TH114

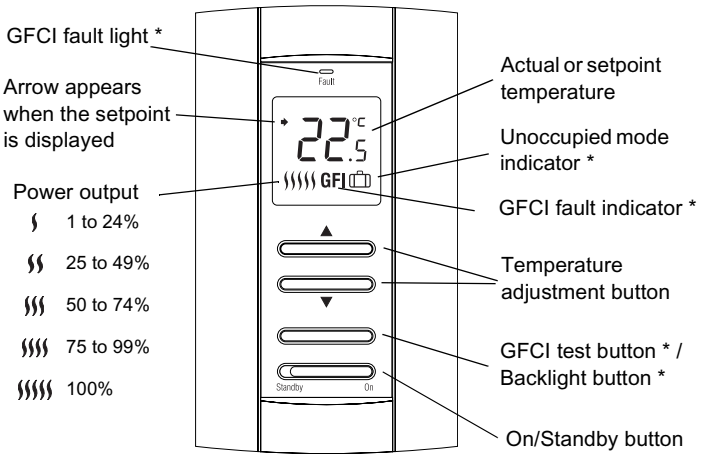
User's Guide

Non-programmable Thermostat

1. Description

Aube's TH114 Series non-programmable thermostats can be used to control ambient or floor temperature. The following models are available:

A model:	▸ controls and displays the ambient temperature
F model:	▸ controls and displays the floor temperature ▸ uses an external temperature sensor
AF model:	▸ controls and displays the ambient temperature ▸ maintains the floor temperature within desired limits ▸ uses an external temperature sensor

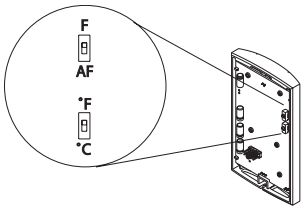


* available on certain models only

Each thermostat consists of a control module which must be mounted on a PB112 Series power base. For the selection and installation of the power base, refer to its installation instructions.

2. DIP Switch Configuration

The DIP switches are located at the back of the control module.



2.1 Temperature Display (S1)

To switch between °C and °F.

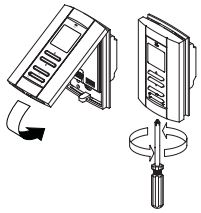
2.2 Model (S2)

***Note**: Available on certain models only*

F: To select the F model

AF: To select the A or AF model

3. Installation



❶ Refer to the installation instructions of the power base.

❷ Insert the tabs at the top of the control module in the slots at the top of the power base.

❸ Secure the control module using the captive screw underneath the base.

***Note**: Do not obstruct the thermostat's vents.*

4. Power-up

As soon as the thermostat is powered, it undergoes a series of tests before displaying the actual temperature.

5. Error Messages

The measured temperature is below 0°C (32°F). Heating is turned On.

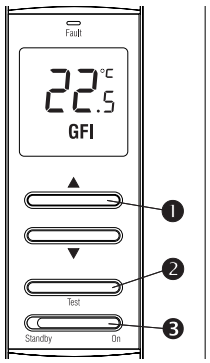
The measured temperature is above 50°C (122°F) (A or AF model) or 60°C (140°F) (F model).

The floor sensor is defective or not properly connected (F model only), or the thermostat is defective.

6. GFCI Test

***Note**: This procedure must be performed if the thermostat is mounted on a GFCI-equipped power base.*

Test the GFCI immediately after installing the control module, and once a month thereafter.



❶ Raise the temperature ▲ until the heating power indicator ⟆⟆⟆⟆ appears.

❷ Press the Test button.

❸ If the test is successful, you will hear a click caused by the GFCI relay tripping. The heating power indicator will disappear, GFI will appear and the Fault light will illuminate. Reset the thermostat by switching it to Standby and back to On.

❹ If the test has failed, cut power to the heating system from the main electrical panel and call customer service.

***Note**: If the Fault light is On during normal operation, cut power to heating system at the main electrical panel and have an electrician verify the installation.*

7. Operation

7.1 Backlight

When either of the ▲▼ buttons is pressed, the display is lit for 10 seconds. The setpoint appears for 5 seconds, then the actual temperature is displayed.

When the backlight button is pressed, the display is lit for 5 seconds. **NOTE**: *If the thermostat is mounted on a GFCI-equipped power base, this button is used for the GFCI test.*

7.2 Displaying and Setting the Temperature

The thermostat normally displays the actual temperature. To view the setpoint, press once on one of the ▲▼ buttons. The setpoint is displayed for 5 seconds. During the setpoint display, press one of the ▲▼ buttons to change it. To scroll the setpoint faster, press and hold the button.

7.3 Setting the Floor Temperature Limits (AF model only)

The thermostat generally turns heating On or Off to control the ambient temperature. However, if the floor temperature drops below the set minimum floor temperature limit or rises above the maximum limit, the thermostat will turn heating On or Off respectively, regardless of the ambient temperature, to maintain the floor temperature within the desired limits.

The minimum and maximum floor temperature limits are factory-set at 10°C (50°F) and 28°C (82°F) respectively. To modify the limits, proceed as follows:

1. Switch the thermostat to Standby.
2. While pressing any button, switch the thermostat back to On to access the floor temperature limit settings.
3. Press the Test button briefly to switch between minimum and maximum floor temperature settings.
4. Press the ▲▼ buttons to set the desired limit.
5. Press the Test button for 3 seconds to save your modifications. After the data are saved, the thermostat displays the actual ambient temperature or "– –".

Note: Your modifications are also saved if no button is pressed for 60 seconds.

6. Switch the thermostat to Standby and back to On to reset the GFCI and return to the normal display.

7.4 Unoccupied Mode

***Note**: This feature is available only if the thermostat is mounted on a power base that has the unoccupied mode input.*

The power base has an input to which Aube's CT240 or CT241 telephone controller (or any similar device) can be connected. Refer to the installation instructions of the power base for connections.

The unoccupied mode is enabled when the dry contact on the telephone controller closes. In this mode, the thermostat lowers its setpoint by 3.5°C (7°F) and all temperature adjustments are blocked except for temporary bypass.

7.5 Unoccupied Mode Temporary Bypass

***Note**: This feature is not available if the thermostat is mounted on a GFCI-equipped power base.*

When the unoccupied mode is enabled, pressing the backlight button will temporarily bypass the mode. The bypass is automatically cancelled after 2 hours or if the backlight button is pressed again.

8. Technical Specifications

Power supply: Refer to the power base installation instructions.

Ambient setpoint range (A/AF models): 5°C to 30°C (40°F - 86°F)

Floor limit range (AF model): 5°C to 40°C (40°F - 104°F)

Floor setpoint range (F model): 5°C to 40°C (40°F - 104°F)

Setpoint resolution: ± 0.5°C (1.0°F)

Display resolution: ± 0.5°C (1.0°F)

Duty cycle: Refer to the power base installation instructions.

Storage: -20°C to 50°C (-4°F - 120°F)

9. Warranty

AUBE TECHNOLOGIES INC. ONE (1) YEAR LIMITED WARRANTY

This product is guaranteed against workmanship defects for a one year period following the initial date of purchase. During this period, AUBE Technologies Inc. will repair or replace, at our option and without charge, any defective product which has been used under normal conditions.

The warranty does not cover delivery costs and does not apply to products poorly installed or randomly damaged following installation. This warranty cancels and replaces any other manufacturer's express or implied warranty as well as any other company commitment.

AUBE Technologies Inc. cannot be held liable for related or random damages following the installation of this product. The defective product as well as the purchase invoice must be returned to the place of purchase or mailed, prepaid and insured, to the following address.

10. Service

705 Montrichard
Saint-Jean-sur-Richelieu, Quebec
J2X 5K8
Canada

T: (450) 358-4600
1-800-831-AUBE (2823)
F: (450) 358-4650
service@aubetech.com

For more information on our products, visit us at:
www.aubetech.com

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Installation Instructions

MASTER THERMOSTATS	SLAVE UNITS
TH113-A/F/AF (12VDC)	CT230-120GA
TH114-A/F/AF (12VDC)	CT230-120GB
TH115-A/F/AF (12VDC)	CT230-240GA
TH116-A/F/AF (12VDC)	CT230-240GB

1. Introduction

This master and slave unit system is specially designed for large floor heating applications exceeding 15 A.

The master thermostat controls a single or multiple floor heating zones driven by slave units. The master thermostat can control up to 10 slave units.

Each slave unit drives its own zone and is equipped with a GFCI test button and warning light as well as an On/Standby switch to facilitate maintenance on specific zones of the floor installation.

2. Operation

Master Thermostat

The master unit controls the temperature and sends a signal to slave units when heating is required. The floor sensor is connected to the master unit. The master unit is powered by the slave units.

Slave Unit

The slave unit receives the signal sent by the master unit and activates its load.

NOTE: There must be a minimum of one slave unit ON to power the master unit.

3. Installation

Turn off power to the heating system at the main power panel to avoid electrical shock. Installation should be carried out by an electrician.

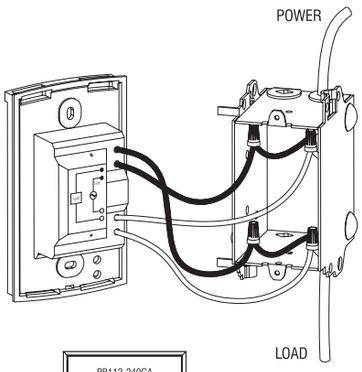
3.1 Wiring Guidelines

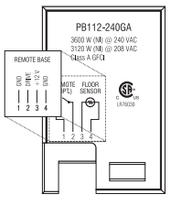
- The wire distance between the master thermostat and slave unit should not exceed 500 ft. (150 m).
- The floor sensor cable should not exceed 200 ft. (60 m).
- A 3-wire 20 AWG cable is recommended.

3.2 Slave Units - Installation and Wiring

The slave units can operate on different voltages (e.g. 5 units @ 120 V and 5 @ 240 V).

- **Required parts**: CT230-120GA, -120GB, -240GA or -240GB
- **Installation**: On an electrical box
- **Location**: Installation near the master thermostat is not required (i.e. can be installed in a utility room).
- **Wiring**: The power bases are joined through a daisy chain connection.





❶ Connect the 120 V or 240 V power base wires to the power (line) and to the load (floor) using solderless connectors for copper wires, and secure the base to the electrical box.

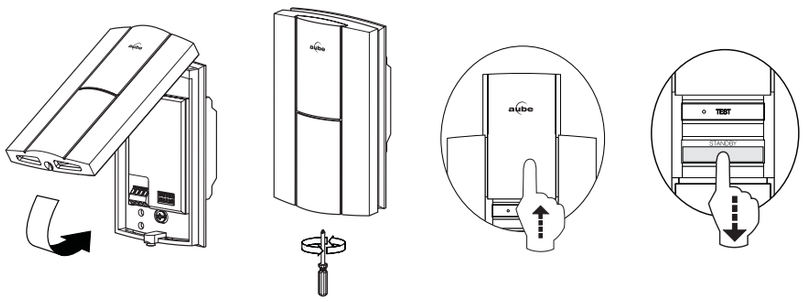
❷ Affix the wiring sticker (in the CT230 box) to the base.

❸ Connect the slave power bases together as per FIGURE 1.

❹ Once installation and wiring is complete, mount the CT230 interface:

a) Align the bracket tabs of the CT230 with the holes located on top of the power base.

b) Secure the CT230 interface using the screw (captive).



❺ Switch all slave power bases to STANDBY by sliding the protective door upwards and positioning the switch to STANDBY.
Install and connect the master unit (see 3.3).

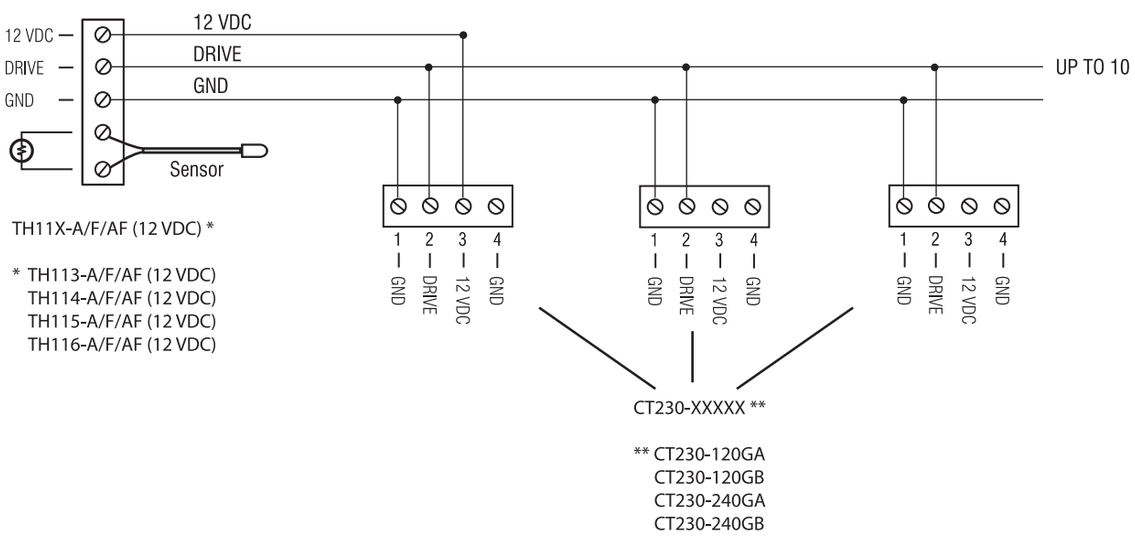


FIGURE 1
Connections

3.3 Master Thermostat - Installation and Wiring

WARNING: Make sure all slave units are in STANDBY mode.

•**Required parts**: TH113-A/F/AF (12VDC),
TH114-A/F/AF (12VDC),
TH115-A/F/AF (12VDC) or
TH116-A/F/AF (12VDC)

- **Location**: anywhere easily accessible to users.

  Temperature control: AF (ambient with floor limit) / A (ambient)

  - Install the master thermostat in the controlled area.
  - Choose a location about 5 ft. above the floor in an area where the temperature is stable.
  - 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.

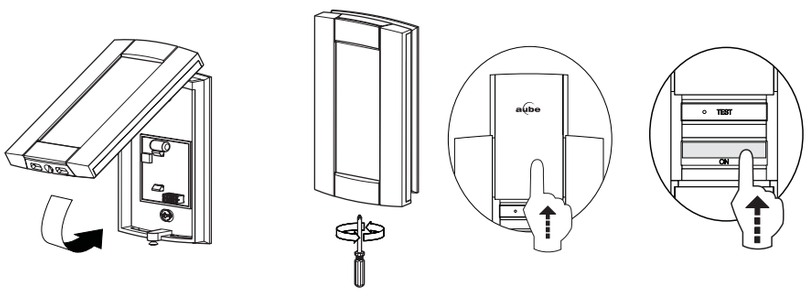
  Temperature control: F (floor)

  - Can be installed anywhere.

❻ Wire the 12 VDC base to the nearest slave unit.
The floor sensor must be installed in an area where average temperature can be read. The cable must follow the wall down to the floor and must not cross any heater wires or be directly on or adjacent to a heating wire.
For maximum performance, the sensor probe should be centered between the wires in the mat (max. 80°C).

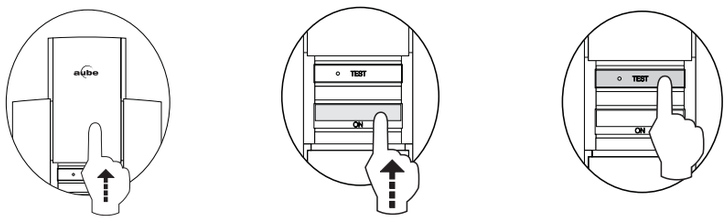
❼ Push the excess wire into the wall, secure the base using the provided screws and wall anchors, and install the TH11x thermostat onto the base.

❽ Once the thermostat is installed, return power to heating system and switch all slave units and the master thermostat to ON.



3.4 Slave Units - GFCI Test

We recommend you test the GFCI immediately after installing the thermostat, and once a month thereafter to ensure it is operating properly.
If the test warning light comes ON during normal operation, cut power to heating system from the main power panel and verify the installation.



❶ Slide the protective door upwards and make sure the switch is ON.

❷ Press TEST.

- The test is successful if the TEST warning light is ON and power is cut off.
- If the test fails (first installation test):
  a. Verify installation
  b. Check the load wires
  c. Once you've identified the problem, run the GFCI test again
- If the test fails (monthly maintenance):
  a. Cut power to heating system from the main power panel and call customer service

❸ When the test is successful, reset the slave unit by switching from ON to STANDBY then back to ON.

❹ Repeat steps 1 to 3 for all slave units.

Technical Specifications

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

TH113/TH114/TH115/TH116 (A/F/AF-12VDC)

Power supply	12 V from remote unit
Maximum slave units	up to 10 slave units per master thermostat
Wire gauge	20 AWG
Size (H • W • D) BASE	4.63 x 2.7 x 0.61 in. (117.5 x 68.3 x 15 mm)

***NOTE:** Refer to the TH11x user guide for technical specifications.*

CT230-120GA/120GB/240GA/240GB

Supply	
- PB112-120	1800 W @ 120 VAC 60 Hz, 15 A resistive
- PB112-240	3600 W @ 240 VAC 60 Hz, 15 A resistive
GFCI	GA=5 mA / GB=30 mA
Certification	c CSA us
Size (H • W • D) BASE	4.63 x 2.7 x 1.45 in. (117.5 x 68.3 x 37 mm)
Size (H • W • D) INTERFACE	4.67 x 2.74 x 0.67 in. (118.6 x 69.6 x 17 mm)

Service

If you have any questions concerning the installation of the master thermostat or slave units, contact our technical support team at:

Montreal area: (450) 358-4600
Canada / U.S.: 1-800-831-AUBE (2823)
Fax: (450) 358-4650
Email: service@aubetech.com

Monday to Friday from 8:30 AM to 5:00 PM EST.

For more information on our products, visit us at www.aubetech.com

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Aube Technologies Inc.
705 Montrichard
Saint-Jean-sur-Richelieu, Quebec,
Canada J2X 5K8