

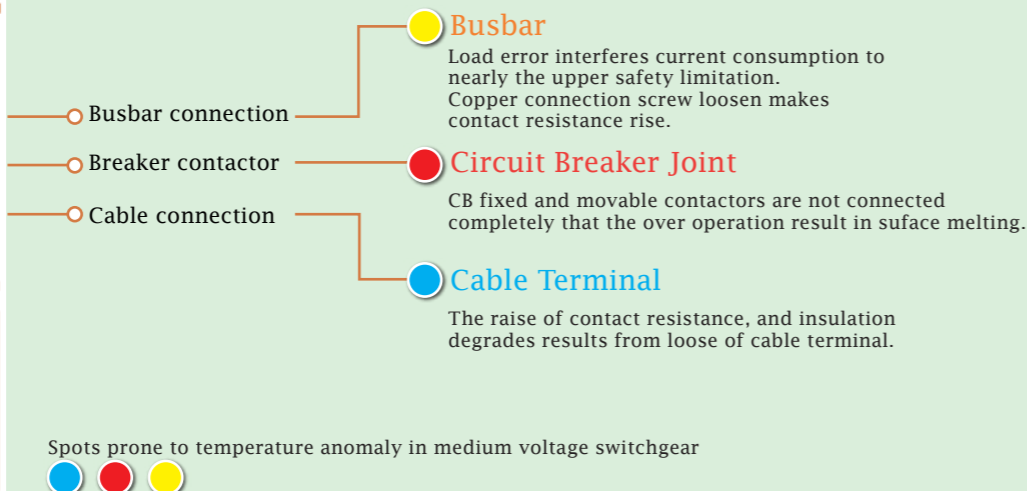
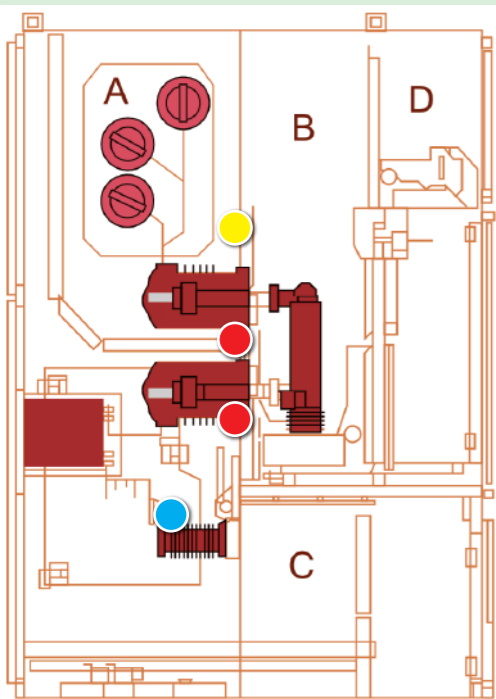
Switchgear Internal Temperature Rise Problem

Solution of switchgear Electricity Safety

Switchgear plays the role as mankind, when body gets fever (heat-up), the brain (detector) will instruct body (switchgear) to take a break (power-off), and go to see a doctor (maintenance engineering company) in time.

A quarter of switchgear failure occurrences result from connectors loosen or temperature rising. On average, switchgear insulating endurance reduces half in every 10°C increase.

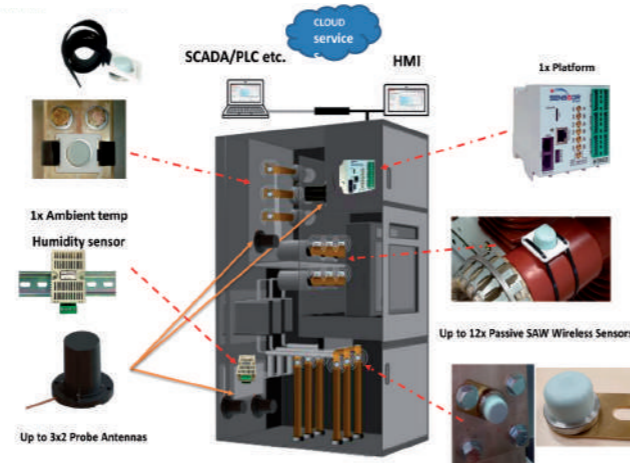
Reference from ABB-Switchgear temperature monitoring Early hot spot detection enabling condition-based maintenance



Temperature and humidity online monitoring

Wireless thermal monitoring

Wireless thermal monitoring device, composed of wireless sensors, antenna and reader adopts Surface Acoustic Wave (SAW) to sense temperature variation. Indoor arrangement in the medium voltage switchgear, it features in continuous circuit breaker temperature online monitoring.



Battery-free

Wireless transmission

Sensitive temp. sensing

Permanently maintenance-free

Partial discharge detecting

Insulating protection unrequired



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iPanel Cloud Management System

- Remote Control
- 24/7 real-time monitoring
- Alarm and message
- Data uploading on cloud sever

MONITORING



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iPanel Cloud Management System

iPanel, with IoT structure, user-friendly interface, 24/7 through cloud management system to monitor the status of power supply with a safer way; the status to monitor includes voltage, current, effective power, temperature, besides the functions of remote control, real time monitoring event alarm, data storage ,improves greatly the quality, reliability and safety of power supply system. With intelligent self-diagnosis and adjusting function for cost saving in labor and maintenance, Horng Yu devotes to build a smarter and safer monitoring system and keeps up to the world trend of net zero carbon emissions with the principle of environmental sustainability.

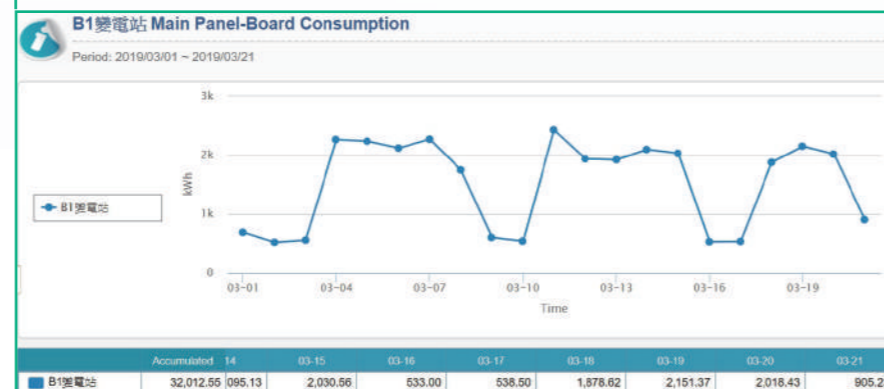
Function

● Substation management board

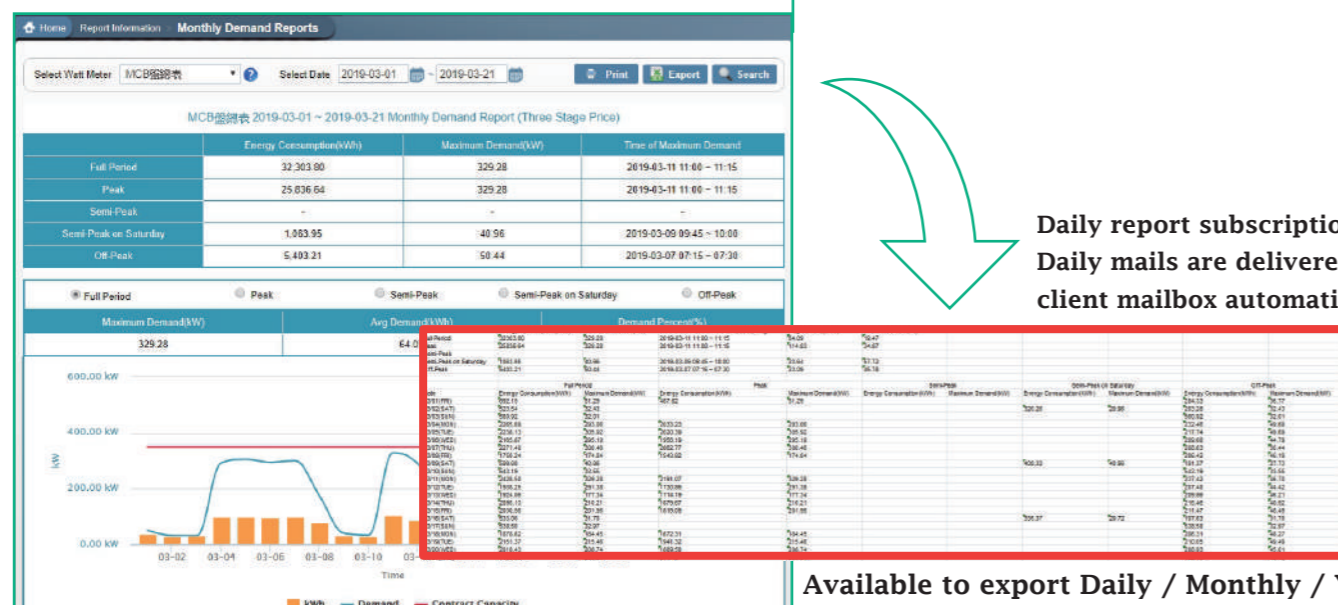
A. Power consumption statistics



B. Power consumption chart



C. Demand analysis



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Ambient temperature & humidity of substation monitoring

Humidity Sensor Reader (HSR) measures ambient temperature and relative humidity of substation. Value measured by HSR is adopted as an estimation on insulation degradation in the switchgear. It is equipped with RS-485 Modbus remote control.



Temperature & humidity monitoring on switchgear compartment(Standard IEC 62271-200)

Equipped with 3-circuit sensors which can monitor and control temperature and humidity of three compartments (CB room 、Cable room 、Busbar room) at the same time. Additionally, it can automatically heat up, dehumidify, and cool down inside of the switchgear to prevent accidents result from moisture, creepage, and flashover. Thus, safety in power system is increased.

