FLEXTHERM

GFCI test button and light

To enable/disable heating and to reset the GFCI

Temperature adjustment ring

Comfort, Economy and Vacation setpoints

To program and view the schedule

To select a mode or to exit programming mode

To clear a program

Day setting

Time setting

Current program number when Automatic mode is activated

Indicates the amount of power sent to the floor heating system

Vacation mode

Floor minimum and maximum temperature (AF only)

Room or floor temperature. Arrow indicates a setpoint

Manual mode

Time and day

Economy setpoint

Comfort setpoint

The FLP12-GA programmable thermostat, specially designed for floor heating installations, is equipped with two ultra-precise sensors which allow temperature control by separately monitoring both floor and ambient settings, thus providing greater comfort.
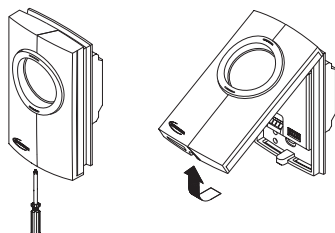
INSTALLATION

Installation Guidelines

⚠ **To avoid electrical shock, turn off power to the heating system at the main electrical panel. The installation must be performed by qualified electrician.**

▸ Install the thermostat on an expanded (deep) electrical box.

▸ Choose a location about 1.5 m (5 ft.) above the floor and on an inside wall.

▸ 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.

Supplied Parts

▸ One (1) thermostat (control module and power base)

▸ Two (2) screws

▸ One (1) 4.6 m (15 ft.) floor sensor

▸ One (1) flat-tip screwdriver

▸ Four (4) solderless connectors for copper wires

⚠ *NOTE: Special CO/ALR solderless connectors must be used when connecting with aluminum conductors.*
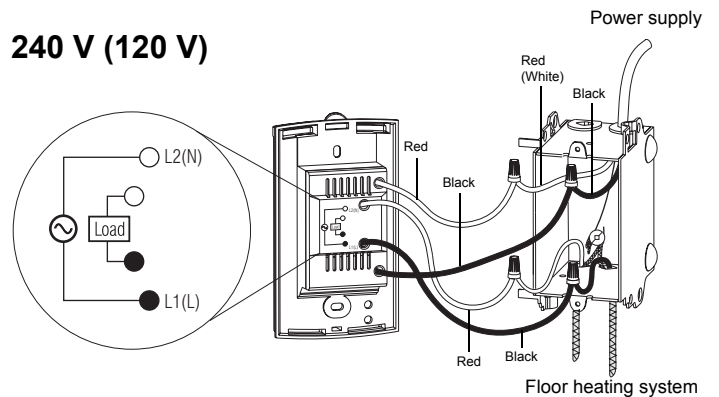
1) Separate the control module from the power base

Loosen the screw and separate the control module from the power base. The screw remains captive on the power base.
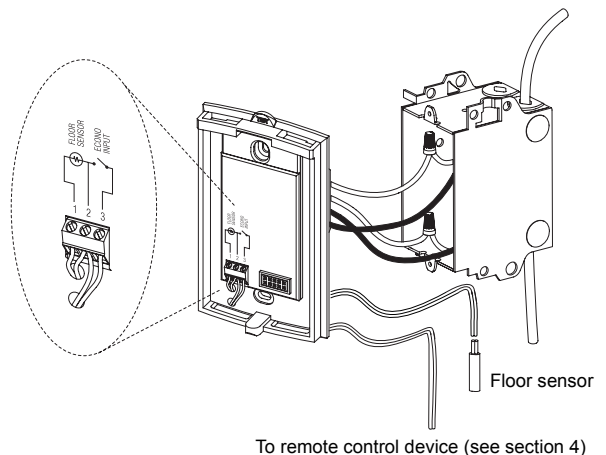
2) Connect the thermostat wires

240 V (120 V)

Power supply

Connect the thermostat to the floor heating system (load) and to the power supply ⊘ using solderless connectors for copper wires.

The floor heating braided shields or green wire as well as the power supply copper ground wires must be secured to the ground terminal.

3) Connect the floor sensor

Floor sensor

To remote control device (see section 4)

> **NOTE:** *Using an ohmmeter, verify the sensor's integrity. It must read between 8 to 12 K Ohms in order to obtain temperature readings between 20°C and 30°C (68°F to 86°F).*

- Insert the sensor wires through one of the two openings on the power base and connect them to terminals 1 and 2 (no polarity).
- The wire must be centered between the heating cables at a distance of 30 to 60 cm (1 to 2 ft.) within the heating zone. **Do not cross the probe wire over the heating cables**.
- The sensor should be placed in a neutral location, not near any other heating or cooling sources.
- Secure the sensor to the floor using hot glue. It is necessary to embed the sensor in the floor surface so it is at the same level as the heating cables.

4) Connect the Econo Input (optional)

The thermostat is equipped with an Econo input which allows connection of any remote control device equipped with a dry contact. For more information, see the section on Vacation mode.

Insert the wires (use an 18 to 22 gauge flexible wire cable) through one of the two openings on the power base.

Connect one end of the wires to terminals 2 and 3 of the power base and the other end to the dry contact of a remote control device (no polarity).

5) Set the DIP switches

The control module has four DIP switches to select the following options:

Time and Temperature Display (1)
- °F/12h
- °C/24h (default)

Early Start (2)
- E.S. On
- E.S. Off (default)

This function determines the optimal system start time to obtain the desired temperature by the set time. When this function is enabled, the system can be activated a few hours before the program's start time.

Temperature Control (3)

This model offers the following three types of temperature control:

Temp. control	Switch position	Notes
Ambient with floor limits	DOWN (AF)	Requires a floor sensor
Floor (default)	UP (F)	Requires a floor sensor
Ambient	DOWN (AF)	Use only when floor sensor is **not** installed. **Not** recommended for floor heating

Permanent Backlight (4)
- P.B. On (The display remains lit all the time.)
- P.B. Off (Default. The display is lit for 12 seconds when the adjustment ring or any button is pressed.)

6) Complete Installation

Install the power base onto the electrical box using the provided screws and return the control module on the power base. Apply power to the floor heating system.

> **NOTE:** *Keep the thermostat's air vents clean and free from obstructions.*

7) First Power On

When power is applied for the first time, the screen displays 0:00 MO (Monday) as well as the ambient/floor temperature.

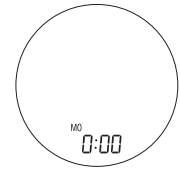If a problem occurs, one of the following messages will be displayed:

- **LO**: the temperature is below 0°C (32°F) The heating indicator is displayed and the system is activated.
- **HI**: the temperature is above 70°C (158°F).
- **Er**: the floor sensor is not connected properly or defective (F temperature control) or the ambient sensor is defective (AF temperature control).

To verify if the thermostat detects the floor sensor, select the F temperature control (see DIP Switch Configuration). If the screen displays **Er**, the floor sensor is not connected properly or defective.

If the screen displays the temperature, the sensor works.

9) Setting the Time and Day

❶ Press **D**, **H** or **M** to access the menu.
❷ Press **H** and **M** to set the time.
❸ Press **D** to select the day.
❹ Press **MODE/RET** to exit.

> **NOTE:** *If you remove the module from its base for more than 6 hours, the time and day must be reprogrammed.*

GROUND FAULT CIRCUIT INTERRUPTER

This thermostat has a built-in Ground Fault Circuit Interrupter (GFCI). In the event of a ground fault, the GFCI trips and quickly stops the flow of electricity to prevent serious injury.

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.

The GFCI **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.

Ground Fault Protection Reset

When the GFCI trips, the **TEST** button illuminates (red) and **GFI** appears on the screen. To reset the GFCI, switch the thermostat to **OFF** and back to **ON**. The **TEST** button light will go off and **GFI** will disappear.

If the **TEST** button illuminates and **GFI** appears on the screen during normal operation, check if the fault has been caused by an 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 floor heating system from the main electrical panel and have the installation verified by an electrician.

GFCI Test

To ensure the GFCI is always in working order, test it once the thermostat is installed and 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 at the top of the thermostat.
- If the **TEST** button 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 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.

BACKLIT DISPLAY

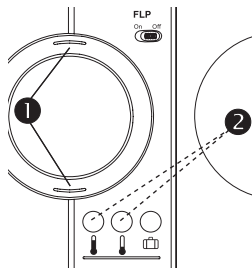The display is lit for 12 seconds when any button or adjustment ring is pressed.

SETPOINTS

Comfort 🌡 and Economy 🌡 Setpoints

These setpoints are associated with the schedule's programs and are preprogrammed as follows:

Comfort: temp. control AF: 21°C (70°F)
temp. control F: 28°C (82°F)

Economy: temp. control AF: 16.5°C (62°F)
temp. control F: 20°C(68°F)

To modify a setpoint value:

❶ Set the temperature using the adjustment ring.

❷ Press and hold the setpoint button (🌡 or 🌡 or 🛏) until the icon is displayed on the screen. The thermostat automatically returns to normal display after 5 seconds.

Vacation Setpoint 🛏

This preprogrammed setpoint is used when the Vacation mode is activated. To modify this value, repeat above steps.

Default: 10°C (50°F) for all control types.

Floor minimum and maximum limits (AF only)

The floor temperature limits prevent damage to the floor and ensure personal safety. The thermostat generally turns heating On or Off to control the ambient temperature. However if the floor temperature goes outside the desired limits, the thermostat will unconditionally turn heating On or Off to maintain the floor temperature within its limits.

Default: min 5°C (40°F) and max 28°C (82°F)

❶ Turn **OFF** the thermostat.

❷ Press and hold **CLR** and turn **ON** the thermostat. Release **CLR** only when the minimum setpoint is displayed.

❸ Select the minimum setpoint limit using the adjustment ring.

❹ Press **CLR** to display the maximum value.

❺ Select the maximum setpoint limit using the adjustment ring.

❻ Press **MODE/RET** to exit.

OPERATING MODE SELECTION

⚠ *NOTE: For the AF temperature control (ambient with floor limits), the setpoint will always be maintained within the minimum and maximum floor limits.*

Automatic

Executes the schedule's programs.

▸ Press **MODE/RET** until the desired program number is displayed (1 to 4).

To temporarily bypass the current program, set a new temperature using the adjustment ring or press one of the predefined setpoint buttons (🌡 or 🌡). The program icon will flash to indicate the bypass. The new setpoint will be maintained until the beginning of the next program.

Manual

Maintains a constant temperature.

❶ Press **MODE/RET** until 🖐 is displayed.

❷ Set the temperature using the adjustment ring or press one of the predefined setpoint buttons (🌡 or 🌡 or 🛏).

Vacation

Maintains the Vacation setpoint during a prolonged absence.

There are two ways to activate this mode:

❶ From the thermostat: press 🛏

❷ The thermostat is equipped with an Econo input which allows connection of any remote control system equipped with a dry contact. When the contact closes, the thermostat automatically switches from normal operating mode to the Vacation mode. In this mode, the suitcase icon flashes and all buttons are locked. When the contact opens, the thermostat returns to the normal operating mode.

PREPROGRAMMED SCHEDULE

The schedule is executed when the Automatic mode is activated. It controls your system by automatically switching from the Comfort setpoint to the Economy setpoint at the preset times.

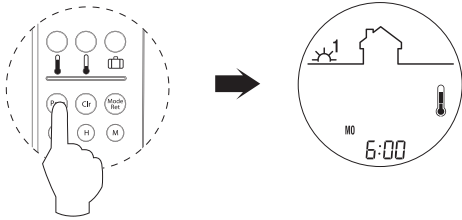The preprogrammed schedule contains four (4) daily programs:

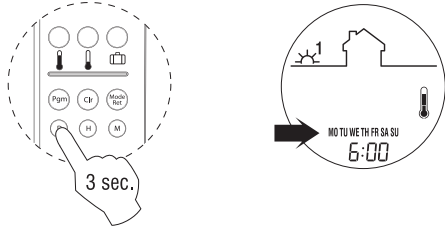|	Programs		MO	TU	WE	TH	FR	SA	SU
1	🌡	Comfort	6:00	6:00	6:00	6:00	6:00	6:00	6:00
2	🌡	Economy	8:00	8:00	8:00	8:00	8:00	--:--	--:--
3	🌡	Comfort	18:00	18:00	18:00	18:00	18:00	--:--	--:--
4	🌡	Economy	22:00	22:00	22:00	22:00	22:00	22:00	22:00

SCHEDULE MODIFICATION

You can set up to four daily programs and each program can have a different time for a total of 28 programs.

⚠ *NOTE: It is sometimes easier to program the same schedule for the entire week and then modify the exception days.*
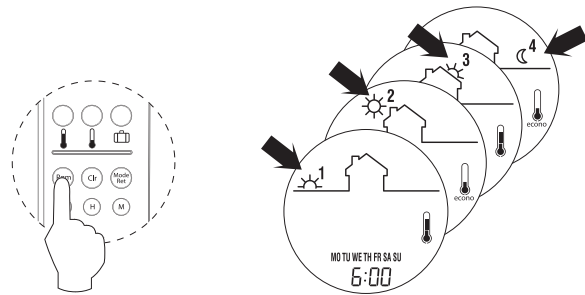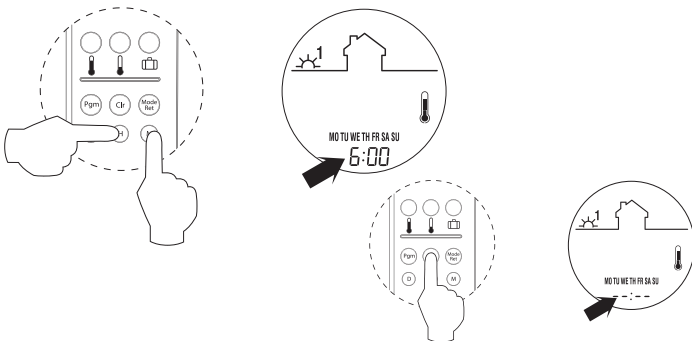
❶ Press **PGM** to access the programming mode.

❷ Press **D** to select the day to be programmed or hold for 3 seconds to select all days.

❸ Use **PGM** to select the program number.

❹ Use **H** and **M** to set the program's start time or use **CLR** to erase the time (--:-- the program is inactive).

❺ Repeat steps 2 to 4 for the remaining programs.

❻ Press **MODE/RET** to exit.

⚠ *NOTE: After 60 seconds of inactivity, the thermostat will automatically exit programming mode.*

SPECIFICATIONS

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

GFCI: 5 mA

	AF	F
Temperature display range:	0°C to 70°C (32°F to 158°F)	0°C to 70°C (32°F to 158°F)
Temperature setting range:	5°C to 30°C (40°F to 86°F)	5°C to 40°C (40°F to 104°F)
Comfort setpoint:	21°C (70°F)	28°C (82°F)
Economy setpoint:	16.5°C (62°F)	20°C (68°F)
Vacation setpoint:	10°C (50°F)	

Accuracy: ± 0.5°C (0.9°F)

Memory backup: In the event of a power failure, an internal circuit will save the programming. Only the time will have to be reset if the power failure exceeds 6 hours. The thermostat will return to the same operating mode in effect before the power failure.

WARRANTY

FLEXTHERM LIMITED WARRANTY

Flextherm Canada Inc. (hereinafter "FLEXTHERM") warrants to the purchaser that the FLEXTHERM THERMOSTAT (hereinafter the "Product") and once installed in conformity with the instructions of FLEXTHERM, shall be free of defects, in either materials of workmanship as described in this document.

COVERAGE PERIOD: This Limited Warranty becomes effective on the date of the original purchase of the Product as supplied by FLEXTHERM and shall remain effective for a period of one (1) year (twelve (12) consecutive months) from such date. This Limited Warranty is valid for products purchased and installed in Canada only.

CONDITIONS: This Limited Warranty is only applicable to new and unused Products purchased from FLEXTHERM, or its authorized re-sellers, provided the Installation Requirements contained herein are met. Claims made for coverage under this Limited Warranty must be addressed in writing, within seventy-two (72) hours from an event giving rise to a claim, or the appearance of a defect, to: Flextherm Canada Inc. 1-800-353-9843. Any parts replaced under the terms of this Limited Warranty become the property of FLEXTHERM. Persons making claims for coverage must present FLEXTHERM with proof of purchase as well as any documents FLEXTHERM may require.

WHAT FLEXTHERM WILL/WILL NOT DO: FLEXTHERM's obligations under this Limited Warranty are limited to, at its sole discretion, repairing or replacing the thermostat originally supplied in the Product that FLEXTHERM has determined to be defective in materials or workmanship. FLEXTHERM shall replace the defective thermostat goods free of charge "ex works" after the originals have been returned to us postage/freight prepaid. Replacement will only be made for defective parts; and no allowance or reimbursement shall be made for wages, labour and freight costs. With respect to the parts not manufactured by ourselves, we shall only warrant for these to the same extent as our suppliers undertake a warranty obligation towards ourselves.

Because of its ongoing commitment to product quality and innovation, FLEXTHERM reserves the rights, at any time and without incurring any obligations, to revise, change, modify or discontinue any specifications, features, designs or components.

INSTALLATION REQUIREMENTS: In addition to the requirements included in the current FLEXTHERM Installation Guide, which is incorporated herein by this reference, the Product must be installed in accordance with accepted standards.

⚠ **WARNING: Failure to install the Product in conformity with your local electrical Codes, as well as the Installation Guide, may cause fires. Failure to install the Product according to the directives in the installation guide may damage the cables/wiring and lead to Product failures, which are not covered under the Limited Warranty.**

EXCLUSIONS, ARE NOT WARRANTED: Failures resulting from improper installation; Damage caused by abuse, improper installation, repairs, service, maintenance and/or storage, modifications or use of parts not manufactured or supplied by FLEXTHERM; Damage caused by abuse or neglect; regarding the Product; Damage caused by water, submersion, accident, fire or any act of God; Incidental, consequential or other damages (including labor costs, towing, inconvenience, loss of time or loss of income).

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Neither FLEXTHERM re-sellers, installers or any other person is entitled or authorized to make any affirmation, representation or warranty other than those contained in this Limited Warranty. If the ownership of the Product is transferred during the Limited Warranty Coverage period, the terms and conditions of the Limited Warranty shall apply to the new owner, provided the new owner has proof, satisfactory to FLEXTHERM, of the date of first purchase of the Product.

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