

The FLP12 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.

### DIP SWITCH CONFIGURATION

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

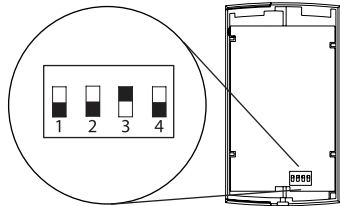
#### Time and Temperature Display (1)

- °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:

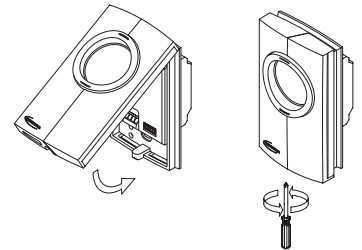
| Temp. control             | Switch position | Notes  |
|---------------------------|-----------------|--|
| Ambient with floor limits | DOWN (AF)       | Requires a floor sensor  |
| Floor (default)           | UP (F)          | Requires a floor sensor  |
| Ambient                   | DOWN (AF)       | Use only when floor sensor is <b>not</b> installed. <b>Not</b> 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.)

### INSTALLATION

Align the bracket tabs on the control module with the holes located on top of the previously installed power base and secure the module to the base.



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

#### 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:

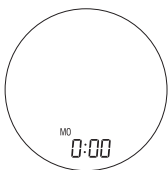
- LO:** the temperature is below 0°C (32°F) The heating indicator is displayed and the system is activated.
- HI:** the temperature is above 70°C (158°F).
- Er:** the floor sensor is not connected properly or defective (temp. control F) or the ambient sensor is defective (temp. control AF).

To verify if the thermostat detects the floor sensor, select the temperature control F (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.

## Setting the Time and Day

- 1 Press **D**, **H** or **M** to access the menu.
- 2 Press **H** and **M** to set the time.
- 3 Press **D** to select the day.
- 4 Press **MODE/RET** to exit.



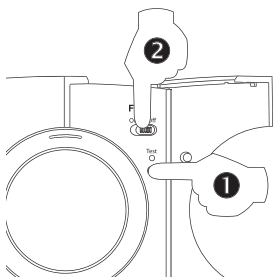
**NOTE:** If you remove the module from its base for more than 6 hours, the time and day must be reprogrammed.

## GROUND FAULT CIRCUIT INTERRUPTION (GFCI) TEST

The GFCI monitors the electrical flow for any loss of current; if there is a loss, the thermostat will cut off power to the heating system. The GFCI must be tested upon installation, and once a month thereafter to ensure it is operating properly.

### 1 Press **TEST**:

- Successful: the **TEST** warning light is ON, **GFI** is displayed and power to the floor heating system is cut off.
- Unsuccessful: the **TEST** warning light is OFF. Cut power to the floor heating system from the main power panel and call customer service.



- 2 When successful, reset the thermostat (**OFF/ON**) to reset the GFCI circuit.

**WARNING:** If the test warning light comes ON during normal operation, cut power to heating system from the main power panel and have an electrician verify the installation.

## BACKLIT DISPLAY

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

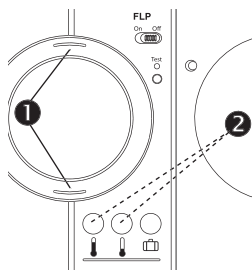
## SETPOINTS

### 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:

- 1 Set the temperature using the adjustment ring.
- 2 Press and hold the setpoint button (↓ or ↑ or ☞) until the icon is displayed on the screen. Screen 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)

- 1 Turn **OFF** the thermostat.
- 2 Press and hold **CLR** and turn **ON** the thermostat. Release **CLR** only when the minimum setpoint is displayed.
- 3 Select the minimum setpoint limit using the adjustment ring.
- 4 Press **CLR** to display the maximum value.
- 5 Select the maximum setpoint limit using the adjustment ring.
- 6 Press **MODE/RET** to exit.



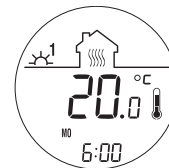
## OPERATING MODE SELECTION

**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.

- 1 Press **MODE/RET** until ☞ is displayed.
- 2 Set the temperature using the adjustment ring or press one of the predefined setpoint buttons (↓ or ↑ or ☞).

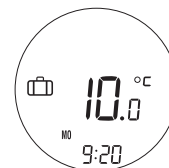


### Vacation

Maintains the Vacation setpoint during a prolonged absence.

There are two ways to activate this mode:

- 1 From the thermostat: press ☞
- 2 Remotely (using a telephone): see Econo Input Signal section (requires an optional control).



## 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 |

### For savings

You can obtain a 2% energy reduction for each degree (°C) that the temperature is lowered during an eight-hour period.

For example, if you program your thermostat to lower the temperature by 5°C (10°F) when you are at work and by another 5°C (10°F) during your sleep, you would reduce your energy consumption by 20%

(5°C (10°F) x 2% x 2 eight-hour periods). Since the temperature is lowered when your home is unoccupied and when the occupants are sleeping, you save money without reducing comfort.

## SCHEDULE MODIFICATION

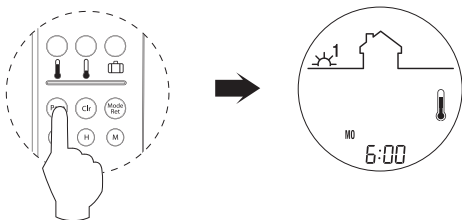
You can set up to four daily programs and each program can have a different time for a total of 28 programs.

Below is a sample schedule:

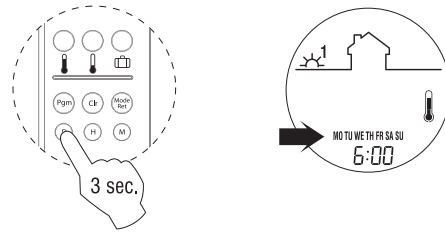
| Programs   | MO    | TU    | WE    | TH    | FR    | SA    | SU    |
|------------|-------|-------|-------|-------|-------|-------|-------|
| 1  Comfort | 6:00  | 7:00  | 6:30  | 6:15  | 7:00  | 9:00  | 8:00  |
| 2  Economy | 8:30  | 9:30  | 7:15  | 8:00  | 8:30  | 12:00 | --:-- |
| 3  Comfort | 16:00 | 17:00 | 15:30 | 18:00 | 16:00 | 18:00 | --:-- |
| 4  Economy | 23:00 | 22:00 | 22:30 | 23:00 | 21:30 | 23:00 | 23:00 |

**NOTE:** It is sometimes easier to program the same schedule for the entire week and then modify the exception days.

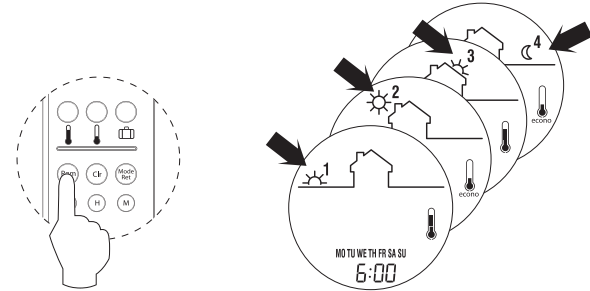
- Press **PGM** to access the programming mode.



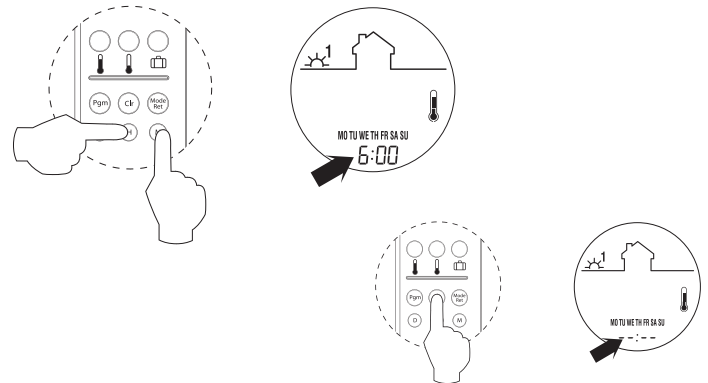
- Press **D** to select the day to be programmed or hold for 3 seconds to select all days.



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



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



- Repeat steps 2 to 4 for the remaining programs.
- Press **MODE/RET** to exit.

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

## ECONO INPUT SIGNAL

The FLP12 thermostat is equipped with an Econo input (dry contact) which allows connection of a telephone controller (optional CT240/CT241) or any other remote control system. Refer to the power base installation instructions for Econo input wiring.

When a signal is received through this input, the FLP12 thermostat automatically switches from normal operating mode to the Vacation mode. In this mode, the suitcase icon flashes and all buttons are locked. The thermostat returns to the normal operating mode when the signal is removed.

## TEMPERATURE CONTROL

The FLP12 thermostat determines the amount of power needed to maintain the setpoint temperature.

| 1 to 24% | 25 to 49% | 50 to 74% | 75 to 99% | 100% |
|----------|-----------|-----------|-----------|------|
| ⎵        | ⎶         | ⎷         | ⎸         | ⎹    |

## SPECIFICATIONS

Model: FLP12

|                            | AF                             | F                              |
|----------------------------|--------------------------------|--------------------------------|
| Temperature display range: | 0°C to 70°C<br>(32°F to 158°F) | 0°C to 70°C<br>(32°F to 158°F) |
| Temperature setting range: | 5°C to 30°C<br>(40°F to 86°F)  | 5°C to 40°C<br>(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:  $\pm 0.5^{\circ}\text{C}$  (0.9°F)

Storage:  $-20^{\circ}\text{C}$  to  $50^{\circ}\text{C}$  (-4°F to 120°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 PROGRAMMABLE THERMOSTAT (hereinafter the "Product") and once installed in conformity with the instructions of FLEXTHERM, shall be free of defects, in either materials or 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).

### LIMITATIONS OF LIABILITY:

THIS WARRANTY IS EXPRESSLY GIVEN AND ACCEPTED IN LIEU ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WITHOUT ANY LIMITATION ANY WARRANTY OF MERCHANTABILITY OR FITNESS OR A PARTICULAR PURPOSE. TO THE EXTENT THAT THEY CANNOT BE DISCLAIMED, THE IMPLIED WARRANTIES ARE LIMITED IN DURATION TO THE LIFE OF THE EXPRESSED LIMITED WARRANTY. INCIDENTAL AND CONSEQUENTIAL DAMAGES ARE EXCLUDED FROM COVERAGE UNDER THIS LIMITED WARRANTY. SOME PROVINCES DO NOT ALLOW FOR THE DISCLAIMERS, LIMITATIONS AND EXCLUSIONS IDENTIFIED ABOVE; AS A RESULT, THEY MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC RIGHTS WHICH MAY VARY FROM PROVINCE TO PROVINCE.

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.

### FLEXTHERM Canada Inc.

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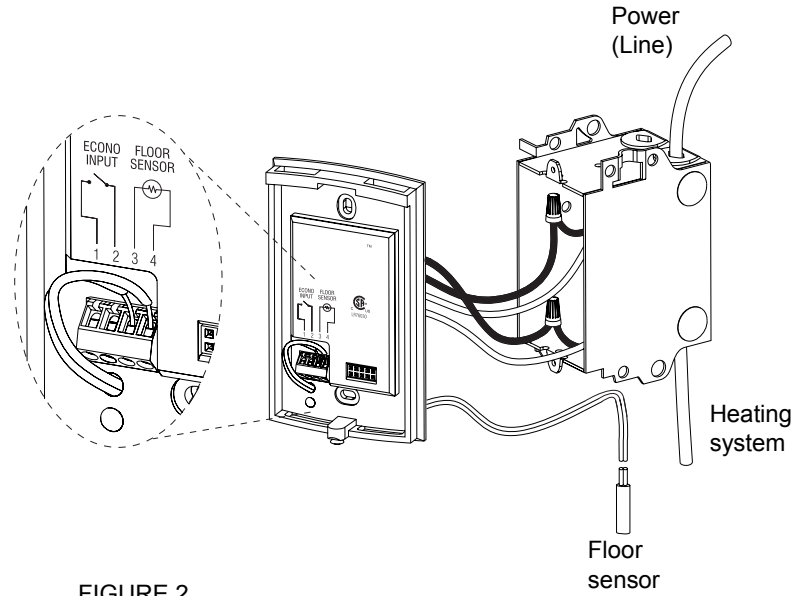
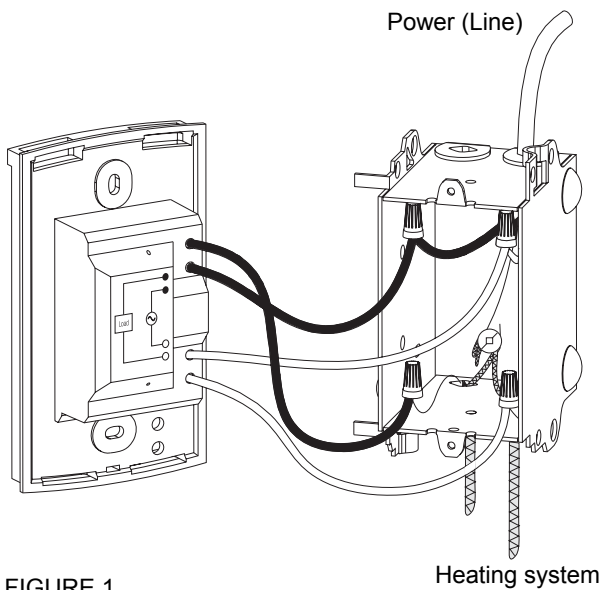
info@flextherm.com



www.flextherm.com



As an Energy Star® partner, Flextherm Inc. has determined that this product meets the Energy Star guidelines for energy efficiency.



Thank you for choosing FLEXTHERM. This power base has been designed to power an FLP/FLK series control module. The maximum load is 15 A.

## INSTALLATION & WIRING

### Guidelines

**WARNING: TURN OFF POWER AT THE MAIN POWER PANEL TO AVOID ELECTRICAL SHOCK.**  
Installation should be carried out by an electrician.

- ▶ Use an expanded thermostat connection box.
- ▶ Choose a location about 1.5 m (5ft.) 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) power base;
- ▶ One (1) control module (not included in the replacement power base);
- ▶ Two (2) screws;
- ▶ Four (4) solderless connectors for copper wires;

**NOTE:** Special CO/ALR solderless connectors must be used when connecting with aluminum conductors.

- ▶ One (1) 4.6 m (15 ft.) floor sensor including a flat tip screwdriver (not included in the replacement power base).

### 1) Separate the control module from the power base

Remove the screw (captive) holding the control module to the power base.

Lift the lower part of the control module upwards to remove it from the power base.

### 2) Connect the thermostat wires (Figure 1)

Connect the rear thermostat wires to the floor heating system wires (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 (Figure 2)

**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).

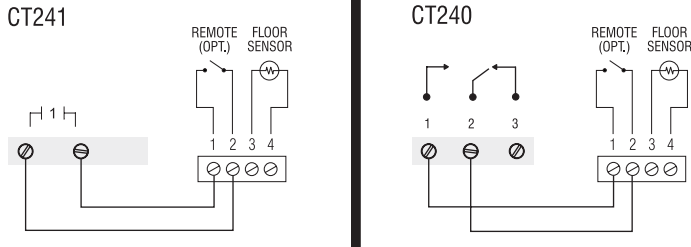
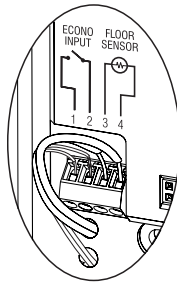
- Insert the wire into one of the two holes available below the terminal board and connect the wire ends to terminals 3 and 4 (no polarity) as per Figure 2.
- The wire must run on the left side of the cavity located on top of the terminal board, outside the electrical box and follow the wall down to the floor.
- 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)

Insert the cable (use an 18 to 22 gauge flexible wirecable) into one of the two holes available below the terminal board.

Connect the wire ends (no polarity) to terminals 1 and 2 of the power base and to the CT240's auxiliary output or any output of the CT241.

The cable must run on the left side of the cavity located on top of the terminal board and outside the electrical box.



#### 5) Complete Installation

Push the excess wire (except for the sensor & econo) back into the electrical box to prevent interference with the thermostat and secure the base to the electrical box using the provided screws.

#### 6) Configure and Install the Control Module

Please refer to the control module user guide prior to mounting the control module on the base.

#### 7) Return Power to the Floor Heating System

Once installation is completed, return power to the floor heating system.

### TECHNICAL SPECIFICATIONS

**Models:** 120GA / 240GA

**Supply:** 120GA: 120 VAC, 60Hz, 1800 W  
240GA: 240 VAC, 60Hz, 3600 W

**Maximum load:** 15 A

**GFCI:** 5 mA

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

**Econo input:** requires a dry contact

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

**Certification:** CSA

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#### LIMITATIONS OF LIABILITY:


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