



**Title:** Digital Controller Operation Instructions

**Department:** Engineering

**Objective:** To provide the digital controller operation instructions and advanced programming

**Revision History:**

Rev	Date	Owner	Description of Changes
1.0	07-28-10	G. Gonzalez	New Format Created

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## Digital Temperature Controller Programming

For the normal and advanced user this section will provide you with all the necessary information to view and change all functions and parameters available to you.



### HOW TO SEE THE SETPOINT

1. Press and immediately release the **SET** key. The display will show the setpoint value.
2. Press and immediately release the **SET** key or wait for 15 seconds to display the prove value again.

### HOW TO CHANGE THE SETPOINT

1. Press the **SET** key for more than 2 seconds to change the setpoint value.
2. The value of the setpoint will be displayed and the “F” LED starts blinking.
3. To change the **SET** value, press the **UP** or **DOWN** arrow key within 15 seconds.
4. To store the new setpoint value, press the **SET** key again or wait 15 seconds.

**Note:** The set value is stored even when the procedure is exited by waiting for the time-out to expire.

### HOW TO ACCESS HIDDEN MENU 1

1. Enter the Programming mode by pressing the **SET + DOWN** arrow keys simultaneously for 3 seconds. The “F” LED starts blinking.
2. Select the required parameter by pressing the **UP** or **DOWN** arrow key. Press the **SET** key to display its value.
3. Use the **UP** or **DOWN** arrow key to change its value.
4. Press **SET** to store the new value and move to the following parameter.

**To exit:** Press **SET + UP** arrow keys or wait 15 seconds without pressing a key.

**Note:** The set value is stored even when the procedure is exited by waiting for the time-out to expire.

### HOW TO ACCESS HIDDEN MENU 2

1. Enter the Programming mode by pressing the **SET + DOWN** arrow keys simultaneously for 3 seconds. The “F” LED starts blinking.
2. Release the keys, then push the **SET + DOWN** arrows keys simultaneously, again for more than 7 seconds. The **Pr2** label will be displayed immediately followed by the **HY** parameter.
3. Select the required parameter by pressing the **UP** or **DOWN** arrow key. Press the **SET** key to display its value.
4. Use the **UP** or **DOWN** arrow key to change its value.
5. Press **SET** to store the new value and move to the following parameter.

**To exit:** Press **SET + UP** arrow keys or wait 15 seconds without pressing a key.

**Note:** The set value is stored even when the procedure is exited by waiting for the time-out to expire.





## HOW TO LOCK THE KEYPAD

1. Press and hold the **UP** and **DOWN** arrow keys simultaneously for more than 3 seconds.
2. The **POF** message will be displayed and the keyboard will be locked.  
At this point, it will be possible only to see the setpoint or the MAX or MIN temperature stored.
3. If a key is pressed for more than 3 seconds the **POF** message will be displayed.

## HOW TO UNLOCK THE KEYPAD

1. Press and hold the **UP + DOWN** arrow keys simultaneously for more than 3 seconds until the **Pon** message is displayed.

### Functions and Parameters

Function	Operation	Parameter	Menu Location	Factory Default	Operating Range	Unit
Cooling Setpoint	Set Cooling Relay	SET	Main	90	70 - 95	°F
Cooling Differential	Control Hysteresis	Hy	Hidden Menu 1	5	1 - 45	°F
Compressor Protection	Anti short-cycle delay	AC	Hidden Menu 2	5	0 - 50	min
Probed Displayed	Select Display Probe P1 – Enclosure Temperature P2 – Condenser Temperature	Lod	Hidden Menu 2	P1	P1 / P2	N/A
Auxiliary Setpoint	Setpoint for Heater or Dry Contact *1	SAA	Hidden Menu 2	105	-67 - 302	°F
Auxiliary Differential	Heater or Dry Contact Hysteresis *1	Shy	Hidden Menu 2	3	1 - 45	°F
Maximum Temperature Alarm	Alerts with “HA” when maximum temperature has been exceeded	ALU	Hidden Menu 2	105	45 - 302	°F
Minimum Temperature Alarm	Alerts with “LA” when minimum temperature has been exceeded	ALL	Hidden Menu 2	45	-67 - 105	°F

\*1 **Note:** When both Heater and Dry Contact options are included, these parameters only control Heater Settings. Dry Contact is controlled by ALU.





### Alarms Signals

Message	Cause	Outputs
"P1"	Enclosure Probe Failure	Start and stop of the compressor after 15 minute intervals *2
"P2"	Condenser Probe Failure	No Output *2
"HA"	Maximum Temperature Alarm: P1 > 105°F for 3 minutes (after initial 30 min. start up delay)	No Output *2
"LA"	Minimum Temperature Alarm: P1 < 45°F for 3 minutes (after initial 30 min. start up delay)	No Output *2
"HA2"	Condenser High Temperature Alarm: P2 > 145°F for 3 minutes	Compressor Off *2
"LA2"	Condenser Low Temperature Alarm: P2 < 50°F for 3 minutes	No Output *2
"CA"	Evaporator Coil Alarm: Low Pressure for 2 minutes	Compressor Off *2
"noP"	Invalid Probe Selected: Low Evaporator Coil	No Output, Display Only

\*2 **Note:** When both Heater and Dry Contact options are included, Dry Contact (Alarm Contact) Relay is activated.

### ALARM RECOVERY

If the compressor is turned off due to an alarm, it will be able to restart after the **AC** anti short-cycle time delay. (Parameter AC = 5minutes)

**Probe** alarm **P1** is cleared with no time delay after the fault is cleared.

**Probe** alarm **P2** starts and stops with no time delay.

**Temperature** alarm **HA** automatically clears as soon as the temperature returns to below 105°F (the **ALU** setpoint) -2°F = 103°F.

**Temperature** alarm **LA** automatically clears as soon as the temperature returns to above 55°F (the **ALL** setpoint) +2°F = 47°F.

**Temperature** alarm **HA2** automatically clears as soon as the condenser coils temperature returns to below 135°F.

**Temperature** alarm **LA2** automatically clears as soon as the condenser coils temperature returns to above 60°F.

**Temperature** alarm **CA** automatically clears as soon as the pressure returns to normal.

