Model 6 Intelligent Motor Control Centers

Smart solutions for your motor control, power quality, and energy management challenges

schneider-electric.us/mcc

Life Is On
An intelligent solution
Industry-leading components
These components provide the most comprehensive process control and energy management capabilities in the industry:

- **Tesys**™ T Motor Overloads
- **Altivar**™ Process and Machine Drives
- **Surgelogic**™ Surge Protection Devices
- **PowerPact**™ and **Masterpact**™ Circuit Breakers
- **PowerLogic**™ ION Meters
- **AccuSine**™ PCS+ Active Filters

Intelligence. We’re all striving for it. Achieving it requires information that answers the big questions and leads to smart choices.

The Square D™ Model 6 intelligent motor control center (iMCC) offers solutions to address your most difficult motor control, communications, automation, energy management and power quality questions.

- How can I remotely monitor and control my motor and non-motor loads?
- How can I improve my power factor and reduce harmonics?
- How can I better manage my energy?
- How can I reduce personnel exposure to the equipment?
- How do I eliminate the cost of field wiring hundreds of I/O points?
- Is there a way to streamline troubleshooting?
- How do I predict unscheduled downtime?
- Do procedures exist for proper wire labeling and documentation?
- Can I use an existing programmable logic controller (PLC) or factory network?

Factory wiring, popular network protocols, and extensive testing and documentation can make your MCC installation simple. Whether your application calls for hardwired I/O or a network solution, Square D™ Model 6 iMCCs can deliver the integrated package while reducing acquisition, installation, and commissioning costs.
Intelligent MCCs: delivering quality, innovation, and reliability.

Advanced Metering
A full line of industry leading power meters, circuit monitors, and ION Meters provides exceptional metering accuracy, communications options, analog/digital I/O, LCD remote displays, and more.

Surgelogic™ Surge Protective Devices
Enhances system protection and reduces equipment damage. The Model 6 offers 120 kA and 240 kA of protection in a six-inch space and up to 480 kA with multiple units.

Power Corrective System Active Harmonic Filters
Offers nearly complete cancellation of harmonic current to improve equipment operating life and system capacity. Available in 50 A and 100 A sizes.

PowerPact™ Electronic Motor Circuit Protector
Offers a simple solution, reliable start-ups, improved protection, and a complete adjustment range for motor protection needs. Available from size 1 up through size 6.
PowerPact Integrated communications and metering capabilities

Model 6 iMCCs feature integrated communications and metering capabilities, with PowerPact electronic circuit breakers and Micrologic electronic trip units. They offer a complete family of circuit breaker options with electronic trip units from 15 A to 2,500 A, allowing for a common trip unit for all circuit breakers in the cabinet.

As part of Schneider Electric’s EcoStruxure™ offer, Model 6 iMCCs provide direct access to energy management for all motor and non-motor loads.

Schneider Electric
TeSys T Motor Management Controller

Offers flexibility for selecting the amount of motor protection, control, and automation required. Fully integrated in the Square D Model 6 iMCC, utilizing the latest protection technology compatible with all existing industrial communication protocols.

Altivar Process

Outstanding performance and optimized utility and industrial processes are delivered by Altivar process drives, which enable optimal energy and asset management, real-time intelligence, and seamless integration into automation architectures.

Altivar 312 Machine Drives — Designed specifically for improved machine performance and availability. The Altivar machine drive is available up to 20 horsepower.

Altivar 600 Drives — For fluids management processing and energy savings

Altivar 900 Drives — For solids and mechanical movement, with exceptional motor control and connectivity capabilities. Applications up to 500 horsepower, with communications and expandable option cards at an affordable price.

18-Pulse Drives — With Altivar process drives and a phase-shifting transformer, 18-pulse drives offer harmonic mitigation and improved power quality in the smallest package in the industry.

Schneider Electric
Altistart Soft Starters

Altistart™ 48 Soft Start — Provides constant starting and stopping rates independent of motor loading and patented motor control algorithm Torque Control System (TCS).

Altistart 22 Soft Start — Compact sized mid-range soft start with integrated shorting contactor and communications with advanced motor protection capabilities.
The right information. At the right time.

The Square D brand Model 6 iMCC

Streamline troubleshooting and maximize uptime by incorporating “intelligent” components and cabling solutions into your motor control center. Armed with this information, your facility personnel will immediately experience these benefits:

- Increase system awareness and reduce operating and maintenance costs.
- Remotely monitor and control MCC loads, reducing the need for personnel to visit the MCC.
- View power quality and energy demand down to every MCC load.
- Improve predictive maintenance capabilities.
- Reduce troubleshooting and shutdown times through advanced diagnostics and data logging.

Integration into your local area network (LAN) is easy. Obtain the IP address, subnet mask, and default gateway from your network administrator and connect with a standard 100BA SE-TX twisted pair. It’s that simple. Authorized users who have access to your company intranet will have the freedom to check power system information whenever they need. And it does not stop within the walls of the facility. If external access is granted, you can check power system information as easily as you can check your email.

Communications

Advancements in system designs and the intelligence of diagnostics open a whole new world to communications beyond basic start and stop functions. Control automation trends dictate that more intelligence is distributed on the plant floor. The traditional operator interface now has more processing power and provides business information on the enterprise level.
Delivering a basic hardwired I/O solution.

Programmable logic controllers or distributed control systems (DCSs) are often part of a networked process. With the basic hardwired I/O solution, the iMCC is factory wired and labeled, tested, and documented, eliminating the time and cost associated with routing, terminating, and labeling of hundreds of wires during installation. Whether a stand-alone processor or several remote I/O drops, you can integrate your hardwired control scheme into our iMCCs.

Basic hardwired I/O delivers a classic approach to troubleshooting during a production breakdown. Electricians and technicians are familiar with this construction and can easily pinpoint problems without additional training.

**Flexibility**
Choose various distributed I/O configurations with unit mounting or full section mounting options.

**Efficiency**
Basic solutions allow automation integration capabilities without complexity. Electricians and technicians can easily perform their functions without additional training due to the familiar construction and equipment.

**Accuracy**
All connections and wire harnesses terminate to pullapart terminal blocks to reduce errors. Complete factory testing ensures meticulous quality control.

**Versatility**
You select the choice of CPU and I/O styles for the system that meets your needs. Options range from the high-end, full-function PLC designed for high-performance industrial applications, to the more compact mid-range device. The choice is yours.
A key feature of our iMCC solution is the integration of intelligent devices and device-level networks for control and automation that delivers improved performance. Popular network protocols communicate with every iMCC unit, including:

- Ethernet IP
- Modbus TCP
- CANopen®
- Modbus RTU
- DeviceNet
- PROFIBUS

Networking allows for easy monitoring of critical data of each motor or load connected to the iMCC, enabling for precise process control and system awareness at all times. Real-time access to records of last faults allows for simplified diagnostics, faster troubleshooting, and reduced downtime. Remote monitoring and control capability increases safety by reducing the time required by personnel to be near the equipment.

Using network control to consolidate all I/O communications significantly reduces the amount of tedious wiring that would normally be required for a hardwired I/O MCC with similar functionality. The iMCC provides industrial network cabling with standard tested, validated and documented network architectures. The wireway separates network cabling from high-voltage cabling, and the standard wireway barrier isolates the communication cabling from the load cabling routed in the vertical wireway.

- Experience the benefits of an iMCC network:
- Remote monitoring and control to every unit.
- Reduced downtime and system interwiring.
- Lower commissioning costs.
- Flexible and expandable configuration.
- Cabling system compliant to applicable standards. DeviceNet solution is Open DeviceNet Vendor Association (ODVA) certified.

Direct access to intelligent energy management

Gain visibility and valuable insight ready to go as soon as the equipment arrives on site. PSP is a simplified yet powerful remote or local access tool backed by the industries' best engineering support. For users who want to digitize – easily.

- Developed on Wonderware and designed for electrical equipment
- Remote or local HMI
- Factory integration with drawings and manuals
- Real-time data
- Predictive maintenance alerts
- Alarms and alerts delivered locally or through email or SMS
- Trending using Wonderware™ Historian
Power distribution is changing for the new electric world.

The world of electric power is changing. Smart energy is everywhere: smart generation, smart grids, smart homes, smart buildings, smart industries, efficient processes. Model 6 MCCs are inherently designed for the new electric world. With smart components and data-driven operations and connectivity, the Model 6 stands up to the challenge.

Power distribution is becoming increasingly regulated by standards.
- Energy savings and sustainability of our environment
- New building codes and regulations

Power distribution is becoming more connected yet at the same time is becoming more vulnerable.
- Full-time connectivity, anytime, any place
- Remote control over all appliances, and increased uptime
- Cyber security

Power distribution must become more efficient, with proactive and predictive maintenance in order to achieve energy savings.
- Real-time operations
- Smart analytics
- Closer control on maintenance costs

In all buildings, particularly hospitals, data centers, continuous process industries, etc.

50B
billion devices connected by 2020

100%
power uptime as standard

Buildings
40%
of energy consumption

+50%
energy consumption by 2050
The Square D Model 6 motor control center (MCC) with Altivar™ process delivers outstanding performance and helps optimize utility and industrial processes. It enables optimal energy and asset management, real-time intelligence, and seamless integration into automation architectures.

Features and Benefits

Flexibility
- Designed to be mounted at any location in the MCC
- Circuit breaker or fusible switch disconnect

Quality and Reliable Construction
- Rated for 100 kA short circuit and UL 845 Listed
- Compliant with North American and international standards, including UL, CSA, and NOM

Advanced Technology
- Advanced thermal management designs allow the drive to be installed in optimized unit sizes.
- Altivar process drives are designed with native Ethernet protocols and Modbus to make integration seamless. Other communications standards are available as options: CANopen™ and Modbus communication ports or add-on cards for Ethernet, DeviceNet™, PROFIBUS, and other protocols.
- Door-mounted keypad display with graphical load curves and energy dashboards. Detailed help screens can be customized for the application.

Ease of Installation and Maintenance
- Modular design is easy to install, maintain, and upgrade.
- Drive units are optimized for high density (up to six drives can be placed in one vertical MCC section).
- Unit design minimizes exposure to live parts during maintenance while plug-in units can be removed.
- Enhanced diagnostic functions, self-tests, and customizable help screens reduce downtime and repair time.

Fast Turnaround and Delivery
- Smart MCC drive units designs allow construction drawings to be completed quickly.
- Standard MCC drive units and options can ship in as little as three days.
- Global technical assistance and repair
Drive Options

Altivar Process Drives
Altivar process drives offer extensive flexibility in water and wastewater, mining, minerals and metals, oil and gas, and food and beverage applications.

The variable-speed Altivar process is more than just a drive. It’s a smart, connected product, delivering information to your fingertips so you can make business decisions on-the-go.

Optimize your business with Altivar process key services, including process and asset optimization, and energy management savings of up to 35%.

### Altivar 630 and 930 Drive HP Ratings

<table>
<thead>
<tr>
<th>Motor Voltage</th>
<th>Variable Torque Loads</th>
<th>Constant Torque Loads</th>
<th>Enclosure Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>480 Vac, 3-phase</td>
<td>1 to 500 hp</td>
<td>1 to 450 hp</td>
<td>NEMA 1 &amp; 1A</td>
</tr>
<tr>
<td>1 to 500 hp</td>
<td>1 to 450 hp</td>
<td>NEMA 12</td>
<td></td>
</tr>
<tr>
<td>Constant torque</td>
<td>1 to 100 hp</td>
<td>NEMA 3R</td>
<td></td>
</tr>
<tr>
<td>230 Vac, 3-phase</td>
<td>1 to 50 hp</td>
<td>1 to 40 hp</td>
<td>NEMA 1, 1A, &amp; 12</td>
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<tr>
<td>1-125 hp</td>
<td>1 to 20 hp</td>
<td>NEMA 3R</td>
<td></td>
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<tr>
<td>200 Vac, 3-phase</td>
<td>1 to 40 hp</td>
<td>1 to 40 hp</td>
<td>NEMA 1, 1A, &amp; 12</td>
</tr>
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<td>Constant torque</td>
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</tbody>
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**Altivar 630**
Ideal for fluid and gas applications, such as pumps and fans. Specific algorithms are included to optimize performance and provide process reliability.

**Altivar 930**
Ideal for solids and mechanical movement applications. The Altivar 930 is focused on maximum productivity, with exceptional motor control and connectivity capabilities.
Industry-leading innovation and proven performance in advanced motor controls with Model 6 iMCCs.

For More Information, go to: schneider-electric.us/mcc