

SECTION 26 28 19  
CIRCUIT AND MOTOR DISCONNECTS  
Design Standards

**PART 1 GENERAL****1.1 PURPOSE**

This design standard has the purpose of creating a consistent application of circuit and motor disconnects throughout the San Mateo County Community College District therefore achieving a standard of maintenance, reliability and quality throughout all renovation and new building projects.

**PART 2 PRODUCTS**

2.1 Circuit and motor disconnects are identified as the following but not limited to:

- A. Toggle type disconnect switches.
- B. Manual motor starters.
- C. Safety switches.

2.2 All circuit and motor disconnects to meet the following requirements based on Code requirements and industry standard of care:

- A. Provide disconnect switch in sight of each motor location unless otherwise noted.
- B. Motors within sight of and not more than 20 feet from motor branch circuit device do not require a disconnect switch at the motor. Provide locking device on circuit protective device.
- C. Provide disconnect switch in site of each motor controller. Motor controller disconnect equipped with lock-out/tag-out padlock provisions do not require a disconnect switch at the controlled motor location.
- D. Disconnect switches for use in publically accessible locations (exterior, roof, unlocked spaces) shall be equipped with a factory installed option to allow the switch to be locked in the "on" position.
- E. Recessed fractional horsepower exhaust ceiling or wall fan units; no disconnect switch required at motor if unit is recessed.
- F. Switches disconnect phase legs.
- G. Coordinate fuse ampere rating with installed equipment. Fuse ampere rating variance between original design information and installed equipment, size in accordance with Bussmann Fusetron 40C recommendations. Do not provide fuses of lower ampere rating than motor starter thermal units.
- H. For toggle type disconnect switches:
  - 1. Rating: 120 volt, 1 pole, 20 amp, 1 HP maximum.
  - 2. Enclosure: NEMA 1 indoors, NEMA 3R raintight outdoors.
- I. For manual motor starters:
  - 1. Characteristics:
    - a. Quick-make, quick-break.
    - b. Thermal overload protection.
    - c. Clearly label device for maximum voltage, current and horsepower.
    - d. Square D, Class 2510.
  - 2. Enclosure: NEMA 1 indoors, NEMA 3R raintight outdoors.
- J. For safety switches:
  - 1. Heavy duty, fused type, dual rated, quick-make, quick-break with fuse rejection feature for use with Class R fuses only, unless other fuse type is specifically noted.
  - 2. Enclosures: NEMA 1 indoors, NEMA 3R raintight outdoors.
  - 3. Switches clearly marked for maximum voltage, current and horsepower.
  - 4. Equip enclosure with defeatable cover interlock.

5. Switches rated for maximum available fault current.
- K. For combination starters:
  1. Heavy duty, fused type, dual rated, quick-make, quick-break with fuse rejection feature for use with Class R fuses only, unless other fuse type is specifically noted.
  2. Enclosures: NEMA 1 indoors, NEMA 3R raintight outdoors.
  3. Clearly mark switches for maximum voltage, current and horsepower.
  4. Provide coil voltage coordinated with control requirements.
  5. Provide thermal overload units sized to equipment nameplate rating.
  6. Provide one N.C. and one N.O. auxiliary contacts.
  7. Provide prewired hand/off/auto switch and start button.

### 2.3 APPROVED MANUFACTURERS

- A. Toggle Type Disconnect Switches:
  1. Cooper
  2. Hubbell
  3. Leviton
  4. Pass & Seymour
  5. Slater
- B. Manual Motor Starters:
  1. Eaton Electrical
  2. Siemens
  3. Square D
- C. Safety Switches:
  1. Eaton Electrical
  2. General Electric
  3. Siemens
  4. Square D

### PART 3 EXECUTION

#### 3.1 SUBSTITUTES ALLOWED?

Yes, if performance and quality equivalency can be evidenced.

#### 3.2 ASSOCIATED DESIGN STANDARDS AND CONSTRUCTION SPECIFICATIONS

- A. Division 26 Design Standards and Construction Specifications

END OF SECTION