

Section 25 25 50 – Dual Purpose Docking Station with Generator Isolation Breaker

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The requirements of the General Conditions, Supplementary Conditions, Division 1, Division 20, and Drawings apply to all Work herein.
- B. Requirements of the following Division 20-28 Sections apply to this section:
 - 1. Design Criteria - Section 20 05 02
 - 2. Basic Division 20-28 Requirements - Section 20 05 03
 - 3. General Division 20-28 Materials and Methods - Section 20 05 05
 - 4. Schedule of Submittal Data - Section 20 05 04
 - 5. Scope of Work - Section 26 05 01
 - 6. Testing - Section 26 05 07

1.2 SCOPE

- A. General: Furnish and install a dual-purpose temporary generator docking station/load bank docking station as shown, scheduled, and specified.
- B. Related Sections: Other Division 20-28 Sections contain requirements related to the work of this Section. These may include, but not be limited to, the following sections:
 - 1. Packaged Electric Generating Systems - Section 26 32 13.13

1.3 QUALITY ASSURANCE

- A. Manufacturers: If they comply with these specifications and requirements, products of the following manufacturers will be acceptable:
 - 1. Dual Purpose – Simultaneous Docking Station with Generator Isolation Breaker:
 - a. Power Temp Systems
- B. Codes and Standards
 - 1. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
 - 2. Comply with NFPA 70.

1.4 GUARANTEE/WARRANTY

- A. The equipment installed under this contract shall be left in proper working order.
- B. Manufacturer's Warranty: Manufacturer shall repair or replace components of Docking Station that fail(s) in materials or workmanship within specified warranty period.
 - 1. Warranty Period: One year(s) from date of Substantial Completion

PART 2 - PRODUCTS

2.01 DUAL PURPOSE DOCKING STATIONS

- A. Docking station shall include 16 Series Camlok Panel Mounts for use as connection to Portable Generator and Temporary Load Bank
- B. Entire package must be listed to ETL or UL 1008 Standards. UL listing of individual components is not acceptable.
- C. Enclosures:
 - 1. NEMA 3R rain-tight, 304 GA aluminum enclosure
 - a. Pad-lockable front door shall include a hinged access plate at the bottom for entry of cables from portable generator or portable load bank. NEMA 3R integrity shall be maintained with access plate open for cable entry.
 - b. Front and side through a front access panel shall be accessible for maintenance.
 - c. Top, side, and bottom through a front access panel shall be accessible for permanent cabling.
 - 2. Finishes:
 - a. Paint after fabrication. Powder coated Gray.
- D. Phase, Neutral, and Ground Buses:
 - 1. Material: Silver-plated Copper
 - 2. Equipment Ground Bus: bonded to box.
 - 3. Ground Bus: 50% of phase size.
 - 4. Neutral Bus: Neutral bus rated 100 percent of phase bus.
 - 5. Round edges on bus.
 - 6. Camlocks Shall be Sized in increments of 400A per docking station total ampacity
 - a. Underrated bussing and Camlocks are not acceptable.
 - b. Providing additional Camlocks exceeding the total ampacity of the docking station is not acceptable.
 - c. Camlocks shall be 45° to reduce cable torque on temporary generator docking panels.
 - d. Temporary Connectors shall include protective flip lids to prevent accidental contact.
- E. Temporary generator connectors shall be Hardwired and Camlok style.
 - 1. Camlok shall be color coded according to system voltage
 - a. A phase – Black or Brown
 - b. B phase – Red or Orange
 - c. C phase – Blue or Yellow
 - d. N Neutral – White
 - e. G Ground – Green
 - 2. Hardwire shall be accomplished utilizing Repetitive Use Smart Lug
 - a. Rated for #6-350MCM Conductor
 - b. Spinning Bolt tip to compress wire with no knurling of conductor
 - 3. Smart Lug shall be mounted on T-Slot Smart Buss System and allow for adjustable placement of Smart Lug in field.
 - a. Smart Buss System shall be rated for 30,000V.
- F. Temporary load bank connectors shall be Camlok style mounted on gland plate.
 - 1. Camlok shall be color coded according to system voltage
 - a. A phase – Black or Brown

- b. B phase – Red or Orange
 - c. C phase – Blue or Yellow
 - d. G Ground – Green
- G. Temporary connectors shall include protective flip lids to prevent accidental contact.
- H. Permanent connectors shall be broad range set-screw type, located behind an aluminum barrier.
- I. Withstand Rating
 - 1. Wall Mount – minimum 65KAIC unless otherwise indicated on drawings.
 - 2. Pad Mount – minimum 100KAIC unless otherwise indicated on drawings
- J. Voltage & Current Rating:
 - 1. Voltage and current rating shall be as indicated, scheduled, or specified.
- K. Phase Rotation, Bonding, and Overcurrent Protection:
 - 1. Source cable connection points shall be clearly marked with phase rotation, system bonding requirements, and maximum temporary generator overcurrent protection rating.
- L. Additional accessories shall be included in submittal drawings as follows:
 - 1. Extra Depth for Bottom Conduit Access
 - 2. Permanent Generator Isolation Breaker
 - a. Isolation Breaker allows for safe Load Banking of Permanent Generator while simultaneously connecting a temporary generator to the docking station.
 - b. Docking Station Shall support simultaneous power and control signals from temporary generator to support ATS loads during utility power outages, while permanent generator is connected to a load bank.
 - c. AREL Trapped Key Door Interlock (shall interlock with AREL Trapped Key on internal docking station generator isolation breaker circuit breaker to prevent inadvertent interconnection between two sources).
 - d. AREL Maintenance Free Trapped Key Interlocking Required
 - e. KIRK Keys which require routine maintenance are not acceptable
 - 3. Contact point that shall annunciate at facility fire alarm system to indicate that the permanent emergency source is disconnected from the emergency system.
 - 4. Listed Monitoring Device
 - 5. Factory Installed Load Dump Receptacle
 - 6. ATS Auto Start Signal Destination Selector Switch
 - a. Docking station shall include factory installed 2-wire auto start terminal.
 - b. Contractor to provide and install 3-wires in conduit from start control contacts in ATS to docking station control contacts.
 - c. Contractor to provide and install 3-wires in conduit from start control contacts in docking station to start control contacts in permanent generator.
 - d. Contractor to install signal wires in accordance with UL 700.10D.
 - 7. ATS Auto Start Signal Destination Selector Switch
 - a. Docking Station shall include factory installed ATS Auto Start Signal Destination Selector Switch.
 - b. Signal Destination Switch shall route ATS start signal from permanent generator to the portable generator.
 - c. Signal Destination Switch shall isolate ATS start signal control voltages between permanent generator and temporary generator.
 - d. Signal Destination Switch guarantees signal is diverted from permanent generator and eliminates possibility of permanent generator starting during maintenance or testing.

PART 3 - EXECUTION

3.1 DUAL PURPOSE DOCKING STATION

- A. Shop drawing submittal shall include, but not be limited to, the following:
1. Cut sheets of the docking station with construction, fault current ratings, and with bus amperage, voltage, phase and wires, and all associated accessories clearly indicated.
 2. Additional information as required in Section 20 05 03.
- B. INSTALLATION
1. Install docking station as shown, including electrical connections, in accordance with the manufacturer's written instructions, the applicable requirements of NEC and recognized industry practices to ensure that products serve the intended function.
 2. Coordinate installation of docking station with cable and raceways installation work.
 3. Anchor enclosures firmly to walls and structural surfaces ensuring that they are permanently and mechanically secured. Provide unistrut racks where walls cannot support panels.
 4. Install each floor-mounted docking station on a 4-inch reinforced concrete housekeeping pad. The housekeeping pad shall extend 3-inches beyond the housing of the docking station, any block outs, dimensions, and location of the concrete work.
 5. Provide interlock control wiring as required to sense a generator start signal from any ATS to facilitate load bank load shed in the event off loss of normal power during permanent generator load bank testing.
 6. Provide interlock wiring between the temporary generator docking station contact and the facility fire alarm system to indicate that the permanent emergency source is disconnected from the emergency system.

END OF SECTION 262550