

SECTION 26 28 13

LOW VOLTAGE VOLT FUSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. The Conditions of the Contract and applicable requirements of Divisions 0 and 1 and Section 26 00 01, "Electrical General Provisions", govern this Section.

1.2 DESCRIPTION OF WORK:

- A. Work Included: The extent of fuse work is as shown and scheduled, as indicated by the requirements of this Section, and as specified elsewhere in these Specifications.
- B. Types: The types of fuses required for the project include, but are not limited to, the following:
 - 1. 250 volt current-limiting fuses.
 - 2. 600 volt current-limiting fuses.

1.3 STANDARDS:

- A. Products shall be designed, manufactured, tested, and installed in compliance with the following standards:
 - 1. ANSI/UL 198E Class R Fuses.
 - 2. ANSI/UL 198C High-Interrupting-Capacity Fuses, Current Limiting Types, Class L.
- B. Where application of applicable codes, Trade Association standards, or publications appears to be in conflict with the requirements of this Section, an interpretation shall be obtained from the Architect/Engineer.

1.4 QUALITY ASSURANCE:

- A. Manufacturers: Provide products produced by Bussmann Manufacturing.
 - 1. The Contractor shall base his proposal upon Bussmann fuses. If the Contractor wishes to use fuses other than specified, and produced by one of the manufacturers listed below, written request shall be submitted to the Engineer for approval review as required in Section 26 00 01, "Electrical General Provisions", under "Prior Approval", together with proof that the substituted fuses "are equal", and that all proposed fuses have been selected for proper fuse coordination with all components of the power system.
 - a. Gould Shawmut Company.
 - b. Littlefuse.
 - c. Copper – Bussmann.
- B. Coordination: All fuses shall, to the maximum extent possible, be from the same manufacturer to facilitate positive selective coordination of protective devices.

1.5 SUBMITTALS:

- A. Shop drawing submittals shall include, but not be limited to, the following:
 - 1. Cut sheet submittals shall be provided for all fuse types required for the project.
 - 2. Additional information as required in Section 26 00 01, "Electrical General Provisions".

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING:

- A. Store fuses in a clean and dry space and protected from weather. When necessary to store outdoors, elevate materials well above grade and enclose with durable, waterproof wrapping.

PART 2 - PRODUCTS

2.1 250/600 VOLT CURRENT-LIMITING FUSES:

- A. General: Provide 200,000 amperes interrupting capacity (AIC) current-limiting fuses of the current ratings shown and with a voltage rating equal to or greater than the voltage at the point of application.
- B. Types:
 - 1. Fuses in circuits supplying individual motors, groups of motors or loads including motors, 600 amperes or less, shall be UL Class RK1 true dual-element, time-delay fuses, unless otherwise shown. Dual-element fuses must hold 500% of rated current for a minimum of 10 seconds and clear 20 times rated current in 0.01 seconds or less.
 - 2. Fuses in circuits supplying individual motors, groups of motors or loads including motors, 601 to 4000 amperes, shall be UL Class L time-delay fuses, unless otherwise shown. Time delay fuses shall hold 500% of rated current for 4 seconds and clear 20 times rated current in 0.01 seconds or less.
 - 3. Fuses in circuits supplying other than motor loads, 600 amperes or less, shall be UL Class RK1 true dual-element, time-delay fuses, unless otherwise shown. Dual-element fuses must hold 500% of rated current for a minimum of 10 seconds and clear 20 times rated current in 0.01 seconds or less.

[VERIFY THE FOLLOWING]

- C. Lighting Fixture Protection: All **[exterior]** **[interior]** HID ballasts shall be protected on the supply side with Bussmann Type "GLR" fuses in a Type "HLR" fuse holder or an approved equal for applications up to 300 volts and Type "KTK-R" fuses in a Type "HPF-RR" fuse holder or an approved equal for 480 volt applications. All pole and bollard site lighting fixtures shall be protected with Bussmann Type "KTK-R" fuses and Type "HEB" waterproof breakaway fuse holders or an approved equal.

2.2 SPARE FUSES:

- A. General: Provide spare fuses in the amount of **[5%]** **[10%]** of each type and size installed, but not less than three spares of a specific size and type. Deliver these spares to the Owner at the time of acceptance of the project. Fuses shall be neatly encased in a properly labeled steel enclosure with padlock provision, to be wall mounted as directed.

PART 3 - EXECUTION

3.1 INSTALLATION:

- A. General: Install fuses in fuse holders immediately prior to energization of the circuit in which the fuses are installed. Fuses shall not be installed and shipped with equipment.
- B. Labels: Place fuse identification labels, showing fuse size and type installed, inside the cover of each switch or other location where fuses are installed.

END OF SECTION 26 28 13