

# SwitchgearMD™

## Asset health monitoring



SwitchgearMD™ offers monitoring and diagnostic solutions for low and medium voltage switchgear and motor control centers. With 24x7 data availability and remote monitoring capability, SwitchgearMD adds value through reduced total cost of ownership and enhanced personnel safety.

Asset health monitoring of critical assets within the electrical distribution network provides end users with peace of mind that the equipment will perform as required, when required. It is also used to proactively maintain equipment only when needed, reducing maintenance costs and operator exposure to energized equipment.

SwitchgearMD switchgear temperature and partial discharge monitoring is available for low voltage and medium voltage switchgear and Motor Control Center (MCC) products with the following sensor packages:

- Wireless solution for temperature and PD monitoring
  - SAW sensors
  - UHF measurements
- Wired solution for temperature monitoring
  - IR sensors
  - Thermistor sensors for LV MCCs
- Wired solution for humidity monitoring

SwitchgearMD is available for new switchgear, as well as for retrofit applications.

### IR: Infrared temperature sensing system

- IR sensors have a non-conductive plastic body
- Sensors do not require external power
- Sensors provide rise over ambient ( $\Delta T$ ) reading
- Sensors have lifetime calibration
- Sensors are UL recognized and CE certified

### SAW: Surface Acoustic Wave temperature sensing system

- SAW temperature sensors are wireless passive components directly coupled to the conductors
- No battery or power source required
- Equipped with quartz (piezoelectric) material that contracts/expands when subjected to change in temperature

### PD monitoring

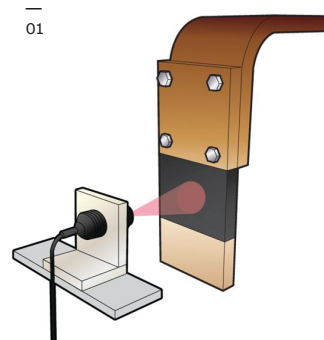
- UHF (300 MHz to 3 GHz) measurements
- Detects extent of PD activity above a set threshold

01 Infrared (IR) sensor

02 Surface Acoustic Wave (SAW) sensor

03 Location of SAW/IR sensors and data collection equipment in MV metal-clad switch-gear compartments

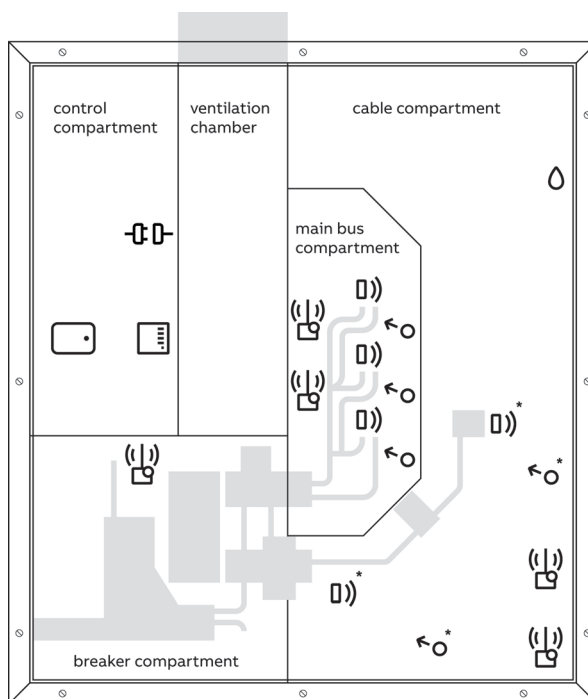
Connection to SCADA and other control systems is possible via Modbus communication protocol for alarms and data compilation. Using internet of things, services and people (IoTSP) infrastructure, sensor data can be converted into actionable intelligence. This enables maintenance personnel to safely identify and repair problems before equipment failures, reducing outage times and enhancing reliability.



02



03



01 SAW sensors (placed under the insulating boot)

02 IR sensors (pointed to bus area just outside the insulating boot covering the bus joint). Possible locations.

03 Humidity sensor

04 Antenna for SAW sensors and PD detection (two antennas per compartment needed; one if only PD detection needed, e.g., breaker compartment)

05 Traneiver/datacard

06 Power supply unit

07 Local HMI

\* One sensor per phase

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