**5a. IEM Switchboards - 80% Rated 16425-1**

Section 16425 Switchboards - 80% Rated

**Part 1 General**

1. CONDITIONS AND REQUIREMENTS:
2. Refer to the Drawings, General Conditions, Supplementary Conditions, and Division 01

 Requirements.

1. DESCRIPTION
2. Distribution Switchboards (600 volts and Below)
3. REFERENCES:
4. American National Standards Institute (ANSI) C12 for Electricity Metering.
5. ANSI C57.13 Requirements for Instrument Transformers.
6. National Electrical Manufacturers’ Association (NEMA) AB1 Molded Case Circuit

 Breakers.

1. NEMA PB2 Dead Front Distribution Switchboards.

 E. Underwriters Laboratories (UL) UL891

1. SUBMITTALS:
2. Submit shop drawings for equipment and component devices under provisions of

 Section 01300.

1. Include outline and Support point dimensions, voltage, main bus ampacity, integrated short

 circuit ampere rating, circuit breaker arrangement and sizes.

1. QUALIFICATIONS:
2. Manufacturer: Company specializing in manufacturing products specified in this Section

 with minimum five years documented experience.

**PART 2 PRODUCTS**

1. SWITCHBOARDS - 80% Rated:
2. Acceptable Manufacturers:
3. Industrial Electric Mfg. (IEM)

(Con t’d)

**5a. IEM Switchboards - 80% Rated 16425-2**

1. FABRICATION:
2. 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.

1. 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. Individually Mounted and Compartmented above 1200A. Switchboards with

Main C.B. smaller than 1200A may be group or chassis mounted.

2. 80% Rated of Frame Size when Mounted in Switchboard

3. 65KAIC Minimum Rating or as noted on Drawings.

 4 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 rated at 1200A to 2000A shall be of the Molded Case type

containing solid state trip Device. Main C.B. smaller than 1200A shall be

of the molded case type with a thermal magnetic trip unit.

1. 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:

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**5a. IEM Switchboards - 80% Rated 16425-3**

* 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.

D. Feeder Circuit Breakers:

 1. Feeder C.B. larger than 1200A shall be Individually Mounted and

compartmented. Feeder C.B. 1200A and smaller shall be Group mounted

or chassis mounted.

1. 80% Rated of Frame Size when Individually Mounted or Mounted on

chassis.

3. 65KAIC Minimum Rating or as noted on Drawings.

4. 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 rated at 1200A to 2000A shall be of the Molded Case type

 containing solid state trip Device. Feeder C.B. smaller than 1200A shall

 be of the molded case type with a thermal magnetic trip unit.

 5. 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.
1. CUSTOMER METERING:
2. Provide Customer Solid State Monitoring as indicated on drawings and per Specification

 Section 16950.

**PART 3 EXECUTION**

1. EXAMINATION:
2. Verify surfaces are ready to receive work.
3. Verify field measurements are as shown on drawings.
4. Verify that required utilities are available, in proper location, and ready for use.
5. Beginning of installation means installer accepts conditions.

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**5a. IEM Switchboards - 80% Rated 16425-4**

1. INSTALLATION:
2. Install in location shown on drawings in accordance with manufacturer’s written

 instructions.

1. Tighten accessible bus connections and mechanical fasteners after placing switchboard.
2. FIELD QUALITY CONTROL:
3. Field inspection and testing will be performed under provisions of Section 01400.

 B. Testing to NEMA 210.

**END OF SECTION**