

**SECTION 26 26 00i**  
**POWER DISTRIBUTION UNITS - INSTALL**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Installation of Power Distribution Units
- B. Meet the following performance requirements:
  - 1. Wind, snow, ice, flood and earthquake Performance: In accordance with Section 26 00 10 -1.5.
- C. System Description:
  - 1. Integrated Isolation Transformer with distribution capabilities and power conditioning.

**1.2 RELATED WORK**

- A. Section 26 00 10 – Basic electrical requirements, is an integral part of this section. Requirements and work indicated in 26 00 10 are not repeated in this Section.
- B. Section 26 08 00 – Electrical General Commissioning Requirements. Provide Installer's and Manufacturer's support as required to coordinate with the Commissioning Agent and support all commissioning efforts and paperwork, Acceptance with Integrated Systems Testing.

**1.3 COORDINATION**

- A. Coordinate work under provisions indicated in Section 26 00 10.

**1.4 QUALIFICATIONS / QUALITY ASSURANCE**

- A. Conform to requirements indicated in Section 26 00 10.
- B. The following specific requirements shall be adhered to fully:
  - 1. Receive the PDU equipment and components properly packaged and mounted on pallets, or skids to facilitate handling of heavy items. Delivery should be coordinated to coincide with the area of final installation being ready to accept the equipment. Shipping sections shall not exceed 60"W x 42"D x 82"H, to facilitate handling.
  - 2. The equipment shall be covered with clear plastic sheeting to prevent dust and dirt from entering the equipment during shipment and storage.
  - 3. Handle the equipment carefully to prevent physical damage to any one of its components. Do not install damaged equipment; remove from site and replace with new.
  - 4. The equipment shall be covered with clear plastic sheeting to prevent dust and dirt from entering the equipment during shipment and storage.
- C. Comply with the requirements of NFPA 70B.

**1.5 REGULATORY REQUIREMENTS AND STANDARDS**

- A. Conform to requirements indicated in Section 26 00 10.

**1.6 SUBMITTALS**

- A. Submit as required here in and under Section 26 00 10.

**1.7 EXTRA MATERIALS**

- A. Furnish under provisions indicated in Section 26 00 10.

**1.8 PROJECT RECORD DOCUMENTS**

- A. Submit under provisions indicated in Section 26 00 10.

**1.9 OPERATION AND MAINTENANCE DATA**

- A. Submit under provisions indicated in Section 26 00 10.

**1.10 WARRANTY**

- A. Provide under provisions indicated in Section 26 00 10.

**PART 2 - PRODUCTS**

- A. Refer to shop drawings for details of pre-purchased power distribution units.

**PART 3 - EXECUTION**

**3.1 EXAMINATION**

- A. Examine areas and conditions, with Installer present, for compliance with requirements for conditions affecting performance of the PDU.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

**3.2 INSTALLATION**

- A. Arrange power distribution units to provide adequate access to equipment and circulation of cooling air.
- B. Install PDU with casters on top of stands or floor leaving adequate cooling space between floor and cabinet. Lower support legs to secure PDU Location
- C. Bolt floor stands to slab-bolt PDU to stand. In addition, anchor or restrain floor-mounted power distribution units according to manufacturer's written instructions, seismic codes applicable to Project, and requirements in Division 26 Section "Vibration and Seismic Controls for Electrical Systems."
- D. Set top of PDU stand level with raised floor. It with raised floor. Seal perimeter of stand to raised floor air tight.
- E. Identify equipment and install warning signs according to Division 26 Section "Identification for Electrical Systems."
- F. Provide all required control and power wiring as indicated in the contract documents.

**3.3 CONNECTIONS**

- A. Ground equipment according to Division 26 Section "Grounding."
  - 1. Separately Derived Systems: Make grounding connections to grounding electrodes as indicated; comply with NFPA 70. Connect to the computer room ground bar.

- B. Connect wiring according to Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."

### 3.4 SEALING

- A. Openings below PDUs into the access flooring shall be sealed airtight using a brush type seal. Refer to Section 26 05 00 – Common Work Results for Electrical and drawings.
- B. Seal conduits entering PDU originating outside the room. Use pliable, non-hardening putty or sealing fittings. Refer to Section 26 05 00.
- C. Seal PDU stands to access floor to minimize air escaping from under access flooring.

### 3.5 FIELD QUALITY CONTROL

- A. Electrical Tests and Inspections – Assist the Owner's testing agent in the performing of tests and inspections according to manufacturer's written instructions and as listed below to demonstrate condition and performance of each PDU component:
  - 1. Inspect interiors of enclosures, including the following:
    - a. Integrity of mechanical and electrical connections. Check tightness of bolted bus joints using a calibrated torque wrench. Tightness shall be in accordance with manufacturer's recommended values.
    - b. Component type and labeling verification.
    - c. Ratings of installed components.
  - 2. Load the system using a variable-load bank to simulate kilovolt amperes, kilowatts, and power factor of loads for unit's rating. Use instruments calibrated, within the previous six months according to NIST standards.
- B. Retest - Correct deficiencies and retest until specified requirements are met.
- C. Record of Tests and Inspections - Maintain and submit documentation of tests and inspections, including references to manufacturers' written instructions and other test and inspection criteria. Include results of tests, inspections, and retests.
- D. Testing Agency: Assist Qualified testing agency to perform tests and inspections and prepare test reports.
- E. Manufacturer's Field Service: Assist Factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections and to assist in testing. Report results in writing.
- F. Tests and Inspections:
  - 1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification for circuit breakers, molded case; and for transformers, dry type, air cooled, low voltage, small. Certify compliance with test parameters.
  - 2. Perform functional tests of power distribution units throughout their operating ranges. Test each monitoring, status, and alarm function.
  - 3. Coordinate work with Section 26 08 13 – Testing of Electrical Systems and Section 26 08 00 – Electrical General Commissioning Requirements.
- G. Remove malfunctioning units, replace with new units, and retest as specified above.
- H. Test Labeling: On completion of satisfactory testing of each unit, attach a dated and signed "Satisfactory Test" label to tested component.

### 3.6 STARTUP SERVICE

- A. Assist Factory-authorized service representative to perform startup service.

1. Verify that power distribution units are installed and connected according to the Contract Documents.
2. Verify that electrical wiring installation complies with manufacturer's submittal and with written installation requirements in Division 26 Sections.
3. Complete installation and startup checks according to manufacturer's written instructions.

### **3.7 ADJUSTING**

- A. Set field-adjustable switches and circuit-breaker trip ranges as indicated.
- B. Adjust power distribution units to provide optimum voltage to equipment served throughout normal operating cycle of loads served. Record input and output voltages and adjustment settings, and incorporate into test results.
  1. Set no load output voltage to a range of 120v -125V.

### **3.8 CLEANING**

- A. Vacuum dirt and debris; do not use compressed air to assist in cleaning.
- B. Touch up scratched or massed surfaces to match original finish.

### **3.9 DEMONSTRATION**

- A. Assist Factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain power distribution units. Refer to Division 01 Section "Demonstration and Training."

### **3.10 INTEGRATED SUSTEMS TESTING**

- A. Provide support for Integrated Systems Testing (commissioning Level 5) in addition to and after successful completion of acceptance testing.

**END OF SECTION**