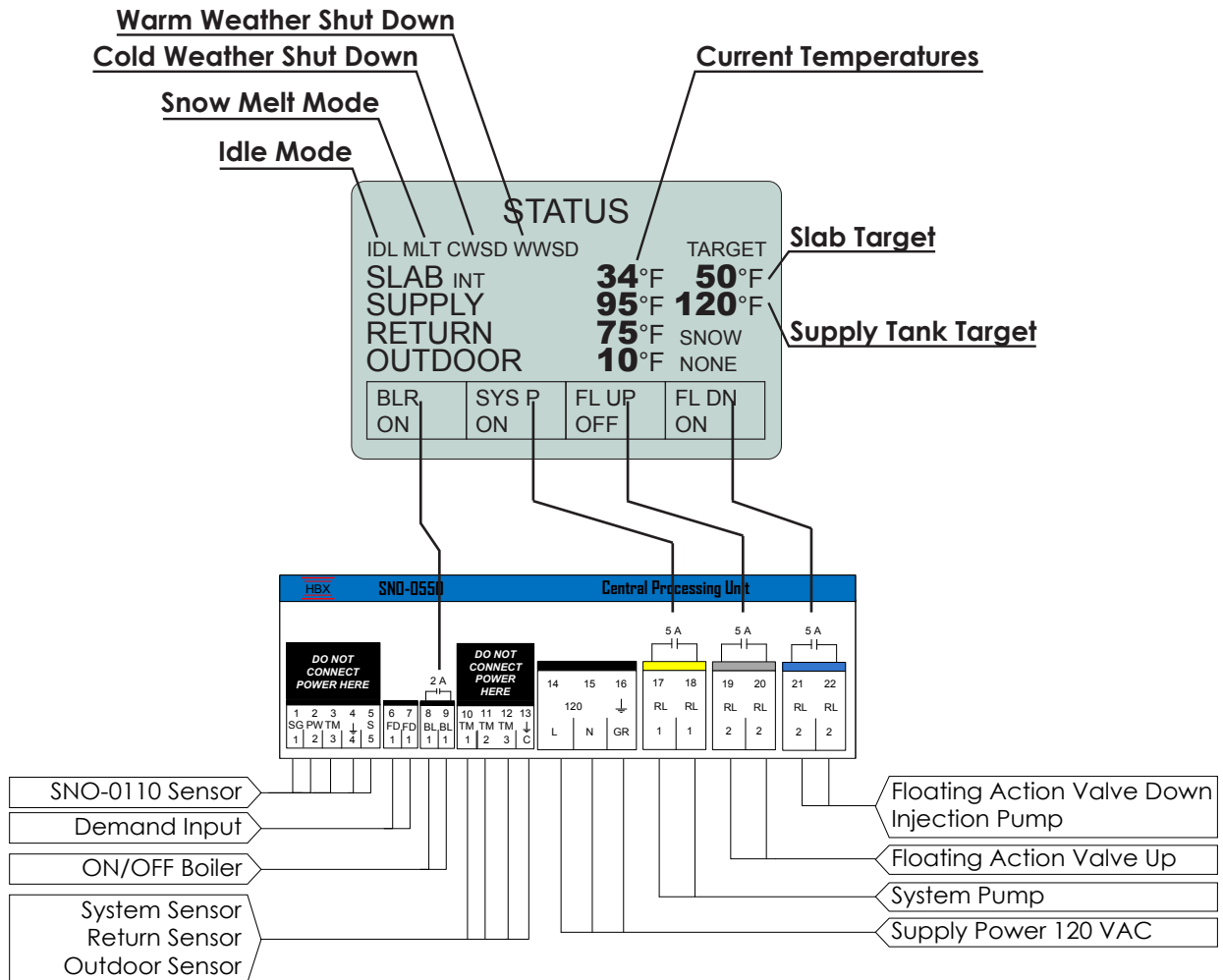
The Multicolour Backlit Display is one of the key features of the HBX Controls stand-alone SNO-0550 Control. Depending on which mode of operation is selected the screen colour will change to indicate information about the status of the system.

Screen Colors

- Light Blue (White) - No Demand/ **OFF**
- Green - Standby Mode
- Dark Blue - Idle Mode
- Red - Melt Mode
- Flashing Orange - Optical Sensor Fault



Status Screen



SENSOR ERRORS



HTR-LOWC: Low current is being drawn into the sensor and will not sense snow. Check the wiring of the control. Refer to testing procedure on page 23, and inspect the SNO-0110 Sensor for signs of damage or improper drainage.

Reset control when issue has been corrected to eliminate error code.



HTR-FAULT: High current is being drawn into the sensor and will not sense snow. Screen will flash orange, and fuse in control will trip. Check the wiring of the control. Refer to testing procedure on page 23, and inspect the SNO-0110 Sensor for signs of damage or improper drainage.

Reset control when issue has been corrected to eliminate error code.

PROGRAMMING GUIDE

1) SNOW RATE

SETUP MENU

- ▶ 1) SNOW RATE SETUP
- 2) DESIGN TEMPS
- 3) SLAB SETUP
- 4) SYSTEM SETUP
- 5) TESTING
- 6) WIFI

Snow Rate Setup

This setting is used to configure the snowfall rate at which your system will go into **MELT** mode

SNOW RATE SETUP

SNOW RATE SETUP

- ▶ 1) SNOW RATE

VERY LIGHT

Very Light (Default)

This will set the control to trigger **MELT** mode when a Very Light snowfall is detected.

SNOW RATE SETUP

- ▶ 1) SNOW RATE

LIGHT

Light

This will set the control to trigger **MELT** mode when a Light snowfall is detected.

SNOW RATE SETUP

- ▶ 1) SNOW RATE

MODERATE

Moderate

This will set the control to trigger **MELT** mode when Moderate snowfall is detected.

SNOW RATE SETUP

- ▶ 1) SNOW RATE

HEAVY

Heavy

This will set the control to trigger **MELT** mode when Heavy snowfall is detected.

2) DESIGN TEMPERATURE

SETUP MENU

- 1) SNOW RATE SETUP
- ▶ 2) DESIGN TEMPS
- 3) SLAB SETUP
- 4) SYSTEM SETUP
- 5) TESTING
- 6) WIFI

Design Temperature Setup

This setting allows you to customize each design temperature for your system

DESIGN TEMPERATURE SETUP

DESIGN TEMPERATURES

- ▶ 1) DELTA T **25°F**
- 2) MIN SYSTEM **50°F**
- 3) MAX SYSTEM **120°F**
- 4) WWSD **40°F**
- 5) CWSD **0°F**
- 6) °C OR °F °F

Delta T

Set this temperature to the Δt you would like in the system. This will calculate the system target. The target is calculated by using system supply and system return temperatures: *System Target = System return + System Δt*

(2°F to 60°F) Default: 25°F

DESIGN TEMPERATURES

- 1) DELTA T **25°F**
- ▶ 2) MIN SYSTEM **50°F**
- 3) MAX SYSTEM **120°F**
- 4) WWSD **40°F**
- 5) CWSD **0°F**
- 6) °C OR °F °F

Minimum System Temperature

Set this to the minimum temperature you would like your entering water temperature in the slab to be. This is for the low temperature system loop.

(20°F to 180°F) Default: 50°F

DESIGN TEMPERATURES

- 1) DELTA T **25°F**
- 2) MIN SYSTEM **50°F**
- ▶ 3) MAX SYSTEM **120°F**
- 4) WWSD **40°F**
- 5) CWSD **0°F**
- 6) °C OR °F °F

Maximum System Temperature

Set this to the maximum temperature you would like your entering water temperature in the slab to be. This is for the low temperature system loop.

(20°F to 180°F) Default: 120°F

DESIGN TEMPERATURES

- 1) DELTA T **25°F**
- 2) MIN SYSTEM **50°F**
- 3) MAX SYSTEM **120°F**
- ▶ 4) WWSD **40°F**
- 5) CWSD **0°F**
- 6) °C OR °F °F

Warm Weather Shut Down

This is used to set the temperature in which the SNO-0550 will go into WWSD. If the outdoor temperature rises above this temperature, the control will turn **OFF**. In WWSD the boilers and all pumps will shut off, and slab temperature will not be maintained.

(2°F to 55°F) Default: 40°F

DESIGN TEMPERATURES

- 1) DELTA T **25°F**
- 2) MIN SYSTEM **50°F**
- 3) MAX SYSTEM **120°F**
- 4) WWSD **40°F**
- ▶ 5) CWSD **0°F**
- 6) °C OR °F °F

Cold Weather Shut Down

This is used to set the temperature in which the SNO-0550 will go into CWSD. If the outdoor temperature dips below this temperature, the control will turn **OFF**. In CWSD the boilers and all pumps will shut off, and slab temperature will not be maintained.

(-40°F to 40°F) Default: 0°F

DESIGN TEMPERATURES

- 1) DELTA T **25°F**
- 2) MIN SYSTEM **50°F**
- 3) MAX SYSTEM **120°F**
- 4) WWSD **40°F**
- 5) CWSD **0°F**
- ▶ 6) °C OR °F °F

Celsius or Fahrenheit Setup

Toggle this setting to set the control to display values in either Celsius or Fahrenheit.

3) SLAB SETTINGS

SETUP MENU

- 1) SNOW RATE SETUP
- 2) DESIGN TEMPS
- ▶ 3) SLAB SETUP
- 4) SYSTEM SETUP
- 5) TESTING
- 6) WIFI

Slab Setup

This setting is used to configure your slab options.

SLAB SETUP

SLAB SETUP

- ▶ 1) IDLE TEMP **20°F**
- 2) MELT TEMP **50°F**
- 3) MELT TIME **3H**
- 4) SENSOR LOC **INT**

Idle Temperature

When this temperature is set, the control will be **ON (IDLE)** and will maintain the slab at the temperature selected by the user, this will allow for the slab to reach the melt temperature quicker once snow is detected. If idle temperature is set to **OFF (STANDBY)**, the control will be **ON**, but will not maintain a slab temperature which will require more time to achieve melt temperature once snow is detected.

(-39°F to 80°F) Default: 20°F



To turn Idle Temperature OFF, set temperature below -39 °F or above 80 °F.



If **STANDBY/IDLE** or **ANTICIPATE** is selected as a demand type in system setup, the control will only turn on in **STANDBY/IDLE** when a demand is given manually by the user on wiring terminal pins 6-7.

SLAB SETUP

- 1) IDLE TEMP **20°F**
- ▶ 2) MELT TEMP **50°F**
- 3) MELT TIME **3H**
- 4) SENSOR LOC **INT**

Melt Temperature

This function is used to set the slab temperature when snow is present. Going from **IDLE/STANDBY** to **MELT** mode is determined by the snow sensor. If the amount of snow is more than the intensity setting, then the control will go into **MELT** mode. This will raise the target for the slab to the **MELT** temperature.

(20°F to 100°F) Default: 50°F

SLAB SETUP

- 1) IDLE TEMP **20°F**
- 2) MELT TEMP **50°F**
- ▶ 3) MELT TIME **3H**
- 4) SENSOR LOC **INT**

Melt Time

This setting allows for the system to stay on even after no snow is present. This will melt any residual snow that has accumulated and not melted. This time is also used when a force melt demand is given. Once a force melt demand is given the control will stay in **MELT** mode for this amount of time.

(1H to 99H) Default: 3H

SLAB SETUP

- 1) IDLE TEMP **20°F**
- 2) MELT TEMP **50°F**
- 3) MELT TIME **3H**
- ▶ 4) SENSOR LOC **INT**

Sensor Location

Set this to **INT** when the Snow/ Ice Optical Sensor is mounted in-slab, or set to **REM** when mounted remotely.

(INT or REM) Default: INT



Holding the **▲** and **▼** buttons on the main screen simultaneously for 10 seconds will put the control into a forced melt demand.

4) SYSTEM SETTINGS

SETUP MENU

- 1) SNOW RATE SETUP
- 2) DESIGN TEMPS
- 3) SLAB SETUP
- ▶ 4) SYSTEM SETUP
- 5) TESTING
- 6) WIFI

System Setup

This setting is used to configure the demand type and mixing settings.

SYSTEM SETUP

SYSTEM SETUP

▶ 1) MIXING	INJECTION
2) DEMAND	FORCE MELT

THIS DEMAND WILL PLACE THE SLAB INTO MELT MODE

SYSTEM SETUP

1) MIXING	INJECTION
▶ 2) DEMAND	FORCE MELT

THIS DEMAND WILL PLACE THE SLAB INTO MELT MODE

Mixing Type

This setting is used to select mixing type.

INJ: PMLp injection pump
FLO: Floating action valve [power open (valve up)/ power close (valve down)]

(FLO and INJ) Default: **INJ**

Demand Type

This setting is a manual demand by the user. When a demand is given, the control will go into the selected mode. The demand input is located on terminal pins 6-7.

Default: **FORCE MELT**

Apply a snow melt demand from a dry contact. For force melt demand, a momentary switch is recommended.

SYSTEM SETUP

1) MIXING	INJECTION
▶ 2) DEMAND	FORCE MELT

THIS DEMAND WILL PLACE THE SLAB INTO MELT MODE

SYSTEM SETUP

1) MIXING	INJECTION
▶ 2) DEMAND	STANDBY/IDLE

THIS DEMAND WILL PLACE THE SLAB INTO STANDBY OR IDLE MODE

SYSTEM SETUP

1) MIXING	INJECTION
▶ 2) DEMAND	ANTICIPATE
3) ANTICIPATE DAYS	2

THIS DEMAND WILL PLACE THE SLAB INTO MELT MODE

SYSTEM SETUP

1) MIXING	INJECTION
2) DEMAND	ANTICIPATE
▶ 3) ANTICIPATE DAYS	2

THIS DEMAND WILL PLACE THE SLAB INTO STANDBY OR IDLE MODE FOR 2 DAYS

FORCE MELT: When a manual demand is given the control will go into **MELT** mode. When no manual demand is present, control will go into **IDLE** mode.

STANDBY/IDLE: When a manual demand is given control will turn **ON** and await snow detection by optical sensor or **FORCE MELT** demand by user. When no manual demand is present, control will be in an **OFF** state.

ANTICIPATE: When a manual demand is given control will turn **ON** for the amount of time selected in **ANTICIPATE DAYS** and await snow detection by optical sensor or **FORCE MELT** demand by user. When no manual demand is present, control will be in an **OFF** state.

ANTICIPATE DAYS: This setting will determine the length of time control will be on in **ANTICIPATE** mode.

(1 to 7) Default: **2**

Page 12

5) TESTING

SETUP MENU	
1) SNOW RATE SETUP	
2) DESIGN TEMPS	
3) SLAB SETUP	
4) SYSTEM SETUP	
▶ 5) TESTING	
6) WIFI	

Testing Setup

This setting is used to test and view functionality of the control.

TESTING SETUP

TESTING	
▶ 1) CONTROL INFO	
2) FUNCTION TEST	ON
3) RELAY 1	OFF
4) RELAY 2	OFF
5) RELAY 3	OFF
6) RELAY 4	OFF

Control Information

This setting will display processing information about the control.

TESTING	
▶ 2) FUNCTION TEST	ON
3) RELAY 1	OFF
4) RELAY 2	OFF
5) RELAY 3	OFF
6) RELAY 4	OFF

Function Test

This setting will allow the user to pre-test the control during setup. It will set the outdoor temperature to 10 °F and the system temperature to 80 °F so the system will test in warmer months.

TESTING	
▶ 5) RELAY 3	ON
1) CONTROL INFO	
2) FUNCTION TEST	ON
3) RELAY 1	OFF
4) RELAY 2	OFF
6) RELAY 4	OFF

Relay Test

These settings will test each relay in the control in order to ensure correct operation. The user is able to test each relay individually. In order to test, select the desired relay by pressing **ENTER**. The relay can be toggled on and off by pressing the **▲** or **▼** buttons.

6) WIFI SETTINGS

SETUP MENU	
1) SNOW RATE SETUP	
2) DESIGN TEMPS	
3) SLAB SETUP	
4) SYSTEM SETUP	
5) TESTING	
▶ 6) WIFI	

WiFi Settings

This setting gives the user the capability to use the SNO-0550 remotely with the HBX App.

WIFI SETTINGS

WIFI SETTINGS	
▶ 1) PASSWORD	A1B2
SYNC-CODE SNOW-0000	

Password

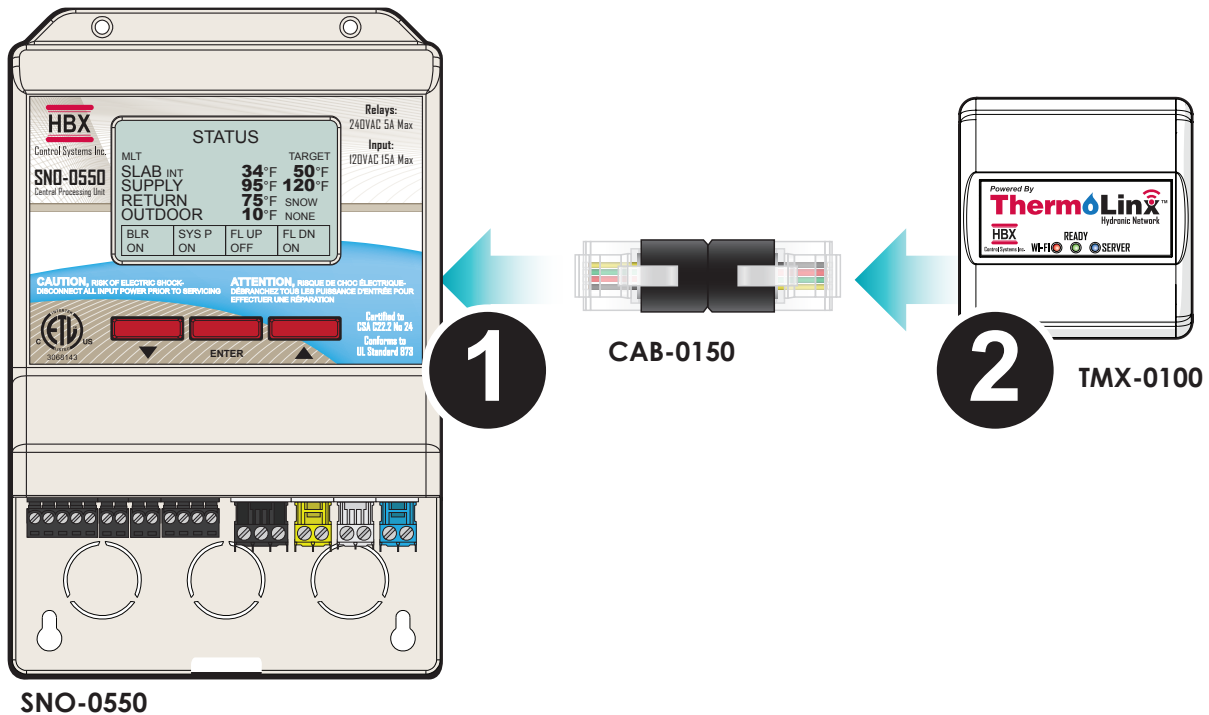
This setting displays the SNO-0550 password and Sync – Code. Enter the password and Sync-Code on the HBX Zone App for remote control of the SNO-0550 on your smartphone or tablet device.

CHANGE PASSWORD	
▶ 1) NO	
2) YES	
SYNC-CODE SNOW-0000	

Change Password

This option allows the user to change the SNO-0550 password.

WIFI SYSTEM SETUP



TMX-0100 (ThermoLinX™ Wi-Fi Module) Installation Procedure

The TMX-0100 is designed to be used with the ZON-0550, SNO-0550, and HBX Zone App for remote access. The operational status of the TMX-0100 is indicated by lights (LEDs). The TMX-0100 has three (3) lights on the front (red for Wi-Fi, green for ready, blue for Server). Information is communicated by the color of the lights and whether they are steady and flashing.

The unit should be installed inside and protected from falling water and high humidity conditions. With all the covers in place, it is designed to protect any individual from accidental electrical shock. It is not suitable for installation in hazardous locations and should not be close to any electromagnetic fields.

Installation

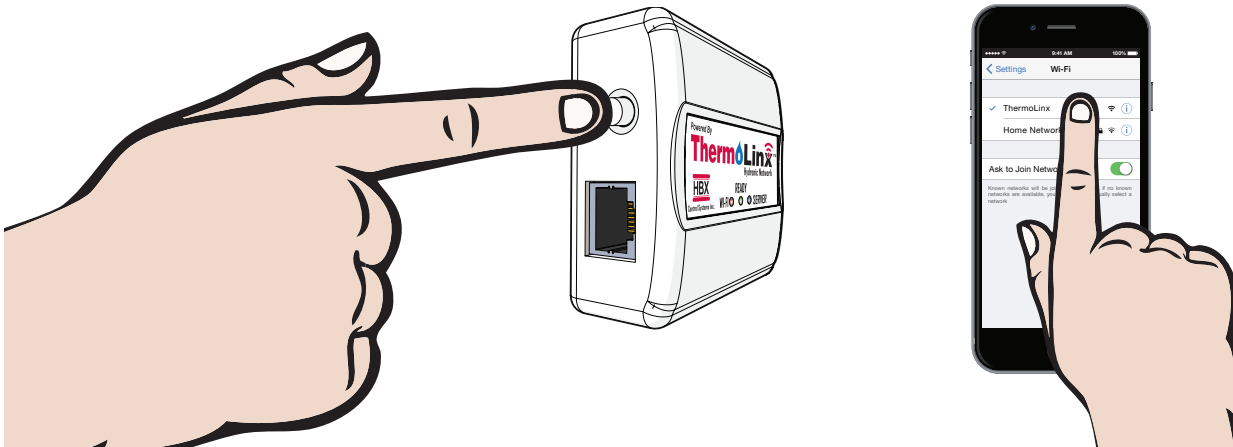
1. Connect the CAB-0150 connector to the Wi-Fi port of the SNO-0550 on the right side of the control.



The CAB-0150 connector length cannot be extended and no other connector shall be used for installation.

2. Connect the TMX-0100 to the CAB-0150 connector.

CONNECTING TO A WIRELESS NETWORK




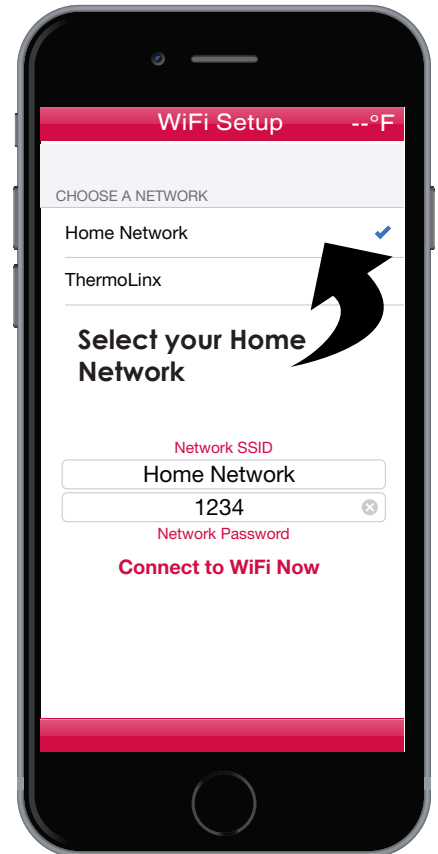
Before You Start

Download the free HBX Zone App from the App store for Apple® devices, or Google Play for Android™ devices.

These steps will guide you through the installation and configuration of the ThermoLinx™ Network. Ensure that your Wi-Fi network is active.

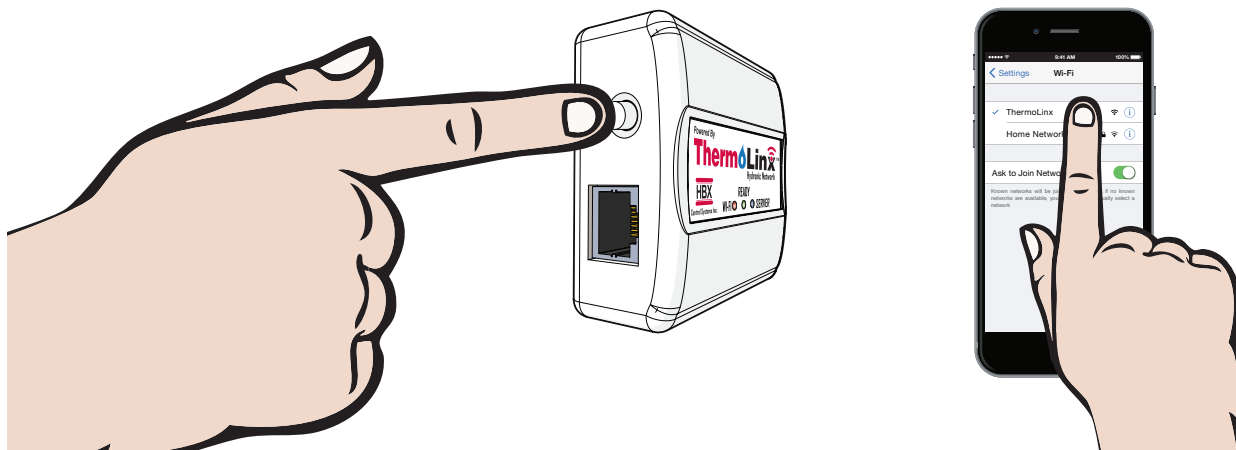
Connecting to ThermoLinx™

1. After connecting the TMX-0100 to the SNO-0550 control, wait 60 seconds. If the red LED light (Wi-Fi) on the TMX-0100 is not blinking, press and hold down the reset button for 10 seconds, or until all the LED's on the TMX-0100 turn off, and then release.
2. Go into your **smartphone/tablet device settings** and then go into your Wi-Fi settings.
3. Select the ThermoLinx Wi-Fi Network.
4. Once you have selected the ThermoLinx Wi-Fi Network, wait until your smartphone/tablet device signifies that it is connected to the network, with a symbol .
5. Start the HBX Zone App. It will display "Contacting ThermoLinx" and direct you to Wi-Fi setup.
6. In Wi-Fi setup, select the **home Wi-Fi network you would like to connect to**, and enter the password for the Wi-Fi network.



Home network name cannot contain more than 30 characters. The password should not contain any special characters. (!, @, #, \$, etc.)

7. Select "Connect to WiFi Now". Please allow for 120 seconds to connect to your Wi-Fi network.
8. Once connected check the red, green, and blue LED lights on the TMX-0100. All LED lights should be steady.
9. Now you are ready to add the SNO-0550. See Adding the SNO-0550 on page 17.



Connecting to ThermoLinx™ via personal hotspot

When there is no internet connection available during installation, you can use your personal hotspot on your smartphone to connect to the ThermoLinx Network to configure your system.

1. After connecting the TMX-0100 to the SNO-0550 control, wait 60 seconds. If the red LED light (Wi-Fi) on the TMX-0100 is not blinking, press and hold down the reset button for 10 seconds and then release.
2. Go into your smartphone settings and then go into your personal hotspot settings. Turn on your personal hotspot.



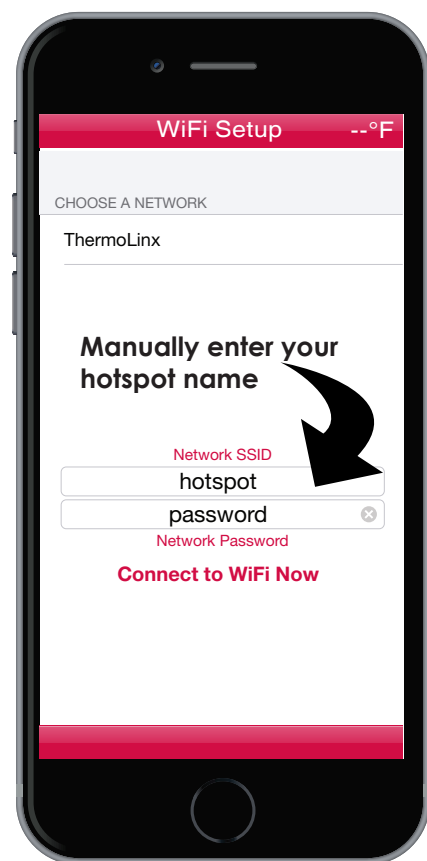
Don't use special characters, symbols or spaces for hotspot name and password

3. Start the HBX Zone App. It will display "Contacting ThermoLinx" and direct you to Wi-Fi setup.
4. In Wi-Fi setup, manually enter personal hotspot device name in network SSID and enter your personal hotspot password. Select "Connect to WiFi Now".

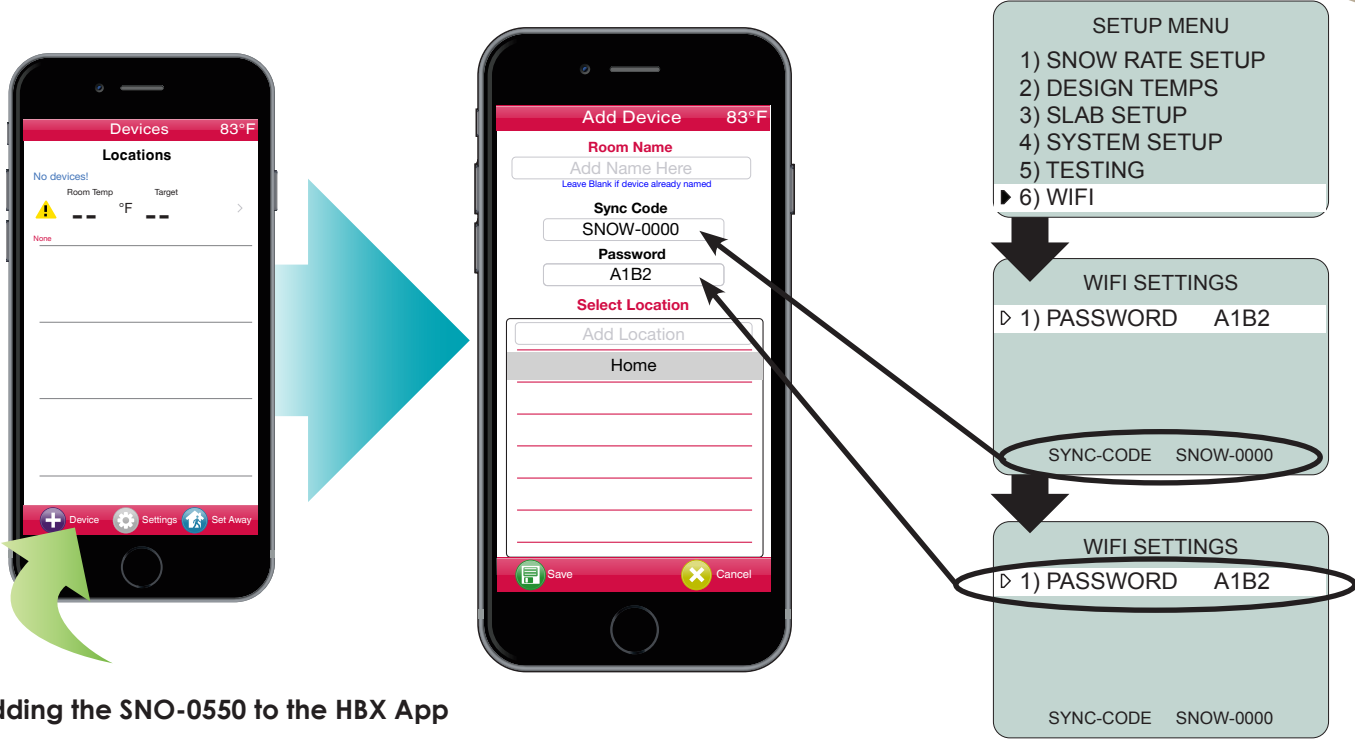


Hotspot name will not appear in network list.

5. Exit the app and go back into your personal hotspot settings and wait for the ThermoLinx Network to connect your hotspot.
6. Once connected, check the red, green, and blue LED lights on the TMX-0100. All LED lights should be steady (allow for a couple of minutes).
7. Now you are ready to add the SNO-0550. See Adding the SNO-0550 on page 17.



ADDING THE SNO-0550 TO THE HBX APP



Adding the SNO-0550 to the HBX App

1. On the home screen, select "Add device".
2. Enter the Sync-Code for the SNO-0550. The Sync- Code can be found in the System Setup Menu in option 6) WIFI on the SNO-0550.
3. Enter the password for SNO-0550. The password can be found in the System Setup Menu in option 6) WIFI on the SNO-0550.
4. Enter a system location name and select done/enter. (Ex. Home, Office, Cabin, etc.) This is the name of the system location.



Symbols and numbers cannot be used in location name

5. After you have entered the system location name, select the location so it is highlighted, and select save.
6. The SNO-0550 connected to your system will automatically populate on the main page. If it does not, confirm that the sync-code and password you specified are correct.

To delete a SNO-0550 Control from the HBX App:

iPhone: swipe the zone to the left and select delete.

Android: press and hold until the delete option appears.

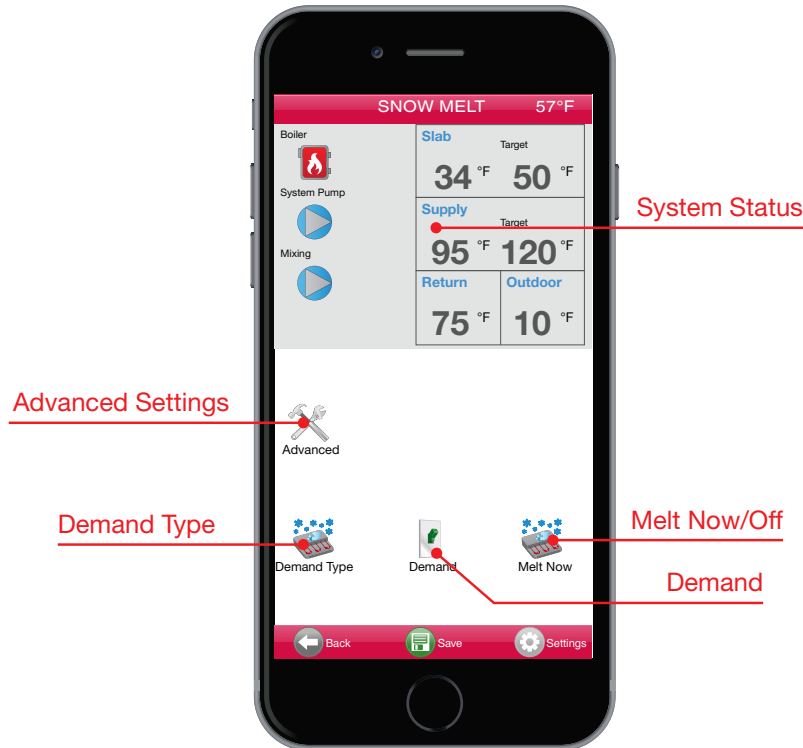


If internet connection is lost, it may take up to 15 minutes for the SNO-0550 to check in once internet connection is restored.



The SNO-0550 cannot be added to the ThermoLinx network if it does not have a TMX-0100 attached to the control. It cannot work in conjunction with the ZON-0550 to connect to the ThermoLinx network.

HBX APP FUNCTIONALITY

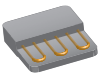


1. Demand Type

This setting is used to determine what the slab does when a demand is given to the control:



Force Melt Icon: When a demand is given the control will go into MELT Mode.



Standby/Idle: When a demand is given the control will turn on and await snow detection by the optical sensor or Force Melt demand by user.



Anticipate: When a demand is give the control will turn ON for the amount of time (1-7 days) selected in Aniticipate days (Advanced Settings) and await snow detection by optical sensor or Force Melt Demand by the user.

2. Demand

This allows you to toggle the demand On/Off.

3. Melt Now/Off

This allows you to toggle the control into Melt Mode, or turn Melt Mode off.

4. Advanced Settings

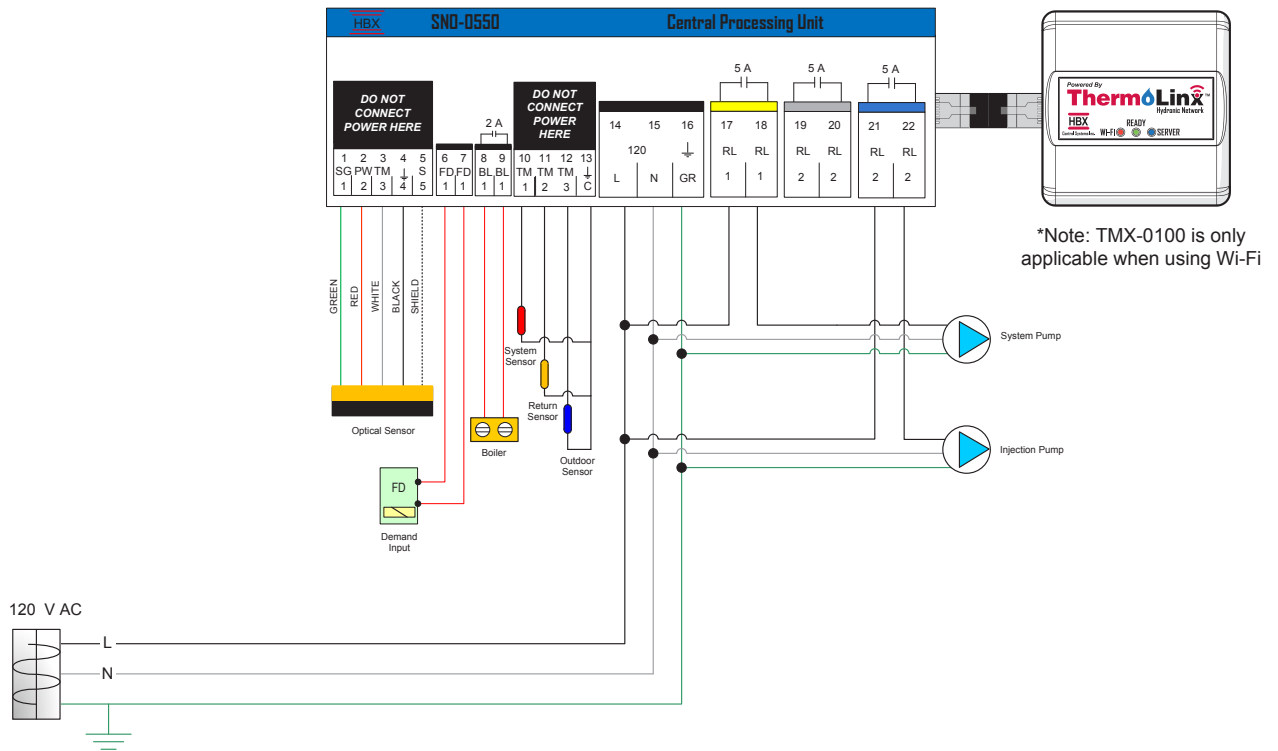
Allows you to have access to all the settings on the SNO-0550 control including snow rate setup, Design temperatures, Slab and System setup.



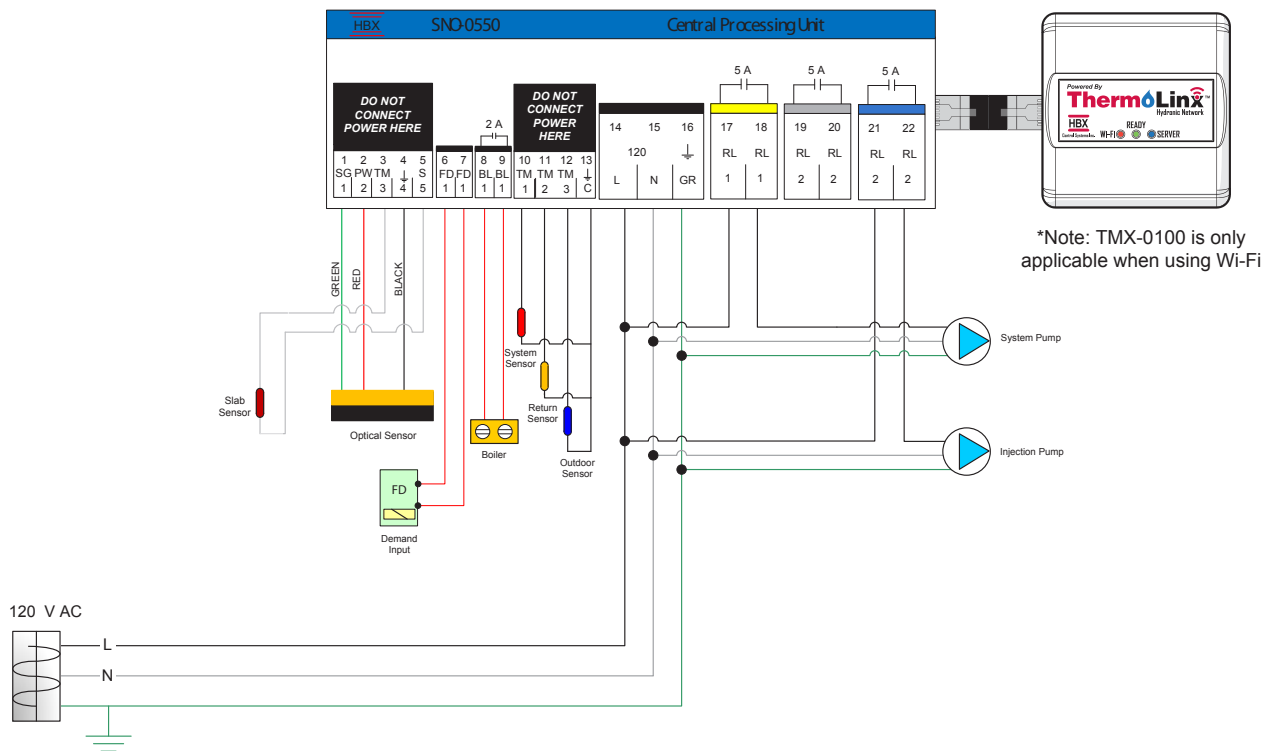
A contractor code is required for Advanced Settings. Contact HBX Technical Support for this code.

WIRING DIAGRAMS

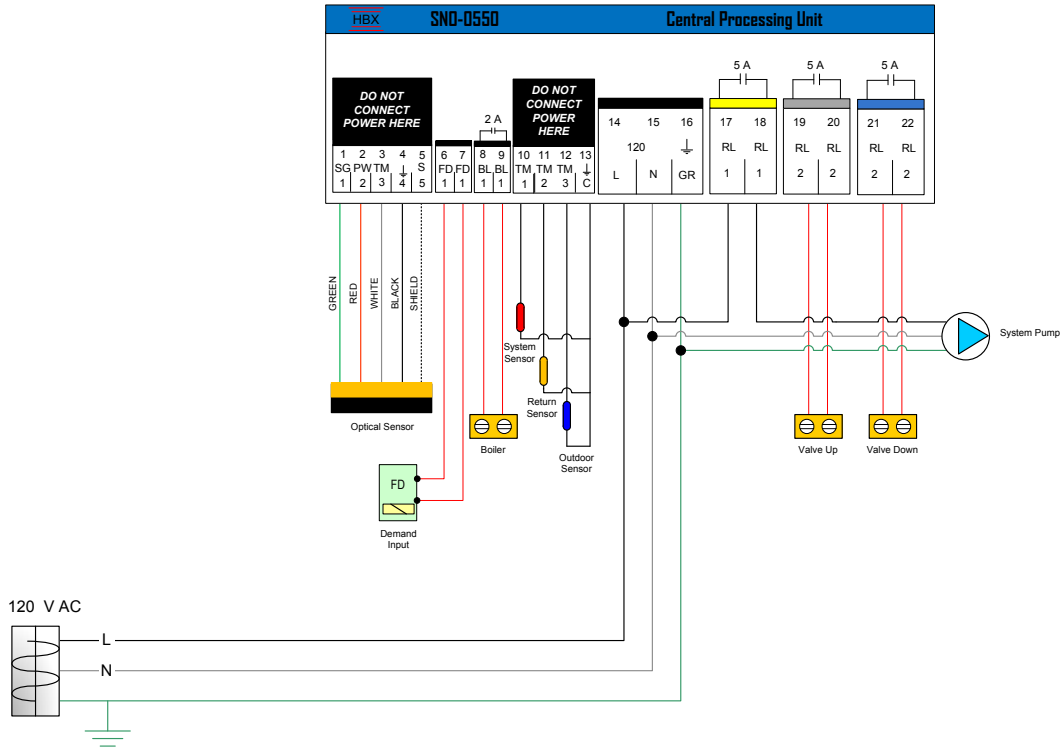
1) Snow Melt with Injection Mixing and WiFi Connection



2) Snow Melt with Injection Mixing and Remote Slab Sensor and WiFi Connection



3) Snow Melt with Floating Action Valve Mixing



SNO-0550 TROUBLESHOOTING GUIDE

ISSUE	POSSIBLE CAUSES & RESOLUTIONS
Cracked sensor	<ul style="list-style-type: none"> Improper drainage (see pg. 6 SNO-0110 manual.) Improper Installation – too much tension on screw tightening, hammering sensor into socket. Resolution: Replace Sensor
Not melting any snow	<ul style="list-style-type: none"> Sensors not connected (supply, return, outdoor) Damaged sensor: check sensor for cracks or deformations Incorrect settings: Idle temperature is set incorrect, Melt temp is set incorrect, melt time is set incorrect, one or more design temperatures set incorrect. (refer to page 10.) Demand type: set to Standby/Idle or no demand is present Doesn't read slab temperature (sensor) Improper wiring (see page 19.) Sensor location in slab setup is set incorrectly. (See page 11.) Improper sensor physical location
Residual snow is present after demand is not present	<ul style="list-style-type: none"> Max temperature is too low and WWSD is set too high Melt time is set too low. Resolution: Increase time.
Slab temperature Error	<ul style="list-style-type: none"> Incorrect wiring (Shield wire not connected) (See page 19.) Heater has not reached operating temperature. Wait for at least 1 hour after installation. Sensor location in slab setup is set incorrectly. (See page 11.) Damaged sensor: check for cracks or deformations
Doesn't detect snow	<ul style="list-style-type: none"> Damaged sensor: check for cracks or deformations Improper wiring. See page 19 or see SNO-0110 troubleshooting section in manual. Sensor location in slab setup is set incorrectly. (See page 11.) Snow rate setup is set too high. (See page 9.) No demand is present. (See page 12.) WWSD is set too low. (See page 10.) CWSD is set too high. (See page 10.)
Display Screen is Involuntary Switching	<ul style="list-style-type: none"> Display button is stuck
Display Screen is Flickering	<ul style="list-style-type: none"> Up/down/enter button is stuck
Control does not power up	<ul style="list-style-type: none"> Check power supply (120V) Damaged PCB. Resolution: contact HBX Technical Support.

SNO-0550 TROUBLESHOOTING GUIDE

ISSUE	POSSIBLE CAUSES & RESOLUTIONS
Error showing on screen	<ul style="list-style-type: none"> • Sensor is not installed. See wiring on page 19. • Damaged Sensor: check for cracks or deformations (Slab temperature) • Slab setup is incorrect. <i>(See page 11.)</i>
Injection pump not turning on	<ul style="list-style-type: none"> • Check wiring. <i>(See page 19)</i> • Make sure mixing is set to injection. <i>(See page 12.)</i>
Build-up of snow to start melting	<ul style="list-style-type: none"> • Slab Snow rate setup is too high • Delta T is set too low. <i>(See page 10.)</i>
Valve not turning on	<ul style="list-style-type: none"> • Mixing setup needs to be set to floating. <i>(See page 12.)</i> • Check the wiring <i>(see page 20.)</i>
Snow melt is on when no snow is present	<ul style="list-style-type: none"> • Damaged sensor: check for cracks or deformations • Check SNO-0110 troubleshooting manual
Not automatically turning on	<ul style="list-style-type: none"> • No demand present. <i>(See page 12.)</i> • Demand is set to Standby/Idle or Anticipate. <i>(See page 12.)</i>
Force Demand Melt Mode not working	<ul style="list-style-type: none"> • Demand is not in Force Demand Melt. <i>(See page 12.)</i>
System Pump Not Working	<ul style="list-style-type: none"> • Check Wiring <i>(see page 19.)</i>
Boiler is not working	<ul style="list-style-type: none"> • Check wiring: <i>(See page 19.)</i> • Check system design temperatures. <i>(See page 10.)</i>

THERMOLINX TROUBLESHOOTING GUIDE

ISSUE	POSSIBLE CAUSES & RESOLUTIONS
Green Light Flashing	<ul style="list-style-type: none"> • No communication between modules • CAB-0150 connector is not connected properly to the control • Disconnect the Thermolinx module and power down the SNO-0550 control. Power it up and reconnect the Thermolinx module. If issue persists contact HBX tech support

TESTING AND TROUBLESHOOTING PROCEDURE

SNO-0550 / SNO-0110 - Testing

1. Thermistor Test

Resistance table for thermistors (outdoor, system)

Temperature		Resistance	Temperature		Resistance	Temperature		Resistance
°F	°C	Ω	°F	°C	Ω	°F	°C	Ω
- 22	- 30	177,000	- 0.4	- 18	86,463	21.2	- 6	44,617
- 18.4	- 28	156,404	3.2	- 16	77,162	24.8	- 4	40,153
- 14.8	- 26	138,482	6.8	- 14	68,957	28.4	- 2	36,182
- 11.2	- 24	122,807	10.4	- 12	61,711	32	0	32,654
- 7.6	- 22	109,075	14	- 10	55,319	35.6	2	29,498
- 4	- 20	97,060	17.6	- 8	49,640	39.2	4	26,686

2. Snowmelt Sensor Test

I. Heater Element Resistance Test

With the sensor unplugged, measure the resistance between the Red wire and the black wire. The result should be around 23-26 Ohms with all 100 feet of wire attached.

II. Slab Sensor Test

Using the above table measure the resistance of the white and shield wires. This will give you the slab sensor reading when the heater is not ON. Take note if the heater was ON and the snowmelt sensor is warm, this will reflect in the slab sensor reading.

III. Heater Element Voltage Test

With the sensor plugged into the control (make sure heater is ON) check the voltage from Red to Black. The voltage should be around 15-17 VDC.

SENSOR ERRORS



HTR-LOWC: Low current is being drawn into the sensor and will not sense snow. Check the wiring of the control. Refer to testing procedure above, and inspect the SNO-0110 Sensor for signs of damage or improper drainage.

Reset control when issue has been corrected to eliminate error code.



HTR-FAULT: High current is being drawn into the sensor and will not sense snow. Screen will flash orange, and fuse in control will trip. Check the wiring of the control. Refer to testing procedure above, and inspect the SNO-0110 Sensor for signs of damage or improper drainage.

Reset control when issue has been corrected to eliminate error code.

For additional assistance with the SNO-0550, please contact our
Technical Support Department toll free at:

+1 (855) 410-2341

Limited Warranty

HBX Controls warrants each of its products to be free from defects in workmanship and materials under normal use and service for a period of 24 months from date of manufacture or 12 months from date of purchase from an HBX Authorized Dealer, if within the above documented period after date of manufacture.

If the product proves to be defective within the applicable warranty period, HBX on its sole discretion will repair or replace said product. Replacement product may be new or refurbished of equivalent or better specifications, relative to the defective product. Replacement product need not be of identical design or model. Any repair or replacement product pursuant to this warranty shall be warranted for not less than 90 days from date of such repair, irrespective of any earlier expiration of original warranty period. When HBX provides replacement, the defective product becomes the property of HBX Controls.

Warranty Service, within the applicable warranty period, may be obtained by contacting your nearest HBX Controls office via the original Authorized Agent and requesting a Return Material Authorization Number (RMA #). Proof of purchase in the form a dated invoice/receipt must be provided to expedite the issuance of a Factory RMA.

After an RMA number has been issued, the defective product must be packaged securely in the original or other suitable shipping package to ensure that it will not be damaged in transit. The RMA number must be visible on the outside of the package and a copy included inside the package. The package must be mailed or otherwise shipped back to HBX with all costs of mailing/shipping/insurance prepaid by the warranty claimant.

Any package/s returned to HBX without an approved and visible RMA number will be rejected and shipped back to purchaser at purchaser's expense. HBX reserves the right, if deemed necessary, to charge a reasonable levy for costs incurred, additional to mailing or shipping costs.

Limitation of Warranties

If the HBX product does not operate as warranted above the purchasers sole remedy shall be, at HBX's option, repair or replacement. The foregoing warranties and remedies are exclusive and in lieu of all other warranties, expressed or implied, either in fact or by operation of law, statutory or otherwise, including warranties of merchantability and fitness for a particular purpose/application. HBX neither assumes nor authorizes any other person to assume for it any other liability in connection with the sale, installation maintenance or use of HBX Controls products.

HBX shall not be liable under this warranty; if its testing and examination discloses that the alleged defect in the product does not exist or was caused by the purchasers or third persons misuse, neglect, improper installation or testing, unauthorized attempts to repair or any other cause beyond the range of intended use, or by accident, fire, lightning or other hazard.

Limitation of Liability

In no event will HBX be liable for any damages, including loss of data, loss of profits, costs of cover or other incidental, consequential or indirect damages arising out of the installation, maintenance, commissioning, performance, failure or interruption of an HBX product, however caused and on any theory of liability. This limitation will apply even if HBX has been advised of the possibility of such damage.

Local Law

This limited warranty statement gives the purchaser specific legal rights. The purchaser may also have other rights which vary from state to state in the United States, from Province to Province in Canada and from Country to Country elsewhere in the world.

To the extent this Limited Warranty Statement is inconsistent with local law, this statement shall be deemed modified to be consistent with such local law. Under such local law, certain disclaimers and limitations of this statement may not apply to the purchaser. For example, some states in the United States, as well as some governments outside the United States (including Canadian Provinces), may:

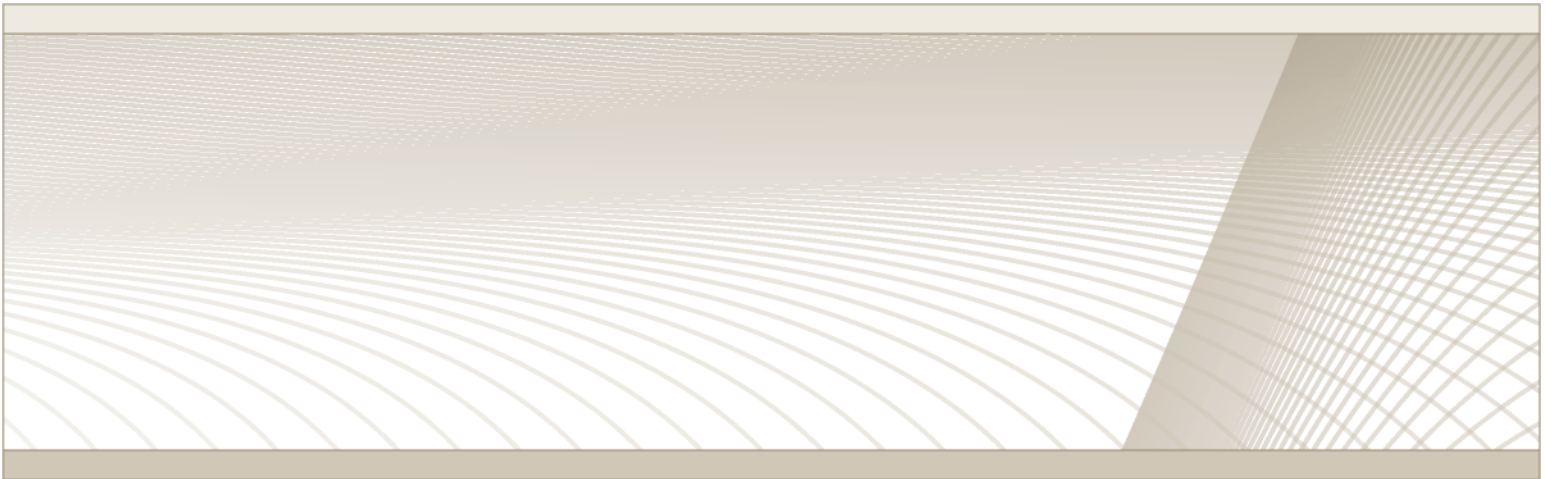
Preclude the disclaimers and limitations in this statement from limiting the statutory rights of a consumer (e.g. United Kingdom);

Otherwise restrict the ability of a manufacturer to enforce such disclaimers or limitations; or

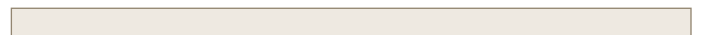
Grant the purchaser additional warranty rights which the manufacturer cannot disclaim, or not allow limitations on the duration of implied warranties.

Phone: +1 (403) 720-0029 Fax: +1 (403) 720-0054
Email: info@hbxcontrols.com Web: www.hbxcontrols.com

Toll Free Technical Support: +1 (855) 410 2341



HBX Control Systems Inc.
4516 - 112th Avenue SE
Calgary, AB Canada T2C 2K2



© HBX Control Systems Inc. 2017