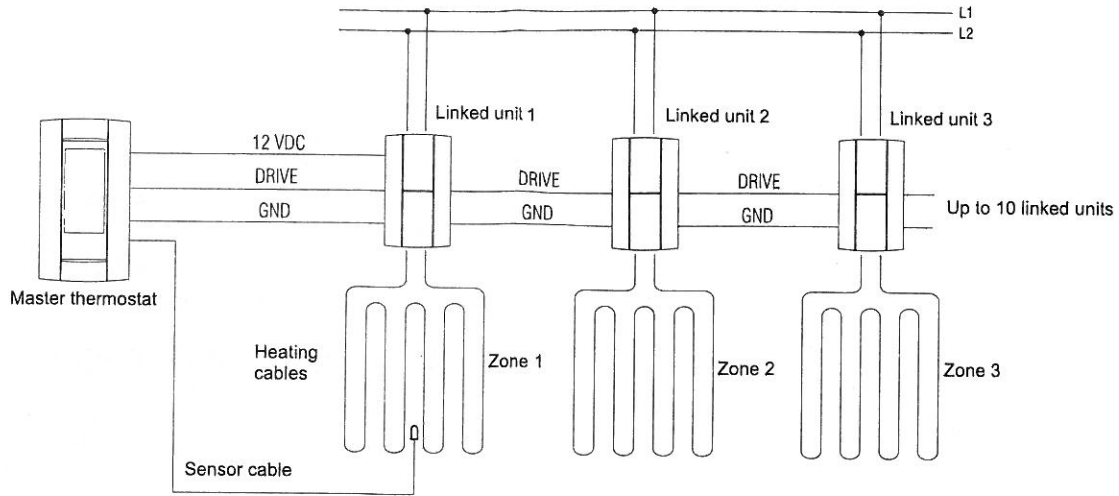


# Installation and Testing Guide



## 1 Introduction

The system comprising a master thermostat and linked units is designed for large floor heating applications whose load is too high for a regular thermostat. With this system, the heating area is divided into zones of 15 A or less. Each zone is connected to one of the linked units which are driven by the master thermostat.

- Each linked unit is responsible for heating its zone. Each unit is powered by line voltage (120 V or 240 V) and has its own ground fault protection device.
- The master thermostat controls the temperature and programming (if applicable) for the entire floor and sends a signal to each linked unit when heating is required. The master thermostat can be used to drive up to 10 linked units and receives its power (12 VDC) from one of them.

## 2 Installation

**Read the entire document before starting the installation**

### CAUTION

- Installation should be carried out by an electrician and must comply with national and local electrical codes.
- Do NOT install the master thermostat or a linked unit in an area where it can be exposed to water or rain.
- To prevent severe shock or electrocution, always turn the power OFF at the service panel before working with wiring.
- Install each linked unit onto an electrical box.
- Use special CO/ALR solderless connectors if you connect the thermostat to aluminum wires.
- The master thermostat has two components: the faceplate and the power base. If you install another faceplate, ensure it is configured for 15-minute cycles.

### Wiring Guidelines

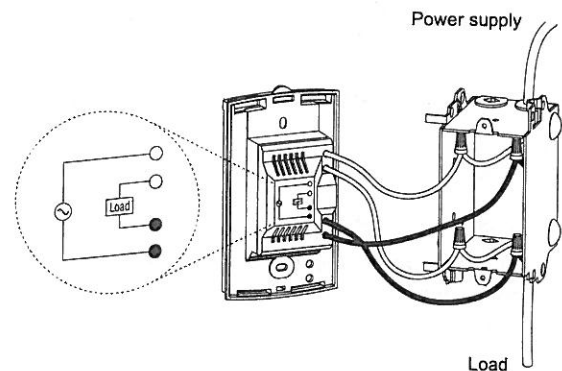
- The wire distance between the master thermostat and each linked unit must not exceed 500 ft. (150 m). 20-AWG wires are recommended.
- The floor sensor cable must not exceed 200 ft. (60 m).

### Linked Unit Installation

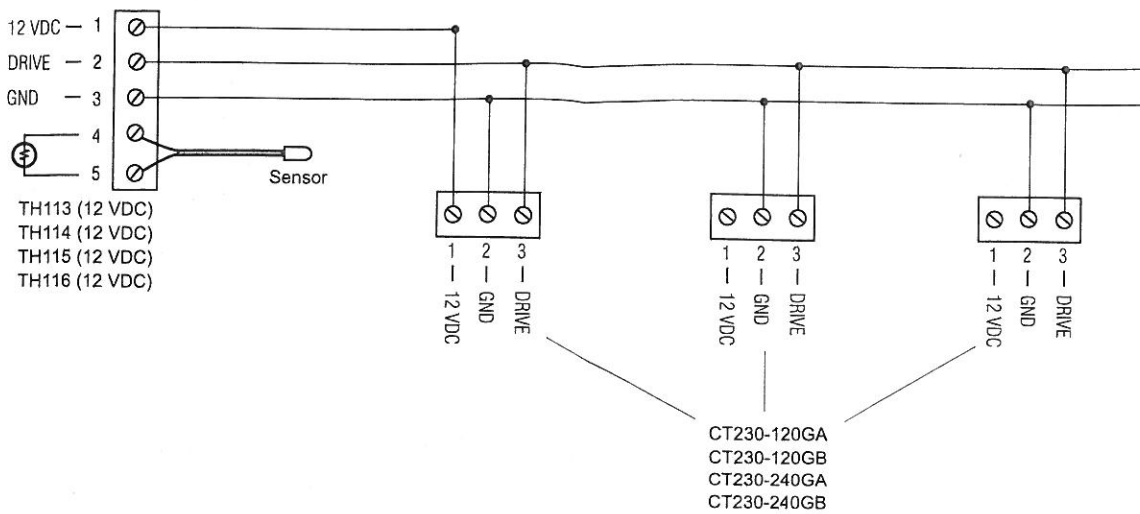
Install each linked unit as follows:

- 1 Connect the 120-V or 240-V power base to line voltage and to the load using solderless connectors for copper wires and install the base onto an electrical box.

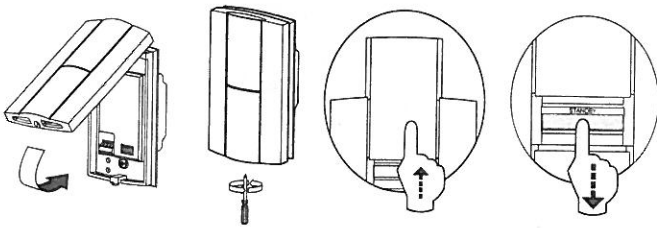
**NOTE:** The linked units can operate on different voltages (e.g., 5 units @ 120 V and 5 @ 240 V).



- 2 Connect the power base as per the following connection diagram.



- 3 Install the CT230 control module (faceplate) onto the power base and switch it to **STANDBY**.



## Master Thermostat Installation

Install the master thermostat as follows:

<ul style="list-style-type: none"> <li>For ambient temperature control</li> <li>For ambient temperature control with floor temperature limit</li> </ul>	Choose a location about 5 ft. above the floor. Avoid locations where there are air drafts (top of staircase, air outlet), dead air spots (behind a door), direct sunlight or concealed chimneys or stove pipes.
<ul style="list-style-type: none"> <li>For floor temperature control</li> </ul>	The thermostat can be installed anywhere.

**WARNING:** Make sure all linked units are in **STANDBY** mode.

Install the master thermostat as follows:

- 1 Wire the 12-VDC power base to the nearest linked unit. See the top wiring diagram.

**WARNING:** Only one linked unit must be used to power the master thermostat.

- 2 Insert the floor sensor cable through one of the two openings on the power base and connect the sensor wires to terminals 4 and 5 (no polarity).

- The sensor cable must pass outside the electrical box and follow the wall down to the floor.
- Position the sensor cable such that it does not come in contact with the floor heating wires. The sensor must be centered between two floor heating wires for best temperature control.
- Do NOT staple the sensor head (epoxy section) to the floor. Doing so might damage the sensor. The damage might not be noticeable during testing but can become apparent several days later.

- 3 Install the power base on the wall using the provided screws and wall anchors.

- 4 Install the control module (faceplate) of the master thermostat onto the power base.
- 5 Once the thermostat is installed, return power to heating system and switch all linked units and the master thermostat to **ON**.

## 3 Ground Fault Protection

A ground fault protection thermostat is different from conventional thermostats. In the event of a ground fault, the ground fault protection mechanism on the thermostat will trip and quickly stop the flow of electricity to prevent serious injury.

### 3.1 Definition of a ground fault

Instead of following its normal safe path, electricity passes through a person's body to reach the ground. For example, a defective floor heating mat can cause a ground fault.

A ground fault protection thermostat **does not protect** against circuit overloads, short circuits, or electrical shocks. For example, you can still receive an electrical shock if you touch bare wires while standing on a non-conducting surface such as a wood floor.

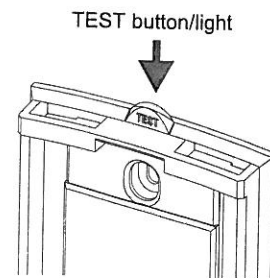
### 3.2 Ground Fault Protection Reset

When the ground fault protection mechanism trips, the **TEST** light is On (red). To reset the ground fault protection, switch the linked unit to **Standby** or **Off** then back to **On**. The **TEST** light will go off if the ground fault protection is functioning properly.

### 3.3 Ground Fault Protection Test

Test the ground fault protection of each linked unit once the master thermostat is installed and once a month thereafter to ensure it is always in working order.

- 1 Increase the setpoint temperature on the master thermostat above the measured floor temperature in order to activate the floor heating system.



- ② Press the **TEST** button on the linked unit. If the **TEST** light does not turn On, the ground fault protection is not functioning properly and therefore the power base of the linked unit must be replaced. If the **TEST** light turns On, continue the test.
- ③ Switch the linked unit to **Off** or **Standby**, wait a few seconds and switch it back to **On**. The **TEST** light should now be Off. If the light stays On, the ground fault protection is not functioning properly and therefore the power base of the linked unit must be replaced.
- ④ Place the master thermostat back to the desired temperature.

## ④ Technical Specifications

### Temperature:

- Operation: 0°C to 50°C (32°F to 122°F)
- Storage: -20°C to 50°C (-4°F to 122°F)

### Master Thermostat

<b>Models</b>	<ul style="list-style-type: none"> <li>• TH113 (12VDC)</li> <li>• TH114 (12VDC)</li> <li>• TH115 (12VDC)</li> <li>• TH116 (12VDC)</li> </ul>
<b>Power supply</b>	12 V from a linked unit
<b>Maximum linked units</b>	up to 10 linked units per master thermostat
<b>Wire gauge</b>	20 AWG

**NOTE:** Refer to the user guide of the master thermostat for its functionalities and technical specifications.

### Linked Units

<b>Models</b>	<ul style="list-style-type: none"> <li>• CT230-120GA</li> <li>• CT230-120GB</li> <li>• CT230-240GA</li> <li>• CT230-240GB</li> </ul>
<b>Supply / Load</b>	<ul style="list-style-type: none"> <li>• CT230-120GA      • 120 VAC, 60 Hz, 15 A resistive (1800 W)</li> <li>• CT230-120GB      • 120 VAC, 60 Hz, 15 A resistive (1800 W)</li> <li>• CT230-240GA      • 240 VAC, 60 Hz, 15 A resistive (3600 W)</li> <li>• CT230-240GB      • 240 VAC, 60 Hz, 15 A resistive (3600 W)</li> </ul>
<b>Ground fault protection</b>	<ul style="list-style-type: none"> <li>• CT230-120GA      • 5 mA</li> <li>• CT230-120GB      • 15 mA</li> <li>• CT230-240GA      • 5 mA</li> <li>• CT230-240GB      • 15 mA</li> </ul>
<b>Certification</b>	c CSA us



## Warranty

Aube warrants this product, excluding battery, to be free from defects in the workmanship or materials, under normal use and service, for a period of three (3) years from the date of purchase by the consumer. If at any time during the warranty period the product is determined to be defective or malfunctions, Aube shall repair or replace it (at Aube's option).

If the product is defective,

- (i) return it, with a bill of sale or other dated proof of purchase, to the place from which you purchased it, or
- (ii) contact Aube. Aube will make the determination whether the product should be returned, or whether a replacement product can be sent to you.

This warranty does not cover removal or reinstallation costs. This warranty shall not apply if it is shown by Aube that the defect or malfunction was caused by damage which occurred while the product was in the possession of a consumer.

Aube's sole responsibility shall be to repair or replace the product within the terms stated above. AUBE SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE OF ANY KIND, INCLUDING ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING, DIRECTLY OR INDIRECTLY, FROM ANY BREACH OF ANY WARRANTY, EXPRESS OR IMPLIED, OR ANY OTHER FAILURE OF THIS PRODUCT. Some provinces, states or regions do not allow the exclusion or limitation of incidental or consequential damages, so this limitation may not apply to you.

THIS WARRANTY IS THE ONLY EXPRESS WARRANTY AUBE MAKES ON THIS PRODUCT. THE DURATION OF ANY IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IS HEREBY LIMITED TO THE THREE-YEAR DURATION OF THIS WARRANTY. Some provinces, states or regions do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

This warranty gives you specific legal rights, and you may have other rights which vary according to the province, state or region.



## Customer Assistance

For any questions regarding product installation or operation, contact us at:

705 Monrichard  
 Saint-Jean-sur-Richelieu, Quebec  
 J2X 5K8  
 Canada  
 Tel.: (450) 358-4600  
 Toll-free: 1-800-831-AUBE  
 Fax: (450) 358-4650  
 E-mail: aube.service@honeywell.com

For more information on our products, visit us at:  
[www.aubetech.com](http://www.aubetech.com)