



Sensata
Technologies

LiTHIUM BALANCE
BATTERY MANAGEMENT SYSTEMS

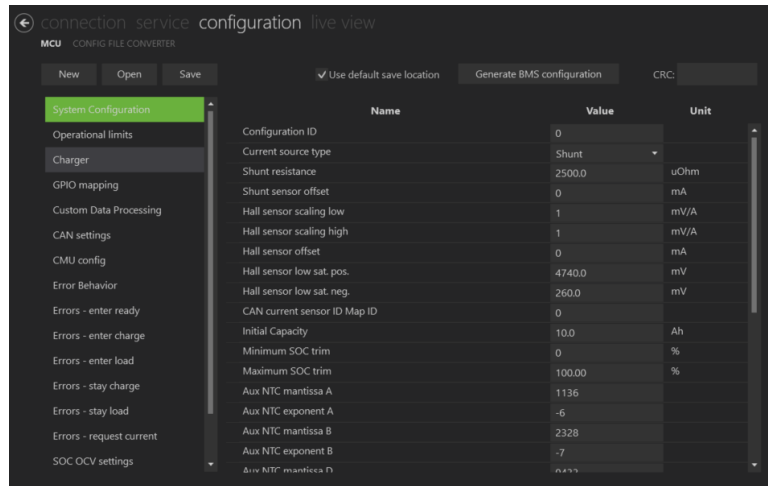


SERVICE

Monitoring & Field Servicing Software

SERVICE is convenient addition to CREATOR for monitoring and servicing purposes

CREATOR Configuration tool



- For engineers and R&D
- Configuration, monitoring, and servicing
 - Configuration
 - Connection to the BMS
 - Battery operation monitoring
 - Software update and maintenance
 - Troubleshooting

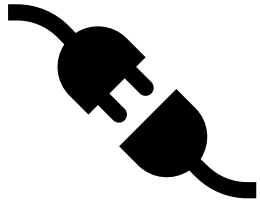
SERVICE

Monitoring and field servicing tool



- For service personnel, field agents, production, and supervisors
- Monitoring and field servicing
 - Connection to the BMS
 - Battery operation monitoring
 - Software update and maintenance
 - Troubleshooting
- Configuration options are locked and not visible

Service functions - monitoring and field maintenance



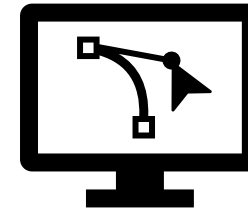
Connect & set up BMS

- Connect / Disconnect the BMS from the PC
- Confirm BMS type
- Check BMS serial number
- Verify firmware version
- Monitor connection



Monitor battery operation

- Live status monitoring
- Cell Voltage, Pack Voltage
- Current
- Alarms / Warnings
- Uptime
- Cell temperature



On-site Software maintenance

- Upload new BMS configuration previously created in a CREATOR
- Update to new software version on-site
- Bootload firmware
- Set time and date in the BMS (for error log)
- Synch time & date with PC



Troubleshoot

- Access and read error logs
- Reset the BMS
- Save the error logs for further analysis / troubleshooting

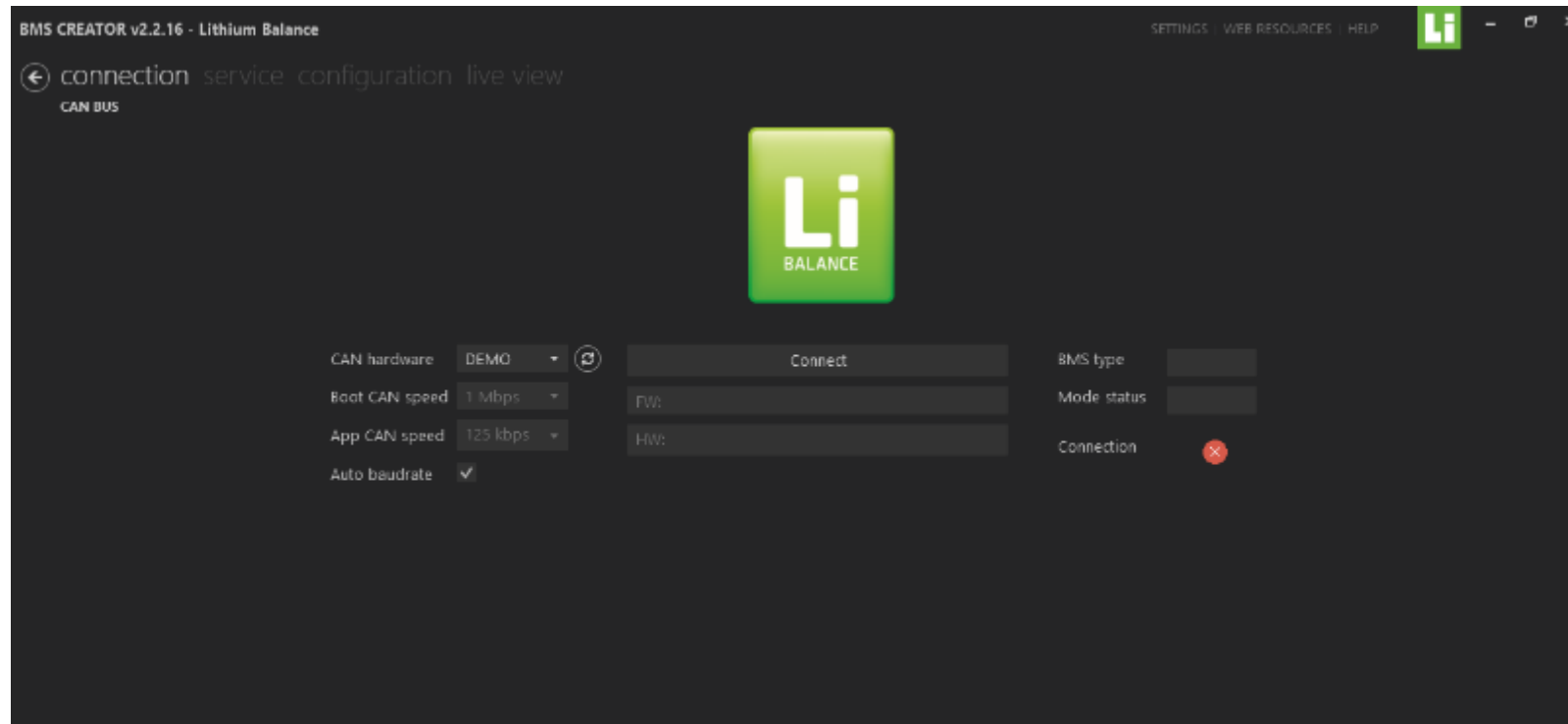
How to connect

- Install the latest version of CREATOR on a PC
- Activate SERVICE via lb_activation@sensata.com
- Connect the BMS to the PC via a PeakCAN adapter
- Open CREATOR with the activated SERVICE license
- The BMS should be detected by the software
- Press Connect on the "Connection" tab



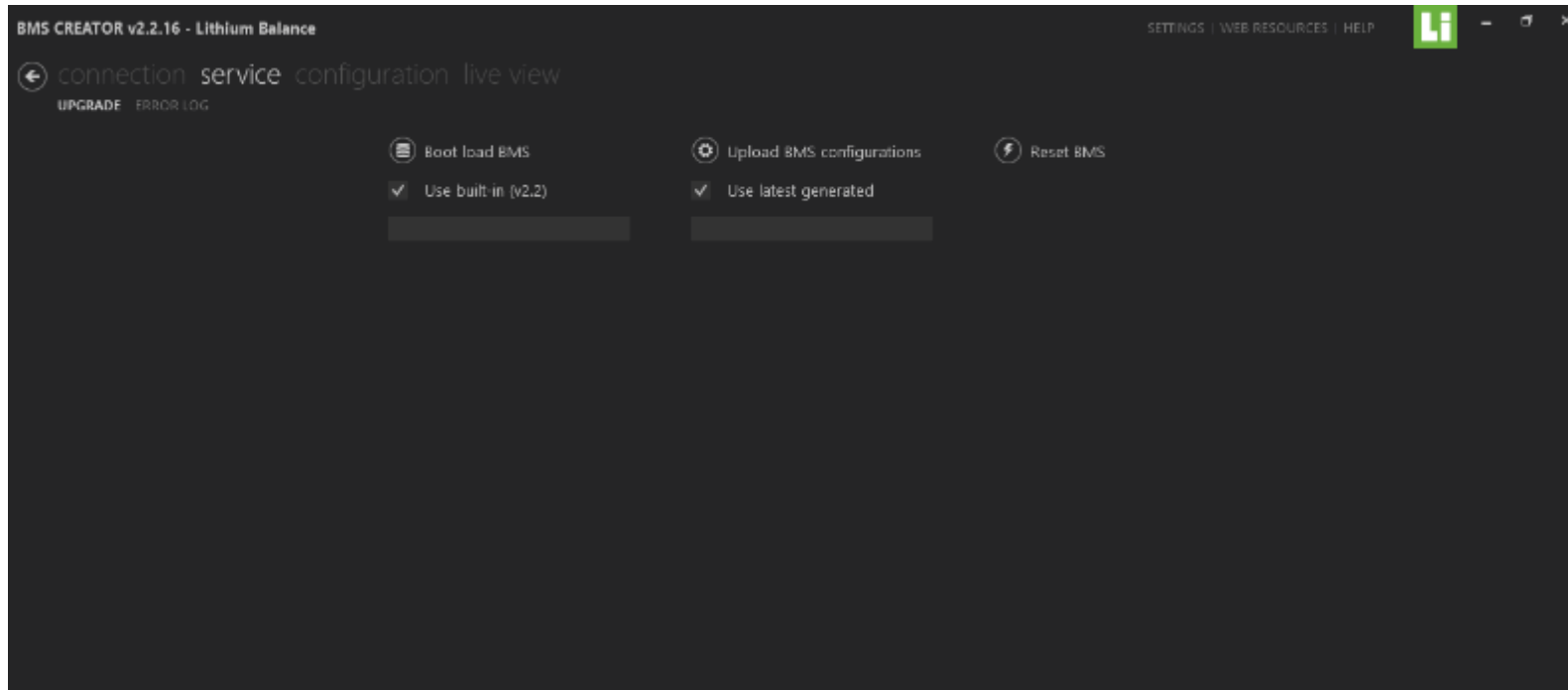
Breakdown of features

Communication Connection



- Connect/Disconnect the BMS from the PC
- Check the type of BMS connected, its Hardware serial number & the firmware version
- Possible to check the connection status of the BMS & PC

Service



- Bootload the BMS to upgrade to new software versions
- Upload previously saved BMS configuration file
- Reset the BMS

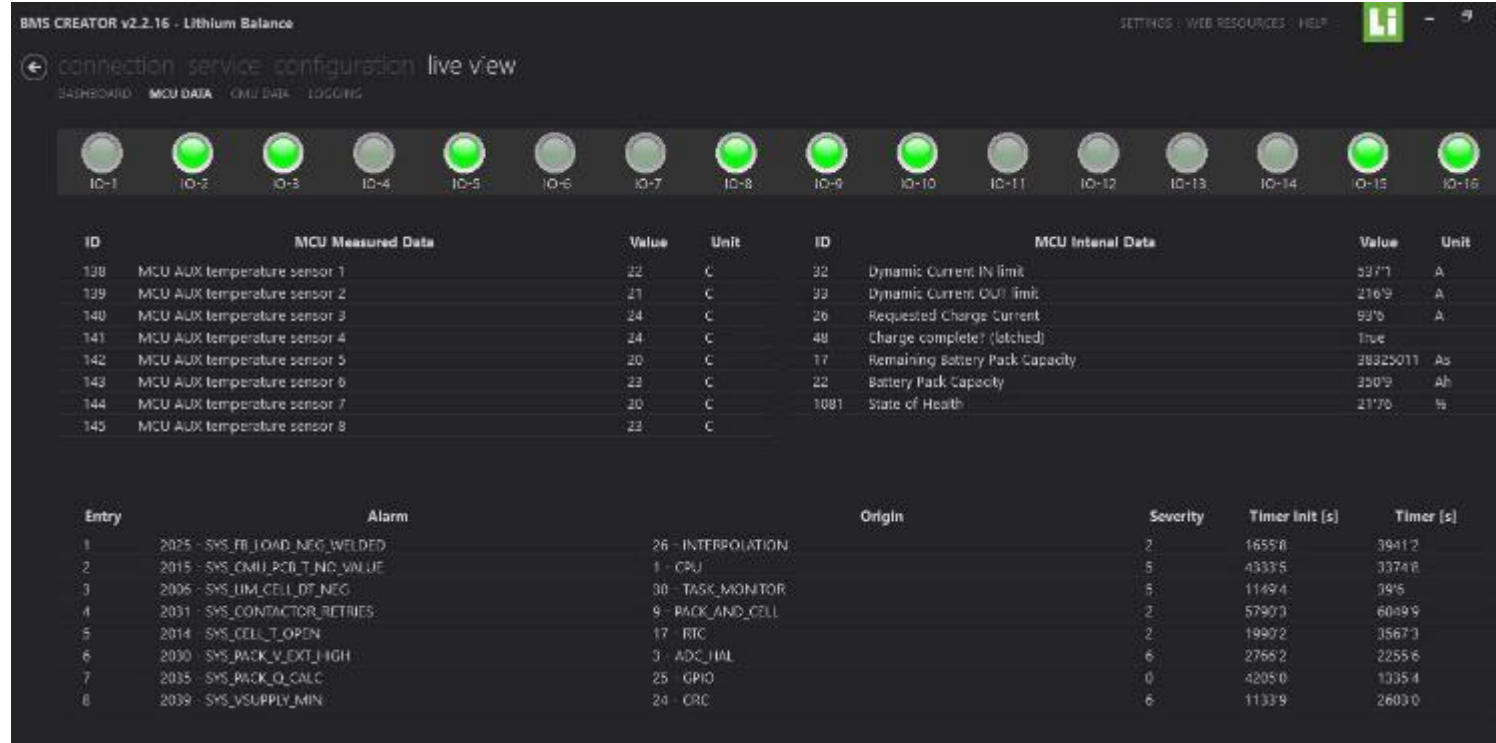
Live View



This window shows the complete overview of the system status and parameters such as

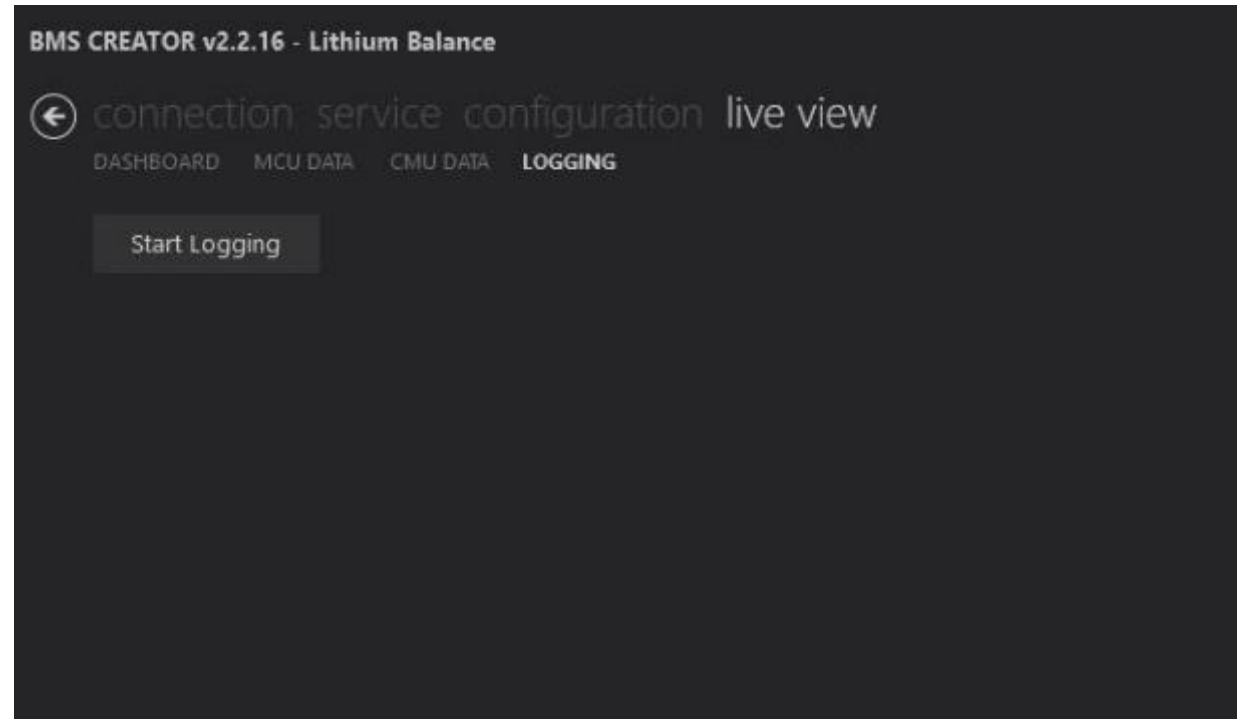
- BMS state
- SOC, Pack voltage, Pack Current, Number of alarms, BMS uptime, Cell Min./Max. temperature & voltages
- Graphs of charging & discharging current, min/max cell voltage, temperature, SOC vs time

BMS board data



- GPIO status
- Temperature data
- Current values
- Cell voltage data
- The errors that are present in the system

Logging



- Access and read error logs
- Save the error logs for further analysis / troubleshooting