

SC1024 CC1600 6U FAN COOLED SIDE MOUNT

Quick Start Guide – 1600439872A



This manual is intended as a guide in assisting equipment understanding and installation. The cabinet SC1024 CC1600 6U FAN COOLED is a pole mount cabinet with CC1600SC55SXZ01A rectifier along with a separate space for customer equipment and has two AC inputs supplied through two circuit breakers which are mechanically interlocked. The AC input is fed from a utility source and upon failure Generator can be used to feed the AC input through a mechanical interlocked transfer breaker. The cabinet is air cooled. Rectifier Unit CC1600SC55SXZ01A rated input AC voltage is from 120/240V 3W+PE and cabinet provides DC output rated -48V at 1600watts. The cabinet is equipped with 19 – in Rack Mount, 6 RU space for mounting Customer Equipment, a DIN rail to provide DC distribution, and a 120VAC convenience outlet. Maximum weight for the customer equipment not to exceed 130 lbs (59 Kgs).

Document – 8600468490P

Safety statements

- SAVE THESE INSTRUCTIONS – This document contains important safety and operating instructions for the SC1024 cabinet
- This equipment is not suitable for use in locations where children are likely to be present.
- Do not install this equipment over combustible surfaces.
- Rules and Regulations – Follow all national and local rules and regulations when making field connections.
- Compression Connectors
 - U. S. or Canada installations – use Listed/Certified compression connectors to terminate Listed/Certified field – wire conductors.
 - 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.
- Electrical Connection Securing: Torque to the values specified on labels or in the product documentation.
- Cable Dress – dress to avoid damage to the conductors and undue stress on the connectors.
- Field – wired Conductors – Follow all National Electric Code (NEC) and local rules and regulations.
 - Insulation rating: 90°C minimum; 105°C (minimum) if internal to enclosed equipment cabinets.
 - Size AC field–wired conductors with 75°C ampacity (NEC) equal to or greater than their panel board circuit breaker rating.
- AC and DC input disconnect/protection – Provide accessible devices to remove input power in an emergency.
- Grounding – Connect the equipment chassis directly to ground. In enclosed equipment cabinets connect to the cabinet AC service ground bus. In huts, vaults, and central offices connect to the system bonding network.

Énoncés de sécurité

- CONSERVEZ CES INSTRUCTIONS – Ce document contient des instructions de sécurité et d'utilisation importantes pour.
- Cet équipement ne convient pas à une utilisation dans des endroits où des enfants sont susceptibles d'être présents
- N'installez pas cet équipement sur des surfaces combustibles.
- Règles et règlements – Suivez toutes les règles et réglementations nationales et locales lorsque vous effectuez des connexions sur le terrain.
- Connecteurs de compression
 - Installations aux États – Unis ou au Canada – utilisez des connecteurs de compression répertoriés/certifiés pour mettre fin aux conducteurs de fil de terrain répertoriés/certifiés.
 - Toutes les installations – appliquez le connecteur approprié au conducteur de taille correcte comme spécifié par le fabricant du connecteur, en utilisant uniquement l'outillage recommandé ou approuvé par le fabricant du connecteur pour ce connecteur.
- Fixation de la connexion électrique : Couple aux valeurs spécifiées sur les étiquettes ou dans la documentation du produit.
- Robe de câble – habillez – vous pour éviter d'endommager les conducteurs et de stress excessif sur les connecteurs.
- Conducteurs câblés sur le terrain – Suivez tous les codes nationaux de l'électricité (NEC) et les règles et règlements locaux.
 - Indice d'isolation : 90°C minimum; 105°C (minimum) si les armoires d'équipement internes aux armoires d'équipement fermées.
 - Conducteurs câblés sur le terrain à courant alternatif de taille avec une ampacité de 75°C (NEC) égale ou supérieure à leur cote de disjoncteur de carte de panneau.
- Déconnexion/protection des entrées CA et CC – Fournir des dispositifs accessibles pour retirer l'alimentation d'entrée en cas d'urgence.
- Grounding – Connectez le châssis de l'équipement directement à la masse. Dans les armoires d'équipement fermées se connectent à l'armoire AC service ground bus. Dans les huttes, les coffres – forts et les bureaux centraux se connectent au réseau de liaison du système.

Precautions

- 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.
- 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.
- Do not disconnect permanent bonding connections unless all power inputs are disconnected.
- Verify that equipment is properly safety earth grounded before connecting power. High leakage currents may be possible.
- 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 that can shock or cause serious injury. When equipped with ringer modules, hazardous voltages will be present on the ringer output connectors.
- Use the following precautions in addition to proper job training and safety procedures:
 - Use only properly insulated tools.
 - Remove all metallic objects (key chains, glasses, rings, watches, or other jewellery).
 - 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.
 - Wear safety glasses.
 - Follow Personal Protective Equipment requirements: customer specified, site specific, or general as appropriate.
 - Test circuits before touching.
 - Be aware of potential hazards before servicing equipment.
 - Identify exposed hazardous electrical potentials on connectors, wiring, etc.
 - Avoid contacting circuits when removing or replacing covers.
 - Use a personal ESD strap when accessing or removing electronic components.
- 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 utility rooms, can affect medical electronic devices, such as pacemakers. Effects decrease with distance.

Précautions à prendre

- L'installation, l'entretien et le fonctionnement des équipements et des batteries doivent être effectués UNIQUEMENT par du personnel professionnel, compétent et qualifié qui possède les connaissances et l'expérience pratique nécessaires en matière d'équipement électrique et qui comprend les dangers qui peuvent survenir lors de travaux sur ce type d'équipement.
- Installer, entretenir et utiliser l'équipement uniquement par du personnel professionnel, qualifié et qualifié qui a les connaissances et l'expérience pratique nécessaires avec l'équipement électrique et qui comprend les dangers qui peuvent survenir lorsque vous travaillez sur ce type d'équipement.
- Débranchez les batteries des sorties et/ou suivez les procédures de sécurité lorsque vous travaillez sur l'équipement. Les batteries peuvent être connectées en parallèle avec la sortie des redresseurs. Éteindre les redresseurs ne supprimera pas nécessairement l'alimentation du bus.
- Ne déconnectez pas les connexions de liaison permanentes à moins que toutes les entrées d'alimentation ne soient déconnectées
- Vérifiez que l'équipement est correctement mis à la terre de sécurité avant de brancher l'alimentation. Des courants de fuite élevés peuvent être possibles.
- Faites preuve de prudence et suivez toutes les mises en garde et pratiques de sécurité lors de l'entretien de cet équipement. De l'énergie et des tensions dangereuses sont présentes dans l'unité et sur les câbles d'interface qui peuvent choquer ou causer des blessures graves. Lorsqu'il est équipé de modules de sonnerie, des tensions dangereuses seront présentes sur les connecteurs de sortie de la sonnerie
- Prenez les précautions suivantes en plus de la formation professionnelle et des procédures de sécurité appropriées :
 - N'utilisez que des outils correctement isolés.
 - Retirez tous les objets métalliques (porte – clés, lunettes, bagues, montres ou autres bijoux).
 - Suivez les procédures d'étiquetage de verrouillage (LOTO) : spécifiées par le client, spécifiques au site ou générales, selon le cas.
 - Débranchez toute alimentation électrique avant de procéder à l'entretien de l'équipement. Vérifiez s'il y a plusieurs entrées de courant.
 - Portez des lunettes de sécurité.
 - Respectez les exigences en matière d'équipement de protection individuelle : spécifiées par le client, spécifiques au site ou générales, selon le cas.
 - Testez les circuits avant de les toucher. Soyez toujours conscient des dangers potentiels avant de réparer l'équipement.
 - Identifiez les potentiels électriques dangereux exposés sur les connecteurs, le câblage, etc.
 - Évitez de toucher les circuits lorsque vous retirez ou remplacez les couvercles.
 - Utilisez un bracelet ESD personnel lorsque vous accédez aux composants électroniques ou les retirez.
- Le personnel qui a des dispositifs médicaux électroniques doit être conscient que la proximité des systèmes d'alimentation et de distribution en CC, y compris les batteries et les câbles, que l'on trouve généralement dans les salles de télécommunications, peut affecter les appareils électroniques médicaux, tels que les stimulateurs cardiaques. Les effets diminuent avec la distance.

Safety

Read and follow all safety statements, warnings, and precautions in this manual before installing, maintaining or repairing this equipment.

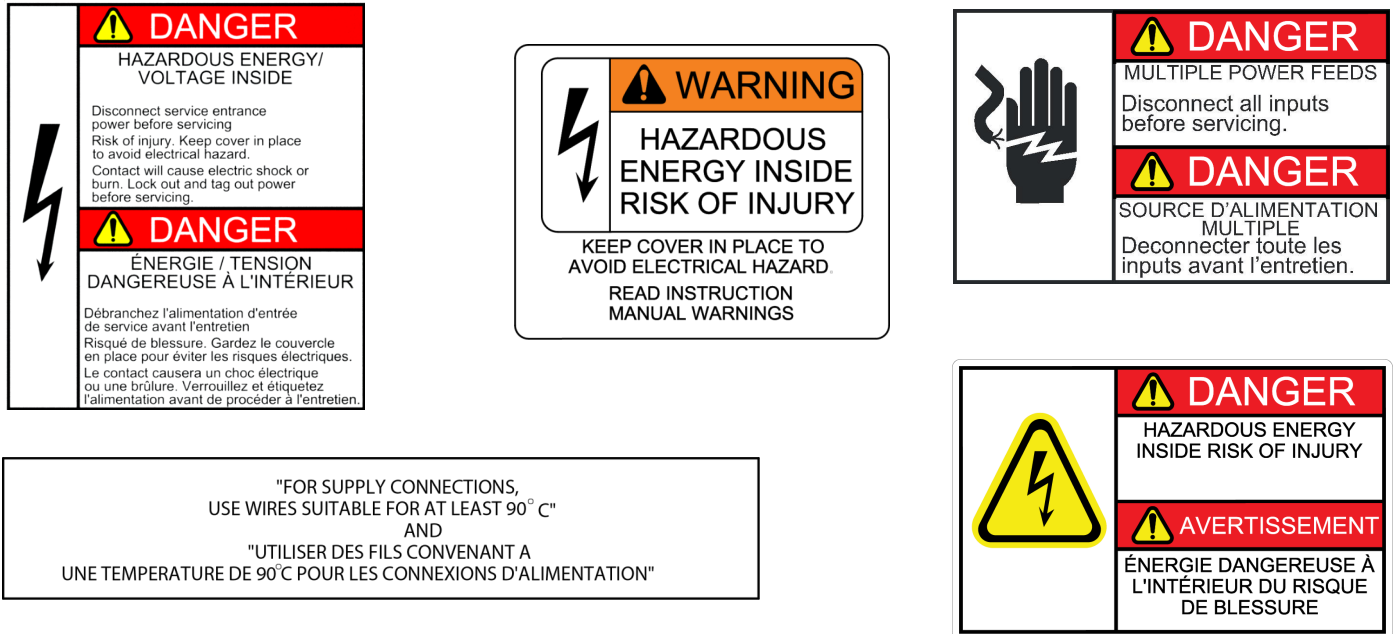


Figure 1 Warning Labels

Equipment identification

The product ID label on door of AC compartment of SC1024 model is shown below. It includes the product serial number and input – output specifications of the cabinet.

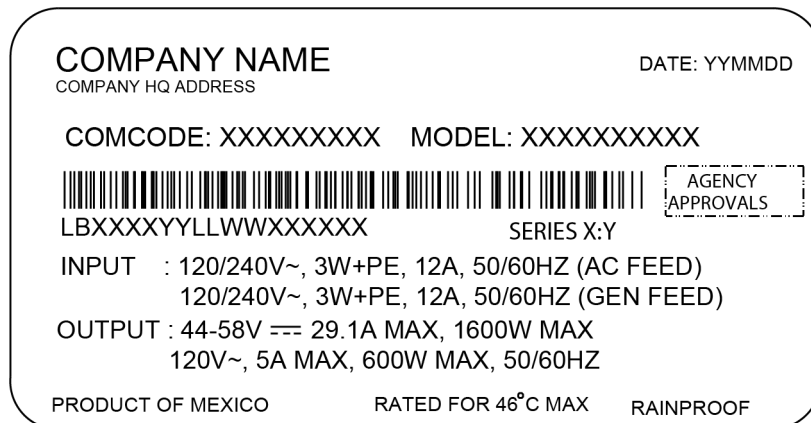


Figure 2 Product ID Label Information

Customer Care

+1 877 546 – 3243

Information – Tools required

- Multimeter (AC/DC voltage, resistance)
- Torque wrench
- Screwdrivers set, flat head, Philips head
- Metric allen key set
- Side cutter
- Socket wrench set (Metric and SAE)
- Spirit level
- Tape measure

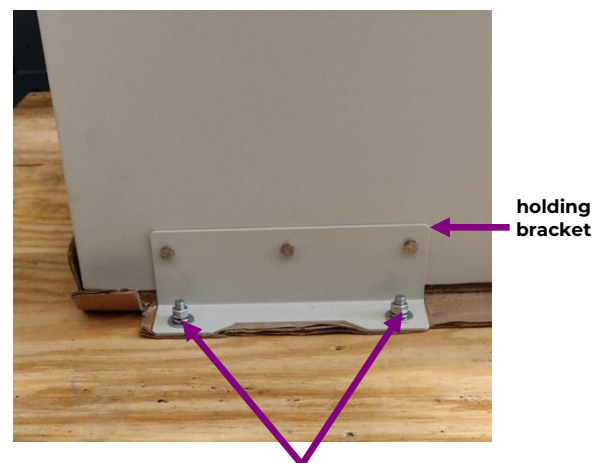
Site preparation

Before installing the cabinet, make sure that the site has been prepared properly and all external connections have been installed correctly. Prepare the site for installation as follows:

1. Make sure that the site access is available.
2. Inspect the site to ensure the following:
 - The site is prepared per site specific installation instructions.
 - The site survey is completed, and the site report is available.
 - The site is clean.
3. Check that all external connections for the Cabinets are available.
 - Ground connection
 - Main's power (AC)
4. Check that enough space for transportation and installation is available.
5. Make sure that the delivery is complete.

Unpack and check delivery

1. Remove all packaging material from the cabinet.
2. Remove the 2 screws that attach the cabinet to pallet.
3. Remove the bracket used to hold the cabinet to pallet.
4. Retain the screws, for pole mount bracket assembly.
5. Check the parts for damages.



Cabinet holding screws

Figure 3 Holding bracket

Pole preparation

Pole preparation for through bolt mount

Locate and mark for through holes on the pole using the pole mounting bracket as a template. This will be bottom mounting hole.

Drill pole as required for 5/8 inch through rod.

Insert pole hardware from the opposite side of the mounting, allowing for threaded shaft to protrude towards the equipment side of the pole.

Cabinet preparation

Attach the pole mounting bracket

- Install the pole mounting brackets using 3 bolts (1/4"– 20 , 0.5" long hex head) on each side as shown in figure 5. Torque to 65.0 in-lbs (7.34 Nm) (6 places).

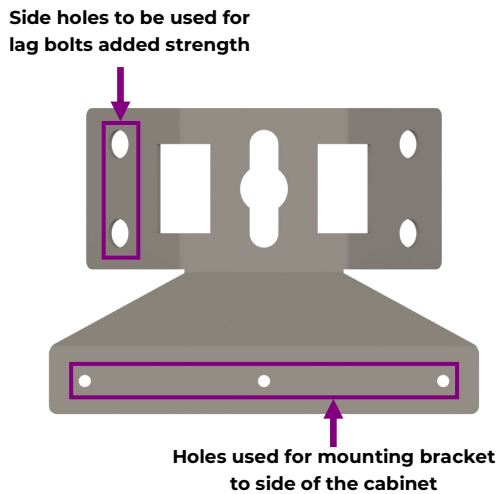


Figure 4 Mounting bracket

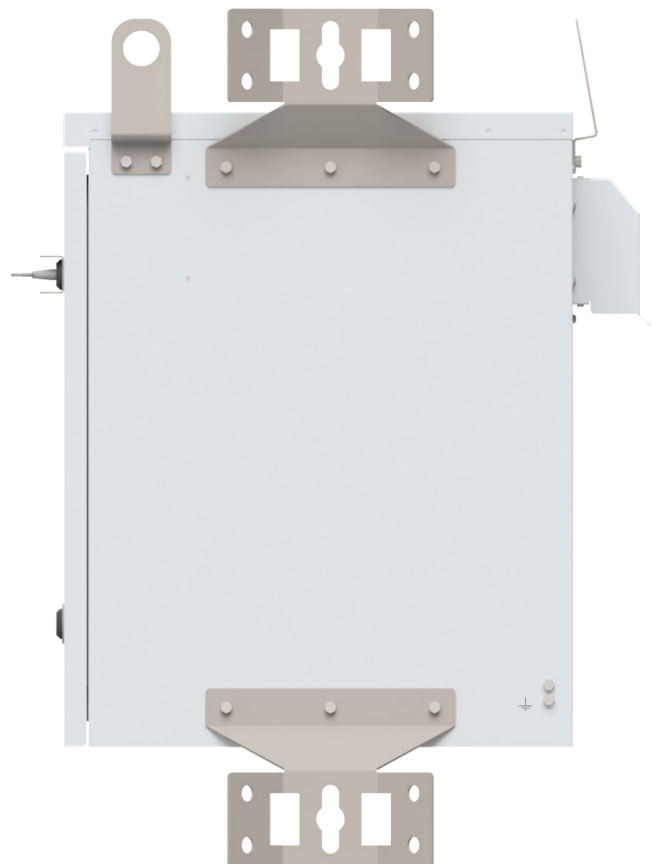


Figure 5 Cabinet with attached pole mount bracket

Step 1 – Mount unit to pole

1. Tie the traction ropes to eye hooks.
2. Lift the cabinet using traction ropes and position the cabinet on pole.
3. Secure cabinet to pole using threaded rods and metal straps as per site engineering instructions.

The pole mounting bracket is designed to optimally fit on a 9" diameter pole.

- Secure washers and nuts to the threaded rods. Use both key holes for best results.
- Torque to 1164 in-lbs (131.51 N-m).

Notes:

- **Two pole straps:** Use both square mounting holes when using only two straps for optimum strength.
- **More than two pole straps:** Equally space straps through the square mounting holes.

4. Install lag screws – Optional
Add up to 4 lag screws (5/8") per side using side holes in pole mount bracket (lag screws not included) – Figure 4 shows pole mounting bracket.
5. Remove the traction rope.

WARNING: Use traction ropes to lift the cabinet which is designed to carry the vertical lifting weight of the cabinet. The lifting pivot must be a minimum of 6 feet above the top surface of the cabinet. The use of shorter lifting ropes can exert excessive lateral pressure on the lifting arrangement. This pressure can damage the cabinet.

CAUTION: The weight exceeds the individual lifting limitations as defined by OSHA. Utilize a crane or lift properly to install the cabinet. A team of at least two persons are needed for cabinet lifting. Use lifting equipment wherever possible.

Step 2 – Ground the unit

Recommended lug size: 2 hole, 1/4" on 5/8", 6AWG

Lug part number: 405347519

Recommended wire size: 6AWG (13.3mm²)

A hole is provided on the cabinet for grounding. Refer the figure 7 for grounding location.

1. Insert the wire into the barrel of the cable lug and crimp the wire.
2. Place the cable lug on grounding hole and connect to the cabinet with bolts.
3. Torque the bolts to 30 in-lbs (3.4 Nm) – flat blade screwdriver.

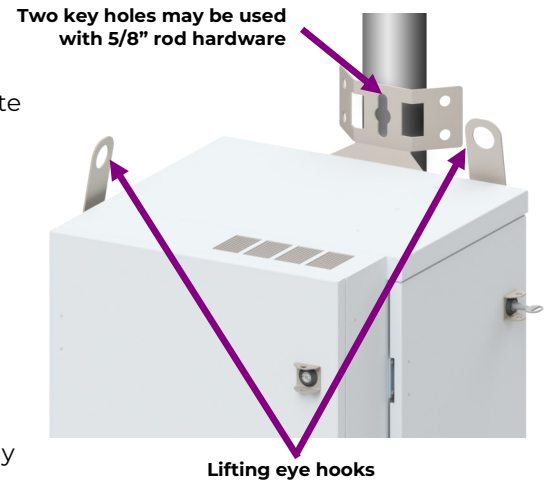


Figure 6 Lifting eye hooks

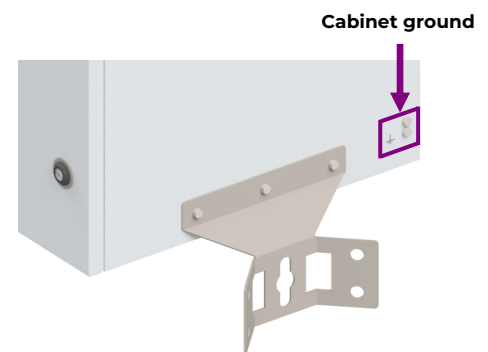


Figure 7 Cabinet grounding

Step 3 – Remove the knockout and insert the conduit

- Remove the knock out.
- Use liquid tight 1 – 1/2" conduit connector.

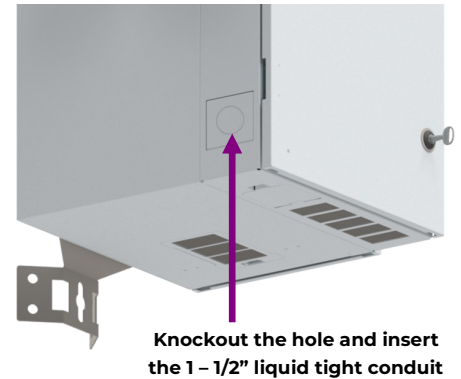


Figure 8 AC input conduit

Step 4 – Open the door and remove dead–front for access to field wiring

1. For field wiring, open the pad lock with a special tool that is provided with the cabinet and open AC compartment door as shown in figure 9.



Figure 9 AC side Door opened

2. Upper dead front cover should be opened to make neutral wire connection in terminal block and lower dead front cover should be opened to make L1, L2 and GND connections. Both the covers are held by wires which prevents the covers from falling. Use a slotted screwdriver to loosen the 3 captive screws of the lower dead – front covers and 4 captive screws of upper dead front.

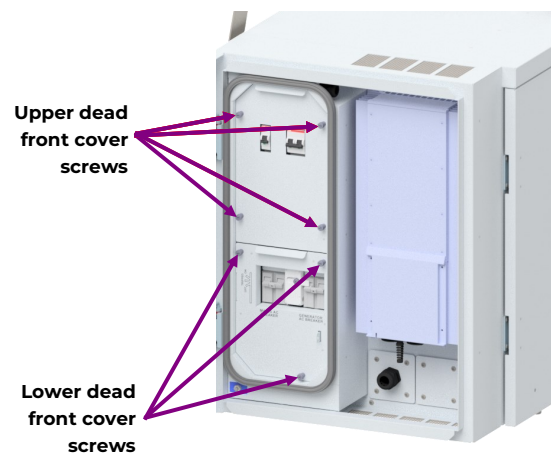


Figure 10 Upper and lower dead front screws

- After the dead front covers are removed, open the necessary insulators. Wiring chamber will look like as shown in figure 11.

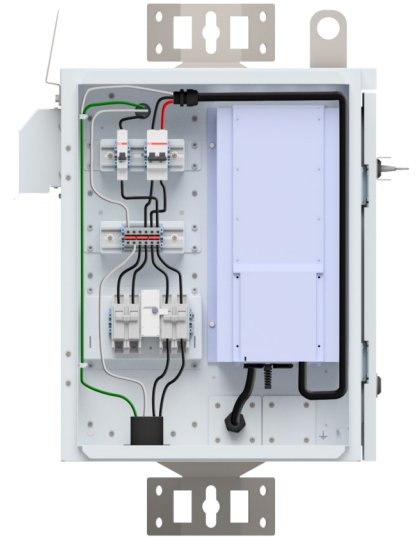


Figure 11 Chamber wiring

Information: Internal ground bar

The Pole Mount Cabinet includes two internal copper ground bars that are pre-wired to the ground connections of the rectifier and convenience receptacle. The ground cable of AC input is connected to bottom internal ground bar. Remove AC panel front cover to access the ground bars.



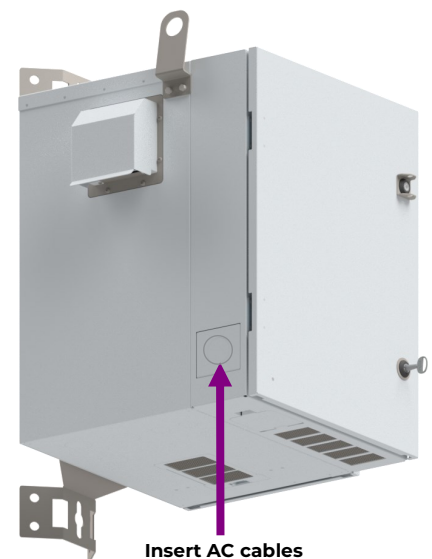
Figure 12 Internal ground bar

Step 5 – Connect AC utility input

Danger: Shock Hazard – Turn OFF and Lock-Out, Tag-Out the AC source before making AC connections. Follow all local and national wiring codes.

AC Input is 120/240V_{AC} 3W+PE two phase, 4 wire(L1, L2, Neutral and Ground) , 50/60Hz. A 2 pole external AC circuit breaker not exceeding 25A should be provided. It is recommended to use 10 AWG minimum (6 mm²) wire as per NEC guidelines.

- Verify all AC breakers are off – external AC feed breakers and Cabinet AC breakers.
- Insert the AC cables through the punched holes/conduit. Bring AC wires L1 and L2 toward the AC input breaker and terminate the neutral wire into the terminal block.



Insert AC cables

Figure 13 AC utility input

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

3. Connect PE Ground wire of input feed (green/green-yellow) to the internal ground bar. Recommended wire size is 10 AWG (6 mm²) minimum. Terminal accepts 20 to 6 AWG size wires.
4. Torque ground connection to 25 in-lbs (2.8 Nm) and Torque Neutral connection to 15 in-lbs (1.7 Nm).
5. Connect AC wires L1 and L2 to the AC input breaker. Terminal accepts 18 to 4 AWG wires.
 - a) Ferrules use is recommended strip 1/2" (12mm).
 - b) Insert each wire L1 and L2 into 20A breaker terminals.
 - c) Torque hex screw to 25 in-lbs (2.8 Nm).
 - d) Pull wire to verify.
 - e) Reinstall AC Panel front cover (7 screws).

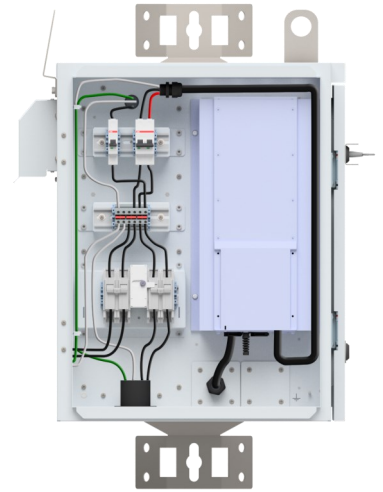


Figure 14 AC utility input wiring diagram

Note: Left (Utility AC input) AC input breaker – CB1, controls the supply to the upper AC distribution section where breaker supply AC input power to the rectifier. The upper AC distribution breaker provide additional input protection to the rectifier.

Note: Right (Generator input) AC input breaker – CB2, controls the supply to the upper AC distribution section in case of utility AC input failure or disconnection. Circuit Breakers CB1 and CB2 are mechanically interlocked for input isolation from either of the sources to the rectifier.

Step 6 – Connect generator AC input

Note: This is temporary connection and not field wired. It will be used only in case of power loss.

Danger: Shock Hazard – Turn OFF and Lock-Out, Tag-Out the AC source before making AC connections. Follow all local and national wiring codes.

Recommended Matching connector: NEMA L14 – 30 FLANGED INLET PLUG, 30A 250V LOCKING RECEPTACLE SOCKET HJP – 2713.

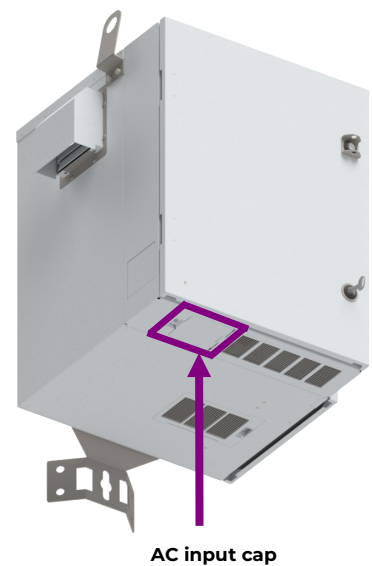
Recommended cable size: 10AWG

Note: Recommended that the Cable exceeding 35lbs (16Kgs) Must be supported separately from inlet connection.

1. Verify all AC breakers are off – External AC feed breakers and cabinet AC breakers.
2. Remove the screw to open the generator AC input waterproof cap.
3. Open the socket lid and connect the generator input plug.

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

4. Close the socket lid. Close the generator AC input waterproof cap with the screw.



AC input cap

Figure 15 Generator AC input

Step 7 – Connect -48V_{DC} and Output return

1. Open the DC side door and place the equipment in 19" 6 RU space.
2. Connect the DC output cables from terminal block to the equipment.

Provisions for customer supplied DIN load breakers are provided below the DC terminal block.

OmniOn recommends using CBI QY, 1 Pole, 80 VDC, 13MM DIN Below is a list of available DIN breakers from OmniOn.

Ordering code	AMPERAGE	CB POSITIONS (POLES)	MIN WIRE GAUGE
450029223	5	1	10
450029222	10	1	10
450029220	15	1	10
450029219	20	1	10
450029218	25	1	10
450029217	30	1	10
450029214	35	1	8
CC408654288	40	1	8

3. Verify polarity of load. Connect load cables to output DC terminal and Output return on the terminal block.
4. Knockout holes in access panel at the bottom of the cabinet as required for equipment cables.
5. Route the equipment cables carefully through holes in access panel at the bottom of the cabinet.
Use appropriate size cable gland, cable ties and integrated cable management.

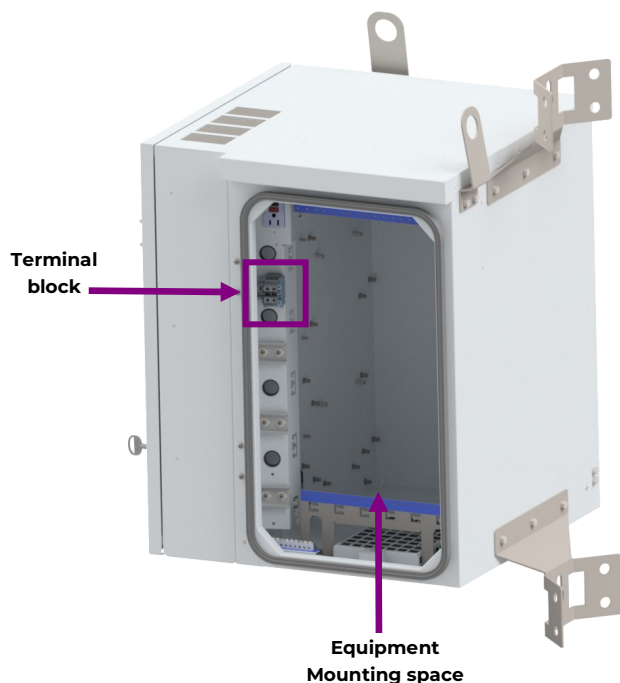


Figure 16 DC output connections and Space for equipment mounting

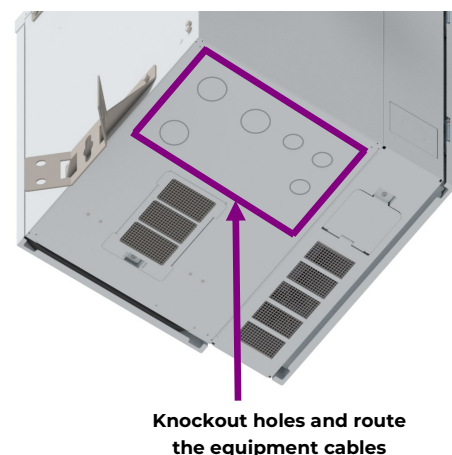


Figure 17 DC side knockout holes

Step 8 – Load side fan control

User can configure the thermostat based on load type. The Heat release capacity for installed equipment is 200W (682 BTU).

- Use flathead screw driver to set the temperature.
The Thermostat is adjustable between -45°C and +80°C temperatures.
- The fan will turn ON when the temperature exceed the set temperature inside the cabinet.

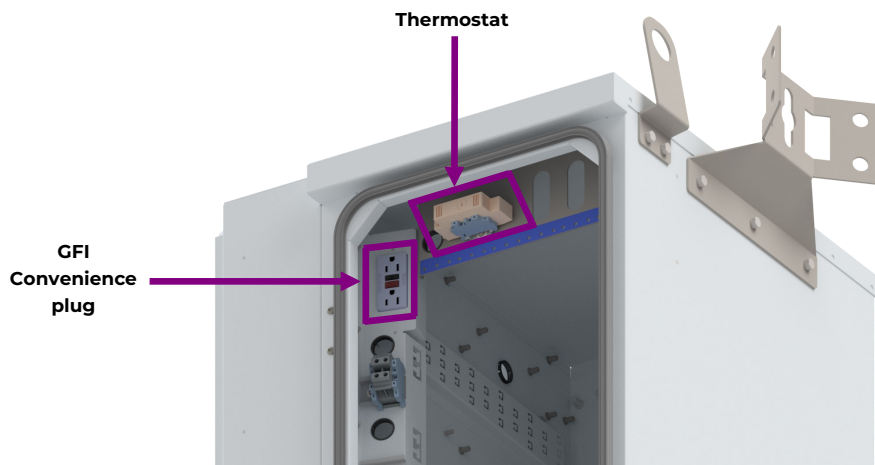


Figure 18 GFI Convenience plug and Thermostat



Figure 19 Thermostat

Information: GFI convenience plug

GFI 120V_{AC} convenience plug rating is 120V_{AC}, 5A max.

Information: Surge protection

Transient surge protection must be provided by the end-product system/site to mitigate the risk of input surges exceeding 2500V_{peak} and external circuit surges. This device is not intended to be used as a surge suppression device for externally connected devices being powered by the unit. Connected devices must provide their own suitable DC input transient suppression as dictated by the equipment's vendor for the installation site environment or per company or industry standards (e.g., ITU K series standards).

Information: Replacement of air filter

- Remove the screw and open the cover to get the access of air filter. As shown in figure 20.
- Replace the air filter. POLY KLEAN AFP10 707 (357 – 011 – 160)
- Close the cap with the screw.

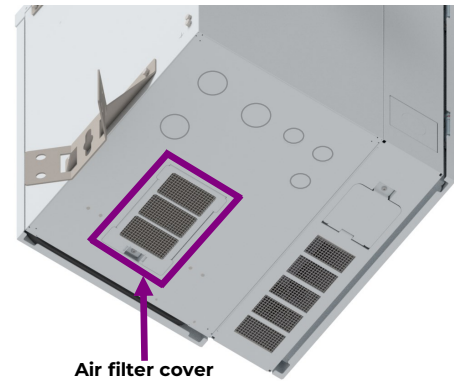


Figure 20 Air filter

Information: Replacement of fan

- Remove the screws to separate the fan unit from the cabinet.
- Replace the fan in fan unit. (QFR1248GHE/QFR1248GHE – SP01)
- Install the fan unit with screws.

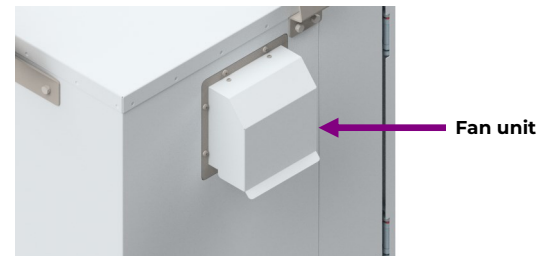


Figure 21 Fan unit

Spare parts list

Ordering code	Description	Application
4600430322P	SU202M-K20 Miniature Circuit Breaker – 2P – K – 20A	
4600430914P	S201-C16 Miniature Circuit Breaker – 1P – C – 16 A	
4600464520P	S202-C16 Miniature Circuit Breaker – 2P – C – 16 A	
QFR1248GHE/QFR1248GHE-SP01	DC Fans DC Tube axial Fan, 120x38mm, 48V _{DC} , Ball	
1600131299A	CC1600SC55SXZ01A Rectifier	
7T.81.0.000.230x	Ventilation control – Blue Dial (Thermostat)	
357 – 011 – 160	POLY KLEAN AFP10 707	

Schematic diagram

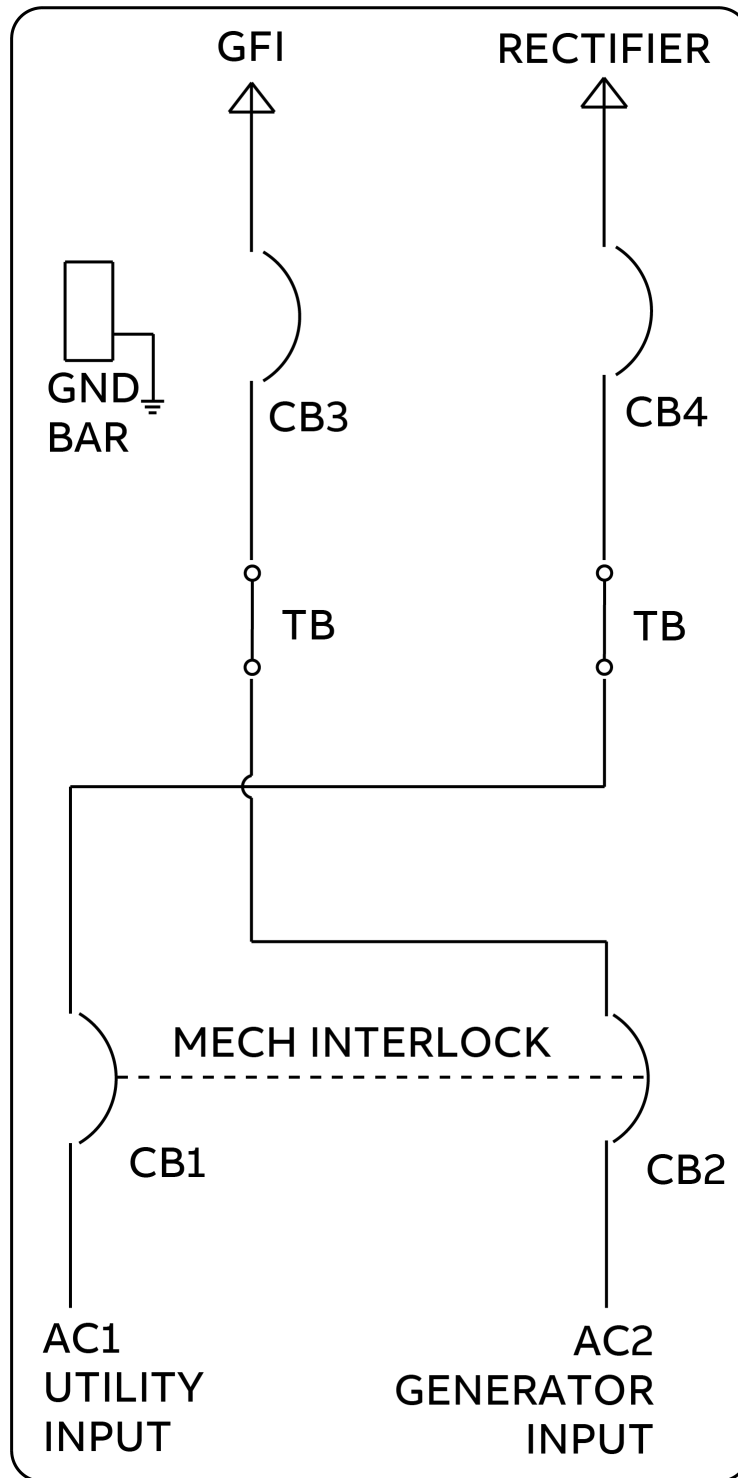


Figure 22 Schematic diagram

Change History (excludes grammar & clarifications)

Rev.	Description	Date Dept./Inti
1.0	Initial release	10/28/2022
1.1	Updated as per OmniOn template	03/05/2024

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