

# Safe Digital

## Intelligent solution for secondary switchgear



ABB's medium-voltage secondary switchgear platform Safe serial RMU is well established around the world. The design is based on the fundamental principle of safety, reliability, modularity and scalability. With the increasing demand of digital transformation, the platform is evolving further with Safe Digital including latest digital technologies, communication and data analytic.

Safe Digital takes full advantage of new technologies such as temperature sensor and gas pressure sensor. Online condition monitoring and diagnostics provide a new way of working with the electric system.

The solution is available for the latest SafeRing/ SafePlus family with wide coverage of rating:

- SafeRing/SafePlus 12/24 kV
- SafeRing/SafePlus 36/40.5 kV
- SafeRing/SafePlus Air 12 kV

The condition monitoring system allows secure access to condition and operation data. Data analysis on-site ensure optimal switchgear operation and minimized maintenance costs.

Safe Digital is ready for cloud connectivity to ABB Ability™, offering further data analysis and predictive maintenance.



### Higher reliability and fewer fault causing service downtime

Monitoring and diagnosis the real-time status of the temperature and gas pressure, preventing potential risks and avoids unexpected power outages.



### Higher safety using digital

Sensor technology for current and voltage measurement are safe and passive which ensures safer working environment for personnel.



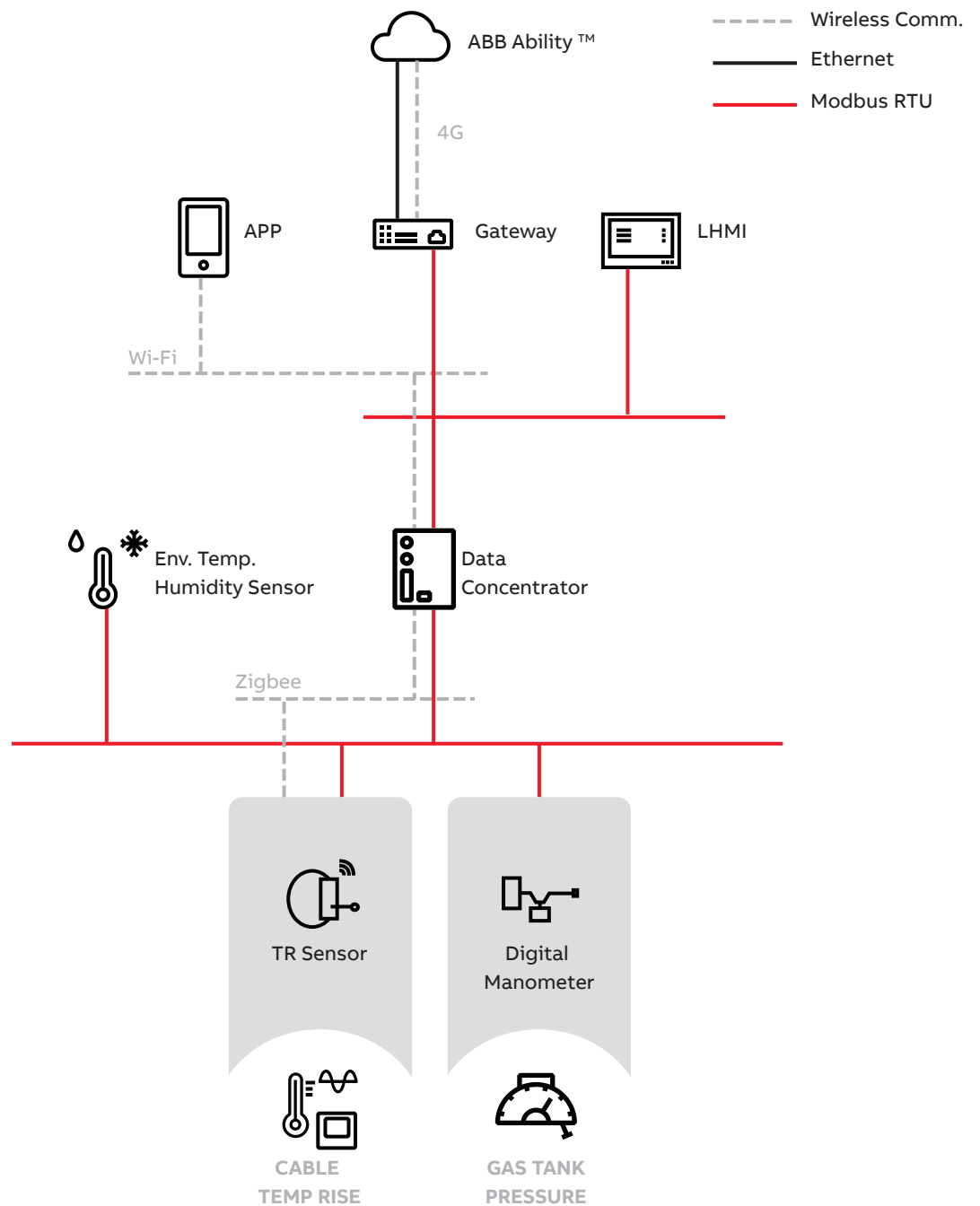
### Lower operation and maintenance costs

Achieve a leap forward from passive maintenance to active predictive maintenance, make operation and maintenance easier.



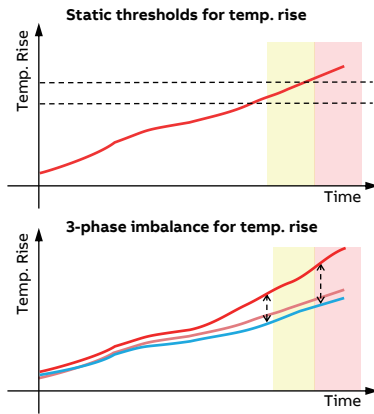
### Long life cycle of secondary switchgear

Through the monitoring and diagnosis algorithms, the service life-time of secondary switchgear can be extended and guarantee customer's benefits.



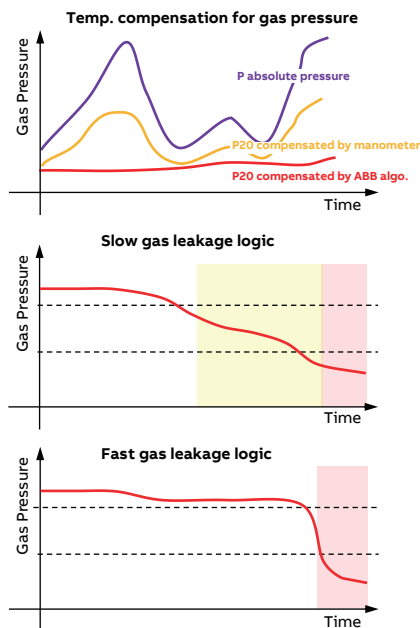
**Note:**

- \* The picture shows various options, while actual implementation depends on the selected features.
- \* The APP only works on site connecting to the WIFI of the data concentrator.



### Cable temperature rise monitoring

- Temperature rise value is calculated with environment temperature in real-time which is more sensible for condition monitoring.
- Static temperature rise algorithm is used for basic condition monitoring.
- Three-phase temperature imbalance algorithm can provide more reliable fault detection.
- Self-powered temperature sensor, maintenance-free, IP 54.



### Gas pressure monitoring

- Real-time gas status monitoring.
- Early warning and alarm for abnormal gas leakage and low gas pressure fault.
- Temperature calibration algorithm accurately.
- Reflects the P20 state of the insulating gas, fully adapting to different environment.
- Effective on-line monitoring and management of insulating gas density, pressure and leakage rate.



### Local HMI Display

Real-time display for all condition monitoring parameters and health status including temperature rise monitoring, gas pressure monitoring, mechanical characteristics monitoring and partial discharge monitoring.

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