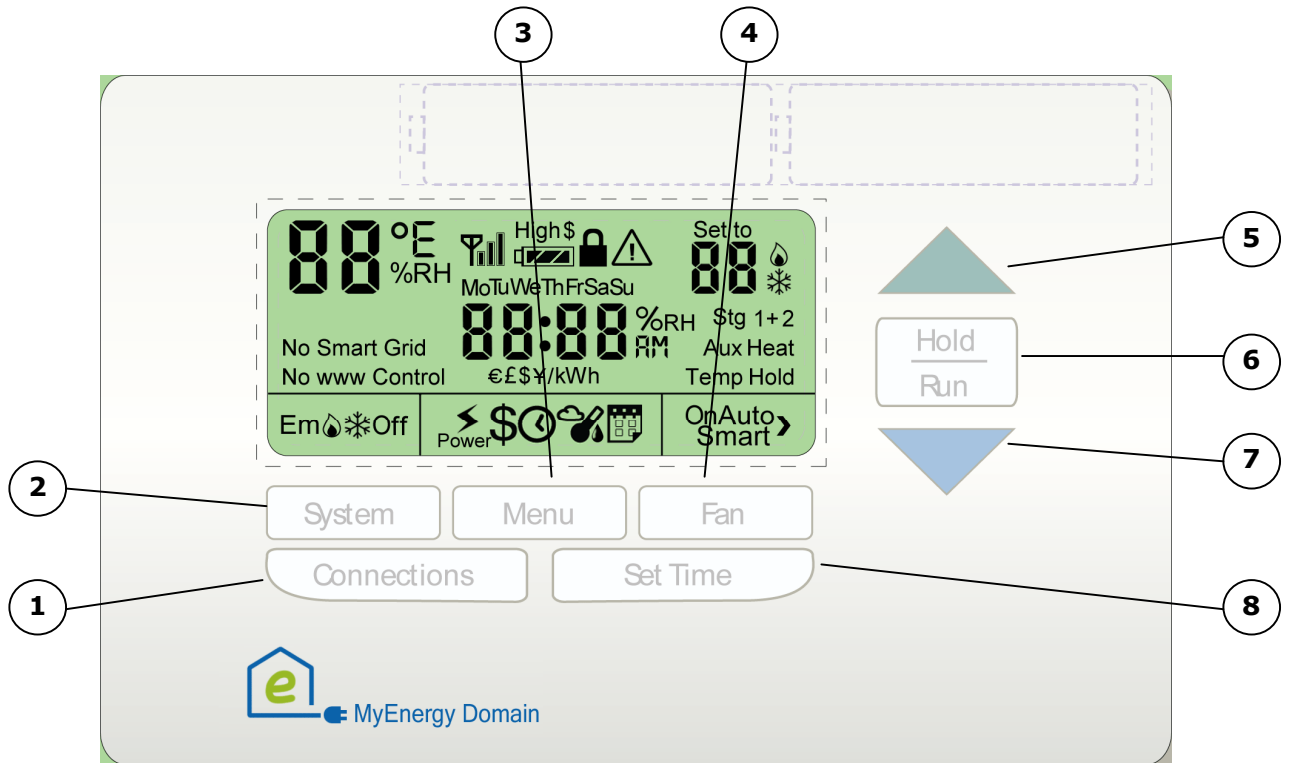
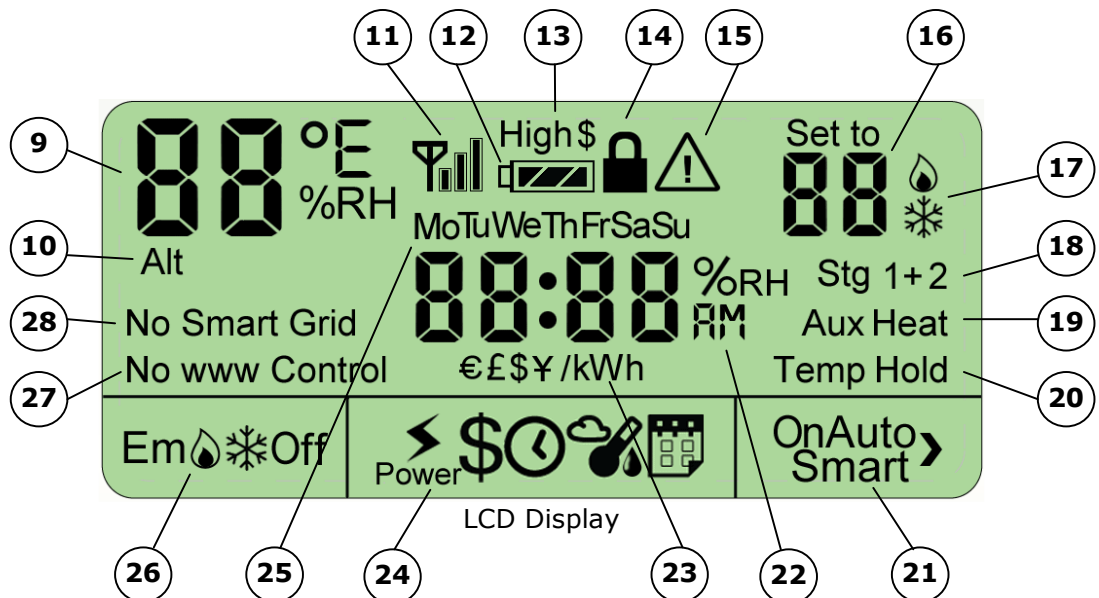


MyE Home Energy Management System Manual



Front view of the thermostat







Button Operations and Related LCD Display





1 – **Communications** button. it will toggle through the following control options:

- Web server control and smart-grid control
- Web server control and no smart-grid control
- smart-grid control and no Web server control
- No Web server control and no smart-grid control.





If there is no smart-meter detected, then the button will only toggle:

- Web server control
- No Web server control.

2 – **SYSTEM** button. Pushing the SYSTEM button will cycle through the system modes auto() , heat () , Off, and cool () . If the system is a heat pump, then emergency heat (EM) will also be available, and that comes after "heat" and before "Off".

- AUTO is represented by having both the  and  active.
- OFF indicates that the system is turned off.
- A single heating icon () indicates that the system is in heat-only mode.
- A single cooling icon () indicates that the system is in cool-only mode.
- Em indicates that the system is in Emergency Heat mode.
- **CAUTION:** To avoid possible compressor damage, do not use Auto Changeover if the outside temperature drops below 50°F (10°C).

3 – **Menu** button. Pressing this button will change the content of the time display area and change the text displayed above the Menu button.

- When the system is reset, Clk  will be active and the time will be displayed in the middle of the LCD.
- Power  is the instantaneous power use for the whole building and is in kWh. Cost  is the current cost of electricity per kWh. Power and Cost require that a smart-meter is present, and smart-grid control is enabled. If there is no smart-meter in the house or there is No smart-grid control, this choice will be skipped.
- External temperature  . If there is no web connection, then outside temperature won't be available either.

4 – **FAN** button.

- This button will toggle between AUTO fan and forcing the fan ON.

5, 7 – **Up, Down** Buttons. Used to set temperature and set points.

- When in time set mode, the buttons are used to adjust hour, min, am/pm, and day.
- When in the default (temperature) mode, the buttons will set a temporary HOLD that will affect the current mode (either heat or cool) until the program's next schedule change.
- Pushing the up button will increase the selected value. The down button will decrease the selected value.
- When the thermostat is in DR Hold mode, pushing the up/down buttons will not modify the temperature. If the user wants to override the DR HOLD, then he needs to explicitly click on the hold/run button.

6 – **Hold/Run** button. The button is used to HOLD a temperature, or to RUN (resume) the current program.

- If **Hold** is "off", then pressing HOLD/RUN when the thermostat is in its default mode will implement a set point Hold until you release it.
- If **Hold** is "on", then pressing HOLD/RUN will release the hold and return to the default weekly thermostat program.

8 – **SET TIME** button. Used to set the time for the Thermostat.

- Press the set_time button to enable set_hours mode. Then Press the up/down buttons to change the hours.
- Then Press the set_time button again to move on to set minutes mode. Then Press the up/down buttons to change the minutes.
- Then Press the set_time button again to move on to set AM/PM mode. Then Press the up/down buttons to toggle between AM and PM.
- Then Press the set_time button again to move on to set day mode. Then Press the up/down buttons to cycle through the days of the week.
- Then Press the set_time button again to start the set_time mode from the beginning.
- The active field (hours, minutes, etc) will blink while active.
- Press any button other than the up, down buttons while the system is in "set time" mode to cancel the changes and revert the system to normal operating mode (this will NOT change the hold/resume status.)
- When the adjustments are done, press the Hold/Run button to exit TIME ADJUST mode.

9 – **Temperature/humidity display**. This indicates the current temperature (and humidity if an indoor humidity sensor is connected).

- The units (C or F) are defined by the user using the graphic interface (through the local server, or the web, or handheld interface).
- If an indoor humidity sensor is connected, the display will alternate between the temperature and the humidity.

10 – **ALT** field. This indicates that the temperature sensor used to drive the thermostat is the alternate sensor, either located in the Mediator or in an external temperature sensor.

- If lit, the temperature in the temperature field (9) will reflect the temperature at the alternate sensor. Otherwise, the temperature reflects the sensor located at the thermostat.
- The selection of the temperature sensor to use is by default at the Thermostat. A setting in the web page or mediator is where the user can change to the ALT sensor.

11 – **Signal Strength**. Status field for connection with the mediator

- Shows the signal strength of the connection with the Mediator, from 0 to 3 bars.
- If the thermostat loses communications with the Mediator, no bar is shown and the antenna will flash. In this case, all control is local to the thermostat.

12 – **BATTERY** field. There are three fill levels, corresponding to the strength of the batteries. When it starts flashing, please replace the batteries soon.

13 – **HIGH COST (High \$)**. Indicates a spike in electricity cost

- If the electric utility company indicates that current electricity prices are about to spike or already high, then this field will flash until the prices come back down below the high cost level.
- This field is only used if there is some way to receive the information on utility pricing, and the utility has a variable price program.
- The user can define the high price limit using MyEnergyDomain.com in the thermostat setup section. For example, it could be defined as anything above \$.30/kwh, or 2x the base rate.

14 – **Lock icon**: Indicates the lock status of the thermostat keypad. It can be locked/unlocked by key combination (Connection + Up + Down) or through the web interface. When it is on, the thermostat doesn't respond to key pressing except for the key combination to unlock.

15 – **ALERT** field. This field will flash if the system detects an error in the HVAC system.

- If this flashes, please consult the your MyEnergyDomain.com account for more information about the particular alert.
- After 12 hours of flashing, it will stop flashing and remain on.
- When the alert is cleared (using the web interface), then the alert field changes back to inactive.

16 – **SET POINT** field. This will indicate the current set point. Icons (see item 17) will indicate what set point is showing (heating or cooling). Changing the set point will only apply to the currently active mode as indicated by the icons.

- In homes with heating & cooling, the setpoint display (and setpoint heat/cool icons) will show the setpoint corresponding to the most recent system used.

17 – **Setpoint HEAT/COOL icons**. This indicates the active set point mode.

- The heating icon (🔥) indicates that the heating set-point is active and any changes to the set point will apply to the heating program.
- The cooling icon (❄️) indicates that the cooling set-point is active and any changes to the set point will apply to the cooling program.
- If the system is running the heating equipment, 🔥 will blink. If the system is running the cooling equipment, ❄️ will blink.

18 – **Stg 1+2**. indicates what stage(s) heating/cooling the system is engaged, when the home has two stage systems.

- Stg 1 means only the first stage is engaged.
- Stg 1+2 means that both stages are engaged.
- If the system is single stage, then this field is inactive.

19 – **Aux Heat**. This field indicates that the system is using auxiliary heat. This field is active when the heat pump (if one is present) cannot produce enough heat to meet heating demand and calls for the Auxiliary Heat to be turned on. When the auxiliary heat turns off, then the Aux Heat field changes to inactive.

20 – **Temp Hold / Hold / Smart Grid Hold**. This field indicates that a set point is different than the program set point.


- If no kind of Hold is in effect and the Up/Down button is pressed, the thermostat will be set to Temp Hold mode (Temp Hold will lit) which will be automatically released at the beginning of next program. Pressing HOLD button will release it manually.
- A Permanent Hold can be triggered by pressing the **Hold/Run** button after adjusting the set point. "Hold" alone will be lit. Pressing HOLD button again will release it manually.
- If there is a smart-meter in the house, and there is an active Demand response event and the temperature is being held, then HOLD is flashing along with "Smart Grid" (see item 27). If the user wants to override the Smart Grid Hold, then he needs to explicitly click on the HOLD/RUN button. Just clicking the up/down buttons won't modify the temperature when the thermostat is in Smart Grid Hold mode.

21 – **FAN (Auto On Smart >)**. This area indicates what operating mode the fan is in.

- **Auto** indicates that the fan is being controlled by the thermostat's program.

- **On** means that the fan has been manually turned on and will run until turned to **Auto** or **Smart** mode.
- **Smart** indicates that the Smart Fan mode is on. Smart mode is like an intermittent windshield wiper and will run intermittently based on our optimal control algorithm.

22 – **%RH / (AM/PM)**: the AM/PM time for 12-hour clock, as well as a single circle of the % for the degree symbol (°) for external temp and percent symbol (%) for external humidity.

- The outdoor temperature (°) and humidity (%) will alternate for display when  (in field 25) is chosen.






23 – **“€£\$¥/kWh”** This field indicates the unit for the 7-segment display above this field.

- If POWER is being shown, display the current usage in kW, for instance, 0.82 kW or 1.32 kW.
- If Cost is being displayed, the appropriate currency symbol and the “/kWh” will be lit to indicate price-per-kWh, for instance, \$0.07/kWh or \$1.02/kWh.
- The order of denominations is Euro, British Pound, Dollar, Yuan/Yen.






24 – **Days of Week**: This will only be active when Clock is selected in field 25.

- Each two-character day of the week is a single element and will be lit according to what day of the week it is.

25 – **Pwr / Cost / Clk / Ext Temp+Humidity**. This field indicates what is currently displayed in the 7-segment display in the center of the LCD.

- If there is no smart meter, then Pwr  and Cost  will not be available.
- If there is no web connection, then outside temperature+humidity  won't be available either.
- Depending on which variables are available, the MENU button will have the corresponding number of items to cycle through (i.e., if there's no smart-meter, and Clk  is active, then the next button-press will make Ext Temp+Humidity  active.

26 – **SYSTEM field**. The System field will show the active system mode. The available modes depend on the equipment controlled by the thermostat. The complete list includes AUTO, HEAT, OFF, COOL, and EM.

- Heat is indicated with a flame icon (). It is available if heating is controlled by the thermostat.
- Cooling is indicated with a snowflake icon (). It is available if cooling is controlled by the thermostat.
- AUTO is indicated with both flame () and snowflake () icons lit. It is available if heating and cooling are both controlled by the thermostat.
- Emergency heat mode is indicated with EM. It is available only if the user has a heat pump.
- OFF is indicated with the text OFF. It is always available.
- To see what mode is currently active when in Auto mode, look to the icons in the Setpoint area. The snowflake will indicate the system is in cooling mode and the flame will indicate heating mode.
- **CAUTION:** To avoid possible compressor damage, do not use Auto Changeover if the outside temperature drops below 50°F (10°C).

27 – **(No) Smart Grid:** Indicates the status of the smart-grid connection and control.

If smart-grid control is disabled (e.g., through the local control button),

“No Smart Grid” will be lit.

If smart-grid control is enabled, then

“Smart Grid” will be lit

If Smart Grid is available and enabled, and if there’s a DR event requiring a HOLD, then

“Smart Grid” and “Hold” (in field 20) will flash.

28 – **(No) WWW (control):** Indicates the status of a web connection, or the status of local/web control.

If web control is disabled (e.g., through the local control button),

“No www control” will be lit.

If web communications fails, then

“No www” will be lit.

Thermostat Operation

Setting Time and Day

Normally, time is automatically set by the MyE website. In case the user opts out of web control, setting time is accomplished by the steps below:

- Press **Set Time** button and the hours starts flashing as one unit (both digits together). The hour will be set from 1-12 using the **Up** and **Down** buttons.
- Press **Set Time** button again and the tens digit of the minutes begins flashing. Set the tens minute digit by using the **Up/Down** buttons.
- Press **Set Time** button again and the ones minutes digits should begin flashing. Set the ones minute digit by using the **Up/Down** buttons.
- Press **Set Time** button again and the AM/PM units should begin flashing. Set the AM/PM by using the **Up** and **Down** buttons.
- Press **Set Time** button again and the current active day will begin flashing. Pressing the **Up/Down** buttons will flash the next day/previous day, respectively.
- At this point, pressing the **Set Time** button again will start the cycle again by flashing the Hour units and so on. Only when “**Hold/Run**” is pressed is the change accepted and the set time mode exited.
- If ANY other button is pressed (other than Set Time, Up, Down), then the set time mode should be canceled and the time/day reverted to the time before **Set Time** was pressed.

Hold Temperature

There are multiple hold situations. There is a Temporary Hold, a Smart Hold and a Smart Grid Hold. The Temporary Hold is the traditional hold that will switch back to the programmed set point at the next mode change. The Smart Hold uses some intelligence to determine how long to keep the Hold active. The Smart Grid Hold is a hold initiated and ended by a Utility through a Smart Meter.

Temporary Hold

- While in normal operation, after pressing the **Up/Down** button, the set point will start to flash for 5 seconds. If **Hold/Run** is not pressed within this period, a temporary hold will be set. This will cause the “Temp Hold” element on the thermostat screen to flash to indicate that the thermostat is in Temporary Hold. “Temp Hold” will continue flashing until the Temporary Hold is canceled or the next program mode takes effect.

- While a Temporary Hold is in effect, pressing the **Up/Down** buttons will change the hold temperature but keep the hold in Temporary mode.
- Once in the Temporary Hold, press the **Hold/Run** will cancel it and resume the current program.

Hold

- While in normal operation, after pressing the **Up/Down** button, the set point will start to flash for 5 seconds. If **Hold/Run** is pressed within this period, a normal hold will be set, and "Hold" alone will be lit.
- Once in Hold mode, pressing **Hold/Run** button again will release it manually..

Smart Grid Hold

- The Smart Grid Hold is activated and ended by the Utility through a Smart Meter. When active, "Smart Grid" and "Hold" flash together. When the DR event is canceled by the Utility, the "Smart Grid" and "Hold" elements will be turned off.
- The user cannot initiate the Smart Grid Hold, but the user can cancel it by pressing the **Hold/Run** button once, which will turn off the "Smart Grid" and "Hold" elements and revert the thermostat to its previous state. That previous state could be a temporary hold, a smart hold, or running the current program.
- While a Smart Grid Hold is active, the user cannot change the temperature UNLESS they cancel the Smart Grid Hold first.

Connections – WWW (Internet) and Smart Grid

The MyE Thermostat has multiple wireless connection possibilities. It can connect to the Internet via the Mediator and it can also connect to the Utility Smart Grid.

Mediator

Without a connection to the Mediator, the thermostat will not be able to have internet connection. If the connection between the Mediator and Thermostat cannot be established, then the "signal strength" icon will show 3 empty bars and the antenna will flash.

Smart Grid

The Smart Grid connection is used by the Utility to send pricing messages and Demand Response events to the thermostat. This Smart Grid connection is not universally available.

- If your Utility does has a Smart Grid and your home is equipped with a Smart Meter, and the thermostat is able to communicate with the Grid, "Smart Grid" should be lit on the Thermostat screen.
- If a Smart Grid exists but the signal is lost, then "No Smart Grid" will flash.
- If a Smart Grid exists but the Smart Grid control has been user-disabled (See **Connection** button), then "No Smart Grid" should be lit.

If the thermostat is connected to a Smart Grid, the following becomes available:

- Cost: current electricity prices.
- Power: instant home electrical power usage in Kw.
- "High Cost" indicator: indicate that a high electricity cost event is in effect.

See "**Menu** button" for further information

- Demand Response capabilities that allow the Utility to set a specific temperature for your thermostat until the DR event is over. This can be overridden. See the "Hold Temperature" section for more information and how to override the Smart Grid Hold.

WWW Control

When the thermostat has the connection to the internet via the mediator, it can be controlled and monitored via you myenergydomain.com account. All controls provided on the thermostat panel

can also be initiated from the web dashboard, plus that the Daily and Weekly programs, vacations/ staycations are set via a user-friendly interface on the website. If you disable WWW Control use **Connections** button, then the thermostat will be controlled locally only, but you can still monitor its status via the web.

Locking the thermostat

The thermostat has the ability to be locked, meaning that most keys will not function. The purpose of the lock is to keep inadvertent or unwanted changes from being performed. The lock can be activated and deactivated from both the website and on the thermostat itself.

- To lock or unlock the thermostat using the buttons on the thermostat, simultaneously press **Connections + Up + Down** buttons.
- When locked, the only button that will function is the **Menu** button to allow changing the information displayed on the screen.
- When locked, the LOCK icon will be visible.

Specifications

1. MyE™ Smart Home Gateway

- Physical dimension: 143 x 88 x 25 mm
- Power Supply : DC5V 500mA
- Wireless: ZIGBEE PRO
- 2.4G IEEE 802.15.4 Compliant RF
- MAX Output power 4.5dBm
- Compliance FCC CFR47 Part15
- RF Frequency Range 2394 -2507 MHz
- Receiver Sensitivity -90dBm
- IEEE 802.3 10BASE-T/100BASE-TX Ethernet
- 10/100 Ethernet PHY interface
- Hardware TCP/IP accelerator
- Support IP/TCP/UDP/ICMP/IGMP checksum and APR
- Support TCP,UDP,ICMP,IPV4,DHCP,APR,DNS,HTTP protocol.

2. MyE™ Smart Thermostat

- Physical dimension: 155 x 105 x 28 mm
- Power Supply: 4 AA batteries or AC 24V
- Maximum load: 1A@24VAC per output
- Temperature display resolution 1°F(0.5°C)
- Temperature Accuracy: +/-1°F(0.5°C)
- Supply RH,RC,C,W,W2/AUX,Y,Y2,G,O/B wire.
- Wireless: ZIGBEE PRO
- 2.4G IEEE 802.15.4 Compliant RF
- MAX Output power 4.5dBm
- Compliance FCC CFR47 Part15
- RF Frequency Range 2394 -2507 MHz
- Receiver Sensitivity -90dBm

MyEnergy Domain, Inc.

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support@myenergydomain.com

Made in China

FCC NOTE:

This equipment has been tested and found to comply with the limits for a Class B Digital Device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the distance between the equipment and receiver
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: 1. This equipment may not cause harmful interference, 2. This equipment must accept any interference received, including interference that may cause undesired operation.

Modifications not authorized by the manufacturer may void the user's authority to operate this device.