

Installation Manual  
Central Processing Unit 0550  
Version 1.04



ECO-0550

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HBX Control Systems Inc.



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## HBX ECO-0550 GEOTHERMAL 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.

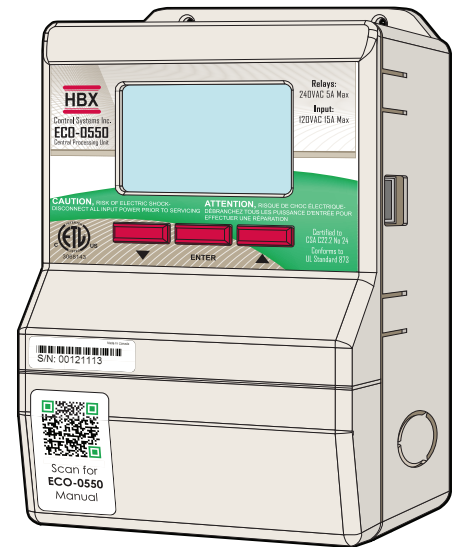
Please consult and install the geothermal appliance in accordance with manufacture's recommendations.

### DESCRIPTION

The ECO-0550 is designed to be a stand-alone Outdoor Reset Control device. The purpose and function of the ECO-0550 is to provide control for Geothermal applications. It can manage single tank applications as well as applications with separate hot and cold tanks.

### QR CODE

Each ECO-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 Geothermal 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 ECO-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
- 2 x Universal sensors
- 1 x Terminal Screwdriver (2.5mm)
- 2 x Cable ties
- 1 x Manual

## TECHNICAL DATA & DIMENSIONS

### TECHNICAL DATA

#### Specifications:

3 x Thermistor Input  
(10K Ohm)  
2 x Miscellaneous Input Signal  
3 x Relay Outputs (240VAC 10Amps) Dry  
Contacts  
1 x 2Amp Dry Contact  
Input: 120VAC +/- 10% 50/60Hz 15A Max

#### Weight:

0.408Kg

#### Dimensions:

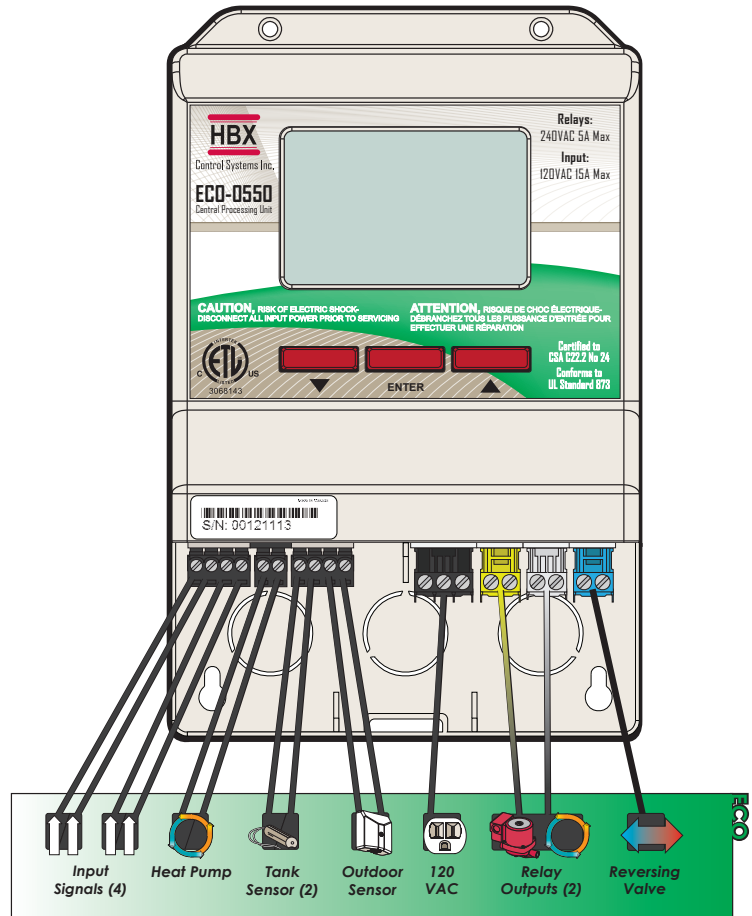
100mm W x 168mm H x 70mm

#### ETL Listings:

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

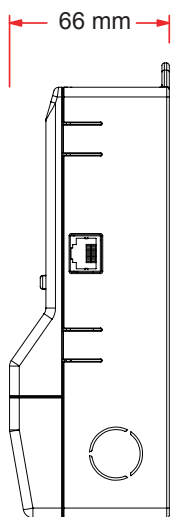
#### Storage:

50°F to 104°F (10°C to 40°C)

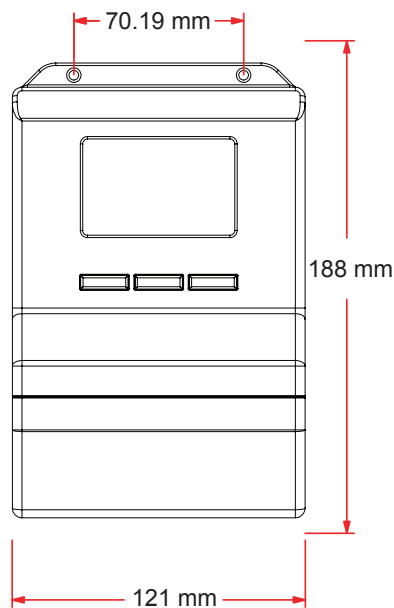


## DIMENSIONS

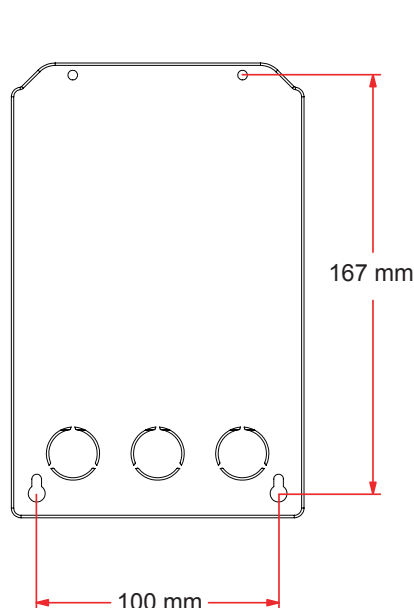
Side View



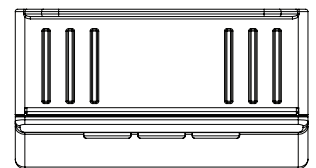
Front View



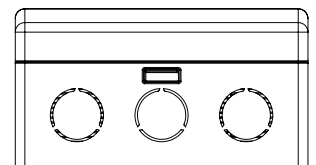
Rear View



Top View



Bottom View



## WIRING AND INSTALLATION

### Wiring

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

#### 1, 2: Demand Signal 1

Apply heat demand from a dry contact, or 24VAC.

#### 3, 4: Demand Signal 2

Apply cool demand from a dry contact, or 24VAC.

#### 5, 6: Heat Pump 1

Heat Pump 1 Output.

### Sensor Inputs

7, 10: Hot Tank temperature in dual tank mode, or Tank Temperature in single tank mode.

8, 10: Cold Tank temperature. If the cold tank sensor is not connected, the control assumes single tank operation. If connected, the control will operate in dual tank mode.

9, 10: Outdoor temperature.

#### 14, 15: Relay 1

This relay is generally a second Heat Pump, or can be used as System Pump output.

#### 16, 17: Relay 2

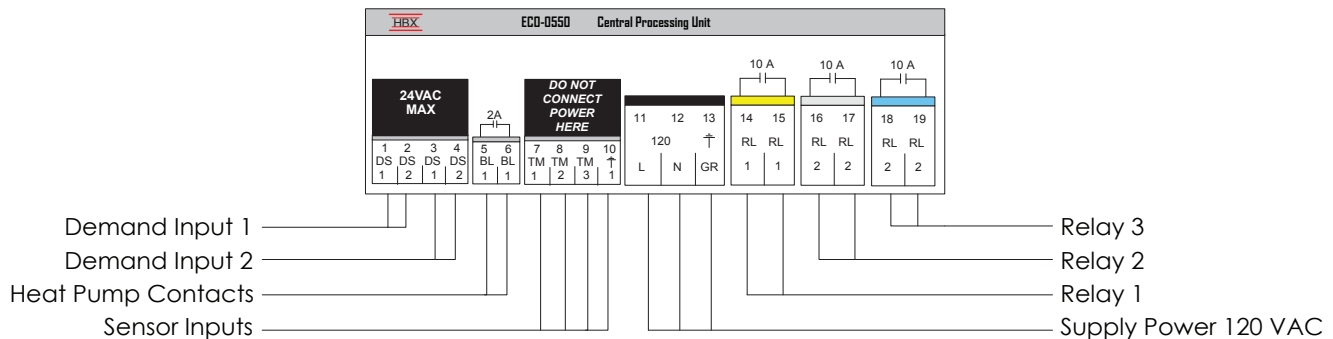
Generally used as a Third stage or Backup Boiler.

#### 18, 19: Relay 3

Used as a Reversing Valve and/or 3 way diverting valves.



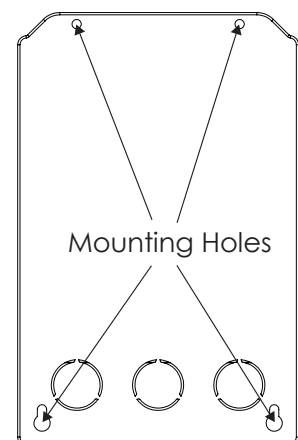
(Relays 1, 2 and 3 are dry contacts and rated for a maximum of 10 Amps.)



### Installation

The ECO-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 ECO-0550, mark on the wall the desired location of mounting.
- Predrill, anchor and fasten four screws for mounting.
- Hang ECO-0550 and fasten tight to desired locations
- Complete wiring connections in accordance with terminal locations.



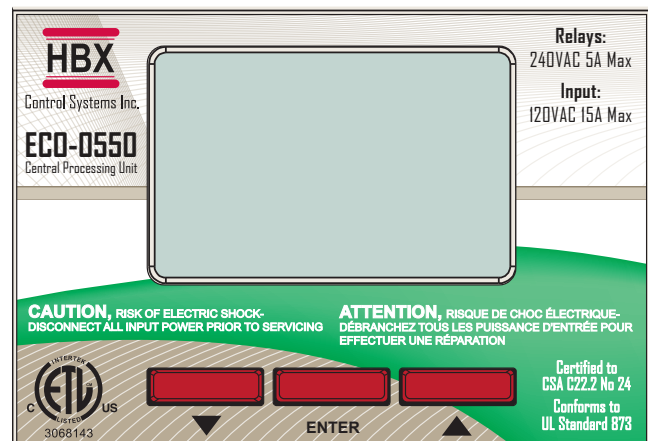
## NAVIGATING THE ECO-0550

All programming steps within the ECO-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.

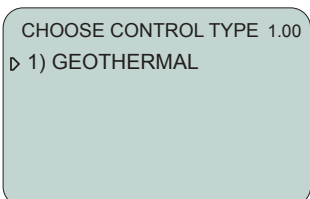
The ▲ button is used to scroll up in menu screens and increase a value in specific options.

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



## CONTROL MODE

The programming instructions for the ECO-0550 are currently selectable in the mode listed below. When the control is first plugged in you are asked to select which control mode you would like your ECO-0550 to operate in. To select your control mode simply use the ▲ or ▼ buttons to select the correct mode then wait five seconds to accept your selection.



### Geothermal Mode

Programming for this mode can be found on pages 7 through 11. This mode is used when running heat pumps/chillers or geothermal related installations. The control will run up to 3 stages of heat pumps, a reversing valve for heating and cooling applications, as well as single or dual tanks. This mode also allows for a built-in backup feature.

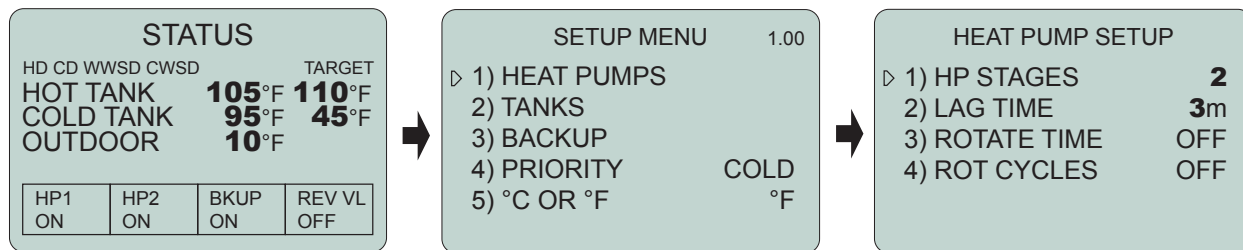
## SETUP MENU

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.



## GEOTHERMAL MODE

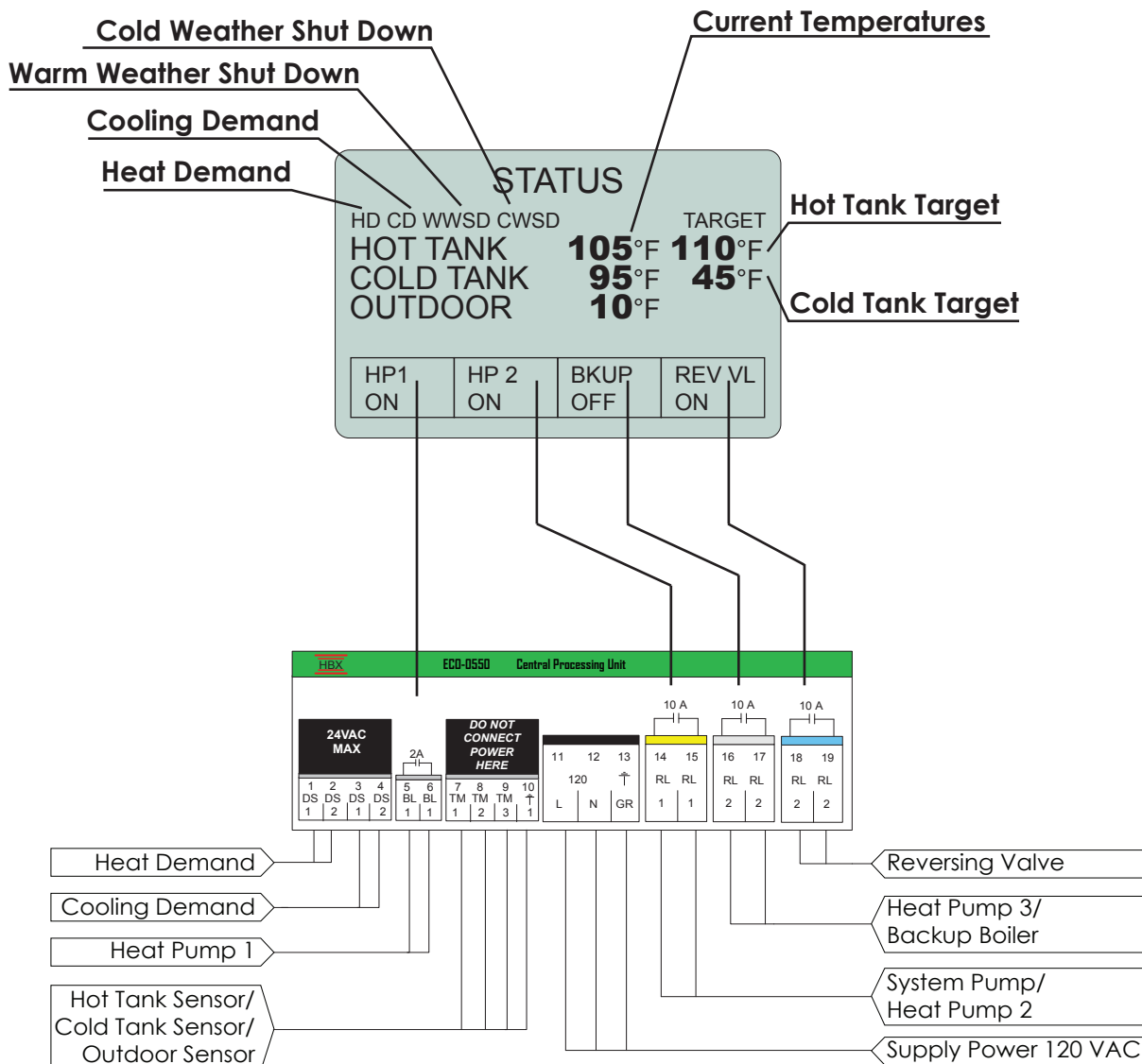
### Multicolour backlit Display

The Multicolour Backlit Display is one of the key features of the HBX Controls stand-alone ECO-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 - No Heat Demand
- Red - Demand and heat pumps running (Heating Mode)
- Green - Demand ON, no heat pumps running
- Dark Blue - Demand and heat pumps running (Cooling Mode)

### Status Screen





## GEOHERMAL MODE PROGRAMMING GUIDE

### 1) HEAT PUMPS

SETUP MENU		1.00
▶ 1) HEAT PUMPS		
2) TANKS		
3) BACKUP		
4) PRIORITY	COLD	
5) °C OR °F		°F

#### Heat Pump Setup

This setting is used to configure the heat pump staging component in your system.

### HEAT PUMP SETUP

HEAT PUMP SETUP	
▶ 1) HP STAGES	<b>1</b>
2) LAG TIME	<b>3m</b>
3) ROTATE TIME	OFF
4) ROT CYCLES	OFF
5) OFF STAGING	ON

#### Stages

This setting will allow you to select the number of heat pump stages that are attached to the control.



**If Backup is being used, you can only have a maximum of 2 stages.**

(1 to 3) Default: 1

HEAT PUMP SETUP	
1) HP STAGES	<b>1</b>
▶ 2) LAG TIME	<b>3m</b>
3) ROTATE TIME	OFF
4) ROT CYCLES	OFF
5) OFF STAGING	ON

#### Lag Time

When the heat pump is set for more than 1 stage, this setting will be set for the minimum lag time between heat pump stages. This is a time delay between stages. Even if the differential has been exceeded this time must elapse before that stage can come on.

(1m to 240m) Default: 3m

HEAT PUMP SETUP	
1) HP STAGES	<b>1</b>
2) LAG TIME	<b>3m</b>
▶ 3) ROTATE TIME	OFF
4) ROT CYCLES	OFF
5) OFF STAGING	ON

#### Rotate Time

The time of rotation between heat pumps. This setting is in hours of run time. This means that the heat pumps are going to rotate when the first heat pump exceeds the second by the rotate time.

(OFF/1H to 99H) Default: OFF

HEAT PUMP SETUP	
1) HP STAGES	<b>1</b>
2) LAG TIME	<b>3m</b>
3) ROTATE TIME	OFF
▶ 4) ROT CYCLES	OFF
5) OFF STAGING	ON

#### Rotate Cycles

Set the number of cycles at which you would like to rotate the heat pumps. One cycle is described as the heat pump going on and then off.

(OFF/1 to 240) Default: OFF

HEAT PUMP SETUP	
1) HP STAGES	<b>1</b>
2) LAG TIME	<b>3m</b>
3) ROTATE TIME	OFF
4) ROT CYCLES	OFF
▶ 5) OFF STAGING	ON

#### Off Staging

This feature is used to set how you would like to stage the heat pumps off. If set to ON the heatpumps will stage off normally. If set to OFF the heat pumps will all stage off at the same time.

(OFF/ON) Default: ON

## 2) TANK SETUP

SETUP MENU 1.00	
1) HEAT PUMPS	
▶ 2) TANKS	
3) BACKUP	
4) PRIORITY	COLD
5) °C OR °F	°F

TANK SETTINGS	
▶ 1) HOT TANK	
2) COLD TANK	
3) CWSD/WWSD TIME	0H

### Hot Tank Setup

This setting is used to set the desired temperature in the hot tank when there is a heat demand present.

### HOT TANK SETUP WITHOUT OUTDOOR RESET

HOT TANK SETUP	
▶ 1) WWSD	65°F
2) OUTDOOR	OFF
3) HOT DIFF	6°F
4) TANK TEMP	115°F

#### Warm Weather Shut Down

This setting is used to set the temperature in which the ECO-0550 will go into WWSD. If the system rises above this temperature, the system will be shut off. In WWSD the heat pumps and backup boiler will shut off.

(OFF/35°F to 119°F) Default: 65°F

HOT TANK SETUP	
1) WWSD	65°F
▶ 2) OUTDOOR	OFF
3) HOT DIFF	6°F
4) TANK TEMP	115°F

#### Outdoor Temperature (Design)

This is used in the outdoor reset design calculation. This option should be set to reflect your specific city or region.



**With this option enabled, the Tank Temperature setting will be replaced by Min Tank and Max Tank Temperature settings.**

(OFF/0°F to 119°F) Default: OFF

HOT TANK SETUP	
1) WWSD	65°F
2) OUTDOOR	OFF
▶ 3) HOT DIFF	6°F
4) TANK TEMP	115°F

#### Hot Tank Differential

Set this temperature to be the desired hot tank differential. A differential of 4°F will allow for 2 degrees above and/or 2 degrees below the desired temperature before a demand is present.

(2°F to 100°F) Default: 6°F

HOT TANK SETUP	
1) WWSD	65°F
2) OUTDOOR	OFF
3) HOT DIFF	6°F
▶ 4) TANK TEMP	115°F

#### Tank Target Temperature

When a heat demand is present and the control is not in WWSD, the control will target this temperature for heating.

(50°F to 200°F) Default: 115°F



**If there is no thermistor attached to pins 8 and 9, the control assumes single tank operation.**

## HOT TANK SETUP WITH OUTDOOR RESET

### HOT TANK SETUP

▶ 1) WWSD	65°F
2) OUTDOOR	11°F
3) HOT DIFF	6°F
4) MIN TANK TEMP	80°F
5) MAX TANK TEMP	115°F

### Warm Weather Shut Down

This setting is used to set the temperature in which the ECO-0550 will go into WWSD. If the system rises above this temperature, the system will be shut off. In WWSD the heat pumps and backup boiler will shut off.

(OFF/35°F to 119°F) Default: 65°F

### HOT TANK SETUP

1) WWSD	65°F
▶ 2) OUTDOOR	11°F
3) HOT DIFF	6°F
4) MIN TANK TEMP	80°F
5) MAX TANK TEMP	115°F

### Outdoor Temperature (Design)

This is used in the outdoor reset design calculation. This option should be set to reflect your specific city or region.

(OFF/0°F to 119°F) Default: OFF

### HOT TANK SETUP

1) WWSD	65°F
2) OUTDOOR	11°F
▶ 3) HOT DIFF	6°F
4) MIN TANK TEMP	80°F
5) MAX TANK TEMP	115°F

### Hot Tank Differential

Set this temperature to be the desired hot tank differential. A differential of 4°F will allow for 2 degrees above and/or 2 degrees below the desired temperature before a demand is present.

(2°F to 100°F) Default: 6°F

### HOT TANK SETUP

1) WWSD	65°F
2) OUTDOOR	11°F
3) HOT DIFF	6°F
▶ 4) MIN TANK TEMP	80°F
5) MAX TANK TEMP	115°F

### Minimum Tank Temperature

This setting is the bottom of the heat curve. The target will hit this temperature as the Outdoor Temperature approaches the WWSD.

(50°F to 200°F) Default: 80°F

### HOT TANK SETUP

1) WWSD	65°F
2) OUTDOOR	11°F
3) HOT DIFF	6°F
4) MIN TANK TEMP	80°F
▶ 5) MAX TANK TEMP	115°F

### Maximum Tank Temperature

This setting is the top of the heat curve. The target will hit this temperature as the Outdoor Temperature approaches the Design Outdoor Temperature.

(50°F to 200°F) Default: 115°F

SETUP MENU 1.00	
1) HEAT PUMPS	
▶ 2) TANKS	
3) BACKUP	
4) PRIORITY	COLD
5) °C OR °F	°F

TANK SETTINGS	
1) HOT TANK	
▶ 2) COLD TANK	
3) CWSD/WWSD TIME	0H

### Cold Tank Setup

This setting is used to set the desired temperature in the cold tank when there is a cooling demand present.

## COLD TANK SETUP WITHOUT OUTDOOR RESET

COLD TANK SETUP	
▶ 1) CWSD	75°F
2) OUTDOOR	OFF
3) COLD DIFF	8°F
4) TANK TEMP	45°F

### Cold Weather Shut Down

This setting is used to set the temperature in which the ECO-0550 will go into CWSD. If the system goes below this temperature, the system will be shut off. In CWSD the heat pumps will shut off.

(OFF/35°F to 119°F) Default: 75°F

COLD TANK SETUP	
1) CWSD	75°F
▶ 2) OUTDOOR	OFF
3) COLD DIFF	8°F
4) TANK TEMP	45°F

### Outdoor Temperature (Design)

This is used in the outdoor reset design calculation. This option should be set to reflect your specific city or region.



**With this option enabled, the Tank Temperature setting will be replaced by Min Tank and Max Tank Temperature settings.**

(OFF/0°F to 119°F) Default: OFF

COLD TANK SETUP	
1) CWSD	75°F
2) OUTDOOR	OFF
▶ 3) COLD DIFF	8°F
4) TANK TEMP	45°F

### Cold Tank Differential

Set this temperature to be the desired cold tank differential. A differential of 4°F will allow for 2 degrees above and/or 2 degrees below the desired temperature before a demand is present.

(2°F to 100°F) Default: 8°F

COLD TANK SETUP	
1) CWSD	75°F
2) OUTDOOR	OFF
3) COLD DIFF	8°F
▶ 4) TANK TEMP	45°F

### Tank Target Temperature

When a cooling demand is present and the control is not in CWSD, the control will target this temperature for cooling.

(30°F to 200°F) Default: 45°F



**If there is no thermistor attached to pins 8 and 9, the control assumes single tank operation.**

### COLD TANK SETUP WITH OUTDOOR RESET

COLD TANK SETUP

▶ 1) CWSD	75°F
2) OUTDOOR	90°F
3) COLD DIFF	8°F
4) MIN TANK TEMP	45°F
5) MAX TANK TEMP	60°F

**Cold Weather Shut Down**

This setting is used to set the temperature in which the ECO-0550 will go into CWSD. If the system goes below this temperature, the system will be shut off. In CWSD the heat pumps will shut off.

(OFF/35°F to 119°F) Default: 75°F

COLD TANK SETUP

1) CWSD	75°F
▶ 2) OUTDOOR	90°F
3) COLD DIFF	8°F
4) MIN TANK TEMP	45°F
5) MAX TANK TEMP	60°F

**Outdoor Temperature (Design)**

This is used in the outdoor reset design calculation. This option should be set to reflect your specific city or region.

(OFF/0°F to 119°F) Default: OFF

COLD TANK SETUP

1) CWSD	75°F
2) OUTDOOR	90°F
▶ 3) COLD DIFF	8°F
4) MIN TANK TEMP	45°F
5) MAX TANK TEMP	60°F

**Cold Tank Differential**

Set this temperature to be the desired cold tank differential. A differential of 4°F will allow for 2 degrees above and/or 2 degrees below the desired temperature before a demand is present.

(2°F to 100°F) Default: 8°F

COLD TANK SETUP

1) CWSD	75°F
2) OUTDOOR	90°F
3) COLD DIFF	8°F
▶ 4) MIN TANK TEMP	45°F
5) MAX TANK TEMP	60°F

**Minimum Tank Temperature**

This setting is the bottom of the cooling curve. The target will hit this temperature as the outdoor temperature approaches the Outdoor Design Temperature.

(50°F to 200°F) Default: 45°F

COLD TANK SETUP

1) CWSD	75°F
2) OUTDOOR	90°F
3) COLD DIFF	8°F
4) MIN TANK TEMP	45°F
▶ 5) MAX TANK TEMP	60°F

**Maximum Tank Temperature**

This setting is the top of the cooling curve. The target will hit this temperature as the Outdoor Temperature approaches the CWSD.

(50°F to 200°F) Default: 60°F

### COLD/WARM WEATHER SHUT DOWN TIME SETUP

TANK SETTINGS

1) HOT TANK	
2) COLD TANK	
▶ 3) CWSD/WWSD TIME	0H

**Cold/Warm Weather Shut Down Time**

This setting is used as a lagtime for CWSD and WWSD. This will hold the control from entering CWSD or WWSD until this time has elapsed. The timer starts when the outdoor temperature hits the CWSD or WWSD. This setting is useful in the shoulder seasons when there are large outdoor temperature swings.

(0H to 48H) Default: 0H

### 3) BACKUP SETUP

SETUP MENU		1.00
1) HEAT PUMPS		
2) TANKS		
▶ 3) BACKUP		
4) PRIORITY	COLD	
5) °C OR °F		°F

#### Backup Setup

This setting is used to configure the boiler backup component in your system

### BACKUP SETUP

HEAT PUMP SETUP	
▶ 1) BACKUP TIME	OFF
2) BACKUP TEMP	OFF
3) BACKUP DIFF	OFF

#### Backup Time

This setting will be set for the minimum lag time between heat pump stages and the backup boiler. This is a time delay between the heat pump stages and the backup boiler. Even if the differential has been exceeded this time must elapse before that stage can come on.

(OFF/1m to 240m) Default: OFF

HEAT PUMP SETUP	
1) BACKUP TIME	OFF
▶ 2) BACKUP TEMP	OFF
3) BACKUP DIFF	OFF

#### Backup Temperature

Set this temperature to the desired outdoor temperature that will allow the backup to come on. When the temperature resides above this value, the backup will not be allowed to come on. Only when the Outdoor Temperature falls below this value can the backup come on.

(OFF/2°F to 100°F) Default: OFF

HEAT PUMP SETUP	
1) BACKUP TIME	OFF
2) BACKUP TEMP	OFF
▶ 3) BACKUP DIFF	OFF

#### Backup Differential

This setting can be used with the backup temperature and backup time or on its own to bring the backup on. This setting is used to set a differential on the tank at which you would like the backup to come on. This setting will override the backup temperature and backup time settings.

(eg. Tank temperature of 115°F and a backup differential of 10°F. The backup boiler will come on at 105°F providing all of the heat pumps are already on.)

(OFF/2°F to 100°F) Default: OFF

#### 4) PRIORITY SETUP

SETUP MENU	1.00
1) HEAT PUMPS	
2) TANKS	
3) BACKUP	
▶ 4) PRIORITY	COLD
5) °C OR °F	°F

##### Priority Setup

This setting will prioritize the option selected.

##### Single Tank Setup:

When the control is in this mode and there is a heat demand and cooling demand simultaneously, the control will disregard the call that is not priority until the priority is satisfied.

##### Dual Tank Setup:

When the control is in this mode and there is a heat demand and cooling demand simultaneously, the control will satisfy the priority tank before switching to the non-priority tank.

(HOT/COLD) Default: **COLD**

#### 5) CELSIUS OR FAHRENHEIT

SETUP MENU	1.00
1) HEAT PUMPS	
2) TANKS	
3) BACKUP	
4) PRIORITY	COLD
▶ 5) °C OR °F	°F

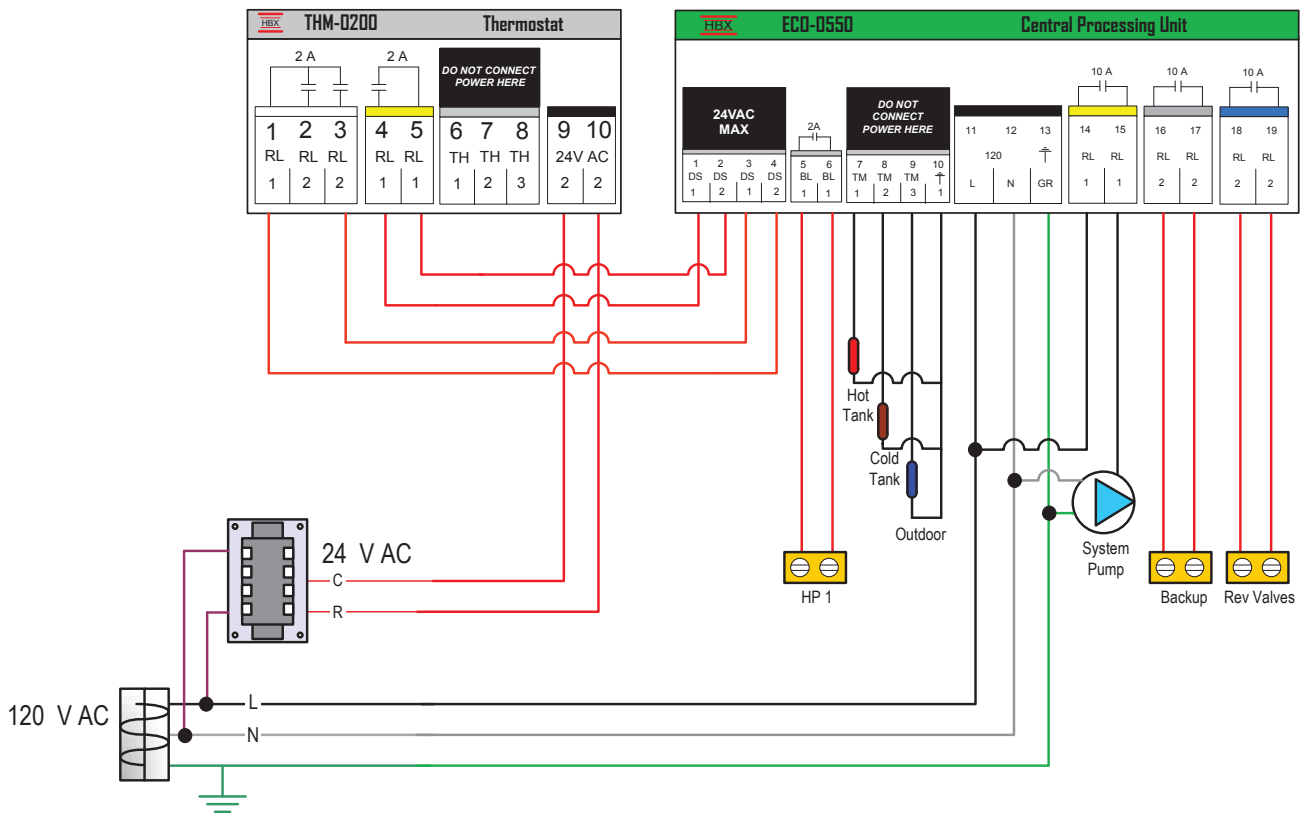
##### Celsius or Fahrenheit

This setting allows you to set the control to either Celsius (°C) or Fahrenheit (°F).

(°F/°C) Default: °F

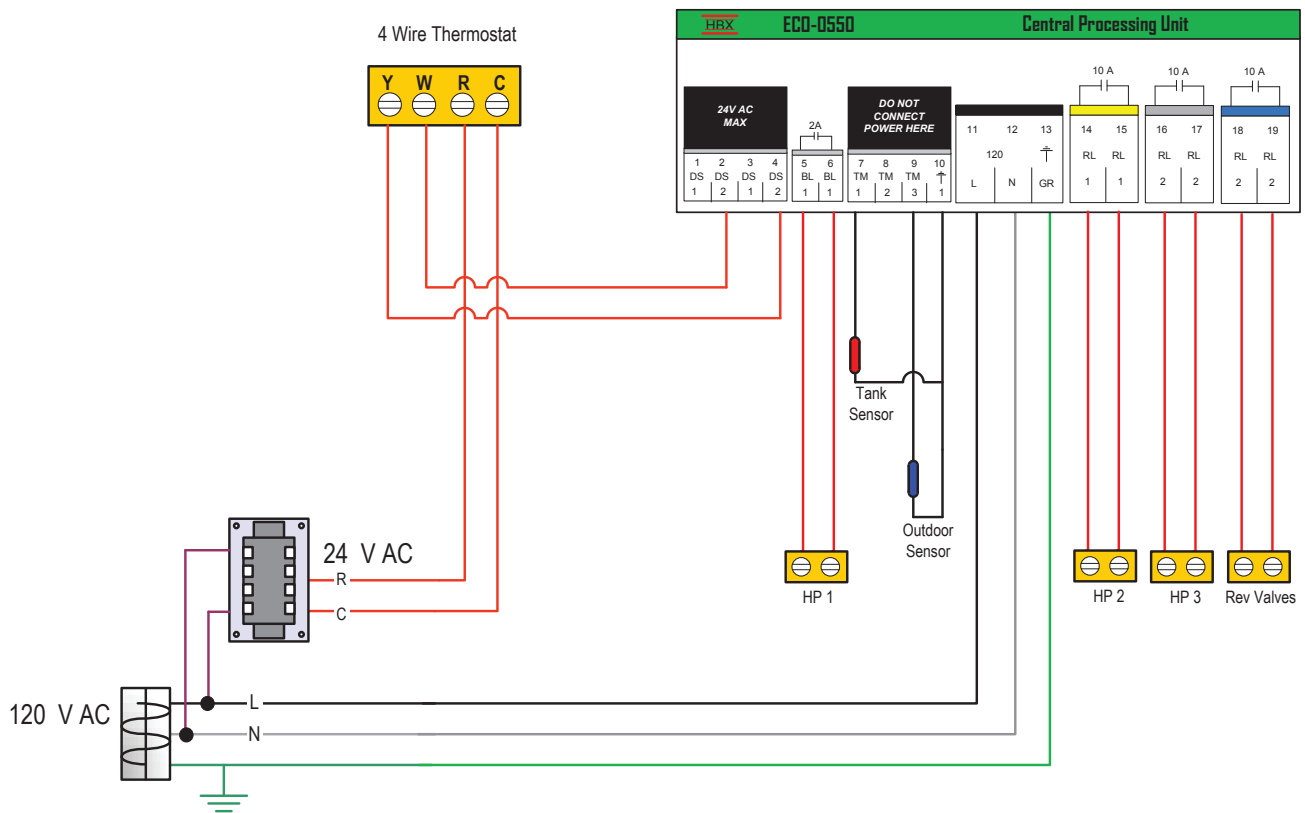
## WIRING DIAGRAMS

1) Single stage heat pump with backup boiler. This system uses a dual tank for heating and cooling

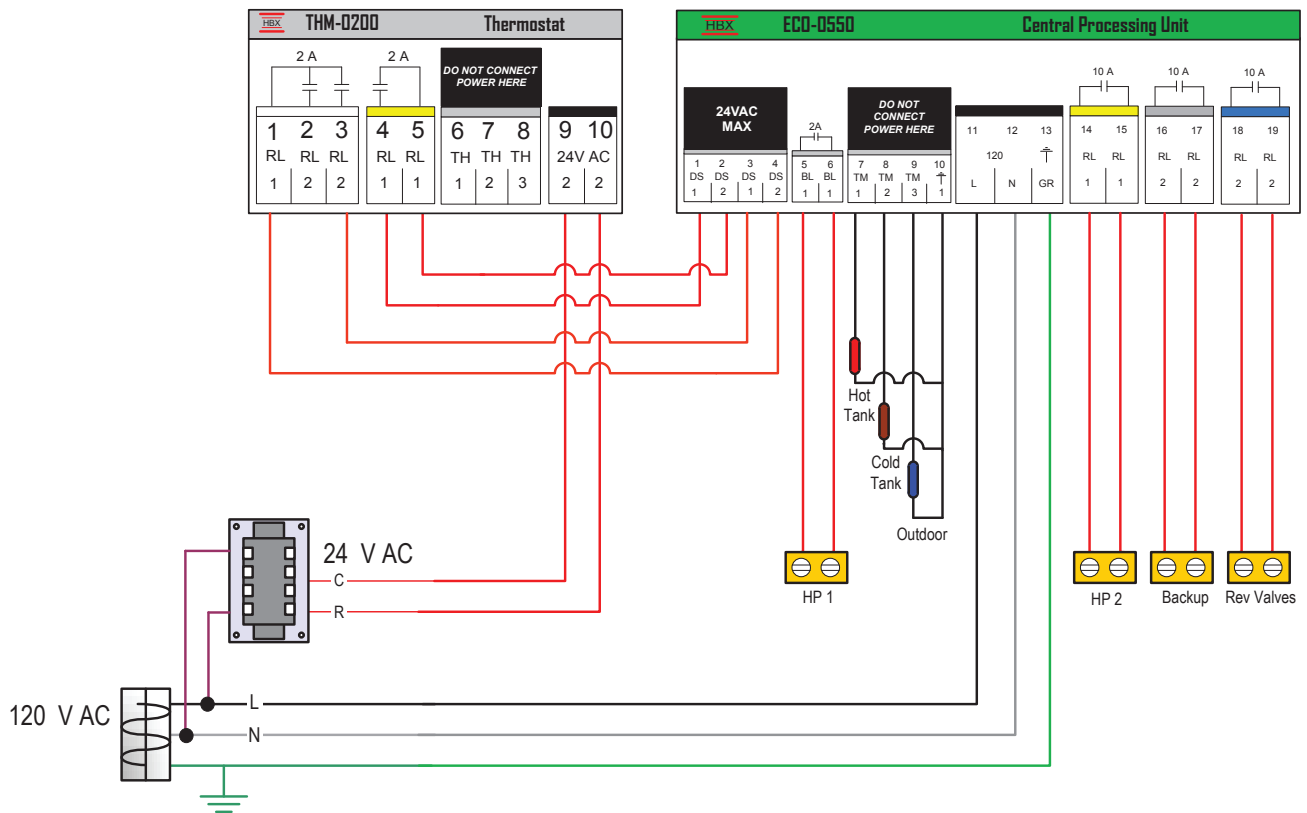




## 2) Three stage heat pump. This system uses a single tank for heating and cooling



### 3) 2 Stage heat pump with backup boiler using separate hot and cold tank.



### 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.

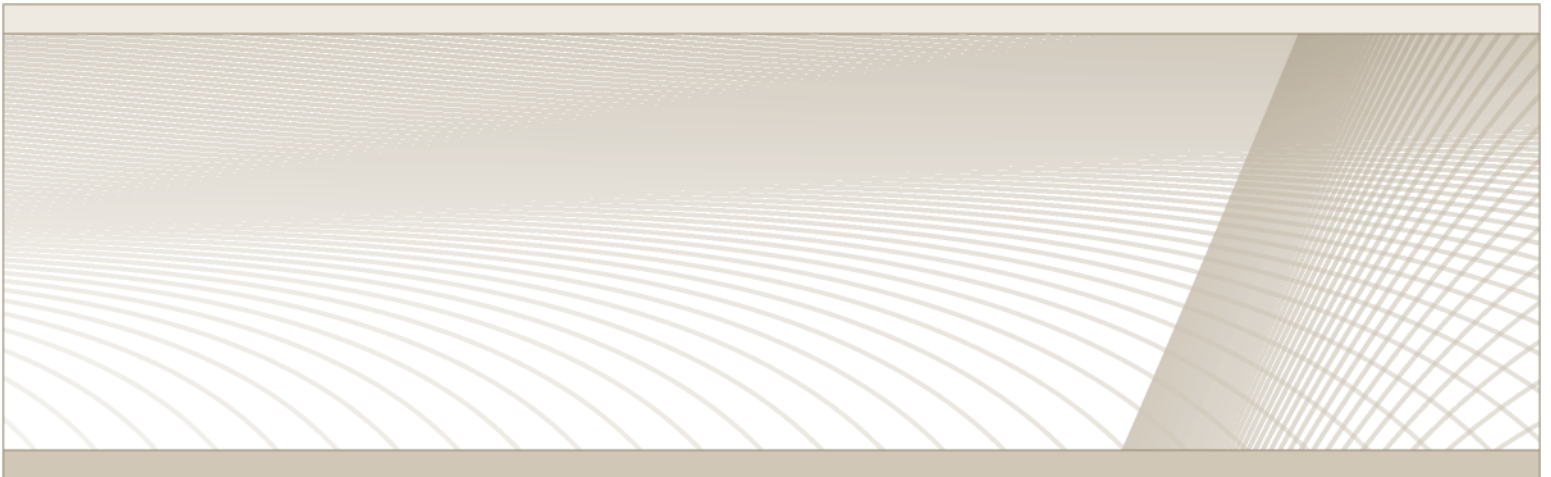
To the extent this Limited Warranty Statement is inconsistent with local law, this statement shall be deemed modified to be consistent with such local law. Under such local law, certain disclaimers and limitations of this statement may not apply to the purchaser. For example, some states in the United 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);

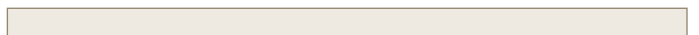
Otherwise restrict the ability of a manufacturer to enforce such disclaimers or limitations; or

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

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