Intelligent Lithium Battery

ESM-48100B1

Introduction

The ESM-48100B1 is a new intelligent energy storage unit developed by Huawei. The intelligent unit can work with the Huawei telecom power system to implement multiple intelligent features and anti-theft functions. It can also connect to the NetEco by IoT gateway to implement multiple intelligent features through cloud-lithium collaboration, helping customers maximize the value of site-based energy storage. The unit features different charging voltages adaptability, fast charging and long service life. It can be directly connected to lead-acid battery strings in parallel to reuse batteries.

ESM-48100B1

Features

- Intelligent design: intelligent detection, SOC&SOH management, simplified O&M, and self-management (SOH must be used together with the NetEco license)
- Intelligent collaboration: with the intelligent power system to realize intelligent features (such as intelligent peak shaving, intelligent peak staggering, intelligent voltage boosting, and intelligent hybrid use). With the intelligent management system: realize intelligent features (such as cloud peak shaving, cloud peak staggering, cloud voltage boosting, and cloud hybrid use).
- Intelligent software anti-theft design①: GPS, intelligent software lock, displacement lock, and buzzer alarm
- High reliability design: integrated BMS design, long service life
- High-density design: 100 Ah with only 3 U high

Specifications

Item		Description
Basic Parameters	Product model	ESM-48100B1
	Cathode material	$LiFePO_4$
	Nominal voltage	48 Vdc
	Nominal charging voltage	56.4 Vdc
	Max. charging / discharging current limited	100 A @ 35°C
	Max. charging / discharging power	4800 W
	Cycle life	3500 cycles @ 0.5C, 85% DOD, 70% EOL, 35°C
	Nominal capacity	100 Ah @ 0.2C, 35°C
	Weight	Approx. 43 kg
	Dimension (W×D×H)	442 mm×396 mm×130 mm (excluding mounting ear)
	Self discharge @ 25°C	Less than 5% after 90 days storage
	Communication interface	CAN / RS485; 2 dry contacts
	Max. quantity of parallel connection	CAN: 32; RS485: 16
	Terminal	M6, torque 4 N•m
	Installation type	Standard 19" rack, Air conditioning system or direct ventilation cabinet
	Operating condition	Air conditioner, direct ventilation in Class B environment
	Protection & alarm	Over temperature, overcurrent, short circuit, overcharge, overdischarge, etc.
	Certification	CE, UN38.3
	Design life	15 years

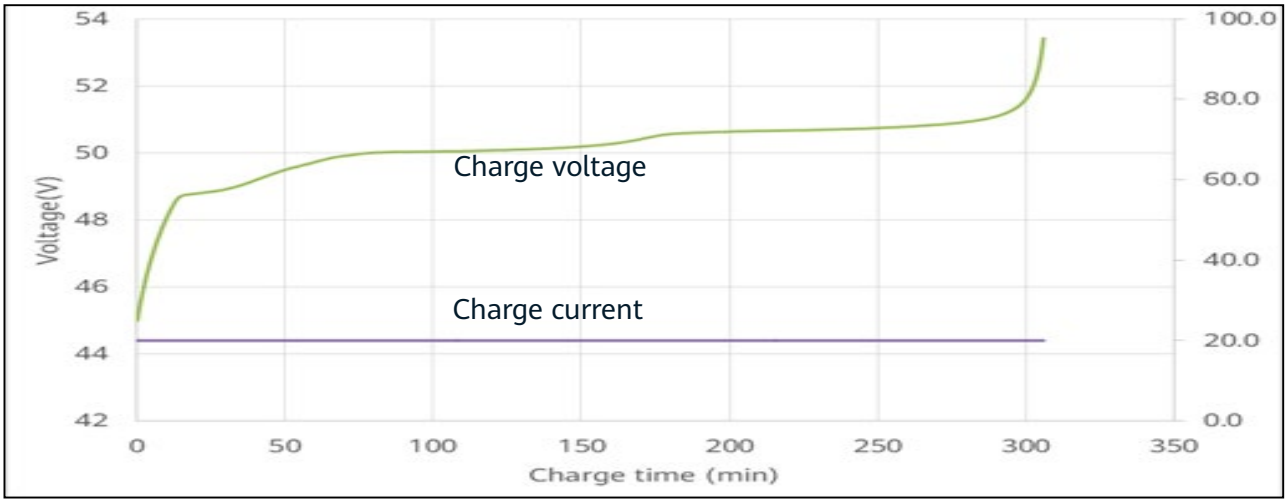
Note: Any datasheet issued previously is invalid when new version releases.

Issue date of this version: 2021-1-11

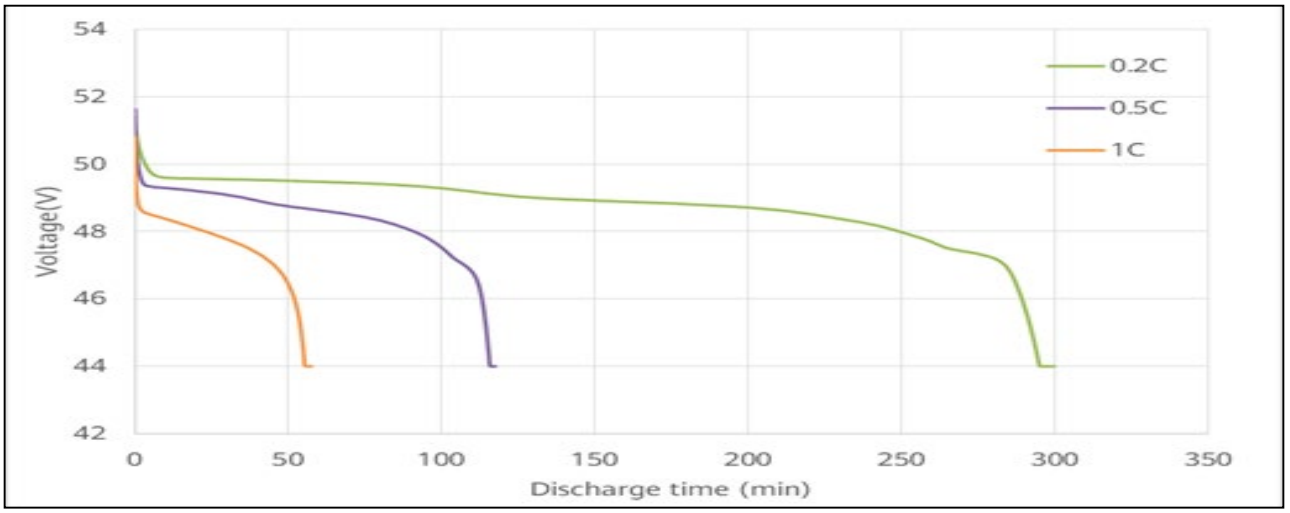
Item		Description
Environment	Storage temperature②	Storage: 0ºC to 40ºC
	Transportation temperature	-40ºC to 60ºC
	Operating temperature③	Charging: 0ºC to 45ºC; Discharging: -20ºC to 45ºC
	Relative humidity	5% to 95%
	Operating atmospheric pressure	61kPa~113kPa

① *The software lock function will only be available when BoostLi is connected to Huawei's specified energy controller (SMU02C) ;displacement lock and buzzer alarm require license to activate. GPS function relies on IoT module and GPS license.*
② *The recommended storage temperature is 20 ~ 30ºC, the battery life would be reduced if battery is stored in high temperature. (The recharging interval should be 12 months when temperature is below 30ºC, and it should be 8 months when temperature is 30 ~ 40ºC)*
③ *Charging and discharging current may be derated or battery will be protected when battery is out of the temperature range*
④ *When the output power of battery reaches to the maximum value, over temperature protection may be triggered, which shortens the battery discharging time.*
⑤ *The parameters in this datasheet are based on the date of production, and may be affected by external environment factors, such as temperature, transportation, and storage.*

Charge curve @ 0.2C, 35ºC



Discharge performance @ different discharge rate @ 35ºC



Copyright © Huawei Technologies Co., Ltd. 2021. All rights reserved.
No part of this document may be reproduced or transmitted in any form or by any means without prior written consent of Huawei Technologies Co., Ltd.

General Disclaimer
The information in this document may contain predictive statements including, without limitation, statements regarding the future financial and operating results, future product portfolio, new technology, etc. There are a number of factors that could cause actual results and developments to differ materially from those expressed or implied in the predictive statements. Therefore, such information is provided for reference purpose only and constitutes neither an offer nor an acceptance. Huawei may change the information at any time without notice.

HUAWEI TECHNOLOGIES CO., LTD.

Huawei Industrial Base
Bantian Longgang
Shenzhen 518129, P.R. China
Tel: +86-755-28780808
www.huawei.com