**SECTION 26 24 17**

**Temporary Generator quick connection Tap Box**

1. GENERAL
   1. Scope
      1. This section specifies the furnishing, installation, and connection of a low-voltage temporary generator quick connection panel, indicated as “Tap Box” in this section.
      2. Generator Quick Connection Tap Box shall be designed to allow quick and safe connection of a mobile generator set to facilities experiencing loss of power. Permanent installation and connection of the Tap Box to the facility power distribution system will minimize any unplanned power outages.
   2. QUALITY ASSURANCE
      1. Manufacturer: Tap Box shall be a Generator Quick Connection (GQC) Tap Box WM-Series (APT part number: APN1583 (400A), APN1584 (800A), APN1585 (1200A), APN1586 (1600A), APN1632 (2000A), APN1633 (2400A)) as manufactured by Advanced Power Technologies (APT), Lafayette, IN.
   3. factory tests
      1. Perform factory and installation tests in accordance with applicable NEC requirements.
      2. Tap Box shall conform to the dielectric (HI POT) test from UL891.
   4. submittals
      1. Product Data: Submit manufacturer's printed product data.
      2. Drawings: Submit shop drawings for approval. Include components, materials, finishes, detailed plan and elevation views, cam type openings, and accessories.
   5. applicable publications
      1. Publications listed below (including amendments, addenda, revisions, supplements and errata) were referenced to form parts of this specification.
      2. National Electrical Manufacturer's Association (NEMA):

PB-2.1-07............... Proper Handling, Installation, Operation, and

Maintenance of Deadfront Distribution Switchboards Rated 600 Volts or Less

* + 1. National Fire Protection Association (NFPA):

70-11................... National Electrical Code (NEC)

* + 1. Underwriters Laboratories, Inc. (UL):

50...................... Standard for Enclosures for Electrical Equipment

891..................... Switchboards

1008.................... Supplement SB Standard Requirements for Inlet

Assemblies for Transfer Switch Equipment

1. PRODUCTS
   1. General
      1. Tap Box shall have the following features:
         1. Tap Box shall be a complete, grounded, continuous-duty, integral assembly, dead-front, wall mountable, outdoor type Tap Box assembly. Incorporate devices shown on the drawings and all related components required to fulfill operational and functional requirements.
         2. Tap Box shall be supplied as a complete system and shall include all the necessary components and equipment to accommodate described system operation unless otherwise noted.
         3. Tap Box shall conform to the arrangements and details shown on the drawings.
         4. Tap Box shall be assembled, connected, and wired at the factory so that only external circuit connections are required at the construction site.
         5. All non-current-carrying metallic parts shall be grounded.
   2. Housing
      1. Enclosure:
         1. Enclosure shall be a wall-mount outdoor NEMA 3R manufactured from Carbon Steel.
         2. The enclosure shall include a full front padlockable door to access permanent cables and a hinged integral lower flip open door to allow cable connection of the temporary generator.
         3. The lower flip door shall be mechanically interlocked with the main front door for personnel protection when the connection panel is not in use.
         4. The mechanical interlock shall only allow for the flip door to open if the front door is already open.
         5. Temporary generator cables shall only be able to be connected through the lower flip door.
         6. Stainless Steel exterior hardware shall be utilized.
         7. For ease of the Tap Box service, maintenance and future upgrades, all the support structures, braces and cover sheets for the circuit breakers, main bus, neutral bus, and ground bus shall be removable and attached via bolts.
      2. Markings and Nameplates:
         1. Each Tap Box shall have a label permanently affixed to it, listing the following information: Name of manufacturer, system voltage, ampacity, type, and manufacturer's shop order number.
         2. The nameplates shall be produced from clear textured polycarbonate, laminated on high performance pressure sensitive adhesive. The printing shall be done on the interior surface of the laminate to avoid scratching or other deterioration of text. The lettering shall be white on black background.
         3. Each phase indicating nameplate shall be black lettering on the appropriate phase color background.
         4. Each component mounted inside the panel shall be identified by a nameplate.
      3. Finish:
         1. One (1) powder coat of ANSI 61 Light Gray shall be applied to all interior and exterior surfaces.
         2. The final finish must be exterior rated for NEMA 3R use.
   3. Busing
      1. Silver plated copper busbar shall be used for “permanent” cable connections to the facility via the side or rear sheets of enclosure.
      2. Permanent facility side (Load) connections shall connect to busbar via mechanical lugs APT Part Number: APN 1587.
         1. One (1) Mechanical Lug shall accommodate One (1) #1/0 AWG - 750kcmil AL/CU cable or Two (2) #1/0 AWG - 300kcmil AL/CU cables
   4. ‘Cam-lok’ type connectors
      1. ‘Cam-lok’ type connectors shall be NEMA 3R rated so as to be used in direct rain should the door become open.
      2. Each color coded, male ‘Cam-lok’ E1016 compatible single pole receptacle with cover shall be color coded for 480VAC applications per:
         1. A phase – Brown
         2. B phase – Orange
         3. C phase – Yellow
         4. Neutral – White
         5. Ground – Green
   5. Interlocking (OPtional)
      1. Interlock between facility main service circuit breaker and integral lower flip door shall be to prevent inadvertent connection of the Utility and Temporary Generator.
      2. The Kirk Key shall be removed from the facility circuit breaker to hold circuit breaker in ‘open’ position, and inserted into the integral lower flip door lock to allow connection of the generator to the facility via the ‘cam-lok’ style receptacles.
      3. Owner shall provide site specific Kirk Key information for existing Kirk Key lock coordination, or APT shall provide a ship loose lock for installation on main service circuit breaker.
   6. sequence of operation (with Kirk Key interlocking)
      1. Should the Utility fail, the facility’s main circuit breaker would be manually opened with the Kirk Key removed.
      2. In order to connect the temporary generator, the Kirk Key shall be inserted into the lock of the integral lower flip door exposing the ‘Cam-lok’ type receptacles in the Tap Box for the portable generator set to be connected. The Key shall remain captive while the flip door is open.
      3. Upon restoration of the Utility’s power, the portable generator set shall be powered down and disconnected from the ‘Cam-lok’ type receptacles.
      4. The integral lower flip door shall be locked and the Kirk Key removed.
      5. Insert Kirk Key back into the facility’s main circuit breaker to allow it to be closed and the normal power source to feed the facility. The Key shall become captive while the facility’s main circuit breaker is closed.
2. EXECUTION
   1. INSTALLATION
      1. Install Tap Boxes in accordance with the NEC, as shown on the drawings, and as recommended by the manufacturer.

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