

## Battery Management System (BMS) For 24-48V Key-switched Systems

### U-Charge<sup>®</sup> BMS-MH

U-Charge Battery Management Systems are designed to ensure safe operation and maximize battery performance. All U-Charge battery systems require a BMS.



Product	Voltage Range	Part Number
U-BMS-MH	18-60V (24-48V enabled)	1007833

### Overview

U-Charge Battery Management Systems (U-BMS-MH) are designed for use with U-Charge XP battery and Power modules. This BMS can be used on systems whose native voltage is 24-48V such as material handling equipment, automated guided vehicles, and stationary energy storage systems. Alternatively, it can be used on large electrical systems whose key switch is 24V such as large trucks or ships.

The U-BMS provides numerous system integration options facilitating temperature, voltage, current and state-of-charge monitoring. One single BMS is capable of managing up to 48 battery modules in series and/or parallel configurations.

All Valence batteries incorporate built-in cell monitoring electronics and communication cables. Connecting the BMS-MH to the pack via the communication cables is as simple as connecting a seat belt.

### Features

- Monitors cell voltage, temperature, stack voltage, current, state-of-charge, errors, contactor status
- One U-BMS can manage packs up to 48 modules
- Charger control via CANbus communications or contactor
- Multiple and configureable digital and analog I/O
- Automatic battery-to-battery balance control
- Control of up to 4 contactors, configureable actions
- Sleep mode when key signal 'OFF'
- Outputs state-of-charge and low warning alarm on analog outputs
- Requires 24-48V key switch input
- Internal dc-dc steps pack voltage down to 12V to drive contactor coils
- Simply connects directly to battery

# Specifications

Dimensions (LxWxH) mm	188mm x 229mm x 42mm*
Dimensions (LxWxH) inches	7.4" x 9" x 1.65"*
Weight	0.72 kg/1.6 lbs
External communication	CAN 2.0b, 125, 250, 500 Kbit/s, standard frames
External control signals	Control signal for line, pre-charge & charger contactors
Monitoring parameters	State-of-charge, error codes, system pack balance
Isolation	Chassis to battery insulation measurement
Mechanical enclosure	IP5X, UL 94V-0, 5 mm mounting holes (4x)
Certifications	FCC Class B, CE

\* including mounting tabs and protrusion of connectors

## Recommended Accessory: CANbus Monitoring Kit

- Connects BMS to PC for full feature monitoring and logging capability
- Part number 1005931



The screenshot displays the 'BMS Configuration' window with several tabs: Monitoring, Graphs, CAN Messages, and RS485 Messages. The 'Monitoring' tab is active, showing a table of Battery Management Systems (BMS) with columns for Active Functions, State of Charge, Voltage, Min/Max Cell Voltage, Current, Direction, Min/Max Cell Temp, Status, Alarm Status, and Contactors (1-4). Below this is a table for 'Information for Selected BMS' with columns for Module, State of Charge, Stack Voltage, Current, Min/Max Cell Voltage, Min/Max Cell Temp, Max PCBA Temp, Interbalancing, Status, and Alarm Status. A detailed view of 'Module Status' is also shown, listing individual cells with their voltages and temperatures.

CANBus Diagnostic & Monitoring Software Screenshot

### Notes:

Contactor Configuration: main discharge, precharge discharge, precharge charge, interlock, or charge control (to be used with contactors with 12V coils)

No internal flyback diodes; to be used with 12V contactors with PWM coils or add external diodes across coils.

For systems with 12V available, please use U-BMS-LV series.



[www.valence.com/contact](http://www.valence.com/contact)

BMS-MH Datasheet  
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