

## SECTION 26 24 16 LOADCENTERS

### PART 1 - GENERAL

#### 1.1 SCOPE

- A. The requirements of the Contract, Division 26 applies to work in this section. Loadcenters as specified and as shown on the contract drawings shall be furnished and installed by the contractor.

#### 1.2 RELATED DOCUMENTS

- A. *[Related Sections include the following:*
  - 1. *Section 26 28 16 - Enclosed Switches and Circuit Breakers]*

#### 1.3 SUBMITTALS

- A. The manufacturer shall provide the following information for review and evaluation by the Engineer:
  - 1. Shop drawings showing dimensions, voltage, phasing, continuous current capacity, short circuit rating, series rating is applicable.
  - 2. Drawings showing conduit entry location, cable termination sizes, mounting.

#### 1.4 RELATED STANDARDS

- A. The loadcenters shall comply with UL 67 and shall be UL Listed and shall comply with the requirements of the National Electrical Code. Panelboard enclosures shall comply with NEMA 250.
- B. Circuit protection devices shall be UL Listed and shall comply with the following standards:
  - 1. UL 489, Molded Case Circuit Breakers
  - 2. UL 489 and 943, Ground Fault Circuit Interrupters
  - 3. UL 489 and 1699, Arc Fault Circuit Interrupters
- C. Loadcenters shall comply with the requirements of Federal Specification W-P-115B, Panel Power Distribution

#### 1.5 QUALITY ASSURANCE

- A. The loadcenter manufacturer shall also be the manufacturer of the circuit breakers.
- B. Manufacturer shall have produced similar electrical equipment for a minimum period of 10 years.
- C. Products shall be listed by Underwriters Laboratories, Inc.

#### 1.6 DELIVERY, STORAGE AND HANDLING

- A. Handle and store equipment in accordance with the manufacturer's installation and maintenance manuals. One (1) copy of this document shall be provided with the equipment at time of shipment.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. The loadcenters shall be a PN or SN Series Load Center manufactured by Siemens or pre-approved equal. Approved manufacturers are as follows:
  - 1. SIEMENS
  - 2. [ ]

#### 2.2 ENCLOSURES

- A. Loadcenters shall have a ***[NEMA 1] [NEMA 3R with G90 galvanized steel]*** enclosure and shall be ***[surface] [flush]*** mounted.
- B. The knockouts shall be pre-stamped into the enclosure.
- C. The trims shall have mounting tabs so that the cover can be hung in place freeing both hands to install the hardware.
- D. The width shall be 14-3/8" wide to fit between standard wall studs for NEMA1 enclosures.
- E. A ground bar with 2/0 lug shall be included and factory installed with every loadcenter.

### 2.3 INTERIOR

- A. ***[The PN interior shall be convertible from main breaker to main lug and vice-versa.]*** The main shall be designed for straight in wiring. Bending the cable 90 degrees is not required.
- B. The neutral bar shall be visible to simplify the insertion of neutral conductors.
- C. The screws shall be installed in the neutral, bond and ground bars, yet backed out so that the installer can quickly land neutral and ground wire.
- D. The screws for the neutral, ground, breaker, trim and pan adjustment shall have a combination head to fit a square and a flathead slot.
- E. The circuit numbers shall be stamped on the dead front.

### 2.4 BREAKERS

- A. The loadcenter shall be fed by ***[a main breaker] [main lugs]***.
- B. ***[Indoor loadcenters shall be 180 degree invertible.]***
- C. The breakers shall be fully rated and shall be plug-in type. The breakers shall be molded case and thermal-magnetic ***rated [10 kaic] [22 kaic] [65 kaic] [as noted on the drawings]***. The terminals shall be rated for copper or aluminum conductors.
- D. ***[The loadcenter shall be designed to accept a surge arrestor breaker that mounts inside the panel in a 2-pole breaker position. The surge arrestor will not reduce the quantity of useable breaker spaces.]***
- E. Ground fault circuit interrupters (GFCI) shall be installed where shown on the schedule.
- F. Arc Fault Circuit Interrupters (AFCI) shall be installed where shown on the schedule. A listed arc-fault circuit interrupter, combination type shall be installed to provide protection of the branch circuits. Breakers shall have LED indication of Arc Fault trips. The information shall be stored in 30-day memory. The memory shall be resettable by pressing and holding down the test button, turning the breaker on, and continuing to press the test button for 5 seconds until the LED lights stop flashing.
- G. Dual function AFCI/GFCI breakers shall be installable in the loadcenter when required.
- H. ***[The loadcenter shall permit the use of 2-pole AFCIs. The 2-pole AFCI shall have two LED lights indicating arc on each pole.]***
- I. The breakers shall plug onto the neutral busbars without the use of a pigtail lead.

### 2.5 BUS

- A. The bus bar shall be ***[copper] [aluminum] [as shown on the drawings]*** for all installations.

### 2.6 ***[SERVICE ENTRANCE]***

- A. ***The panel shall be labeled for use as service entrance equipment.***
- B. ***Single main panels used as service entrance equipment shall include removable and re-installable touch-safe line terminal barriers.]***

## **PART 3 - EXECUTION**

### **3.1 INSTALLATION**

- A. Install per manufacturer's recommendations and contract documents.

### **3.2 ADJUSTMENTS AND CLEANING**

- A. Remove debris from loadcenters and wipe dust and dirt from all components.
- B. Repaint marred and scratched surfaces with touch up paint to match original finish.

### **3.3 TESTING**

- A. Check tightness of all accessible mechanical and electrical connections to assure they are torqued to the minimum acceptable manufacture's recommendations.
- B. Check all installed panels for proper grounding, fastening and alignment.

### **3.4 WARRANTY**

- A. The loadcenter shall be supplied with a lifetime warranty on standard branch breakers and a 10-year warranty on the main breaker and main lugs. The AFCI and GFCI breakers have a standard warranty of 12 months from energization or 18 months from shipment, whichever comes first.

**END OF SECTION**