
Single Breaker Generator Docking Stations

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 up to 600V, single and three phase, Single Breaker 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 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.

Cabinet Mounting

Make sure cabinet is mounted at all anchor points. There must be at least 36 inch clearance in front of panel. (Some pad-mounted units may require 46 inches of clearance in the front of the cabinet to accommodate a large swinging door.)

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. Connection cables 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. (Wall mount units with the extra depth option, will need to be mounted on top of the steel support bracket that is provided.)
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 labeled terminals.
8. Use properly sized conductors determined by the NEC
9. Ground the cabinet in accordance with NEC and local electrical codes.
10. If the unit has optional phase rotation monitor, follow "Initial Installation Setup Procedure for Phase Rotation Monitor". Instructions located at the

end of this manual and on the inside door of the docking station unit.

11. 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 insulated by another means.

12. Replace all covers and access panels.
13. 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.
14. Energize the unit.

Attention! The input badge on the Generator Docking Station may say "When used to power a structure this inlet must be used in conjunction with a transfer switch." If the unit was sent with an optional Kirk Key System built in, then this does not apply. The built in Kirk Key System acts as the transfer switch needed to separate the Utility/Permanent Generator from the Back-up Power source.

Installation Outdoors

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



1. Fig 1 Phase Rotation Monitor (above)
2. Backup generator connections via male panel mounts on front side of enclosure See Figure 2



Fig 2

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 and 2S600 to lugs to 500 IN. LBS. The chart below shows recommended torque values for standard size bolts.

Torque Values for Screws and Bolts	
Screw/bolt Size	Torque Value

(SAE Grade 5)	(+/-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 Use a Back-up Generator,

1. Ensure Main Power source/ Utility is turned off and locked out. Units with optional Kirk Key systems may have the Main Breaker built in to the docking station. This breaker must be turned off and the Kirk Key removed. The key must then be inserted into the trap door that covers the back-up generator cam locks, and unlocked.

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 if equipped) located behind front door of the Docking Station (possibly behind a Kirk Key trap door if equipped). Connect back-up generator wires in order of Ground first, Neutral second, then the three phases. 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. Turn on 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.

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

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!

To Return to Utility Power,

1. Turn off the back-up generator breaker (if equipped).

2. Turn off the back-up generator.

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

4. If the unit is equipped with a Kirk Key trap door, the trap door will need to be closed and locked in order to get the key out. The key will need to be inserted into the Main Utility breaker and unlocked.

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.

8. Close and lock all Docking Station doors, and access panels.

Optional Items

If optional outlets for items such as Block Heaters or Battery Chargers have been provided they must be connected to utility power so they are operational only when main power is on to operate correctly.

Kirk Key Interlock System:



If Cabinet comes with optional Kirk Key Interlock make sure that only one key is provided and that only the Main Utility (Permanent Generator) or the docking station, never both can be energized at any given time.

Generator Auto Start Connections:



Use optional Auto start terminals to send a signal to start the generator when main power is interrupted.

Leg Kit:



Wall Mounted Docking Station shown with optional leg kit. Leg kits come standard on pad mounted units.

Maintenance

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 does not bind.
2. Make sure the fasteners for door hinges are tight.

Check bottom access panel (rake system).

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

Optional Items

If optional Kirk Key system is installed make sure it operates correctly and lube the locking mechanism with a graphite based lubricant.

Initial Installation Setup Procedure for Phase Rotation Monitor

WARNING! This procedure is to be performed by a qualified electrician. All appropriate PPE must be worn at all times and NFPA 70E must be followed when working on energized equipment.

The setup of the docking station phase rotation monitor will require the use of a hand held phase rotation meter! The phase rotation monitor provided in the Generator Docking Station is factory configured to indicate (light up) when clockwise direction is sensed.

1. With facility running on normal utility power, one must use a hand held phase rotation monitor to test the existing load at the point where this unit will be tied in. The test will determine clockwise or counter-clockwise direction.
2. If the test concludes that the facility has a clockwise rotation, you can skip down to step 8 and sign off at the bottom of the page.
3. However, if the test concludes that the facility has a counter-clockwise rotation, then you will need to change the GDS phase rotation monitor so that it will indicate (light up) when a counter-clockwise direction is sensed.

4. Locate the phase colored wires that feed into the back of the phase rotation monitor. Follow these wires until you come across a male/female connector set.



5. Unplug the B phase male connector from the female connector, and the C phase male connector from the female connector. (Connectors could be on A and C or A and B phase on some units, follow the same procedure)



6. Next plug the A phase male connector into the B phase female connector, and the B phase male connector into the A phase female connector.



7. The GDS phase rotation monitor is now set up to indicate (light up) when a counter-clockwise direction is sensed.
8. Sign and date at the bottom of this page. Then if another person hooks up a temporary generator, they can be sure that the phase rotation monitor is already set up correctly.

I, _____, hereby certify the phase rotation monitor in this unit has been set in accordance with these instructions.

X _____ / ____ / ____

Installation Electrician

Company Name

Date