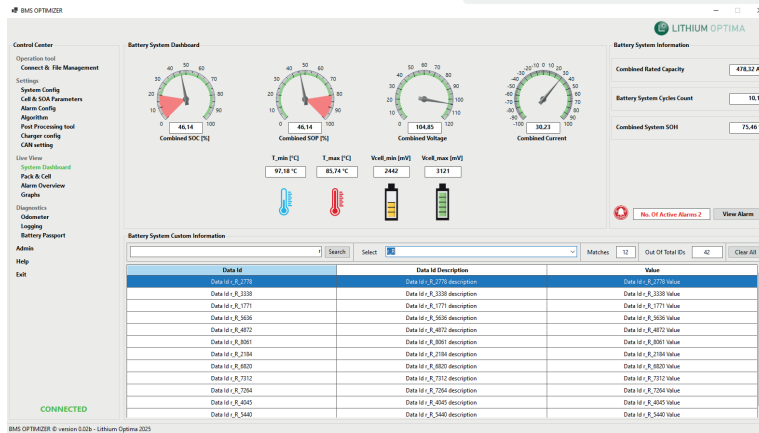




## OPTIMIZER™

Configuration and diagnostic SW for Lithium Optima BMS products

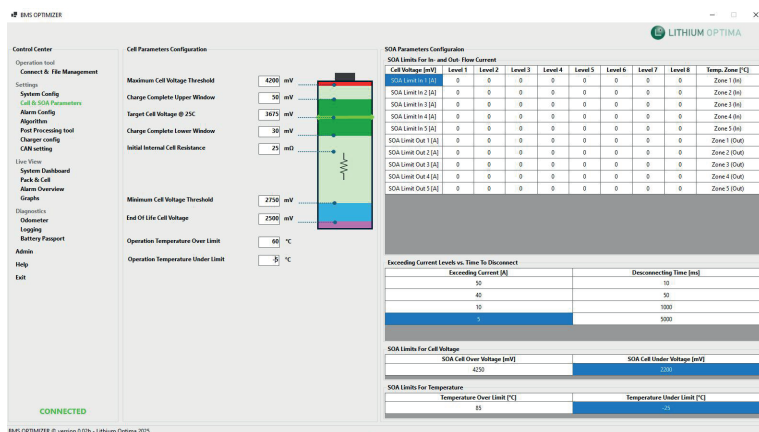


## PRODUCT DESCRIPTION

**OPTIMIZER™** software toolbox facilitates a fast and secure method for configuring **Lithium Optima BMS** products.

The tool enables the configuration of essential parameters for the specific cell chemistry used in the battery (LTO, LFP or NMC or any other commercially available types). In addition, **OPTIMIZER™** allows to set up application specific parameters including permissible charge and discharge rates, customized error and warning handling, pre-charge set up, CAN communication as well as various hardware configurations.

A dedicated section for the Safe Operating Area (SOA) limits is included to ensure a safe and efficient set-up of the battery.



## ADVANCED VERSION

OPTIMIZER™ toolbox also comes with additional functionality in the **Advanced version**. The Advanced version allows for more intelligent algorithm designs of SOC, SOH, and Balancing.

Furthermore, the Advanced version features the **BMscript™**, Lithium Optima's proprietary flexible scripting tool, that enable dynamic configuration of parameters and logic, to further customize the battery and application.

## SERVICE VERSION

OPTIMIZER™ toolbox is also available as a Service version. This version restricts all configuration access, limiting the tool to reading values and allowing only customer-verified files to be downloaded to the BMS.



## TECHNICAL REQUIREMENT SPECIFICATIONS

Operating system	Description	Requirement
WINDOWS	MS Windows	Win10 or later
PEAK CAN	BMS CAN to PC adapter	

## FUNCTIONALITY – STANDARD VERSION

Functionality	Description
SOA Limits	Set-up safe operating area for the specific cell used
Cell settings	Optimize the use of cells within SOA
Error handling	Set flags for triggering errors and how to handle errors
Warning handling	Set flags for triggering warnings and how to handle warnings
Charge and discharge configuration	Charger regulation, discharge and charge current limits
IO and HW set-up	Configuration of the IO's, on-board pre-charge circuit and external sensors
CAN configuration	TX and RX frame configuration incl. ID type, data format and 10 data sets
Diagnostic functions	Logging, Odometer, Error logging, Freeze frames
Live view functions	Battery dashboard incl. System- Pack- and cell information
CAN post processing	Define CAN messages to be re-calculated with logic and transmitted
Standard SOX settings	SOC estimation based on Coulomb counting
Standard Balancing settings	End of charge balancing
Generate/Upload file	Generate and upload BMS configuration file(s)
Password protection	

## ADDED FUNCTIONALITY – ADVANCED VERSION

Functionality	Description
Parallel pack	Set number of strings to be operated. Monitor individual strings as well as full pack
Hot Swap	Logic to enable swapping of batteries in and out of the application without service entry
BMscript™	Define parameters and operators to create dynamic logic
Advanced SOC settings	Coulomb counting, IR, OCV and mixed
Advanced SOH settings	2-points based
Advanced Balancing settings	SOC/IR based
EU1542 Battery passport	Remaining Useful Energy/Capacity, IR, battery manufacturing data, roundtrip efficiency etc.

## FUNCTIONALITY – SERVICE VERSION

Functionality	Description
Upload file	Upload saved configuration file(s) to the BMS
Live view	Battery dashboard, Pack information, cell information
Diagnostic functions	Logging, Odometer, Error logging, Freeze frames
EU1542 Battery passport	Remaining Useful Energy/Capacity, IR, battery manufacturing data, roundtrip efficiency etc.

## COMPLIANCE

Standard/Regulation	Description
ISO 13849 PL C	Functional Safety for industrial machines
EU 1542	Battery Passport