

**SECTION 26 18 41
MEDIUM-VOLTAGE SWITCHES**

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section specifies the furnishing, installation and connection of high voltage switches.

1.2 RELATED WORK

- A. Section 09 06 00, SCHEDULE FOR FINISHES: Switch finishes.
- B. Section 26 05 11, REQUIREMENTS FOR ELECTRICAL INSTALLATIONS: General electrical requirements that are common to more than one section of Division 26.
- C. Section 26 05 13, MEDIUM-VOLTAGE CABLES: High voltage cables and splices.
- D. Section 26 05 26, GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS: Requirements for personnel safety and to provide a low impedance path to ground for possible ground fault currents.

1.3 SUBMITTALS

- A. In accordance with Section 26 05 11, REQUIREMENTS FOR ELECTRICAL INSTALLATIONS, submit the following:
- B. Shop Drawings:
1. Provide detailed drawings with sufficient information, clearly presented, to determine compliance with drawings and specifications.
 2. Provide information such as complete electrical ratings, dimensions and approximate design weights, mounting details, materials, required clearances, cable terminations, fuse sizes and class, interrupting ratings, wiring and connection diagrams, front, side and rear elevations, sectional views, safety features, accessories and nameplate data.
- C. Manuals:
1. Submit, simultaneously with the shop drawings, companion copies of complete maintenance and operating manuals including technical data sheets, wiring diagrams and information for ordering replacement parts.
 2. Two weeks prior to the project final inspection, submit four copies of the final updated maintenance and operating manuals to the COTR. (Update the manuals to include any revisions necessitated by shop drawing approval).
- D. Certifications:

1. Two weeks prior to the project final inspection, submit four copies of the following to the COTR.
 - a. Certification by the Contractor that the equipment has been properly installed, adjusted and tested.
 - b. Certified copies of all factory test reports and any field test data sheets and reports.

1.4 APPLICABLE PUBLICATIONS

- A. Publications listed below (including amendments, addenda, revisions, supplements, and errata) form a part of this specification to the extent referenced. Publications are referenced in the text by designation only.
- B. American National Standards Institute (ANSI):

C37.47-00.....High Voltage Current-Limiting Type Distribution Class Fuses and Fuse Disconnect Switches

C37.58-90.....Conformance Test Procedures for Indoor AC Medium-Voltage Switches for Use in Metal-Enclosed Switchgear
- C. Institute of Electrical and Electronics Engineers (IEEE):

C37.20.3-01.....Metal-Enclosed Interrupter Switchgear

C37.48-97.....Guide for Application, Operation and Maintenance of High Voltage Fuses, Distribution Enclosed Single Pole Air Switches, Fuse Disconnecting Switches and Accessories
- D. National Electrical Manufacturers Association (NEMA):

C37.22-97.....Preferred Ratings and Required Capabilities for Indoor AC Medium-Voltage Switches Used in Metal-Enclosed Switchgear

SG 6-00Power Switching Equipment
- E. National Fire Protection Association (NFPA):

70-02National Electrical Code (NEC)

PART 2 - PRODUCTS

2.1 HIGH VOLTAGE INDOOR AIR BREAK SWITCHES, SEPARATELY ENCLOSED

- A. Shall be in accordance with ANSI, IEEE, NEMA, NFPA, as shown on the drawings and have the following features:
 1. Air break, three-pole gang-operated, rated load interrupter type.
 2. Copper blades.

3. A separate door for the fuse section. A mechanical interlock shall prevent opening the door unless the switch blades are open, and closing the switch if the door is open.
 4. Phase barriers for the full length of the blades and fuses for each pole.
 5. Protective shield to cover the cable connections on the line terminals.
 6. Quick-make, quick-break, stored energy type operation mechanism.
 7. External manual operating handle with lock-open padlocking provisions.
 8. When the switches are open, the fuses shall be de-energized.
 9. Current limiting, power type fuses.
 10. Enclosures:
 - a. NEMA type shown on the drawings for the switches. Where the types of switch enclosures are not shown, they shall be the NEMA types which are most suitable for the environmental conditions where the switches are being installed.
 - b. Doors:
 - 1) Concealed or semi-concealed hinges shall be used to attach doors. Weld hinges to the enclosure and door.
 - 2) Mechanically interlocked to prevent opening unless the switch blades are open.
 - 3) Three point door locking mechanism, suitable handles and padlocking provisions.
 - 4) Safety-glass window for viewing the switch blades.
 - 5) Door stops for the open position.
 - c. Finish:
 - 1) All metal surfaces shall be thoroughly cleaned, phosphatized, primed and painted at the factory.
 - 2) Final finish shall be enamel, lacquer or powder coating. Enamel and powder coatings shall be oven baked. Color shall be light gray.
- B. Minimum switch fault close and momentary current rating shall be 80 kA with a 2 second current rating of 50 kA.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install the switches in accordance with the NEC, manufacturer's instructions and recommendations and as shown on the drawings.
- B. Anchor the units with rustproof bolts, nuts and washers not less than 13 mm (1/2-inch) diameter.

3.2 SPARE PARTS

- A. Two weeks prior to the final inspection, provide one (1) set of spare fuses for each fused switch installed on this project.

END OF SECTION 26 18 41