

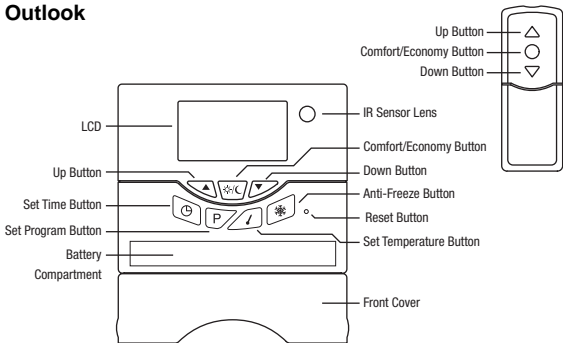
**-092**

**Remote Programmable  
Thermostat**

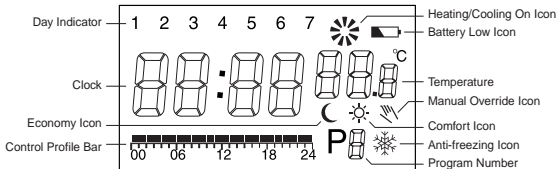
# Introduction

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. This thermostat has added an auto-recovery feature which provides better temperature setting and control. The remote control can also override the set temperature in a more convenient way, especially for people with impaired movement.

## Outlook



# LCD



## Features

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

- Auto recovery to the comfortable mode set temperature at the pre-set time.
- LCD shows “need to know” information only, making it more easy to understand.
- Real-time clock with day of week display.
- Room temperature display.
- Control profile display.
- Simplified temperature adjustment.
- Simplified programming procedure.

- 6 pre-defined control profiles, 3 user-programmable control profiles.
- Anti-freeze protection.
- Temporary set-temperature override.
- Remote temperature override setting using an IR remote controller.
- User-selectable temperature span.
- User-selectable Heating/Cooling operation mode.
- Battery level detection/display.

## **Installation**

### **CAUTION:**

1. The thermostat can only be mounted on dry indoor places, and used under normal polluted environment.
2. A suitable fuse with a rating not exceeding 8A should be in the power line.
3. Observe national regulations for wiring.
4. It is recommended that installation and servicing be carried out by a qualified electrician

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 the old thermostat/ Installing the programmable thermostat***

**CAUTION** : to avoid electric shock, turn off the power of the Heating/Cooling system at the main power box. Read the following instructions carefully before disconnecting the wires.

1. Turn off the 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), a 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 from penetrating the thermostat. By doing this, the thermostat will operate correctly.

## **Choosing a Location**

Note: for a new installation, choose a mounting location about five feet (1.5 meters) above the floor in an area with good air circulation and away from:

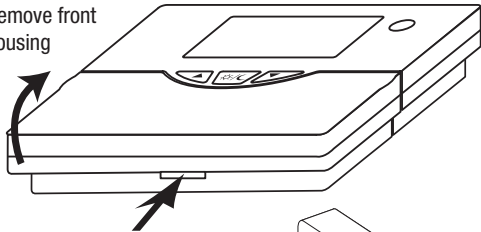
1. Areas or corners where there is no air circulation.
2. Air ducts.
3. Radiant heat from the sun or appliances.
4. Concealed pipes and chimneys.

## **Mounting**

Mounting the thermostat onto the wall.

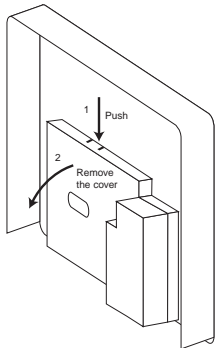
1. Completely remove the front housing of the thermostat.

Remove front  
housing



Press

2. Remove the cover over the connector.



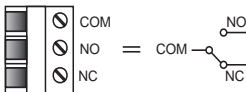
3. Mark the holes position and align the wire coming from the wall in the hole beside the connectors.
4. Drill two holes and insert the plastic anchors carefully into the holes until they are flush with the wall.
5. Fasten the thermostat to securely the wall with the two screws.

## Connecting the Wires

1. Connect the system wires to the terminals according to the wiring diagram shown in the section “WIRING DIAGRAM”.
2. Push the wires back into the wall, seal the hole in the wall and replace the cover over the connectors.

## Wiring Diagram

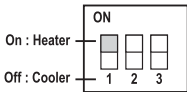
The thermostat can be used with any single stage Heating or Cooling system. Inside the thermostat, you will find three terminals which are labeled as **COM**, **NO** and **NC**. It is a typical single pole, double throw (SPDT) contact. Connect your Heating/Cooling system to the terminal **COM** and **NO** (or **NC**, depends on the type of Heating/Cooling system). In most case **COM** and **NO** are used.





## Heating/Cooling Selection

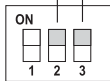
Inside the front cover, you will find the DIP switch. These three switches are used to control the span and the Heating/Cooling system. **The DIP switch must be set before installing the batteries. Once the batteries are installed, you cannot change from heating to cooling (or from cooling to heating) unless the batteries are removed or pressing the reset button.** Set the DIP switch (position 1) according to your selection of Heating system or Cooling system as the shown in following diagram.



## Temperature Span Selection

Span is the temperature difference between the turn-on temperature and turn-off temperature. For example, if you set the temperature to 20°C and the span to  $\pm 0.5^{\circ}\text{C}$ , the Heating system will operate when the room temperature drops to 19.5°C and turn off when the temperature rises to 20.5°C. Set the DIP switch (position 2 & 3) according to your selection of temperature span as shown in the following diagram.

2	3	Span
ON	ON	+/- 0.25 °C
ON	OFF	+/- 0.5 °C
OFF	ON	+/- 0.75 °C
OFF	OFF	+/- 1 °C



## Battery Installation

Your thermostat uses two (2) “AA” size **alkaline** batteries. To power-up the unit, insert two “AA” batteries into the battery compartment. Be sure to observe correct polarity (+ and -).













When power is applied for the first time, the display should show the time and the day as well as the room temperature (for example 28.5°C) as follows:








If the display is different, press the **RESET** button by using a fine probe such as a straightened paper clip to gently push the RESET button. Turn on the main switch of the system. The thermostat is ready for use.

For the remote unit, open the cover of the battery compartment and install 2 AAA **alkaline** batteries. Be sure to observe correct polarity (+ and -).

## Setting Clock




1. Press the  button to clear all digits except the day indicator and the time display. The Day indicator will flash.
2. While the Day indicator is flashing, press  or  button to set the correct day.
3. Press the  button again, and the hour digits will flash instead of the day indicator. Press  or  button to set the present time. Note that pressing and holding the  or  button will speed up the adjustment rate.
4. Press the  button again, and the minute digits will flash instead of the hour digits. Press  or  button to set the present time.
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 economy mode and comfortable mode.
3. Press the  or  button to increase/decrease the set temperature by 0.5°C.
4. Press the  button again to save the set temperature.
5. The unit will return to normal operation mode if no button is pressed for 10 seconds.
6. The default setting of comfortable mode is 21°C for Heating mode and 23°C for Cooling mode. And the economy mode is 18°C for Heating mode and 26°C for Cooling mode. When the user adjusts the set temperature, the temperature of comfortable mode should be higher than the temperature of economy mode for Heating. For Cooling mode, the set temperature of comfortable mode should be lower than economy mode. Otherwise, the auto-recovery function will be activated only at economy mode.


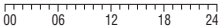

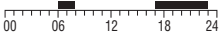

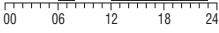
## Setting Program

### Select Week-Day


1. Press the  button, and the day indicator will show the program day and will flash. The program number indicator will show 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, and the day indicator will stop flashing and the program number will start flashing.
2. Press the  or  button to select the program profile. P1- P6 are predefined programs; their profiles are shown below.

Program Number	Program profile
Program 1: Factory preset "Whole day Comfort"	
Program 2: Factory preset "Whole day Econ"	
Program 3: Factory preset "Holiday"	
Program 4: Factory preset "Work day(A)"	
Program 5: Factory preset "Work day(B)"	
Program 6: Factory preset "Half-day work"	



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

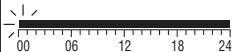
3. If any of these programs is selected, press the  button again to return to normal operation mode.





## User-defined Control Profile



1. If a user-defined program number is selected (P7-P9), press the  button to stop the program number flashing and display the control profile bar with the selected hours.

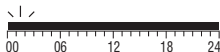
Example:


Hour Digit (Clock) is 0 and the 00 hour bar is flashing.  icon is on if previous setting was comfortable mode, else  icon is on, e.g. Hour 00-23 are comfortable mode.





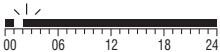
2. Press the  or  button to increase or decrease the setting hour by one. The  or  icon will be turned on according to the previous setting.


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.




3. Pressing the  button will toggle the control temperature setting  
and advance the sett 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 set to economy mode.



4. Pressing the  button will terminate the setting procedure and  
return to normal operation mode.


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



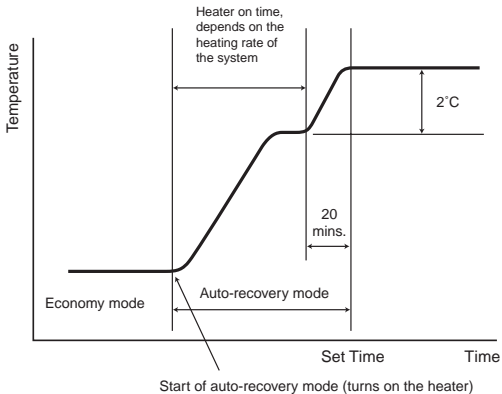


5. The setting procedure will terminate automatically when no button is pressed for 10 seconds.

## Auto-recovery Mode



The thermostat has an auto-recovery function that brings your room temperature to the set temperature of comfortable mode exactly at the pre-set time by turning on the Heating/Cooling system earlier. When it finds that the operation mode needs to change to comfortable mode at the coming hour, it will turn on the Heating/Cooling system for a short period to estimate the Heating/Cooling rate. Then, the thermostat will continuously monitor the room temperature and estimate the time required to heat-up/cool-down the room temperature to the set temperature of comfortable mode. Once the unit finds that the remaining time is just enough to bring the room temperature to the set temperature of comfortable mode, it will turn on the Heating/Cooling system, with flashing the comfortable mode icon .

Any key press during the auto-recovery mode will terminate the process immediately and return to the current operation mode.










## Temporary Override

### Override the Operation Mode

At the normal operation mode, pressing the  button will toggle the current set temperature to comfortable mode or economy mode. If the operation mode is in 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 set to override by pressing the  or  button. When in override, the new set temperature will be displayed with the  icon, while both the  and  icon will be turned off.
2. Pressing any other button (except the  or  button) will terminate the setting procedure and return to normal mode with the new setting.
3. The unit will return to normal operation mode automatically when no button is pressed for 10 seconds.








### Override the Temperature Setting by Remote Control

The buttons on the remote control unit have the same override function as the main unit at normal operation mode. To override the set temperature of the main unit, **press and hold** the button of the


remote control unit until the LCD display changes.

1. **Press & hold** the  or  button again will increase or decreasing the set temperature by 0.5°C.
2. **Press & hold** the  button will toggle the current set temperature to comfortable mode or economy mode.
3. The unit will return to normal operation mode automatically when no button is pressed for 10 seconds

## Anti-freeze Mode/Off Mode

1. Pres the  button will activate the anti-freezing mode (for Heating mode only). The  icon and the  icon will be turned on while both the- and  icon will be turned off.
2. For Cooling mode, pressing the  button will set the thermostat in off mode. In off mode, the unit only display the clock and the weekday.
3. Pressing  button again will terminate the anti-freezing mode/off mode and return to normal operation mode.
4. The default set temperature for anti-freezing mode is 7°C.

## Battery Replacement

It is recommended the batteries be replace when the display is showing the  icon. To replace the battery,

1. Turn off your heater or cooler first.
2. Remove the front cover.
3. Replace the old batteries with 2 new AA **alkaline** batteries.
4. Replace the front cover and turn on the main switch of the system.

**CAUTION: Used batteries must be disposed properly.**

## Specification

### Physical Characteristics

Size	116x95x21mm (main unit)
Weight	220 gram

### Electrical Characteristics

Power Source	2 AA(LR6) <b>ALKALINE</b> batteries (Main unit) 2 AAA <b>ALKALINE</b> batteries (Remote Control Unit)
Switching cap	250 VAC 50 Hz Maximum 8 A for resistive load 3 A for inductive load
Clock accuracy	+/- 60 seconds/month
Temperature measurement	0°C to 40°C in 0.1°C resolution

Temperature accuracy	+/- 1°C at 20°C
Temperature Control	7°C to 30°C in step of 0.5°C
Span	+/-0.25, +/-0.5, +/-0.75, +/-1°C
Minimum air conditioner off time	3 minutes
Operation temperature	0°C to 40°C
Storage temperature	-10°C to 60°C
IR remote distance	6 meters