

Comba Battery Backup Installation User Manual

PN: CPBBUV2-48xxx-UL
&
PN: PSU-9248* or CPBBUV1-48055-UL*

*Modified with the LiFePO 60AHr Battery and a V2.6 MCU Control Board

Version: 1.2.4

THIS INSTALLATION GUIDE IS FOR FIRMWARE VERSION V8802 ONLY

IMPORTANT ~ READ BELOW

THIS DEVICE SHALL BE INSTALLED AND INSPECTED PER NFPA 1221 (2019) BY A CERTIFIED INSTALLER

UPON SYSTEM INSTALLATION, AND ALL THE BREAKERS TURNED ON (AC, DC & BATTERY), PRESS AND HOLD THE LIFEPO BATTERY "RESET" BUTTON UNTIL THE FIRST "SOC" LED ILLUMINATES (2-3 SECONDS) THEN RELEASE

COMBA TECHNICAL SUPPORT: (408) 526-0180, EXT 3

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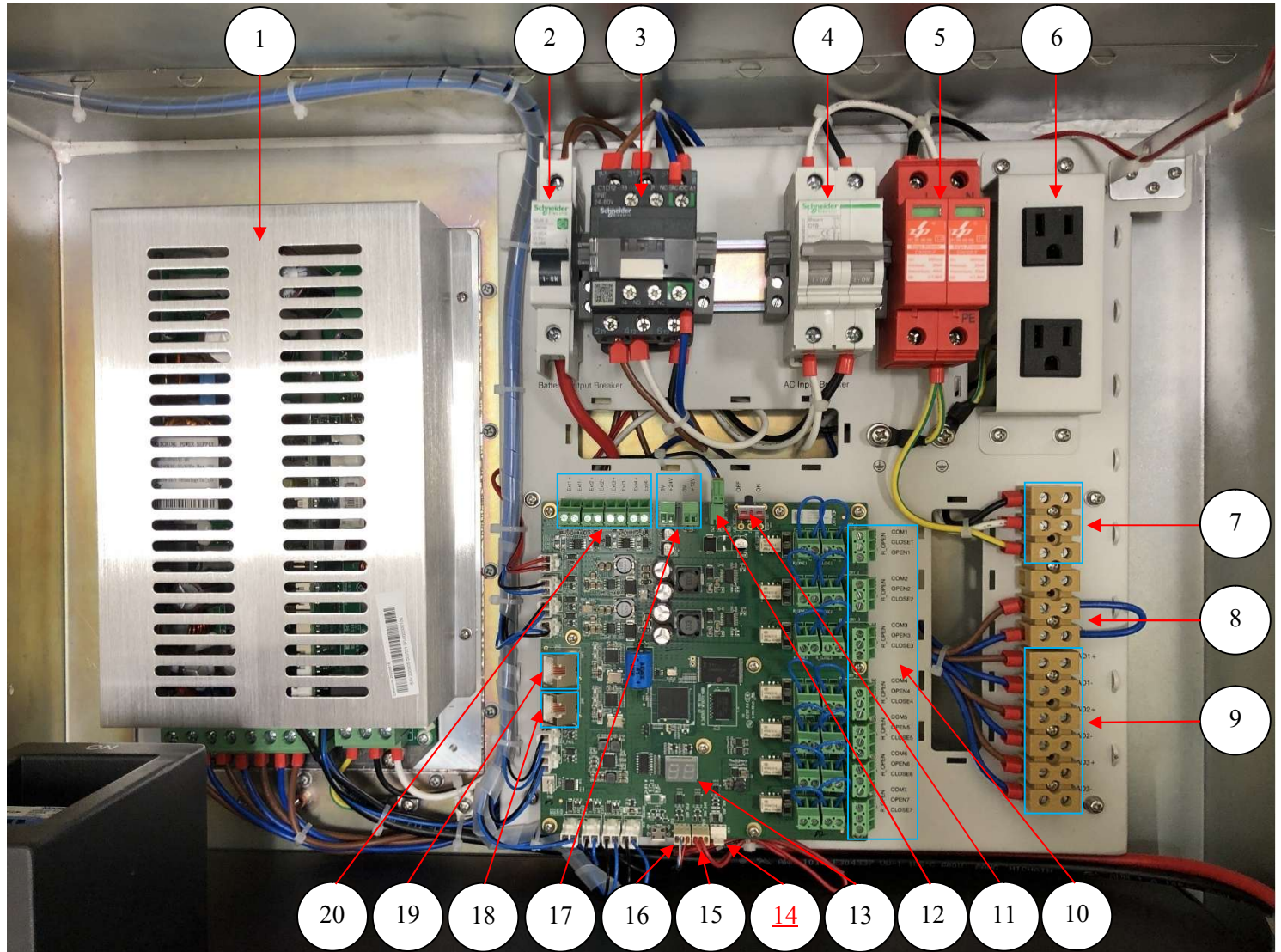
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LiFePO4 Battery Explanation and Benefits

- Lithium Iron Phosphate (LiFePO4) batteries typically weigh half as much and provide up to 50% more energy than traditional lead acid batteries.
- Under normal operating conditions, the LiFePO4 battery will last between 7~10 years as compared to the lead acid battery life span of 3~5 years
- Under high temperature conditions, the lead acid battery will not completely discharge whereas the LiFePO4 battery will have a 100% discharge
- Manual inspection is required for lead acid battery health as compared to the LiFePO4 that can be checked by remote login into the BBU GUI
- LiFePO4 batteries have x10 times the charge/discharge cycles with respect to lead acid batteries
 - LiFePO4 batteries can typically deliver 5,000 or more discharge cycles with minimal life cycle impact
 - Lead acid batteries can typically deliver 300-500 discharge cycles before life cycle degradation occur
- LiFePO4 battery uses green battery material
- Lead-acid batteries contain lead, sulfuric acid, lead sulfate and lead alloys which are considered carcinogenic and toxic to humans
- LiFePO4 batteries do not contain any toxic or heavy metals and are not hazardous to the environment during the manufacturing process



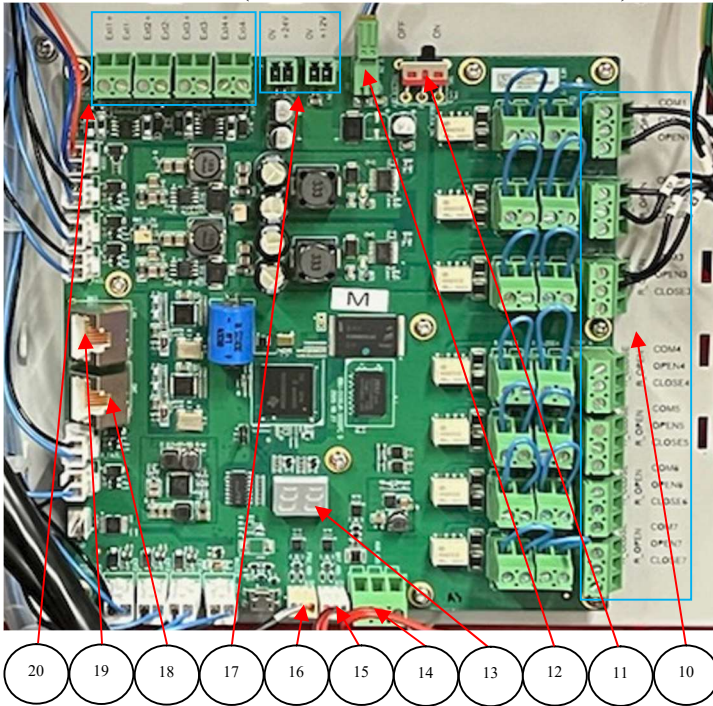
BBU/MCU V2.x Location Diagram:



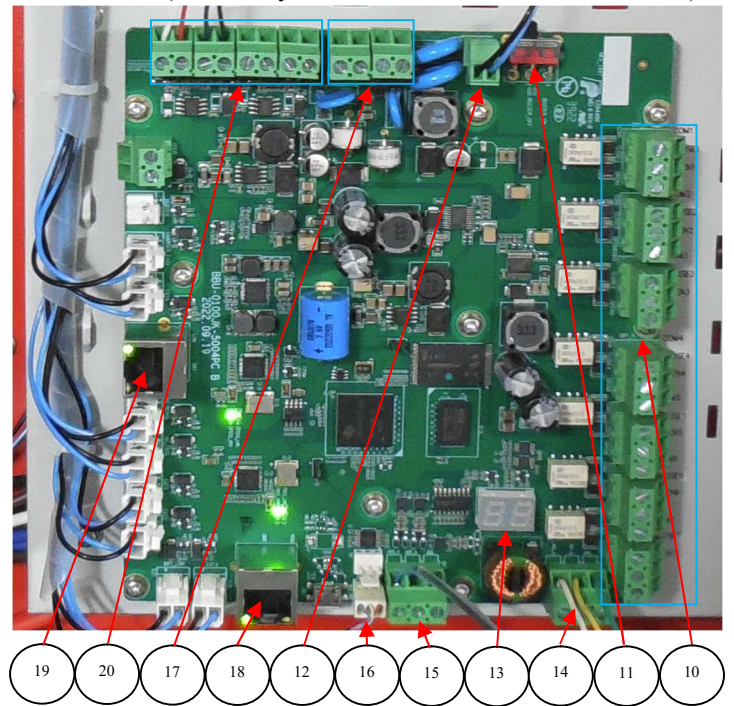
V2.0 MCU (early model V2 BBU Chassis)

Item	Description	Item	Description	Item	Description
1	BBU Charger/PSU	8	EPO Switch Connection	15	Battery RS485 Comm Port
2	BBU DC Output Breaker	9	48VDC Outputs/Loads	16	Charger RS485 Comm Port
3	EPO Control/Cutoff Relay	10	Dry Contact Outputs	17	12 & 24 VDC Outputs
4	BBU AC Input Breaker	11	BBU Visual Alarm/Buzzer Silence Switch	18	OMT Port
5	Surge Arrestor	12	MCU Board Power Connector	19	LAN Port
6	120VAC Convenience Outlets (V2 Chassis Only)	13	State of Charge (SOC) Display for Battery, 0% to 100% (FF)	20	External Alarm Inputs
7	BBU AC Input	<u>14</u>	External Annunciator Panel RS485 Comm Port (newer MCUs updated to a phoenix connector)		

V2.7 MCU (current model V2 BBU Chassis)



V2.6 MCU (Used only in the V1 BBU Modified Chassis)



Item	Description	Item	Description	Item	Description
1	BBU Charger/PSU	8	EPO Switch Connection	15	Battery RS485 Comm Port
2	BBU DC Output Breaker	9	48VDC Outputs/Loads	16	Charger RS485 Comm Port
3	EPO Control/Cutoff Relay	10	Dry Contact Outputs	17	12 & 24 VDC Outputs
4	BBU AC Input Breaker	11	BBU Visual Alarm/Buzzer Silence Switch	18	OMT Port
5	Surge Arrestor	12	MCU Board Power Connector	19	LAN Port
6	120VAC Convenience Outlets (V2 Chassis Only)	13	State of Charge (SOC) Display for Battery, 0% to 100% (FF)	20	External Alarm Inputs
7	BBU AC Input	14	External Annunciator Panel RS485 Comm Port		



V2 BBU Front Panel Display Diagram (Labeled with Dry Contact/Ext Input Positions for Reference)

Battery Backup Shipping Contents:

The BBU is shipped with the following. Please check accessories to ensure all are included:

1. Qty 1 – BBU Chassis
2. Qty 2 – 100AHr, 60AHr or 30AHr LiFePO₄ Battery (based on order)
3. Qty 4 – Liquid Tight Connectors
4. Qty 1 – Ground Wire
5. Qty 1 – Accessory Kit (Includes 2 Keys, Factory QC Report, and Concrete Mounting Bolts).

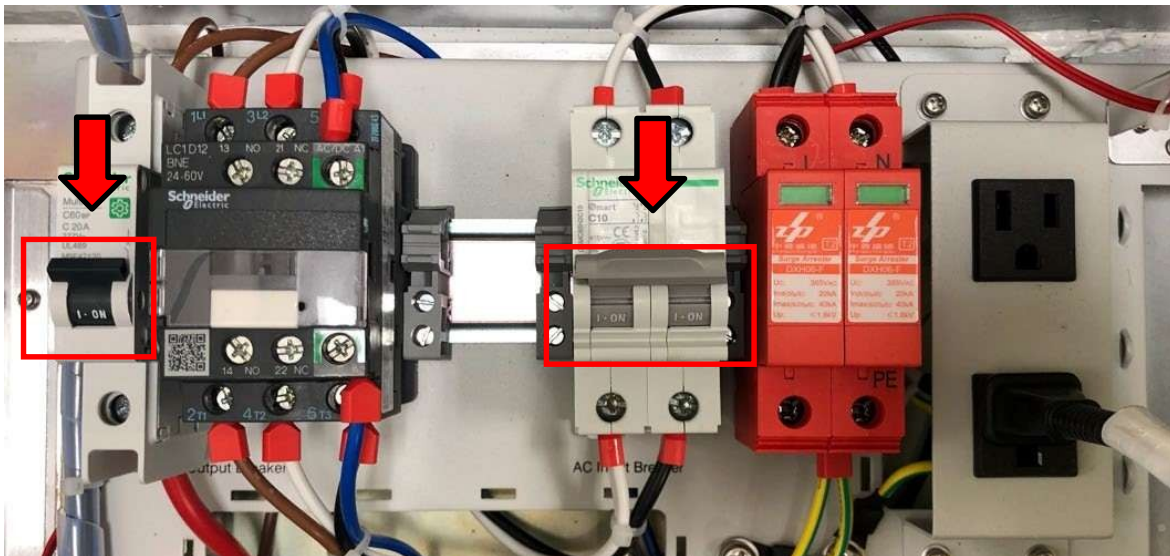
Before Starting:

Check the battery and chassis for any shipping damage. If there are any signs of damage to the battery, chassis, damaged connections, or other deformities, contact Comba technical support for assistance. Note that the batteries may be shipped with electrical grease on the battery terminals to prevent corrosion and oxidation.

After installing the chassis, ensure the chassis is properly grounded using the provided ground wire or equivalent. The unit must be grounded per local or national electric code.

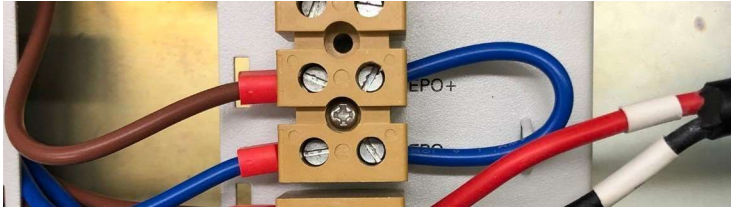
Cable Connections:

1. Turn off AC Input Breaker and DC Battery Output Breaker
 - AC Input Breaker disconnects the AC supply to the Charger
 - DC Battery Output Breaker disconnects the Battery from the Load/Charger



2. EPO Switch (Optional)

- If required, an EPO switch can be installed by removing the preinstalled jumper wire located at EPO+ and EPO- on the brown busbar. If an EPO switch is not required, leave the jumper in place.



- Connect the EPO switch wiring to EPO+ and EPO- (NOTE: The EPO switch must be wired in the “closed” position for normal BBU operation).
- The EPO switch can be installed at a remote location (NOTE: The max voltage-drop can be no greater than 14 volts).
- The EPO function is controlled by a contactor relay. This relay is initially energized by the battery, and once engaged, in conjunction with the charger. (NOTE: If the battery is over-discharged and goes into Cut-Off mode, the EPO contactor relay will release and disconnect AC power from the BBU charger and DC power to the equipment load. To reinitialize the BBU, the LiFePO battery must be “awaken” to active the EPO contactor relay).

3. External Annunciator Panel (Optional) – The BBUV2 will support up to two V1 Annunciator Panels and/or four V3 Annunciator Panels. Please refer to the V1/V3 Annunciator Panel User Manual for connections and configuration.

4. Configure the Dry Contact Output and External Input Alarms

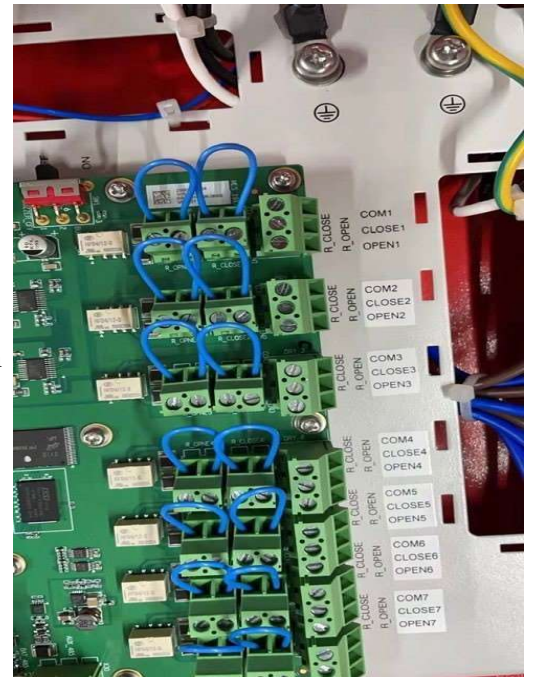
- Dry Contact Output Alarms:

This is a standard Form-C Relay that will change state upon an alarm event and typically connected to the fire alarm control panel. The BBU default configuration is Normally Open, and when connected to the “COM” and “OPEN” relay terminal/s, the circuit is “open” and “closes” when an event occurs.

If required, an EOL resistor will be installed at the Dry Contact location by the fire alarm contractor.

Default Dry Contact configuration shown below (configuration is programmable using WEBOMT):

- ALM 1 – Loss of Normal AC Power
- ALM 2 – Loss of Battery Capacity
- ALM 3 – Battery Charger Fail
- ALM 4 – EXT1 (Active RF Emitting Device Malfunction)
- ALM 5 – EXT2 (Donor Antenna Malfunction)
- ALM 6 – EXT3 (System Component Malfunction)
- ALM 7 – EXT4 (Donor Antenna Disconnection)



- External Alarm Inputs:

The BBU will monitor up four (4) dry contact alarms from the BDA/s or other devices. Only connect dry contact outputs to these external alarm inputs – connecting anything else may result in damage to the monitoring circuitry.

Alarms from external devices (BDA, AMS, etc.) can be wired into BBU EXT 1/2/3/4 inputs so they can be monitored and reported to the BBU front panel LEDs and BBU Dry Contacts. The default order is:

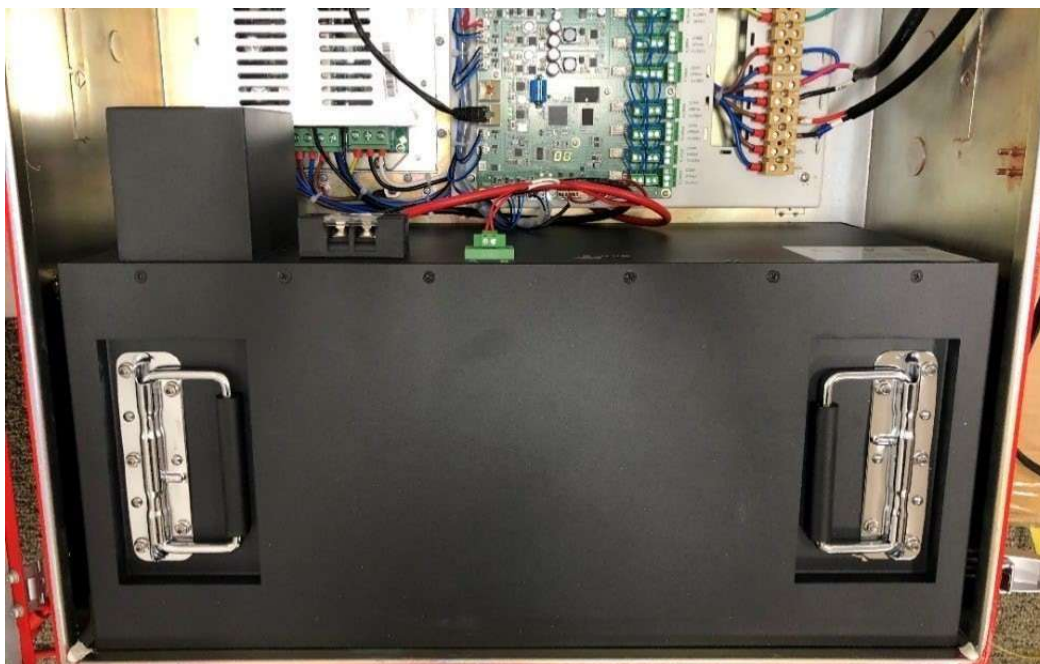
- EXT ALM1 - Signal Booster Fail
(from BDA Dry Contact)
- EXT ALM2 - Antenna Malfunction
(from BDA Dry Contact)
- EXT ALM3 - System Component Failure
(from BDA or AMS or another device)
- EXT ALM 4 – User Configurable in the GUI



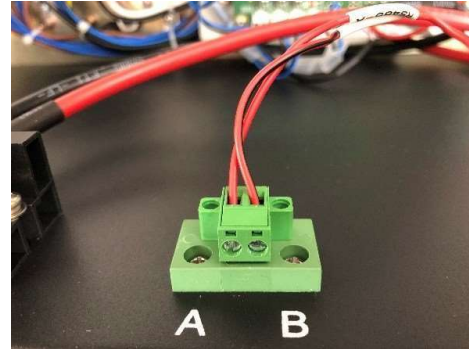
The EXT ALMs are defaulted to Normally Open dry contact alarm wiring. The dry contact alarm type (Normally Open or Normally Closed) can be configured using the WEBOMT tool. The two wires from dry contact alarms can be tied to EXT ALMs positive and negative termination block – the polarity does not matter.

5. Connect the LiFePO₄ Battery

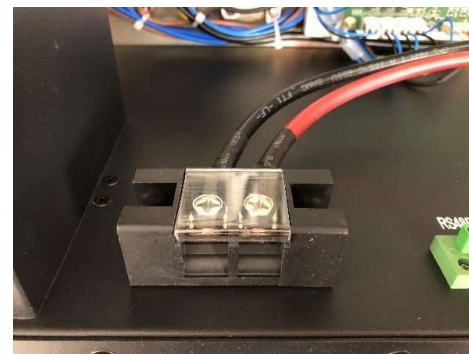
- Install the LiFePO₄ battery by using the handles and sliding it towards the back of the chassis. Once positioned, secure the battery with the bracket supplied with the battery kit to the BBU chassis. NOTE: The 100Ahr battery weighs approximately 120 pounds – please use two-person lift.



- Once the battery is installed and secured, connect the RS-485 MCU/battery communication cable to the battery. **NOTE:** The battery communication cable is located and zip-tied at the bottom of the MCU board. The MCU/battery communication cable allows the battery and MCU to communicate with each other.
- Connect the RS-485 pigtail wire labeled RS485-A/B to Battery Terminal A/B.

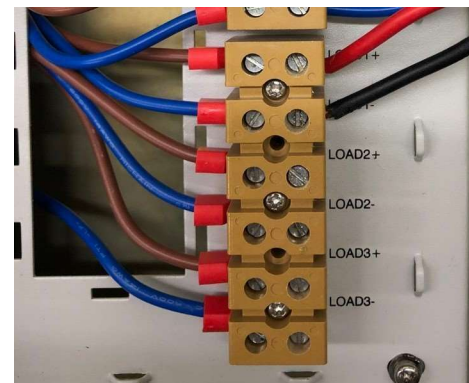


- Connect the red battery cable to the positive terminal and the black battery cable to the negative terminal on the battery. Replace the plastic cover when connections have been secured.



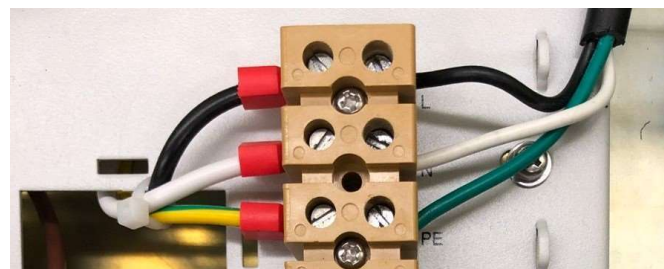
6. Install DC Wiring for Equipment Load(s)

- The BBU provides three sets of terminations points for DC loads
- All three loads share the same power being supplied by the charger or batteries
- **Note:** Not all Comba 48VDC products come with a power cable.



7. Install AC Wiring

- Primary/Neutral/Ground. Min. 14 AWG (not included). **Note: This must be done by a qualified electrician in your local jurisdiction.**

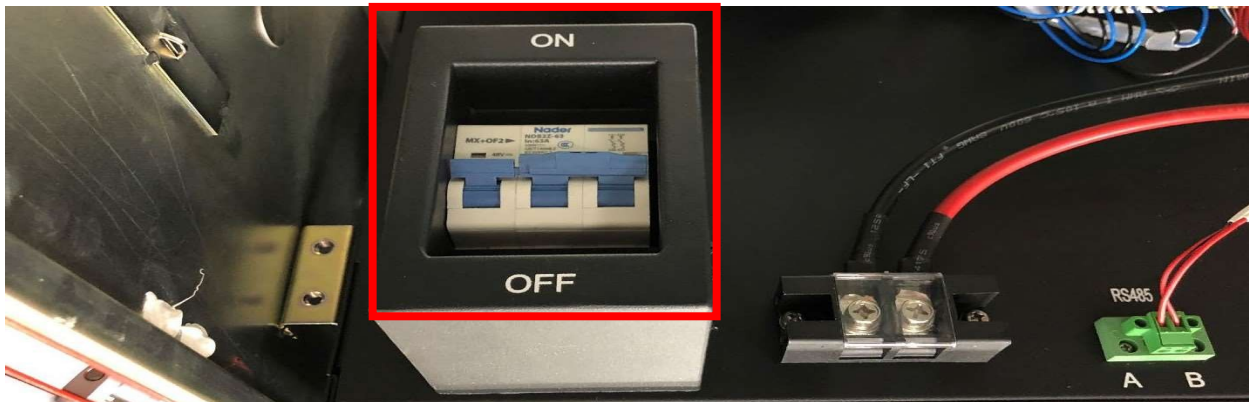


8. Turning on the system.

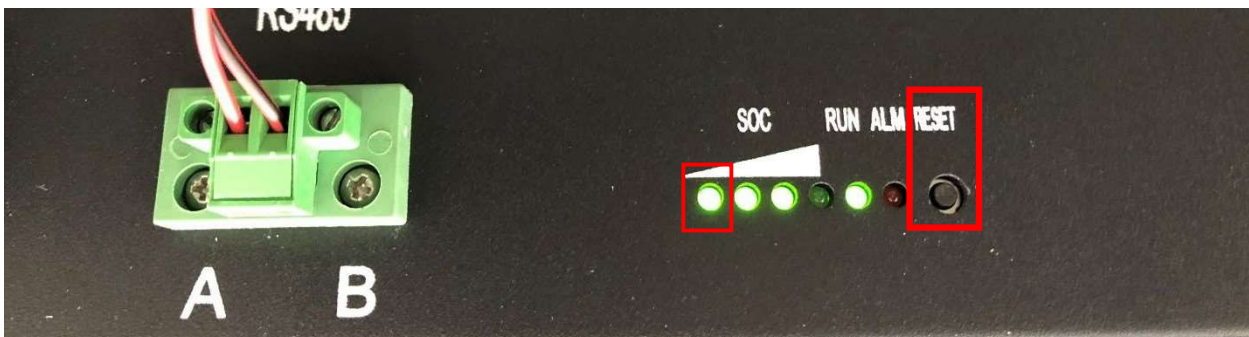
Turn on the AC and DC breakers at the top of the unit:



Turn on the breaker on the battery:



Press and hold the RESET button located on top of the battery for 2 to 3 seconds. When the first SOC LED illuminates, immediately release the RESET button.



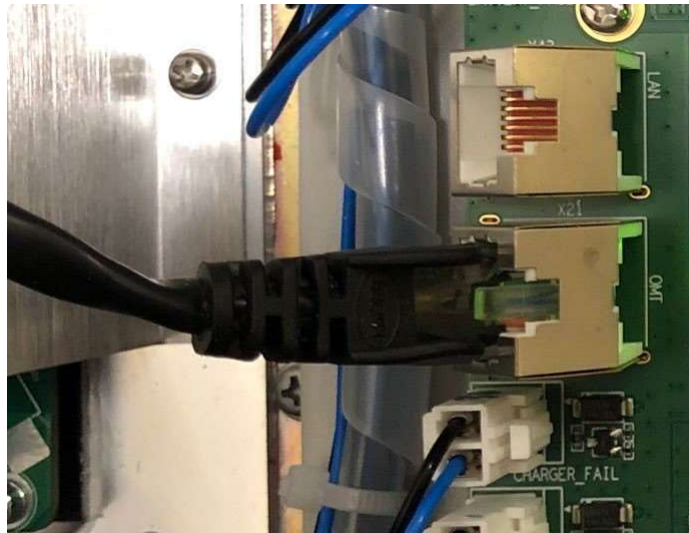
Once the BBU boots up, 2 ~ 3 minutes, you will be able to log in to complete the BBU commissioning process.

If the BBU does not turn on after following these steps, but the “SOC” LED’s are illuminated, check the battery voltage with a voltmeter. The battery should be above 46VDC when installed. If the voltage is below 46VDC, please contact Comba technical support for assistance.

Software Instructions:

After the BBU is energized, the MCU board will bootup in about 2 to 3 minutes. The GUI is preconfigured to the default settings. To change these settings, or review product identification information, you will need to connect to the OMT port located on the MCU board using a CAT5/6 Ethernet jumper.

- WEBOMT Login:
 - On the left-hand side of the MCU, connect the laptop to the OMT port using an Ethernet cable. Make sure to use the bottom port, as the top LAN port is used for remote connectivity and will be discussed later.



- Change the laptop local Ethernet IPv4 address to 192.168.8.XXX and Subnet Mask to 255.255.255.0 (DO NOT use 192.168.8.101)
 - Control Panel > Network & Sharing Center > Change Adaptor Settings > Right Click on “Ethernet” > Click on “Properties” > Click and highlight “Internet Protocol Version 4 (TCP/IPv4)” > Click on “Properties” > Click on “Use the following IP address” > For “IP address” enter 192.168.8.100 and for “Subnet mask” enter 255.255.255.0 > Click OK
- Open a Chrome Incognito (or Firefox/private mode) browser and type in 192.168.8.101, a login page will appear, enter username and password.
- Username: admin
- Password: admin
- LAN Port Login:
 - The LAN port is reserved for remote monitoring of the BBU and has a MAC address, unlike the OMT port, the LAN IP address is 192.168.1.101
 - Note that the IPV4 will need to be changed to 192.168.1.XXX as directed above

WEBOMT Interface:

Once logged into the GUI, the first page displayed is called “Overview” and will provide the status of the BBU.

Overview Tab:

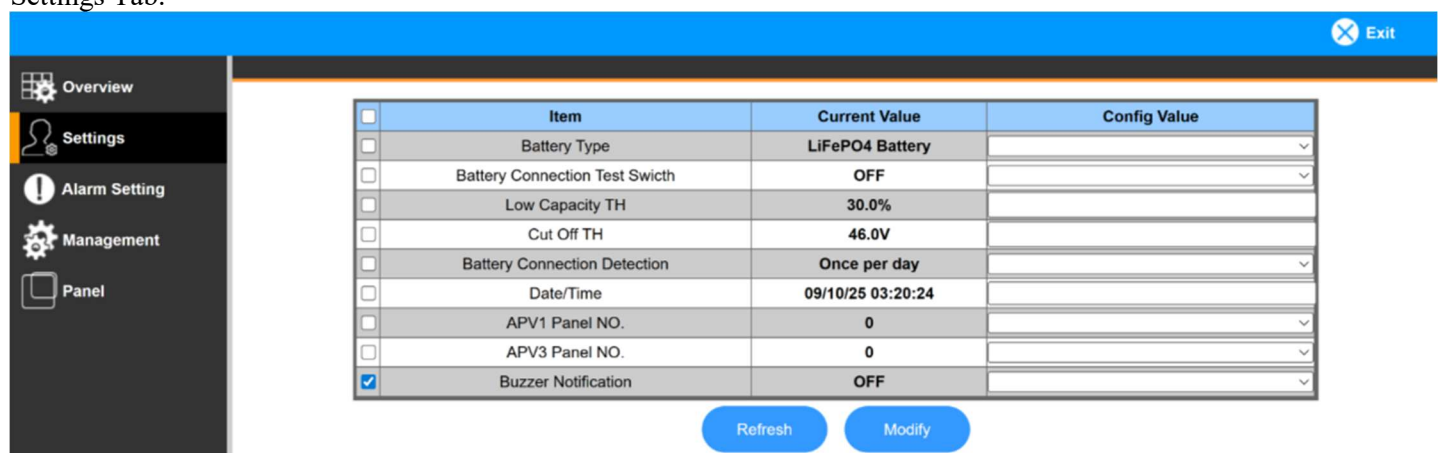


Item	Current Value
System Status	Normal
Output Voltage	54.3V
Charging Current	-0.1A
Battery Status	Floating Charging
Battery Voltage	54.3V
SOC(State Of Charge)	100.0%
Time Of AC Lost	N/A
Discharge Time	N/A
Load Current	0.2A
Overall ALM	●
AC Lost ALM	●
Charger Fail ALM	●
Battery Low ALM	●
Over TEMP ALM	●
Battery Over-Discharge ALM	●
Charger Comm. Fault ALM	●
Battery Comm. Fault ALM	●
Battery Connection ALM	●
Door Open ALM	●
Ext ALM1	●
Comm. Wire Fault ALM1	●
Ext ALM2	●
Comm. Wire Fault ALM2	●
Ext ALM3	●
Comm. Wire Fault ALM3	●
Ext ALM4	●
Comm. Wire Fault ALM4	●
AC Fail	●
Battery Low	●
Charger Fail	●
Signal Booster Fail	●
Antenna Malfunction	●
System Component Fail	●
Not Configured	●

- System Status:
 - Normal: The BBU is operating normally
 - Fault: The BBU is not operating normally. In this state, the batteries may not be charging, or the charger may not be providing a consistent DC voltage to the load
- Output Voltage: The voltage that the BBU provides to the load/s
- Charging Current: The current draw while the BBU is charging the battery
- Battery Status:
 - Cycle Charging: The BBU PSU/Charger produces high current to charge the battery
 - Float Charging: The BBU PSU/Charger produces low current to trickle charge the battery
 - Discharging: NO AC supply to the BBU, all loads are running on battery
 - Cut off: Battery voltage is lower than the Cut Off Threshold (<Settings> Tab) and has been cut off from the system to ensure it can still be recharged when AC power is restored
 - No battery: Battery is not connected

- Battery Voltage: The voltage of the battery
- SOC (State of Charge): The percentage of charge in the battery as reported by the battery management system. This is also displayed on the MCU board dual seven segment display, indicated from 00 (0% charge) to FF (100% charge)
- Time On Battery: Time (in minutes) as to when the AC supply to the BBU was interrupted and the battery is providing power to the load/s (Will be displayed as “N/A” when battery is not in use)
- Time Remaining: Approximate battery time (in minutes) remaining based on the battery State of Charge and load/s connected to the BBU (Will be displayed as “N/A” when battery is not in use)
- Load Current: Displays the cumulative current draw from the load outputs that are connected to the BBU
- Alarm Status: Refer to Appendix A – Alarms

Settings Tab:



Item	Current Value	Config Value
Battery Type	LiFePO4 Battery	
Battery Connection Test Switch	OFF	
Low Capacity TH	30.0%	
Cut Off TH	46.0V	
Battery Connection Detection	Once per day	
Date/Time	09/10/25 03:20:24	
APV1 Panel NO.	0	
APV3 Panel NO.	0	
Buzzer Notification	OFF	

- Battery Type: Default = LiFePO4 Battery (Sets charging parameters based on the battery type)
- Battery Connection Test Switch: For factory troubleshooting, set to OFF unless otherwise instructed by Comba Technical Support
- Low Capacity TH: Default = 30%, below this threshold is when the Low Battery Alarm will trigger
- Cut Off TH: Default = 46.0V. The battery supply to the loads will cut off when this threshold is reached, the BBU PSU/Charger will charge the battery when AC is restored (if the LiFePO battery is awake), but it is not guaranteed that the battery can be fully charged if the battery is over-discharged or the internal LiFePO battery management system has put the battery to sleep for protection
- Battery Connection Detection: The system will check at the specified interval to verify that the battery is connected
 - Off: Does not check
 - Once per Day (default): Checks once every 24 hours
 - Smart: Checks every 3 minutes when the door is open. Does not check when the door is closed (V2BBU Models Only)
- Date/Time: Click this field and modify upon initial commissioning for local date and time
- APV1 Panel NO: 0/1/2, are the number of external V1 annunciator panels that can be connected in series. Please refer to the APV1 external annunciator panel user manual for wiring and programming information
- APV3 Panel NO: 0/1/2/3/4, are the number of external V3 annunciator panels that can be connected in series. Please refer to the APV3 external annunciator panel user manual for wiring and programming information
 - The BBU using FW V8802 can support a total of six (6) external annunciator panels simultaneously
- Buzzer Notification: Default = OFF
 - OFF position - The buzzer will not be audible with alarms
 - ON position - The buzzer will sound with any dry contact alarm event, and will silence with alarm clear or for 24 hours by manually silencing with the silence switch (top of the control board)

Alarm Setting Tab:

Overview

Settings

Alarm Setting

Management

Panel

Item	Status	Name	Modify	Test
Dry Contact ALM1	●	AC Fail	⚙️	🧪
Dry Contact ALM2	●	Battery Low	⚙️	🧪
Dry Contact ALM3	●	Charger Fail	⚙️	🧪
Dry Contact ALM4	●	Signal Booster Fail	⚙️	🧪
Dry Contact ALM5	●	Antenna Malfunction	⚙️	🧪
Dry Contact ALM6	●	System Component Fail	⚙️	🧪
Dry Contact ALM7	●	Not Configured	⚙️	🧪

Ext Alarm	Status	Name	EOLR	Alarm Type	Modify
Ext ALM1	●	EXT ALARM1	Not Config	Normally Open	⚙️
Ext ALM2	●	EXT ALARM2	Not Config	Normally Open	⚙️
Ext ALM3	●	EXT ALARM3	Not Config	Normally Open	⚙️
Ext ALM4	●	EXT ALARM4	Not Config	Normally Open	⚙️

Item	Current Value	Config Value
☐ AC Lost ALM	●	▼
☐ Charger Fail ALM	●	▼
☐ Battery Low ALM	●	▼
☐ Over TEMP ALM	●	▼
☐ Battery Over-Discharge ALM	●	▼
☐ Charger Comm. Fault ALM	●	▼
☐ Battery Comm. Fault ALM	●	▼
☐ Battery Connection ALM	●	▼
☐ Comm. Wire Fault ALM1	●	▼
☐ Comm. Wire Fault ALM2	●	▼
☐ Comm. Wire Fault ALM3	●	▼
☐ Comm. Wire Fault ALM4	●	▼

Item	Current Value	Modify
Alarm Detect Duration(10s)	3	⚙️

Name

Lamp Test

⚙️

Test

Refresh

Modify

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○ Dry Contact Alarm Settings Table

- Seven Dry Contacts are provided. Dry Contacts 1 through 6 are predefined, but all are user configurable.
 - Dry Contact ALM 1 = AC Fail (Lost of AC Power)
 - Dry Contact ALM 2 = Battery Low (Battery Low/below 30% capacity, Battery Over Discharge, Battery Connection and Battery Communication Fault)
 - Dry Contact ALM 3 = Charger Fail (Charger Fail and Charger Comm Fault)
 - Dry Contact ALM 4 = Signal Booster Fail (Ext ALM1)
 - Dry Contact ALM 5 = Antenna Malfunction (Ext ALM2)
 - Dry Contact ALM 6 = System Component Fail (Ext ALM3)
 - Dry Contact ALM 7 = Not Configured
 - Status: Green = No Alarm, Red = Alarm & Grey = Disabled
- Clicking on “Modify” will result in a pop-up menu. This indicates which alarm, or alarms, will trigger the Dry Contact, also provides the ability to rename the Dry Contact alarm.

Dry Contact ALM1

Alarms	Alarms	Alarms
☒ AC Lost ALM	☐ Ext ALM1	☐ Comm. Wire Fault ALM1
☐ Charger Fail ALM	☐ Ext ALM2	☐ Comm. Wire Fault ALM2
☐ Over TEMP ALM	☐ Ext ALM3	☐ Comm. Wire Fault ALM3
☐ Battery Low ALM	☐ Ext ALM4	☐ Comm. Wire Fault ALM4
☐ Battery Over-Discharge ALM	☐ Battery Connection ALM	☐ Battery Comm. Fault ALM
☐ Charger Comm. Fault ALM		

Alarm name/remark

Item	Current Value	Config Value
Dry Contact Remark1	AC Fail	

Ok

Cancel

- Clicking on the “Test” button will toggle the specific dry contact relay to test the Fire Alarm Control Panel wiring.

External Alarm Setting Table

- Users can detect up to four normally open (NO) or normally closed (NC) alarms from external devices:
 - Status: Green = No Alarm, Red = Alarm & Grey = Disabled
 - Name: User Configurable text field for the alarm name (Example: Rename EXT ALARM1 to “SIGNAL BOOSTER MALFUNCTION”, etc.)
 - EOLR: If it is required to monitor the wire integrity between the device providing a dry contact output and the BBU Ext Alarm Input, you can place an EOL Resistor at the dry contact and this will monitor for resistance, opens, and shorts. This will typically remain unused (Not Config)
 - Alarm Type: Configure this for your dry contact alarm, either normally open (NO) or normally closed (NC). Default for Comba equipment is Normally Open (NO)

Ext Alarm	Status	Name	EOLR	Alarm Type	
Ext ALM1	●	EXT ALARM1	Not Config	Normally Open	Modify
Ext ALM2	●	EXT ALARM2	Not Config	Normally Open	Modify
Ext ALM3	●	EXT ALARM3	Not Config	Normally Open	Modify
Ext ALM4	●	EXT ALARM4	Not Config	Normally Open	Modify

Alarm Enable/Disable Table

- Users can enable or disable the listed alarms using the “Config Value” drop down menu
 - AC Lost ALM – See Appendix A - Alarms
 - Charger Fail ALM – See Appendix A - Alarms
 - Battery Low ALM – See Appendix A - Alarms
 - Over TEMP ALM – See Appendix A - Alarms
 - Battery Over-Discharge ALM – See Appendix A - Alarms
 - Charger Comm. Fault ALM – See Appendix A - Alarms
 - Battery Connection ALM – See Appendix A - Alarms
 - Comm. Wire Fault ALM1 – See Appendix A - Alarms
 - Comm. Wire Fault ALM2 – See Appendix A - Alarms
 - Comm. Wire Fault ALM3 – See Appendix A - Alarms
 - Comm. Wire Fault ALM4 – See Appendix A - Alarms
 - Current Value: Green = Enabled/No Alarm, Red = Alarm & Grey = Disabled

☐	Item	Current Value	Config Value
☐	AC Lost ALM	●	▼
☐	Charger Fail ALM	●	▼
☐	Battery Low ALM	●	▼
☐	Over TEMP ALM	●	▼
☐	Battery Over-Discharge ALM	●	▼
☐	Charger Comm. Fault ALM	●	▼
☐	Battery Comm. Fault ALM	●	▼
☐	Battery Connection ALM	●	▼
☐	Comm. Wire Fault ALM1	●	▼
☐	Comm. Wire Fault ALM2	●	▼
☐	Comm. Wire Fault ALM3	●	▼
☐	Comm. Wire Fault ALM4	●	▼

Alarm Detect Duration Table

- Users can define a time interval (no less than “3” or 30 seconds) to specify the amount of delay before a detected alarm is passed to the associated dry contact and triggered
- The value entered is multiplied by 10 seconds, i.e.- 5 = 50sec, 10 = 100sec, etc.

Item	Current Value	
Alarm Detect Duration(10s)	5	

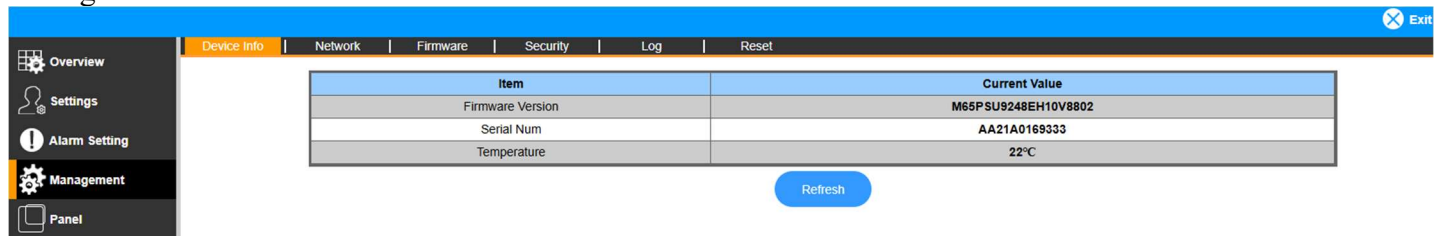
Lamp Test, Refresh and Modify Buttons

- The Lamp Test button “Test” will illuminate the front panel alarm LED’s three times to verify that all LED’s are operational
- The “Refresh” button will refresh the Alarm Setting page and update any new alarm statuses
- The “Modify” button is used to lock in any of the changes made to the Alarm Setting page

Name	
Lamp Test	

Refresh Modify

Management Tab:



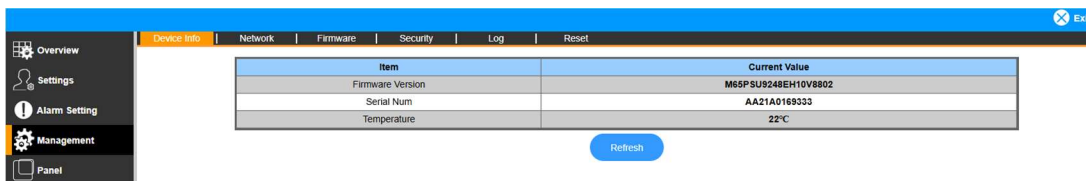
The Management Tab interface shows a sidebar with navigation options: Overview, Settings, Alarm Setting, Management (selected), and Panel. The main content area has tabs for Device Info, Network, Firmware, Security, Log, and Reset. The Device Info tab is active, displaying a table with the following data:

Item	Current Value
Firmware Version	M6SPSU9248EH10V8802
Serial Num	AA21A0169333
Temperature	22°C

Below the table is a Refresh button. An Exit button is located in the top right corner.

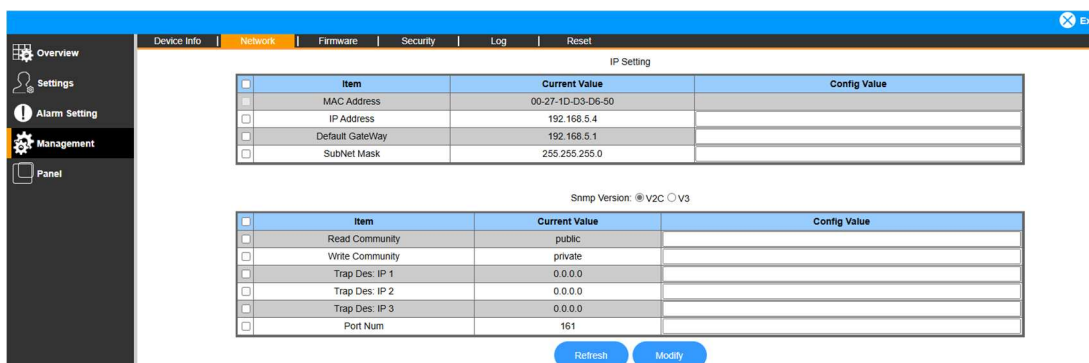
The Management Tab has six (6) subtabs to provide the user with general information and BBU interface access

- “Device Info” – Current firmware version, Serial Number and internal chassis/MCU board temperature



This screenshot shows the Device Info subtab within the Management Tab. It displays the same table as the previous screenshot, showing Firmware Version, Serial Number, and Temperature. A Refresh button is present below the table.

- “Network” – Settings for LAN port remote connectivity and SNMP traps



This screenshot shows the Network subtab within the Management Tab. It displays two tables. The first table is titled "IP Setting" and shows the following data:

Item	Current Value	Config Value
MAC Address	00-27-1D-D3-D6-50	
IP Address	192.168.5.4	
Default GateWay	192.168.5.1	
SubNet Mask	255.255.255.0	

The second table is titled "Snmp Version: v2c v3" and shows the following data:

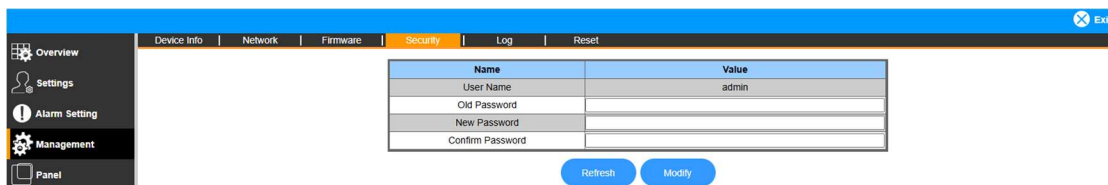
Item	Current Value	Config Value
Read Community	public	
Write Community	private	
Trap Des: IP 1	0.0.0.0	
Trap Des: IP 2	0.0.0.0	
Trap Des: IP 3	0.0.0.0	
Port Num	161	

Below the tables are Refresh and Modify buttons.

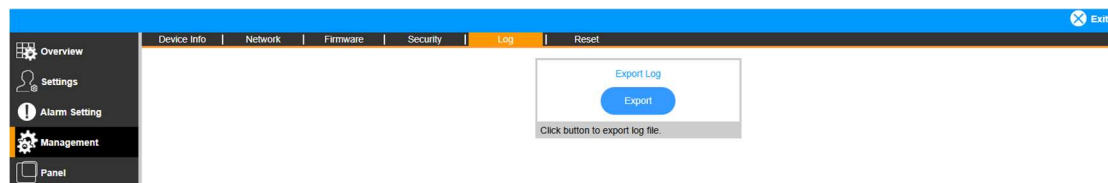
- “Firmware” – Displays the BBU Model, current operating firmware version, and the ability to upgrade the firmware -> “Add File” -> “Upgrade” NOTE: Firmware file must be unzipped prior to importing and ends with .dnl. NOTE: It is suggested that after upgrading the firmware to a newer version, the user verifies that all dry contact alarm settings are correct



- “Security” – Change Login Password



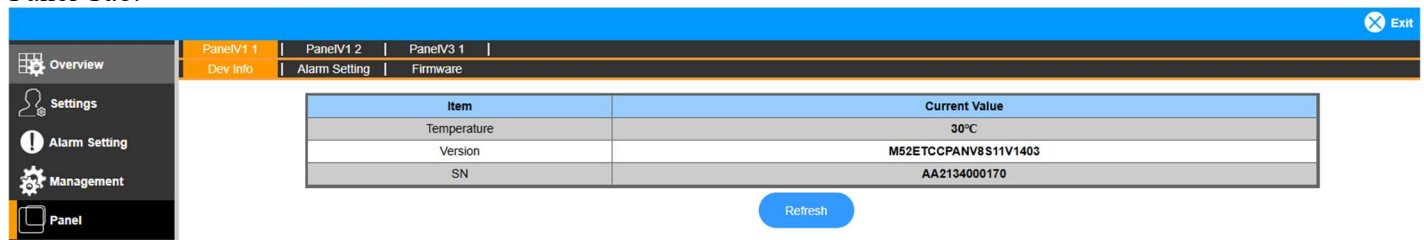
- “Log” – Export alarm log file



- “Reset” – The reset functions are:
 - Device Reset: This will reboot the BBU MCU board
 - Restore Default Setting: Reset to Factory Defaults
 - Clear Log: This will clear the BBU alarm log



Panel Tab:



- BBU firmware version V8802 and newer will support two (2) Comba V1 and four (4) V3 external annunciator panels, total of six (6) external annunciator panels simultaneously.

- When the V1 and/or V3 external annunciator panel/s are connected to the BBU external annunciator panel RS485 communications port, A/B/GND, and configured per the external annunciator panel user manual. The “Panel Tab” will indicate a subtab with the number of V1 and V3 external annunciator panel/s connected to the BBU.
- Each subtab will consists of three sub-subtabs – Dev Info, Alarm Setting and Firmware
 - “Dev Info” – Provides AP internal temperature, firmware version and serial number
 - “Alarm Setting” – AP internal settings – reference the V1 or V3 External AP User Manuals for details
 - “Firmware” – Allows the user to update the External AP firmware

Final Installation:

With battery installed and connected, the BBU will look like the image below:



Appendix A - Alarms:

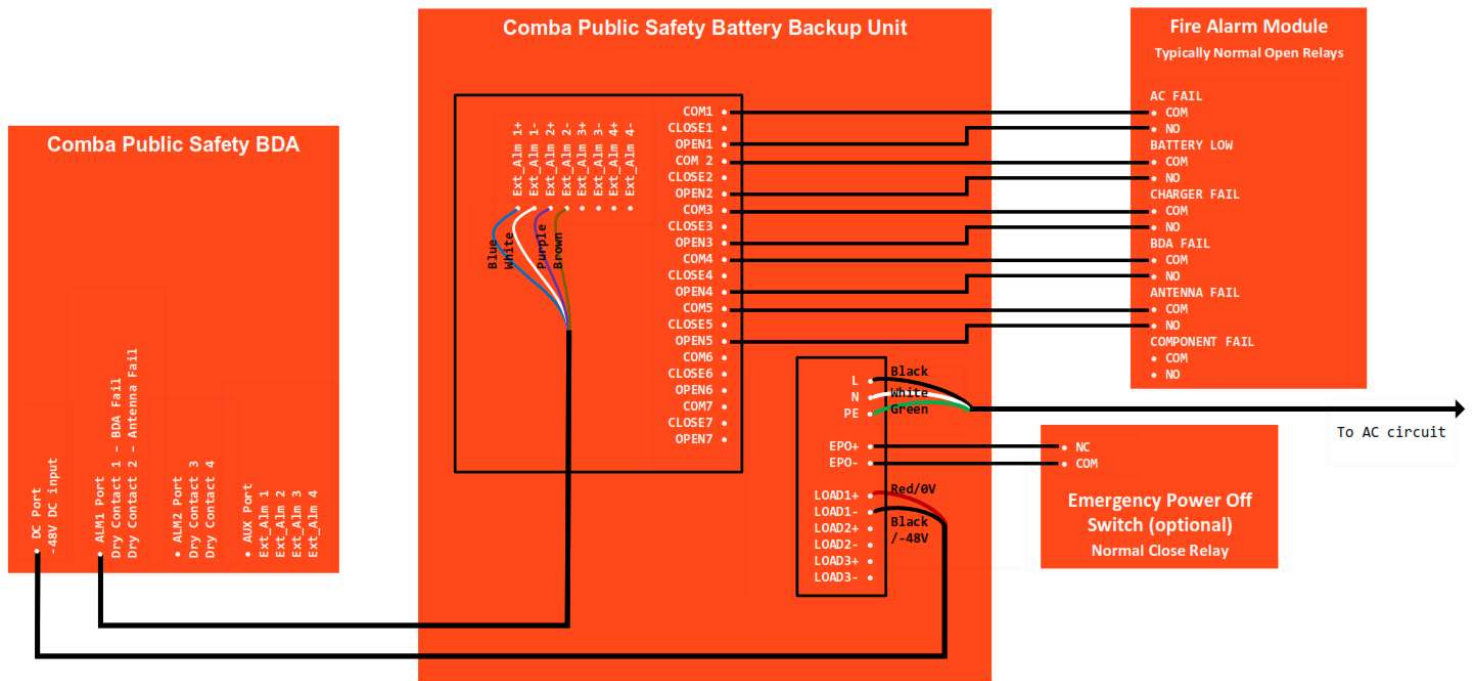
The following table shows the alarms that may be present in the WEBOMT software and what triggers them. The alarm configuration for required alarms (and LED lights) is configurable to include any of the following:

Alarms	Causes
Overall	Any of alarms trigger
AC Lost	Triggers when loss of AC occurs at the BBU and on system shutdown
Charger Fail	Triggers when the charger module fails (Output Voltage High, Output Voltage Low, Current High, Temperature High, Circuit Short Protection Mode)
Battery Low	Triggers when the battery is below “Low Capacity TH” setting. Default value is 30%
Over TEMP	Triggers when the temperature of the BBU is higher than the threshold Default value set is 50C.
Battery Over-Discharge	Triggers when the charger fails to charge the battery
Charger Comm. Fault	Triggers when the charger communication cable is disconnected from the MCU board or the RS485 circuit is no longer communicating between the MCU board and charger (white pigtail connector with red/white/blue wires on the bottom of the MCU)
Battery Comm. Fault	Communication between the battery and the MCU board has been lost (RS485A and RS485B wires that connect the MCU to the Battery)
Battery Connection	Triggers when batteries are not connected to the BBU
Door Open	The door opened (only applies to models that were equipped with door switch)
Ext ALM 1/2/3/4	BBU External Input has detected an Open or Closure from an external device
Comm. Wire Fault ALM 1/2/3/4	The EOL resistor is not detected between a dry contact output from an external device and the EXT Alarm input on the BBU MCU Board.
AC Fail	Dry Contact 1 Alarm (Default)
Battery Low	Dry Contact 2 Alarm (Default)
Charger Fail	Dry Contact 3 Alarm (Default)
Signal Booster Fail	Dry Contact 4 Alarm (Default)
Antenna Malfunction	Dry Contact 5 Alarm (Default)
System Comp Fail	Dry Contact 6 Alarm (Default)
Not Configured	Dry Contact 7 Alarm (Default)

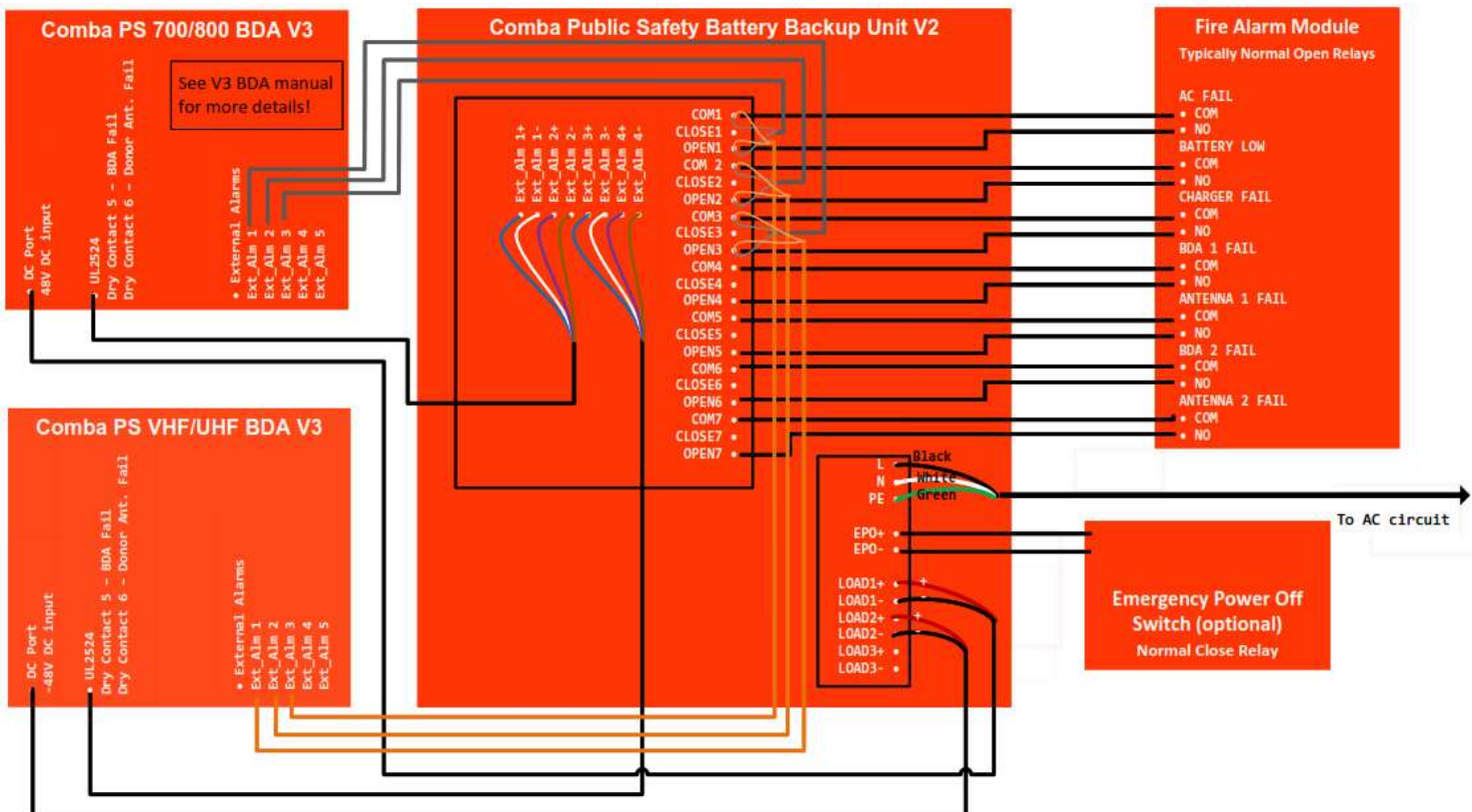
Appendix B – Firmware Version Control:

FW Version	Release Notes
M65PSU9248EH10V8802	Added V3 external annunciator panel option to the Settings Tab
M65PSU9248EH10V8801	Fixed false charger communications fail alarm
M65PSU9248EH10V8701	1. Migrated all BBU MCU versions to same firmware 2. Lowered alarm duration min value to 3. 3. Changed Low-Capacity TH to percentage value 4. Added Dry Contact “Test” function 5. Removed “Door Alarm” from possible dry contact alarms 6. Added “Lamp Test” function 7. Added Network functions for LAN modifications
M65PSU9248EH10V8601	Firmware for new V2.6 MCU board used in V1 BBU Upgrade Kit
M65PSU9248EH10V8501	1. Improved Low Battery Protection Alarm 2. Improved Battery Cut Off updates
M65PSU9248EH10V8401	1. Energized all Dry Contact alarms 2. Added Smart Function to Battery Detection Alarm 3. Added option to turn Buzzer Notification OFF in webGUI
M65PSU9248EH10V8301	1. Fixed false AC Fail alarm bug 2. Changed Buzzer: Switch ON: unmuted alarms, switch OFF: gives notification 3. Added battery communication alarm 4. Fixed Alarm Log Clear bug
M65PSU9248EH10V8201	1. Added Factory Default Setting 2. Added System Log 3. Removed option for Lead-Acid Batteries

Appendix C – BDA/BBU Wiring Diagram Examples:



Example of a Comba V1 or 3rd Party BDA to BBU DC power and alarming diagram



Example of a Comba V3 700/800 & V3 VHF/UHF BDA/MU/RU to BBU DC power and alarming diagram