Programmable Thermostat
TH-9520B/TH-9520H

Operational Guide

Introduction
This thermostat is a digital programmable Heating or Cooling temperature control unit. It can be used for use with most heating or cooling systems. Please take a few moments to read through this manual before you begin to install or operate your thermostat.

Note
This thermostat cannot control multistage heating or air conditioning systems.

Warning
Wiring work can be dangerous! Please consult with a qualified electrician or a contractor.

Specification
Physical dimensions
L: 73.4mm W: 73.4mm H: 30mm
Maximum Relay contact rating
7 (3)A /250V
Power Supply
TH-9520B – Battery 1.5V AAA x 2
TH-9520H – 24Vac or 240Vac selectable by wiring
Temperature scale
Celsius
Temperature differential
0.5℃
Temperature adjustment
1° Celsius steps
Sampling resolution
1 minute
Compressor protection delay
3 minutes
Temperature display range
0° ~ 45° Celsius
Temperature control range
5° ~ 35° Celsius
Programming periods

Monday Sunday : 6 periods/day
Program mode
5:2d / 7d / 7ds (Factory default: 7D)
Programming resolution
10-minute steps

Thermostat location
1. The thermostat should be on the inside wall of a room that is often used, approx. 5 ft (1.5m) above the floor.
2. Avoid areas that exhibit unusual heating or cooling conditions such as in direct sunlight, near a fireplace, stove register, door, window or stair well.
3. Be aware of furnishings, which may block airflow, or alter temperature such as sofas, chairs, bookcases, track lighting, lamps, stereo components and television sets.
4. Hot water pipes in the wall, a stove, refrigerator, or fireplace on the other side of a prospective wall may affect the accuracy of your thermostat.
5. Locating any control in a damp area will cause corrosion, and shorten the life of the control.
6. Do not install where air circulation is poor (i.e. In a corner, or an alcove, or behind an open door).
7. All construction work and painting should be complete before installing unit.
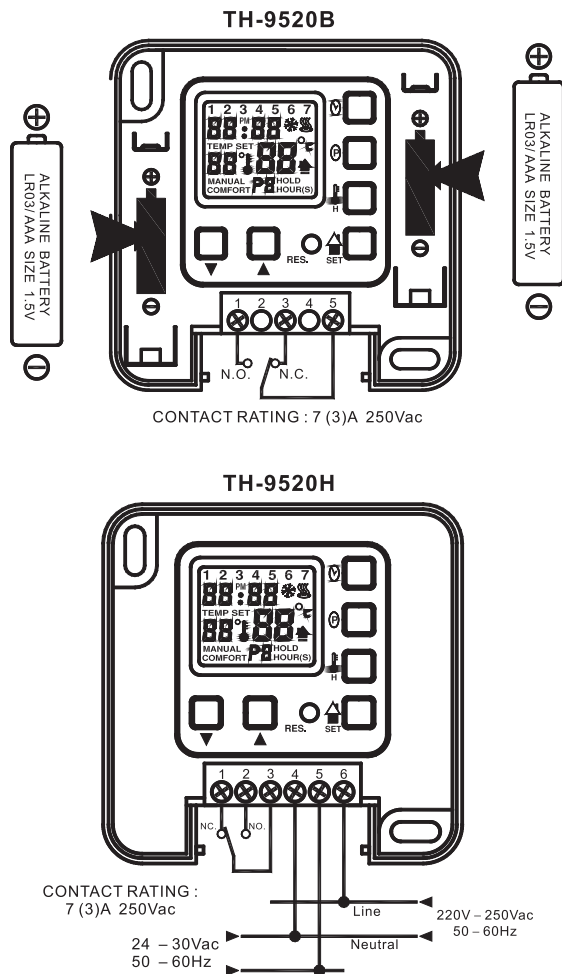8. This thermostat does not require levelling.

Packing list
Thermostat unit……………………………………*1
Self-tapping screw #5 * 3/4……………………*2
Anchor 4φ *20 …………………………………*2
Operational manual……………………………*1

Optional accessory
Back plate…………………………………………*1
Self-tapping screw 3 * 6……………………………*2
(Depending on different model you purchased, this pack may not have optional accessories included.)

Wiring Diagram
Follow wiring-guide as below Illustration, mistaking in connecting electricity system to thermostat will cause permanent damage.

TH-9520B

CONTACT RATING : 7 (3)A 250Vac

TH-9520H

CONTACT RATING :
7 (3)A 250Vac
24 – 30Vac
50 – 60Hz
Line
Neutral
220V – 250Vac
50 – 60Hz

Mounting & installation
1. Firstly, if the back plate is provided (it is an optional accessory), mount it on the wall with two anchors (4 φ * 20) and two screws (#5 * 3/4) (figure A), then install the thermostat on the back plate with two screws(3 * 6).
   Figure A: Back plate
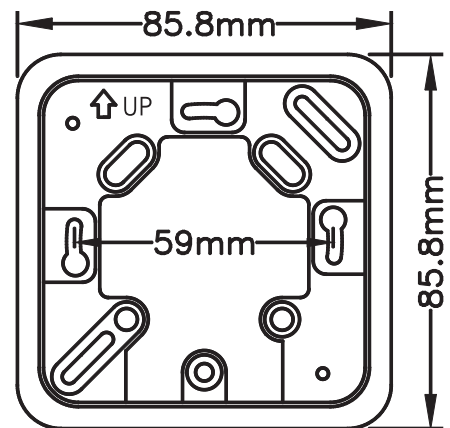2. Chose any two holes for mounting.

Fig. A

3. Look for a location which has a constant temperature in the house and it is not near the door entry or air conditioning outlet (see example on Figure 1).
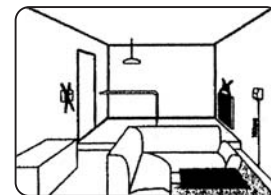

Fig. 1

4. Warning!! Must remember to turn off your main power switch before installation of the thermostat.
5. Dismantle the front cover by using a screw driver pressing a hook on the top of the front cover.(see Figure 2). Pull the front cover out with your hand holding on two sides of the cover. (see Figure 3)
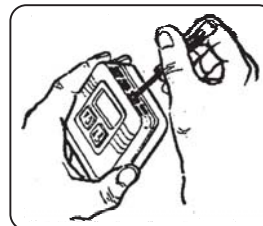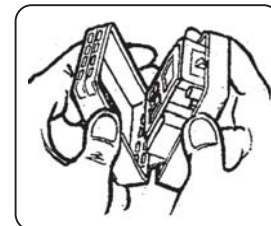

Fig. 2

Fig. 3

6. Mount the base with the wire through the holes of the base and mount the base with screw driver on the wall (see Figure 4).

Before you install the wires, you MUST check your system wiring diagram. If your system is other than this type, please consult with your local dealer or a profession electrician.
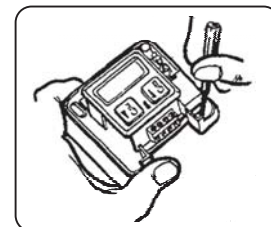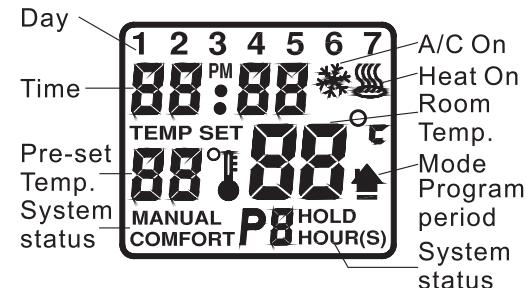

Fig. 4

7. Cover the front cover back to the base and make sure the hooks on the base are locked with the front cover.
8. You can turn on the main power switch for operation.

LCD Feature

Day · Time · Pre-set Temp. · System status · A/C On · Heat On · Room Temp. · Mode · Program period · System status

Operation mode setting
There are three operation modes can be chosen: 5:2D , 7DS or 7D.

Mode 5:2D(It's 5+1+1D practicable)
When 5:2d mode is chosen, weekdays will be recognised as a single event. Saturday and Sunday considered as two independent events.

Mode 7D
When 7d mode is chosen, weekdays, Saturday and Sunday will all be recognised as a single event.

Mode 7DS
When 7ds mode is chosen, either weekdays, Saturday and Sunday will be recognised as independent events.

Mode setting
Press the 🔘 RES. button then the LCD screen will display all symbols for about 5 seconds, afterwards, LCD screen will display "7d" (factory default). (Figure 5-1)
It will appear for another 5 seconds, pressing the ▲ and ▼ button can change the setting to 7d, 5:2d or 7d:S.
When it is set, press the SET button then your setting will be recorded. (Figure 5-2, 5-3)
However, mode can be re-set at any time, by press and hold the SET button and then press the 🔘 button together.
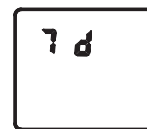

Figure 5-1

Figure 5-2

Figure 5-3

Factory pre-set schedule of time and temperature:

DAY	Period	Heat On	
		Time	Temp.
Monday | Sunday	1	7:00	20°C
	2	9:00	17°C
	3	12:30	20°C
	4	15:00	19°C
	5	17:30	22°C
	6	23:00	17°C

DAY	Period	A/C On	
		Time	Temp.
Monday | Sunday	1	7:00	24℃
	2	9:00	26℃
	3	12:30	24℃
	4	15:00	23℃
	5	17:30	24℃
	6	23:00	26℃

Clock setting

1. To begin setting the clock press the ⊙ button. The day of the week will start flashing. Use the ▲ and ▼ button to select the current day. (Figure 6)

Figure 6

2. Press the ⊙ button again to set hour, the display will flash the hour digits. Use the ▲ and ▼ buttons to select current hour. (Figure 7)

Figure 7

3. Press the ⊙ button again to set minute, the display will flash the minute digits. Use the ▲ and ▼ buttons to select current minute. (Figure 8)

4. Press the ⊙ button will continue cycling through the options. When set is completed, press the button to save current time and return to normal operation. The display will stop flashing.

Figure 8

Warning

The date and time must have been set as described in the earlier section

Program setting

1. To change a program memory, press and hold the button and then press the ℗ button together. The display shall indicate " day of week " by " Flashing " on LCD, for users to select which " day of week " users wants to making adjustment.

2. Press ▲ or ▼ to select day of week. Upon finished selecting " day of week " pressing ℗ to start setting for all 6-program- period in the Daily-programming-block (Each of 5+1+1D, 7DS, 7D has individual program-block defining. On LCD display, it flashes digits on top of LCD-display subject to user's selection of day of week) (Figure 12)

3. Use the ▲ button to set the time forward. Use the ▼ button to set time back. Each press will make a 10-minute different. If the start time did not require changing, press the ℗ button to move to the temperature set. (Figure 13)
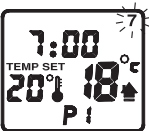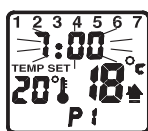

Figure 12   **Figure 13**

4. Use the ▲ and ▼ buttons to adjust the temperature, (Figure 14) or if the set temperature did not require changing, press the ℗ button to move to the next period.
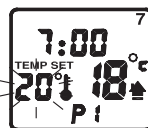
5. Continue cycling through each period and day to set temperature and time schedule.
Once all the adjustments are done, press the button to save your program setting and then return to normal operation.

Figure 14

NOTE:

When 5+1+1D chosen, after finished all desired setting for Monday to Friday, user must to press to return to main screen and then repeat procedure of program-setting 1 & 2. to set desired setting for Saturday and Sunday.

When 7DS chosen, at final setting of each "day of week"(TEMP SET of 6th program of that day) LCD shall remind users by digit-flashing on top of LCD-display for making adjustment for day following or before. When read digit-flashing, pressing ▲ or ▼ to select "day of week" to continue setting.

Program review

To review and not to change any program memory. press the ℗ button to enter program-review mode.
The display shall indicate the first period(P1) and show the start time and the temperature set for P1. Continue to press the ℗ button will display the next program period in the same program-block. (Each of 5+2D,7DS,7D has individual program-block defining)
Or to press ▲ or ▼ to move to the next daily-programming-block, pressing the button to return to normal operation. When program review finished.

Hold mode

1. By simply pressing the button, the thermostat will place into hold mode, and then the LCD display will appear the HOLD icon. (see Fig.15)

2. Use the ▲ and ▼ button to set your desired temperature; when it is done, release buttons and wait for 10 seconds, then the setting will be maintained. (Figure 16)

Figure 15   **Figure 16**

3. Press the button to quit the "Hold mode" and return to normal operation mode.

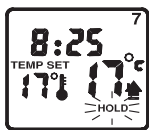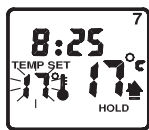### Warning

The thermostat will ignore the pre-set program and keep operating in "Hold" mode unless the "Hold" mode is deactivated.

Vacation hold

1. Follow the same procedure as "hold" to set temperature.

2. Press and hold the button for 3 seconds, the LCD display will appear the "d:00" icon. (Figure 17)

3. Use the ▲ and ▼ button to set how many days you want vacation hold to last; when it is done, release buttons, then the setting will be maintained.
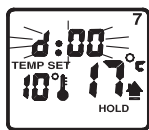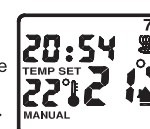

Figure 17

4. Press the button to quit the "Vacation Hold" mode and return to normal operation mode.

Temporary override

1. By simply pressing the ▲ or ▼ button, the thermostat will place into a manual operation mode, and then the LCD display will appear the MANUAL icon. (Figure 18)

2. Use the ▲ and ▼ button to set your desired temperature; when it is done, release buttons and wait for 10 seconds, then the setting will be maintained until the next period. (Figure 19)

Figure 18

3. Whenever you wish to quit this mode, press the button to return to normal operation mode.

Time left of override period
Figure 19

Comfort override

1. Follow the same procedure as "Temporary override" to set temperature.

2. Press the ⊙ button; the LCD display will appear the COMFORT symbol. (Figure 20)

3. Use the ▲ and ▼ button to set how many hours you want comfort override to last; when it is done, release buttons, then the setting will be maintained. (Figure 21)

Figure 20

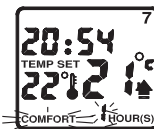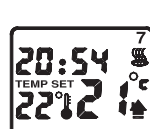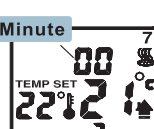4. Whenever you wish to quit this mode, press the button to return to normal operation mode.
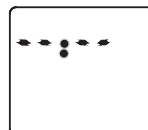

Time left of override period
Figure 21

Reset

If the unit does not work properly or the unit begins to perform erratically, press the button with a small blunt object to reset the unit; you will need to re-input some of the settings i.e. day, time programme schedule etc.

However, if resetting system does not help, please contact your local dealer at your earliest convince for help.

Erase program setting memorized in EEPROM

Press and ▼ together and hold, LCD display shall show

Pressing RES. . Then, to restart all programming procedure to your own preference.

Compressor protection

This thermostat is designed to provide protection to heating /cooling system from too frequent ON/OFF.
There is 3-minute restart delay function built-in thermostat's programs.

Once compressor or heat-pump are shut-off they will not re-activate in 3 minutes. (This control-logic covers when "each occasion that temperature-setpoint reached)

Temperature Calibration

It is possible your thermostat does not indicate the real room temperature due to miss-located or direct sun light etc.

Yet there is a function within this thermostat to rectify this deviation, which is temperature-reading adjustment.

Press and hold the and then press the ▲ button, then LCD screen will display AL:0 (Figure 22).

Press the ▲ and ▼ button to adjust temperature reading, each press will increase/decrease 0.5℃ of indicate reading (±6 steps, up to ±3℃). (Figure 23)
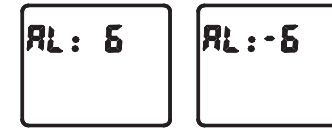

Figure 22

Figure 23

When setting is done, press the button, the thermostat will save your change automatically.

Manual operation/Hold:

This mode will be in affect until the Manual operation/Hold mode is relieved.
It means, if the mode is not relived, the unit will keep running this setting forever.

Vacation Hold:

This mode will be in affect within the period that you have set; the period limit is up to 99 days.

Temporary Override

This mode will be in affect g until the next period begins, then the Temporary Override mode is relived automatically.

Comfort override:

This mode will be in affect within the period that you have set; the period limit is up to 9 hours.

NOTE

If you should encounter any difficulties in the use of this thermostat, please contact the company who selected this thermostat for you. This would most likely be the contractor who installed your heating and cooling systems. Beside, you maybe able to get help from any local heating and cooling contractors if you purchased this thermostat yourself.

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