

**SECTION 26 28 13**  
**FUSES (600 VOLT AND BELOW)**

**PART 1 GENERAL**

- 1.1 FURNISH AND INSTALL FUSES OF THE TYPES AND SIZES AS INDICATED ON THE DRAWINGS AND/OR AS SPECIFIED HEREIN.
  - A. All fuses furnished and installed under this specification shall be as specified; shall be new, unused fuses; shall be delivered to the job site in manufacturer's original boxes or cartons whether furnished by the Contractor or by the manufacturer of equipment.
  - B. All fuses shall have a minimum interrupting rating of 200,000 amperes.
  - C. Should utilization, conversion, or distribution equipment provided under any division of these specifications require fuse classes offering a higher degree of protection or different ampere ratings than fuses specified, such fuse classes and ampere ratings may be used.
- 1.2 EVENLY TORQUE ALL MOUNTING BOLTS OR NUTS TO ASTM RECOMMENDATIONS FOR TYPE AND DIAMETER OF MOUNTING BOLTS OR STUDS PROVIDED.
  - A. The inside of each fuse enclosure shall contain a durable, readily visible label, which shall clearly indicate the correct type and size of replacement fuse.
  - B. Label shall not cover or interfere with equipment manufacturer's instructions.
- 1.3 FUSES SHALL BE MADE BY ONE OF THE FOLLOWING MANUFACTURERS:
  - A. Reliance Fuses
  - B. Gould Shawmut
  - C. Littlefuse
  - D. Bussmann
  - E. Substitutions:
    1. Should the Contractor propose to provide fuses other than those specified, at least six weeks prior to the installation of the fuses, he shall furnish the Engineer complete technical data sufficient for the Engineer to determine whether system function will be adversely affected, whether proposed fuses meet this specification and whether they are equal in quality.
    2. Proposal for substitution shall state the dollar cost savings to the Owner and reason for proposed substitution.
- 1.4 TO ASSURE SELECTIVE COORDINATION OF PROTECTIVE DEVICES, ALL FUSES SHALL BE OF THE SAME MANUFACTURER.

**PART 2 PRODUCTS**

- 2.1 FUSES FOR SERVICE, SWITCHBOARD MAINS, FEEDERS, AND BRANCH CIRCUITS
  - A. 0 to 600 amperes: Fuses 0 to 600 amperes shall be UL listed RK1 dual-element, time-delay fuses with ampere ratings as indicated on the drawings except as modified by these specifications.
  - B. Fuses for motor branch circuits 600 amperes and below, whether individual or grouped (MCC), shall be class RK1 fuses.
    1. To determine fuse ratings for motor branch circuits use actual full-load currents of motors provided, not by NEC Table of Standard Motor Full Load Ampere.
    2. EXCEPTION
      - a. Fuses in motor control centers may be time-delay Class CC fuses if MCC manufacturer's standard designs are for these fuses.
      - b. Follow the fuse manufacturer's recommendations for Class CC fuses.

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- C. Fuses for motor branch circuits requiring fuses over 601 amps, whether individual or grouped (MCC), shall be Class L fuses.
  - D. Fuse holders shall be able to simultaneously disconnect all ungrounded conductors of the branch circuit by means of an adjacent disconnect or a multi-pole fuse holder.
- 2.2 FUSING OF CONTROL CIRCUITS
- A. General: Fuses shall be RK1 or time-delay Class CC fuses installed in Class CC fuse blocks.
  - B. Control Power Transformers:
    - 1. Primary circuit of all control power transformers shall have proper fuse.
    - 2. Fuse ratings shall be in accordance with NEC requirements.
    - 3. Fuses shall be RK1 or time-delay UL Class CC fuses installed in Class CC fuse blocks.
- 2.3 FUSING FOR FLUORESCENT AND H.I.D. LIGHTING FIXTURE BALLASTS
- A. 300 volt and below fluorescent fixture ballasts, where required, shall be individually fused.
    - 1. Fuse holders and fuses shall be GLR fuses or equal.
  - B. Provide individual fuses for H.I.D. lighting fixture ballasts, where required, with fuses rated in accordance with fixture manufacturer's recommendation.
    - 1. Fuse holders shall be UL Class CC fuses.
  - C. Outside pole lights shall have only one fuse holder per branch circuit or switch leg.
- 2.4 FUSES FOR METERING CENTERS, LOAD CENTERS, AND FOR BACK-UP PRODUCTION OF CIRCUIT BREAKERS
- A. Fuses for above purposes shall be RK1 or Class L fuses.
  - B. Fuse ampere ratings shall not exceed maximum recommended by equipment manufacturer.
- 2.5 INITIAL START-UP
- A. Contractor shall replace all fuses opened during start-up and testing.
  - B. At contract completion, all fuse holders shall contain serviceable fuses as specified.

### **PART 3 EXECUTION**

- 3.1 Not Used.

END OF SECTION