

Data Bulletin

Model 6 Arc-Rated Motor Control Centers

Ratings and Certification

Class 8998

Introduction

This document contains ratings information and testing certification for Square D™ brand Model 6 Arc-Rated Motor Control Centers, manufactured by Schneider Electric.

Ratings

- 65,000 Amperes symmetrical, maximum available short circuit current
- Maximum: 600 Volts
- Arc duration: 100 milliseconds (maximum)
- Type 2A accessibility (protection on front, rear, and sides)

Main overcurrent protective device (OCPD) must meet these requirements:

- Approved **circuit breakers** that can be used as the upstream OCPD:
 - 15–150 A, PowerPact™ H-frame circuit breakers (manufactured by Schneider Electric)
 - 175–250 A, PowerPact J-frame circuit breakers (manufactured by Schneider Electric)
 - 300–600 A, PowerPact L-frame circuit breakers equipped with Micrologic™ trip units (manufactured by Schneider Electric)
 - 700–1200 A, PowerPact PJ- or PL-frame circuit breakers equipped with Micrologic trip units (manufactured by Schneider Electric)
 - 1200–2500 A, PowerPact R-frame circuit breakers equipped with Micrologic trip units (manufactured by Schneider Electric)
 - 800–1200 A, Masterpact™ NT circuit breakers equipped with Micrologic trip units (manufactured by Schneider Electric)
 - 1600–2500 A, Masterpact NW circuit breakers equipped with Micrologic trip units (manufactured by Schneider Electric)
- Approved **fuses** that can be used as the upstream OCPD:
 - 15–600 A, UL Listed, Class RK1 from any manufacturer
 - 15–600 A, UL Listed, Class RK5 from any manufacturer
 - 15–600 A, UL Listed, Class J from any manufacturer
 - 700–2500 A, UL Listed, Class L from any manufacturer

Testing Certification

UL Verification Services—Witnessed and Validated Testing

- All internal arc testing was witnessed by UL Verification Services
- Model 6 Arc-Rated construction is UL Listed 845 and CSA Certified 22.2 no. 245-05

ANSI/IEEE C37.20.7 Testing Requirements

The following criteria was used to assess the equipment for the arc rating. The equipment was required to meet all of the criteria to qualify as an Arc-Rated Motor Control Center.

Every unit tested was compliant with ALL of these criteria.

- **Criterion 1:** That properly latched or secured doors, covers, and so on, do not open. Bowing or other distortion is permitted provided no part comes as far as the position of the indicator mounting racks or walls (whichever is closest) on any assessed surface.
- **Criterion 2:** No fragmentation of the enclosure occurs within the time specified for the test.
- **Criterion 3:** Assessment of burn-through:

It is assumed that any opening in the switchgear caused by direct contact with an arc will also ignite an indicator mounted outside of the switchgear at that same point. Since it is not possible to cover the entire area under assessment with indicators, any opening in the area under assessment that results from direct contact with an arc is considered cause for failure. Openings above the indicator mounting rack height (2 m) that do not cause ignition of the horizontally mounted indicators are ignored.

- Accessibility Type 1: That arcing does not cause holes in the freely accessible front of the enclosure.
- Accessibility Type 2: That arcing does not cause holes in the freely accessible front, sides, and rear of the enclosure.

- **Criterion 4:** That no indicators ignite as a result of escaping gases. Indicators ignited as a result of the burning of paint or labels, glowing particles, and so on, are excluded from this assessment. High-speed movies or video may be used to evaluate the cause of indicator ignition. Holes in horizontally-mounted indicators caused by particles that do not ignite the indicator are ignored.
- **Criterion 5:** That all the grounding connections remain effective.

Product Tested

The Model 6 Arc Rated Motor Control Center product was tested per the ANSI C37.20.7 guidelines with the following enclosure features:

- UL 50E Type 1, 12, and 3R
- Exhaust type
 - Roof flaps
 - Plenum
 - Type 3R Drip Hood
- Pull box
- Control stations, IR windows, external reset buttons, and metering displays
- Installed position
 - Minimum of 28.5 inches of clearance above the venting means located at the top of the LV MCC
 - With an aisle around the enclosure (front, rear, and sides). No additional aisle clearances beyond standard NEC requirements.
 - Mounted in a corner (0.5 inch clearance required for enclosure hardware for back and sides)

An internal arc was initiated in the following compartments in the Model 6 Arc Rated Motor Control Center. Multiple tests were performed in each compartment type to cover the variations of product offered.

- Horizontal bus
 - Copper and Aluminum materials
 - Insulated and un-insulated versions
 - Largest and smallest section footprints
- Vertical bus
 - Copper material
- Motor control units
 - Arc initiator placed on line side of disconnect
 - NEMA and IEC Contactors
 - Power conversion units
- Main and feeder units
 - Arc initiator placed on line side of disconnect
 - Powerpact circuit breakers
 - Main lug only
 - Panelboards

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