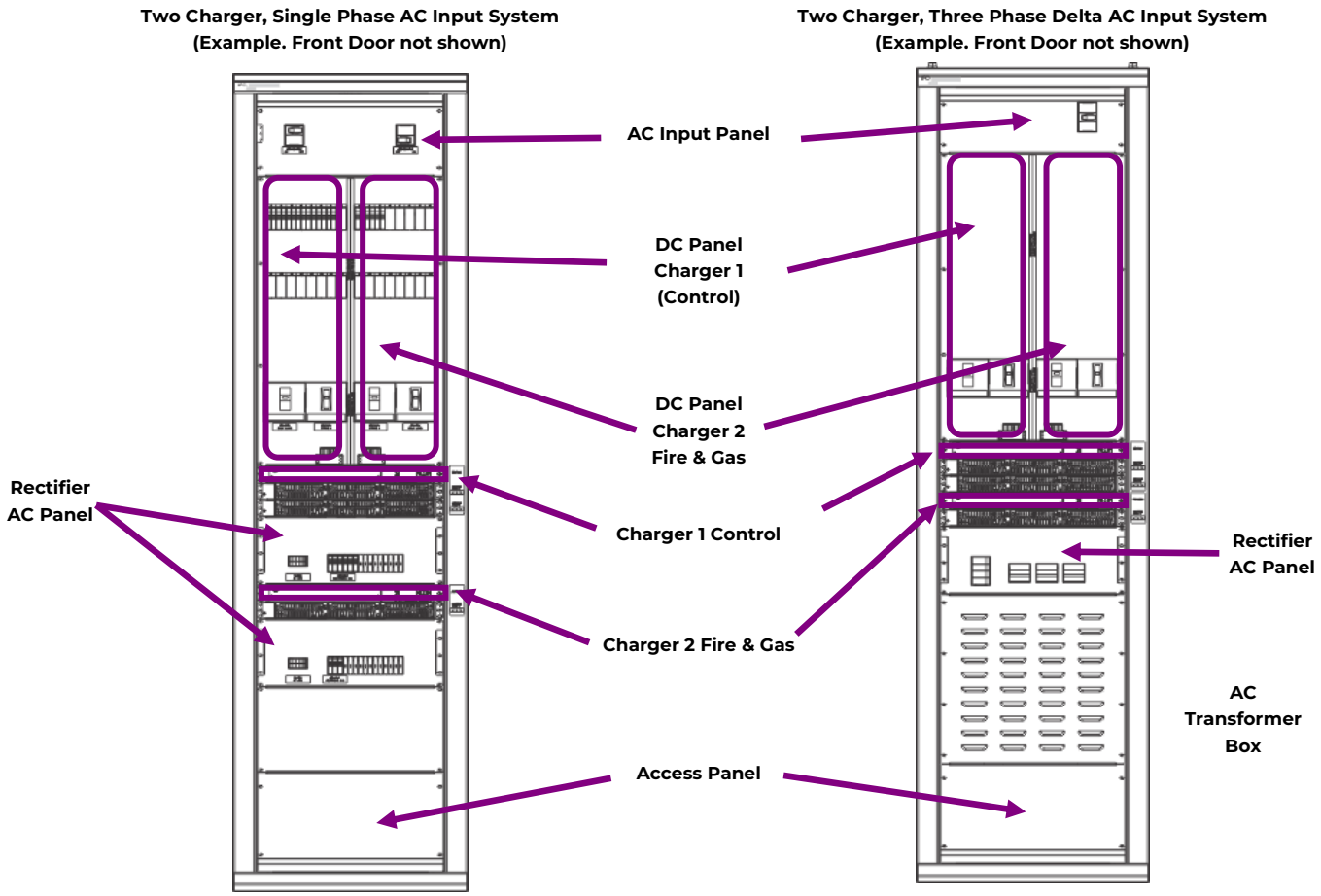
# Integritas™ 24V Floor Mount Battery charger

## Model name structure: IFC-24V/24V Models: many

Integritas Floor Charger Cabinet

Charger Voltage (1 or 2)




## Installation

### Tools Required:

- Torque wrench (0-240 in-lb / 28 Nm)
- Cable crimpers
- Wire cutters and strippers
- Sockets - inch and metric
- Screw Drivers - Flat & 2 Phillips

# CONTENTS

## Important Safety Instructions

1. SAVE THESE INSTRUCTIONS – This document contains important safety and operating instructions for the Integritas battery charger.
2. Before using battery charger, read all instructions and cautionary markings on battery charger, battery, and all connected equipment.
3. Rules and Regulations - Follow all national and local rules and regulations when making field connections.
4. Field-wired Conductors - Follow all National Electric Code (NEC) and local rules and regulations.
    a. Insulation rating: 90°C minimum; 105°C (minimum) if internal to enclosed equipment cabinets.
    b. Size AC field-wired conductors with 75°C ampacity (NEC) equal to or greater than their panel board circuit breaker rating.
    c. Size DC field-wired conductors with 90°C ampacity (NEC) equal to or greater than circuit breaker/ fuse rating.
5. AC and DC input disconnect/protection - Provide accessible devices to remove input power in an emergency.
6. Compression Connectors
    a. US or Canada installations - use Listed/Certified compression connectors to terminate Listed/ Certified field-wire conductors.
    b. All installations - apply the appropriate connector to the correct size conductor as specified by the connector manufacturer, using only the connector manufacturer's recommended or approved tooling for that connector.
7. Electrical Connection Securing: Torque to the values specified on labels or in the product documentation.
8. Cable Dress - dress to avoid damage to the conductors and undue stress on the connectors.
9. Alarm Signals - Provide external current limiting protection. Rating—60V (125V for 125V charger), 0.5A unless otherwise noted.
10. Grounding - Connect the equipment chassis directly to ground.
11. WARNING: Equipment does not provide battery discharge control and protection. To be provided by external battery source.
12. WARNING: A battery can present a risk of electrical shock, burn from high short circuit current, fire or explosion from vented bases. Observe proper precautions.

## Precautions

1. Install, service, and operate equipment only by professional, skilled and qualified personnel who have the necessary knowledge and practical experience with electrical equipment and who understand the hazards that can arise when working on this type of equipment.
2. Disconnect batteries from outputs and/or follow safety procedures while working on equipment. Batteries may be connected in parallel with the output of the rectifiers. Turning off the rectifiers will not necessarily remove power from the bus.
3. Batteries may produce explosive gas. Do not create arcs, smoke, or use an open flame in the vicinity.
4. Do not disconnect permanent bonding connections unless all power inputs are disconnected.
5. Verify that equipment is properly safety earth grounded before connecting power. High leakage currents may be possible.
6. Exercise care and follow all safety warnings and practices when servicing this equipment. Hazardous energy and voltages are present in the unit and on the interface cables and connectors that can shock or cause serious injury.
7. Use safe lifting practices. The equipment is heavy. Lifting devices are recommended.
8. Use the following precautions in addition to proper job training and safety procedures:
    a. Use only properly insulated tools.
    b. Remove all metallic objects (key chains, glasses, rings, watches, or other jewelry).
    c. Follow Lock Out Tag Out (LOTO) procedures: customer specified, site specific, or general as appropriate. Disconnect all power input before servicing the equipment. Check for multiple power inputs.
    d. Wear safety glasses.
    e. Follow Personal Protective Equipment requirements: customer specified, site specific, or general as appropriate.
    f. Test Circuits for Potential and Polarity before touching and making connections.
    g. Be aware of potential hazards before servicing equipment.
    h. Identify exposed hazardous electrical potentials on connectors, wiring, etc.
    i. Avoid contacting circuits when removing or replacing covers;.
    j. Use a personal ESD strap when accessing or removing electronic components.
9. Follow all warning and precautionary battery instructions, including proper replacement and disposal procedures, to minimize risk of injury. External batteries, if applicable, are to be installed in accordance with all national and local rules and regulations, including CEC, part 1.
10. Personnel with electronic medical devices need to be aware that proximity to DC power and distribution systems, including batteries and cables, typically found in telecommunications and industrial utility rooms, can affect medical electronic devices, such as pacemakers. Effects decrease with distance.

## Instructions de sécurité importantes

1. SAVE THESE INSTRUCTIONS - Ce document contient d'importantes instructions de sécurité et de fonctionnement pour le chargeur de batterie Integritas.
2. Avant d'utiliser le chargeur de batterie, lisez toutes les instructions et les marques d'avertissement sur le chargeur de batterie, la batterie, et tout l'équipement connecté.
3. Règles et règlements - Suivez toutes les règles et règlements nationaux et locaux lors de l'établir desconnexions sur le terrain.
4. Conducteurs câblés sur le terrain - Suivez tous les codes nationaux électriques (NeC) ainsi que les règles et règlements locaux.
    a. Note d'isolation : minimum de 90 oC; 105 oC (minimum) si interne à des armoires d'équipement fermées.
    b. Conducteurs câblés sur le terrain de taille AC avec une amacité de 75 oC (NEC) égale ou supérieure à leur cote dedisjoncteur de panneau.
    c. Conducteurs câblés sur le terrain de taille DC avec une amacité de 90 oC (NEC) égale ou supérieure à la cote disjoncteur/fusible.
5. Déconnexion/protection des entrées AC et DC - Fournir des dispositifs accessibles pour supprimer la puissance d'entrée encas d'urgence.
6. Connecteurs de compression
    a. Installations américaines ou canadiennes - utilisez des connecteurs de compression répertoriés/certifiés pour mettre finaux conducteurs de câbles de campagne énumérés/certifiés.
    b. Toutes les installations - appliquer le connecteur approprié au conducteur de taille correcte tel que spécifié par lefabricant du connecteur, en utilisant uniquement l'outillage recommandé ou approuvé du fabricant du connecteur pource connecteur.
7. Sécurisation de la connexion électrique : couple aux valeurs spécifiées sur les étiquettes ou dans la documentation du produit.
8. Robe de câble - robe pour éviter des dommages aux conducteurs et le stress indu sur les connecteurs.
9. Signaux d'alarme - Fournir une protection de limitation du courant externe. Note—60V (125V pour chargeur 125V), 0.5A saufndication contraire.
10. Mise à la terre - Connectez le châssis de l'équipement directement au sol.
11. AVERTISSEMENT: L'équipement ne fournit pas le contrôle et la protection de décharge de batterie. A fournir par source debatterie externe.
12. AVERTISSEMENT: Une batterie peut présenter un risque de choc électrique, de brûlure causée par un courant de court-circuit élevé, par un incendie ou une explosion par des bases ventilées. Observez les précautions appropriées.

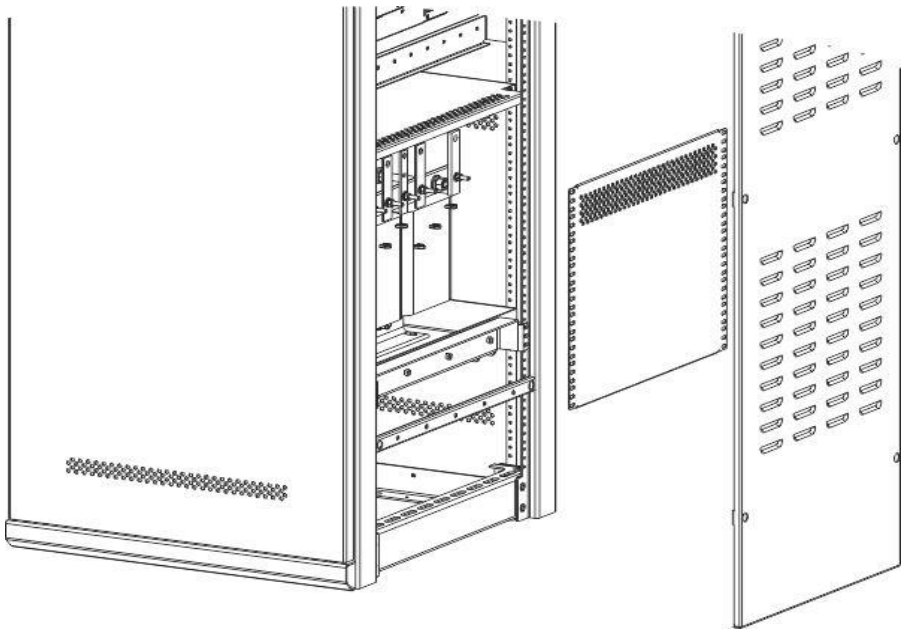
## Précautions

1. Installer, entretenir et faire fonctionner l'équipement uniquement par du personnel professionnel, qualifié et qualifié qui possède les connaissances et l'expérience pratique nécessaires avec l'équipement électrique et qui comprend les dangers qui peuvent survenir lorsqu'on travaille sur ce type de équipement.
2. Débranchez les piles des sorties et/ou suivez les procédures de sécurité pendant le travail sur l'équipement. Les batteries peuvent être connectées en parallèle avec la sortie des rectifiers. L'arrêt des rectificateurs ne supprimera pas nécessairement l'alimentation de l'autobus.
3. Les batteries peuvent produire du gaz explosif. Ne créez pas d'arcs, ne fumez pas ou n'utilisez pas de flamme nue dans les environs.
4. Ne déconnectez pas les connexions de liaison permanentes à moins que toutes les entrées d'alimentation ne soient déconnectées.
5. Vérifier que l'équipement est correctement la terre de sécurité mise à la terre avant de connecter la puissance. Des courants de fuite élevés peuvent être possibles.
6. Faites preuve de prudence et suivez tous les avertissements et pratiques de sécurité lors de l'entretien de cet équipement. L'énergie et les tensions dangereuses sont présentes dans l'unité et sur les câbles d'interface et les connecteurs qui peuvent choquer ou causer des blessures graves.
7. Utilisez des pratiques de levage sécuritaires. L'équipement est lourd. Les dispositifs de levage sont recommandés.
8. Utiliser les précautions suivantes en plus de la formation professionnelle appropriée et des procédures de sécurité :
    a. N'utiliser que des outils correctement isolés.
    b. Enlevez tous les objets métalliques (porte-clés, lunettes, bagues, montres ou autres bijoux).
    c. Suivre les procédures de Lock Out Tag Out (LOTO) : spécifiée par le client, spécifique au site ou générale, le cas échéant. Débranchez toutes les entrées de puissance avant d'entretenir l'équipement. Vérifiez s'il y a plusieurs entrées d'alimentation.
    d. Portez des lunettes de sécurité.
    e. Suivez les exigences relatives à l'équipement de protection personnelle : spécifiée par le client, spécifique au site ou générale, le cas échéant.
    f. Testez les circuits pour le potentiel et la polarité avant de toucher et d'établir des connexions.
    g. Soyez conscient des dangers potentiels avant d'entretenir l'équipement.
    h. Identifier les potentiels électriques dangereux exposés sur les connecteurs, le câblage, etc.
    i. Évitez de contacter les circuits lors de l'enlèvement ou du remplacement des couvercles;.
    j. Utilisez une sangle PERSONNELLE DEO lorsque vous accédez ou retirez des composants électroniques.
9. Suivez toutes les instructions d'avertissement et de précaution sur les piles, y compris les procédures de remplacement et d'élimination appropriées, afin de minimiser les risques de blessures. Les batteries externes, le cas échéant, doivent être installées conformément à toutes les règles et règlements nationaux et locaux, y compris la CeC, partie 1.
10. Le personnel muni d'appareils médicaux électroniques doit être conscient que la proximité des systèmes d'alimentation et de distribution de DC, y compris les batteries et les câbles, généralement présents dans les télécommunications et les salles de services publics industriels, peut affecter les appareils électroniques médicaux, tels que comme stimulateurs cardiaques. Les effets diminuent avec la distance.

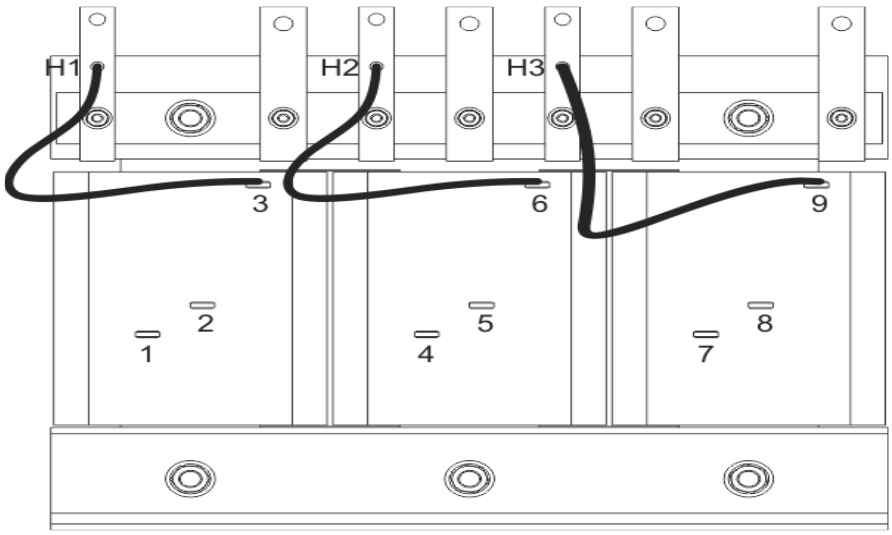
## Step 1 - Verify AC Transformer Tap Connections - 3-Phase Delta AC only

**Danger: Damage to Equipment -**

1. Equipment will be damaged if transformer tap connections do not match actual AC input voltage. Measure the AC input voltage with a meter at the panel board.
2. Remove right side cover panel - 8 screws – 5/16” socket.
3. Remove AC Transformer Box side panel - 4 screws – 5/16” socket.
4. Modify transformer tap connections as necessary to match the measured AC input voltage. Connection hardware is ¼-20 bolt, (2) washers, lock-washer and nut – 7/16” socket Torque to 65 in-lb.

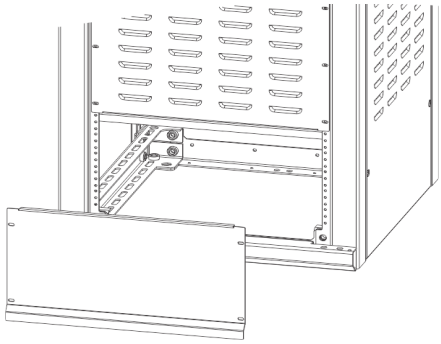


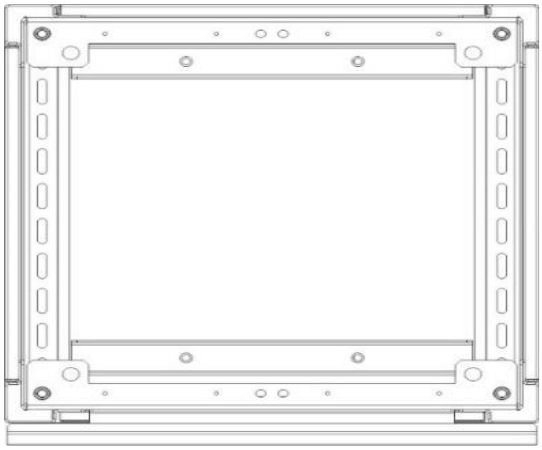
| Input V | Jumpers |
|---|---|
| 400V AC | H1-1, H2-4, H3-7 |
| 415V AC | H1-2, H2-5, H3-8 |
| 480V AC | H1-3, H2-6, H3-9 |



## Step 2 - Position and Secure the Cabinet

1. Place the Cabinet in position for installation.
2. Remove access panel on front - 4 screws - 5/16” socket.
3. Mark anchor locations.
4. Move cabinet and drill anchor holes.
5. Relocate cabinet and install floor anchors per manufacturers specification.
6. Reinstall bottom cover panel. Torque to 30 in-lb(3.4 Nm).

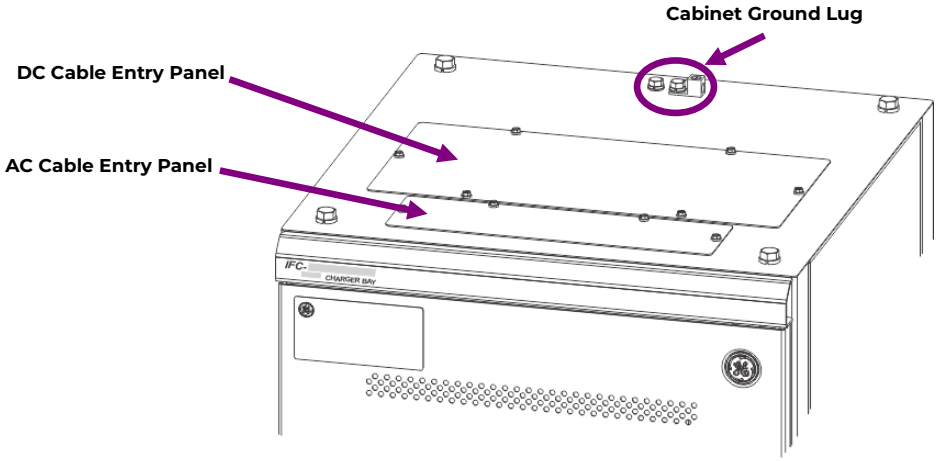




## Step 3 - Ground the Cabinet

Ground lug landing - 5/16” on 1” centers (single hole mechanical lug provided). Minimum 6 AWG recommended.

1. Insert ground wire into Cabinet Ground mechanical lug at top of cabinet.
2. Torque to 35 in-lb (4.0 Nm) - flat blade screwdriver.



## Step 4 - Connect AC Input

**Danger: Shock Hazard -** Turn OFF and lock-out tag-out the AC source before making AC connections. Follow all local and national wiring rules.

AC input is through the AC Cable Entry Panel in the cabinet top. Punch appropriate size holes in top cover area marked AC.

**Caution:** Ensure that wires do not come in contact with sharp or rough surfaces that may damage insulation and cause a short circuit.

1. Verify all AC breakers are off external AC feed breakers and Cabinet AC breakers in both the AC Panel and in the AC Rectifier Panel (s).
2. Remove the AC Cable Entry Panel - 4 screws - 5/16” socket..
3. Punch appropriate size holes in the AC Cable Entry Panel. Recommended Punch additional holes for future use and install hole covers in them.
4. Choose the next step to match AC input voltage marked on the charger ratings label.

| AC Input per Charger Label | Follow Step |
|---|---|
| 220/230/240Vac 1PH 3-Wire (L1, L2/N, and GND) | Step 4A Single Phase |
| 400/415/480Vac 3-PH 4-Wire (L1, L2,L3, and GND) | Step 4B Delta 3 Phase |
| 400/415/480Vac 3-PH 5-Wire (L1, L2,L3,N,and GND | Step 4C Wye 3 Phase |

## Step 4A: Single Phase - Connect Two 220/230/240Vac Single Phase AC Inputs

Sizing external protectors and wire for all rectifier positions (3 or 6) provides full power for all rectifier positions. Recommend External Protection and Minimum Wire Size for maximum rectifiers per feed.

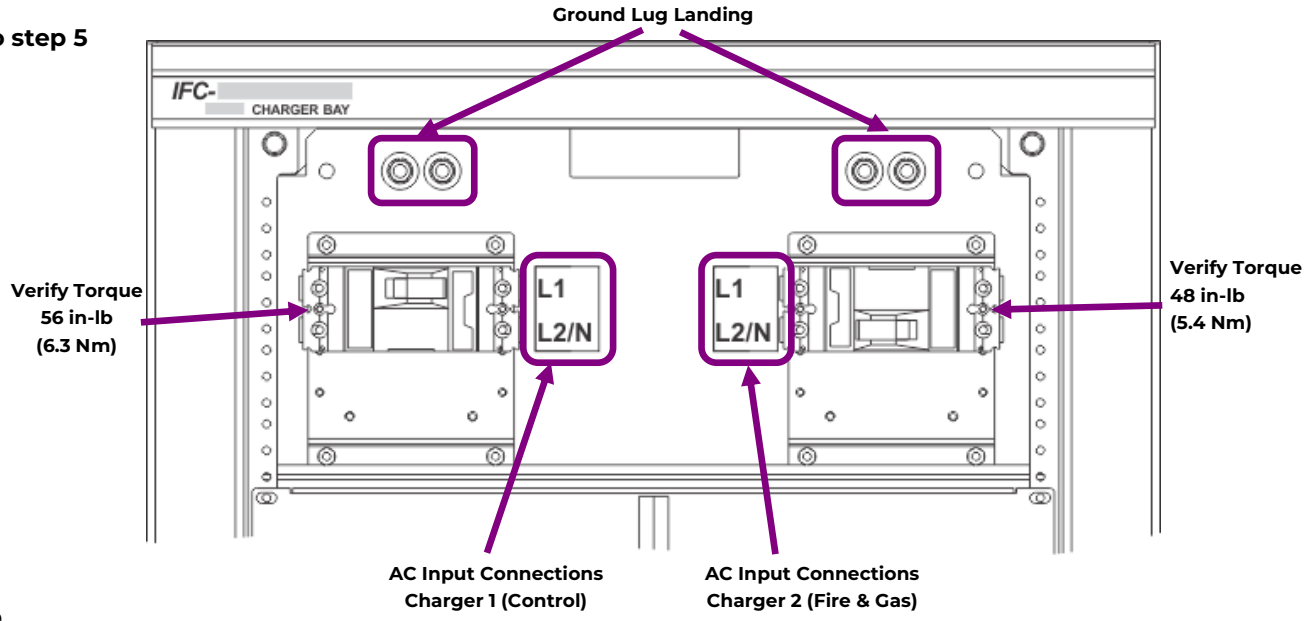
| **IR100ACR024ATEZ Rectifier** | | **Input: 200-240VAC, 15A, 50-60Hz Output: 22-29VDC, 2725W per rectifier max** | |
|---|---|---|---|
| Feed | Maximum Rectifier per Feed | External Feed Protector | Minimum Wire Cu |
| Charger 1 (Control) | 6 | 125A | 2AWG (35mm) |
| Charger 2 (Fire & Gas) | 3 | 60A | 6AWG (16mm) |

1. Verify all AC breakers are off-external AC feed breakers and Cabinet AC breakers in both the AC Panel and in the AC Rectifier Panel (s).
2. Remove AC Panel front cover- 4 screws - 5/16 socket.
3. Verify AC voltage matches AC Input per Charger Label on the front door with a meter.
4. Bring AC wires of each feed into the AC Input Box in conduit.
5. Connect Ground wire of each feed (green /green-yellow) with suitable lug to the ground lug landings - 8 AWG minimum recommended. Lug landing - 5/16" studs on 1" centers (lug not provided).
   Torque to 120 in-lb (13.6 Nm)
6. Connect each AC wire to its breaker terminal.

   AC terminal connections are labeled at each position- L2/N and L1

   a. Strip 1/2" (12mm) - application of ferrule recommended.
   b. Insert into breaker terminal.
   c. Torque (1/8" hex) to 48 in-lb (5.4 Nm) for 6 AWG 56 in-lb (6.3 Nm) for 2 AWG.
   d. Pull wire to verify.
7. Verify torque of factory breaker connections.
8. Replace AC Panel front cover - 4 screws.

**Go to step 5**



## Step 4B: Delta 3 Phase - Connect One 400/415/480Vac 3- Phase AC Input

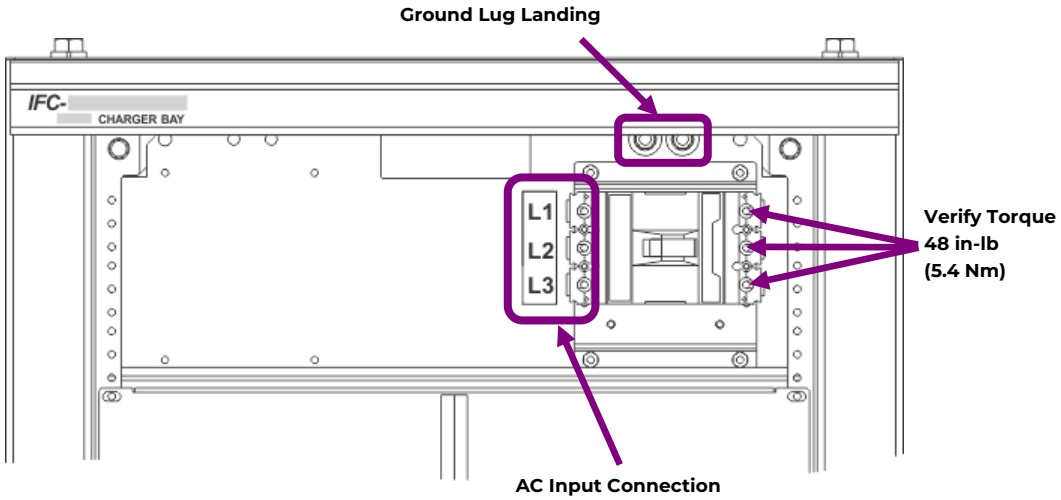
Sizing external protectors and wire for all rectifier positions (3 or 6) provides full power for all rectifier positions.

Recommended External Protection and Minimum Wire Size for maximum rectifiers per feed.

| IR100AR024ATEX Rectifiers | | 400/415/480Vac Phase to Phase Output: 22-29Vdc, 2725W per rectifier max. Single Phase Rectifiers | |
|---|---|---|---|
| Feed | Maximum Rectifiers per Feed | External Feed Protector | Minimum Wire Cu |
| Charger 1 (Control) and Charger 2 (Fire & Gas) | 9 | 70A | 6AWG (16 mm) |

1. Verify all AC breakers are off external AC feed breakers and Cabinet AC breakers in both the AC Panel and in the AC Rectifier Panel (s).
2. Remove AC Panel front cover - 4 screws—5/16 socket.
3. Verify AC voltage matches AC Input per Charger Label with a meter.
4. Bring AC wires into the AC Input Box in conduit.
5. Connect Ground wire (green /green-yellow) with suitable lug. to the ground lug landings—8 AWG minimum recommended.
6. Lug landing - 5/16” studs on 1” centers (lug not provided). Torque to 120 in-lb (13.6 Nm)
7. Connect each AC wire to its breaker terminal.
8. AC terminal connections are labeled at each position- L1, L2, and L3.
    a. Strip 1/2” (12mm) - application of ferrule recommended.
    b. Insert into breaker terminal .
    c. Torque screw to 48 in-lb (5.4 Nm)-1/8” hex.
    d. Pull wire to verify.
9. Verify torque of factory breaker connections.
10. Replace AC Panel front cover - 4 screws.

**Go to step 5**



## Step 4C: Wye 3 Phase - Connect One or Two 400/415/480Vac 3- Phase AC Input

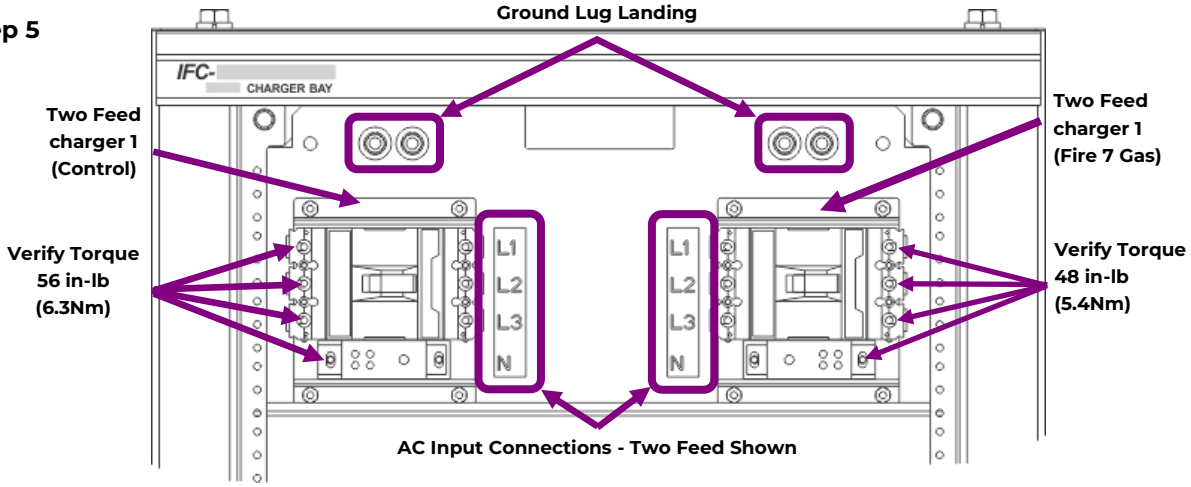
Sizing external protectors and wire for all rectifier positions (3 or 6) provides full power for all rectifier positions.

Recommended External Protection and Minimum Wire Size for maximum rectifiers per feed.

| IR100AC020ATEZ Rectifiers | | 400/415/480Vac Phase to Phase Output: 22-29Vdc, 2725W per rectifier max. Single Phase Rectifiers | |
|---|---|---|---|
| | Maximum Rectifiers Pre Feed | External Feed Protector | Minimum Wire Cu |
| One Feed | | | |
| Charger 1 (Control) and Charger 2 (Fire & Gas) | 9 | 63A | 6AWG(16mm$^2$) |
| Two Feeds (2) | | | |
| Charger 1 (Control) | 6 | 40A | 8AWG(10mm$^2$) |
| Charger 2 (Fire & Gas) | 3 | 30A | 10AWG(6mm$^2$) |

1. Verify all AC breakers are off external AC feed breakers and Cabinet AC breakers in both the AC Panel and in the AC Rectifier Panel (s).
2. Remove AC Panel front cover - 4 screws, 5/16 socket.
3. Verify AC voltage matches AC Input per Charger Label with a meter.
4. Bring AC wires of into the AC Input Box in conduit.
5. Connect Ground wire (green /green-yellow) with suitable lug. to the ground lug landings - 8 AWG minimum recommended. Lug landing - 5/16" studs on 1" centers (lug not provided). Torque to 120 in-lb (13.6 Nm)
6. Connect each AC wire to its breaker terminal . AC terminal connections are labeled at each position - L1, L2, L3, and N.
    a. Strip 1/2" (12mm) - application ferrule recommended.
    b. Insert into breaker terminal .
    C .Torque screw to 48 in-lb (5.4 Nm) - 1/8" hex.
    D. Pull wire to verify.
7. Verify torque of factory breaker connections.
8. Replace AC Panel front cover – 4 screws.

**Go to step 5**



## Step 5 - Connect 24VDC Load Equipment

The cabinet has separate connections for Charger 1 (Control ) equipment and for Charger 2 (Fire & Gas) equipment.

**Danger: Damage to Equipment -** Use copper only wire. Connections are approved only for copper wire.

**Danger :** Dommages à l'équipement - Utilisez du fil de cuivre seulement. Les connexions ne sont approuvées que pour les fils de cuivre.

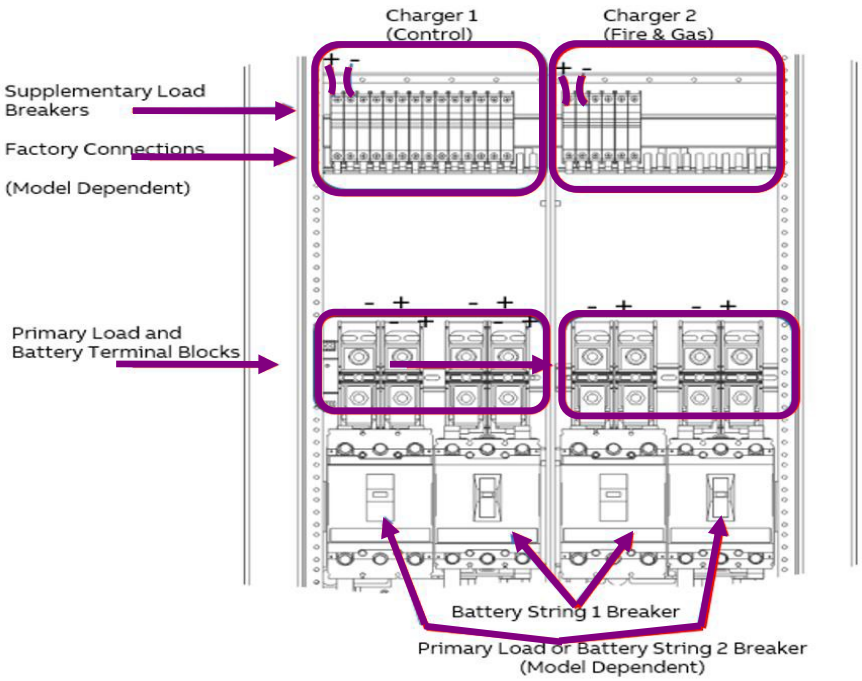
Connect per site engineering instructions.

Connections are in the DC Panel, to circuit breakers for supplemental loads and to terminal blocks for primary loads.

DC output is through the top cover. Punch appropriate size holes in top cover area marked DC.

**Caution:** Ensure that wires do not come in contact with sharp or rough surfaces that may damage insulation and cause a short circuit.

1. Verify all DC Panel breakers are off.
2. Remove DC Panel cover - 8 screws.
3. Remove the DC Cable Entry Panel - 4 screws - 5/16" socket.
4. Punch appropriate size holes in the DC Cable Entry Panel for both Load, Battery, and alarm cables. Recommended Punch additional holes for future use and install hole covers in them.
5. Verify polarity of loads - connect load cables only to charger connections of the same polarity.
6. Connect Primary Loads (if present)
   Connections are to terminal blocks with single hole M10 lug landings (lugs not provided)
   Connect positive and negative cables to the Primary Load breaker terminal blocks.
   Torque to 140 in-lb ( 16 Nm).
7. Connect Supplementary Loads (if present)
   Connect positive and negative cables to Supplementary Load Breakers.
   a. Strip 1/2" (12mm) - application of ferrule recommended.
   b. Insert cables into breaker terminals: positive cable into left breaker terminal  negative cable into right breaker terminal.
   c. Torque to:
      2AWG 35 in-lb (4.0 Nm)
      4 AWG 28 in-lb (3.2 Nm)
      18-6AWG20 in-lb (2.3 Nm).
   d. Pull wires to verify.
8. Verify torque of Supplementary Load Breakers factory connections.
   35 in-lb (4.0 Nm)



## Step 6 - Connect Batteries

1 or 2 Battery String breakers are provided for Charger 1 (Control ) and for Charger 2 (Fire & Gas).

Battery String Breakers provide battery disconnect and protection for battery cables.

Connect per site engineering instructions.

Connections are in the DC Panel to terminal blocks with single hole M10 lug landings (lugs not provided).

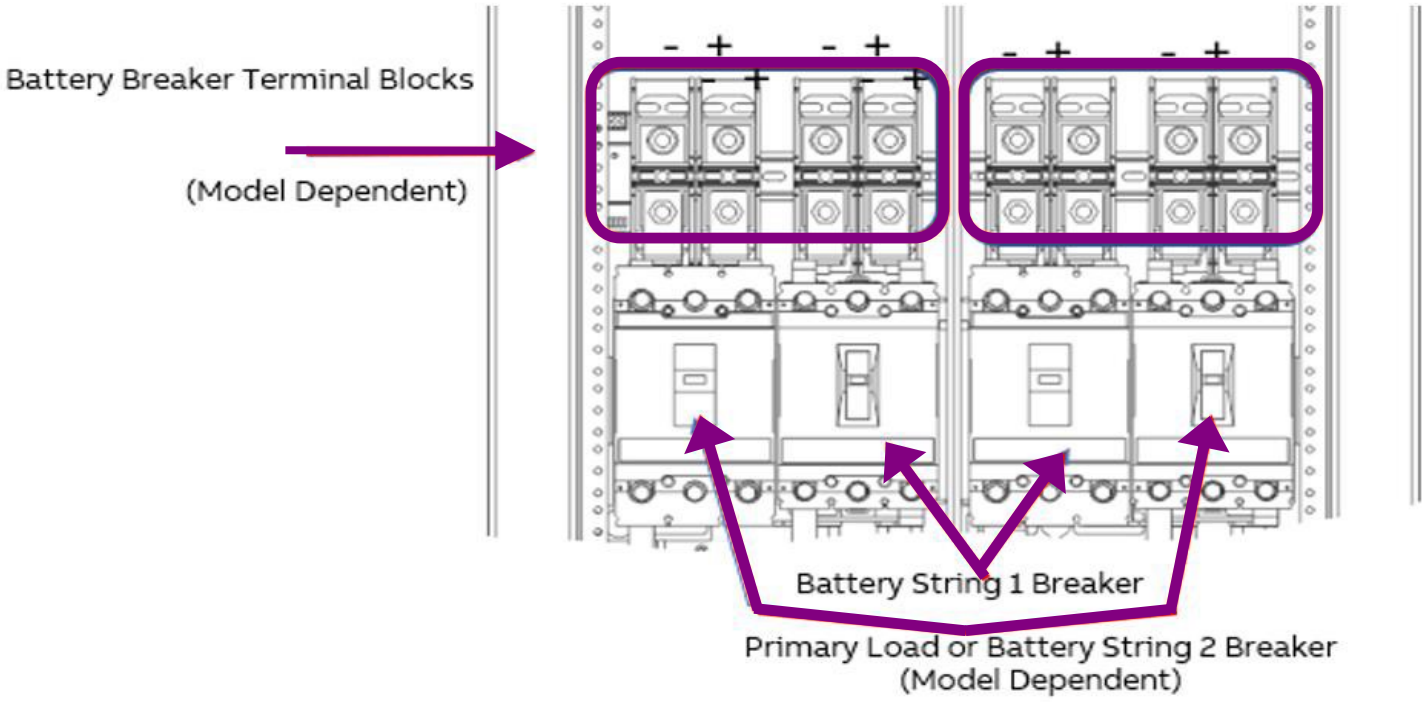
Battery DC feeds are through the top cover.

**Danger: Energy Hazard -** avoid shorting battery wires to ground or to each other.

**Danger :** Risque d'énergie - évitez de court-circuiter les fils de batterie au sol ou les uns aux autres.

**Caution:** Ensure that wires do not come in contact with sharp or rough surfaces that may damage insulation and cause a short circuit.

1. Verify all DC Panel breakers are off.
2. Verify Battery voltage with a meter.
    a. Verify Battery voltage matches Charger Label on the front door.
    b. Verify all battery string voltages are within a total range of 1.0V.
3. Verify polarity of batteries - connect battery cables only to charger connections of the same polarity.
4. Connect negative battery cable to the negative terminal of the specified Battery Breaker terminal block. Torque to 140 in-lb ( 16 Nm).
5. Connect positive battery cable to the positive terminal of the specified Battery Breaker terminal block. Torque to 140 in-lb ( 16 Nm).
6. Repeat for remaining batteries.
7. Replace DC Panel cover-8 screws.



## Step 7 - Connect Controller Signals

Connect per site engineering instructions.

See Information: Signal Connections for details.

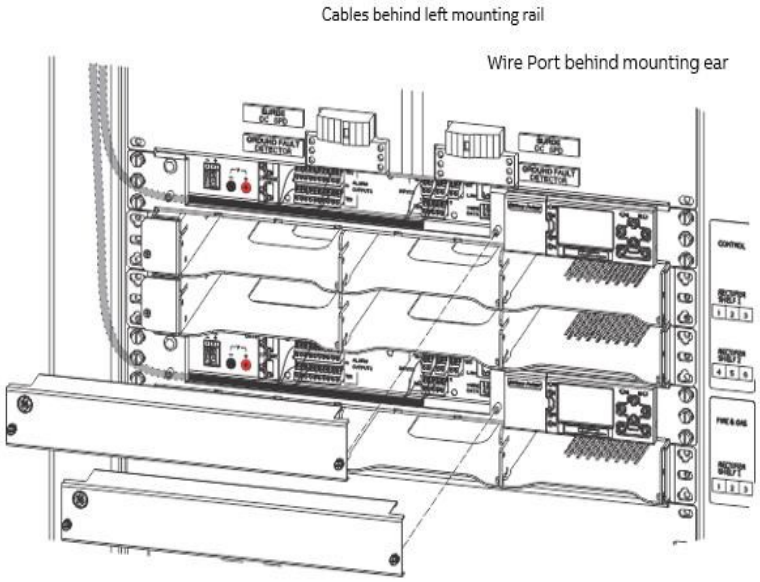
Independent connections are on the front of each charger controller, behind a cover.

Route cables thru DC Cable Entry Panel, behind left front mounting rail, through wire port behind the

left mounting ear of each controller.

Leave 12” slack in cables to slide controller out of cabinet.

Secure with wire ties as desired.




**Alarm Wires**

TB1, TB2, TB3, TB4, & TB6 Alarms - detachable blocks Wire to site alarms and signals. See Information: Signal Connections .

Strip - 0.35” (9 mm) Torque - 2 in-lb (0.25 Nm)

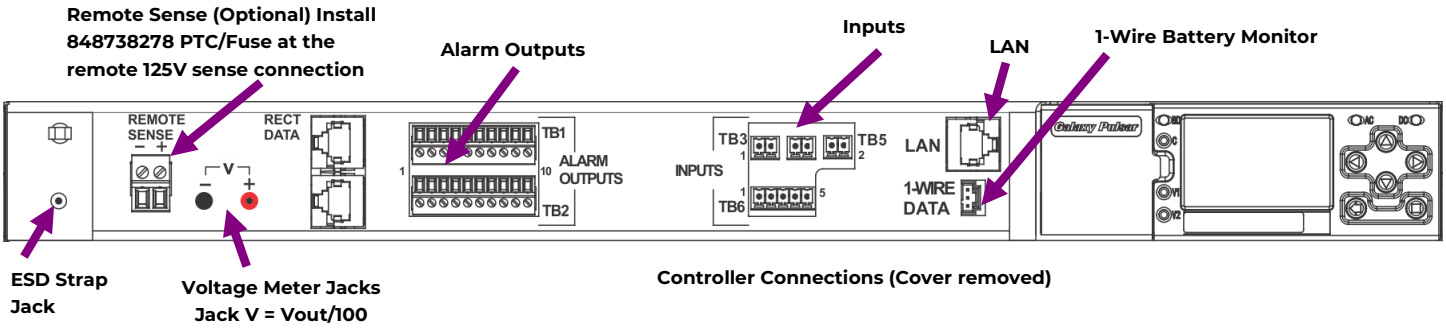
**LAN**

LAN Ethernet LAN or local PC connection

**1-Wire Battery Temp Monitor - Optional**

1-WIRE DATA

See Information: Battery Monitoring Connections.



## Step 8 - Install Rectifiers

Install rectifiers in each section starting at the top left position, proceeding across, then down to the next shelf.

Install IR100ACR024ATEZ rectifiers into rectifier positions in both 24V sections.

Slide the rectifier into the rectifier slot approximately 3/4 of the way.

Open the faceplate by sliding the faceplate latch to the left until the faceplate releases and swings outward.

Slide the unit into the slot until it engages with the back of the shelf. Swing the faceplate closed to fully seat the rectifier. Verify the faceplate is latched.

## Step 9 - Initial Start Up

1. Verify that AC and DC connections are complete and secure.
2. Turn on Charger 1 Battery String 1 breaker.
3. Turn on Charger 1 AC input breakers.
    a. External feed breaker
    b. Cabinet AC breaker in the AC Input Panel at top of the cabinet
    c. Charger 1 Rectifier AC breakers in the shelf breakers –in the Rectifier AC Panels below rectifier shelves
4. If there are no alarms, make required adjustments to the default settings on the controllers for this installation.
5. Repeat for Charger 2 from step 2.

## Step 10 - Configure Controllers per Pulsar Plus Controller Family Product Manual

**Notes:**

1. The Pulsar Plus Controller Family Product Manual includes steps and information that are not applicable to this system.
2. This system automatically configures Rectifier Parameters.
3. This system does not require configuring shelves or J code.

Verify and edit these controller basic configuration parameters per site engineering instructions.

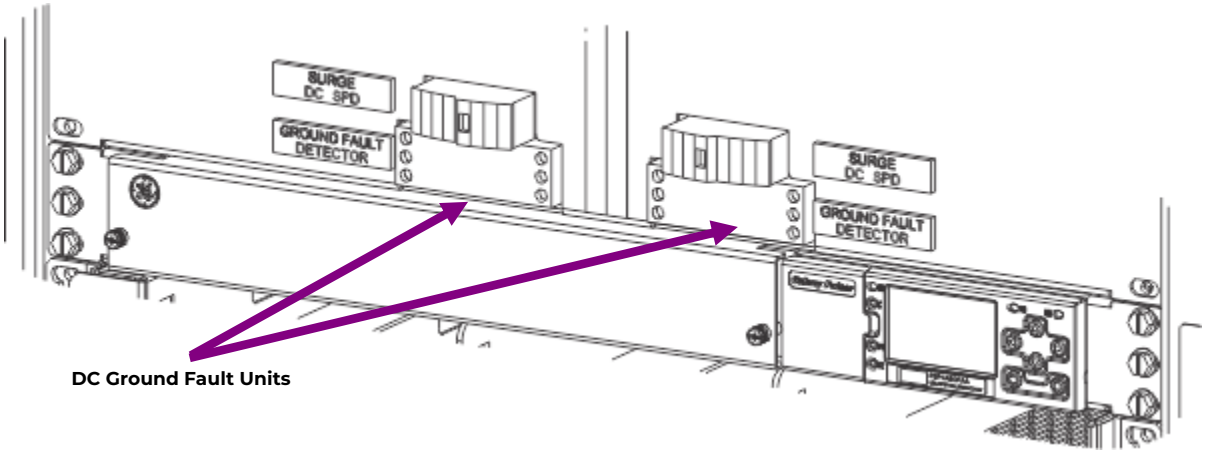
1. System Date, System Time
2. Site ID, Site Description
3. DHCP / Static IP Address

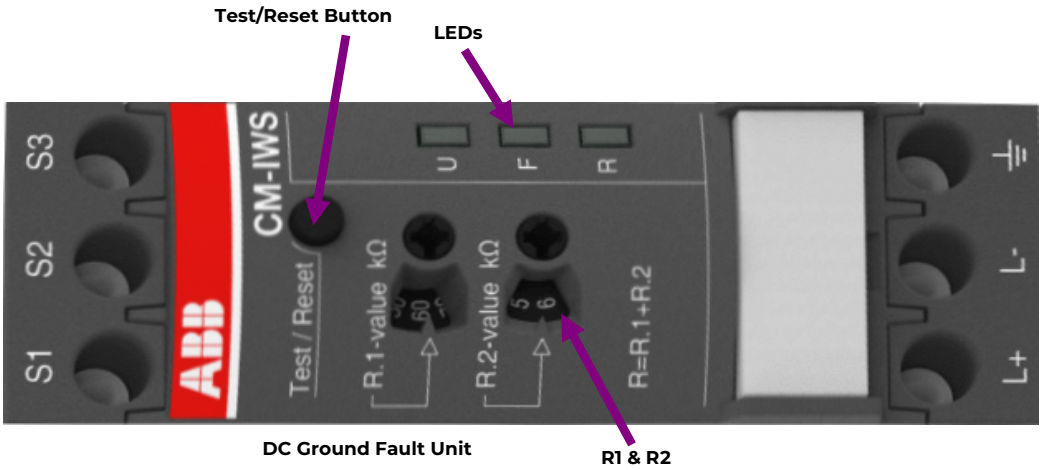
## Step 11 - Apply Power to Loads and Batteries

1. Turn on Battery String breakers.
2. Verify DC output voltage with a meter on VDC+ and VDC– controller jacks behind cover.
3. Turn on load breakers.
4. Verify No Ground Fault alarm-Ground Fault Unit U LED is Green and F LED NOT Red. If F LED is Red, adjust values of resistance threshold down (R1 + R2).

   Operate Test/Reset button after each adjustment.

   If alarm continues, trouble shoot Load and battery wiring accordingly.



## Information: Controller Basic Operation

View and change system parameters from the factory defaults via

A. Controller Display

B. Craft Port on front of controller using a laptop with EasyView2 software or HyperTerminal. EasyView2 (GUI) software can be downloaded from **omnionpower.com**

C. J5 LAN port web pages using a laptop with browser. LAN port Server mode is for local laptop connection. Set the LAN port to Server: With the controller set to Server enter the default IP address 192.168.2.1 (default) in the web browser address field.

**Warning:** Do not connect J5 LAN port to a network when set to Server. Set the controller to Client or Static before connecting to the network. Static is the factory default setting and the typical setting for most networks.

**Controller Alarm Status:** The display changes colors; Green = Normal, Amber = Minor Alarm, Red = Critical/Major Alarm

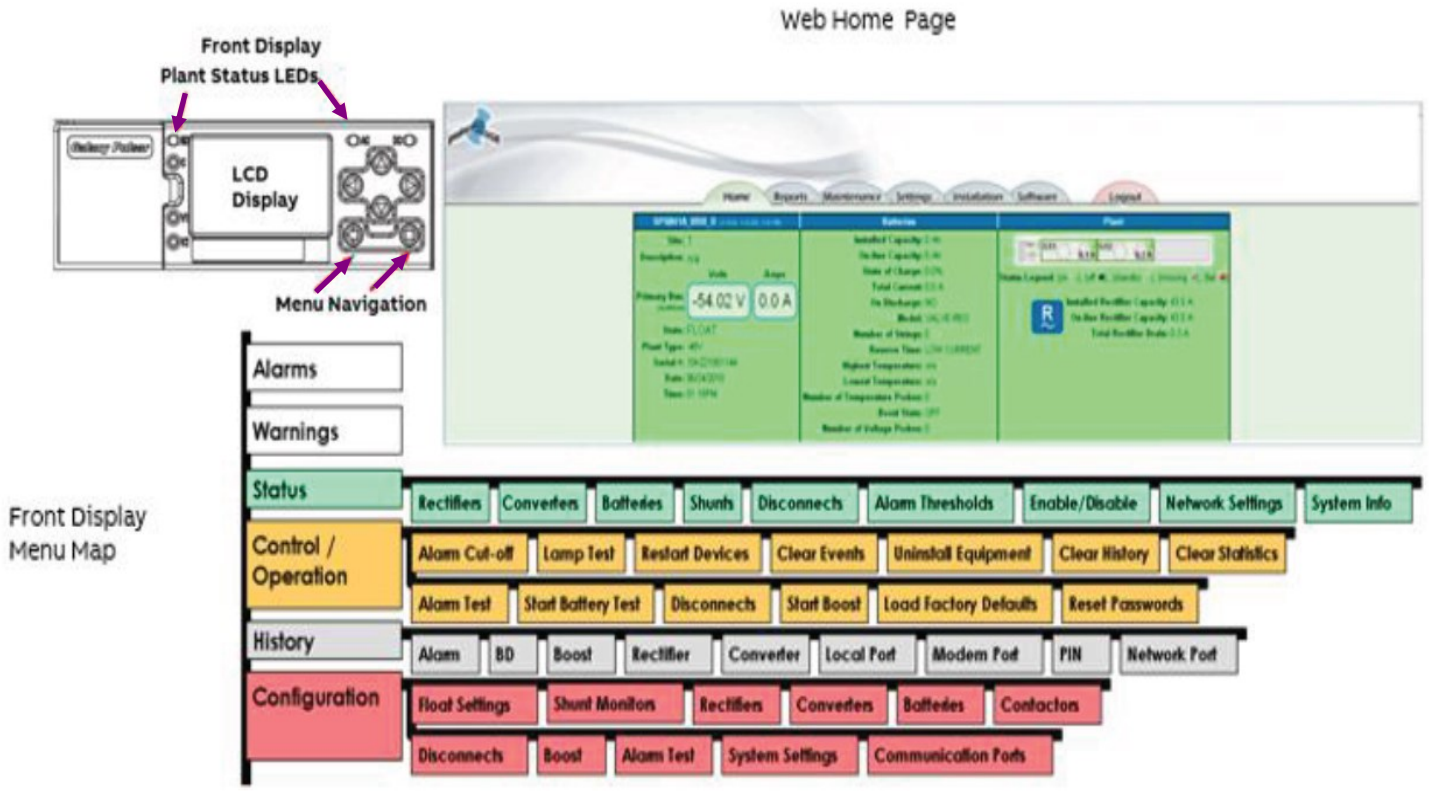
**Some alarms may occur during initial installation** :example: thermal probe fail or Major/Minor communication fail .

Clear these alarms: Via Controller Display: follow the menu path; Menu > Control/Operation > Clear Events or Uninstall Equipment. Via web pages or EasyView2; Select the Maintenance tab > clear latched events and clear missing devices.

**Verify Basic Installation Settings:** Date, Time, Battery Type, number of strings and float voltage

**Controller Display -** Menu > Configuration > System Settings and Menu > Configuration > Batteries.

**Web pages or EasyView2 -** Installation Tab for Date, Time. Site ID and Site Description. Settings Tab > Battery Management for Battery Type and number of battery strings installed.



## Information: Controller

View and Change Parameters and Alarm Severity

View and change system parameters and alarm severity from the factory defaults via:

A. Front Display

B. LAN port in Local mode via a laptop (web pages)

C. LAN port in Network mode (web pages)

D. Craft Port via laptop and EasyView2 software or HyperTerminal.

EasyView2 (GUI) software can be downloaded from **omnionpower.com**

See Pulsar Plus Controller Family Product Manual for details.

**Information: Controller – LAN Port – Local / Network**

The LAN port is be configured as Local or Network-
controller display menu path Configuration > Communication Ports > Network Settings > DHCP > mode CLIENT or SERVER

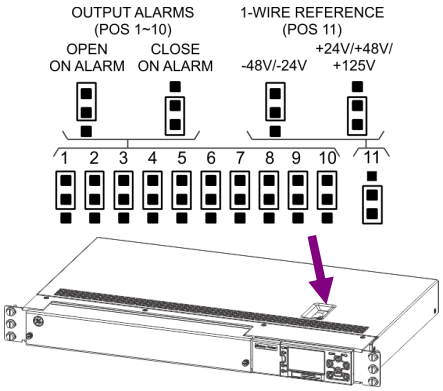
**Local** (Server): LAN connects to a laptop.

Local (Server) is a temporary setting. When configuration is complete, return LAN port to Network (Client) mode.

**Network** (Client): LAN connects to a network. (Default).

**CAUTION:** Do not connect LAN port to a network when configured as Local.

See Pulsar Plus Controller Family Product Manual for details.




**Information: Alarm Relay Jumpers and 1-Wire**

**Data reference**

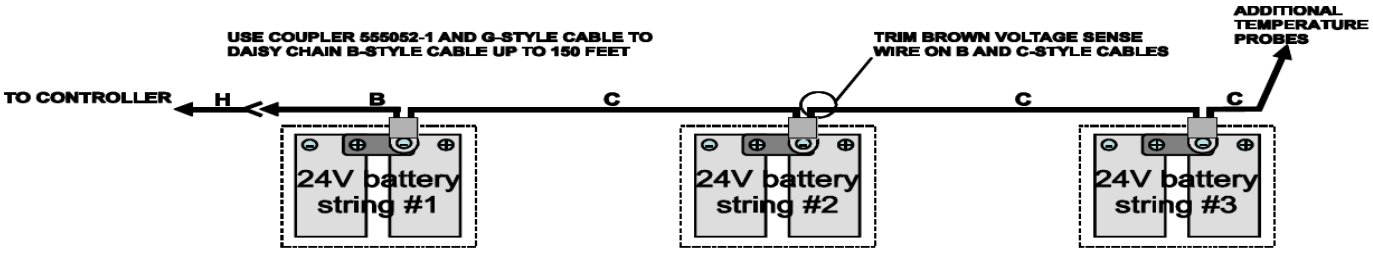
Jumpers are located on the top of the controller.

Slide the controller out for access to the jumpers-6 screws.

Alarm Relay Jumper Factory Defaults are Open On Alarm

## Information: Battery Monitoring Connections – for use with VRLA batteries only

Battery Monitoring is accomplished with a “Daisy Chained” series of probes. The Probes monitor battery temperature. Bolt the Probe under the “–“ terminal connector




| Ordering Codes | Descriptions |
|---|---|
| 1600093513A | DTP873 Battery Thermal Probe |
| 160093513A | DTP873 Ambient Temperature Probe |

## Alarm Inputs

Default alarm descriptions may be changed as needed using web pages or Easyview2.

| Standard Controller Alarm Output Defaults | | Pin |
|---|---|---|
| PCR_C | Power Critical Alarm Return | TB1.1 |
| PCR | Power Critical Alarm | TB2.1 |
| PMJ_C | Power Major/charger Common Alarm Return | TB1.2 |
| PMJ | Power Major/charger Common Alarm | TB2.2 |
| HV_C | High DC Voltage Alarm Return | TB1.3 |
| HV | High DC Voltage Alarm | TB2.3 |
| R1_C | Rectifier Fail Alarm Return -R1 | TB1.4 |
| R1 | Rectifier Fail Alarm -R1 | TB2.4 |
| R2_C | AC Fail Alarm Return - R2 | TB1.5 |
| R2 | AC Fail Alarm - R2 | TB2.5 |
| R3_C | Very Low Voltage Alarm Return - R3 | TB1.6 |
| R3 | Very Low Voltage Alarm - R3 | TB2.6 |
| R4_C | Ground Fault Indicator Return - R4 | TB1.7 |
| R4 | Ground Fault Indicator - R4 | TB2.7 |
| R5_C | Surge Protection Fail Alarm Return - R5 | TB1.8 |
| R5 | Surge Protection Fail Alarm - R5 | TB2.8 |
| R6_C | Battery Test Active Return - R6 | TB1.9 |
| R6 | Battery Test Active - R6 | TB2.9 |
| R7_C | Check Battery Return – R7 | TB1.10 |
| R7 | Check Battery – R7 | TB2.10 |

| Standard Controller Alarm Output Defaults | Pin |
|---|---|
| Not used | TB3.1 |
| Not used | TB3.2 |
| Remote Group Standby | TB4.1 |
| Remote Group Standby RTN | TB4.2 |
| Plant Battery Test | TB5.1 |
| Plant Battery Test RTN | TB5.2 |
| Air Conditioning Fail 1 | TB6.1 |
| Door Open 1 | TB6.2 |
| High External Ambient 1 | TB6.3 |
| Low External Ambient 1 | TB6.4 |
| Common Input Monitor RTN 1 | TB6.5 |

## Information : Rectifiers

| Rectifier | | Input (50/60 Hz) | Output DC | |
|---|---|---|---|---|
| | | | Voltage | Max. Current, Power |
| 24V Orange | IR100ACR024ATEZ | 200-277Vac,15A | 22-29Vdc | 100A,2725W |
| | | 100-120V,15 –12A | 22.-29Vdc | 48A,1200W |

## Information: AC and DC Surge Protectors—SPD

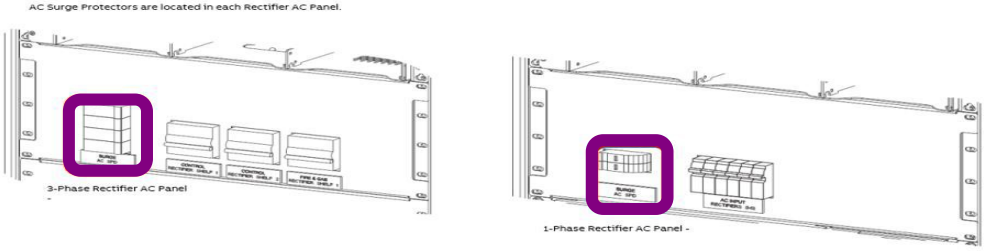
Surge Protectors are plug-in, replaceable modules.

Replace failed modules to maintain surge protection. The Surge Protection Fail Alarm will be active when one or more Surge Protectors has failed.

The Each module has a LED:

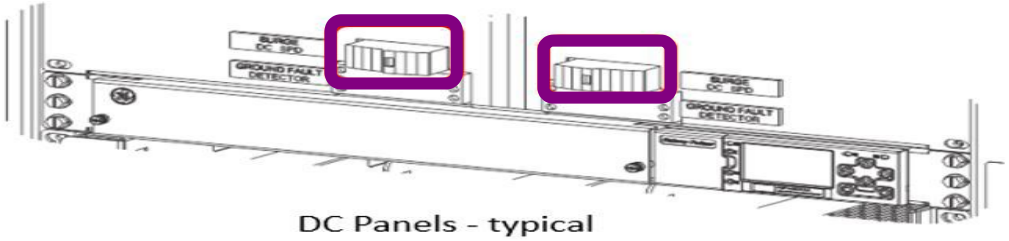
Green indicates NORMAL

Red indicates FAILURE



## DC Surge Protectors—SPD

DC Surge Protectors are located in each DC Panel.



DC Panels - typical

## Troubleshooting

Troubleshooting tables are in the Pulsar Plus Controller Family Troubleshooting Table document.

## Parts List

| **Power Modules** | | |
|---|---|---|
| **Ordering Code** | **Description** | **Application** |
| 150052771 | IR100ACR024ATEZ | 24VDC Hot-Swappable Integritas Charger Module, Single Phase 120 - 277AC Input, 100A Output |
| **Thermal Probes** | | |
| Ordering Code | Description | Application |
| 1600093512A | DTP873_AMBIENT | Ambient Thermal Probe Kit |
| 1600093513A | DTP873_BATTERY | Battery Terminal Thermal Probe Kit |
| **Surge Arrestors** | | |
| Ordering Code | Description | Application |
| 4600097827P | VAL-CP-350-ST 2859602 | AC Line Surge Arrestor Replacement Module |
| 4600097268P | VAL-CP-N/PE-350-ST 2859699 | AC N-PE Surge Arrestor Replacement Module |
| 450048866 | TD220Y4025RMN | AC 3-phase Surge Arrestor Module Set |
| 4600097830P | PST-SEC-T3-24P 2905232 | 24V DC Surge Arrestor Replacement Module |

## Specifications and Application

- External Surge Protective Device (SPD) is required on all AC inputs. Equipment Safety is Approved in UL1449/IEC 60664-1 Installation Category II environments up to 50°C ambient.
- Equipment and subassembly ports:

1. are suitable for connection to intra-building or unexposed wiring or cabling;
2. can be connected to shielded intra-building cabling grounded at both ends.

- Grounding / Bonding Network – Connect to an Isolated Ground Plane (Isolated Bonding Network) or an Integrated Ground Plane (Mesh-Bonding Network or Common Bonding Network).
- Installation Environment - Install where NEC applies.

**Reference Documents**

These documents are available **omnionpower.com**

**Document Title**

CC848815341 Pulsar Plus Controller Family Product Manual

**OmniOn Power Inc.**
601 Shiloh Rd.
Plano, TX USA

**omnionpower.com**