

SECTION 262813

FUSES

PART 1 - GENERAL

1.1 STIPULATIONS

- A. The specification sections “General Conditions of the Construction Contract”, “Special Conditions”, and “Division 1 - General Requirements” form a part of this section by this reference thereto, and shall have the same force and effect as if printed herewith in full.

1.2 SUMMARY

A. Section Includes:

1. Cartridge fuses rated 600-V ac and less for use in control circuits, enclosed switches, panelboards, switchboards, enclosed controllers and motor-control centers.
2. Plug fuses rated 125-V ac and less for use in plug-fuse-type enclosed switches, fuseholders and panelboards.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Submit as required in section 013000. Include construction details, material, dimensions, descriptions of individual components, and finishes for spare-fuse cabinets. Include the following for each fuse type indicated:
 1. Ambient Temperature Adjustment Information: If ratings of fuses have been adjusted to accommodate ambient temperatures, provide list of fuses with adjusted ratings.
 - a. For each fuse having adjusted ratings, include location of fuse, original fuse rating, local ambient temperature, and adjusted fuse rating.
 - b. Provide manufacturer's technical data on which ambient temperature adjustment calculations are based.
 2. Dimensions and manufacturer's technical data on features, performance, electrical characteristics, and ratings.
 3. Current-limitation curves for fuses with current-limiting characteristics, when requested by the Engineer.
 4. Time-current coordination curves (average melt) and current-limitation curves (instantaneous peak let-through current) for each type and rating of fuse, when requested by the Engineer.
 5. Coordination charts and tables and related data, when requested by the Engineer.

- B. Operation and Maintenance Data: For fuses to include in emergency, operation, and maintenance manuals. In addition to items specified in General Conditions Specification Section include the following:
 - 1. Ambient temperature adjustment information.
 - 2. Current-limitation curves for fuses with current-limiting characteristics.
 - 3. Time-current coordination curves (average melt) and current-limitation curves (instantaneous peak let-through current) for each type and rating of fuse.
 - 4. Coordination charts and tables and related data.

1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain fuses, for use within a specific product or circuit, from single source from single manufacturer.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- C. Comply with NEMA FU 1 for cartridge fuses.
- D. Comply with NFPA 70.
- E. Comply with UL 248-11 for plug fuses.

1.5 PROJECT CONDITIONS

- A. Where ambient temperature to which fuses are directly exposed is less than 40 deg F or more than 100 deg F, apply manufacturer's ambient temperature adjustment factors to fuse ratings.

1.6 COORDINATION

- A. Coordinate fuse ratings with utilization equipment nameplate limitations of maximum fuse size and with system short-circuit current levels.

1.7 EXTRA MATERIALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Fuses: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Cooper Bussmann, Inc.
 - 2. Edison Fuse, Inc.
 - 3. Ferraz Shawmut, Inc.
 - 4. Littelfuse, Inc.
 - 5. Or approved equal.

2.2 CARTRIDGE FUSES

- A. Characteristics: NEMA FU 1, nonrenewable cartridge fuses with voltage ratings consistent with circuit voltages.

2.3 PLUG FUSES

- A. Characteristics: UL 248-11, nonrenewable plug fuses; 125-V ac.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine fuses before installation. Reject fuses that are moisture damaged or physically damaged.
- B. Examine holders to receive fuses for compliance with installation tolerances and other conditions affecting performance, such as rejection features.
- C. Examine utilization equipment nameplates and installation instructions. Install fuses of sizes and with characteristics appropriate for each piece of equipment.
- D. Evaluate ambient temperatures to determine if fuse rating adjustment factors must be applied to fuse ratings.
- E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 FUSE APPLICATIONS

- A. Cartridge Fuses (when applicable):

1. Service Entrance: Class RK1, dual-element, time delay; class RK1, fast acting; class L, fast acting; class L, dual-element, time delay; class J, fast acting; class J, time delay; class T, fast acting (as required).
2. Feeders: Class RK1, dual-element, time delay; class RK1, fast acting; class RK5, dual-element, time delay; or class RK5, fast acting; class L, fast acting; class L, dual-element, time delay; class J, fast acting; class J, time delay (as required).
3. Motor Branch Circuits: Class RK1, dual-element, time delay; or class RK5, dual-element, time delay (as required).
4. Other Branch Circuits: Class RK1, dual-element, time delay; or class RK5, dual-element, time delay; class J, fast acting; class J, time delay (as required).
5. Control Circuits: Class CC, dual-element, time delay; or class CC, fast acting (as required).

B. Plug Fuses:

1. Motor Branch Circuits: Edison-base type, time delay; or type S, time delay (as required).
2. Other Branch Circuits: Edison-base type, fast acting; Edison-base type, time delay; type S, time delay (as required).

3.3 INSTALLATION

- A. Install fuses in fusible devices. Arrange fuses so rating information is readable without removing fuse.

3.4 IDENTIFICATION

- A. Install labels complying with requirements for identification detailed in "Identification for Electrical Systems" specification section 260553 and indicating fuse replacement information on inside door of each fused switch.

END OF SECTION 262813