

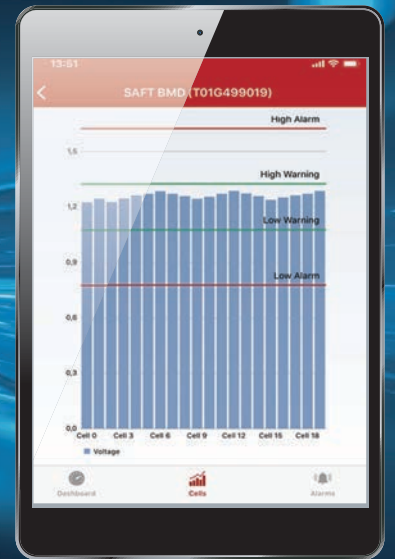
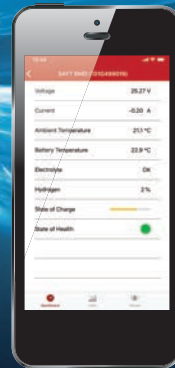
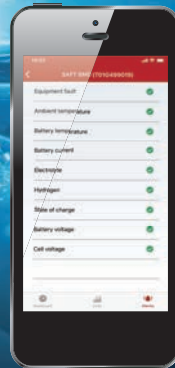
SAFT

a company of



Intelli-Connect™

Advanced remote battery monitoring solution
for nickel battery technology



INDUSTRIES



UTILITIES



OIL & GAS



SIGNALING



saft
voluntary
compliance

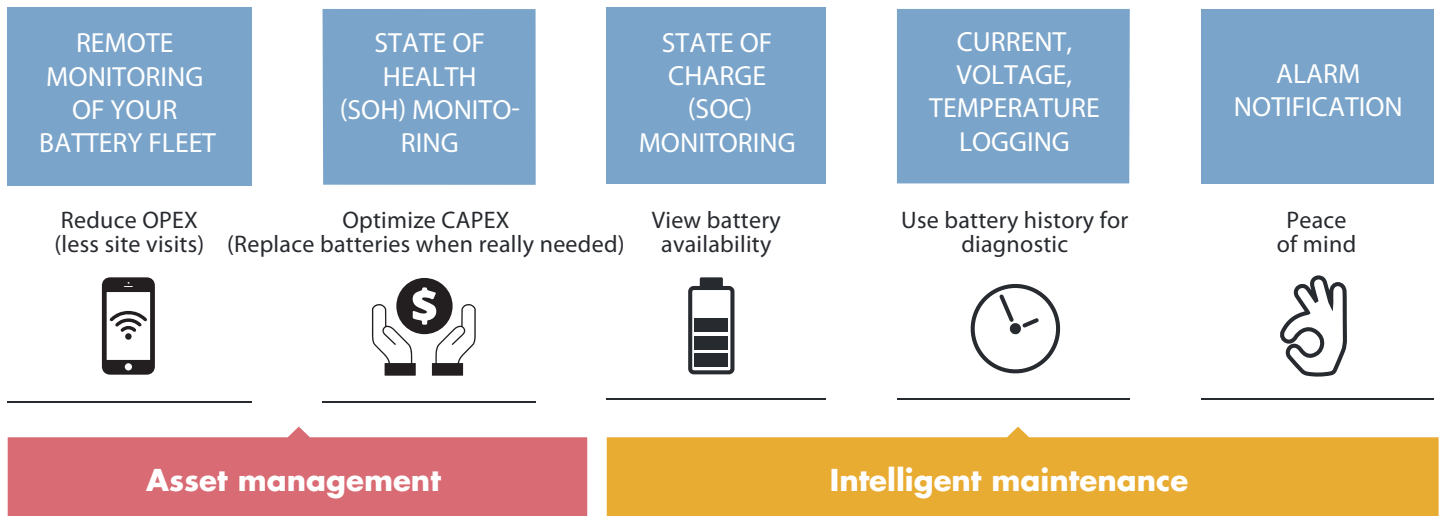


saft
compliant



Intelli-Connect™ main advantages

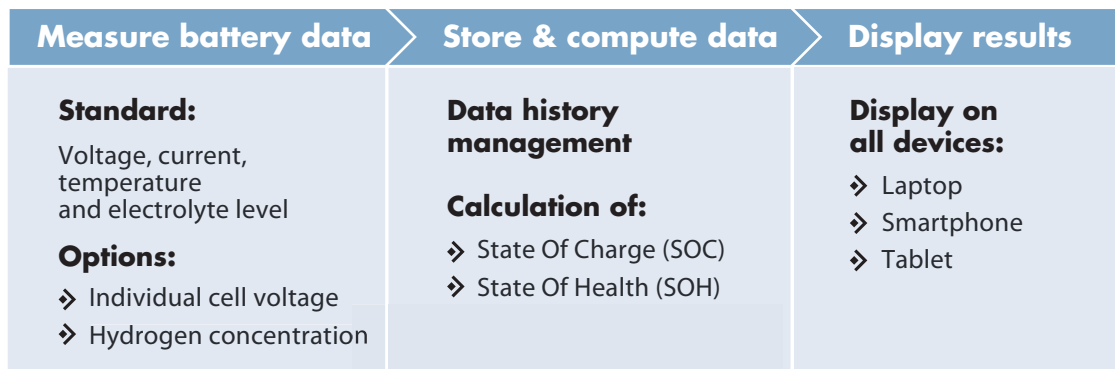
Main benefits of Intelli-Connect™ monitoring solution



A powerful monitoring solution

- Manages unlimited number of sites and batteries
- Ideal for scattered and isolated sites
- Can be connected to batteries from 12 to 600 V

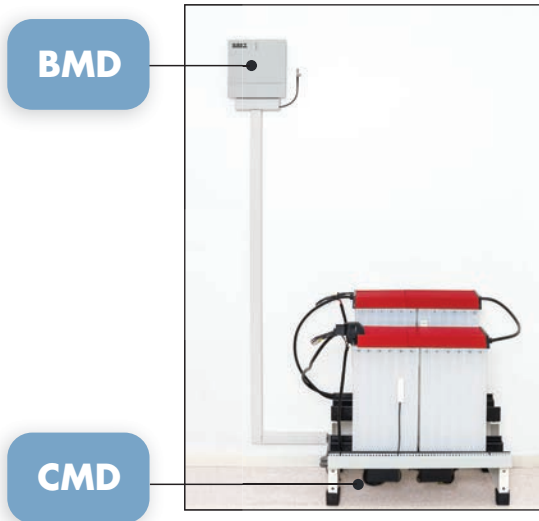
Intelli-Connect™ system overview



Intelli-Connect™ system & components

Battery Monitoring Device

Measures all the battery parameters



Current Sensor

Measures the current of the battery

Voltage sensor (batt & indiv. cells)

Measures the voltage of the cell and the battery

Battery Temperature Sensor

Measures the temperature of the battery

Ambient Temperature Sensor

Measures the ambient temperature in the battery room

Electrolyte low Level Sensor

Gives an alarm if the electrolyte level is too low

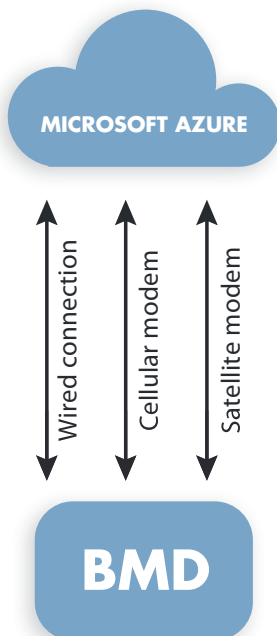
Hydrogen content sensor

Measures the hydrogen gas concentration in the battery room

Cell Monitoring Device

Measures the voltage of the individual cells

A secure Cloud Solution



Communication options:

- › LAN connection (Ethernet)
- › 2G/3G modem
- › Satellite modem

Highest data management standards:

Security:

- › Data encryption between the BMD and the Cloud (TLS protocol)
- › Cyber security audit performed (ISO 27005)
- › Recurring penetration tests by external testing company

Data privacy:

- › Customer can only access their own data

Cloud solution:

- › Microsoft Azure, used by major industrial high-tech companies such as Total

Intelli-Connect™ user interface

Nickel technology batteries are reliable by design but if remote monitoring is needed Intelli-Connect™ solution offers high-performance remote access to your fleet of batteries.

You can easily access to Intelli-Connect™ user interface from any device: your desktop, laptop, tablet or smart phone.



2 user interface options:

❖ **Web App**

This application is used remotely from any location by customers and Saft experts. It visualizes battery parameters trending and historical data.

❖ **Local App**

This App is used by on-site technicians to easy access the status of individual batteries.

Intelli-Connect™ key differentiators

A tailor-made solution developed by Saft battery experts

Designed by Saft, a world leading battery manufacturer with 100 years of experience in cutting-edge nickel technology.

A unique battery condition calculation

Saft's Intelli-Connect™ advanced State of Charge (SOC) & State of Health (SOH) proprietary algorithms have been designed by Saft battery researchers and are the legacy from 100 years of technology experience from the field.

Unique support from Saft experts:

- › Technical advice
- › Application guidance
- › Remote diagnosis
- › Trouble shooting assistance

Real time battery data trending:

- › Voltage
- › Temperature
- › Current



Intelli-Connect™ technical data

Battery information:

Battery voltage
Battery current
Battery temperature
Ambient temperature
State Of Charge (SOC)
State Of Health (SOH)
Electrolyte low level (option)
Individual cell voltage (option)
Hydrogen concentration (option)

Nominal battery voltage:

12 V to 600 V

Max charge/discharge current:

3000 A

Max no of temperature sensors:

25

Max no of electrolyte sensors:

24

Max no of cells per system:

500

Communication interfaces:

Ethernet port
2G/3G modem
Satellite modem (optional)

Battery Monitoring Device

Power source:

Powered by the monitored battery

3 voltage variants:

9 to 90 V (Low voltage version)
55 to 265 V (Medium voltage version)
160 to 750 V (High voltage version)

Cloud platform:

Microsoft Azure