



**.1 General**

- .1 Materials and installation for low voltage switchgear for controlling relatively large loads - 2000 A or larger.
- .2 Provide and install a complete distribution centre as indicated on the plans.
- .3 The available space is restrictive, and the electrical equipment has been designed to accommodate this. All proposed manufacturers shall take particular note of this when pricing equipment, and include for any variations to their standard equipment in the tender sum.
- .4 This section of specification includes main distribution centres, and fused disconnects in main distribution circuits

**.2 Shop Drawings & Product Data**

- .1 Submit shop drawings and product data that indicates:
  - .1 Floor anchoring method and foundation template.
  - .2 Dimensioned cable entry and exit locations.
  - .3 Dimensioned position and size of bus.
  - .4 Overall length, height and depth of complete switchgear.
  - .5 Dimensioned layout of internal and front panel mounted components.
- .2 Include time-current characteristic curves for circuit breakers and fuses rated 250A and higher.

**.3 Storage And Protection**

- .1 Store switchgear on site in protected, dry location. Cover with plastic to keep off dust.
- .2 Provide energized strip heater in each cell to maintain dry condition during storage.

**.4 Extra Materials**

- .1 Provide maintenance materials including:
  - .1 3 fuses for each type above 600 A.
  - .2 6 fuses for each type up to and including 600 A.

**.5 Rating**

- .1 Secondary switchgear: indoor, [347/600] [120/208] V, 3 phase, 4 wire, 60 Hz, minimum short circuit capacity [65] kA (rms symmetrical), in amperage capacity sized to Canadian electrical Code plus a 25% spare capacity.

**.6 Enclosure**

- .1 Main incoming section to contain:
  - .1 Moulded case circuit breaker sized as indicated.
  - .2 Digital metering.
- .2 Distribution sections to contain:
  - .1 Moulded case circuit breakers sized as indicated.
  - .2 Copper bus, from main section to distribution sections including vertical bussing.
- .3 Metal enclosed, free standing, floor mounted, dead front, indoor, CSA Enclosure 1 [2] cubicle unit.
- .4 Access from front [and rear].
- .5 Steel channel sills for base mounting in single length common to multi-cubicle switchboard.



- .6 Interior lighting: 100 W lamp in porcelain lampholder in each cubicle with externally mounted switch and pilot light.
- .7 Receptacle: 120 V, single phase, 60 Hz, duplex, U-ground, in each cubicle.

**.7 Busbars**

- .1 Three phase and full capacity neutral bare busbars, continuous current rating self-cooled, extending full width of cubicles in the switch board, suitably supported on insulators.
- .2 Main connections between bus and major switching components to have continuous current rating to match major switching components.
- .3 Busbars and main connections: 99.3% conductivity copper.
- .4 Provision for extension of bus on both sides of unit without need for further drilling or preparation in field.
- .5 Tin plated joints, secured with non-corrosive bolts and Belleville washers.
- .6 Identify phases of busbars by suitable marking.
- .7 Busbar connectors, when switchboard shipped in more than one section.

**.8 Grounding**

- .1 Copper ground bus not smaller than 50 x 6 mm extending full width of cubicles inside the switchboard and situated at bottom.
- .2 Copper lugs at each end for size #4/0 grounding cable, connect to main ground bus.

**.9 Ground Fault Unit**

- .1 For main breakers rated at 1000 amps, 347/600 volt or higher, or 2000 amps at 120/208 volt or higher, provide ground fault breaker unit.

**.10 Moulded Case Circuit Breakers**

- .1 Rated for fault as indicated on one line.
- .2 Common-trip breakers with single handle and trip mechanism for multipole applications.
- .3 Magnetic instantaneous trip elements in circuit breakers, 400A and above, to operate only when the value of current reaches setting. Trip settings on breakers with adjustable trips to range from 3-10 times current rating.
- .4 Manufacturer: Square D, Cutler-Hammer.

**.11 Moulded Case Circuit Breakers – Current Limiting**

- .1 Rated for fault as indicated on one line.
- .2 Common-trip breakers with single handle and trip mechanism for multipole applications
- .3 Breakers up to 225 Amp to limit fault (RMS Symmetrical Amps) to 10,000A at 51,600 Amp input.
- .4 Manufacturer: Square D, Cutler-Hammer.

**.12 Fusible Disconnects And Fuses**

- .1 Disconnect switches shall be heavy duty, lockable position, complete with HRC fuses.
- .2 Disconnects shall have quick make/quick break mechanism.
- .3 Disconnects shall be adapted for HRC fuses.
- .4 Manufacturer: Square D, Cutler-Hammer.



**.13 Fuses**

- .1 All fuses shall be designed for special fault limiting.
- .2 Fuse sizes 30A - 350 Amp shall be bus low peak LPN-RK1 (or equivalent fuse providing equal or better fault limiting characteristics).
- .3 Fuse sizes 400 - 600 Amp shall be bus T-tron type JJN (or equivalent fuse providing equal or better fault limiting characteristics).

**.14 Equipment Identification**

- .1 Nameplates:
  - .1 White plate, black letters, size 7.
  - .2 Complete switchgear labelled: "[120] [208] [600] V".
  - .3 Main cubicle labelled: "Main Breaker" or "Main Switch".
  - .4 Branch disconnects labelled: "Feeder Panel \_\_\_\_"