Section 16425 Switchboards - 100% Rated

Part 1 General

1.1 CONDITIONS AND REQUIREMENTS:

A. Refer to the Drawings, General Conditions, Supplementary Conditions, and Division 01 Requirements.

1.2 DESCRIPTION

B. Distribution Switchboards (600 volts and Below)

1.3 REFERENCES:

A. American National Standards Institute (ANSI) C12 for Electricity Metering.

B. ANSI C57.13 Requirements for Instrument Transformers.

C. National Electrical Manufacturers' Association (NEMA) AB1 Molded Case Circuit Breakers.

D. NEMA PB2 Dead Front Distribution Switchboards.

E. Underwriters Laboratories (UL) UL891

1.4 SUBMITTALS:

A. Submit shop drawings for equipment and component devices under provisions of Section 01300.

B. Include outline and Support point dimensions, voltage, main bus ampacity, integrated short circuit ampere rating, circuit breaker arrangement and sizes.

1.5 QUALIFICATIONS:

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum five years documented experience.

PART 2 PRODUCTS

2.1 SWITCHBOARDS - 100% Rated:

A. Acceptable Manufacturers:

1. Industrial Electric Mfg. (IEM)

(Con t'd)

B. FABRICATION:

1. Switchboard for indoor services, shall NEMA type 1, Switchboards for outdoor services shall NEMA type 3R.

2. Description: Switchboard manufactured to NEMA PB2, 480/277V, 3PH , 4W w/full length Cu Ground Bus.

3. Bus to be Silver plated Cu, rated at not more than 1000A per square inch, braced at 100KAIC RMS Symmetrical, ratings as shown on drawings.

4. Line and Load Teminations: Accessible from the front only.

5. All frames of Switchboards shall be a minimum of 11 gauge steel. Provide added rigidity using steel member gussets in all corners of all Structures.

6. Switchboards, including all steel members and boxes, shall be painted using electrostatically applied polyester powder coated paint. Color shall be manufacture's standard gray or specific color as shown on drawings.

7. Provide full height Bussing in all sections tapped to accept hardware in unused space.

8. Provide hinged wiring gutters for easy access to load side cables.

9. All power connections shall be torqued and marked to equipment manufacture's specification to insure structure rigidity before leaving assembly plant.

10. Align all switchboard from the front of the structures.

C. Main Circuit Breakers:

1. Larger than 1200A: Individually Mounted and Compartmented
2. 1200A and Smaller: Group Mounted or Chassis Mounted
3. 100% Rated of Frame Size when Mounted in Switchboard
4. 65KAIC Minimum Rating or as noted on Drawings.
5. Main C.B.'s rated at 2500A and larger, Circuit Breaker shall be of the insulated case design with solid state trip device. Main C.B.'s smaller than 2500A shall be of the Molded Case type containing solid state trip Device.
6. Solid State Trip Device shall be interchangeable between compatible breaker frames. Continuous ampere rating of breaker determined by insertion of interchangeable rating plug. Rating plug interlocked so that its removal automatically trips the breaker. Trip unit shall also employ the following functions:

(Cont'd)

- Adjustable Ground Fault Pick-up
- Adjustable Long Time Pickup and Delay
- Adjustable Short Time Pickup and Delay
- Instantaneous Trip
- Visual indication of mode of trip following an automatic trip operation.

D. Feeder Circuit Breakers:

1. Larger than 1200A: Individually Mounted and Compartmented
2. 1200A and Smaller: Group Mounted or Chassis Mounted
3. 100% Rated of Frame Size when Individually Mounted or Mounted on chassis.
4. 65KAIC Minimum Rating or as noted on Drawings.
5. Feeder C.B.'s rated at 2500A and larger, Circuit Breaker shall be of the insulated case design with solid state trip device. Feeder C.B.'s smaller than 2500A shall be of the Molded Case type containing solid state trip Device.
6. Solid State Trip Device shall be interchangeable between compatible breaker frames. Continuous ampere rating of breaker determined by insertion of interchangeable rating plug. Rating plug interlocked so that its removal automatically trips the breaker. Trip unit shall also employ the following functions:

   - Adjustable Ground Fault Pick-up when shown on drawings.
   - Adjustable Long Time Pickup and Delay
   - Adjustable Short Time Pickup and Delay
   - Instantaneous Trip
   - Visual indication of mode of trip following an automatic trip operation.

2.2 CUSTOMER METERING:

A. Provide Customer Solid State Monitoring as indicated on drawings and per Specification Section 16950.

PART 3 EXECUTION

3.1 EXAMINATION:

A. Verify surfaces are ready to receive work.

B. Verify field measurements are as shown on drawings.

C. Verify that required utilities are available, in proper location, and ready for use.

D. Beginning of installation means installer accepts conditions.

(Cont'd)

3.2 INSTALLATION:

A. Install in location shown on drawings in accordance with manufacturer's written instructions.

B. Tighten accessible bus connections and mechanical fasteners after placing switchboard.

3.3 FIELD QUALITY CONTROL:

A. Field inspection and testing will be performed under provisions of Section 01400.

B. Testing to NEMA 210.

END OF SECTION