In a typical configuration, a CENTERLINE MCC network segment controls up to 45 motors. An individual ControlLogix controller can control up to 10 MCC network segments, each at a 32mS RPI, without disturbing the Critical System Attributes (CSA). See page 2 for details about typical MCC configurations and CSA.

- Motor Demand (kW) - Trip/Snapshot Log
- Motor Power (kW) - Trip/Warning History
- Power Protection (kW) - Current Imbalance
- Thermal Overload - Ground Fault Current
- Slip Compensation - Ground Fault Current
- Sensorless Vector - Slip Compensation
- Vector Control with FORCE technology - Slip Compensation
- Torque Regulation - Slip Compensation
- Encoder or Encoderless Speed Control - Slip Compensation
- Permanent Magnet Motor Control

IntelliCENTER Software
IntelliCENTER Software provides significant reduction in troubleshooting time, allowing immediate issue identification, in many instances before equipment shuts down. Remote diagnostics reduces human interaction with the electrical equipment, improving safety for plant personnel. Early diagnostic and fast troubleshooting have significant, positive impact on overall system availability.

The EtherNet/IP Intelligent Motor Control (IMC) devices in each MCC section are connected to a Stratix 5700 switch located in the system. There is no need to extend a second network to a remote I/O location to access Controllers and HMI servers. Real-time control and information flow can be effectively managed throughout the manufacturing and IT enterprise.

S/MC Reduced Voltage Starters
S/MC Reduced Voltage Starters are implemented with Allen-Bradley Smart Motor Controllers (SMCs) which provide:
- Built-in Bypass/Run controller
- Built-in Electronic Motor Overload Protection
- CT on each phase
- Multiple Modes of Operation (motor acceleration ramps)

Reduced Voltage Starters
The E300 Full Voltage Starters include Allen-Bradley E300 which provide digital communications and enough I/O to control standard or reversing starters. The E300 provides enhanced motor protection including:
- Overload Protection
- Power Protection (kW)
- Power Factor Protection (PF)
- Undervoltage Detection
- Temperature Protection (°F)
- Motor Demand (kW)
- Motor Energy Consumption (kW)

PowerFlex Drives:
Variable speed control is implemented with Allen-Bradley PowerFlex drives. Different product families are available in the PowerFlex portfolio depending on the requirements of each application:
- Voltz/Hertz, Slip Compensation
- Vector Control with FORCE technology
- Torque Regulation
- Encoder or Encoderless Speed Control
- Permanent Magnet Motor Control

Variable speed control is implemented with Allen-Bradley PowerFlex drives. Different product families are available in the PowerFlex portfolio depending on the requirements of each application:
- Voltz/Hertz, Slip Compensation
- Vector Control with FORCE technology
- Torque Regulation
- Encoder or Encoderless Speed Control
- Permanent Magnet Motor Control.
**Operator-initiated control**

Operator-initiated actions are loaded into the controller and the feedback for the operator.

**Recovery**

The system is operational within 5 minutes of the restoration of a system element failure or loss.

**Alarm burst time**

A burst of 1000 alarms are timestamped within 3 seconds.

**Steady state alarm time**

Steady state alarms occurring at 20 per second are timestamped within 3 seconds.

**Display update**

The display updates control information within 1 second.

**Display callup (paint time)**

A noncached display is called up by the operator and ready for operator use within 2 seconds.

**Batch server: controller action time**

Batch status events display on the operator workstation within 1 second.

**Batch server: operator action time**

An operator batch command has been acted on by the controller in 1 second.

**Bill of Material**

**CENTERLINE Motor Control Center with IntelliCENTER Technology:**

2100: 10 vertical sections with approx. 4.5 units per section (45 units total, plus condition monitoring modules, bridge and power supply units)

2500: 6 columns with approx. 7.5 units per column (45 units total, plus condition monitoring modules, bridge and power supply units)

**Technology:**

**CENTERLINE 1500 Medium Motor Control Center with IntelliCENTER Technology:**

5 sections with one or two motor controller per section

**2500: 6 columns with approx. 7.5 units per column (45 units total, plus condition monitoring modules, bridge and power supply units)**

**Bill of Material**

**About this Configuration:**

Rockwell Automation's CENTERLINE family of MCCs provides a complete motor control solution for low and medium voltage systems. IntelliCENTER Technology allows users to maintain a globally consistent network architecture while selecting electrical equipment to meet local standards.

**About the Motor Control Center:**

**CENTERLINE Motor Control Centers with IntelliCENTER Technology**

**Reduced Installation and Start-up Cost**

Save up to 90% on wiring and installation time and material cost, while IntelliCENTER Technology’s pre-wired and factory-validated network reduces start-up time.

**Enhanced Personnel Safety**

Use network access and preconfigured software to configure and troubleshoot devices without opening enclosure doors. This reduces personnel exposure to hazardous energy levels and the resultant need to “suit up” for routine maintenance.

**Improved Management of Production Assets**

IntelliCENTER Software includes all MCC documentation, such as wiring diagrams, user manuals, spare parts list, and user-added documents. IntelliCENTER Software also includes advanced features like an event log and data trending that can help you see how your equipment is performing over time, so you can take action before the equipment fails.

**Improved Uptime**

IntelliCENTER Technology can help keep your facilities up and running with electronic documentation, remote diagnostics, predictive maintenance, and easy replacement of MCC units.

**New units can be added to the MCC and to the PLC program without shutting down the network scanner, providing the flexibility required for continuous processes where shutting down is not an option.**

**PowerFlex Drives**

The Allen-Bradley® PowerFlex family of drives offers a broad range of control modes to fit virtually any motor control requirement. With the combination of features, options and packaging for application versatility, to helping meet safety requirements, ease programming and configuration the PowerFlex family has a solution to meet your application demands.

When you configure your CENTERLINE Motor Control Centers with PowerFlex drives you’ll receive improved motor control performance and motor efficiency along with important information about your motors delivered to where it’s most valuable--all equating to greater overall production efficiency and real bottom-line savings.

**Most commonly used PowerFlex drives in CENTERLINE Motor Control Centers:**

- PowerFlex 520 Series
- PowerFlex 70 Series
- PowerFlex 700 Series
- PowerFlex 750 Series

**Note:**

- For sleeve bearing motors with non-contact eddy current probe sensor pairs, we recommend two XM-120 modules per motor or one XM-162 module.
- For sleeve bearing motors that use case mounted velocity output sensors or for rolling element/anti-friction bearing motors, we recommend one XM-120 module per motor. One XM-160 can support up to three motors using only case mounted sensors.