

LOW VOLTAGE SYSTEMS

# MNS® Digital

## The switchgear that sees everything



ABB's MNS platform for low voltage switchgear has been evolving for over 45 years. Since its inception, MNS design has focused on the fundamental principles of safety, reliability, modularity and scalability. MNS Digital extends the proven system platform, with the latest technologies for data analytics and data communication providing switchgear ready for Industry 4.0.

MNS Digital changes the way switchgear is monitored, operated, and maintained. By using latest electrical devices for measurement, monitoring and diagnosis in any of the MNS platform solutions, MNS Digital is seamlessly integrated into the switchgear assembly.

ABB's Emax 2, Tmax XT circuit breaker, motor control and protection devices, softstarter and variable speed drives together with other sensors are connected to the on-site ABB Ability™ Condition Monitoring for electrical systems (CMES). Its data is collected and analyzed online 24/7 without interference with other operation or control.

Process control systems, required for motor control, are connected through standard communication protocols (Profibus and Profinet, Modbus RTU and Modbus TCP). Air circuit breaker supports the communication to electrical controls also via IEC 61850.

The local ABB Ability™ CMES system, installed as part of the switchgear assembly, allows secure access to data and data analysis on-site to optimize switchgear operation and minimize maintenance costs. MNS Digital is ready for cloud connectivity to ABB Ability™ Energy and Asset Manager. Alternatively, through OPC UA offering further connectivity to other systems.

### Benefits



#### Simplicity

- Reduction of switchgear wiring, replaced by bus connection
- No PLC required
- Easy implementation of last minute modification by software



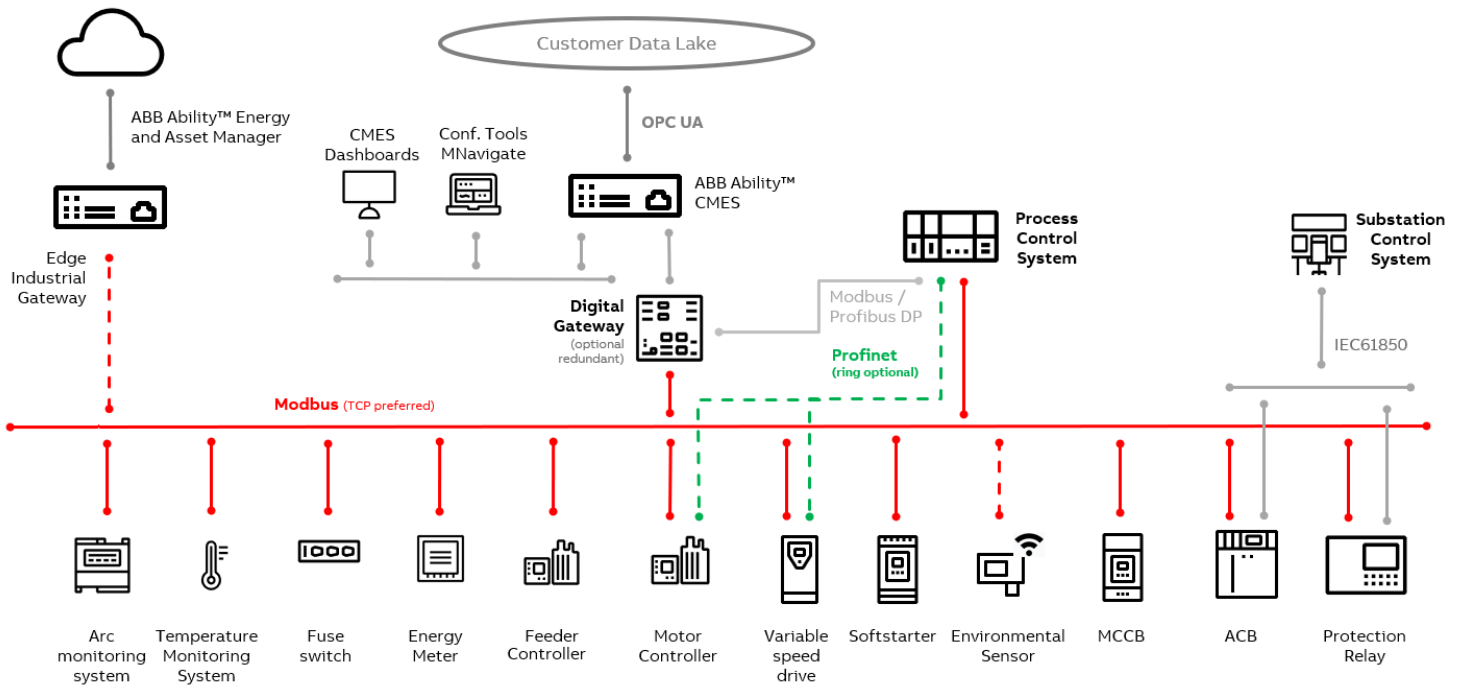
#### Safety

- Maintenance performed when needed ensuring safe switchgear operation and availability
- Option to integrate online temperature monitoring, arc fault detection devices



#### Flexibility

- Digital switchgear can be easily adapted and customized if requirements change.
- Easy upgrade of conventional feeders and switchgear without interventions on power parts like cables or busbars
- Possibility to utilize new functions in the cloud, without changing the equipment physically
- Supporting remote service and troubleshooting



MNS Digital communication

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



### 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 available throughout lifetime

- Data monitoring from commissioning throughout lifetime
- Analysis improves over time with more details collected

Availability of system and data

- Availability of critical process data
- Access your data even in the case of device failures



### Optimize

Efficient maintenance

- Shift from planned maintenance to condition-based
- 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
- Lower upgrading equipment cost

Reduced infrastructure investment

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

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