100-300 Amp Commercial Grade Generator Docking Station

Installation, Operation, and Maintenance Manual

IMPORTANT:

Save this instruction sheet for future use of the product

Warning

Electrical potentials hazardous to human life can exist within this equipment when energized. Disconnect all input power before opening case or touching internal parts. Use proper lock-out/tag-out procedures.

The Information contained herein may not cover all variations in equipment or provide for all contingencies. Failure to follow instructions may result in death or serious injury.

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Introduction

This manual covers 100-300 amp, up to 600 volt, single and three phase Commercial Grade Generator Docking Station cabinets. These instructions set out the limiting factors for satisfactory performance of the cabinets. The information contained herein outlines and describes the proper inspection, installation, operation and maintenance of the cabinets.

Inspection upon Receiving

Cabinets should be carefully inspected upon receipt to ensure that no damage has occurred during shipment. Any damage should be reported at once and a claim should be placed against the transportation company. If any problems are found or parts are missing please contact Trystar at 1-866.TRYSTAR.

Installation and operating safety

The cabinets are provided with access panels to facilitate installation and should never be operated without these access covers securely mounted in place. A safety program must be established, verified and followed by all personnel involved with the cabinets.

Warning

Only qualified personnel should install, inspect, or maintain cabinets since the normal operating voltages can be hazardous.

Caution

Cabinet is top heavy.

Cabinet Mounting & Spacing

Make sure cabinet is mounted at all anchor points. There must be at least 36 inches of clearance in front of panel.

Grounding

The cabinet should be grounded securely and effectively as a safety precaution. Grounding must be in accordance with NEC and local electrical codes.

Wire Selection

Connection cables must be rated for at least 90 degrees C insulation and conductors must meet NEC and local electrical codes.

Inspection during Installation

The cabinet should be carefully inspected for any damage due to handling after receipt. The nameplate rating on the unit should be checked against the job specifications to ensure installation of the correct cabinet. The cabinet should be connected only as described on its nameplate to match the available line voltage. All bolted electrical connection should be checked and tightened since fasteners may have loosened during shipment.

Installation Procedures

Warning! If the unit has Cam Lock/quick connect type inlets built in, it is NOT suitable for indoor use. Carbon monoxide could enter a facility through unsealed temporary wire entry points. Cam Lock docking stations need to be mounted outdoor, with in close proximity to where the back-up generator will be parked.

1. Ensure the area is well ventilated and free from explosive or corrosive gas or vapors. Ensure area will be easily accessible to allow for easy connection of an appropriately sized back-up generator.
2. Check the cabinet nameplate and verify that it is the correct line and load voltage for the application.
3. Mount the cabinet securely using the provided holes to mount to a wall, or use the holes in the stainless steel legs to mount to a pad.
4. Shut off primary voltage using approved lock-out/tag-out procedures
5. Remove the cover over the wiring compartment.
6. Route conduits into enclosure by creating holes as needed.
7. Connect the Line and/or Load wires to the appropriate terminals. Use properly sized cable determined by the NEC.
8. Ground the cabinet in accordance with NEC and local electrical codes.
9. Before energizing the unit, check all terminations for loose connections and proper torque values.

Note: After installation of cables and connectors, a minimum of 1" clearance should be maintained between the enclosure and any energized parts, unless insolated by another means.

10. Replace the cover over the wiring compartment.
11. If for any reason you suspect the unit has been exposed to moisture during transit or storage, it should be dried out before being energized.
12. Energize the unit.

Installation Outdoors

- Select appropriate location, cable, installation, and mounting hardware to meet applicable codes.
- Use water tight fittings on all electrical connections.

Torque Values for Screws and Bolts

When attaching the wires to the terminals use the recommended bolts for the wiring lugs. It is recommended to use two wrenches "where applicable" when tightening or loosening bolted connections to prevent damage. Torque 2S350 lugs to 375 IN. LBS. The chart below shows recommended torque values for standard size bolts.

Torque Values for Screws and Bolts	
Screw/bolt Size (SAE Grade 5)	Torque Value (+/-5%)
1/4	8 ft-lbs
5/16	17 ft-lbs
3/8	30 ft-lbs
7/16	50 ft-lbs
1/2	75 ft-lbs

Operation

To Load Bank a Standby Generator

1. Ensure power source (standby generator) is turned off and locked out.
2. Pick an outdoor location for the load bank equipment that is well ventilated free from explosive or corrosive gas or vapors. The load bank tester will exhaust great amounts of heat, so choose a safe location where the equipment will not endanger the surrounding environment or personnel.
3. Connect the load bank equipment to the Docking Station Cam Lock output panel located behind the front door of the docking station. Connect Cam Locks in the order of Ground first, Neutral second, then the three phases. Make sure that the Cam Locks are fully inserted and turned clockwise to full stop position.
4. All portable power cabling must be lashed together or braced in accordance with the short circuit current rating of your system.
5. Return all doors and access panels to their closed position. (Bottom cable entry rake door must remain open for back-up generator cables to enter the Docking Station).
6. Start the standby generator and check for correct voltage at the Docking Station.
7. If voltage is correct, then initiate the load bank test.
8. When load bank test is complete, turn off the stand by generator. Verify no voltage is present with a voltage meter. Then disconnect all portable power cables from the Docking Station and return all doors and access panels to the closed and/or locked position.

To Use a Back-up Generator

1. Ensure Main Power source/ Utility is turned off and locked out.

2. Pick an outdoor location for the back-up generator that is well ventilated and free from explosive or corrosive gas or vapors. Ensure that the generator is installed away from doors, windows, and ventilation systems that can cause potential carbon monoxide hazards.

3. Connect the back-up generator to the Docking Station inlet Cam Locks (Hardwire Lugs) located behind front door of the Docking Station. Connect the Cam Locks in order of Ground, Neutral, A Phase, B Phase, C phase. Make sure that the connections are fully inserted and turned clockwise to full stop position

4. All portable power cabling must be lashed together or braced in accordance with the short circuit current rating of your system.

5. Return all doors and access panels to their closed position (except portable wire entry door)

6. Turn on the Back-up generator. Test for correct voltage at the generator. If voltage is correct, turn the back-up generator circuit breaker to the on position.

7. Your facility should now be running on back-up generator power.

Please note if the grounding (green) conductor and the grounded (neutral) conductor are bonded together in the **docking station**, the generator should **not** be bonded. Unless otherwise required by authorities having jurisdiction.

If the grounding (green) conductor and the grounded (neutral) conductor are bonded together in the **generator**, the docking station should **not** be bonded. Unless otherwise required by authorities having jurisdiction.

NEVER BOND THE GROUND AND NEUTRAL IN BOTH THE DOCKING STATION AND THE GENERATOR!

⚠ Warning

⚠ **If Local Code requires a secondary breaker to protect incoming generator power, make sure it is in the on position at this time and never in the on position when the Main Utility power is on.** ⚠

To Return to Utility Power

1. Turn off the back-up generator breaker if provided.

2. Turn off the back-up generator

3. Unplug generator cables from the Cam Lock (Hardwire Lug) connections.

4. Close and lock out all Docking Station doors, and access panels.

5. Check voltage to make sure utility power is available and correct.

6. Turn on the Main Utility breaker.

7. Your facility should now be running on utility power.

Maintenance

The Commercial Grade Docking Station shall only be maintained, serviced and inspected by qualified personnel.

All power to the docking station must be disconnected and tested to confirm that the box is safe to work on.

Check Integrity of the enclosure by visually inspecting it for any defects.

Check all badges

1. Make sure all badges are clean and legible.
2. If badges are losing adhesion, replace.

Check door latches and cams

1. Make sure that the door latches turn freely.
2. Make sure that when latched the door is firmly closed so that the gasket creates a good seal.

Check door hinges

1. Make sure door hinges swing freely and do not bind.
2. Make sure the fasteners for door hinges are tight.

Check bottom access panel (rake system).

1. Make sure panel opens and closes without binding.
2. Make sure that the latches on the panel are tight.