

PART 1 - General

1.1 SECTION INCLUDES

- .1 Materials for moulded-case circuit breakers, circuit breakers, and ground-fault circuit-interrupters.

1.2 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 26 05 01 - Common Work Results - For Electrical.
- .3 Section 26 28 18 - Ground Fault Equipment Protection.
- .4 Section 26 24 17 - Panelboard Breaker Type.

1.3 REFERENCES

- .1 Canadian Standards Association (CSA International).
 - .1 CSA C22.2 No. 5-09, Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures (Tri-national standard with UL 489, and NMJ-J-266-ANCE-2010).

1.4 SUBMITTALS

- .1 Submit product data in accordance with Section 01 33 00 - Submittal Procedures.

1.5 WASTE MANAGEMENT AND DISPOSAL

- .1 Collect and separate plastic, paper packaging and corrugated cardboard in accordance with Waste Management Plan.
- .2 Fold up metal banding, flatten and place in designated area for recycling.

PART 2 - Products

2.1 BREAKERS GENERAL

- .1 Moulded-case circuit breakers, Circuit breakers, and Ground-fault circuit-interrupters: to CSA C22.2 No. 5
- .2 Bolt-on moulded case circuit breaker: quick- make, quick-break type, for manual and automatic operation having de-ionizing arc chambers, be trip free of operating handles on overloads with a definite indication when tripping has taken place, all for manual and automatic operation with temperature compensation for 40°C ambient.

- .3 Plug-in moulded case circuit breakers: quick- make, quick-break type, for manual and automatic operation with temperature compensation for 40 degrees C ambient.
- .4 Common-trip breakers: with single handle for multi-pole applications; tie handles will not be acceptable
- .5 Magnetic instantaneous trip elements in circuit breakers to operate only when value of current reaches setting.
 - .1 Trip settings on breakers with adjustable trips to range from 3-8 times current rating.
- .6 Circuit breakers with interchangeable trips as indicated.
- .7 Circuit breakers to have minimum 10000 A symmetrical RMS interrupting capacity rating or as indicated.

2.2 THERMAL MAGNETIC BREAKERS

- .1 Moulded case circuit breaker to operate automatically by means of thermal and magnetic tripping devices to provide inverse time current tripping and instantaneous tripping for short circuit protection.

2.3 MOTOR CIRCUIT PROTECTORS (MCP)

- .1 Moulded case circuit breaker to operate automatically by means of solid state tripping devices to provide instantaneous tripping for short circuit protection.
- .2 MCP tripping range to allow for starting motors direct-on-line. Adjustable range from 700% to 1700% of motor full load amps.

2.4 SOLID STATE TRIP BREAKERS

- .1 Moulded case circuit breaker to operate by means of solid-state trip unit with associated current monitors and self-powered shunt trip to provide inverse time current trip under overload condition, and long time, short time, instantaneous tripping for phase, ground fault short circuit protection.
- .2 Solid state trip units shall have independently adjustable long time pickup, long time delay, short time pickup, short time delay, instantaneous trip, ground fault pickup, and ground fault delay.

2.5 OPTIONAL FEATURES

- .1 Include:
 - .1 Shunt trip.
 - .2 On-off locking device.
 - .3 Handle mechanism to be supplied on all breakers 225amps and greater.
 - .4 Under-voltage release.
 - .5 Solid state trip unit.

2.6 MANUFACTURERS

- .1 All circuit breakers shall be from the same manufacturers as the panelboard.

PART 3 - Execution

3.1 INSTALLATION

- .1 Circuit breakers shall be securely mounted in panelboards and tightened down to the bussing as per the manufacturer's recommended torque levels.
- .2 Install breakers in quantities as indicated.
- .3 Supply and install blank sections in panelboards for all unused breaker spaces.
- .4 Set trip units as per the fault and coordination study described in 26 05 01 Common Work Results for Electrical.

END OF SECTION