LOW VOLTAGE SYSTEMS

ABB Ability™ Condition Monitoring for electrical systems (CMES)

Monitoring and analyzing switchgear conditions continuously through the ABB Ability™ CMES solution ensures continuous switchgear operation with early detection of potential risks, reducing unnecessary switchgear maintenance and enables the move to predictive maintenance processes and reduces operational costs.

Monitor switchgear conditions such as temperature, current levels, energy consumption, warning levels, these are collected and stored for further analysis, coupled with real-time data they enable user to make right decision at right time.

Analyzing algorithms are implemented which consider multiple data and do not require human input make decisions i.e. whether a temperature increase is a critical situation or a normal situation due to increase load demand.

Predict maintenance by monitoring conditions but also counting repetitive activities of a period such as removing and inserting withdrawable functional units in a switchgear assembly and suggest on the next maintenance cycle.

Optimize unusual levels of energy consumption, even of smaller loads, influence total plant operational costs. Identifying such situations to enable process optimization at a new scale.

The ABB Ability™ CMES is the innovative on premise-based switchgear condition monitoring platform that enables switchgear operators and plant maintenance managers to monitor and manage electrical distribution systems, motor control center and connected loads via mobile device or computer in real time to prevent, predict conditions and monitor energy consumption - anytime from anywhere optimizing operational costs. Installed as integral part of the switchgear assembly it monitors the complete lifetime of a switchgear from FAT in the manufacturers' assembly location, through commissioning including start-up phase and operational life.

Connect to upper-level maintenance management systems, SCADA or other monitoring solutions and cloud-based applications using OPC-UA option.

Informs about condition changes through email notification option.

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Switchgear condition and health index summary
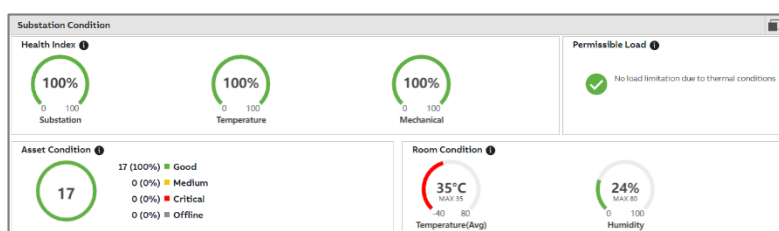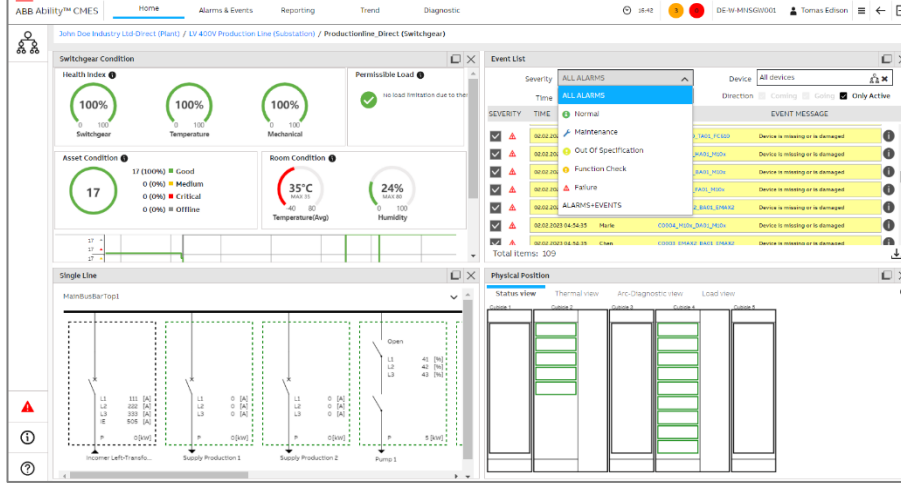
Summary dashboards
Substation dashboard (multiple or single switchgear) and health index summary display to easy identify total status. Color codes highlight severity enabling user to select required information and action fast.

Alarm and Event list with automatically filtered lists based on selected switchgear level. Includes detailed description and knowledge base for each item to provide user guidance.

Single Line view contains well known switchgear representation with life data and color codes for status. Device selection by simply selecting the electrical device on screen.

Panel and Thermal view provide a traffic light visualization of device status, temperatures, and other conditions in switchgear assembly.

Device dashboard and widgets
Selected from any overview dashboard and available for each connected electrical device in the switchgear, the sensors or other switchgear component. The dashboard provides an easy access to health status, condition, and data analysis results. Contains specific widgets for data, trends, filtered alarm and events as well as device specific and predictive maintenance information. The CMES provides full integrated and user configurable trending support of all the data within the system without the need for additional software.

Connected devices
- Air circuit breaker Emax 2 with Ekip Touch/ HiTouch or Ekip Up
- Load feeder modules with power meter, molded case circuit breaker Tmax XT or fuse etc.
- Motor starter modules with motor control and protection device, contactor, and sensors etc.
- Softstarter and variable speed drives
- Protection devices i.e. REF615
- Temperature and ambient condition sensors in switchgear and modules
- Arc monitoring solution using ArcGuard TVOC2

User reports
Condition reports enable a full switchgear healthcare summary view at few clicks. Daily or monthly reports contain summary and detail view of switchgear sections, installed module as and devices including statistics and data analytics.

Energy reports provide the unique option to monitor energy consumption on individual device level at low-voltage switchgear. The values are analyzed and automatically compared to the previous energy report which provides an easy-to-read difference report.

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