OUELLET

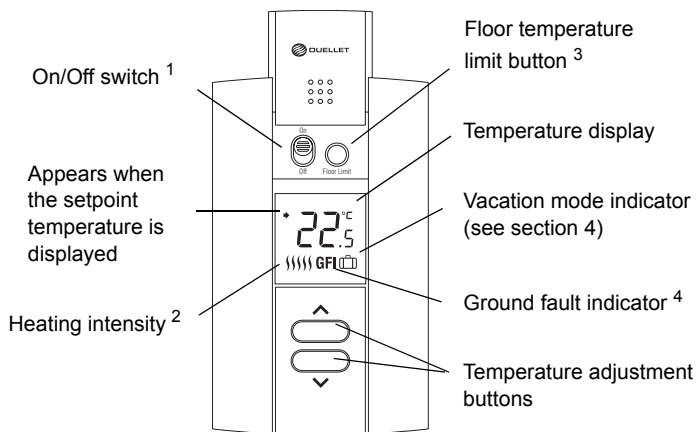# OTH770

User Guide
Non-programmable Thermostat

❶ Description

The OTH770 thermostat has been designed for floor heating systems. It has built-in ground fault protection and an input for connecting a floor sensor, supplied with the thermostat.

Depending on the mode of application you choose, each thermostat can be used to control the floor temperature (F mode) or to control the ambient temperature while keeping the floor temperature within comfortable and safe limits (AF mode).

Your thermostat has Vacation Mode which can be activated by connecting an Aube telephone controller (CT240 or CT241) or any other remote control device equipped with a normally open (NO) dry contact.

On/Off switch [1]

Appears when the setpoint temperature is displayed

Heating intensity [2]

Floor temperature limit button [3]

Temperature display

Vacation mode indicator (see section 4)

Ground fault indicator [4]

Temperature adjustment buttons

[1] Switch the thermostat Off when it is not in use (e.g., during summer). To reset the ground fault protection, switch the thermostat to Off and back to On.

[2] The image disappears when heating is off.

[3] The temperature limits are used only if your thermostat is configured in AF mode.

[4] When the ground fault protection is activated, GFI appears on the screen and the TEST button-light at the top of the thermostat illuminates (see section 7).
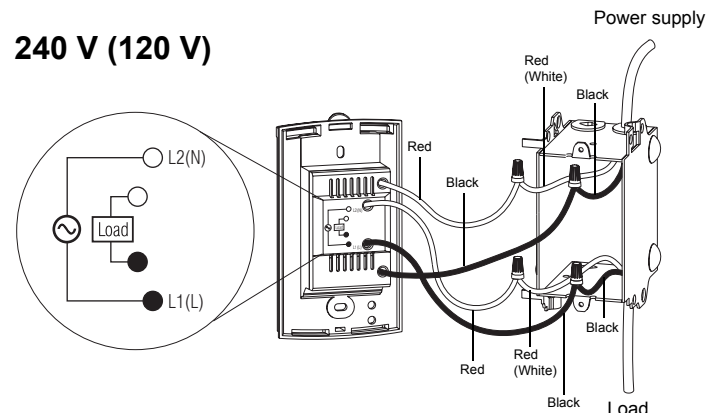
❷ Installation

CAUTION

- Installation must be carried out by a qualified electrician and must comply with national and local electrical codes.
- Use this thermostat only for resistive load.
- Do NOT install the thermostat 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 the thermostat onto an electrical box.
- This thermostat has tinned copper wires for line and load connections. Use special CO/ALR solderless connectors if you connect the thermostat to aluminum wires.

❶ Turn off power to the heating system at the service panel in order to avoid any risk of electrical shock.

❷ To remove the thermostat faceplate, loosen the screw at the bottom of the thermostat and lift the bottom of the faceplate outwards towards you. (The screw remains captive on the base.)

Faceplate
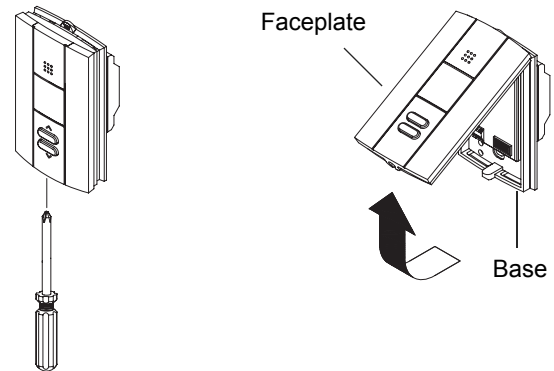
Base

❸ Connect the thermostat wires to the power supply and to the load using solderless connectors for copper wires.

240 V (120 V)

Power supply

Red (White)

Black

Red

Black

L2(N)

Load

L1(L)

Red

Red (White)

Black

Black

Load

❹ Insert the temperature sensor wires through one of the openings on the thermostat base and connect the wires to terminals 1 and 2 (no polarity).

- The sensor cable must not come in contact with the electrical wires and must be routed 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 (the plastic end) to the floor. Doing so might damage the sensor. Any damage might not be noticeable during testing but can become apparent several days later.

❺ If you wish to connect a remote control device, insert the wires (use 18- to 22-gauge flexible wires) through one of the two openings on the base and connect them to terminals 2 and 3 (no polarity).


Floor sensor
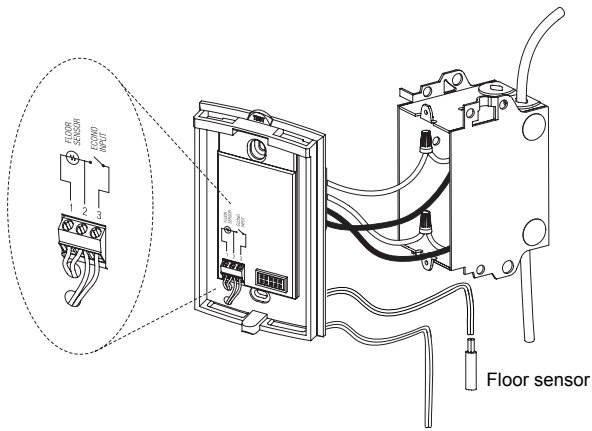
To remote control device (see section 4)

❻ Push the excess length of the line voltage wires back inside the electrical box. Install the thermostat base onto the electrical box using the provided screws.

❼ Set the DIP switches (refer to section 3).

❽ Reinstall the thermostat faceplate on its base and secure it with the screw. If there is a sticker on the screen, peel it off.

❾ Apply power to the heating system. Verify the installation by making sure that the heating system can be turned on or off by increasing or decreasing the setpoint respectively.

❿ Test the ground fault protection (refer to section 7).

NOTE: Keep the air vents (openings) at the top and bottom of the thermostat clean and unobstructed at all times.

❸ Configuration

The configuration switches are located on the back of the faceplate.
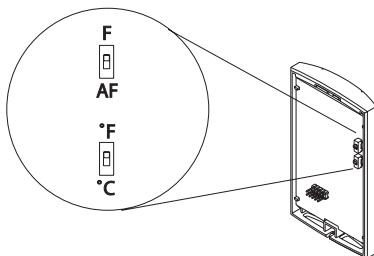
3.1 Temperature Display (S1)

Select between °C and °F.

3.2 Application Mode Selection (S2)

F: Select the F mode if you wish to control the floor temperature.

AF: Select the AF mode if you wish to control the ambient temperature.

❹ Vacation Mode

The Vacation mode can be activated using a remote control device equipped with a normally-open (NO) dry contact such as Aube's telephone controller (CT240/CT241).

In the Vacation mode, the temperature is reduced by 3.5°C (7°F) and the thermostat buttons are locked to prevent any temperature adjustment. The mode is indicated by the suitcase icon 🧳 on the screen. When the contact opens, the thermostat returns to normal mode and to the initial temperature setpoint.

❺ Power-up

When the thermostat is powered, it first undergoes a series of tests before displaying the actual temperature.

❻ Error Messages

LO	The measured temperature is below the thermostat's display range. Heating is activated.
HI	The measured temperature is above the thermostat's display range. Heating is deactivated.
Er	Verify the thermostat and sensor connections.

❼ Ground Fault Protection

The thermostat has built-in ground fault protection. In the event of a ground fault, the ground fault protection mechanism on the thermostat trips and quickly stops the flow of electricity to prevent serious injury.

7.1 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.

7.2 Resetting the Ground Fault Protection

The TEST button-light is On (red) when the ground fault protection mechanism trips. If the TEST button-light comes On during normal operation, reset the ground fault protection and check if the fault has been caused by an external interference such as a halogen button-light or an electric motor. To reset the ground fault protection, switch the thermostat to Off and back to On. The TEST button-light will go off. However, if the

TEST button-light
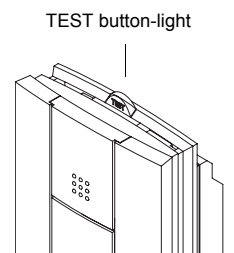
fault occurs again for unknown reasons, cut power to the floor heating system from the main electrical panel and have the installation verified by an electrician.

7.3 Testing the Ground Fault Protection

To ensure the ground fault protection is always in working order, test it once the thermostat is installed and test it every month thereafter.

❶ Increase the temperature sufficiently to start heating.

❷ Wait for about 5 seconds until the heat intensity indicator (�§ § § § §) appears on the screen.

❸ Press the TEST button-light.
   - If the TEST button-light does NOT illuminate, **the test has failed**. Cut power to the heating system at the main electrical panel, have an electrician verify the installation and, if necessary, replace the thermostat.
   - If the TEST button-light illuminates, continue to step 4.

❹ Switch the thermostat to Off then back to On.
   - If the TEST button-light goes off, **the test has passed**. Set the thermostat back to the desired temperature and ignore the remaining steps. The test is now completed.
   - If the TEST button-light remains on, **the test has failed**. Continue to step 5.

❺ Switch the circuit breaker (at the service panel) of the heating system to off then back to on.

❻ Repeat the test. If the test fails again, cut power to the heating system at the main electrical panel, have an electrician verify the installation and, if necessary, replace the thermostat.

❽ Temperature Setting

The thermostat normally displays the actual temperature. To view the setpoint temperature, press one of the ∨∧ buttons once. The setpoint will be displayed for 5 seconds. To change the setpoint, press and release one of the ∨∧ buttons until the desired temperature is displayed. To scroll the setpoint faster, press and hold the button.

Backlight

When you press on either of the ∨∧ buttons, the display is lit for 10 seconds. The setpoint appears for 5 seconds, then the actual temperature is displayed.

❾ Floor Temperature Limits

NOTE: The floor temperature limits are used only if your thermostat is configured in AF mode.

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

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:

❶ Press the Floor Limit button for 3 seconds. The thermostat will display the minimum limit.

❷ Press the ∨∧ buttons to set the minimum limit.

❸ Press the Floor Temperature Limit button briefly. The thermostat will display the maximum limit.

❹ Press the ∨∧ buttons to set the maximum limit.

❺ Press the Floor Limit button for 3 seconds to exit the menu and save your modifications.

NOTE: The thermostat will also exit the menu and save your modifications if you do not press any button for 60 seconds.

❿ Technical Specifications

Model	Supply	Maximum Load		Wiring	Leakage current
		Current	Power		
OTH770-GA	240 VAC, 60Hz	15 A	3600 W	4 wires double pole	5 mA
	208 VAC, 60Hz		3120 W		
	120 VAC, 60Hz		1800 W		
OTH770-GB	240 VAC, 60Hz		3600 W		15 mA
	208 VAC, 60Hz		3120 W		
	120 VAC, 60Hz		1800 W		

Setpoint range - **F mode**: 5 °C to 40 °C (40 °F to 104 °F)
         - **AF mode**: 5 °C to 30 °C (40 °F to 86 °F)

Display range - **F mode**: 0 °C to 60 °C (32 °F to 140 °F)
         - **AF mode**: 0 °C to 50 °C (32 °F to 122 °F)

Resolution: ± 0.5 °C (1.0 °F)

Storage: -20 °C to 50 °C (-4 °F to 120 °F)

Heating cycle length: 15 minutes

Size (H • W • D): 124 x 70 x 23 mm (4.89 x 2.76 x 0.91 in)

Certification:

☑ Warranty

THREE (3) YEAR LIMITED WARRANTY

OUELLET CANADA INC. warrants the component parts of the OTH770 against defects in material and workmanship for a three (3) year period from the date of purchase, under normal use and service, when proof of purchase of such is provided to the manufacturer.

The obligation of Ouellet Canada Inc., under the terms of this warranty, will be to supply a new unit and this releases the manufacturer from paying the installation costs or other secondary charges linked to replacing the unit or the component part(s).

☎ Customer Service

If you have any questions on the product, call our technical support team at:

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