EzeeStat II Multi-Function Programmable Thermostat

INDEX

A. INTRODUCTION

This thermostat can be operated in one of 3 modes:

1. Room temperature control (Room mode)
 The thermostat controls the room temperature by switching the heating or cooling system.
2. Floor temperature control (Floor mode)
 The thermostat controls the floor temperature (Floor heating only).
3. Room temperature control + Floor limitation (Room + Floor mode)
 Room temperature governs the heating whilst limiting the floor to a set maximum temperature. (Floor heating with sensitive flooring - e.g. vinyl, wood).

Mode selection is done by setting jumpers on the printed circuit board. (refer to section D)

B. CHOOSING THE CORRECT LOCATION.
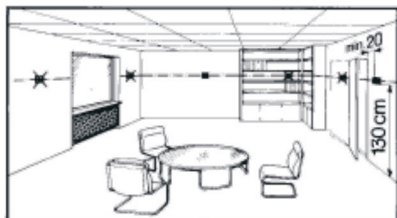
The thermostat must be located in the room where the heating/ cooling is to be controlled, except in the case of floor temperature control (mode 2).

The position should be chosen so that the sensor can measure the room temperature as accurately as possible. Direct solar radiation, drafts as well as other heating or cooling sources must be avoided.

The mounting height should be approximate 1.3 metres.

The unit can be fitted to either a 3"x3" or 2"x4" horizontal recessed conduit box or directly onto the wall.

C. INSTALLATION

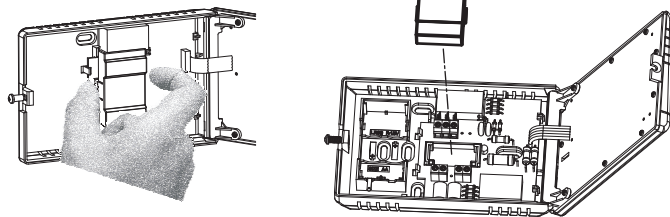### 1. Opening the thermostat housing

The plastic enclosure consists of 2 parts, front and base, which are connected by means of a hinge. (A small "*" screw-driver is required)

STEP 1.
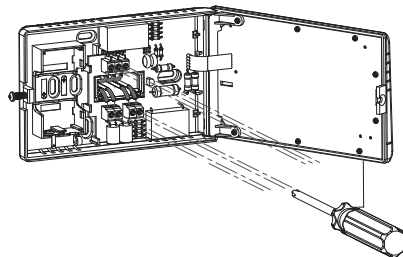Loosen the fastening screw
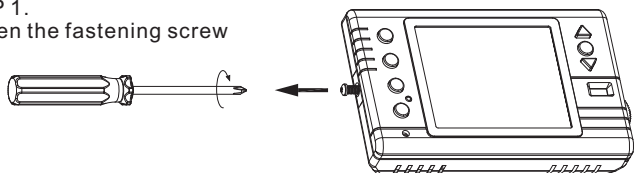
STEP 2.
Open the unit. Press and hold both sides of the protective terminal cover and pull it off the thermostat base.
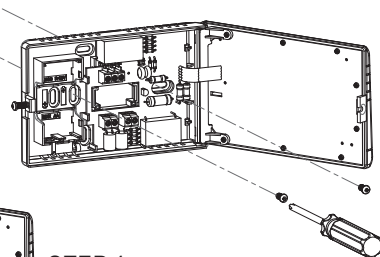

STEP 3.
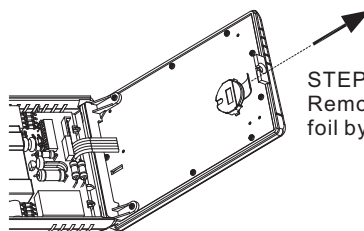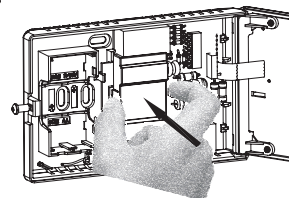Mount the unit to the wall with the mounting screws provided.

STEP 4.
Connect the electric wires /Floor sensor cable to the correct terminals (refer to section J).

STEP 5.
Press and hold both sides of the terminal cover and fit it back onto the base.
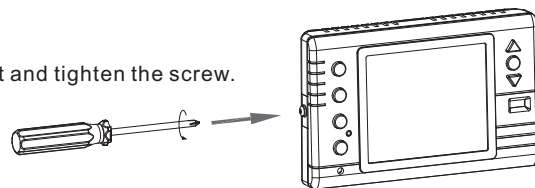

STEP 6.
Remove the backup battery's insulation foil by pulling the tab.

> **If the tab is not pulled out, the time will not be maintained in the event of a power outage.** ⚠

STEP 7.
Close the unit and tighten the screw.

D. SETTING THE MODE OF OPERATION

Locate the jumpers, they can be found on the right hand side of the top printed circuit board.

Jp13
Heating or Cooling jumper selector.

Jp6
Floor sensor enabled or disabled

Jp5
Room sensor enabled or disabled
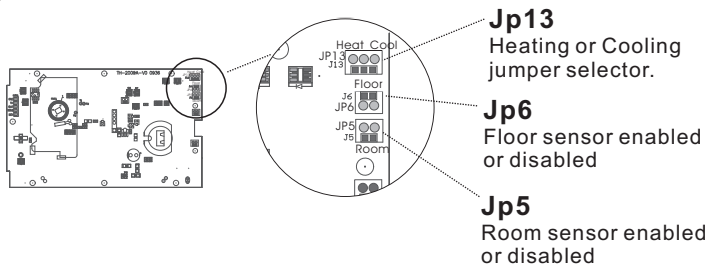
> **If the mode of operation is set incorrectly (e.g. Cooling with floor sensor enabled) will be shown in the display.** ⚠

1

NB. Ex-factory mode is Room + Floor limitation.

Jumper Settings:

1. Room mode 🏠	2. Floor mode 〰	3. Room + Floor mode 🏠+〰
Heat	Heat	Heat
▣● **Jp13 -** Heat	▣● **Jp13 -** Heat	▣● **Jp13 -** Heat
▣●● **Jp6-** Disabled	▣● **Jp6 -** Enabled	▣● **Jp6-** Enabled
▣● **Jp5-** Enabled	▣●● **Jp5 -** Disabled	▣● **Jp5-** Enabled

Display shows:

1. Room mode 🏠	2. Floor mode 〰	3. Room + Floor mode 🏠+〰
System ON	System ON	System ON
System OFF	System OFF	System OFF

E. SET/MODIFY THE 'INTERNAL SETTINGS'

In order to select the maximum floor temperature, it's recommended to check with your flooring supplier. For vinyl and wood flooring this is normally ±28 °C.

Default settings can be found on the "**SPECIFICATIONS**" page 4; we suggest you read the information thoroughly before setting/adjusting these values.

Front panel

Set/adjust Comfort or Economy setpoints

Set/adjust the time

Stand-by

Reset

Floor limitation LED

Up & Down buttons

Program setting rotary selector with red LED.
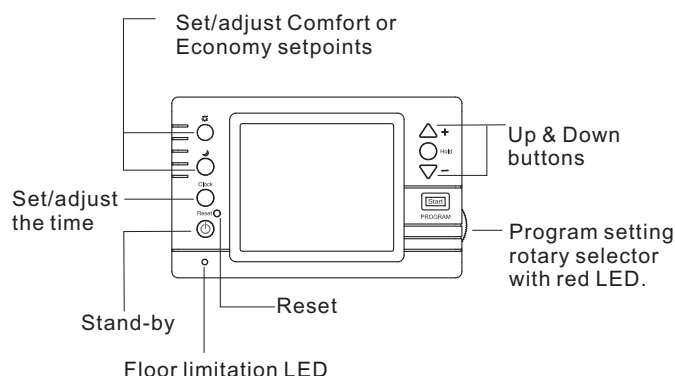
It is advisable to press "**RESET**" before changing the Internal Settings.

Consult with a technician if uncertain on the choice of the best operating mode.

> **To enter the setting mode, ensure the rotary switch is set to "Start"!** ⚠

Room mode

1. Press △+ and ▽− simultaneously for 5 seconds to enter the setting mode.

2. Press △+ or ▽− to set °C or °F.

3. Press ⏻ to set the switching differential.

4. Press △+ or ▽− to set the switching differential .

5. Press the ⏻ button to return to operate mode.

Floor mode (Floor heating only!)

1. Press △+ and ▽− simultaneously for 5 seconds to enter the setting mode.

2. Press △+ or ▽− set °C (Celsius) or °F (Fahrenheit).

3. Press ⏱ for the next setting– Hi temperature limit (The floor heating will be turned off when the floor temperature reaches the Hi limit.)

4. Press △+ or ▽− to set the Hi limit .

5. Press ⏻ – Lo limit (The heating will be turned on when the floor temperature drops below this Lo limit.)

6. Press △+ or ▽− to set the Lo limit.

7. Press ⏱ – Switching differential (Hysteresis).

8. Press △+ or ▽− to set the switching differential.

9. Press ⏻ to return to operate mode.

Room + Floor limitation mode (Floor heating only!)

1. Press △+ and ▽− simultaneously for 5 seconds to enter the setting mode.

2. Press △+ or ▽− to set °C (Celsius) or °F (Fahrenheit).

3. Press ⏱ to set the next setting – Hi limit. (The floor heating will be turned off when the floor temperature reaches the Hi limit.)

4. Press △+ or ▽− to set the Hi limit.

5. Press ⏱ switching differential (Hysteresis)

6. Press △+ or ▽− to set the switching differential.

7. Press ⏻ to return to operate mode.

F. SET/ADJUST THE CLOCK

1. Press ○ Clock

2. Press △+ or ▽− to set the day of week.

3. Press ○ Clock for hour.

4. Press △+ or ▽− to set the hour of the day.

5. Press ○ Clock for minutes.

6. Press △+ or ▽− to set the minutes.

7. Wait 5 seconds, the unit will automatically retain the time and start operation.

G. SET/ADJUST THE REQUIRED SETPOINTS FOR COMFORT ☼ AND ECONOMY 🌙

The selected COMFORT or ECONOMY setpoints will operate in each of 48-programming-sections in a day.

1. Press ○

2. Press △+ or ▽− to select the temperature setpoint for COMFORT.

3. Press ○

4. Press △+ or ▽− to select the temperature setpoint for ECONOMY.

5. Wait 5 seconds, the unit will automatically retain the settings and start operation.

> **NB.**
> In Floor mode, the COMFORT setpoint cannot be set above the "Hi Limit" and the ECONOMY setpoint cannot be set lower than the "Lo Limit".
> **In Room+Floor limitation mode, the COMFORT setpoint cannot be set above the "Hi limit".** ⚠

H. SET/ADJUST THE PROGRAMMING

Set/Adjust COMFORT ☼ or ECONOMY 🌙 setpoints in each of 48 programming-sections of a day and all 7 days of a week.

1. Spin the rotary selector to the desired day of the week and start programming.

2. Press ☼ or 🌙 to alter the settings between. ☼ and 🌙 on the display.

3. Press △+ or ▽− to select each required programming section. LCD display will indicate each programming section by digital numbers and flashing display.

4. After completing the programming for all 7-days, spin the rotary selector to "**START**" to start operating.

> **Note:**
> If the rotary-selector is left at any setting other than "Start" for more than 1 minute during programming the LCD will show: [E rr]
>
> In such case, spin rotary selector to Start and restart the programming.

Built-in program default settings
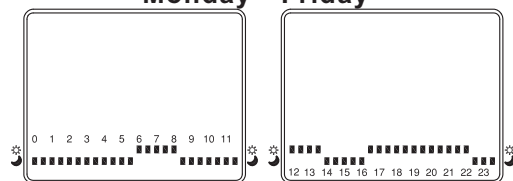
Monday ~ Friday
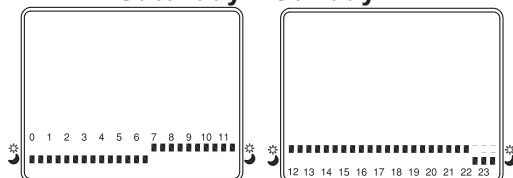
> Room mode(Heat)
> Room+Floor Limit.
> ☼ = 21°C
> 🌙 = 16°C
>
> Floor mode
> ☼ = 26°C
> 🌙 = 21°C

Saturday ~ Sunday

I. PROGRAM OVERRIDES

Manual (Temporary Override)

When the unit is in operation, users can increase or decrease the temperature setpoint by pressing the △+ or ▽− buttons.

Wait 5 seconds after changing the setpoint and the unit will automatically retain the setting and start to run the "Manual" function. The flashing symbol ☝ will show on the display to indicate the **Manual** function(Temporary Override) is active.

This function will not alter the Comfort or Economy setpoints.

While the unit is operating the "Manual" function; rotating the rotary selector away from "Start" and back will abort the "Manual" function and the normal program will resume.

> When in Comfort ☼ while activating the Manual function the thermostat will continue to operate in Manual until the program switches to Economy 🌙 and vise versa.
>
> The ☼ and 🌙 icons will disappear from the LCD while the Manual function is active.

Stand-by

When the unit is in operation, users can manually turn the thermostat's operation ON or OFF.
1. Press ⏻
2. Wait 5 seconds, the thermostat will manually turn off its operation.
3. Press again the ⏻ will turn on the thermostat's operation.

> **Anti-frost protection will automatically be activated when the unit is operating in Stand-by.**

Hold

When the unit is in operation (The rotary selector is at "Start") users can maintain the temperature at a fixed setpoint.

1. Press ◯Hold

2. Press △+ or ▽− to set the required setpoint.
3. Wait 5 seconds and the unit will automatically retain the temperature setting and start to operate
4. While the unit is operating in "Hold", pressing the ◯Hold will stop the "Hold" function and resume the normal program.

Auto resume

Auto resume the programming's operation and stop operating in Stand-by mode.

1. Press ⏻.

2. Press ◯ Clock to select the required day within the next 7-days to automatically resume it's normal operation.

3. Wait 5 seconds and the unit will automatically operate this function. On the LCD it will display:

Current temperature · · · · · **20.0**°C Next Resume 1 2 3 4 5 6 7 ⏻**Auto** · · · · · Which day to auto resume the programming operation
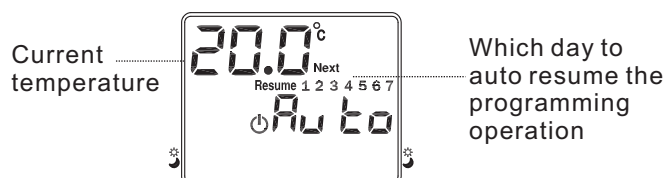
4. When this function is in operation, pressing the ⏻ will immediately resume normal program operation.

> **Anti-frost protection will automatically be activated when the unit is operating the Auto Resume function. If you are going to be away longer than 7 days, use the stand-by function.**

Reset to factory default settings

To set the program back to the factory default settings:

1. Spin rotary selector to "**START**"

2. Press and hold the ⏻ button for 5 seconds.

3. On the LCD [dEL] will appear.

4. Press the Reset ◯ button.

The thermostat has now reverted back to the factory default settings.

J. CONNECTION DIAGRAMS

> ⚠ **DANGER** ⚠
> Electric Shock Or Fire Hazard
> READ ALL WIRE SIZING, VOLTAGE REQUIREMENT AND SAFETY DATA AVOID PROPERTY DAMAGE AND PERSONAL INJURY

Disconnect the mains before you start wiring!

Room temperature control

Standby
Relay Off / Relay Active
Programmed — MCU

The internal sensor controls the system ON/OFF to the required setpoint

NO — COM — NC
③ ④ ⊗

N ① ⊗   ⊗ ⊗

AC INPUT
N
200-240V~
L
Two pole isolation switch

Heater

⚠ In this application, temperature control only requires the built-in room sensor.

Do not connect terminals 6 & 7 to the mains supply, or the unit will be damaged

▣▣●● **Jp13**
▣● **Jp6**
▣▣ **Jp5**

Floor temperature control.

Standby
Relay Off / Relay Active
Programmed — MCU

Do not connect terminal 5 to main supply, or unit will be damaged

Floor sensor controls heating ON/OFF to the desired setpoints

NO — COM — NC
③ ④ ⊗

N ① ⊗   ⑥ ⑦

AC INPUT
N
200-240V~
L
Two pole isolation switch

Heater

Floor Sensor for limitation

⚠ In this application, the temperature is controlled by the floor sensor.

▣▣●● **Jp13**
▣● **Jp6**
▣▣ **Jp5**

Room temperature control + Floor-limitation.

Standby
Relay Off / Relay Active
Programmed — MCU

Do not connect terminal 5 to main supply, or unit will be damaged

The internal sensor controls the heating ON/OFF to the setpoint.

NO — COM — NC
③ ④ ⊗

N ① ⊗   ⑥ ⑦

AC INPUT
N
200-240V~
L
Two pole isolation switch

Heater

Floor Sensor for control

⚠ In this application, temperature control requires both room and floor sensor.
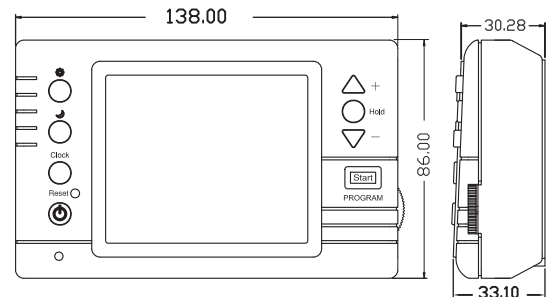
▣▣●● **Jp13**
▣● **Jp6**
▣▣ **Jp5**

K. SPECIFICATIONS

1. Operating voltage : 230 Vac ± 10%, 50 ~60Hz
2. Display: 10 Second auto off blue LCD back light
3. Output: Voltage-free contact, Rating 16 Amp/ 250Vac
4. Circuitry consumption: 8VA
5. Temperature indication: °C or °F selectable.
6. Temperature control range: Room:5 ~ 35°C
   Floor:5 ~ 45°C 0.5°C/step
7. Temperature Display Range: ± -10 ~ 50°C), resolution: 0.1°C.
8. Comfort ☼ & Economy ☾ setpoint range:

☼ Room: 5 ~ 35°C Floor: 5 ~ 45°C 0.5°C/step
Default settings-- Floor-mode: 26°C.
           Room mode (Heating) & Room+Floor Limitation mode : 21°C
           Room mode (Cooling) : 24°C
☾ Room: 5 ~ 35°C Floor: 5 ~ 45°C 0.5°C/step
Default settings-- Floor-mode: 21°C
           Room mode (Heating) & Room+Floor Limitation mode: 16°C
           Room mode(Cooling) : 27°C

9. Floor temperature limitation setpoint range:
   For Floor mode or Room+Floor-limitation mode only:
   Hi Limit.: 20 ~ 45°C (default setting 29°C)
   Lo Limit.: 5 ~ 20°C (default setting 15°C)
   *In Floor-mode, the Lo limit acts as low-temperature protection, the Hi-Limit acts as maximum floor-temperature limitation.
   *In Room+Floor Limitation mode, only the the Hi-Limit is in effect.
10. Temperature sensor : NTC 10 kOhm at 25°C, same on both Room-sensor & Floor-sensor
11. Switching differential (Hysteresis) selectable by the user:
    In Room mode (Mode 1): 0.2/0.4/0.6/ 0.8 /1°C , default setting 0.4°C
    In Floor mode (Mode 2) : 0.6°C/ 1°C/2°C/3°C, default setting 1°C
    In Room+Floor limitation mode (Mode 3) : The same hysteresis value as in Room mode applies
12. Floor-limitation switching differential: 2.0 °C fixed, not adjustable.
13. Programming : 7d. Each one of the 7 days in a week is independently programmable. Each day is split into 48 time periods of 30 minutes. In each of these time periods the COMFORT or ECONOMY temperature may be chosen as the setpoint. Both 24H/12H clock formats are available. The default setting is : 24H
14. Stand-By ⏻ : To manually turn off the thermostat's operation. (Internal clock & program keep running)
15. Auto resume : Stop the Stand-by operation and resume the thermostat's program operation on the selected day within the following 7 days.
16. Anti-frost protection: Prefixed, not adjustable. In effect when thermostat is in Stand-by(⏻)function. Room-mode or Room+Floor limitation Mode + 5°C. Floor Mode +10°C
17. Factory default internal settings & programming default settings on Reset.
18. Non-volatile EEPROM to retain the program.
19. CR2032 Lithium battery for maintaining the time during power outages.
20. Red LED indicator on the rotary programming selector.
21. Green LED indicates the status of the floor limitation.
22. Storage temperature : -10 ~ 60°C.
23. Dimensions: (WxHxD) 138 x 86 x 33.1 mm

L. CONTENTS

Thermostat (incl. CR2032 backup battery)
Instruction sheet
Machine screws (2)
Anchors plugs (2)
Self-tapping screws (2)

Floor sensor and cable (optional)
(10 kOhm @ 25°C - 4 metres)

138.00
30.28
86.00
33.10

Hold
Clock
Reset
Start
PROGRAM