产品规格承认书

Product Specification For Approval

产品名称(Product Name)：	1A硬件主动均衡/1A Active Balance Module	
产品型号(Product Number)：	DL-J04(1A)/DL-J10(1A)/DL-J16(1A)	
客 户 名(Customer Name)：		
客户料号(Customer P/N)：		
送样日期： (Sample delivery date)：	版次 (Version)	文件编号 (Document No.)
	A6	
编制(Prepared by)	核准(Approved)	审核(Audit)
Jiang huiming	Yang feigui	Thomas
客户确认栏 Customer Confirmation		
确认意见：Confirmation： 客户签章Signature: 日期Date:		

注意（Note）：

1.收到样机确认OK后请及时回签，7天内没有回签及问题反馈，我司默认客户测试合格；规格书中的图片为通用机型图片，可能与送样样机有差异，此份规格书达锂电子保留最终解释权.After receiving the prototype to confirm OK, please sign back in a timely manner, within 7 days without signing back and problem feedback, our default customer test qualified; specifications in the picture for the general model picture, may be different from the delivery of the prototype, this specification by the Dongguan Daly Electronics Co.

2.客户批量前，请在规格书中签字回传，并说明详细功能说明，我司才安排批量

Before the customer batches, please sign the specification and return it, and explain the detailed function description, and our company will arrange the batch.

目录

Catalogue

1．概述 Introduction

因电池的容量、内阻和电压等参数值不能完全一致，这种差异导致充电时容量最小的电池容易过充，过放，受损后最小的电池容量变得更小，进入恶性循环。单体电池性能的优劣直接影响到整组电池的充放电特性及电池组容量降低。没有均衡功能的BMS只是一个数据采集器，很难称得上是管理系统。本产品为电容式主动均衡模块，可以实现最大1A均衡电流，利用开关矩阵配合电容充放电转移能量而非多余电量损耗。当电池出现稍微的压差，立即启动均衡控制电作为能量传递的载体。可以实现能量在电池组任意两个单体之间的直接转移。

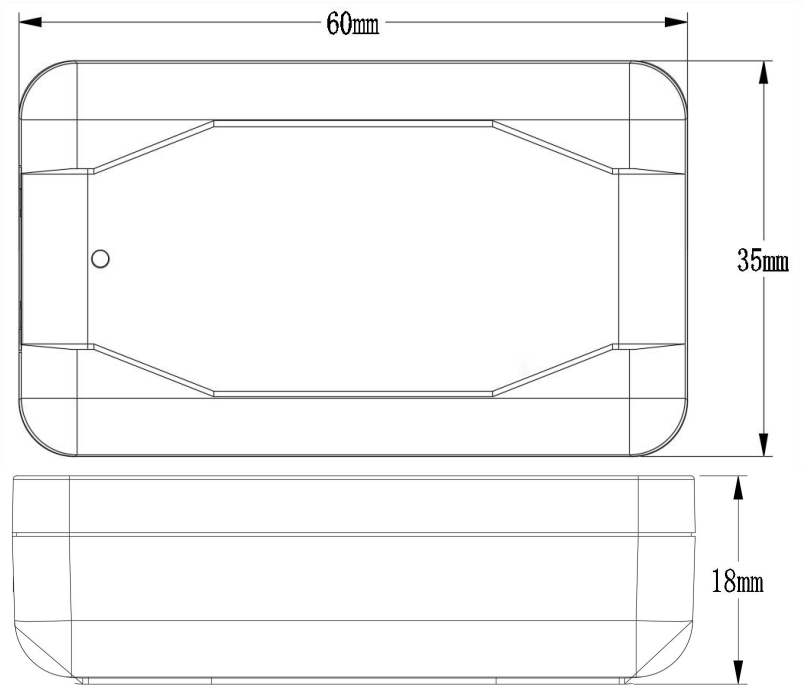
Because the battery capacity, internal resistance and voltage and other parameter values can not be completely consistent, this difference leads to the charging of the smallest capacity of the battery is easy to overcharge, over-discharge, after the damage to the smallest battery capacity becomes even smaller, into a vicious circle. The performance of a single battery directly affects the charging and discharging characteristics of the whole battery and the capacity of the battery pack is reduced. BMS without equalization function is just a data collector, it can hardly be called a management system. This product is a capacitive active equalization module, which can achieve a maximum equalization current of 1A, using the switching matrix with the capacitor charging and discharging to transfer energy instead of excess power loss. When a slight pressure difference occurs in the battery, it immediately starts the equalization and control of electricity as a carrier of energy transfer. It can realize the direct transfer of energy between any two monomers in the battery pack.

2．主要参数 Technical specification

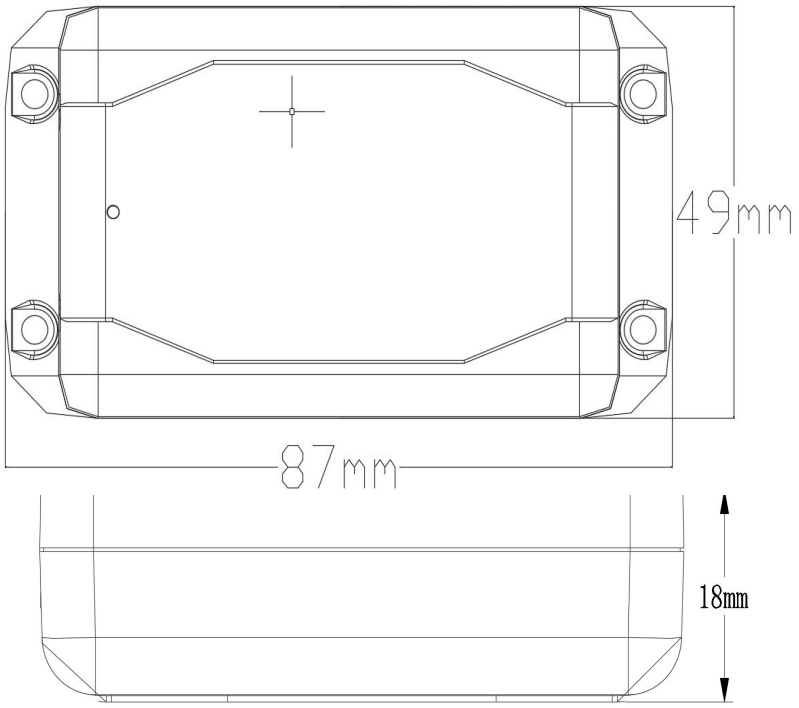
指标Index	参数Specification	备注Remarks
电池组类型 Battery group type	三元、铁锂 Li-ion、LiFePO4	
电池组串数 Number of battery strings	3串-16串，根据电池串数进行选择 3S-16S，Select based on the number of battery strings.	不同串数不可混用 Different battery strings can not be mixed
均衡电流 Balance current	≥1A（压差≥900mV时）； ≥1A（Differential pressure≥900mV）； ≥0.01A（压差≥20mV时）； ≥0.01A（Differential pressure≥20mV）	压差越大，均衡电流越大 The greater the pressure difference, the larger the balancing current
均衡方式 Balance mode	主动均衡 Active Balance	
均衡开启条件 Balance on conditions	第一串单串电压≥3.1V First single string voltage≥3.1V	0.1V 精度公差 0.1V tolerance
均衡关闭条件 Balance off conditions	第一串单串电压≤3.0V First single string voltage≤3.0V	0.1V 精度公差 0.1V tolerance
工作功耗 Working power consumption	<1mA	
休眠电流 Sleep current	<5uA	
工作温度 working temperature	-20℃～60℃	
尺寸 size	3~4S：60*35*18mm 5~10S：87*49*18mm 11~16S：115*65*19mm	
均衡指示灯 Balance Indicator Light	亮：均衡开启 ON: Balance on 灭：未开启均衡/故障 OFF: Balance off or fault	

3．尺寸图 dimensional drawing

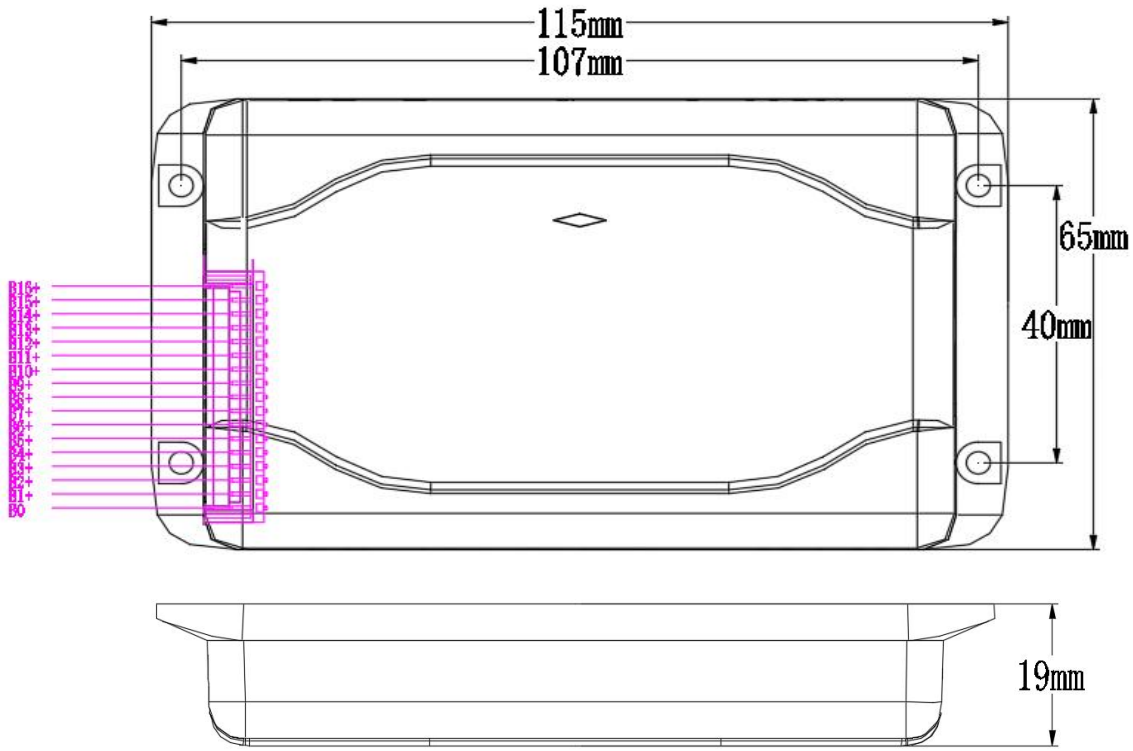
3.1、DL-J04（1A），电池串数：3~4串 Strings:3~4S



3.2、DL-J10（1A）,电池串数：5~10串 Strings:5~10S



3.3、DL-J16（1A）,电池串数：11~16串　Strings:11~16S



4．接口定义说明 Interface definition description

名称 name	主动均衡 Active Balancer	Pin	标号 Sign	定义说明 Description of definition
采样线接口 (PHB 2.0带扣) Sampling wire (PHB 2.0 buckle)		1	B0	接第1节电池负级 Connect Section 1 Battery negative pole
		2	B1+	接第1节电池正级 Connect the positive pole of section 1 battery
		3	B2+	接第2节电池正级 Connect the positive pole of section 2 battery
		...	...	接最后1节电池正级 Connect the last 1 positive battery pole

5．包装清单 Packing list

名称 Name	默认规格 Default specification	数量 Pcs
主动均衡模块 Active Balance Module	1A 硬件主动均衡模块 1A Hardware Active Balance Module	1
线束 Wireharness (可定制长度) (Support customized)	排插类型：PHB2.0 Interface type: PHB2.0 线号：24AWG Cable number: 24AWG 线长：7串以下为300mm，7串为350mm，7串以上为450mm Line length: Less than 7 strings is 350mm, 7 strings is 350mm, More than 7 strings is 450mm 黑色接负极，红色接正极 The black wire connects to the negative pole of the battery, and the red wire harness connects to the positive poles	1

6．接线使用说明 Wiring instructions

扫码查看说明书，或使用电脑浏览器登录：https://www.dalyelec.com/service.html

Scan the QRcode using the browser to view the user manual, or use a computer browser to access this website: https://www.dalyelec.com/service.html

修订记录

Revision record

日期 (Date)	版本号 (Version)	修订说明 (Note)	制表 (Tab)	核准 (Approve)
2023/8/20	A1	初版 First edition	杨伟滈	李天富
2023/10/7	A2	修正英文翻译 Corrected English translation	杨伟滈	徐丹
2023/10/13	A3	更新均衡电流描述 Updated balanced current description	杨伟滈	余宣飞
2023/10/31	A4	修改操作说明 Modify operation description	杨伟滈	徐丹,牧歌 李天富
2024/12/20	A5	修改操作说明 Modify operation description	杨伟滈	闫连红
2025/5/15	A6	修改均衡电流备注 Modify the balanced current remarks	蒋慧明	林田生