

## SECTION 26 24 16.05 – PANELBOARDS

### PART 1 - GENERAL

#### 1.1 THE REQUIREMENT

- A. The CONTRACTOR shall provide panelboards complete and operable, in accordance with the Contract Documents.
- B. Single Manufacturer: Like products shall be the end product of one manufacturer in order to achieve standardization of appearance, operation, maintenance, spare parts, and manufacturer's services.

#### 1.2 CONTRACTOR SUBMITTALS

- A. General: Submittals shall be in accordance with MASS Section 10.05 Article 5.6 and Section 26 05 00 – Electrical Work, General.
- B. Shop Drawings
  - 1. Breaker layout drawings with dimensions and nameplate designations
  - 2. Component list
  - 3. Drawings of conduit entry/exit locations
  - 4. Assembly ratings including:
    - a. Short circuit rating
    - b. Voltage
    - c. Continuous current
  - 5. Cable terminal sizes
  - 6. Descriptive bulletins
  - 7. Product sheets
  - 8. Installation information
  - 9. Seismic certification and equipment anchorage details

### PART 2 - PRODUCTS

#### 2.1 PANELBOARDS

- A. Panelboards shall be dead front factory assembled. Panelboards shall comply with NEMA PB-1-Panelboards, as well as the provisions of UL 50 – Safety Enclosures for Electrical Equipment and UL 67 – Safety Panelboards. Panelboards used for service equipment shall be UL labeled for such use. Lighting panelboards shall be rated for 120/208-volt, 3-phase operation or 120/240-volt for single phase operation as indicated. Power panelboards shall be rated for 480 volts, 3-phase, 3-wire operation.
- B. The manufacturer of the panelboard shall be the manufacturer of the major components within the assembly, including circuit breakers.

C. Ratings

1. Panelboards rated 240 VAC or less shall have short circuit ratings not less than 10,000 amps RMS symmetrical or as indicated by the Short Circuit Study, whichever is greater.
2. Panelboards rated 480 VAC shall have short circuit ratings not less than 25,000 amps RMS symmetrical or as indicated by the Short Circuit Study, whichever is greater.
3. Panelboards shall be labeled with a UL short circuit rating. Series ratings are not acceptable.
4. Service entrance panelboards (panels connected to transfer switches or power meters) rated 240 VAC or less shall have short-circuit rating not less than 22,000 amps RMS symmetrical.
5. The VFD circuit breakers shall be time-delay units, shall be UL-listed for VFD loads, and approved by the VFD manufacturer for protection of their drives.

D. Construction

1. All lighting and power distribution panels shall have copper bus bars.
2. Breakers shall be one, two, or three pole as indicated, with ampere trip ratings as required by the equipment. Breakers shall be quick-make and quick-break, inverse time trip characteristics, to trip free on overload or short circuit, and to indicate trip condition by the handle position.
3. The panels shall have hinged doors with combination catch and latch. The front panels shall be so arranged that when the plates are removed, the gutters, terminals and wiring will be exposed and accessible. The doors shall have inner doors within the plates to have only the breaker operating mechanism exposed when they are opened. Live conductors and terminals shall be concealed behind the plates.
4. All panelboards shall be rated for the intended voltage.
5. All circuit breakers shall be interchangeable and capable of being operated in any position as well as being removable from the front of the panelboard without disturbing adjacent units. No plug-in circuit breakers will be acceptable.
6. Lighting and power distribution panels which are not part of a motor control center shall be constructed in accordance with Section 26 05 00 – Electrical Work, General. Panels shall have the necessary barriers, supports, and liberal wiring gutters. Trim screws shall be stainless steel. All panelboard parts of metal other than copper, aluminum, or stainless steel shall be cadmium plated. Panelboards shall be as manufactured by **Allen-Bradley, General Electric, or Cutler-Hammer**.
7. Panelboards shall be UL listed except for special enclosures which are not available with UL listing.
8. Panelboards shall be suitable for use as service entrance as indicated or as otherwise required by the N.E.C.

## **PART 3 - EXECUTION**

### **3.1 GENERAL**

- A. All WORK of this Section shall be installed as indicated in Section 26 05 00 – Electrical Work, General.

**END OF SECTION 26 24 16.05**