

Sentron[®] Molded Case Circuit Breakers

Guide Form Specifications

General Specifications

Siemens molded case circuit breakers shall be provided for the protection of all electrical circuits. Other makes of molded case circuit breakers will not be accepted until approved by this office.

All circuit breakers shall be listed by Underwriters' Laboratories, Inc., conform to applicable requirements of NEMA Standard Publication No. AB1 and meet appropriate classifications of Federal Specifications W C 37511/Gen.

All circuit breakers shall have a quick-make, quick-break over center toggle-type mechanism and the handle mechanism shall be trip-free to prevent holding contacts closed against a short circuit or sustained overload. All circuit breaker handles shall assume a position between "ON" and "OFF" when tripped automatically. Multi-pole circuit breakers shall be common-trip such that an overload or short circuit on any one pole will result in all poles opening simultaneously. Arc extinction is to be accomplished by magnetic arc chutes. All ratings are to be clearly visible.

Choose either thermal magnetic or solid state trip specifications

Thermal Magnetic Trip Specification

Automatic operation of all circuit breakers shall be obtained by means of thermal-magnetic tripping devices located in each pole providing inverse time delay and instantaneous circuit protection. Circuit breakers shall be calibrated to carry 100% rated current in an ambient of 40°C. Circuit breakers shall be ambient compensating in that, as the ambient temperature increases over 40°C, the circuit breaker automatically derates itself so as to better protect its associated conductor. The instantaneous magnetic trip shall be adjustable and accessible from the front of all circuit breakers on frame sizes 250A and above.

Solid State Trip Specification

Solid State sensing shall measure true RMS current with capability to measure through to the 21st harmonic. Automatic operation of all circuit breaker frames 400A and larger shall be obtained by means of solid state tripping elements providing inverse time delay and (instantaneous) and/or (short-time delay) circuit protection. Continuous current rating shall be adjustable from 20% to 100% of trip unit rating. Long-time delay and instantaneous trip shall be adjustable. The optional short-time pick-up trip shall have adjustable pick-up settings and three fixed times and one I²t ramp. Circuit breaker frames 400A and larger and where indicated on the drawings shall be 100% equipment rated.

Integral Ground Fault Option

Main and feeder circuit breakers, as indicated on the drawings shall be provided with integral ground fault protection. Ground fault pick-up shall be adjustable from 20% to 70% of circuit breaker maximum continuous current rating, but in no case greater than 1200A. Ground fault time delay shall be adjustable with three I²t ramps.

Ammeter / Trip Indicator (Optional)

Solid state trip breakers shall be furnished with combination ammeter/trip indicator units that can simultaneously display three phase currents, and retain and display date, time and type (overload, short circuit or ground fault) of trip for the most recent 5 trip events.

Current Limiting Specifications (Optional)

Where indicated on the drawings, and in the panelboard and switchboard schedules, Siemens current limiting circuit breakers are to be furnished. Current limiting circuit breakers shall limit the let-through I²t to a value less than the I²t of one-half cycle wave of the symmetrical prospective current without any fusible elements when operating within its current range.

Instantaneous Only Trip Specifications (Optional)

Where indicated on the drawings and in the combination motor starter/motor control schedule, furnish instantaneous magnetic trip only circuit breakers for motor short circuit protection. The magnetic trips shall be adjustable from the front of all these circuit breakers.

The interrupting rating of the circuit breakers shall be as indicated in the specifications, shown on the drawings in the panelboard/switchboard schedules; or as shown on the single line drawing. The interrupting rating of the circuit breakers shall be at least equal to the available short circuit current at the line terminals of the circuit breaker and correspond to the UL listed integrated short circuit current rating specified for the panelboards and switchboards.

Series Connected Combination Specifications (Optional)

Where protective devices are applied in series combination, such that the prospective available fault current exceeds the interrupting rating (AIR) of the downstream protective devices, such combinations shall be UL recognized combinations. All electrical equipment using these UL recognized circuit breaker combinations shall be clearly marked in accordance with NEC Section 240-83(c).