MNS® Digital Motor Control Center
M10x motor control and protection

ABB MNS motor control center (MCC) application is offering the full range of motor protection and monitoring through smart device family M10x. Beside motor control and protection it enables 24/7 monitoring and condition analysis of the electrical assembly and connected motors and loads.

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01 M10x motor controller and operator panel

ABB's MNS platform for low-voltage switchgear and motor control center has been evolving over the years. Since its inception and the launch of the first digital MCC over 30 years ago, the MNS design has focused on the fundamental principles of safety, reliability, modularity and scalability.

Offering
- Flexible MCC design using withdrawable, plug-in and fixed motor starter technologies makes it the right match to all motor control center applications
- Single front, back-to-back or duplex switchgear arrangement
- Smart motor control and protection device M10x covering motor starter and feeder solutions

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M10x benefits
- Coverage of full load ranges from 0.24A to 63A, up to 6300A with secondary current transformer
- State of the art motor protection and control
- Motor and motor starter condition monitoring
- Temperature measurement and load monitoring
- Integrated into ABB Ability™ Condition Monitoring for electrical systems (CMES) fully on-premises
- Alternative direct communication flexibility with Profibus DP, Modbus RTU and Modbus TCP
- Local operator panel option
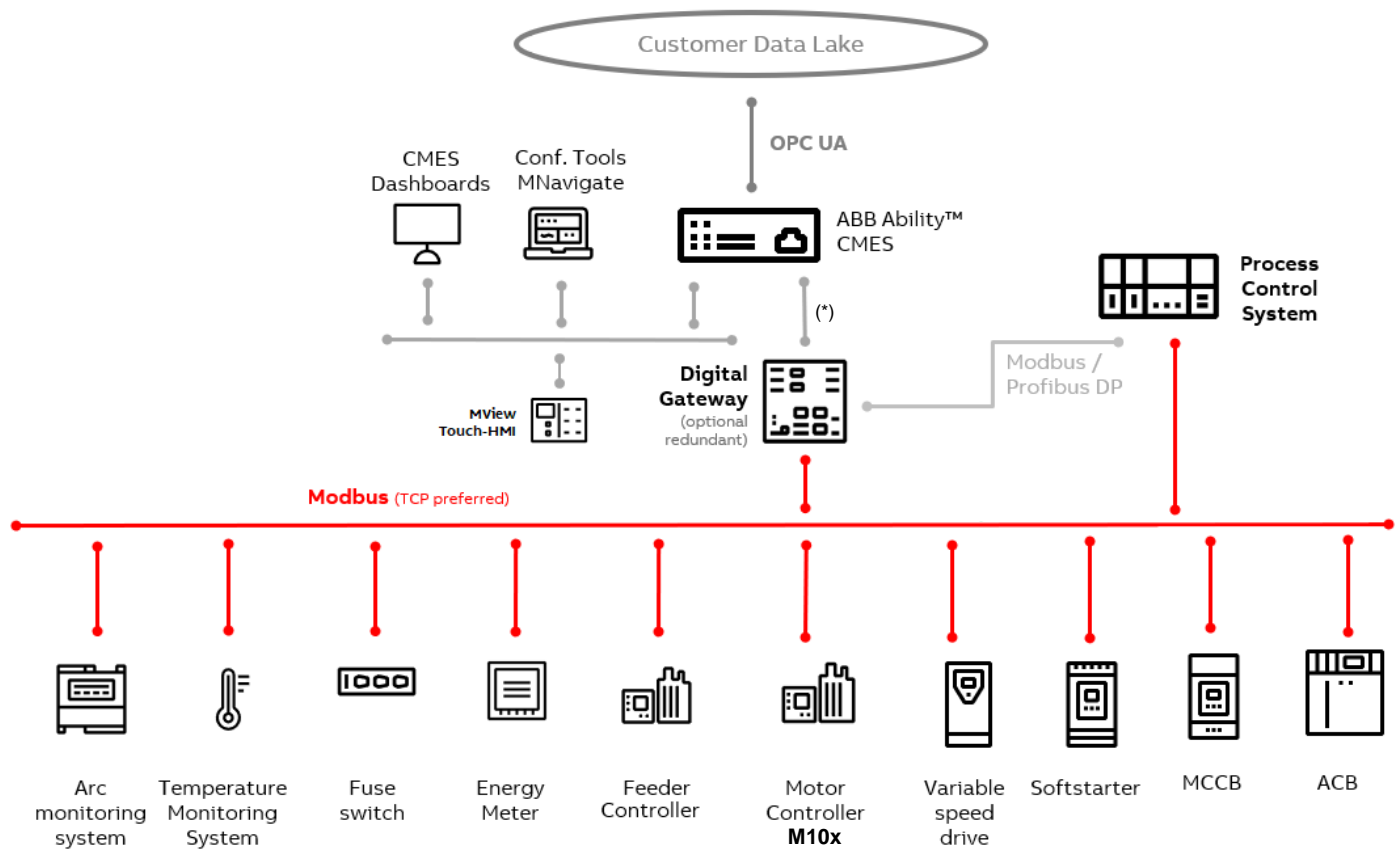
M10x-y product variants
- 1 — basic function (M101)
- 2 — advanced function (M102)
- M — Modbus RTU (M10x-M)
- P — Profibus (M10x-P)
- TCP — Modbus TCP (M10x-TCP)

ABB Ability™ CMES
MNS low-voltage motor control center with M10x is the solid foundation of the ABB Ability™ CMES, to continuously monitor and assess the condition of the MCC and connected motors.

Customer Data Lake

OPC UA

CMES Dashboards

Conf. Tools MNavigate

ABB Ability™ CMES

Process Control System

(*)

MView Touch-HMI

Digital Gateway (optional redundant)

Modbus / Profibus DP

Modbus (TCP preferred)

Arc monitoring system | Temperature Monitoring System | Fuse switch | Energy Meter | Feeder Controller | Motor Controller **M10x** | Variable speed drive | Softstarter | MCCB | ACB

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Digital Communication

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Note: the graphic above shows logical connection only, actual network configuration baced on selected protocol may differ

(*) Option to connect field devices directly to CMES Edge without using Digital Gateway

Customize

Scalable, modular and flexible platform

- Modular: Use of fixed, plug-in or withdrawable technology depending on your needs
- Easily exchange and upgrade of the components and devices
- Add new features to an existing installation with minimal effort
- Flexible, configurable MNS platform

Easy to connect

- Connection to DCS, SCADA and ABB Ability platform, non-intrusive to each other

Analyze

Data provided by M10x can be made available in ABB Ability™ CMES

- Data monitoring from commissioning throughout lifetime
- Analysis improves over time with more details collected
- Access via web browser anywhere on site or through OPC UA to other systems

Optimize

Efficient maintenance

- Shift from planned to condition-based maintenance
- Reduce reactive maintenance costs
- Plan ahead with condition reports
- Optimize operating costs and achieve savings of up to 30%

Energy management

- Better energy management
- Full transparency to prioritize investment and optimization steps

Continuous operation

- Avoid unplanned outages conduct maintenance where and when necessary

Economize

Lifecycle and performance management

- Easy replacement, less spare parts

Reduced infrastructure investment

- Ethernet infrastructure
- PLC free design, reducing infrastructure investment by up to 20%

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