

SECTION 26 28 16**ENCLOSED SWITCHES AND CIRCUIT BREAKERS****PART 1 - GENERAL****1.1 REFERENCED DOCUMENTS**

- A. Comply with Division 1 - General Requirements and related documents.
- B. Comply with all other Division 26 sections as applicable.
- C. Refer to other Divisions for coordination of work with other portions of work.

1.2 DESCRIPTION

- A. Work Included: Provide disconnect switches and enclosed circuit breakers for branch circuit, motor circuits, and items of equipment.
- B. Related work specified in other sections:
 - 1. Division 23
 - 2. 26 00 00 - Electrical
 - 3. 26 28 13 - Fuses

1.3 QUALITY ASSURANCE

- A. The equipment supplied and installed shall meet the requirements of the National Electrical Code and all applicable local codes and ordinances.
- B. All equipment supplied shall be Underwriter's Laboratories Inc. listed and so labeled.

1.4 REFERENCED STANDARDS

- A. UL 50 Cabinets and Boxes
- B. UL 98 Enclosed and Dead front Switches
- C. UL 489 Molded Case Circuit Breakers
- D. UL 977 Fused Power Circuit Devices
- E. NEMA AB1 Molded Case Circuit Breakers and Molded Case Switches
- F. NEMA KS1 Enclosed Switches

1.5 SUBMITTALS

- A. Submit shop drawings including:

1. Enclosure outline drawings and dimensions.
2. Nameplate schedule.
3. Assembly ratings including:
 - a. Main lug ratings and location.
 - b. Voltage ratings.
 - c. Short circuit ratings.
4. Conduit entry and exit locations, dimensions, and knock-outs.
5. Cable terminal sizes.
6. Fuse types and ratings.
7. Manufacturer's literature describing circuit breakers and trip units.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Equipment shall be handled and off loaded in accordance with the manufacturer's published instructions.
- B. Upon arrival, inspect equipment for damage insured in shipping.
- C. Store and protect equipment from moisture and dust by storing in a clean, dry, heated space. Provide additional heavy plastic cover to protect the equipment and components. Provide auxiliary heating in the sections in accordance with the manufacturer's recommendations.

1.7 MANUFACTURER

- A. The equipment shall be the product of a manufacturer with a minimum of ten years' experience with the manufacture of similar equipment.
- B. Acceptable Manufacturers:
 1. Square D Company.
 2. Eaton.

1.8 WARRANTY

- A. The equipment shall be warranted to be in proper working order for a period of one year following the date of final acceptance.

PART 2 - PRODUCTS

2.1 FABRICATION

- A. Enclosed Switches
 1. Provide enclosed switches where indicated on the drawings or required by NEC.
 2. Switches shall be NEMA Type HD, heavy duty, rated 600 volts, with quick-make, quick break switch units and external operator, rated 100,000 A.I.C.

3. Switches shall be fused or unfused as shown on the drawings and as required by NEC, capacity and number of poles as indicate don the drawings.
4. Enclosures shall be provided with interlocks to prevent opening the enclosure without first opening the switch and to prevent operating the switch with the enclosure open.
5. Enclosures shall be provided with a means for pad locking in the open position.
6. Enclosures shall be provided with an equipment grounding lug.
7. Enclosures for use on four wire shall be provided with an insulated neutral bus.
8. Line side and load side terminals shall be provided with insulating cover to prevent accidental contact.
9. Indoor locations shall be provided with NEMA Type 1 Enclosures.
10. Outdoor locations shall be provided with NEMA Type 3R Enclosures and water tight threaded hubs for conduit entry.

B. Enclosed Circuit Breakers

1. Provide enclosed circuit breakers or molded case switches where indicated on the drawings or required by the NEC.
2. Circuit breaker for rating 250 amperes or less shall be thermal magnetic molded case circuit breakers.
3. Circuit breakers 300 amperes through 1200 amperes shall be molded case, 100% rated, electronic trip, microprocessor based, true RMS sensing, with adjustable, defeatable instantaneous pickup.
4. Units shall be 600 volt or 250 volts as required and unless noted otherwise shall be 42,000 A.I.C.
5. Enclosures shall be provided with a means for pad locking in the open position.
6. Enclosures shall be provided with and equipment ground bus.
7. Enclosures for use on four wire systems shall be provided with an insulated neutral bus.
8. Line side and load side terminals shall be provided with insulating covers to prevent accidental contact.
9. Indoor locations shall be NEMA Type 1 Enclosures.
10. Outdoor locations shall be NEMA Type 3R enclosures and watertight hubs for threaded conduit entry.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Inspect building structure to which disconnects are to be secured for defects which affect the execution and quality of work.
- B. Do not start work until defects are corrected.

3.2 PREPARATION

- A. Carefully measure and lay out exact locations maintaining working clearances required by the National Electrical Code.

3.3 INSTALLATION

- A. Provide disconnects where indicated and where required by the National Electrical Code and all equipment where integral disconnects are not provided by the manufacturers.
- B. Provide disconnects mounted to building structure ahead of flexible conduit final connection to each fan powered terminal box.
- C. Install within sight of equipment served.
- D. Provide final connection to equipment served.
- E. Provide engraved lamacoid name plate secured to cabinet with designation of equipment served, operating voltage, and circuit designation.

END OF SECTION