Advanced Programmable Thermostat

User Manual

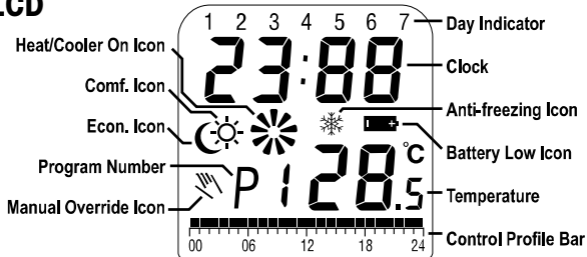# Table of Content

INTRODUCTION

This thermostat can replace most common residential thermostat and is designed to be used with electric, gas or oil heating control system or cooling system.

Outlook

Up Button
Set Time Button
Reset Button
Down Button
Conf./Econ Button
Set Temperature Button
Set Program Button

LCD

Day Indicator
Heat/Cooler On Icon
Comf. Icon
Econ. Icon
Program Number
Manual Override Icon
Clock
Anti-freezing Icon
Battery Low Icon
Temperature
Control Profile Bar
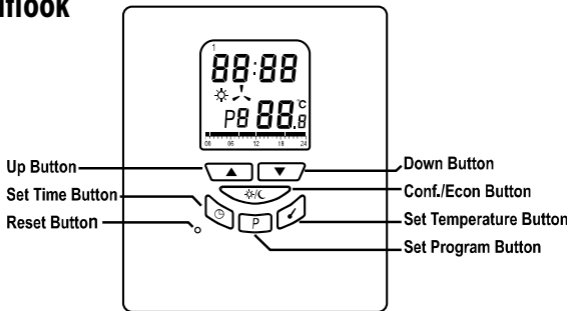
Features

Several useful function and operating modes have been incorporated to adapt a variety of customer needs besides all the features associated with the state of the art programmable thermostat.

-LCD shows the need to know information only, which is more easy to understand.
-Real time clock with day of the week display.
-Room temperature display.
-Control profile display.
-Simplified temperature adjustment.
-Simplified programming procedure.
-6 pre-defined control profiles, 3 user programmable control profiles.
-A protection against freezing.
-Temporary override set-temperature.
-User selectable temperature span.
-User selectable heater/cooler operation mode.
-Battery level detection.
-2 AA size alkaline batteries (not included).
-Slim housing design.

INSTALLATION

This thermostat has been designed for simple and quick installation requiring only a few tools

Required Material

Hammer
Masking tape
Drill and 3/16" drill bit
Screwdriver

Removing your old thermostat

CAUTION : to avoid electric shock, turn off the power of the heating/cooling system at the main power box in your home. Read the following instructions carefully before disconnecting the wires.
1.Turn off your old thermostat.
2.Remove the cover from the old thermostat. You may have to pull extra hard.
3.Unscrew the old thermostat from the wall plate.
4.Now find the screws attaching the wall plate to the wall, and remove them. You should now be able to pull the wall plate a small distance from the wall. Do not disconnect any wire yet, simply locate the wires.

WARNING: After removing the wall plate, if you find that it is mounted on a junction box (e.g. a box similar to one behind a light switch or electric outlet), high voltage circuit may be present and there is a danger of electric shock. Please consult a qualified electrician.

Wire Labeling

1.Disconnect and identify each wire.
2.You may wish to tape the wires to the wall to keep them from slipping through the hole in the wall. If the hole in the wall is larger than necessary, fill it in order to prevent hot or cold air to penetrate the thermostat. In this manner, the thermostat will behave perfectly.

Choosing a Location

Note: for a new installation, choose a mounting location about five feet (1.5 meter) above the floor in an area with good air circulation and away from.
1.Drafts of dead air sports.
2.Air ducts.
3.Radiant heat from the sun or appliances.
4.Concealed pipes and chimneys.

Mounting

Mounting the thermostat onto the wall
1.Remove completely the front housing of the thermostat.

1c
Remove
the front
housing

1b
Push and hold
internal lock by
a screw driver

1a
Remove
the front
cover

6
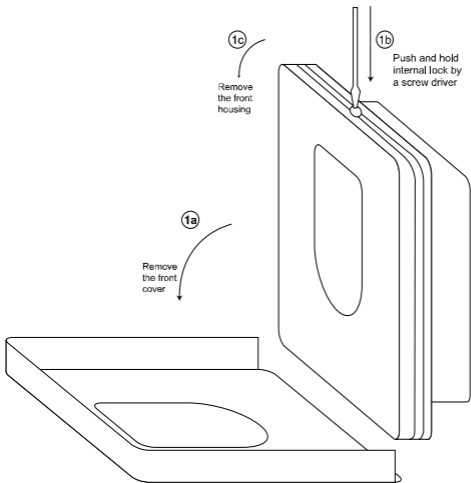
2.Remove the cover over
the connector.

2a Push

2b

Remove
the cover
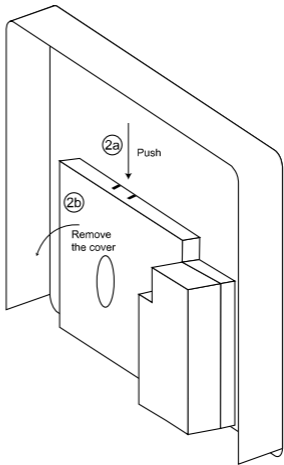
3.Mark the holes position and align the wire
coming from the wall in the hole beside the
connectors.
4.Drill two holes and insert the plastic anchors
carefully into the holes until they are flush with
the wall.
5.Fasten securely the thermostat to the wall with the two screws.

Connecting the Wires

1.Connect the system wires to the terminals according to the wiring diagram shown in the section "WIRING DIAGRAM"
2.Push on the wires in the wall and replace the cover over the connectors.

Wiring Diagram

The 097A thermostat can be used with any single stage heating or cooling system.
1.Connect life to terminal 'COM'.
2.Connect HEATER/COOLER in series with terminal 'NO' and neutral.
3.Replace the connector cover.
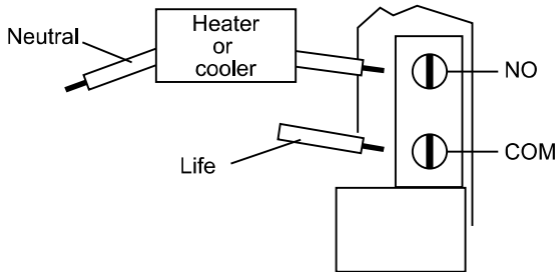
Heater/Cooler Selection

Inside the front cover, you can find the DIP switch, These three switches are used to control the span and heat/cool system. Set the DIP switch (position 3) according to your selection of heater system or cooler system as the following diagram.
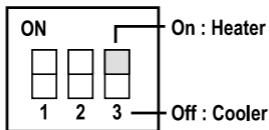
Temperature Span Selection

Span is the temperature difference between the turn on temperature and turn off temperature. For example, if you set temperature to 20 ºC and span to 1ºC, the heater will operate when the room temperature drops to 19.5 ºC and turns off when the temperature rises to 20.5 ºC. Set the DIP switch (position 1 & 2) according to your selection of temperature span as the following diagram.

1	2	Span
ON	ON	1 ºC
OFF	ON	2 ºC
ON	OFF	3 ºC
OFF	OFF	4 ºC
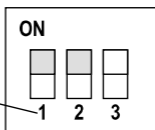
Battery Installation

Your thermostat is using two (2) "AA" size batteries to operate. To power-up the unit, insert two "AA" batteries into the battery compartment of the front cover. When power is applied for the first time, the display must show time and the day as well as the ambient temperature (for example 28.5 ºC) as follows:

10

If the display is different, press the RESET button. Use a fine probe such as straightened paper clip to gently push the RESET button. After installation of the batteries, put the front housing onto the back housing and then place back the front cover. Before turning on the main switch of the system, press the reset button once. The thermostat is ready for use.

Align the hinge
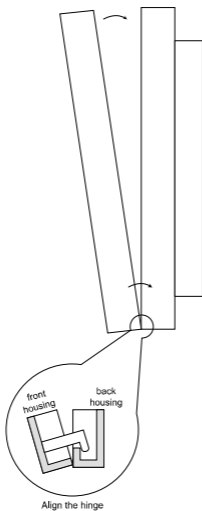
SETTING CLOCK

1. Press the ✎ button to clear all digits except the day indicator and the time display. The Day indicator is flashing.

2. While Day indicator is flashing, press ⊡ or ⊡ button to adjust.

3. Press the ✎ button again, hour digits are flashing instead of day indicator. Press ⊡ or ⊡ button to adjust. Press and hold the ⊡ or ⊡ button will speed up the adjustment rate.

4. Press the ✎ button again, minute digits are flashing instead of hour digit. Press ⊡ or ⊡ button to adjust. Press and hold the ⊡ or ⊡ button will speed up the adjustment rate.

5. Press the ✎ button again to return to normal operation mode.

6. The unit will return to normal operation mode if no key is pressed for 10 seconds.

SETTING CONTROL TEMPERATURE

1. Press the ⊘ button to display the pre-defined set temperature.

2. Press the ⊜ button to toggle between the setting of economic mode and comfortable mode.

3. Press the ⊡ or ⊡ button to increase/decrease the set temperature by 0.5 ºC.

4. Press the ⊘ button again to save the set temperature.

5.The unit will back to normal operation mode if no button is pressed for 10 seconds.

6.The default setting of comfortable mode is 21ºC for heater and 23ºC for cooler mode. And the economic mode is 18ºC for heater mode and 26ºC for cooler mode.
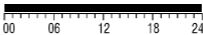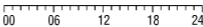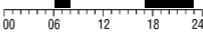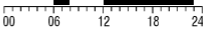
SETTING PROGRAM

Select Week-Day

1.Press the ⌨ button, the day indicator shows the program day and is flashing. Program number indicator shows the current program for the selected day.

2.Press the ⌨ or ⌨ button to select the day needed to program. You can select the whole week, working day, weekend, or individual day to program.

Select Control Profile - Pre-defined

1.Press the ⌨ button again, the day indicator stop flashing and the program number starts flash.

2.Press the ⌃or ⌄ button to select the program profile. P1-P6 are predefined program, their profile are shown as follows.

Program number	Program profile
Program 1 : Factory Preset "Whole day Comfort"	� from 00 to 24 (full) 00 06 12 18 24
Program 2 : Factory Preset "Whole day Econ"	(empty) 00 06 12 18 24
Program 3 : Factory Preset "Holiday"	bar from ~06 to 24 00 06 12 18 24
Program 4 : Factory Preset "Whole day (A)"	two bars near 06 and 18-24 00 06 12 18 24
Program 5 : Factory Preset "Whole day (B)"	bars near 06, 12, 18-24 00 06 12 18 24
Program 6 : Factory Preset "Half-day work"	bar near 06 and 12-18 00 06 12 18 24

where the black dot ■ means the selected hour is set to comfortable mode, else economic mode is selected.

3.If any of these programs is selected, press the ▭ button again to confirm this program for the specified day and back to normal operation mode.

User-defined Control Profile

If user-defined program number is selected (P7-P9), press the ⊡ button will stop flashing of the program number and start flashing the control profile bar with displaying the selected hour.

Example:
Hour Dight(Clock) is 0 and the 00 hour bar is flashing. ☼ icon is on if previous setting is comfortable mode, else ☾ icon is on.
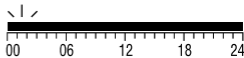e.g. Hour 00-23 are comfortable mode.

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 \ | /
 ‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾
00   06   12   18   24
```
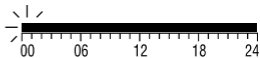
2.Press the ▭ or ▭ button will increase or decrease the setting hour by one, the ☼ or ☾ icon will be turned on according to the previous setting.
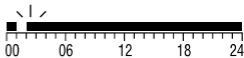

Example:
▭ button is pressed.
Hour Digit (Clock) is 1 and the 01 hour bar is flashing. ☼ icon is on and the operation mode for hour 00 is unchanged, i.e., at comfortable mode.

```
 \ | /
 ‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾
00   06   12   18   24
```

15

3.Press the ⌇ button will toggle the control temperature setting and advance the setting hour digit by one.
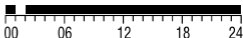
Example:
⌇button is pressed. Hour Digit (Clock)is 2 and the 02 hour bar is flashing. ☼ icon is on and the operation mode for hour 01 is toggled to economic mode.

```
      ＼ ｜ ／
 ▔   ‐　‐
00    06    12    18    24
```

4.Press the ▭ button will terminate the setting procedure and back to normal operation mode.

Example:
▭ button is pressed. Terminate the setting procedure and the new control profile is :

```
 ▔
00    06    12    18    24
```

5.The setting procedure will terminate automatically when no button is pressed for 10 seconds.

16

TEMPORARY OVERRIDE

Override the Operation Mode

At the normal operation mode, press the ⟳ button will toggle the current set temperature to comfortable mode or economic mode. If the operation mode is being override, the ✎ icon will be turned on with the current operation mode icon.

Override the Setting Temperature

1.At the normal operation mode, the current set temperature can be override by pressing the ⏶ or ⏷ button. When override, the new set temperature will be displayed with turning on the ✎ icon and off both the ☼ and ☾ icon.

2.Press other button (except the ⏶ or ⏷ button) will terminate the setting procedure and back to normal mode with the new setting.

3.The unit will back to normal operation mode automatically when no button is pressed for 10 seconds.

ANIT-FREEZING MODE

1.Pressing the ⏶ and ⏷ buttons simultaneously will activate the anti-freezing mode (for heater mode only).The ❄ icon and the ✎ icon will be turned on while both the ☼ and ☾ icon will be turned off.

17

2.Pressing any button will terminate the anti-freezing mode and back to normal operation mode.

3.The default set temperature of the anti-freezing mode is 7ºC.

BATTERY REPLACEMENT

It is recommended to replace the batteries when the display is showing the ▬▬. To replace the battery,

1.Turn off your heater or cooler first.

2.Remove the front housing of the thermostat.

3.Replace the old batteries with 2 new AA alkaline batteries.

4.Replace the front housing.

5.Press the reset button once and then turn on the main switch of the system.

SPECIFICATION

Physical Characteristic

Size   116 x 100 x 23.5 mm
Weight   220 gram

Electrical Characteristic

Power Source   2 AA (LR6) batteries
Switching cap   250 VAC 50 Hz Maximum
                        5 A for resistive load
                        3 A for inductive load
Clock accuracy   +/- 60 seconds/month
Temp. measurement   0 ºC to 40 ºC in 0.5 ºC resolution
Temp accuracy   +/- 1 ºC at 20 ºC
Temperature Control   7 ºC to 30 ºC in step of 0.5 ºC
Span   1,2,3 or 4 ºC
Air conditioner cycle time   3 minutes
Operation temperature   0 ºC to 40 ºC
Storage temperature   -10 ºC to 60 ºC