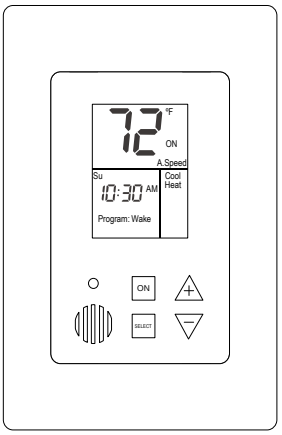
Installation

The FMT24-SUPER-FP-PROG is designed for flush mounting in the room to be controlled. It should be located where the occupant can easily read the LCD display and use the controls. If the built in temperature sensor is being used to measure room temperature, the module should be placed in such location which represents the room general conditions. Cold or warm air draughts; radiant heat and direct sunlight should be avoided.



General points to follow:

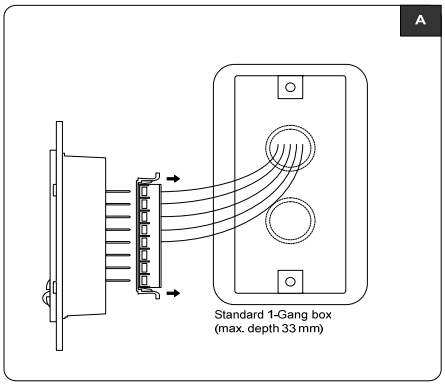
- Disconnect power to the main board before installing the unit.
- The unit MUST be fitted into a standard electrical box (Carlon – B114R or similar)
- The unit should not be installed on an outside wall or where there is an air draft.
- The unit must not be exposed to a direct sunlight.
- The standard height to install this unit is 1.5 meter (5 feet) from the floor.

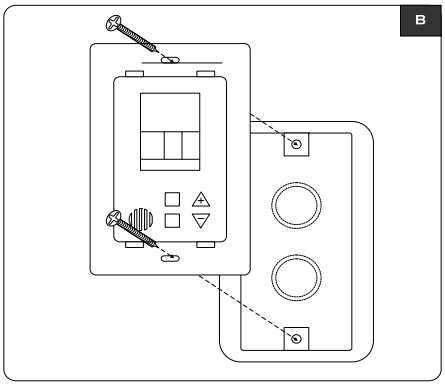
Installation procedure:

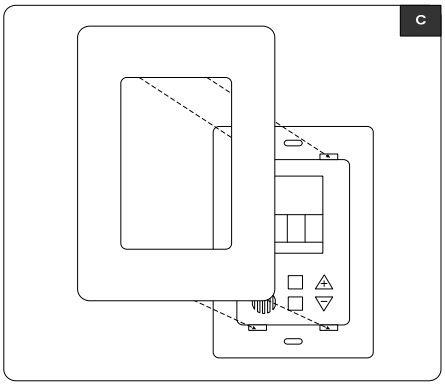
A. Connect the wires as shown in the wiring diagram section of this manual. All terminals accept 1x0.5 mm^2 /24 AWG.

B. Place the thermostat in the electrical box and tighten up the 2 screws.

C. Adapt the front frame-panel into its place, by pushing it towards the wall.







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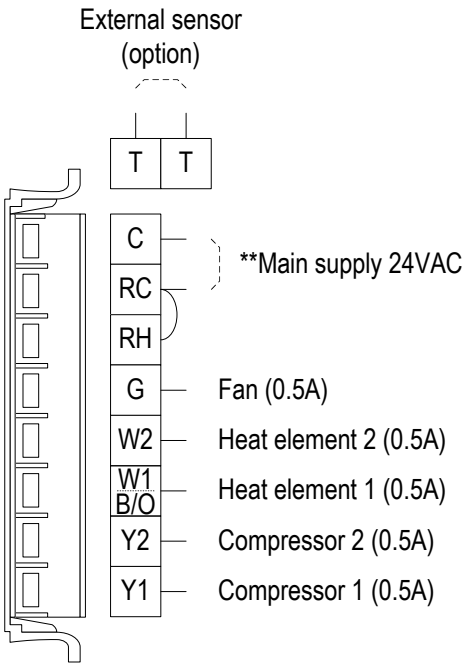
Wiring

Before connecting or disconnecting any wires, ensure that all power supplies have been switched off and all wires are potential-free to prevent equipment damage and avoid electrical shock.

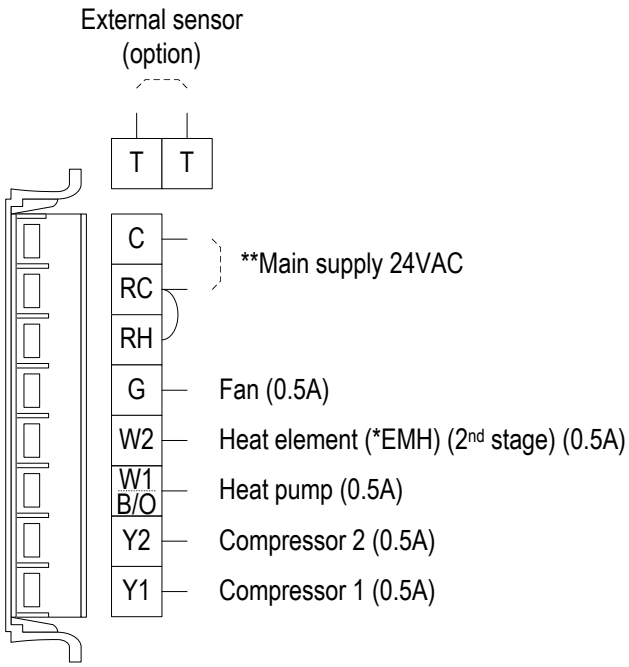
All wiring to the thermostat is low (safe) voltage and must be separated from power line voltage wiring.

Do not run wiring close to transformers or high frequency generating equipment. Complete and verify all wiring connections before applying power to the controller to which the module is connected.

System without heat pump (heat elements only)



System with heat pump



*EMH – Emergency heat

Notes:

1. For a non heat pump system with one heat element, leave terminals “W2” free.
2. For all system types with one compressor, leave terminal “Y2” free.
3. For a heat pump system, “W2” must be connected (Emergency heat).
4. RC-RH, - When using one transformer, RC,RH terminals must be shorted.

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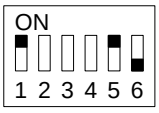
DIP switch settings

The DIP Dwitch is located on the top of the back side of the thermostat (above the connectors).

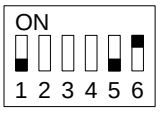
Internal/External sensor

Use DIP Switches S1, S5 and S6 to select Internal/External sensor

- Internal sensor…….. S1, S6 – ON S5 – OFF
- External sensor…….…… S1, S6 – OFF S5 – ON



External sensor

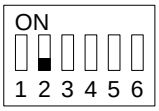


Internal sensor

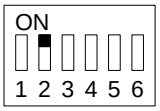
Heat pump or non heat pump (heat elements only) system

Use DIP Switch S2 to select heat pump or non heat pump system

- Heat pump system……..S2 – ON
- Non heat pump system…….…… S2 – OFF



Non heat pump system

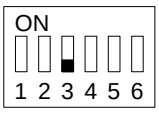


Heat pump system

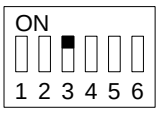
Heater type – electric or oil/gas (for non heat pump systems)

Use DIP Switch S3 to select heater type

- Oil/Gas heaters…….. S3 – ON
- Electric heaters……..……...S3 – OFF



Electric heaters

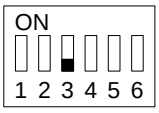


Oil/Gas heaters

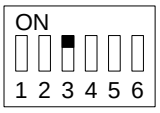
Heat pump configuration (for heat pump systems)

Use DIP Switch S3 to select heat pump configuration

- Heat pump energized in heat.……..... S3 – ON
- Heat pump energized in cool.……..... S3 – OFF



Energized in cool

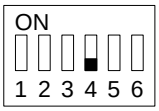


Energized in heat

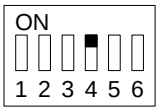
Compressor time delay

Use DIP Switches S4 to enable/disable the 3 minutes compressor time delay as follows:

- 3 Minutes delay……..S4 – OFF
- No delay…….. S4 – ON



3 Minutes compressor delay



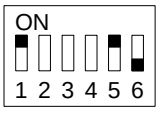
No compressor delay

External sensor Connection (option)

N.T.C Sensor: Temperature ~ Resistance characteristics

Temp °F	45	50	55	60	65	70	75	80	85	90
Res. KΩ	115.8	100.9	88.1	77.1	67.7	59.6	52.5	46.4	41.2	36.6

Connecting the external sensor



External sensor

- Disconnect power to the thermostat.
- Move switches 1 and 5 to ON position and switch 6 to OFF position.
- Connect the temperature sensor to the T-T terminals.
- Reconnect power to the thermostat.

Notes:

- **The external sensor must be Meitav-tec type only!**
- The wire length for the external sensor can be up to 100 feet (30 meters) with standard cable.
- If the distance is greater than 100 feet the wire MUST be shielded.

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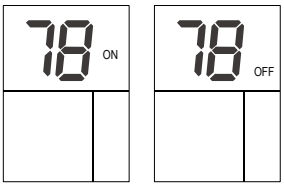
Operating instructions

On/Off

- Press the [ON] button to turn the thermostat ON or OFF – “ON” or ”OFF” will appear on display.

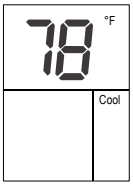


ON **OFF**

Set point

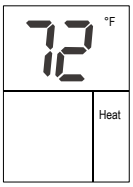
In Cool mode:

- Press the [+] or [-] buttons - "COOL" will appear on display and the set-point temperature for cooling will flash.
- Adjust the set-point temperature for cooling using the [+] or [-] buttons.
- Press the [Select] button or wait to return to normal display.



In Heat mode:

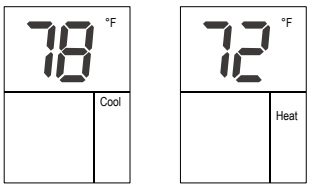
- Press the [+] or [-] buttons - "Heat" will appear on display and the set-point temperature for heating will flash.
- Adjust the set-point temperature for heating using the [+] or [-] buttons.
- Press the [Select] button or wait to return to normal display.



In Fan mode or in auto change-over mode (2 set-points):

- Press the [+] or [-] buttons - "COOL" will appear on display and the set-point temperature for cooling will flash.
- Adjust the set-point temperature for cooling using the [+] or [-] buttons.
- Press the [Select] button or wait 3 seconds - "HEAT" will appear on display and the set-point temperature for heating will flash.
- Adjust the set-point temperature for heating using the [+] or [-] buttons.
- Wait until display returns to normal.

Note: the cooling set point temperature must be higher than the heating set point temperature



Lock Buttons

Use the Lock option to prevent users from making unwanted changes.
When the thermostat is locked, the [SELECT], [+] and [-] buttons are disabled, however, the users can turn the thermostat ON or OFF. The display will alternate between "Loc" and real time clock.

- Make sure both temperature set points are different than 50°F.
- Lock the thermostat - Press and hold the [SELECT] button (20 seconds) until "Loc" appears on display.
- Unlock the thermostat - Press and hold the [SELECT] button again (20 seconds) until "UnLo" appears on display.

Unlocked **Locked**

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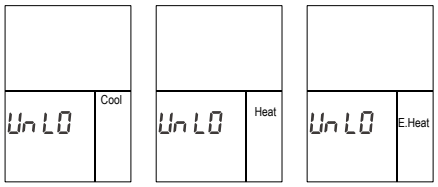
Modes / Auto fan / Fan speeds

- Press the [SELECT] button once to enter **Modes** selection:
- Use the [+] and [-] buttons to switch between modes:
  - "Cool"…… Cooling
  - "Heat"…….. Heating
  - "E.Heat"…… Emergency Heat (EMH)
  - "Cool" & "Heat"……. Auto mode
  - "Fan"…….. Fan only

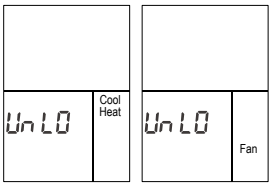
  *EMH available in heat pump configuration only.
- Press the [SELECT] button again to enter **Auto fan** selection:
- Use the [+] and [-] buttons to switch between:
  - "Fan"…… Fan is on continuously
  - "Auto Fan"…… *Fan cycles on with demand

  *Auto Fan is not available in "Fan only" mode.

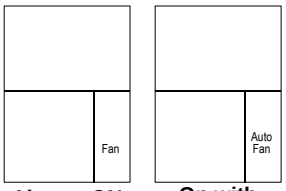
  * In Heat mode, with Oil/Gas heat configuration (i.e., furnace):
    - Auto Fan – The fan will never be activated.
    - Fan – The Fan will work continuously.
- Press the [ON] button to return to normal display



Cool **Heat** ***Emergency Heat (EMH)**



Auto mode **Fan only**



Always ON **On with demand**

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Weekly Program

The thermostat can be programmed with up to 12 different programs: 4 different programs for the weekdays (Monday to Friday); 4 different programs for Saturday and 4 different programs for Sunday. The daily programs are named: Wake, Day, Return and Sleep.

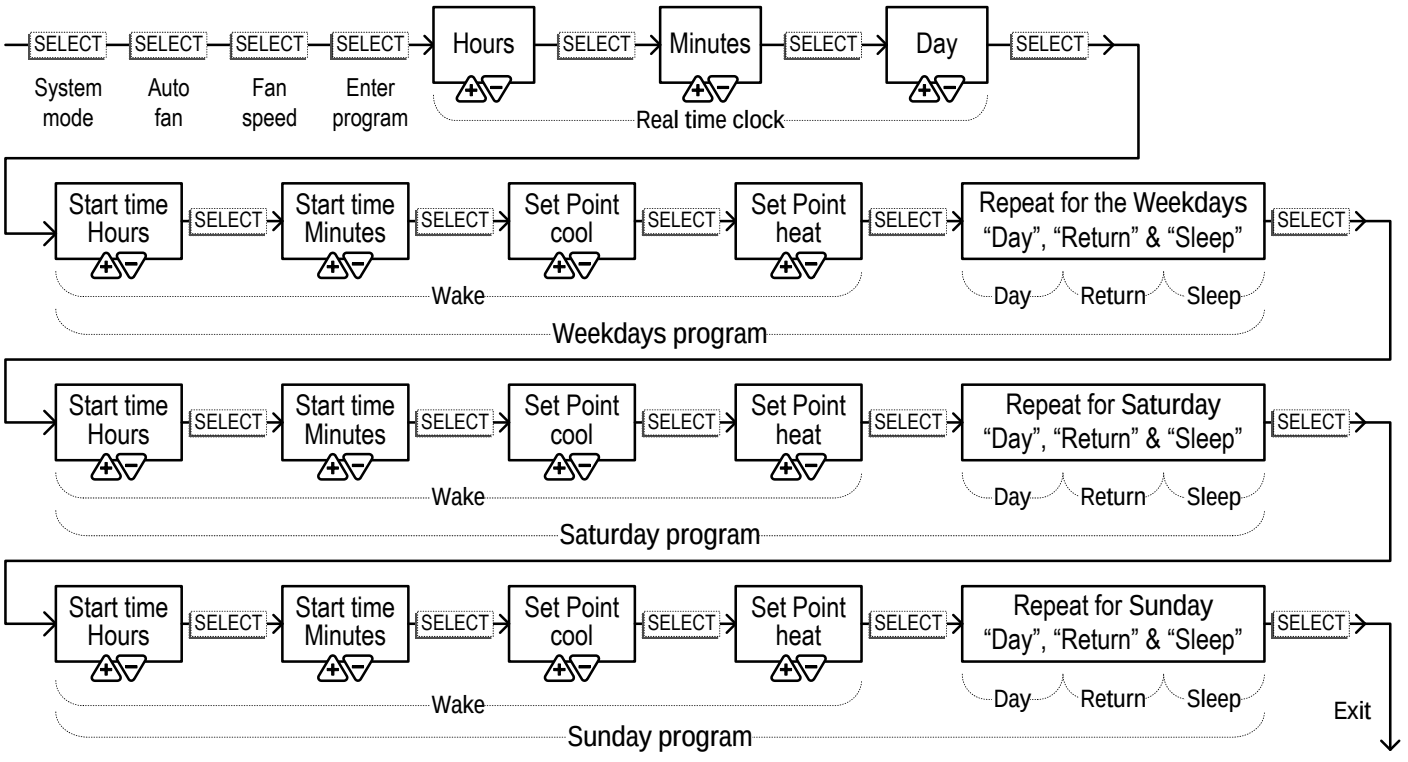
Programming defaults		**1 (Wake)**	**2 (Day)**	**3 (Return)**	**4 (Sleep)**
Monday to Friday	Start time:	6:30 AM	8:00 AM	5:30 PM	10:00 PM
	Cool Set Point / Heat Set Point:	78°F/70°F	85°F/62°F	78°F/70°F	82°F/62°F
Saturday	Start time:	7:30 AM	12:30 PM	6:00 PM	11:30 PM
	Cool Set Point / Heat Set Point:	76°F/70°F	74°F/70°F	72°F/70°F	78°F/65°F
Sunday	Start time:	7:30 AM	12:30 PM	6:00 PM	11:30 PM
	Cool Set Point / Heat Set Point:	76°F/70°F	74°F/70°F	72°F/70°F	78°F/65°F

Enable/Disable/Override the weekly program

- Press & Hold the [ON] button (10 sec.) to enable/disable the program. When the word “Program” appears on display, the weekly program is enabled and can be modified. When the word “Program” does not appear on display, the weekly program is disabled and cannot be modified.
- The occupant can temporarily change the set point temperature to be different than the set point temperature specified by the program. Changes will be affective until the next program event begins.

Programming procedure

- At any step during the programming procedure illustrated below, use the [+] and [-] buttons to make adjustments.
- Press the [ON] button to quickly scan through weekdays, Saturday and Sunday programs, and/or exit the programming procedure.
- If no button is pressed for 30 seconds, the thermostat will automatically exit the programming procedure.



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Technician Settings

Enter technician settings mode

- Switch to heating or auto mode and adjust the set point temperature for heating to 50°F.
- Wait until display stops flashing.
- Press and hold the [SELECT] button (5 sec.) to **enter technician settings**.

Enter tech. settings

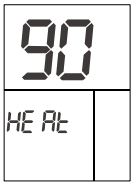
Temperature limit for cooling

- "Cool" will flash.
- Use the [+] and [-] buttons to adjust the temperature limit for cooling.
  Range: 50...90°F, default 50°F.

Set point limit cool

Temperature limit for heating

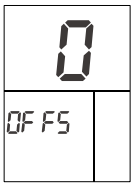
- Press the [Select] button again – "heat" will flash.
- Use the [+] and [-] buttons to adjust the temperature limit for heating.
  Range: 50...90°F, default 90°F.



Set point limit heat

Offset for calibration of measured temperature

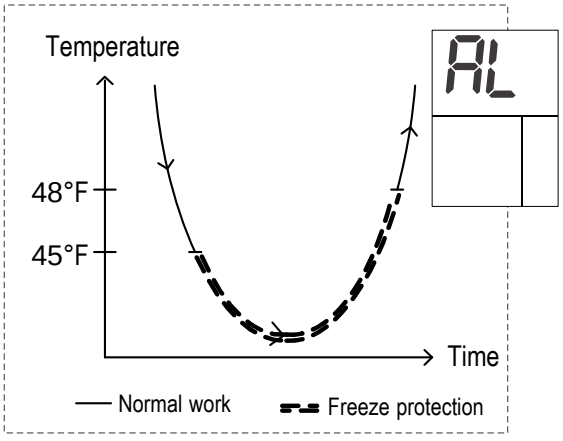
- Press the [Select] button again – the offset will appear on display.
- Use the [+] and [-] buttons to adjust the offset.
  Range: -6…+6°F, Default 0°F.
- Press the [Select] button again to return to normal display.



Calibration Offset

Freeze Protection

The Freeze protection feature will not allow the room temperature to drop below 45°F. Depending on which configuration the system is operating under (W/WO Heat pump) this feature will force the system to operate in heat mode and activate the fan. This feature will take effect when the thermostat is either ON or OFF. When the room temperature rises above 48°F, the thermostat will return to its previous state.
When freeze protection is activated, the display alternates between "AL" and room temperature.



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