

Section 16165

DISCONNECT SWITCHES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Specifications for disconnect switches including:
  - 1. Fusible disconnect switches
  - 2. Non-fusible disconnect switches
  - 3. Circuit breaker type disconnect switches
  - 4. Fuses
  - 5. Circuit breakers
  - 6. Manual transfer switches

1.02 REFERENCES

- A. American National Standards Institute/National Electrical Manufacturers Association (ANSI/NEMA)
  - 1. NEMA AB1: Molded Case Circuit Breakers
  - 2. NEMA KS1: Enclosed Switches
- B. Underwriters Laboratories (UL)
  - 1. UL 98: Standard for safety enclosed switches and Dead Front Switches
  - 2. UL 198C: High Interrupting Capacity Fuses, Current Limiting type
  - 3. UL 198E: Class R Fuses
- C. American National Standards Institute/National Fire Protection Association (ANSI/NFPA), NFPA No. 70 - National Electrical Code (NEC), Article 380 - Switches.

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### 1.03 SUBMITTALS

- A. Submit the following under provisions of Section 01330 – Submittal Procedures:
  - 1. Manufacturer's cut sheets and catalog data
  - 2. Switch internal arrangement
  - 3. Breaker or fuse characteristic curves
  - 4. Instructions for handling and storage
  - 5. Installation instructions
  - 6. Dimensions and weights

### 1.04 DELIVERY, STORAGE AND HANDLING

- A. Have disconnect switches packed and crated to permit ease of handling and to provide protection from damage during shipping, handling and storage.

## PART 2 PRODUCTS

### 2.01 ACCEPTABLE MANUFACTURERS

- A. Disconnect Switches and Circuit Breakers:
  - 1. Cutler-Hammer Products
  - 2. General Electric
  - 3. Siemens Energy and Automation
  - 4. Square D Company
  - 5. Westinghouse Electric
- B. Fuses
  - 1. Bussman Division, Cooper Industries
  - 2. Gould Shawmut
  - 3. Littelfuse Incorporated

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## 2.02 MATERIALS AND EQUIPMENT

### A. Disconnect and Transfer Switches

1. Characteristics: Horsepower rated, 600-volt, heavy-duty type with an interlocked door, positive quick-make, quick-break mechanism and visible blades.
2. Use switches and components designed, manufactured and tested in accordance with NEMA AB1, NEMA KS1, UL 98, and NEC Article 380.
3. Enclose switch in a NEMA 4X, Type 316 stainless steel enclosure in all locations. Enclosures shall have fully welded seams that are ground smooth. No sealant of any kind may be used to support the NEMA 4 classification.
4. Provide switches with provisions for padlocking the operating lever in any position.
5. Select switches having the number of poles and general size conforming to the Drawings.
6. Conform to fusible, non-fusible or circuit breaker type switch requirements as shown on Drawings and required by the NEC, or one-line diagrams.
7. Provide an auxiliary contact as shown on the Drawings.
8. Select fuses or circuit breakers with current interrupting duty as calculated for the points of switch application or as indicated on the Drawings or one-line diagrams.

B. Fuses. Unless otherwise noted on Drawings, for fuses used in disconnect switches, provide the dual-element, time-delay type with the maximum interrupting rating of 200,000 amperes, conforming to the NEC.

C. Circuit Breakers. When circuit breakers are used in disconnect switches, provide the thermal-magnetic type with current interruption ratings as required at the point of application.

D. Conduit Connectors: Watertight as manufactured by Myers Hubs, or equal. Hubs of this nature shall be used for all connections to enclosures. All such hubs shall be equipped with auxiliary grounding lugs that are securely interconnected to the facility grounding system.

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PART 3 EXECUTION

3.01 PREPARATION

- A. Review the Drawings and verify that the disconnect switches are correct for the applications.
- B. Make sure that the correct fuses or breakers are being used regarding size and short circuit interrupting capability.
- C. Prepare adhesive labels on the inside door of each switch indicating UL fuse class and size or breaker type and size for replacement.

3.02 INSTALLATION

- A. Install the disconnect switches in accordance with and NEC Article 380.
- B. Mount switches 6'-6" (to top of cabinet) above finished floor or grade.
- C. In wet and corrosive areas, including outdoor locations, install switches on spacers to provide a space of approximate 1/4-inch between the back of cabinet and the mounting surface.
- D. In wet and corrosive areas, including outdoor locations, connect conduit to the bottom of enclosure and to the lower 30 percent of the sides using watertight connectors.
- E. All mounting hardware shall be 316 stainless steel.

END OF SECTION