

Model 6 Arc Resistant Motor Control Center

Enhanced arc flash solutions



Make the most of your energySM

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Electric[™]





The consequences of an arc flash

While the need for a higher level of performance from electrical control and distribution equipment is constant, it is also critical for equipment to provide an advanced level of arc flash protection and reduction of downtime.

The outcome of an arc flash event, caused by uncontrolled energy moving between phases, can have serious consequences such as personnel injury, damaged equipment, downtime, and financial losses to name just a few.

The industry is recognizing the significance of arc flash safety and is moving toward arc resistant solutions.

With over 100 years of experience and a commitment to innovation, Schneider Electric has developed a full line of arc resistant solutions to help you create a safe work environment. Our solutions not only enhance the reliability of your electrical distribution system, but also help ensure its safe operation.



5 – 10

Five to ten arc flash explosions occur in electrical equipment every day in the United States, according to statistics compiled by CapSchell, Inc., a Chicago-based research and consulting firm that specializes in preventing workplace injuries and deaths.

Model 6 Arc Resistant Motor Control Center innovative features

Enhanced venting unit shelf

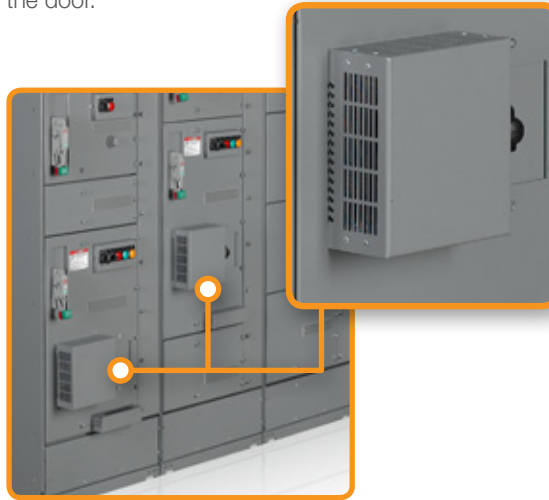
Unit shelf vents direct the arc fault energy between units and into the arc chimney at the rear of the structure. The energy is then channeled out of the top of the structure through the roof flaps. Sealing flanges added to the shelf and unit bottom plate create a physical barrier, preventing the arc energy from escaping through the door. Additional arc mitigation features were designed into the new unit shelf, such as the self-aligning guide rails, which ensure the shrouded bucket stabs connect properly to the vertical bus.



Variable frequency drive (VFD)

The innovative VFD filter box design allows for natural heat transfer while maintaining the versatility of the Model 6 Arc Resistant Motor Control Center (MCC).

The VFD design comes fitted with a RJ45 port to adjust the setting on the VFD without having to open the door.

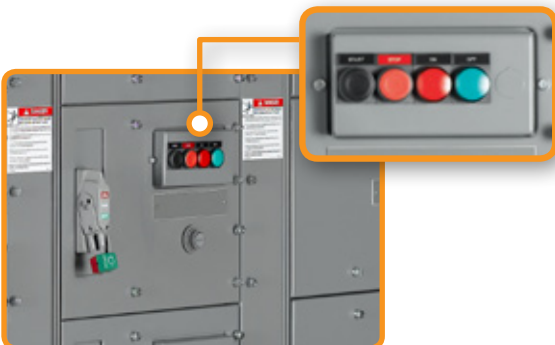


Robust design and metal control station plate (CSP)

Threaded door fasteners added to the top, bottom, and sides provide positive door seal and offer a more robust design. Additional hinges on all doors minimize deformation on units.

- > 12 gauge steel reduces deformation
- > Minimizes release of arc gas and plasma around the door

Metal CSP mounted to the door using nut and bolt construction instead of being hinged to the unit saddle prevents the CSP from separating from the door under pressure.



Arc gas management

Roof flaps and optional plenums

Engineered and designed to provide advanced pressure relief through the top of the structure, channeling dangerous energy away from personnel. The roof flaps blow open to relieve pressure as plasma is channeled up and out the top of the equipment.





Standard features

- > UL® witnessed in accordance with C37.20.7
- > UL 845
- > Certified to Canadian Standard CSA C22.2 No. 254-05
- > Industry-exclusive, full-depth vertical wireway
- > Arc Resistant Type 2A rating, protection of front, rear, and sides
- > NEMA® Types 1, 1A, 3R, and 12 enclosures with increased fasteners and 12 gauge steel
- > Roof flaps for release of arc flash gases
- > The VFD filter box design allows for natural heat transfer while maintaining versatility
- > Metal control station plates contain arc gases
- > Redesigned unit shelf with pressure relief flap
- > Manual vertical bus shutters
- > Incremented 3" vertical bus openings
- > Unit disconnect condition is made clear with 180° on/off disconnect handle arm; 90° circuit breaker trip position
- > Full threaded fasteners to ensure doors maintain positive seal during an arc flash
- > Horizontal bus located at the top of the structure for easy inspection and maintenance
- > Captive horizontal bus splice bars to prevent bar loss and make connecting sections quick and simple
- > Horizontal bus ampacity is 2000 A
- > Hook and hang guide rails provide a positive self-aligning method when installing and racking in the unit
- > Twin-handle cam mechanism assists with proper stab alignment and enables easy installation and removal of units
- > Sliding horizontal bus barriers provide easy access to horizontal bus for easy and quick preventative maintenance
- > Integrated track system eliminates need for panel removal for splicing or inspections
- > Shrouded power stabs are protected against damage during unit maintenance
- > Provides self-aligning system for installation of units and connection to the vertical bus

Optional features

- > Pull box (top hat)
- > Automatic vertical bus shutters
- > Infrared scanning windows
- > Energy Reduction Maintenance Switch
- > Epoxy-coated insulated horizontal bus bar design
- > High Resistance Ground Unit
- > Plenum

Leading the evolution of arc flash safety: setting a higher standard

The explosive and uncontrollable nature of an arc flash event can cause critical consequences including death, injury, and serious financial loss. Reducing the occurrence of these incidents, as well as containing the effects of an arc flash event once it occurs, is essential. Though there is not an arc resistant criterion set for MCCs, our arc resistant design is Underwriters Laboratories® (UL) witnessed in accordance to Institute of Electrical and Electronics Engineers (IEEE) C37.20.7 arc resistant standard for personnel protection. Schneider Electric is a part of several IEEE committees driving electrical safety, including the IEEE P1814 Standard for Electrical System Design to Improve Electrical Safety, IEEE P1584 around Arc Flash Calculation, and the IEEE P1683 for Enhanced Safety around MCCs. The IEEE C37.20.7 standard is also evolving to include provisions for performance testing for arc resistance of MCCs.

The Model 6 Arc Resistant MCC minimizes the potential for personnel injury by containing and redirecting the arc energy out from the top of the motor control center. The MCC offers the smallest footprint on the market while still providing superior strength and protection.

Improve the safety of your facility

Advance the level of safety at your facility with the Square D™ Model 6 Arc Resistant Motor Control Center. With proven reliability and low maintenance requirements, this industry-leading motor control center provides an additional level of arc flash prevention and protection. Our unique design is engineered to enhance worker safety and offers a combination of incident reduction options, arc-containing enclosure, and incident energy reduction features.

Benefits

- > Improves safety and reduces risk
- > Space-saving design, smallest footprint in the market
- > Engineered for superior strength
- > Requires less maintenance and inspections
- > Flexible bucket design and placement
- > Easily customizable and flexible for selective coordination
- > Flexible communication platform



Network communications aid in arc flash mitigation

CANopen, DeviceNet, Ethernet, Modbus, PROFIBUS offer arc flash avoidance and prevention:

A key feature of our intelligent motor control center (*i*MCC) solution is the integration of intelligent devices and device-level networks for control and automation that delivers enhanced remote monitoring and control capabilities.

Intelligent communication, monitoring, and configuration enable users to remotely monitor, configure, and troubleshoot the MCC. Flexible communication protocols minimize equipment exposure for personnel, reducing the chance of arc flash injury. Popular network protocols such as CANopen®, DeviceNet™, Ethernet, Modbus, and PROFIBUS communicate directly with every unit of the *i*MCC connecting centralized control and widely distributed I/O. The network of your choice creates a common thread for a variety of motor control equipment that not only improves control, but also allows for simple and easy installation and operation.

Networking allows for easy monitoring of critical data of each motor or load connected to the *i*MCC, enabling precise process control at all times. With this information, your staff can respond to potential problems proactively. Real-time access to information and records of last faults allow for simplified diagnostics and reduced downtime.

Using network control to consolidate all I/O communications significantly reduces the amount of tedious wiring that would normally be required for a hard-wired I/O MCC with similar functionality. The network cabling consists of a five-conductor cable and is constructed into the topology that is appropriate for your networked solution. Our industry-leading, full-depth wireway effectively separates network cabling from high-voltage cabling. Additionally, our standard wireway barrier isolates the communication cabling from the load cabling routed in the vertical wireway.

Experience the benefits of an *i*MCC network:

- Remote monitoring capability.
- Reduced downtime and system interwiring.
- Control to every bucket.
- Lower commissioning costs.
- Flexible configuration.
- Cabling system compliant to applicable standards. DeviceNet solution is Open DeviceNet Vendor Association (ODVA) certified.

TeSys™ T Motor Management Controllers

Delivering effective protection and control functions to minimize production shutdowns. Configurable functions include overload/underload, phase loss/imbalance, stall, jam, zero-sequence ground fault, restart delay timers, and PTC thermistor inputs. Completely open, TeSys T controllers can be incorporated in all industrial communication protocols available: CANopen, DeviceNet, Ethernet, Modbus, and PROFIBUS.



Network cable shown in front of barrier for clarity. Normally located behind grounded steel communication barrier.



Sample guide form specification for Model 6 Arc Resistant Motor Control Center



- 1 This section supplements Section 26.24.19.30 AR — Low Voltage Motor Control Center, unless otherwise noted.**
- 2 Comply with requirements of latest revision of ANSI/IEEE C37.20.7 — Guide for Testing Metal-Enclosed Switchgear Rated up to 38 kV for Internal Arcing Faults.**
- 3 Arc Resistant Electrical Ratings:**
 - a. Voltage: (208) (240) (380) (480) (600) Vac
 - b. Horizontal bus: (600) (800) (1200) (1600) (2000) amps
 - c. Maximum short-circuit current: 65 kAIR @ 600 Vac
 - d. Arc Resistant Type 2A
 - e. Arcing duration: 100 msec
- 4 Arc Resistant General Construction:**
 - a. NEMA Enclosures (1), (1A), (12), (3R)
 - b. 20" deep
 - c. Standard sections (20) (25)" wide
 - d. Relay sections (20) (25) (30) (35)" wide
 - e. Shrouded self-aligning bucket stabs



Take the next step, advance the level of safety at your facility with the Model 6 Arc Resistant Motor Control Center.

Whatever your requirements for motor control centers are, we have a solution to meet your needs. For assistance or more information, contact www.schneider-electric.com/us or call at **888-778-2733**.

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