

U-Charge® XP

Battery Management System (BMS)



U-Charge Battery Management Systems are designed to enable multiple system implementation options and advanced command and control ability. The BMS is compatible with U-Charge XP battery and Power modules.

Overview

U-Charge Battery Management Systems (U-BMS) are designed for use with U-Charge XP battery and Power modules.

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 12V, 18V, 24V, or 36V configurations with isolation measurement.

U-Charge Battery Modules offer twice the run-time at nearly half the weight of similar sized lead-acid batteries, offering outstanding intrinsic safety, excellent float and cycle life resulting in low cost of ownership. Thousands of U-Charge systems have been deployed since 2006, across numerous motive and energy storage applications.

Features

- Monitors cell voltage, temperature, voltage, current, SOC, errors, contactor status
- One U-BMS can manage multiple battery modules (see Table 2)
- CANbus communications for charger control and external interface
- Digital and analog I/O
- Battery-to-battery balance control
- Control of up to 4 contactors
- System ground isolation verification
- Sleep mode when key signal 'OFF'

Product	Voltage Range for Isolation	Part Number
U-BMS-LV	10V - 150V (12V enable)	1004443
U-BMS-LVM	10V-150V (used in multi-BMS configuration) (12V enable)	1007427
U-BMS-HV	100V - 450V (12V enable)	1004440
U-BMS-SHV	350V - 700V (12V enable)	1004437

Table 1

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



Modules per BMS with Isolation Measurement

U-Charge Module Type	Max. No. of Modules per BMS
12 V U-Charge® XP	up to 48 in series
18 V U-Charge® XP	up to 32 in series, 2 in parallel
24 V U-Charge® XP or Power Module	up to 24 in series, 2 in parallel
36 V U-Charge® XP	up to 16 in series, 4 in parallel

Table 2

Without insulation management, U-BMS-LV can manage up to 1000 V DC series string or 65 modules in series or parallel.



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BMS Datasheet
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