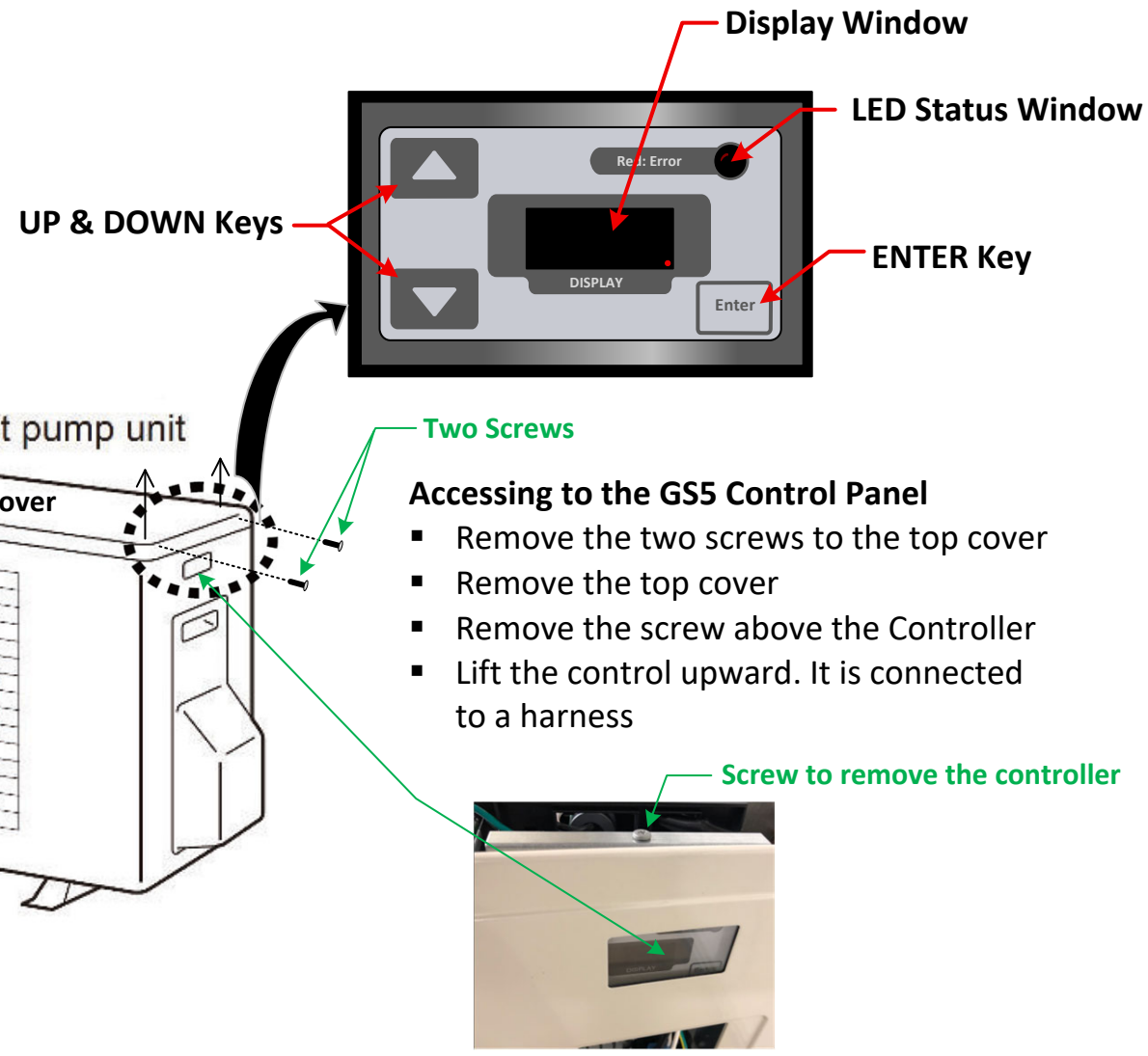
Sanco2 GS5-45HPC &GS5-45HPC-D Heat Pump Water Heater Controller

Quick Start-up Guide

For HPWH's w/Serial Number Up To 1240

OPERATION CONTROL PANEL



Accessing to the GS5 Control Panel

- Remove the two screws to the top cover
- Remove the top cover
- Remove the screw above the Controller
- Lift the control upward. It is connected to a harness

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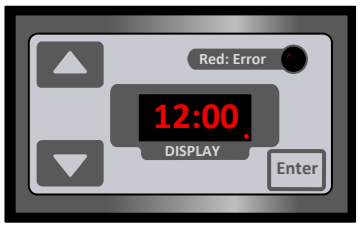
Quick Start-up Guide

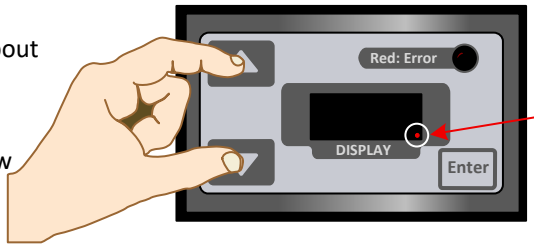
Setting the control internal clock (Military Time)
Press the Enter KEY to set the time. Display will flash, use the up arrow key (forward) & down arrow key (reverse). Set hour, press Enter. Set minutes, press Enter.



Fast forward, press and hold the up arrow key. Reverse, press and hold the down arrow key.

Access Commissioning Mode and Controller Menu
Press the up and down arrows simultaneously for about 10 seconds.

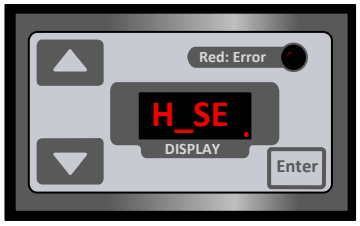
Use the **UP** arrow key to scroll to each mode. Then press **ENTER** to access that mode. Press the **UP** arrow key to move to the next mode



Red LED indicates heat pump is operating. The rest of the screen will be BLANK.

Heat Setting Mode H_SE
This is a factory default setting and should not be changed. The display will flash between "H_SE and nor". Using the **UP** and **DOWN** arrow keys allows the user to toggle between "nor and off".

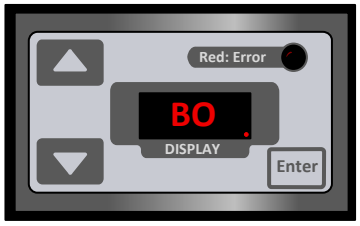
To advance to the next mode, press the UP arrow key.



WARNING, OFF prevents the heat pump and freeze protection from operating

ON/OFF Timer Mode – BO – (Blockout) (Military time)
If the BLOCK-OUT (BO) time period is not desired. The mode can be set to 00:00. To accomplish this, press ENTER, The screen will altenately flash between **BO** and **0000.** Press **ENTER**, 00 will flash. You can Press **ENTER** to lock in **00**. Press **ENTER**. Press **ENTER** again, the second set of **00's** will flash. Press **ENTER** to lock in **00**. *If the Owner of Maintenance Staff desires a BLOCK-OUT time, see page 3 for instructions.*

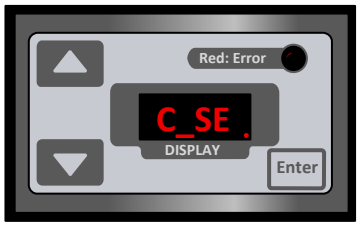
To advance to the next mode, press the UP arrow key.



The **BLOCK-OUT (BO) TIME** is beneficial when time-of-use electrical rates are off-peak or for PV Production. This function can be used to allow the heat pump to operate at a certain time of day.

Communication Mode – C_SE
Standard setting is **OFF**.
To switch from **OFF** to **ON** use the **UP** arrow key, then press **ENTER.**
To bypass this mode, simply press the **UP** key to get to the next mode in the Commissioning Menu.

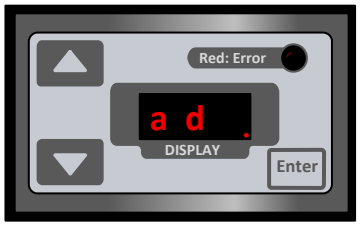
To advance to the next mode, press the UP arrow key.



The Communication Mode feature allows the GS5 Heat Pump to communicate with both the ECO-RDR Residential Demand Controller or the ECO-CMB-BAC Commercial controller.

Modbus ID Setting Mode: id (Note: if you are not using our Commercial ECO-CMB-BAC Controller, skip this step.

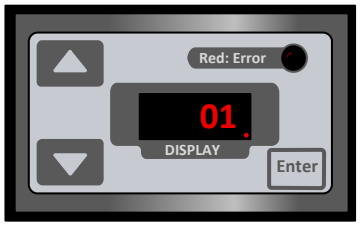
To advance to the next mode, press the UP arrow key.



The GS5 used in a Commercial application where multiple GS5 Heat Pumps are installed on a manifold has the ability to communicate with the ECO-CMB-BAC Commercial Controller. Each individual GS5 Heat Pump on the manifold requires it to have an ID or address set for that GS5 Unit. Addresses can be any number from 01 to 99 and do not need to be in order. Address can be duplicated without causing an error

To set the address press the **ENTER** Key.
Use the **UP** or **DOWN** arrow keys to select the address for that GS5 Unit.
Press the **ENTER** Key to set the ID

To advance to the next mode, press the UP arrow key.



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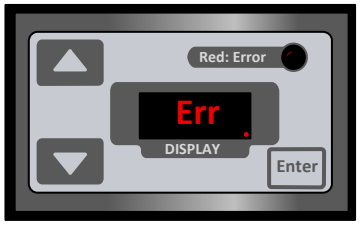
Quick Start-up Guide

Error Code History Mode - ERR

Press **ENTER** to access mode. Use the **DOWN** arrow key to scroll through the errors.

Chart with Error Code descriptions and explanations are on page 4.

To advance to the next mode, press the UP arrow key.



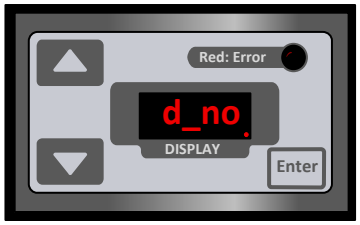
The controller stores up to five error codes. If they occurred in the Error Code History Log, then the display will show the Error Code even if they've been cleared.

Parameters Mode - d_no

Press **ENTER** to access all the parameters. Use the **UP** and **DOWN** arrow keys to access all of the parameters. Press **UP** arrow key to move from **d_no** to **00** upwards to other values.

Chart with data measurement descriptions is on page 4.

To advance to the next mode, press the UP arrow key.



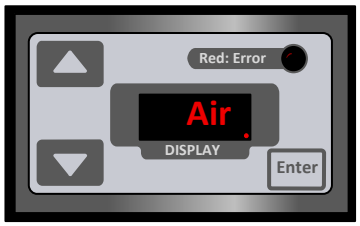
There are twelve different parameter readings. Data can be used to determine operation, performance and troubleshooting.

Air Purge Mode - Air

Standard setting is **OFF**. To purge the heat pump, cold and hot water piping, use the **UP** arrow key to change Air Purge to **ON**.

Heat Pump will operate for 5 minutes. The water will circulate between the Heat Pump and Storage Tank. The Controller will switch back to **OF**F when run time is over.

To advance to the next mode, press the UP arrow key.



The Water Pump is connected to the cold water inlet to the Heat Pump.

Exit the Mode Program

To Exit the Mode Program, simply hold the **ENTER** Key for 15 seconds. The Clock will display, or just leave the controller alone for 60 seconds, the controller will go to sleep and the display will disappear. Wake the controller by pressing any key, the clock will be displayed.

Out of Commissioning Mode the Unit will return to normal operation. It will produce 145°F to 150°F hot water until the storage tank completely heated where the cold water inlet temperature is 114°F

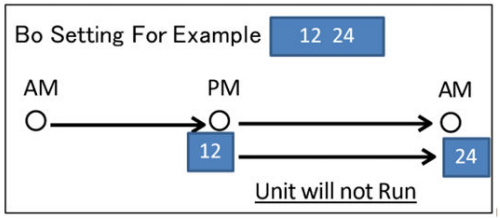
ON/OFF Timer Mode – BO (Military time)

Setting the OFF Period

Press **ENTER** to access the **BLOCK-OUT mode**. Display will show "BO" "00XX". Press the **UP** arrow key. **00** will flash. Use the UP arrow key to set the **OFF** time for the heat pump. (It can only be set as an hour e.g. 10, 12, 14 etc., Press **ENTER** – **OFF** period is now set.

Setting the ON Time

"XX" will now be flashing. Use the **UP** or **DOWN** arrow keys to the **ON** time for the unit. It can only be set as an hour. Press **ENTER**, **ON** time is now set. Both OFF and ON time will flash briefly, then unit will display "BO" and the times are set.



This Unit is set to be off at 12 Noon and ON at Midnight and then operated until 12 Noon.

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Parameter Measurement Data

Parameter	What is being measured
00	Tank Temperature °F
01	HP Outlet Water Temperature °F
02	HP Inlet Water Temperature °F
03	HP Discharge Temperature °F
04	HP Suction Temperature °F
05	HP Defrost Temperature °F
06	Ambient Temperature °F
07	Compressor Operation Frequency: Hz
08	Pump Rotation Speed: RPM
09	Fan Motor Speed: RPM
10	Compressor Operating Time: Hour
11	Compressor Start-up Count

Error Codes Descriptions and Explanations

Error code	Error Explanation
H9	HP ambient (outdoor) temperature thermistor error
HC	HP water outlet (outgoing) temperature thermistor error
J3	HP discharge temperature thermistor error
J5	HP suction temperature thermistor error
J6	HP defrost temperature thermistor error
J8	HP water inlet (return) temperature thermistor error
H7	Tank temperature thermistor error
E6	Compressor booting error
H6	Compressor revolution error
U0	Refrigerant leakage error
E1	Main PCB error
E2	Control PCB error
L7	Control PCB error
F5	Communication error between main PCB to control PCB
E8	High inlet current error
H8	Current error
L4	High temperature of module error
L5	High outlet current error
P4	Module temperature thermistor error
U2	High voltage error
HJ	Water circuit error
EC	High water outlet error
E9	Water circulation pump error
E7	Fan motor locked
F3	Discharged temperature error
H0	High water outlet error
FA	High pressure side error
H3	Pressure switch error