

AIRSYS

Controller IP Interface

Installation and Operation Manual

Controller Models

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

Contents

- Introduction 2
- 1 Setup 2
 - 1.1 Hardware 2
 - 1.2 Controller Setting..... 3
- 2 Main Page 4
 - 2.1 Environment Monitor 4
 - 2.2 Unit Status..... 5
 - 2.3 Statistics 6
- 3 Alarm Status..... 7
- 4 Parameter Settings..... 10
 - 4.1 Remotely Turning System ON/OFF 10
 - 4.2 System Parameter Setting 10
 - 4.3 Manual Operation..... 11
- 5 Alarm Log 12
- 6 Customizing User Interface 12
- 7 SNMP/Email Notification 13
 - 7.1 Setup 13

INTRODUCTION

This manual provides installation and operation instructions for the pre-loaded IP User Interface. For details on setting up a IP connection please consult the pCOWeb User Manual.

For further information remote communication for AIRSYS equipment, please contact AIRSYS Support at (855) 874-5380 or ASNSupport@air-sys.com.

1 SETUP

The AIRSYS controller must have the correct hardware and settings for IP communication. These steps can be skipped if pCOWeb is preinstalled.

1.1 Hardware

Install Hardware

Remove the existing RS485 Card and install the new pCO Web Card (Figures 1 and 2).



Figure 2: Remove RS485 Card



Figure 1: Insert pCO Web Card

Initialize/Reset IP Address:

1. Cycle controller breaker (QF1) while pressing the reset button on the web card (Figure 3).
2. Keep holding Reset for 20 seconds, the green Status light (Figure 3) will start to flash red. Before the third red flash, release Reset.
3. If done correctly the Status light will flash quickly three times and return to steady green within 1 minute. This initializes the following settings:

IP address: 172.16.0.1

Subnet Mask: 255.255.0.0



Figure 3: Web Card User Interface

4. Once connected with the default IP address, use the default username and password to configure network and security settings:

User Name: admin

Password: fadmin

1.2 Controller Setting

Follow these steps to configure the controller for IP interface:

1. Press **Up** and **Down** together to display indoor temperature (**main menu**).
2. Press **Up** twice, screen should display **SPt**.
3. Press **Down** and **Sel** at the same time, the screen should display **0**.
4. Press **Down** until you get to **5** and press **Sel**, the screen should display **L 0 1**.
5. Press **Down** until you get to **L 0 4** and press **Sel**, the screen should display **U 0 1**.
6. Press **Down** until you get to **U 3 1** and press **Sel**, the screen should display **3**.
7. Press **Up** to change to **4** and press **Sel**, the screen should return to **U 3 1**.
8. Press **Down** for **U 3 2** and press **Sel**, the screen should display **n a d**.
9. Press **Up** to change to **U 3**, and press **Sel**, the screen should return to **U 3 2**.
10. Press **Up** and **Down** together to return to indoor temperature (**main menu**).

Note 1: Normal operation will not be interrupted during this change.

Note 2: If you are lost at any point in the menus, press **Up** and **Down** together to start over from Step 1.

2 MAIN PAGE

AIRSYS WPU Series

Software Version: 13B64

ENVIRONMENT MONITOR		
Description	Status	
Temperature Setpoint	77.0 °F	
Indoor Temperature	74.7 °F	
Backup Indoor Temperature	68.3 °F	
Outdoor Temperature	67.4 °F	
Indoor Humidity	54.4 %	
High Temp Alarm	● Normal	
Smoke/Fire Alarm	● Active	
Generator Mode	● Normal	
DC Failover Mode	● Normal	

Unit Status		
Description	WPU1	WPU2
Running Status	OFF (pLD)	OFF (pLD)
Supply Fan Speed	0.0 %	0.0 %
Free cooling Damper	0.0 %	0.0 %
Supply Air Temperature	67.2 °F	66.7 °F
Compressor	OFF	OFF
Electric Heater	OFF	OFF
Dirty Filter	● Normal	● Normal
Lockout Status	● Normal	● Normal

Statistics		
Description	WPU1	WPU2
Compressor running time	: hr	0 hr
Heater running time	: hr	0 hr
Freecooling running time	: hr	0 hr
Compressor start count	0	0
Heater start count	0	0
Freecooling start count	1	1

Figure 4: Monitoring Main Page

2.1 Environment Monitor

2.1.1 Temperature Set point

Displays cooling set point for indoor room temperature.

2.1.2 Indoor Temperature

Displays real-time indoor temperature.

2.1.3 Backup Indoor Temperature

Displays real-time indoor temperature (should be close to Indoor Temp reading).

2.1.4 Outdoor Temperature

Displays real-time outdoor temperature.

2.1.5 Indoor Humidity

Displays real-time indoor relative humidity in %.

Note: The lowest possible humidity reading is 10%. A 10% humidity reading also corresponds to the reading when the connection to the humidity sensor is open. If humidity reading is consistently 10% for an extended period of time, the connection to the humidity sensor should be verified on site.

- 2.1.6 High Temp Alarm**
Normal: The indoor temperature reading is below high temp set point
Active: The indoor temperature reading has exceeded the high temp alarm set point for at least 60 seconds (adjustable delay: 0 to 1 min)
- 2.1.7 Smoke/Fire Alarm:**
Normal: No alarms indicated
Active: Smoke/Fire Alarm has been received by the unit. Outside air dampers, heaters, compressors, and supply fans will automatically shut off until alarm condition clears.
- 2.1.8 Generator Mode:**
Normal: No generator signal has been received by the controller
Active: Generator On signal has been received by the unit. Outside air dampers will automatically close and only one compressor will be allowed to operate (can be configured for 2nd unit turn on).
- 2.1.9 DC Failover Mode: (AC supply fan configuration only)**
Normal: No DC Failover signal has been received by the controller
Active: A DC failover signal has been received indicating the AC power has been lost. The system will operate in low power supply fan only mode until AC power returns.

2.2 Unit Status

- 2.2.1 Running Status:**
On: The supply fan for the HVAC system is running at this time. (supply fan will run for MC, FC, heater and for circulation)
Off (Alarm): Unit has been shut off by alarm (e. g. high pressure).
Off (Remote): Unit has been shut off through remote control.
Off (pLD): Unit has been shut off by the local display (programmable LED).
Standby: Unit is powered and ready to operate when requested by the controller.
- 2.2.2 Supply Fan Speed:**
Displays supply fan speed as a percentage of maximum speed.
- 2.2.3 Free Cooling Damper:**
Displays damper opening as a percentage of maximum speed.
- 2.2.4 Supply Air Temperature:**
Displays real-time supply air temperature.
- 2.2.5 Compressor:**
On/Off
- 2.2.6 Electric Heater:**
On/Off
- 2.2.7 Dirty Filter:**
Excess pressure has built up across the air pressure differential switch. The filter should be cleaned or changed to maintain efficiency of the unit.
- 2.2.8 Lockout Status:**
Lockout: Mechanical Cooling is locked out due to low/high pressure alarm or AC power loss. Lockout due to AC power loss will recover once AC power has been restored.

2.3 Statistics

- 2.3.1 Compressor Running Time**
Displays the cumulative hours the compressor has run.
- 2.3.2 Heater Running Time**
Displays the cumulative hours the heater has run.
- 2.3.3 Free Cooling Running Time**
Displays the cumulative hours the unit has run with the damper at least partially open
- 2.3.4 Compressor Start Counter**
Displays a count of the number of times the compressor has turned on.
- 2.3.5 Heater Start Counter**
Displays a count of the number of times the heater has turned on since the equipment was installed.
- 2.3.6 Free Cooling Start Counter**
Displays a count of the number of times the unit has turned on Free Cooling to maintain site temperature.

3 ALARM STATUS

Alarm	Status	Level	Description
A02	Normal	Major	Unit 1 Low Pressure
A03	Normal	Major	Unit 1 High Pressure
A04	Normal	Major	Unit 2 Low Pressure
A05	Normal	Critical	Smoke/Fire
A06	Normal	Major	Unit 2 High Pressure
A07	Normal	Critical	High Temp Alarm
A08	Normal	Minor	Low Temp Alarm
A10	Normal	Major	Unit 1 Fan Overload / AC Loss
A11	Normal	Major	Unit 2 Fan Overload / AC Loss
A15	Normal	Minor	Unit 1 Dirty Air Filter
A16	Normal	Minor	Unit 2 Dirty Air Filter
A17	Normal	Minor	pLAN alarm
A18	Normal	Minor	Clock Card Alarm
A19	Normal	Minor	Humidity Alarm
A20	Normal	Minor	Indoor Temperature Sensor Alarm
A21	Normal	Minor	Backup Temperature Sensor Alarm
A22	Normal	Minor	Outdoor Temperature Sensor Alarm
A23	Normal	Info	Two Compressors On
A24	Normal	Minor	Unit 1 Freecooling Damper Alarm
A25	Normal	Minor	Unit 2 Freecooling Damper Alarm
A26	Normal	Minor	Unit 1 Supply Temperature Sensor Alarm
A27	Normal	Minor	Unit 2 Supply Temperature Sensor Alarm
A28	Normal	Info	Generator Mode
A29	Normal	Major	Unit 1 HVAC Airflow Alarm
A30	Normal	Major	Unit 2 HVAC Airflow Alarm
A31	Normal	Major	Unit 1 HVAC AC Loss
A32	Normal	Major	Unit 2 HVAC AC Loss

Figure 5: Alarm Status Page

Note: Alarm Status will be displayed as either Normal or Active

A02/A04 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.

A03/A06 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.

A05 Smoke/Fire Alarm

During Smoke/Fire Alarm, both units will shut down all system functions.

A07 High Temp Alarm

The indoor temperature reading has reached above the configured high temp alarm set point (adjustable) for at least 60 seconds (adjustable).

A08 Low Temp Alarm

The indoor temperature reading has reached below the low temp alarm set point (adjustable) for at least 60 seconds (adjustable).

A10/A11 Fan Overload /AC Loss

Indicates either the supply fan’s internal protection is active or the HVAC unit has lost AC power. AC Fan Systems only.

A15/A16 Dirty Air Filter

Excess pressure has built up across the air pressure differential switch. Schedule a filter cleaning/replacement for optimum efficiency and capacity.

A17 pLAN alarm

pLAN communication has been lost between the 2 HVAC units. Each unit will cool independently according to its own temperature sensors while communication is lost.

A18 Clockcard Alarm

The clockcard is either not connected properly or the battery in the clockcard needs replacement.

A19 Humidity Sensor Alarm

Humidity sensor is failing to report accurate relative humidity. Connection should be verified or humidity sensor replaced.

A20 Indoor Temp Sensor Alarm

Indoor temp sensor is not giving accurate temperature readings. Connection should be verified or temperature sensor replaced.

A21 Backup Indoor Temp Sensor Alarm

Backup indoor temp sensor is not giving accurate temperature readings. Connection should be verified or temperature sensor replaced.

A22 Outdoor Temp Sensor Alarm

Outdoor temp sensor is not giving accurate temperature readings. Connection should be verified or temperature sensor replaced.

A23 Two Compressor Run:

Each HVAC unit is designed to be able to maintain site temperature on its own. Whenever two compressors need to engage to maintain site temp this could be an indication of the following:

- Temperature in the site has been allowed to climb above lag unit turn on temp by workers on site shutting off the HVACs or leaving the door open on a warm day.
- Elevated outside temperature (>95°F)
- Additional heat load has been added to the site without properly addressing the cooling capacity.
- Lead system is no longer performing to specifications and needs service.

A24/A25 Damper Alarm

Indicating one of the two most common failure modes for the outside air damper has occurred.

- Damper stuck open
- Damper stuck closed

A26/A27 Supply Air Temperature Sensor Alarm

Supply air temp sensor is failing to report accurate temperature. Connection should be verified or possibly temperature sensor re-placed.

A28 Generator Mode

An active generator on signal has been received by the unit. When the generator is on, outside air dampers will be shut and only one HVAC system will be allowed to utilize mechanical cooling (unit quantity adjustable).

A29/A30 Airflow Alarm

Indicates a potential problem with DC supply fan. DC Fan Systems only.

A31/A32 AC Loss Alarm

Primary AC power has been lost on the HVAC units. Mechanical cooling cannot run without AC. Free Cooling will continue to operate if conditions are appropriate. DC Fan Systems only.

4 PARAMETER SETTINGS

Setting Value	Status	Description
Remote ON/OFF System		
ON ▾	ON	Remote ON/OFF (Warning: Leaving the system in OFF state can quickly overheat live sites.)
System Parameters Setting		
77.0 °F	77.0 °F	Indoor Temperature Setpoint(Default: 77°F)
6.0 °F	6.0 °F	Cooling Difference (Default: 6°F)
3.0 °F	3.0 °F	Heating Difference (Default: 3°F)
18.0 °F	18.0 °F	High Temp Alarm Trigger (Default: 18°F Above Setpoint)
32.0 °F	32.0 °F	Low Temp Alarm Trigger (Default: 32°F Below Setpoint)
3.6 °F	3.6 °F	Minimum Outdoor-Indoor Temperature Difference for Freecooling (Default: 3°F)
85.0 °F	85.0 °F	Maximum Indoor Humidity Allowed for Freecooling (Default: 85%)
5.0 °F	5.0 °F	Humidity Turn On Deadband (Default: 5%)
10.0 °F	10.0 °F	Tolerance for Damper Closed State Alarm (Default: 10°F)
10.0 °F	10.0 °F	Tolerance for Damper Open State Alarm (Default: 10°F)
Manual Operation (MUST Turn System Off First)		
MAN_OFF ▾	MAN OFF	Manual Operate Supply Fan 1
MAN_OFF ▾	MAN OFF	Manual Operate Supply Fan 2
MAN_OFF ▾	MAN OFF	Manual Operate Compressor 1 (WARNING: Never Run Compressor or Heater Without Supply Fan)
MAN_OFF ▾	MAN OFF	Manual Operate Compressor 2 (WARNING: Never Run Compressor or Heater Without Supply Fan)
MAN_OFF ▾	MAN OFF	Manual Operate Electric Heater 1 (WARNING: Never Run Compressor or Heater Without Supply Fan)
MAN_OFF ▾	MAN OFF	Manual Operate Electric Heater 2 (WARNING: Never Run Compressor or Heater Without Supply Fan)
MAN_OFF ▾	MAN OFF	Manual Operate Freecooling Damper 1
MAN_OFF ▾	MAN OFF	Manual Operate Freecooling Damper 2
Enter & Send		

Figure 6: Parameter Settings Page

4.1 Remotely Turning System ON/OFF

To control the system remotely, select a parameter and press “Enter & Send” at the bottom of the page.

Note 1: Remotely turning system On/Off will only function when the system is in On, Standby, or Off (Remote) status.

Note 2: This feature may be turned off locally in the L04 Menu.

Warning: Leaving the system in OFF state can quickly overheat a live site.

4.2 System Parameter Setting

4.2.1 Indoor Temperature Setpoint

The main temperature target for cooling.

4.2.2 Cooling Difference:

Secondary temperature setpoint that determines the control temperature range. For example, if setpoint is 77°F and Cool Difference is set to 6°F, the control temperature range will be 73-79°F.

4.2.3 Heating Difference:

Determines the indoor temperature that must be increased before the heater turns off. This is to prevent rapid cycling of the heating.

- 4.2.4 High Temp Alarm Trigger:**
The temperature difference above the setpoint for high temp alarm to trigger. For example, if the Indoor Temperature Setpoint is 77°F and High Temp Alarm Trigger is set to 18°F, the high temp alarm will trigger at 95°F.
- 4.2.5 Low Temp Alarm Trigger**
The temperature difference below the setpoint for low temp alarm to trigger. For example, if the Indoor Temperature Setpoint is 77°F and Low Temp Alarm Trigger is set to 32°F, the low temp alarm will trigger at 45°F.
- 4.2.6 Minimum Outdoor-Indoor Temperature difference for Freecooling**
The temperature difference between the indoor and outdoor temperature must be larger than this setting for the system to engage in 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 freecooling to engage.
- 4.2.7 Max Indoor Humidity for Freecooling**
Once indoor humidity reaches this limit, the outside air damper will be shut and the unit will only use compressor for cooling.
- 4.2.8 Humidity turn on deadband:**
Determines the indoor humidity below the maximum that freecooling is allowed again.

4.3 Manual Operation

Follow these steps to use manual mode:

1. Turn system off and make sure the system status is Off (remote).
2. Change Supply Fan 1 or 2 from Man_Off to Man_On and then press “Enter & Send”.
3. You may now turn on other components by changing Man_Off to Man_On and then press “Enter & Send”.
4. Before turning the system back on, turn all manual components to Man_Off.

Warning: Manual mode bypasses automatic internal protection. Never operate the heater or compressor without the supply fan.

7 SNMP/EMAIL NOTIFICATION

SNMP alarm traps and email notifications can be configured for remote monitoring.

7.1 Setup

1. On the main page, click on Administrator
2. Input user name / password. (**default: admin / fadmin**)
3. Click on Event → Event triggered by digital alarms
4. Configure alarms using the table below. Digital Variable 0 = Normal / 1 = Alarm Active

Alarm #	Digital Variable	Alarm Level	Description
A02	45	Major	Unit 1 Low Pressure
A03	46	Major	Unit 1 High Pressure
A04	47	Major	Unit 2 Low Pressure
A05	55	Critical	Smoke/Fire
A06	48	Major	Unit 2 High Pressure
A07	56	Critical	High Temp Alarm
A08	57	Minor	Low Temp Alarm
A09	58	Major	Prime Power Loss (DC Failover Mode)
A10	49	Major	Unit 1 AC Loss/Evap. Fan Overload
A11	50	Major	Unit 2 AC Loss/Evap. Fan Overload
A15	51	Minor	Unit 1 Dirty Air Filter
A16	52	Minor	Unit 2 Dirty Air Filter
A17	59	Minor	pLAN Alarm
A18	60	Minor	Clock Card Alarm
A19	61	Minor	Humidity Sensor Alarm
A20	53	Minor	Indoor Temperature Sensor Alarm
A21	62	Minor	Outdoor Temperature Sensor Alarm
A22	54	Minor	Backup Temperature Sensor Alarm
A23	63	Info	Two Compressors On
A24	65	Minor	Unit 1 Freecooling Damper Alarm
A25	66	Minor	Unit 2 Freecooling Damper Alarm
A26	67	Minor	Unit 1 Supply Temperature Sensor Alarm
A27	68	Minor	Unit 2 Supply Temperature Sensor Alarm
A28	69	Info	Generator Running Status
A29	70	Major	Unit 1 Airflow Alarm (DC fan system only)
A30	71	Major	Unit 2 Airflow Alarm (DC fan system only)
A31	72	Major	Unit 1 AC Loss (DC fan system only)
A32	73	Major	Unit 2 AC Loss (DC fan system only)