

## Electronic Thermostat 120 volts (LS120N)

### SUMMARY

#### TO CHANGE THE TEMPERATURE SCALE FROM °C (CELSIUS) TO °F (FAHRENHEIT) AND BACK

Press on button while pressing and releasing RESET button, then release button.

#### TO SET TEMPERATURE

Press on ▲ or ▼ once to see setpoint temperature appear on display. Every subsequent press will change the setpoint temperature by one degree.

#### TO RECORD THE (COMFORT) SETPOINT TEMPERATURE

Select chosen setpoint temperature by using ▲ or ▼ button. Press on button (2 to 3 seconds) until icon appears on display.

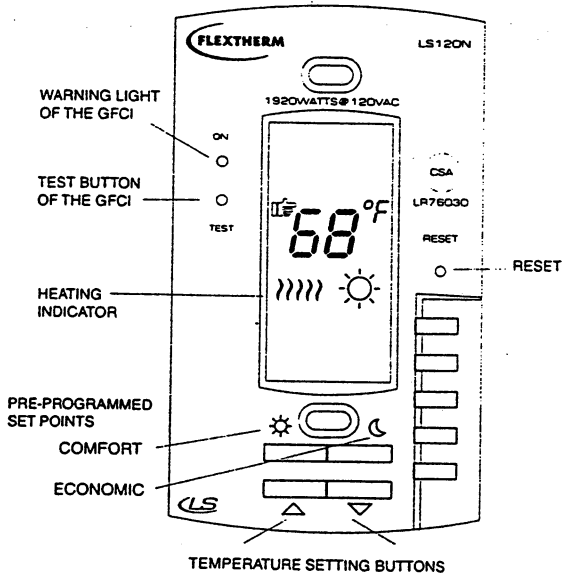
#### TO RECORD THE (ECONOMIC) SETPOINT TEMPERATURE

Select chosen setpoint temperature by using ▲ or ▼ button. Press on button (2 to 3 seconds) until icon appears on display.

#### CHECKING GROUND FAULT CIRCUIT INTERRUPTER (GFCI)

Adjust the setpoint temperature until heating indicator (flames) appears on display. Press TEST button. The test is conclusive if the warning light (GFCI) on thermostat is ON and power to the load is cut-off (flames remain on display though). If these events do not occur, check the installation. Press on RESET button to reset the GFCI.

FLOOR OR SET POINT TEMPERATURE



### INSTALLATION

Parts included:

- One (1) LS120N (120 VAC) thermostat
- Two (2) 6-32 screws
- Four (4) Solderless connectors (for copper wire)
- One (1) Temperature sensor with a 15 foot extension

TURN OFF POWER TO THE HEATING SYSTEM AT THE MAIN POWER PANEL TO AVOID ELECTRICAL SHOCK. KEEP AIR VENTS OF THE THERMOSTAT CLEAN AND OBSTRUCTION FREE.

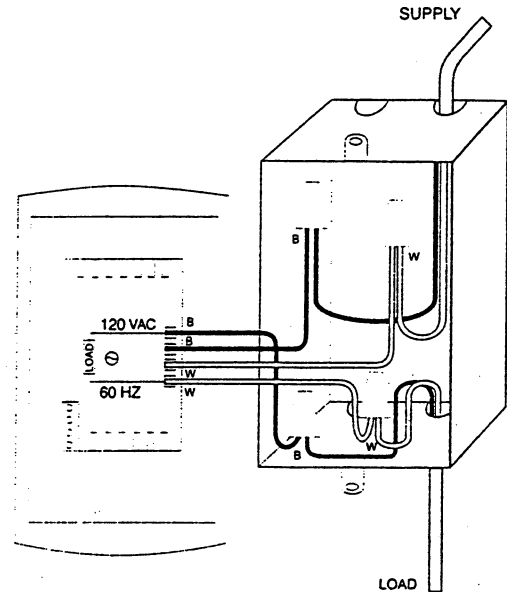
This thermostat is an electrical product and must be installed in conformity with the National and/or Local Electrical Code. The installation must be performed by qualified personnel where required by law.

This thermostat was designed to control a floor heating system. The resistive load must not exceed 1920 watts @ 120 VAC (16.0 A). The thermostat is equipped with a ground fault circuit interrupter (GFCI) and therefore the isolation of the line and load is required for operation. The polarity of line connection must be respected. During a ground fault, only the current in the black wire of the load will be cut-off. Connect thermostat as shown on diagram.

#### 1) CONNECTING WIRES AND MOUNTING THERMOSTAT

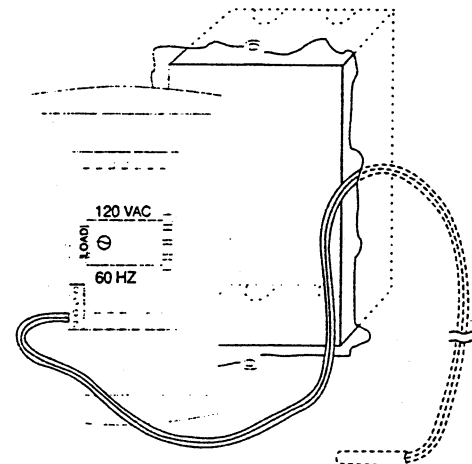
Connect the rear thermostat wires to the power supply and to the load using solderless connectors for copper wires. See schematic diagram.

Push the excess wire back into the electrical box to prevent interference with the thermostat. Secure the thermostat using two (2) 6-32 screws 1 1/4 inches long. Once the thermostat is properly installed, return power to heating system.



#### 2) CONNECTING TEMPERATURE SENSOR WIRE

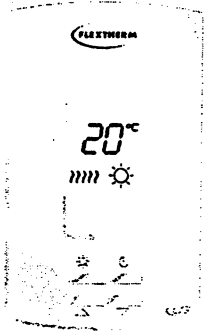
Connect the sensor wire to the two lower screws of the terminal block at the back of the thermostat (no polarity need to be respected). The wire must pass outside the electrical box and follow the wall down to the floor. Install the sensor wire between two runs of cable, at a distance of 30 to 60 cm (1 to 2 feet) within the heating zone in a neutral location, away from any source of heat or cold. Do not cross the probe wire over the heating cable. Secure the sensor to the floor with hot glue, it will be necessary to recess the sensor in the floor so it is at the same level as the heating cable.



## POWER UP

To power up thermostat:

When power is applied for the first time, the display must show the floor temperature. Other information might show up on the display if installation is defective or does not comply with the instructions. The warning light (GFCI) must be off.



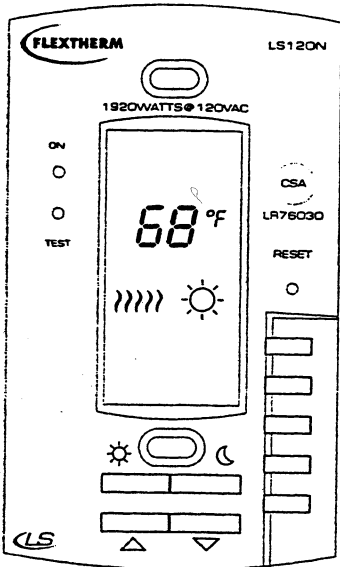
The message L0 will appear on the display if the temperature sensor is not hooked up, is in default or the temperature is below 0 °C (32 °F). Also, the heating indicator will be present on display and the relays will be close (current going in the load).

The message E1 will appear on the display if the temperature sensor is short-circuited.

The message HI will appear on the display if the temperature is higher than (99 °F).

If anything else appears on the display, press the ▲ button as you press and release the RESET button.

## CHECKING GROUND FAULT CIRCUIT INTERRUPTER (GFCI)



Adjust the setpoint temperature until heating indicator ( // // // ) appears on display. Press TEST button. The test is conclusive if the warning light (GFCI) on the thermostat is ON and power to the load is cut-off. If these events do not occur, check the installation. Press on RESET button to reset the GFCI.

If the GFCI test fails:  
Check the load wires. The thermostat must be in heating mode to carry out the test (heating indicator ON).

The GFCI test should be carried out monthly. If the test fails, check your heating cable

## OPERATION

The thermostat has 4 different buttons to control the floor temperature. The ▲ and ▼ buttons increase or decrease the setpoint temperature. The ☼ and ☾ buttons are used to store and recall two temperature settings.

### • Default values

To erase the recorded setting temperatures (☼ and ☾) and replace their values by the default ones, ☼ 30 °C (86 °F) and ☾ 10 °C (50 °F) press the ▲ button while pressing and releasing the RESET button. Then release the ▲ button.

### • Setting a setpoint temperature

Press once the ▲ or ▼ button to see the setpoint temperature on display. Every subsequent press will change the setpoint temperature by one degree.

### • Recording setpoint temperature for ☼ (COMFORT) and ☾ (ECONOMIC) settings

By recording two setpoint temperatures you will be able to go from the ☼ setting to the ☾ setting by simply pressing the ☼ or ☾ button.

### • Recording a setpoint temperature for the ☼ (COMFORT) setting

Select chosen setpoint temperature by using ▲ and ▼ buttons. Keep pressing on the ☼ button (2 to 3 seconds) until icon appears on display.

### • Recording a setpoint temperature for the ☾ (ECONOMIC) setting

Select chosen setpoint temperature by using ▲ and ▼ buttons. Keep pressing on the ☾ button (2 to 3 seconds) until icon appears on display.

**NOTE:** When the temperature setting used is ☼ or ☾, you can still use the ▲ or ▼ buttons to change the setpoint temperature without changing the recorded temperature.

### • Recalling stored setpoint temperatures

Once stored, both setpoint temperatures can be recalled simply by selecting the ☼ or ☾ button.

## CHOOSING THE TEMPERATURE SCALE IN °C (CELSIUS) OR °F (FAHRENHEIT) TO APPEAR ON DISPLAY.

To choose the temperature scale, press the ☼ button while pressing and releasing the RESET button. Then release the ☼ button.

## CHARACTERISTICS

Model:	LS120N (120 VAC)
Supply:	120 VAC, 50/60 Hz
Load:	16.0 A maximum (resistive only)
Power:	1920 watts @ 120 VAC
Ground fault circuit interrupter (GFCI):	Class A (5 MA TRIP LEVEL)
Approvals:	CSA C/US
Display range:	0 to 60 °C (32 °C to 99 °F)
Setting range:	10 °C to 50 °C (50 °C to 99 °F)
☼ Default setting:	30 °C (86 °F)
☾ Default setting:	10 °C (50 °F)
Storage:	-20 °C to 50 °C (-4 °F to 120 °F)
Temperature regulation:	1 °C (2 °F)
Precision:	± 0.5 °C (1 °F) (1920 W)

## WARRANTY

### ONE YEAR LIMITED WARRANTY

This product is warranted against material defects and workmanship in normal use for a period of one year, from the date of the original purchase from authorized dealers. During this period, Flextherm inc. will repair or replace the product with a new or of equivalent quality at Flextherm's option, without charge, any product proven defective in normal use.

Warranty does not cover transportation costs. Nor does it cover a product subjected to misuse or accidental damage. This warranty does not cover the cost of installation, removal or reinstallation.

This limited warranty is in lieu of all other warranties, obligations or liabilities expressed or implied by the company. In no event shall Flextherm inc. be liable for consequential or incidental damages resulting from installation of this product.

All defective merchandise must be returned to your retailer or installer.

If you have any questions concerning the installation or programming of this product, please call your retailer, installer or Flextherm.

### Flextherm Inc.

2400, de la Province

Longueuil (Québec), J4G 1G1

Tel.: (450) 442-9990, Fax: (450) 442-1099

Toll free: (800) 353-9843