KRATOS INDUSTRIES

KDS IO&M

DOCKING STATION

Installation, Operations, and Maintenance Manual

Rev 1 September 2025: KDS IO&M Manual

KRATOS INDUSTRIES
6255 Joyce Drive, Arvada, CO 80403

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Docking Stations

September 5, 2025

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You may also use the QR Code below to submit a Field Services request online.

PUTTING POWER IN YOUR HANDS

Kratos crafts reliable, safe, and efficient electrical equipment that serves a wide range of industrial applications. We integrate industry-leading components into turnkey, factory-tested power, and control equipment.

At Kratos, we have the experience and capacity to meet your project needs, whether it be large scale production, technical innovation, or through the nuances of customer service.

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SAFETY INFORMATION

Introduction

Safety Symbols and Explanations

The addition of either a “Danger” or “Warning” safety label indicates that an electrical hazard that will result in personal injury if the instructions are not followed.

This is the safety alert symbol. It is used to alert you to potential hazards. Obey all safety messages that follow this symbol to avoid possible injury and death.

DANGER

“DANGER” indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.

WARNING

“WARNING” indicates a potentially hazardous situation that, if not avoided, can result in death or serious injury.

Safety Explanation

Those responsible for operations and maintenance should be familiar with the equipment and the instructions found in this manual. The information provided should be used in conjunction with existing safety regulations such as OSHA, NFPA 70, NFPA 70E, NEMA® PB2.1 and CSA Z462.

Due to the hazardous nature of the product, only qualified individuals with an understanding of the system are advised to install, operate, and maintain the equipment. Such individuals should be aware of the safety symbols found on the equipment and follow the outlined instructions.

Precautions should always be prioritized to create the safest possible environment when working with this product. Products may vary between sites and resulting potential dangers must be anticipated.

Kratos Industries, LLC is not liable for any damages incurred from error regarding the instructions provided in this manual.

Receiving & Handling

Receiving

Compare shipment with the packing list. Report any missing or damaged items.

Remove the plastic covering and thoroughly inspect the docking station for damage.

Please note any inconsistencies or damages on the freight bill. Failure to report damages soon after receiving the shipment may result in costs associated with repairs or replacements.

To protect the docking station, place the plastic covering back over the equipment and leave it on the shipping skid until ready to install.

Handling

⚠ WARNING

DOCKING STATION IS TOP HEAVY. USE CARE IN HANDLING

The unit may exceed 2000 lbs and is top-heavy.

Use only rated forklifts, cranes, or rigging equipment.

1) Make sure the unit is secured to the pallet before moving.
2) Keep the unit as close to the mast of the forklift while moving the unit.

When using crane/lift:

1) Prepare the sling and spanner or spreader according to Figure 2 and Figure 3.
2) Do not insert chains or cables through lifting holes.
3) Use the crane to raise the equipment without lifting it off the floor.
4) Check for any instabilities within the structure before continuing. Then, slowly lift the structure until it is about 2 inches above the floor to relocate. Avoid impact or pressure to the CAM connectors or electrical components during handling.

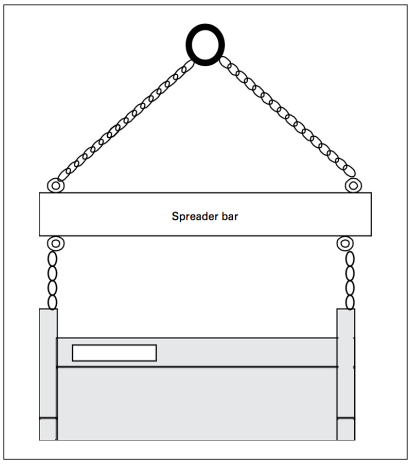


Figure 2.

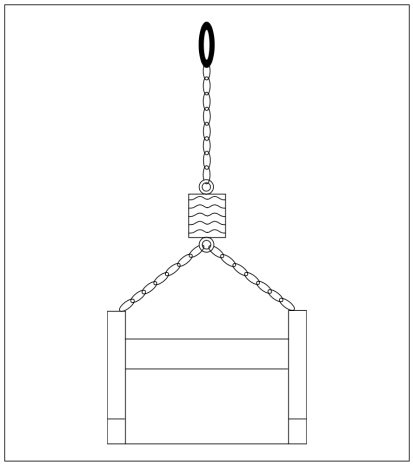


Figure 3.

INSTALLATION AND OPERATING SAFETY

- Use caution and appropriate equipment throughout the installation process.
- Compare manufacturer's drawings and markings on cabinet sections to orient the cabinet.
- Manufacturer may ship the docking station in individual sections or in two or more sections joined together.
- Select an installation site that allows adequate ventilation and is free from explosive or corrosive gases or vapors. If indoor installation is necessary, proper ventilation and gas detection measures must be implemented to comply with safety codes. Ensure the site is accessible to the docking station's generator and operating personnel.

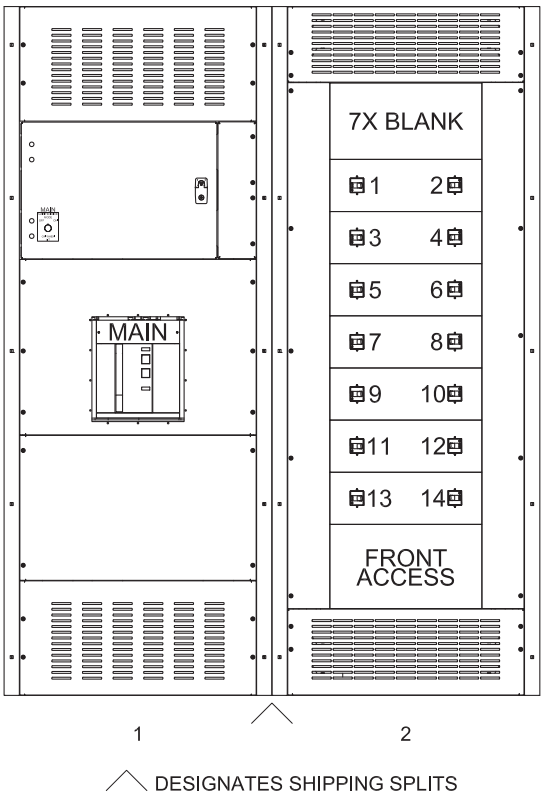


Figure 3.

MOUNTING AND ANCHORING

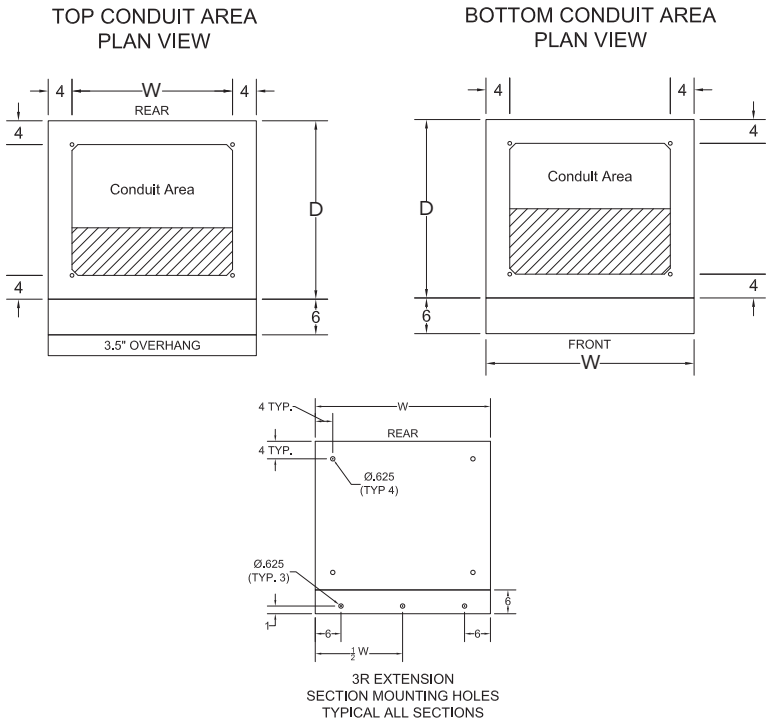


Figure 4.

- Place unit on a level, solid pad.
- Anchor using embedded concrete anchors or structural steel.
- Follow local building code for seismic/structural requirements.
  o Reference local building codes and regulatory agencies for more requirements for installations.

  Contact Kratos Industries for more information.
- Steel bolts must be correctly sized and torqued. Embedded anchors should be installed as in structed by the manufacturer.
- Plan conduit entry to meet NEC bending space requirements.
- Some units may require 50 inches in front of the cabinet to accommodate a swing door.
  o There must be at least 36 inches of clearance in front of this equipment.

ELECTRICAL CONNECTIONS

Never work on electrical equipment while it is energized. Ensure that the power source(s) has been de-energized before beginning.

Cables and camlocks are typical sources of power for the docking station

Grounding

- Ground equipment per NEC and local electrical codes.
- Ensure ground conductors are properly sized and bonded.

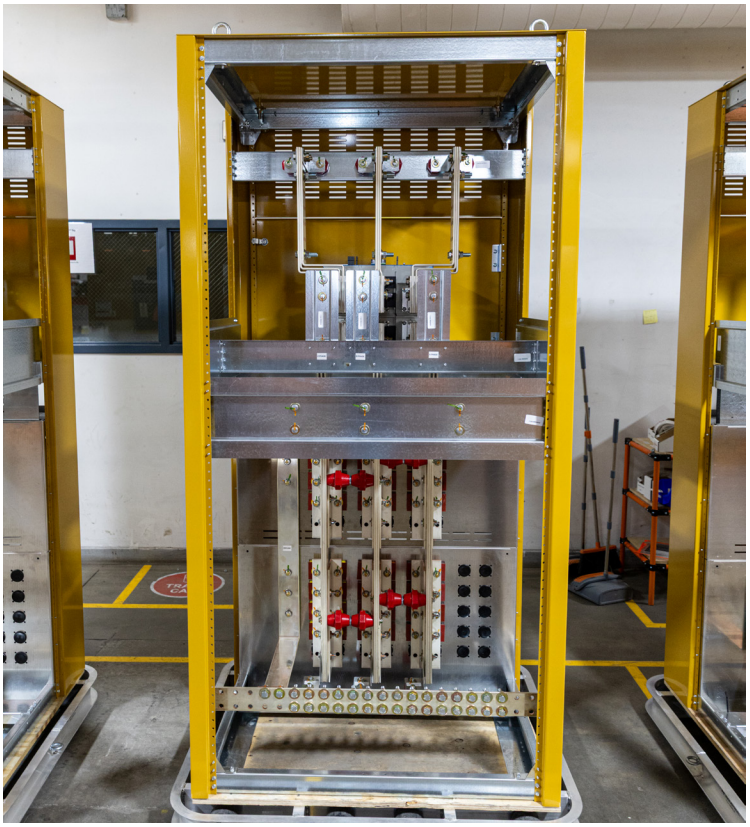
Wire Selection and Connection

- De-energize all sources before connecting.
- All docking station connections are rated for use with minimum 75°C or higher rated conductors. Refer to job-specific documentation for the accommodations made for terminal types, cable type, and size.
- Remove structure covers and store in a safe environment to protect from damage.
- Pull the conductors into the section and connect to the appropriately labeled terminals.
- Maintain a minimum of 1 inch clearance between cables and energized parts (unless insulated).
- Three-phase units may come equipped with a phase rotation monitor and indicator. Follow the instructions for setup and testing provided in the manual.

NOTE: If the (GREEN) Grounding conductor and grounded NEUTRAL conductor are bonded together in the docking station the generator should not be bonded. Unless otherwise required by authorities having jurisdiction.

⚠ WARNING

NEVER BOND THE GROUND AND NEUTRAL IN BOTH THE DOCKING STATION AND AT THE GENERATOR.



PRE ENERGIZING INSPECTION

Do not work on wet energized electrical equipment.

Any significant presence of water or moisture may significantly damage the docking station. A docking station is significantly damaged if submerged by more than 2 inches or if water has had contact with current-carrying parts. Minor exposure to moisture such as brief exposure to condensation may be corrected with heat.

1) Verify that the docking station is not energized.

2) Inspect docking station sections and remove all foreign materials such as tools, wire scraps, and debris.

3) Remove all packing materials and temporary shipping materials.

4) Clean the interior with a vacuum or lint-free cloth. Do not use solvents or compressed air.

5) Remove any debris or blockage from all ventilation points.

6) Confirm all bus and wire terminations torqued to specification.

7) Check all the factory connections for tightness. If any loose connections are found, double check all factory connections.
Factory connections include: bus hardware connections, circuit breaker and switch terminals, contactors, metering, and other connections which include incoming terminals.

8) Inspect docking station insulators, busbar, and conductors for damage. Do not energize the docking station if any components are damaged.

9) Factory-installed connectors are rated for the voltage and current capacities specified on the unit's nameplate. Before energizing the Docking Station, inspect all factory-installed cables and connectors to ensure they are intact and securely fastened

10) Verify that proper fusing has been installed if using a fusible switch type overcurrent device.

OPERATION

Connecting a backup generator

1) Confirm utility/main power OFF and locked out.

2) If equipped with key interlock:
o Open breaker, remove key, unlock generator camlock door.

3) Position backup generator in an outdoor location that is well ventilated and free from explosive/ corrosive vapors and gases.

4) Ensure generator is OFF.

5) Connect cables to docking station in this order:
   i. Ground
   ii. Neutral (if applicable)
   iii. Phases (A-B-C)

6) Verify connections are tight and torqued.

7) Lash or brace cables as required by system short circuit rating. Refer to cable bracing figure.

8) Turn on back-up generator and test for correct voltage at the generator.

9) If voltage is correct, confirm phase rotation then turn the back-up generator circuit breaker to the on position.

10) Close all doors and access panels, except for outdoor camlock door if equipped.

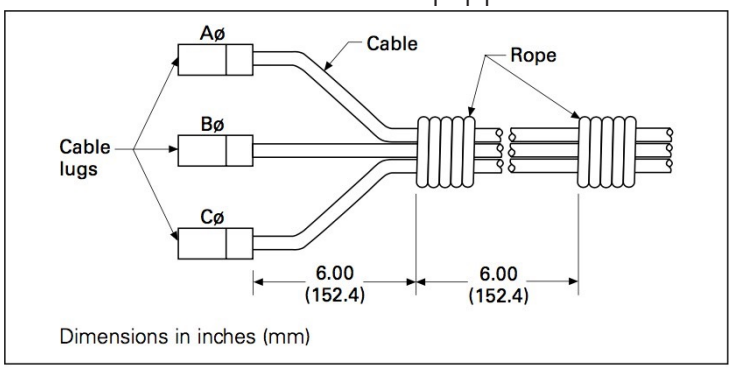


Figure 5. Cable bracing

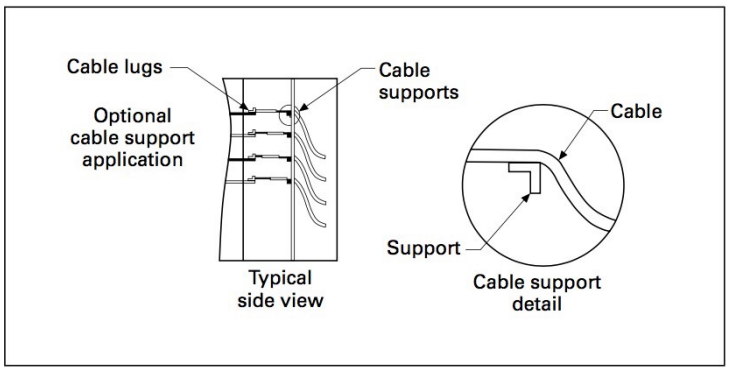


Figure 6. Cable bracing

RETURN TO UTILITY POWER

1) Turn backup generator breaker OFF.

2) Shut down backup generator.

3) Disconnect the cables in this order:
   i. Phases
   ii. Neutral
   iii. Ground

4) If keyed interlock is installed, return key to utility breaker.

5) Verify utility voltage present.

6) Turn main utility breaker ON.

7) Confirm facility is operating on utility.

8) Close and lock all access doors.

Optional

If block heaters or battery chargers have been equipped, they must be connected to utility power to be operational only when main power is on in order to operate correctly.

If docking station has keyed interlock confirm that only one key of each pair is in use at each time and that only Main Utility (Permanent Generator) or the docking station can never be both energized at any given time.

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

OUTDOOR INSTALLATION

- Install in appropriate location to meet applicable codes.
- Use watertight fittings.
- If enclosure is exposed to rain, confirm it is rated NEMA 3R.

MAINTENANCE

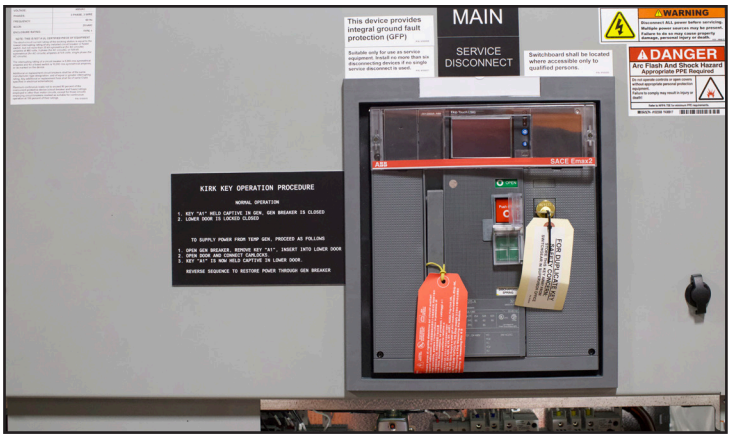
The docking station requires a systematic maintenance schedule to ensure quality function. Please reference NEMA PB.2 Standard. Schedules will vary based on facility operation and local conditions. Consult the provided instruction leaflets for instructions regarding the maintenance of circuit breakers, meters, fusible switches, and other individual devices. Coordinate inspection and test operations with overall testing program to ensure the least operating inconvenience and system shutdowns.

1) Prior to performing any maintenance on the docking station, first de-energize the docking station at the source. Use lockout/tagout precautions as prescribed in OSHA, NFPA 70E, and other safety materials.

2) The manufacturer recommends completing an annual thorough maintenance check.

3) Use extreme caution and ensure that equipment is disconnected from the power source while tests are conducted.

4) Check integrity of enclosure via visual inspection.



5) Check Nameplates and labels
   i. Nameplates and labels shall be clean and legible.
   ii. Replace any that may be loose.

6) Check door hinges, latches, and seals for smooth operation.
   i. Check if door latches turn freely.
   ii. Make sure door hinges swing freely and door can be propped open.
   iii. Check door hinge fasteners are tight.
   iv. Ensure a good seal is created when door is closed and latched
   v. Check all CAM-style connectors for wear, primarily if they are frequently utilized. Replace any connectors that show signs of mechanical or electrical wear to ensure a reliable and safe connection during generator use.

7) If docking station is equipped with key intelock system check to ensure it operates correctly and lube locking mechanism with graphite based lubricant.

Appendices

TIGHTENING TORQUE FOR SCREWS: LBIN (NM) [UL508A:TABLE 54.1]					
WIRE SIZE AWG OR MCM	WIRE SIZE MM^2	SLOTTED HEAD SCREW: SLOT LESS THAN 0.047" X 0.250"	SLOTTED HEAD SCREW: SLOT GREATER THAN 0.047" X 0.250"	HEX HEAD, EXTERNAL DRIVE (SOCKET WRENCH)	HEX HEAD, EXTERNAL DRIVE (SOCKET WRENCH)
---	---	---	---	SPLIT-BOLT CONNECTOR	OTHER
18-10	0.82-5.3	20 (2.3)	35 (4.0)	80 (9.0)	75 (8.5)
8	8.4	25 (2.8)	40 (4.5)	80 (9.0)	75 (8.5)
6-4	13.3-21.2	35 (4.0)	45 (5.1)	165 (18.6)	110 (12.4)
3	26.7	35 (4.0)	50 (5.6)	275 (31.1)	150 (16.9)
2	33.6	40 (4.5)	50 (5.6)	275 (31.1)	150 (16.9)
1	42.4	-	50 (5.6)	275 (31.1)	150 (16.9)
1/0-2/0	53.5-67.4	-	50 (5.6)	385 (43.5)	180 (20.3)
3/0-4/0	85-107.2	-	50 (5.6)	500 (56.5)	250 (28.2)
250-350	127-177	-	50 (5.6)	650 (73.4)	325 (36.7)
400	203	-	50 (5.6)	825 (93.2)	375 (42.4)
500	253	-	50 (5.6)	825 (93.2)	375 (42.4)
600-750	304-380	-	50 (5.6)	1000 (113)	375 (42.4)
800-1000	406-508	-	50 (5.6)	1100 (124.3)	500 (56.5)
1250-2000	635-1010	-	-	1100 (124.3)	600 (57.8)

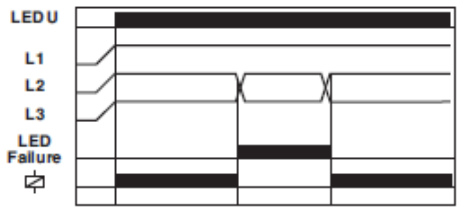
STEEL HARDWARE					
SELF TAP SCREW	SAE GR5	TORQUE N*M	TORQUE LBFT	TORQUE LBIN	METRIC CLASS 8.8
1/4-20	1/4-20	9.5	7	84	M6
1/4-20 ELE		9.5	7	84	-
	5/16-18	20.3	15	180	M8
5/16-18 ELE		16.3	12	144	-
	3/8-16	27	20	240	M10
	3/8-16 INS	20.3	15	180	-
	1/2-13	54.2	40	480	M12
	1/2-13 CAM	47.5	35	420	-
	5/8-11	75	55	660	
	3/4-10	119	87.5	1050	

SET SCREW ELECTRICAL CONNECTORS / MECHANICAL LUGS (UL486B)				
SOCKET WIDTH, (FLATS) MM	SOCKET WIDTH (FLATS) INCH	TORQUE N*M	TORQUE LBF*FT	TORQUE LBF*IN
3.2	1/8	5.1	3.75	45
4.0	5/32	11.3	8.33	100
4.8	3/16	13.6	10	120
5.6	7/32	16.9	12.5	150
6.4	1/4	25.4	19	225
7.9	5/16	33.9	25	300
9.5	3/8	45.2	33	400
12.7	1/2	56.6	42	500
14.3	9/16	67.8	50	600

PHASE ROTATION MANUAL

Dear Valued Customer,

To energize the Phase Rotation Correct Light, all 3 conditions must be met:



Phase sequence monitoring

If all the phases are connected in the correct order and voltage asymmetry is smaller than the value set, output relay "R" picks up (yellow LED is ON). If the direction of rotation of the phase sequence changes, output relay "R" drops out without delay (yellow LED is OFF).

Asymmetry monitoring

If the asymmetry exceeds the value set at the ASYM controller, the response delay starts (red Failure LED flashes). After the time delay has elapsed (red Failure LED is ON), output relay "R" drops out (yellow LED is OFF).

Shutdown is also performed if asymmetry results from reverse voltages of motors running on two phases.

Phase failure monitoring

As soon as one of the phase voltages fails, output relay "R" drops out (red Failure LED is ON / yellow LED is OFF).

Note: Manual dial adjustments must be made on the Asymmetry dial if continual failure.

If phase sequence is failing, but is the in the desired sequence, please de-energize and switch L1 & L2 wires going into the top of the Phase Monitoring Relay.

Thank you,

Kratos Industries