

ASLLC Programmable Graphical Display (PGD)

Installation and Operation Manual

Controller Models

ASLLC.2	ASLLC.2.48
ASLLC.2A	ASLLC.2A.48



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GENERAL

This manual provides installation and operating instructions for the optional 128*32 Carel Programmable Graphical Display (PGD) user interface for the AIRSYS Lead/Lag controller models ASLLC.2, ASLLC.2.48, ASLLC.2A, and ASLLC.2A.48 .

Note: For PGDs preinstalled in ASMUC series controllers or used with UniCool series WPUs, please consult the Installation and Operation Manual for UniCool units.

For instructions on controlling your HVAC system with the 3-digit programmable LED (PLD) user interface, please refer to the installation and operation manual accompanying the unit. For operation with the Web interface, please refer to AIRSYS Controller IP Interface Manual. All support documents are available at <https://airsysnorthamerica.com>.

For any questions regarding AIRSYS equipment, please contact AIRSYS Support at (855) 874-5380 or ASNSupport@air-sys.com.

1. ESTABLISHING CONNECTION

The PGD Interface connects to the J5 terminal on the controller module via standard 6 pin telephone cable (RJ12). The PGD does not require external power. Please allow 20s startup time when the display is first connected.

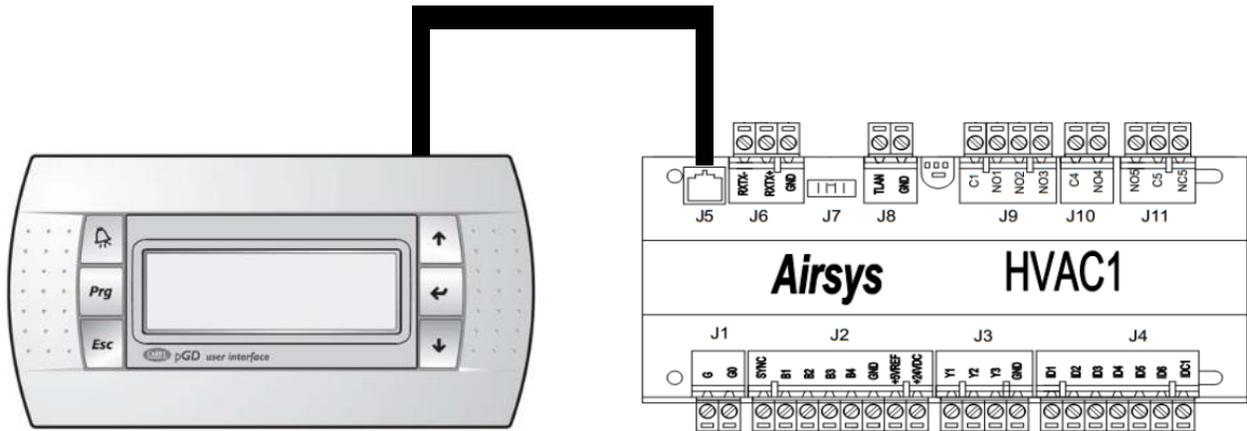


Figure 1: Connection Between PGD and Controller

When the PGD is plugged in, the PLD “freezes” and will no longer function. To return to using the PLD, remove the PGD connection and restart the controller by power cycling the input breaker. Control will return to PLD display after ~30s.

2. USER INTERFACE



Figure 2: PGD User Interface

Button actions of the PGD display are described in Table 1.

Table 1: PGD Buttons

Button	Function	Description
	Alarm	<ul style="list-style-type: none"> Display any active alarm when pressed. For more details on alarms, please refer to Chapter 5: Active Alarms on page 6.
	Program	<ul style="list-style-type: none"> Access the program menus when pressed. For more details, please refer to Chapter 6: Program Menus on page 8.
	ESC	<ul style="list-style-type: none"> Return to Main Screen. For more details, please refer to Chapter 3: Main Screen on page 4.
	Up	<ul style="list-style-type: none"> Scroll to the previous screen in a menu Increase the value of selected parameter
	Enter	<ul style="list-style-type: none"> Select a parameter to be changed. Confirm a changed parameter.
	Down	<ul style="list-style-type: none"> Scroll to the next screen in a menu. Decrease the value of selected parameter.
	Turn On/Off	<ul style="list-style-type: none"> Press and Hold for 5 seconds to turn on/off system.

3. MAIN SCREEN

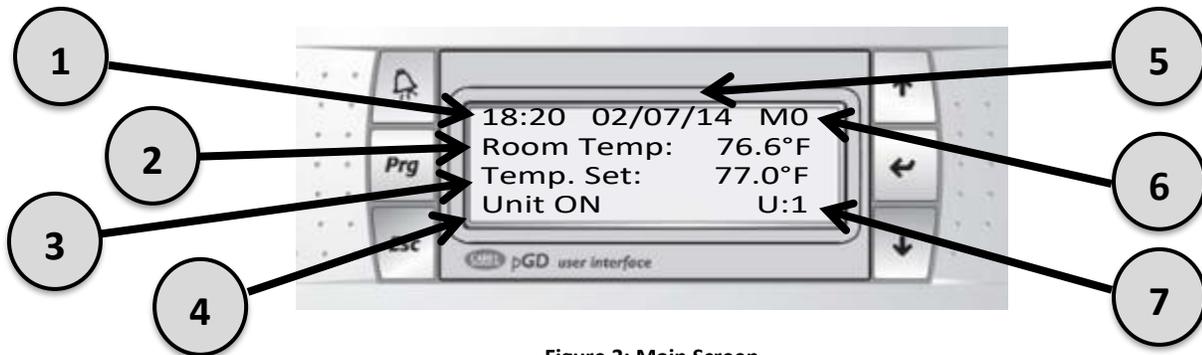


Figure 3: Main Screen

Press **ESC** to return to the Main Screen

1. **Time:** Current System Time and Date. Can be modified in the Maintenance Menu. For more details please refer to Chapter 6: Program Menus on page 8.
2. **Room Temp:** Displays current room temperature measured by the primary temperature sensor. Sensors can be calibrated in the Maintenance Menu (Page 10).
3. **Temp. Set:** Displays current room temperature setpoint. The setpoint can be accessed by pressing **Enter** at the Main Screen. Press **Up** or **Down** to change setpoint temperature and press **Enter** to confirm change.
4. **Unit:** Displays status of the unit
 - a. **On:** Unit is on. NOTE: Unit can be idol if temperature in the space is within the control range.
 - b. **Off (Alarm):** Unit has been shut off by alarm (e. g. high pressure).
 - c. **Off (Remote):** Unit has been shut off through remote control.
 - d. **Off (Keyboard):** Unit has been shut off by the controller.
 - e. **Manual Proc:** Unit is in manual procedure (step test or manual operating mode)
 - f. **Standby:** Unit is powered and ready to operate when requested by the controller.
5. **Date:** Current system date in DD/MM/YY format. Can be modified in the Maintenance Menu.
6. **Menu Reference:** M0 = Main Screen.
7. **Unit Number:** Indicates which unit the main screen is showing (U:1 or U:2). Press **Esc** and **Up** to change the unit.

4. COMPONENT WORK STATUS

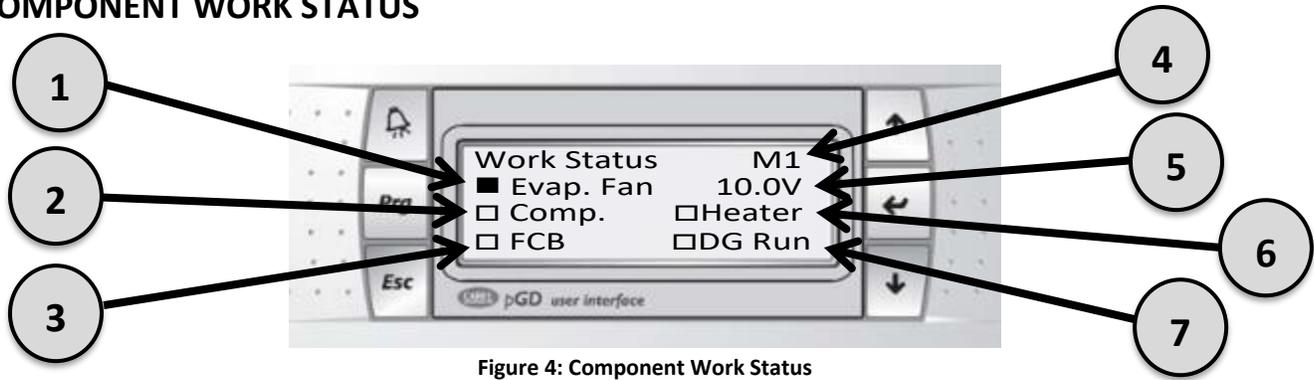


Figure 4: Component Work Status

Press **Down** from the Main Screen to access Component Running Status for unit 1. Press **Down** again to access unit 2. Parameters listed are all Read Only.

1. **Evaporator Fan Running Status:** ON (■)/OFF (□).
2. **Compressor Running Status:** ON (■)/OFF (□)
3. **Free Cooling Running Status:** ON (■)/OFF (□)
4. **Unit # Menu Reference:** M1=Unit 1 Work Status. M1a=Unit 2 Work Status
5. **Evaporator Fan Running Speed:** (0-10V). 10 V = Full Speed. Note: Supply fan will not run between 0-2V.
6. **Heater Running Status:** ON (■)/OFF (□)
7. **(Diesel) Generator Run:** ON (■)/OFF (□). A Generator Run Signal will automatically shut outside air damper and only one compressor will be allowed to operate. The default setting is a Normally Open (NO) signal across terminals #42 and #5. This can be changed to Normally Closed (NC) at Menu Reference C2 (Page 15). The controller can also be configured to allow both compressors to turn on during generator run at Menu Reference C2c (Page 16).

5. ACTIVE ALARMS



Figure 5: Active Alarms

Press the **Alarm** button to access **active** alarms. Use the Alarm History, (page 10) to access alarm history.

1. **Unit Number:** Indicates which controller module is receiving the alarm signal (U:1 or U:2)
2. **Alarm Description**
3. **Alarm Code**

AL02/AL04, Unit 1/2 Low Pressure: Indicates Low Pressure side of refrigeration circuit is out of spec. 3 active alarms within one hour (adjustable) will trigger lockout to protect the refrigerant circuit.

AL03/AL06, Unit 1/2 High Pressure: Indicates High Pressure side of refrigeration circuit is out of spec. 3 active alarms within one hour (adjustable) will trigger lockout to protect the refrigerant circuit.

AL05, Smoke/Fire Alarm: Indicates that the controller is receiving a Smoke/Fire alarm signal. Both units will be shut down and outside air dampers, heaters, compressors, and supply fans will all be turned OFF until the alarm is cleared.

AL07, High Temp Alarm: Triggers when the indoor temperature reading has increased above the configured high temp alarm set point (adjustable) for at least 60 seconds (adjustable).

AL08, Low Temp Alarm: Triggers when the indoor temperature reading has decreased below the low temp alarm set point (adjustable) for at least 60 seconds (adjustable).

AL10/AL11, Unit 1/2 Fan Overload /AC Loss: (AC Fan Systems Only): Indicates either the supply fan's internal protection is active or a loss of AC power to the HVAC unit.

AL15/AL16, Unit 1/2 Dirty Air Filter: Indicates that the primary air filter(s) is dirty and needs to be changed out.

AL17, pLAN alarm: pLAN communication has been lost between the 2 controller modules. Each unit will cool independently according to its own temperature sensors while communication is lost.

AL18, Clock Card Alarm: The clock card is either not connected properly or the battery in the clock card needs replacement.

AL19, Humidity Sensor Alarm: Humidity sensor is disconnected or does not accurately report relative humidity.

AL20, Indoor Temp Sensor Alarm: Indoor temperature sensor is disconnected or does not accurately report temperature.

AL21, Backup Indoor Temp Sensor Alarm: Backup indoor temperature sensor is disconnected or does not accurately report temperature.

AL22, Outdoor Temp Sensor Alarm: Outdoor temperature sensor is disconnected or does not accurately report temperature.

AL23, Two Compressor Run: Indicates that both HVAC unit compressors are needed to maintain site temperature as part of a Lead/Lag control relationship. For Lead/Lag operation one HVAC unit should be able to maintain site temperature on its own. Whenever two compressors are needed to maintain site temperature, one or more of the following conditions may be present:

- The controller setpoint(s) have been manually changed
- Elevated outside temperature (>95°F)
- Additional heat load has been added to the site without increasing the cooling capacity
- The HVAC system is undersized for the site heat load
- Lead unit is no longer performing to specifications and needs service

AL24/AL25, Unit 1/2 Damper Alarm: Indicates that one of the two most common failure modes for the outside air damper has occurred:

- Damper stuck open
- Damper stuck closed

AL26/AL27, Unit 1/2 Supply Air Temperature Sensor Alarm: Supply air temperature sensor is disconnected or does not accurately report temperature.

AL28, Generator Run: Indicates that the generator is running. During generator run, outside air dampers will be shut and only the lead unit compressor will run.

AL29/AL30, Unit 1/2 Airflow Alarm (DC Fan Systems Only): Indicates a potential problem with the DC supply fan.

AL31/AL32, Unit 1/2 AC Loss Alarm (DC Fan Systems Only): Primary AC power has been lost on the HVAC units. Mechanical cooling cannot run without AC power. Free Cooling will continue to operate if conditions are suitable.

6. PROGRAM MENUS



Figure 6: Program Menu

Press **Prg** to access the Program Menus. Use the **Up** and **Down** keys to scroll through the menu options. Press **Enter** to access the functions in each menu. See Pages 9-16 for a list of all menu options.

Table 2 describes the list of functions available within each menu.

Table 2: List of Program Menus

Menu	Functions Available
Maintenance	<ul style="list-style-type: none"> • Review software and boot versions • View component Run Time and Start Count • Modify system time • Review Alarm History • Manual Operation mode • Calibrate sensor probes
Input/Out	<ul style="list-style-type: none"> • View current input/output status on the controller: <ul style="list-style-type: none"> ○ Sensor probe readings ○ Alarm input contacts ○ Alarm output contacts ○ Contactor coil outputs
Setpoint	<ul style="list-style-type: none"> • Change primary temperature setpoint
User	<ul style="list-style-type: none"> • Adjust cooling stages • Heater settings • Humidity control • Free Cooling settings • High/Low Temp alarm setpoints • Step Test • Comfort Mode
Manufacturer	<ul style="list-style-type: none"> • Communication settings • Alarm inputs (Normally Open vs. Normally Closed) • Supply fan setting (AC vs. DC) • Erase Alarm History • Reset factory defaults

6.1. Maintenance Menu

Table 3 lists the information and settings available in the Maintenance Menu. Press Up or Down to change or cycle through parameters. Press Enter to confirm a change or cycle through parameter options. The Menu Reference is located at the top right-hand corner of the screen.

Table 3: Maintenance Menu

Menu	Menu Reference	Description
Unit (System) Type	A0	AIRSYS = Manufacturer's Name
		Unit Type: US BS (U.S. Base Station)
System Version	A1	Bios Version
		Boot Version and Date
		Version: Software build and version
Free Cooling Stats	A2	Unit 1 Free Cooling Running Hours
	A2a	Unit 1 Free Cooling Start Count
	A2b	Unit 2 Free Cooling Running Hours
	A2c	Unit 2 Free Cooling Start Count
Compressor Stats	A3	Unit 1 Compressor Running Hours
	A3a	Unit 1 Compressor Start Count
	A3b	Unit 2 Compressor Running Hours
	A3c	Unit 2 Compressor Start Count
Heater Stats	A4	Unit 1 Heater Running Hours
	A4a	Unit 1 Heater Start Count
	A4b	Unit 2 Heater Running Hours
	A4c	Unit 2 Heater Start Count
Evaporator Fan Stats	A5	Unit 1 Evaporator Fan Start Count
	A5a	Unit 1 Evaporator Fan Running Hours
	A5b	Unit 2 Evaporator Fan Start Count
	A5c	Unit 2 Evaporator Fan Running Hours
Regulation (System) Clock	A6	Clock Settings
Alarm history	A7	Press the Alarm button to view historical alarms. See Alarm History on page 10 for more detail.
Manual Mode Entry	A8	Note: Use the Step Test described in Page 14 instead of manual mode unless absolutely necessary. Manual mode is only available when the system is Off . Warning: Improper use manual mode may damage HVAC components. Always turn on the supply fan before the heater or compressor. Always let compressor run at least one minute before shutting off. The default password for manual mode and sensor calibration is 0003.
Manual Mode	A9	Unit 1 Evaporator Fan Manual On/Off
	A9a	Unit 2 Evaporator Fan Manual On/Off
	Aa	Unit 1 Evaporator Fan Manual Speed (0-10V)
	Aa1	Unit 2 Evaporator Fan Manual Speed (0-10V)
	Ab	Unit 1 Heater Manual On/Off
	Ab1	Unit 2 Heater Manual On/Off
	Ae	Unit 1 Compressor Manual On/Off
	Ae1	Unit 2 Compressor Manual On/Off
	Ag	Unit 1 Free Cooling Damper Position (0-10V)
Ag1	Unit 2 Free Cooling Damper Position (0-10V)	
Sensor Calibration	Ah	Room Temp Sensor Calibration Outdoor Temp Sensor Calibration
	Ai	Supply Air Temp Sensor 1 Calibration Humidity Sensor Calibration
	Aj	Room Temp Sensor 2 (used for backup) Calibration Supply Air Temp Sensor 2 Calibration
	Az	Press Enter to change the manual mode password

For parameters A2-A5c, Press **Enter** to access clock reset.

Press **Enter** to modify system time and date.

6.1.1. Alarm History



Figure 7: Alarm History

1. **Alarm Code:** Refer to Alarm Code detail on Page 6 for more detail.
2. **Alarm Description**
3. **Alarm Time**
4. **Alarm Sequence:** H008 indicates the 8th alarm on the system
5. **Alarm Date:** Date recorded in DD/MM/YY format

6.2. Input/Output Menu

Table 4 lists the information available in the Input/Output Menu. The parameters in this table are READ ONLY.

Table 4: Input/Output Menu

Menu	Menu Reference	Description	Range
Sensor Input	I0	B1: Not Used	
		B2: Room Temp	
		B3: Indoor Humidity	
		B4: Outdoor Temperature	
	I1	Supply Air Temp Sensor Reading	
	I2	Humidity Sensor Reading	
	I3	Indoor Temp Sensor Reading	
Backup Temp Sensor Reading			
I4	Outdoor Temp Sensor Reading		
Unit 1 Input Contacts	I7	Unit 1 Smoke/Fire Alarm Input	Open/Closed
		Gen Run Signal Input	Open/Closed
		Unit 1 Low Pressure Contact	Open/Closed
	I8	Unit 1 High Pressure Contact	Open/Closed
		Unit 1 Filter Contact	Open/Closed
		ASLLC.2(A): Unit 1 Fan Overload / AC Loss Contact ASLLC.2(A).48: Unit 1 Airflow Contact	Open/Closed
Unit 2 Input Contacts	I7a	Prime Power Loss Input (DC Failover Option Only)	Open/Closed
		Unit 2 Smoke/Fire Alarm Input	Open/Closed
		Unit 2 Low Pressure Contact	Open/Closed
	I8a	Unit 2 High Pressure Contact	Open/Closed
		Unit 2 Filter Contact	Open/Closed
		ASLLC.2(A): Unit 2 Fan Overload / AC Loss Contact ASLLC.2(A).48: Unit 2 Airflow Contact	Open/Closed
	I8b	Controller 1 Power Contact	Open/Closed
		Controller 2 Power Contact	Open/Closed
Analog Output	I9	Unit 1 Evaporator Fan Speed	0-10V
		Unit 1 Outside Air Damper Opening	0-10V
	I9a	Unit 2 Evaporator Fan Speed	0-10V
		Unit 2 Outside Air Damper Opening	0-10V
Unit 1 Output Contacts	Id	Unit 1 Compressor Output	On/Off
		Unit 1 Evaporator Fan Output	On/Off
		Unit 1 heater Output	On/Off
	Ie	High Temp Output	Open/Closed
		HVAC1 Alarm Output	On/Off
Unit 2 Output Contacts	Id1	Unit 2 Compressor Output	On/Off
		Unit 2 Evaporator Fan Output	On/Off
		Unit 2 heater Output	On/Off
	Ie1	2 Compressor Run Output	Open/Closed
		HVAC2 Alarm Output	On/Off

6.3. User Menu

The default password for User Menu is **0003**.

Table 5: User Menu

Menu	Menu Reference	Description	Default
Cooling and Heating Stage Control	P0a	Enable PI Temperature Control	No
	P1	Lead Compressor Turn Off Difference: The range of allowed temperature swing for compressor. This is to prevent frequent compressor cycling	6.0°F
		Lead Compressor Turn On Difference: The temperature above the setpoint at which the compressor will turn on. For example, if setpoint is 77°F and this setting is 2°F, the compressor will start at 79°F.	2.0°F
		Free Cooling Turn On Difference: The temperature below the setpoint at which Free Cooling will start. For example, if the setpoint is 77°F and this setting is 4°F, Free Cooling will start at 73°F.	4.0°F
	P2	Lead Heater Turn Off Difference: The temperature range for heater operation.	3.0°F
		Lead heater Turn On Difference: The temperature below the setpoint at which the heater turns on. For example, if the setpoint is 77°F and this setting is 29°F, the heater will start at 48°F.	29.0°F
	P3	Minimum temperature allowed for the primary temperature setpoint	33.8°F
Maximum temperature allowed for the primary temperature setpoint		104.0°F	
Free Cooling Setpoints	P4	Enable humidity limit when free cooling	Yes
		Humidity limit: maximum relative humidity allowed at the site before the outdoor air damper shuts down	85%
		Humidity Difference: determines the indoor humidity below the maximum at which free cooling is re-enabled	5%
	P5	Free Cooling Temperature Difference: Minimum Outdoor-Indoor Temperature difference for Free Cooling. For example, if this parameter is set to 3.6°F, the outdoor air must be 3.6°F lower than the indoor air for Free Cooling to engage.	3.6°F
System Power Setting	P7	Enable Auto Restart: Restarts the system automatically after power loss	Yes
		Enable Supervisor On/Off Unit: Enable the system to be turned on and off remotely. This is required for remote manual mode.	Yes
High/Low Temp Alarm Setting	P8	Low Temp Alarm Diff: The temperature difference below the setpoint for low temperature alarm to trigger. For example, if the Indoor Temperature Setpoint is 77°F and Low Temp Alarm Trigger is set to 34°F, the low temp alarm will trigger at 43°F.	34.0°F
		High Temp Alarm Diff: The temperature difference above the setpoint for the high temperature alarm to trigger. For example, if the Indoor Temperature Setpoint is 77°F and High Temp Alarm Trigger is set to 16°F, the high temp alarm will trigger at 93°F.	16.0°F
		High/Low temp alarm delay	60s
Communication Setting	Pg	Identification number for BMC Network	001
		Communication speed. Use 9600 bps for Modbus, 19200 for IP connection	9600 bps
		Protocol Type: Use Carel Protocol for IP connection	Modbus
Free Cooling Control Logic	Pm	Free Cooling Temperature Limit: Minimum temperature for supply air during free cooling: when the outside air temperature is lower than this limit, the outside air damper will adjust to mix in return air to avoid cold shocking equipment	51.8°F
		Free Cooling Dead Zone: The temperature range for Free Cooling	1.8°F
	Pn	Enable FC damper alarm: The FC damper alarms work by measuring the temperature difference across the damper when it is fully open and fully closed. For example, when the damper is fully open, the outside air temperature should be the same as supply air temperature, within the tolerance specified.	Yes

Menu	Menu Reference	Description	Default
		Temperature difference tolerance for Damper Open condition	15.0°F
		Temperature difference tolerance for Damper Closed condition	15.0°F
	Pn1	FC Alarm Delay: delay after the damper reaches fully open or fully closed position before damper alarm is accessed.	600s
		Restart Check: time delay between each damper check	60min
		Lock Counts: the number of check fails to trigger damper alarm	3
		Lock time: free cooling lockout period after the damper alarm is triggered	540min
Controller Setting	Pp	Controller Address: 01 for unit 1, 02 for unit 2.	1/2
Step Test	Pp1	Step Test. <u>Only available when the system is Off.</u> See section 6.3.1 on page 14 for more information.	N/A
Controller Setting	Pr	Supply fan PID control	Yes
	Ps	Compressor delay when free cooling is engaged	Yes
		Enable Room Temp 2: use backup temp sensor when required	Yes
AFPD	Pq	Enable Dust Sensor	No
		Set Filter Delay	120min
Comfort Mode	Pu	Comfort mode temperature setting	72.0°F
		Enable Comfort Mode	No
		Comfort Mode Time	01Hr
Alarm Setting	Pv	Alarm A08 output signal	Yes
		Alarm A15 output signal	No
		Alarm A16 output signal	No
		Alarm A24 output signal	Yes
	Pv1	Alarm A25 output signal	Yes
		Alarm A26 output signal	Yes
		Alarm A27 output signal	Yes
		Custom alarm signal output	A23
Dehumidification	Pw	Enable Dehumidification function	No
	Pw1	Target humidity level	55%
		Dehumidification dead zone: The humidity level above the target humidity level at which the compressor will turn on. For example, if the target humidity is 55% and this setting is 15%, the dehumidification process will start at 70%.	15%
		Free Cooling humidity dead zone: The humidity level above the target humidity level at which Free Cooling becomes unavailable. For example, if the target humidity is 55% and this setting is 5%, Free Cooling will not be available above 60%.	5%
	Pw2	Dehumidification temperature difference: The temperature below the main cooling setpoint at which electric reheat will be employed to achieve the desired humidity level	11.0°F
		Maximum fan speed during dehumidification	7.5 V
New Password	Pz	Press Enter to change the user mode password	N/A

6.3.1. Step Test

The step test systematically verifies that key components of the system are operating as expected. Note the following considerations:

- The step test is available only when the system is **Off** (at main screen, press and hold ESC + Enter for 5s to turn on/off system)
- The steps in the test can be executed in any order; they do not need to be sequential
- If any alarms are triggered during the test, refer to “Active Alarms” on Page 6 for more detail
- Warning: Once a compressor has been turned on, it must be allowed to run for **at least one minute** before shutdown to prevent damage

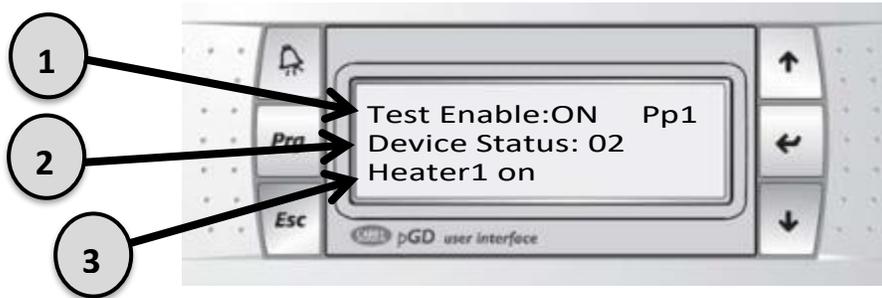


Figure 8: Step Test

1. Test Enable: Change to ON to start step test
2. Device Status: change the step number to perform a test. See **Table 6** for a list of all available tests and their corresponding step numbers.

Table 6: Step Test List

Step	Action	Notes
01	Turns on Unit 1 Supply Fan	
02	Turns on Unit 1 Heater	May take a few minutes before you feel warm air
03	Turns on Unit 1 Compressor	IMPORTANT: Let compressor run for <u>at least one minute</u> before going to next step
04	Opens Unit 1 Fresh Air Damper	HINT: With the lights off in the shelter, you can see indirect daylight via opening behind exhaust grill
05	Turns on Unit 2 Supply Fan	
06	Turns on Unit 2 Heater	May take a few minutes before you feel warm air
07	Turns on Unit 2 Compressor	IMPORTANT: Let compressor run for <u>at least one minute</u> before going to next step
08	Opens Unit 2 Fresh Air Damper	HINT: With the lights off in the shelter, you can see indirect daylight via opening behind exhaust grill
09	Turns on Fan and Heater for both Lead and Lag WPU's	
10	Turns on Fan, Compressor, and Damper for both Lead and Lag WPU's	Damper will open to 100% IMPORTANT: Let compressor run for <u>at least one minute</u>

3. When testing is complete, change “Test Enable” to OFF and turn the unit on from the main screen.

6.4. Manufacturer Menu

Table 7 lists the parameters available in the Manufacturer Menu.

Warning: these parameters are critical to system operation. Improper settings may cause the system to operate incorrectly. The default password for Manufacturer Menu is **0003**.

Table 7: Manufacturer Menu

Reference	Description	Default
C1	BMS Network	Y
	Enable Clock Card	Y
	Enable Free Cooling	Y
	Enable Free Cooling with Compressor (Partial Free Cooling).	Y
C1a	Enable buzzer	N
	Only Free Cool during emergency	N
	Enable Alarm A23	Y
C1b	Enable auxiliary heating	Y
	Do not turn off unit when fire alarm is activated	N
C2	Sys number: Number of units in system	2
	Enable Supply temperature calculation (Only when supply sensors not installed)	Y
	DG Status Type: (Diesel) Generator input signal type	N.O.
C2a	Smoke Input Type: Smoke/fire Alarm input signal type	N.C.
	Custom alarm output signal type	N.C.
C2b	HVAC Alarm (WPU lockout) output signal type	N.O.
	High Temp Alarm output signal type	N.C.
C2c	Manual lead-lag rotation: Changing to yes will manually rotate the lead and lag units once.	N
	Compressor start delay whenever a generator run signal is received	180s
	Allow both compressors to run during active generator run signal	N
C8a	Measurement Unit Type (Fahrenheit or Celsius)	F
Ce	Evaporator fan minimum speed: Change to 5V to enable indoor air circulation	0.1V
	Evaporator fan maximum speed	10V
	Evaporator fan maximum speed during prime power loss (DC failover option only)	8V
Ce1	Free Cooling damper minimum position	0V
	Free Cooling damper maximum position	10V
Cf	Startup delay time for evaporator fan	5s
	Stop delay time for evaporator fan	60s
Cf1	Startup delay time for evaporator fan overload alarm	0s
	Recovery delay time for evaporator fan overload alarm	120s
Cg	Startup delay time for low pressure alarm	60s
	Recovery delay time for low pressure alarm	10s
Cg1	Number of low pressure alarms triggered in an hour to cause lockout	3
Cg2	Number of high pressure alarms triggered in an hour to cause lockout	3
Ch	Minimum stop time for compressor	180s
	Minimum run time for compressor	60s
Ch1	Evaporator Fan Type	Auto
Ci	Airflow Alarm Delay	30s
Cj	Filter Alarm Delay	10s
	Stop Free Cooling when Filter Alarm is triggered.	Yes

Co	Number of Stand-by units	1
	Auto Rotation Time	168Hr
Cp	Force startup of stand-by unit by temperature	Yes
	Lag unit heating delay	1min
	Lag unit compressor delay	0min
Cq	Lag heater Turn On Difference: The temperature below the setpoint at which the heater turns on. For example, if the setpoint is 77°F and this setting is 29°F, the heater will start at 48°F.	29.0°F
	Lag Heater Turn Off Difference: The temperature range for heater operation.	3.0°F
	Allow both units to simultaneously employ Free Cooling	Yes
Cr	Lead Compressor Turn On Difference: The temperature above the setpoint at which the lag compressor will turn on. For example, if setpoint is 77°F and this setting is 7.4°F, the compressor will start at 84.4°F.	7.4°F
	Lag Heater Turn Off Difference: The temperature range for lag compressor operation.	7.2°F
Cs	Reset Controller to default values	N/A
Ct	Erase Alarm History	No
Cz	Press Enter to change the user mode password	N/A