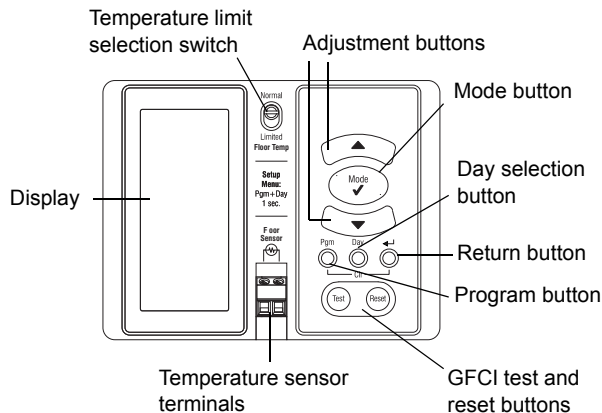


## 1 Description

The HMYDV thermostat is designed to control the temperature of a floor heating system. The thermostat can be used with a maximum load of 15 A (1800 W @ 120 VAC or 3600 W @ 240 VAC).



### SUPPLIED PARTS

- One (1) thermostat
- One (1) floor temperature sensor
- Four (4) 6-32 mounting screws
- Four (4) solderless connectors

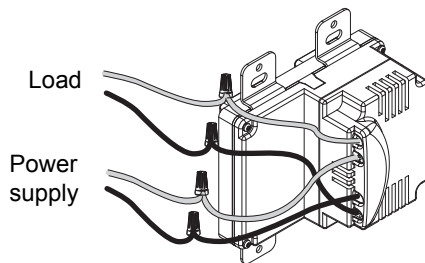
## 2 Installation

**TURN OFF POWER TO THE HEATING SYSTEM AT THE MAIN POWER PANEL TO AVOID ELECTRICAL SHOCK. This thermostat does NOT protect against electrical shocks resulting from contact with both conductor wires.**

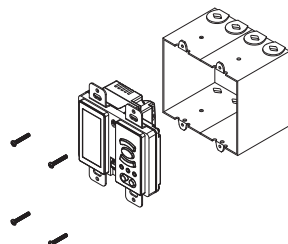
**The thermostat's housing is not watertight. Do NOT install the thermostat in an area where it can be exposed to water or rain.**

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

Connect the grounding braid of the floor heating system to the supply ground.



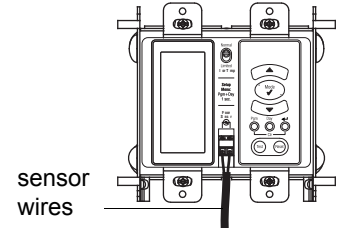
**NOTE:** All cables and connections must conform to the local electrical code. This thermostat has tinned copper wires for line and load connections. Special CO/ALR solderless connectors must be used if these wires are to be connected to aluminium conductors.



Mount the thermostat onto the electrical box using the provided screws.

Connect the temperature sensor to the terminals as shown.

**NOTE:** The temperature sensor wires must not come in contact with the electrical wires and must be routed outside the electrical box.



**WARNING:** THE FLOOR TEMPERATURE LIMIT **MUST** BE SET TO 'LIMITED' FOR ALL LAMINATE AND ENGINEERED WOOD FLOOR APPLICATIONS (SEE SECTION 5.2).

If there is a sticker on the display, peel it off.

Apply power to heating system.

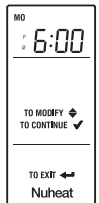
## 3 Programming

**NOTE:** Interactive programming tutorial available at [www.nuheat.com](http://www.nuheat.com)

### 3.1 Clock and Day Setting

The clock must be set when the time display flashes on the screen.

- 1 Press and hold the **Day** button for 1 second. The day display will flash.
- 2 Set the day using the  $\blacktriangle$ / $\blacktriangledown$  buttons.
- 3 Press the **Mode** button. The hour display will flash.
- 4 Set the hours using the  $\blacktriangle$ / $\blacktriangledown$  buttons.
- 5 Press the **Mode** button again. The minute display will flash.
- 6 Set the minutes using the  $\blacktriangle$ / $\blacktriangledown$  buttons.
- 7 Press the  $\leftarrow$  button to end.



### 3.2 Customizing the Schedule

You can customize your thermostat's schedule using either:

- **5+2 day programming** - easier to set as you enter only two programs: one program for weekdays (Monday to Friday) and another program for weekends (Saturday and Sunday).
- **7-day programming** - more flexible as you can set a different program for each day of the week.

See section 5.1 to learn how to switch between the two different programming methods.

You can program up to 4 periods in a day. To program a period, you must enter the starting time and the temperature setpoint for the period.

#### 5+2 day programming

5-day programming allows you to enter one program for weekdays (Monday to Friday) and another program for weekends (Saturday and Sunday). Use the following grid to record your new settings.

Periods	Settings	Monday to Friday	Saturday and Sunday
P1	Start Time		
	Temperature		
P2	Start Time		
	Temperature		
P3	Start Time		
	Temperature		
P4	Start Time		
	Temperature		

• **To enter the programming mode:** Press and hold the **Pgm** button for 1 second. Once inside the programming mode, you can perform the operations below.

• **To select the program days:** Press **Day** until the desired days are displayed (**MO TU WE TH FR** for Monday to Friday or **SA SU** for Saturday and Sunday).

**NOTE:** To program the same settings (time and temperature) for a selected period for the entire week (7 days), press and hold the **Day** button for 1 second. The settings will now be the same for that period for the entire week.

• **To set a period:**

① Press the **Pgm** button until the **P1** appears on the screen. The start time, temperature and period number will appear. The start time display will flash.

② Set the start time using the  $\blacktriangle/\blacktriangledown$  buttons. The time is set in 15-minute increments. Hold the button to scroll faster.

**NOTE:** To skip a period, press and hold the **Pgm** button and the  $\leftarrow$  button simultaneously. The time and temperature display for that period will disappear. Press the **Pgm** button to skip to the next period.

③ Press the **Mode** button. The temperature display will flash.

④ Set the temperature using the  $\blacktriangle/\blacktriangledown$  buttons.

• **To go to the next period:** Press the **Pgm** button.

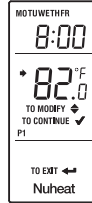
• Repeat steps 1 to 4 to program the remaining periods (P2, P3, P4).

• **To exit the programming mode:** Press the  $\leftarrow$  button.

### 7-day programming

5+2 day programming is the default programming method; to select 7-day programming, see section 5.1. 7-day programming allows you to set a different program for each day of the week. Use the following grid to record your new settings.

Periods	Settings	Program days						
		MO	TU	WE	TH	FR	SA	SU
P1	Start Time							
	Temperature							
P2	Start Time							
	Temperature							
P3	Start Time							
	Temperature							
P4	Start Time							
	Temperature							



• **To enter the programming mode:** Press and hold the **Pgm** button for 1 second. Once inside the programming mode, you can perform the operations below.

• **To select a program day:** Press the **Day** button until the day is displayed. (**MO**: Monday, **TU**: Tuesday, **WE**: Wednesday, **TH**: Thursday, **FR**: Friday, **SA**: Saturday and **SU**: Sunday).

**NOTE:** To program the same settings (time and temperature) for a selected period for the entire week (7 days), press and hold the **Day** button for 1 second. The settings will now be the same for that period for the entire week.

• **To set a period:**

① Press the **Pgm** button until **P1** appears on the screen. The start time, temperature and period number will appear. The start time display will flash.

② Set the start time using the  $\blacktriangle/\blacktriangledown$  buttons. The time is set in 15-minute increments. Hold the button to scroll faster.

**NOTE:** To skip a period, press and hold the **Pgm** button and the  $\leftarrow$  button simultaneously. The time and temperature display for that period will disappear. Press the **Pgm** button to skip to the next period.

③ Press the **Mode** button. The temperature display will flash.

④ Set the temperature using the  $\blacktriangle/\blacktriangledown$  buttons.

• **To go to the next period:** Press the **Pgm** button.

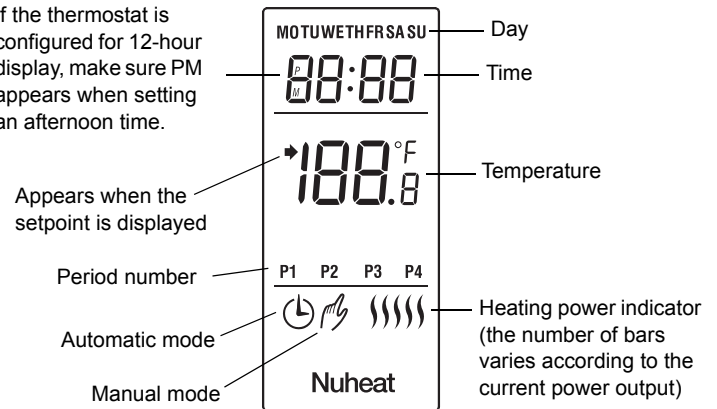
• Repeat steps 1 to 4 to program the remaining periods (P2, P3, P4).

• **To exit the programming mode:** Press the  $\leftarrow$  button.

## 4 Basic Operation

### 4.1 Display

If the thermostat is configured for 12-hour display, make sure PM appears when setting an afternoon time.



Depending on the thermostat's configuration, the screen can be permanently backlit or the backlight can be activated when any button is pressed (see section 5.1). In the latter case, the backlight will remain on for 12 seconds.

### 4.2 Temperature Setting


The thermostat normally displays the current floor temperature.

• To view the programmed temperature, press either of the  $\blacktriangle/\blacktriangledown$  buttons once.

• To change the programmed temperature, press either of the  $\blacktriangle/\blacktriangledown$  buttons until the desired temperature is displayed.

### 4.3 Automatic Mode

Use automatic mode if you want the thermostat to follow a programmed schedule. At the start of a programmed period, the temperature will change according to the schedule you programmed.

To use the automatic mode, press the **Mode** button until the clock icon  appears on the screen. The current period number will appear.




### Pre-programmed schedule

The following schedule has been programmed at the factory using the 5 +2 day programming method. One program is used for Monday to Friday and another program is used for Saturday and Sunday. To program a new schedule, see section 3.2.


Periods	Temperature	Start Times						
		MO	TU	WE	TH	FR	SA	SU
P1	88°F (31°C)	6:00 a.m.						
P2	74°F (23.5°C)	9:00 a.m.					--	
P3	88°F (31°C)	5:00 p.m.					--	
P4	74°F (23.5°C)	11:00 p.m.						


### Temporary Bypass

If you modify the temperature (using the  $\blacktriangle/\blacktriangledown$  buttons) when the thermostat is in automatic mode, the thermostat temporarily bypasses the current programmed temperature. Your floor will remain at this temperature for the next two hours. (The clock icon  will flash during this time.) You can cancel the bypass by pressing the **Mode** button.

### 4.4 Manual Mode

In manual mode, the programmed schedule is not followed. Use this mode if you wish to set the temperature manually.

To use the manual mode, press the **Mode** button until the hand icon  appears on the screen and set the temperature using the  $\blacktriangle/\blacktriangledown$  buttons.

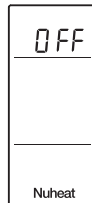
Your floor will remain at this temperature until the manual mode is turned off. To turn manual mode off, press the **Mode** button until the clock icon  appears.



### 4.5 Off Mode / Vacation Mode

Use the Off mode to cut power to the floor heating system. This mode is useful in the summer or when heating is not required for an extended period of time.

To place the thermostat in Off mode, press the **Mode** button until the message **OFF** appears on the screen. After 5 seconds, the message will disappear and current time and day will appear.



### 4.6 Configuring the Thermostat as a Power Regulator

The thermostat can be configured as a power regulator with no temperature feedback (see section 5.1). This feature is useful in any of the following conditions:

- The temperature sensor is not connected to the thermostat.
- You wish to control the heating power without accounting for the floor temperature.
- The temperature sensor is defective.

The thermostat will display the percentage of heating power instead of displaying the temperature.

**NOTE:** When the heating power is displayed instead of the temperature, °F or °C does not appear on the screen.

When configured as a power regulator, the numeric value on the screen represents the **percentage** of the maximum output **not the actual temperature**. To set the power, use the  $\blacktriangle/\blacktriangledown$  buttons.

### 4.7 Error Codes

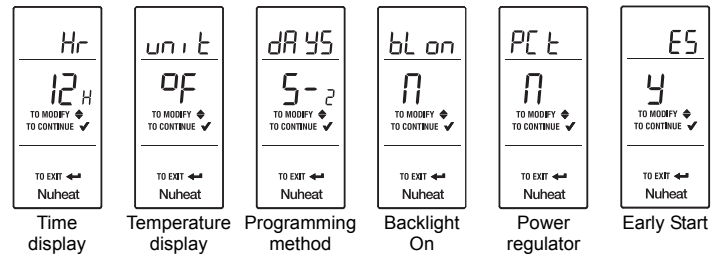
The following error codes can appear at the top of the display.

- LO:** The measured temperature is below 32°F (0°C).
- HI:** The measured temperature is above 140°F (60°C).
- E1:** The temperature sensor is defective or not connected.
- E2:** The temperature sensor is shorted.

## 5 Configuration

### 5.1 Configuration settings

- To access the configuration settings, simultaneously press and hold the **Pgm** and **Day** buttons for 1 second.
- To jump from one setting to the next, press the **Mode** button. The configuration settings will appear in the order shown below (from left to right).
- To toggle between the selections, use the  $\blacktriangle/\blacktriangledown$  buttons.



Configuration settings	Selections	
<b>NOTE:</b> The default settings are inside the gray cells.		
Time display	12 h	24 h
Temperature display	°F	°C
Programming method <sup>a</sup>	5+2 days	7 days
Backlight On <sup>b</sup>	N	Y
Power regulator <sup>c</sup>	N	Y
Early Start <sup>d</sup>	Y	N

- This setting specifies the schedule programming method (see section 3.2).
  - When this setting is set to Y, the screen is permanently backlit. When set to N, the backlight is activated for 12 seconds when a button is pressed.
  - Enable this setting (Y) to configure the thermostat as a power regulator (see section 4.6).
  - Early Start can be used in Automatic mode only. When this function is enabled, the thermostat calculates the optimal time to start heating in order to obtain the desired temperature by the set time. The thermostat re-assesses the start time daily based on the previous day's results.
- To exit the configuration settings, press the  $\leftarrow$  button.

## 5.2 Floor temperature limit for laminate and engineered floors

**WARNING:** THE FLOOR TEMPERATURE LIMIT **MUST BE SET TO 'LIMITED'** FOR ALL LAMINATE AND ENGINEERED WOOD FLOOR APPLICATIONS.

You must limit the floor temperature as shown in the following table. The temperature limit switch is on the front of the thermostat, above the temperature sensor terminals. (You may need to remove the wall-plate to expose the switch.)

Switch Position	Floor Types	Temperature Limit
Normal	ceramic, concrete	104°F (40°C)
Limited	laminate, engineered wood	82°F (28°C)

## 6 GFCI Test

The GFCI protects against risks of electrocution caused by a current leakage. If the leakage current exceeds 5 mA, the GFCI will automatically trigger, thus cutting power to the floor heating system. To indicate the fault, the **Test** and **Reset** buttons will illuminate.

**WARNING:** The GFCI does not protect against electrical shocks resulting from contact with both conductor wires.

To ensure that the GFCI is always in working order, test it once the thermostat is installed and on a monthly basis thereafter.

- 1 Increase the setpoint temperature sufficiently to start heating.
- 2 Wait for about 5 seconds until the heating power indicator (||||) appears on the screen.
- 3 Press the **Test** button.

**Successful:** The **Test** and **Reset** buttons illuminate. This means the GFCI is working and has cut power to the heating system. Press the **Reset** button to return power to the heating system (the **Test** and **Reset** button lights will go off). Return the temperature setpoint to the desired value.

**Unsuccessful:** The **Test** and **Reset** button lights flash. This means the GFCI is defective and will not provide any protection. The button lights will continue to flash until the thermostat is replaced.

**WARNING:** If the **Test** and **Reset** buttons illuminate during normal operation, check if the fault was caused by external interference such as a halogen light or an electric motor. In this case, reset and test the GFCI. However, if the fault occurs again for unknown reasons, cut power to the heating system from the main electrical panel and have the installation verified by an electrician.

## 7 Power Outage

If the power failure exceeds 4 hours, only the thermostat's clock must be re-adjusted. When power returns, the thermostat returns to the mode of operation preceding the power outage.

## 8 Troubleshooting

PROBLEM	SOLUTIONS
Heating is always On.	Check the thermostat wiring.
Thermostat indicates that heating is On when it is not.	Check the thermostat wiring.
Thermostat is hot.	Under normal operation, the thermostat housing may reach a temperature between 95°F (35°C) and 104°F (40°C).

PROBLEM	SOLUTIONS
Wrong temperature is displayed.	Verify that the sticker on the thermostat's screen has been removed.
Temperature does not change according to the programmed schedule.	Check that the thermostat is in Automatic mode. Check the schedule and clock settings.
Time display is flashing.	The thermostat was without power for more than 4 hours.
The °F or °C does not appear.	The thermostat has been configured as a power regulator and therefore displays the percentage of heating power instead of the temperature.

## 9 Specifications

Supply	120 VAC, 50/60 Hz	240 VAC, 50/60 Hz
Maximum load	15 A (1800 W)	15 A (3600 W)

**Display range:** 32°F to 140°F (0°C to 60°C)

**Display resolution:** 1°F (0.5°C)

**Minimum setpoint:** 40°F (5°C)

**Maximum setpoint:** 82 or 104°F (28 or 40°C)  
depending to the thermostat configuration

**Setpoint interval:** 1°F (0.5°C)

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

**Dimensions (HxWxD):** 2.7 x 3.5 x 2.2 inches (69 x 89 x 55 mm)

**GFCI rating:** 5 mA Class A

**Approval:** c CSA us

## Warranty

### NUHEAT INDUSTRIES THREE (3) YEAR LIMITED WARRANTY

This product is guaranteed against workmanship defects for a three-year period following the initial date of purchase. During this period, NUHEAT 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 before, during or after installation. This warranty cancels and replaces any other manufacturer's express or implied warranty as well as any other company commitment. NUHEAT cannot be held liable for related or random damages before, during or after 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:

### NUHEAT INDUSTRIES LTD.

**USA**  
6920 Salashan Parkway  
Building D-200  
Ferndale, WA 98248

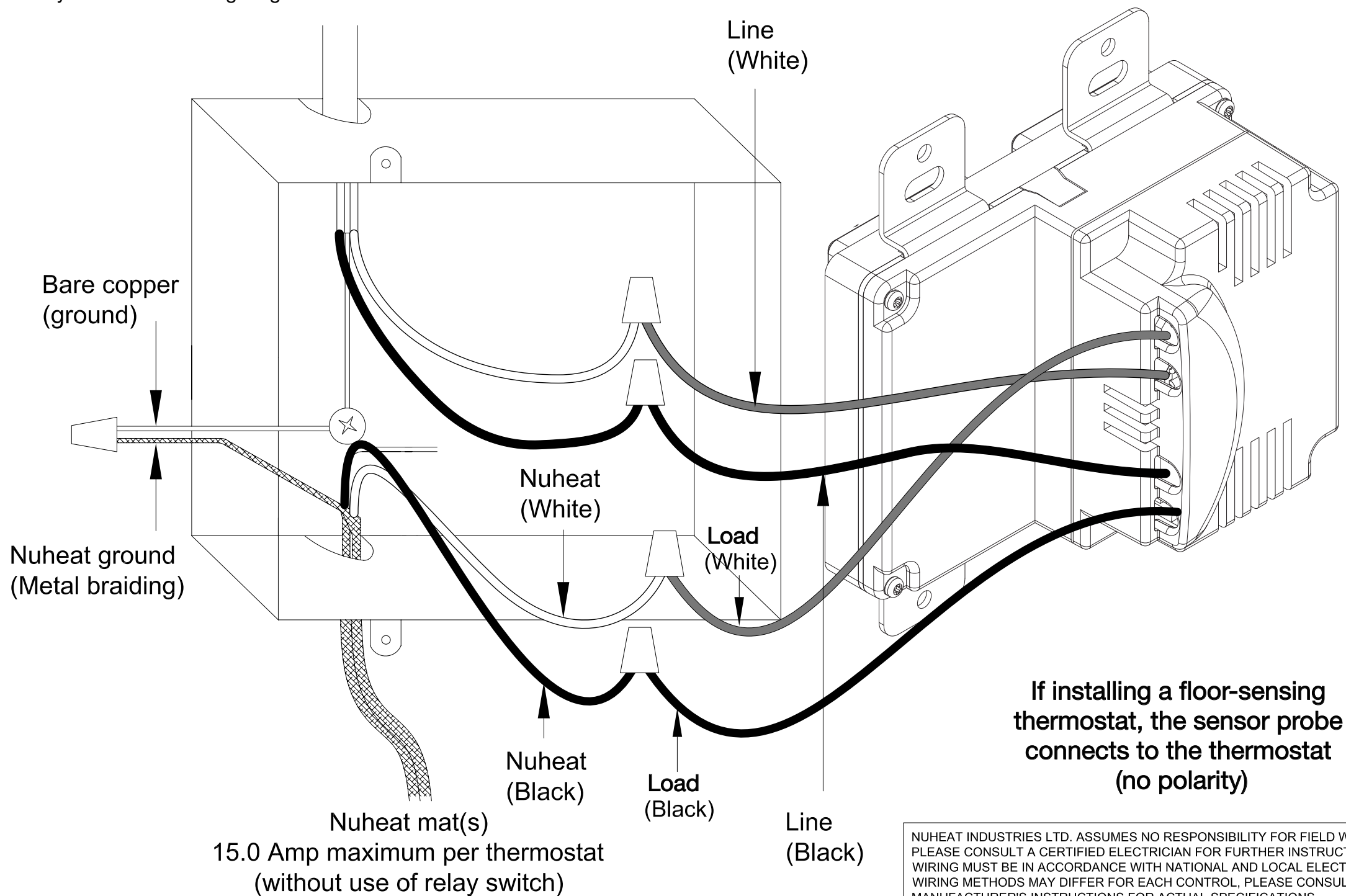
**CANADA**  
3105 - 6900 Graybar Road  
Richmond, BC  
V6W 0A5

**1 (800) 778-9276**

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# Wiring Diagram for Nuheat Harmony (Dual-Voltage Model)

Always refer to the wiring diagram located on the back of the thermostat



NUHEAT INDUSTRIES LTD. ASSUMES NO RESPONSIBILITY FOR FIELD WIRING. PLEASE CONSULT A CERTIFIED ELECTRICIAN FOR FURTHER INSTRUCTION IF NEEDED. WIRING MUST BE IN ACCORDANCE WITH NATIONAL AND LOCAL ELECTRICAL CODES. WIRING METHODS MAY DIFFER FOR EACH CONTROL, PLEASE CONSULT MANUFACTURER'S INSTRUCTIONS FOR ACTUAL SPECIFICATIONS.