

TH-2005 EXCEL PROGRAMMABLE THERMOSTAT USER'S GUIDE (E-Series)

This large LCD display thermostat series comprises 6 models with same two sizes of plastic housing. Application of this thermostat covers Heating, Fancoil and Floor-Heating.

Please take some moment to read this user's guide before begin use of thermostat.

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Choosing location for INSTALLATION

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For obtaining thermostat's best performance upon using, recommend user to follow up with precaution listed below.

- Place thermostat on wall inside the room approximate 1.5 meter above floor.
- Avoid position where temperature sensing easily interfered by ambience, such as, directly exposed to Sun-Light, too near to any Heat-Generate devices/refrigerator, right next to entrance/exit/window, etc.
- Prevent thermostat from installed at position that furniture may interfere air-flow, stagnant air-flow location is not suitable for installing thermostat.
- Keep thermostat away from high humid ambience, high humidity is hazardous to thermostat's operational duration,
- It's crucial, before installing thermostat, make sure house renovation is finished, no tacky painting/plaster is right on thermostat's installing position.
- To level thermostat prior to installation is not necessary

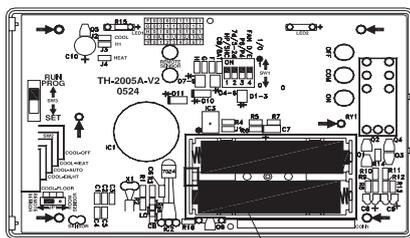
START INSTALLATION

- How to open top housing

2



- How to install battery (For Battery Model only) 2 x AA



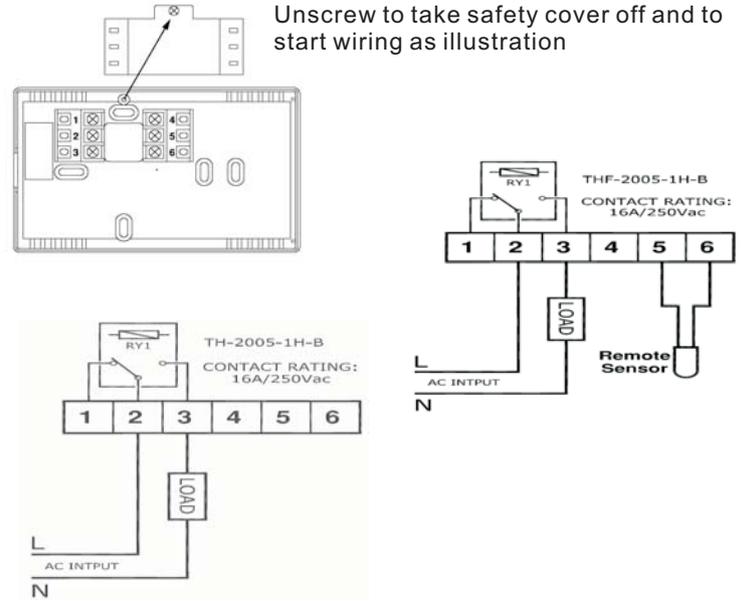
BATTERY 1.5V "AA" *2pcs

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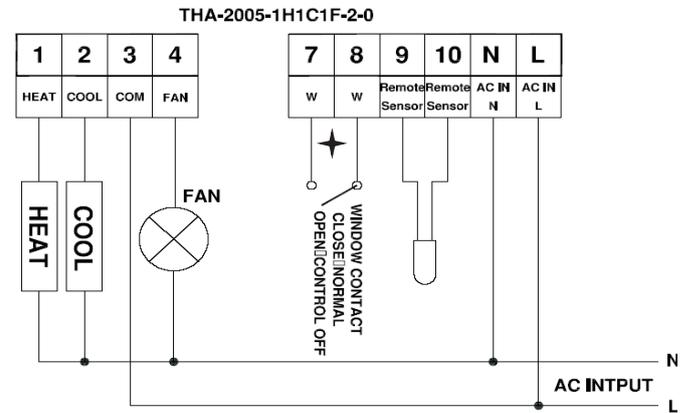
WIRING – Battery Operate Model

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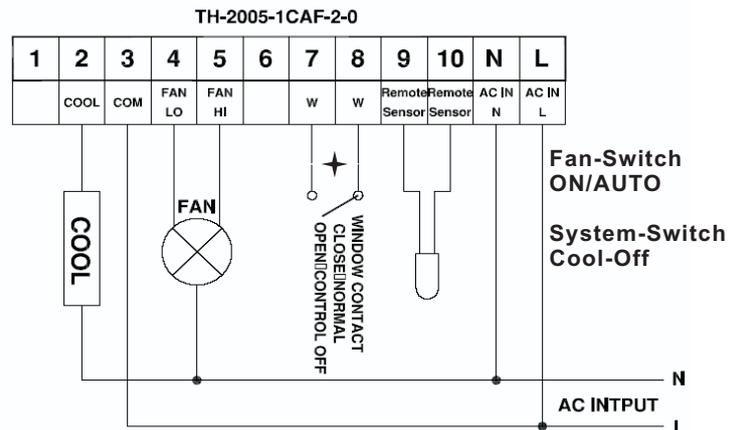


WIRING – Line Voltage Model

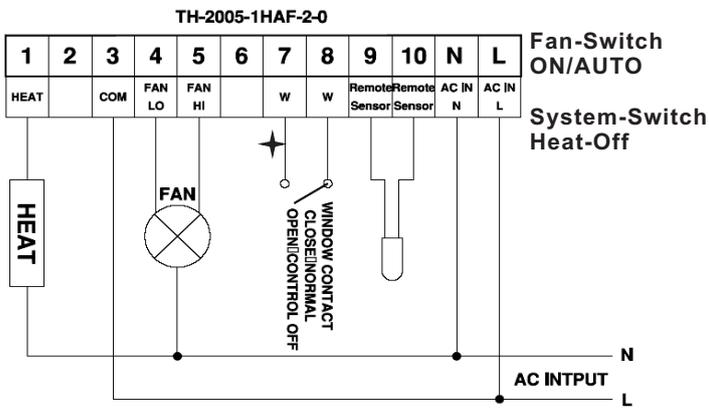
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THA-2005-1H1C1F-2-0(Line-Voltage-Model) Preset HP



TH-2005-1CAF-2-0(Line-Voltage-Model) Preset SHC

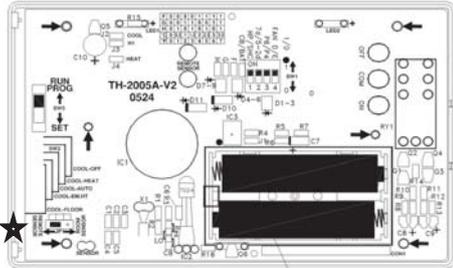


TH-2005-1HAF-2-0(Line-Voltage-Model) Preset HP

WINDOW CONTACT: Terminal 7 & 8 shorted by wire upon shipping thermostat., when it is Disconnected, Heat/Cool/Fan Output will be Cut-Off. This special-made mechanism is for extensional ON/OFF control purpose. Please do not take wire off terminal 7 & 8 unless WINDOW-CONTACT Function shall be in use.

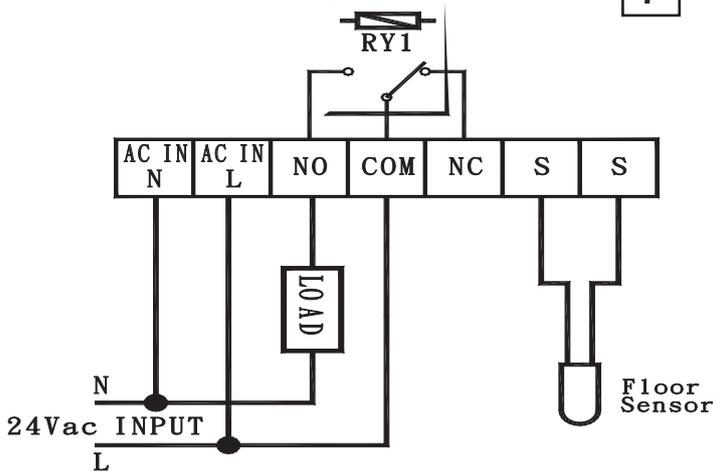
Changing Jumper" position accordingly if users wants to select Remote-sensor to command thermostat.

"JP1"(Jumpered position on PCB) shown as Figure on the right.



BATTERY 1.5V "AA" *2pcs

WIRING-- Floor-Heating



INTERNAL SETTING BY FACTORY PRESET (UPON ORDERING)

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- 1—Preset Cool or Heat on Battery-Operate models, preset Heat only on Floor-Heating model.
- 2—HP/SHC mode selection by preset.
HP : 3-minute Delay-start-protection works in both Heating and Cooling.
SHC : 3-minute Delay-start-protection works in Cooling only.
- 3—7d/5-2d : Day-Program period(event) by preset
- 4—P6/P4 : 6 or 4 Program period(event) per day by preset.

Model Descriptions & Specs

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Model NO.	TH-2005-1H-B-0	THF-2005-1H-B-0	THF-2005-1H-3-0/CB	TH-2005-1HAF-2-0/CB	TH-2005-1CAF-2-0/CB	THA-2005-1H1C1F-2*3-0/CB
Specs						
Operating Power	2 x AA 1.5V x 2 pcs	2 x AA 1.5V x 2 pcs	24 VAC	240 VAC	240 VAC	*2--24 VAC *3--240 VAC
Terminal Output	Dry Contact	Dry Contact	Dry Contact	Dry Contact	Dry Contact	Dry Contact
Contact Rating	16 AMP 250 VAC	16 AMP 250 VAC	16 AMP 250 VAC	7 AMP 250 VAC	7 AMP 250 VAC	7 AMP 250 VAC
System Switch				Heat-Off	Cool-Off	Heat-Off -Cool-Auto
Fan Switch				On/Auto (speed Hi-Lo Automatic)	On/Auto (speed Hi-Lo Automatic)	On/Auto
3-minute Delay Start	No	No	No	Yes	Yes	Yes
Purge (Fan Delay Stop)	No	No	No	Yes	Yes	Yes
Window Contact	No	No	No	Yes	Yes	Yes
Remote Sensor Control Function	No	No	No	Yes	Yes	Yes
Floor Heating	No	Yes	Yes	No	No	No
Cool or Heat	Preset Heat	Preset Heat	Preset Heat	Preset Heat	Preset Cool	By System Switch
Backlight	No	No	Optional	Optional	Optional	Optional

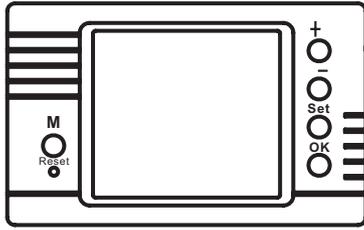
- *Large LCD Display 72 x 64 mm.
- *Interactive program setting pattern.
- *EEPROM Memory backup.
- *Temperature Display Range 0°C ~ 50°C/32°F ~ 122°F
- *Temperature Control Range Heat: 5°C ~ 35°C/41°F ~ 95°F Cool: 6°C ~ 36°C/43°F ~ 97°F Floor-Heating: 5°C ~ 45°C/41°F ~ 113°F
- *24H/12H Format selectable by programming.
- *6/4 program(ON/OFF)-period by factory preset.
- *7-day/5-2-day day-program by factory preset.
- *Switching Differential: 0.5°C-1.0°C/1°F-2.0°F selectable by programming.
- *Purge: Fan 90 seconds delay-off for use of residue energy in pipe.
- *Automatic Hi-Lo Fan Speed by Switching-differential. (1CAF/1HAF models only)
- *Remote-Sensor for distant temperature sensing and control.
- *Built-in room temperature sensor
- *Floor-Heating Model.
- *Auto-Change-Over Model available.
- *Heat-Cool Dead-band(Minimum Gap) 2°F/1°C
- *COPY function for programs setting.
- *3-Minute delay-start for energy saving, and system protection. (By factory preset)
- *Window-Contact for Energy saving.
- *Back-light (Optional)

START PROGRAMMING THERMOSTAT

* Within this program setting mode, Thermostat shall resume works 30 seconds after there is no any functional Command input.

Descriptions for KEY PADS

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+ / - :
Up / Down keys.

Set :
Programming
Selection

M : Override function
control keys.
Reset : Reset
Thermostat

ok :
Press to confirm
setting

PROGRAM SETTING:

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System Switch **must not be** pointed at "OFF" position, in models which has system-switches.

REMINDER

In programming-mode, if users want to stop programming thermostat, either to wait for 30 seconds, let thermostat automatic begin executing or press **SET** key twice and then press **OK** key, to set thermostat start executing programming.

If uncertain with programming procedure, please follow up with guidance by flashing display on LCD screen

PROGRAMMING FOR 7-D — Each of 7 days of week, be programmed separately. Thermostat has semi-interactive function to guide users in programming thermostat. Please follow up with flashing display to complete programming.

1. Press **SET** key to enter program setting, (users shall read temperature reading in flashing)
2. Press '+ or -' key to set Temperature setpoint for 1st program- period (event).
3. Press **OK** key to enter setting Time setpoint for 1st program-period (event),after temperature setpoint of 1st program-period completed. Users shall read "Hour & Start Time" in flashing.
4. Press '+ or -' key to set Time setpoint for 1st program-period (event).
5. Press **OK** key to enter setting Temperature setpoint for 2nd program-period (event),after Time setpoint of 1st program-period completed. Users shall read temperature reading in flashing again.
- 6 Repeat programming procedure above, to complete each of Temperature & Time setpoints for every program-period of day and rest of days in week..
7. When programming completed, pressing **SET** key **twice** and then press **OK** key to start executing programs.

COPY function —In 7-d format only

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* First to select any day of whole 7-day and to complete entire Temperature/Time setpoints to each program-period of the day. taking the selected day as **reference base** for this 'COPY' function.. (programming procedure same as description on 11)

1. Press '**SET**'key to enter program setting, and then press '**SET**'key again, users shall read '**From**' flashing on LCD.
2. Press '+ 'key to select any day in week whose daily program-period setting was completed. Taking this day as **COPY** reference.

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3. Press '**OK**' to confirm selected date of COPY reference, and enter '**copy programs to**'. LCD shall begin flashing '**To**' on screen after pressing '**OK**'.
4. Press '+ 'to select date that users want to copy programs to.
5. Press '**OK**' to confirm **COPY** setting, and continue selecting more days of week for "**copy programs to**".
6. Users can press '- ' to delete " days was set to copy programs. if wants to make changes.

PROGRAMMING FOR 5+2 D

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For 5+2D Program (all 5 weekdays shall have same programming Saturday & Sunday to be programmed separately)

1. Press '**SET**' key to enter program setting,.
2. Press '+ ' or '- 'to set Temperature setpoint for 1st program -period(event).
3. Press '**OK**' to enter setting Time setpoint for 1st program -period,after temperature setpoint of 1st program-period completed. Users shall read "Hour & Start Time" in flashing.
4. Press '+ ' or '- ' to set Time setpoint for 1st program-period (event).
5. Press **OK** key to enter setting Temperature setpoint for 2nd program-period (event),after Time setpoint of 1st program-period completed. Users shall read temperature reading in flashing again.
6. Repeat programming procedure above, to complete each of Temperature & Time setpoints for every program-period of weekdays(5-D).
7. Repeat programming procedure again to set setpoints for Saturday & Sunday after weekdays Temperature & Time setpoints was done.
8. Pressing "**SET**" key **twice** and then pressing "**OK**", to start executing programs.

FACTORY PRESET PROGRAMS PERIOD (INITIAL DEFAULT)

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Weekday	Time	Temperature	
		Switch on heat	Switch on cooling
Mon. ~ Fri.			
MORN(P1)	6:00	70 °F (21 °C)	75 °F (24 °C)
DAY(P2)	8:30	60 (15.5)	85 (29.5)
EVEN(P3)	4:30 PM	70 (21)	75 (24)
NIGHT(P4)	10:30 PM	65 (18.5)	80 (26.5)
Saturday	Time	Temperature	
		Switch on heat	Switch on cooling
MORN(P1)	7:00	70 °F (21 °C)	75 °F (24 °C)
DAY(P2)	8:30	70 (21)	85 (29.5)
EVEN(P3)	4:30 PM	70 (21)	75 (24)
NIGHT(P4)	10:30 PM	65 (18.5)	80 (26.5)
Sunday	Time	Temperature	
		Switch on heat	Switch on cooling
MORN(P1)	7:00	70 °F (21 °C)	75 °F (24 °C)
DAY(P2)	8:30	60 (15.5)	85 (29.5)
EVEN(P3)	4:30 PM	70 (21)	75 (24)
NIGHT(P4)	10:30 PM	65 (18.5)	80 (26.5)

Mode 5+2d P4 Factory Preset

* When choose P4, **NOON** and **BREAK** will vanish from screen.

Mon, Tue, Wed, Thu, Fri	Time	Temperature	
		Switch on heat	Switch on cooling
MORN(P1)	6:00	70 °F (21°C)	75 °F (24°C)
DAY(P2)	8:30	60 (15.5)	85 (29.5)
NOON(P3)	12:00pm	70 (21)	75 (24)
BREAK(P4)	2:00pm	60 (15.5)	85 (29.5)
EVEN(P5)	4:30pm	70 (21)	75 (24)
NIGHT(P6)	10:30pm	65 (18.5)	80 (26.5)
Saturday	Time	Temperature	
		Switch on heat	Switch on cooling
MORN(P1)	7:00	70 °F (21°C)	75 °F (24°C)
DAY(P2)	8:30	70 (21)	75 (24)
NOON(P3)	12:00pm	70 (21)	75 (24)
BREAK(P4)	2:00pm	70 (21)	75 (24)
EVEN(P5)	4:30pm	70 (21)	75 (24)
NIGHT(P6)	10:30pm	65 (18.5)	80 (26.5)
Sunday	Time	Temperature	
		Switch on heat	Switch on cooling
MORN(P1)	7:00	70 °F (21°C)	75 °F (24°C)
DAY(P2)	8:30	70 (21)	75 (24)
NOON(P3)	12:00pm	70 (21)	75 (24)
BREAK(P4)	2:00pm	70 (21)	75 (24)
EVEN(P5)	4:30pm	70 (21)	75 (24)
NIGHT(P6)	10:30pm	65 (18.5)	80 (26.5)

Mode 7-d p6 factory preset

- To program's logic, each day's ending time is at **11:59 in 12H-Format, 23:59 in 24H-Format.**
Therefore ; **do not set 12:00 PM for NIGHT(P4) nor 24:00 for NIGHT(P6).**
- Thermostat is designed to run programs by sequential order, do not set program either "overlap" In time sequence, nor non-sequential Time-setting in program setting, this will lead chaos to Thermostat's operational logic.

REMINDER

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TO USE OVERRIDE FUNCTION

*******System switch must not be At "OFF".**

There are 4 functions comprised.

- Temporary Override-** Change current Temperature setting until next program's executing.
 - Press **'+' or '-'** to adjust Temperature. (Temp. Set in flashing)
 - Wait for 10 seconds, thermostat shall automatically run this temporary override function, or to press **'OK'** to run (Users shall read **"Temporary Override"** displayed on LCD screen)
 - Upon **Temporary Override** is in executing, Press **OK** shall terminate its executing.
- Comfort Override** — Change current temperature setting and hold new setting for required hours. Thermostat shall resume its original programmed setting upon Comfort Override executing ceased.
 - Press **'MANUAL'** to enter.
 - Press **'+' or '-'** to adjust Temperature. (Temp. Set in flashing on LCD screen)
 - Press **OK** to enter selecting duration of comfort-override executing
 - Press **'+' or '-'** to set HOURS (minimum 1 hour).
 - Press **OK** to run **Comfort Override.**
 - Upon **Comfort Override** is in executing, Press **OK** again shall terminate this Override command.

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C. Permanent Hold Temperature — Change current temperature setting and to execute new setting permanently Until this command is called off. (by pressing 'OK')

- Press **'M'** key to enter setting mode.
- Press **'+' or '-'** to adjust Temperature. (Temp. Set in flashing on LCD screen)
- Press **OK** to run **Permanent Hold Temperature** function. (LCD display shall indicate its executing)
- Upon **Permanent Hold Temperature** is in executing, Press **OK** shall terminate this Override command.

D. Temperature Until.(Vacation Hold) — Change current temperature setting and to execute new setting till to specified date.

- Press **'M'** key to select this Override.
- Press **'+' or '-'** to set Temperature setpoint. (Temp. Set in flashing)
- Press **'OK'** to select desired duration of **Hold-Temperature Until.**
- Press **'+' or '-'** to select **Month** first and then Press **OK** again to select **Day**, using **'+' or '-'** again to select desired **DAY.**
- Press **'OK'** to run **Hold Temperature Until.**
- Upon **Hold Temperature Until.** is in executing, Press **OK** shall terminate its executing.

In Override setting mode, thermostat shall automatic enter its prior programmed operation, 30 seconds after, if users pending input any new command.

Keep to press **M** key, users shall read Override modes appears on LCD screen in sequence.

REMINDER

Please follow up with guidance by flashing on LCD screen

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TO ERASE MEMROY BACKUP (EEPROM)

Pressing 'OK' and '-' two keys together for 6 seconds, "Reset" shall appear on LCD display, then to press **"Reset"** key on Front housing, all previous setting shall be deleted, thermostat shall resume its factory preset program

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BACKLIGHT OPTION

(For Line-Voltage models only)

Pressing 'OK' and hold then pressing '+' to select 'BACKLIGHT' mode. On top left of LCD screen, users shall read indication by different graphic of "BULB", each of them stands for;

(when "Bulb" vanished from screen, Backlight function is off)



Backlight always "ON"



AUTO