

武汉彦阳物联科技有限公司

WuHan YanYang IOT Technology

硬件保护板系列规格书

Hardware protection board series specification



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1. 产品简介 Product introduction

硬件板参数说明 Hardware board parameters							
支持串数 Number of strings supported	支持电流 (可定制) Support current (customizable)	同口 Same mouth	规格尺寸 Specification and size	电芯类型 出厂前通过软件配置 Cell type Software configuration before delivery		型号命名(参照标题2选型说明) Model name (refer to Title 2 selection instructions)	常用型号 Common model
6串 6 string	10A-100A	支持 support	130*62*18	支持铁锂 Support lithium iron phosphate lithium battery	支持三元 Support three-way lithium battery	YY-BPU02-MOS-6SxxA-xxV	YY-BPU02-MOS-6S30A-3.2V/3.7V
7串 7 string	10A-100A	支持 support	130*62*18	支持铁锂 Support lithium iron phosphate lithium battery	支持三元 Support three-way lithium battery	YY-BPU02-MOS-7SxxA-xxV	
8串 8 string	10A-100A	支持 support	130*62*18	支持铁锂 Support lithium iron phosphate lithium battery	支持三元 Support three-way lithium battery	YY-BPU02-MOS-8SxxA-xxV	YY-BPU02-MOS-8S30A-3.2V/3.7V
9串 9 string	10A-100A	支持 support	130*62*18	支持铁锂 Support lithium iron phosphate lithium battery	支持三元 Support three-way lithium battery	YY-BPU02-MOS-9SxxA-xxV	
10串 10 string	10A-100A	支持 support	130*62*18	支持铁锂 Support lithium iron phosphate lithium battery	支持三元 Support three-way lithium battery	YY-BPU02-MOS-10SxxA-xxV	YY-BPU02-MOS-10S50A-3.2V/3.7V
11串 11 string	10A-100A	支持 support	130*62*18	支持铁锂 Support lithium iron phosphate lithium battery	支持三元 Support three-way lithium battery	YY-BPU02-MOS-11SxxA-xxV	
12串 12 string	10A-100A	支持 support	130*62*18	支持铁锂 Support lithium iron phosphate lithium battery	支持三元 Support three-way lithium battery	YY-BPU02-MOS-12SxxA-xxV	YY-BPU02-MOS-12S80A-3.2V/3.7V
13串 13 string	10A-100A	支持 support	130*62*18	支持铁锂 Support lithium iron phosphate lithium battery	支持三元 Support three-way lithium battery	YY-BPU02-MOS-13SxxA-xxV	YY-BPU02-MOS-13S80A-3.2V/3.7V
14串 14 string	10A-100A	支持 support	130*62*18	支持铁锂 Support lithium iron phosphate lithium battery	支持三元 Support three-way lithium battery	YY-BPU02-MOS-14SxxA-xxV	YY-BPU02-MOS-15S80A-3.2V/3.7V
15串 15 string	10A-100A	支持 support	130*62*18	支持铁锂 Support lithium iron phosphate lithium battery	支持三元 Support three-way lithium battery	YY-BPU02-MOS-15SxxA-xxV	
16串 16 string	10A-100A	支持 support	130*62*18	支持铁锂 Support lithium iron phosphate lithium battery	支持三元 Support three-way lithium battery	YY-BPU02-MOS-16SxxA-xxV	YY-BPU02-MOS-16S80A-3.2V/3.7V
17串 17 string	10A-100A	支持 support	130*62*18	支持铁锂 Support lithium iron phosphate lithium battery	支持三元 Support three-way lithium battery	YY-BPU02-MOS-17SxxA-xxV	YY-BPU02-MOS-17S80A-3.2V/3.7V
18串 18 string	10A-100A	支持 support	130*62*18	支持铁锂 Support lithium iron phosphate lithium battery	支持三元 Support three-way lithium battery	YY-BPU02-MOS-18SxxA-xxV	
19串 19 string	10A-100A	支持 support	130*62*18	支持铁锂 Support lithium iron phosphate lithium battery	支持三元 Support three-way lithium battery	YY-BPU02-MOS-19SxxA-xxV	YY-BPU02-MOS-20S100A-3.2V/3.7V
20串 20 string	10A-100A	支持 support	130*62*18	支持铁锂 Support lithium iron phosphate lithium battery	支持三元 Support three-way lithium battery	YY-BPU02-MOS-20SxxA-xxV	

2. 选型描述 Description of selection

(1)命名规则 Naming Rules

以 16S30A 硬件板为例 The following uses the 16S30A as an example

YY - BPU02 - MOS - 14S 30A - 3.2V/3.7V

I
I
I
①
②
③

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- ①YY - BPU02- MOS 编码开头的 为彦阳硬件板型号。The beginning of the code for the Yanyang hardware board model
- ②14S 30A 14S 为硬件板串数 30A 为硬件板最大持续过流能力，硬件板过流能力可以定制，最大支持 100A。14S indicates the string number of the hardware board. 30A indicates the maximum continuous overflow capability of the hardware board. The overflow capability of the hardware board can be customized to a maximum of 100A.
- ③ 3.2V/3.7V 尾缀为硬件板适用电池类型，3.2V 表示适用于铁锂电池，3.7V 表示适用于三元电池。电池类型，出厂通过软件配置。The hardware plate at the end is suitable for battery type. 3.2V indicates that it is suitable for lithium iron battery and 3.7V indicates that it is suitable for three-way battery. The battery type is configured by software before delivery.

(2)选型说明 Selection description

①以适用于 16 串铁锂最大持续过流 60A 为例，选型型号为：Taking 16 strings of lithium iron with a maximum continuous overcurrent of 60A as an example, the selection model is as follows:

YY-BPU-MOS-16S60A-3.2V

②以适用于 16 串三元最大持续过流 60A 为例，选型型号为：Taking 16 strings of ternary maximum sustained overcurrent 60A as an example, the selection model is:

YY-BPU-MOS-16S60A-3.7V

2. 电气参数 Electrical parameters

序号 Serial No	指示项目 Indicative items		默认参数（以标称 30A 为例） Default parameters (take nominal 30A as an example)	
			三元 NMC	铁锂 LiFePO4
1	总体过充保护 Overall over charge protection	总体过压保护 Overall over voltage protection	4250mV*串数 4250mV*Cells	3750mV*串数 3750mV*Cells
2	均衡功能 Balance function	均衡开启电压 Equalizing opening voltage	4180mV	3500mV
		均衡电流 Balance current	120mA	120mA
3	单体过压保护 Single cell over voltage protection	单体过压保护电压 Single Cell over voltage protection	4250mV	3750mV
		单体过压保护解除电压 Single cell over discharge protection voltage	4150mV	3550mV
		单体过压保护延时 Single cell over voltage protection delay	1s	1s



4	单体过放保护 Single cell over discharge protection	单体过放保护延时 Single cell over discharge protection delay	2700mV	2500mV
		单体过放保护解除电压 Single cell over discharge protection released voltage	3000mV	2700mV
		单体过放保护延时 Single cell over discharge protection delay	1s	1s
5	充电过流保护 Charging over current protection	充电过流保护电流 Charging overcurrent protection current	21A	21A
		充电过流保护延时 Charging overcurrent protection delay	1s	1s
6	放电过流保护 Discharging over current protection	放电过流保护电流 1 Discharge overcurrent protection current 1	94.5A	94.5A
		放电过流保 1 护延时 Discharge overcurrent protection delay 1	1s	1s
		放电过流保护电流 2 Discharge overcurrent protection current 2	200A	200A
		放电过流保护延时 2 Discharge overcurrent protection delay 2	100ms	100mS
		恢复条件 Restoration conditions	负载移除 Load removal	负载移除 Load removal
7	短路保护 Short circuit protection	短路保护电流 Short circuit protection current	400A	400A
		短路保护延时 Short circuit protection delay	250us	250us
		恢复条件 Restoration conditions	负载移除 Load removal	负载移除 Load removal



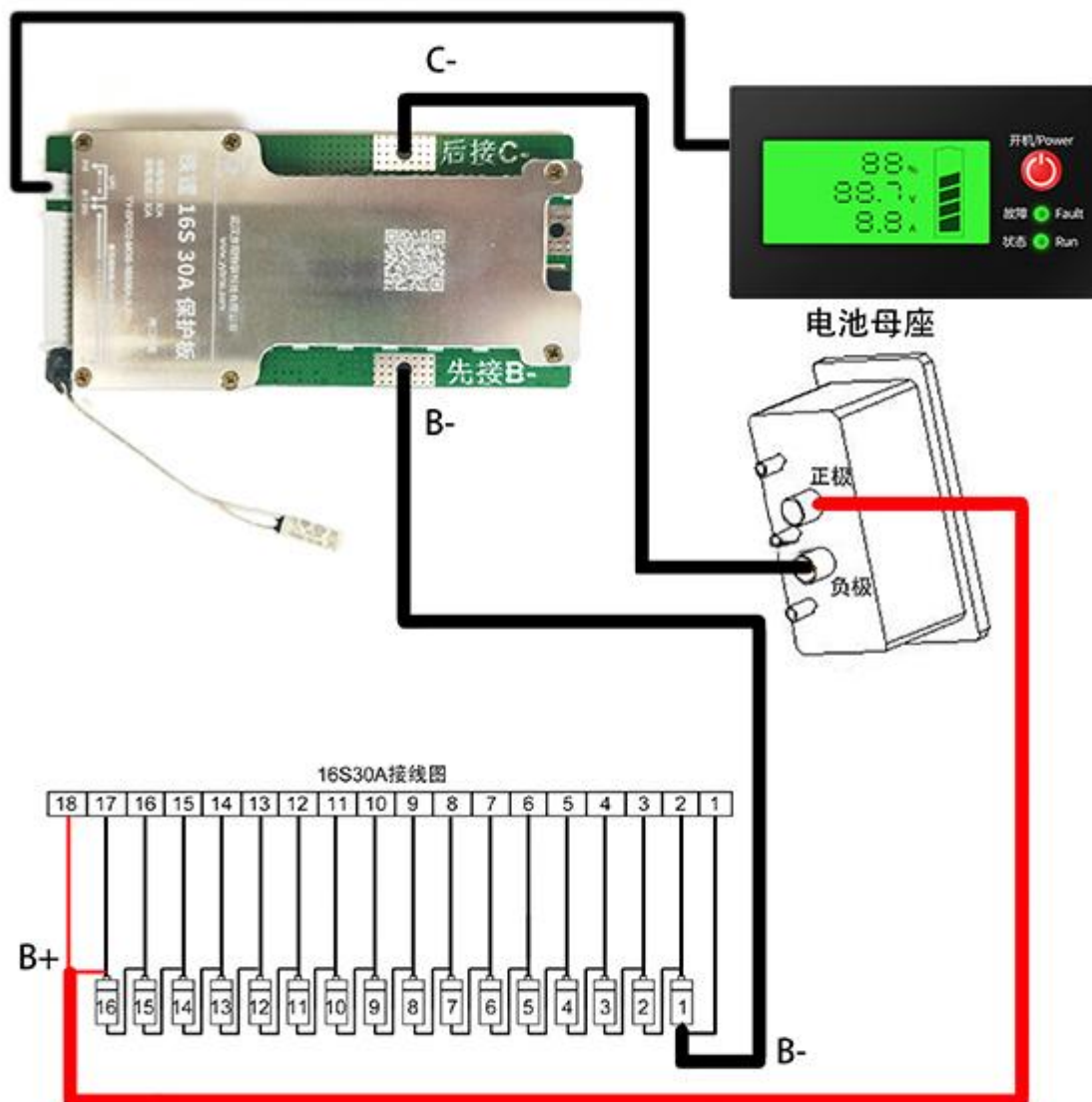
8	运行功耗 Working power consumption	工作状态自耗电 Self consumption in working state	0.7mA	0.7mA
9	0V 充电 0V charge	是否允许 0V 充电 Whether 0V charging is allowed	否 no	否 no
10	温度保护 Temperature protection	充放电高温保护值 (BMS) Charge discharge high temperature protection value (BMS)	80°C	80°C
		充放电高温恢复值(BMS) Charge discharge high temperature recovery value (BMS)	70°C	70°C
		充放电低温保护值 (BMS) Low temperature protection value of charging and discharging (BMS)	-30°C	-30°C
		充放电低温恢复值 Low temperature recovery value of charge and discharge	-20°C	-20°C
		NTC 高温保护值(电芯) NTC high temperature protection value (cell)	65°C	65°C
11	建议工作条件 Recommended working conditions	建议最大持续充电电流 Recommended maximum continuous charging current	20A	20A
		建议最大持续放电电流 Recommended maximum continuous discharge current	30A	30A
		建议工作温度 Recommended operating temperature	-20°C-60°C	-20°C-60°C
12	蓝牙通讯 Bluetooth Communicator	选配 Optional	支持电量、总电压、电流、单串电压 支持 Android APP, 苹果手机 APP 支持 Android APP, Apple IOS APP	支持 Android APP, 苹果手机 APP support Android APP, Apple IOS APP



			current, single series voltage display in addition to MOS control of the software board functions	
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3. 接线说明 Wiring instructions

动力线接线图 : Power line wiring diagram:



蓝牙模块选配 Bluetooth module optional

4. 蓝牙 APP 概述 Overview of Bluetooth APP

到华为、小米、应用宝、OPPO 应用商店搜索：彦阳 BMS，下载当前最新彦阳 APP。在打开 APP 扫描蓝牙时，请注意必须同步打开 位置信息或者 GPS 开关才能方便蓝牙搜索到。

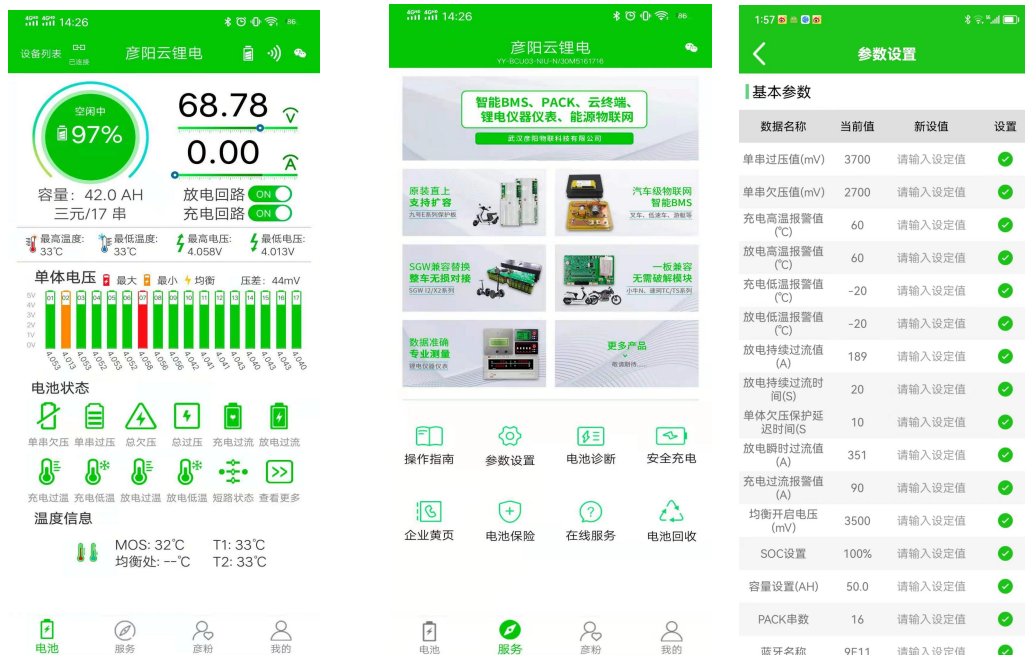
使用 APP 链接 BMS 时，需要预先打开 GPS 定位。

Go to Huawei, Xiaomi, App Store, OPPO App Store to search: YYBMS, and download the latest YYBMS. When opening the APP to scan the Bluetooth, please note that the location information or GPS switch must be turned on simultaneously to facilitate the Bluetooth search.

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硬件板搭配蓝牙方案，APP 功能：

- 1.显示功能：电量显示、报警显示、数据显示功能，显示总体电压、单体电压、电流等。
- 2.可设置功能：单串过电压值、单串欠电压值、放电持续过流时间、单体欠电压保护延迟时间、均衡开启电压、SOC 设置、容量设置、蓝牙名称。

Hardware board paired with Bluetooth solution, APP functions:

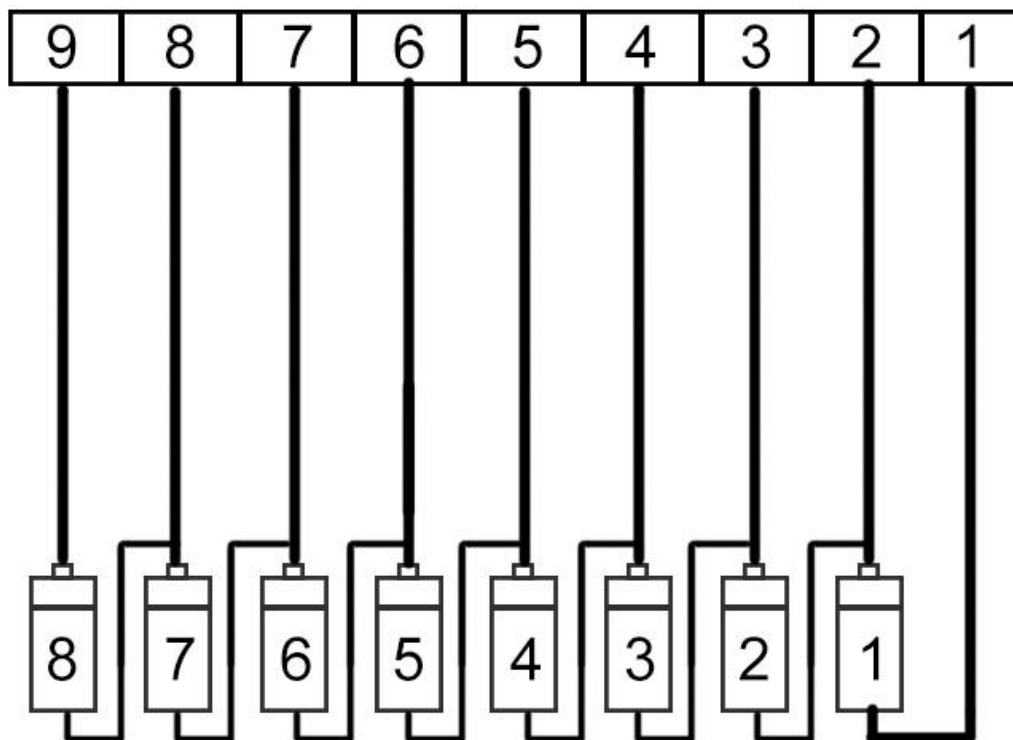
1. Display function: Power display, alarm display, data display function, displaying overall voltage, individual voltage, current, etc.
2. Settable functions: single string overvoltage value, single string undervoltage value, continuous overcurrent time of discharge, delay time of single body undervoltage protection, balanced opening voltage, SOC setting, capacity setting, Bluetooth name.

采样线接线图：

Sampling line wiring diagram:

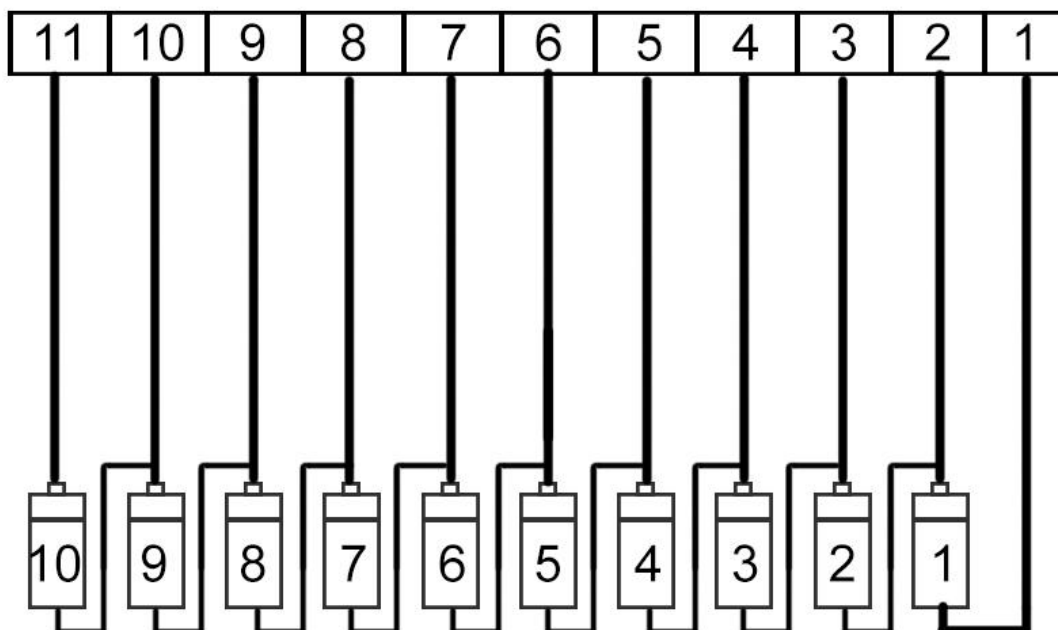
8 串接线图 8 String wiring diagram

8S30A接线图

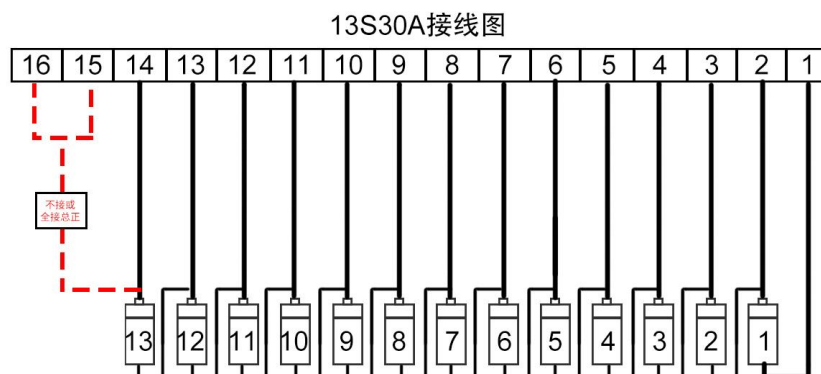


10 串接线图 10 String wiring diagram

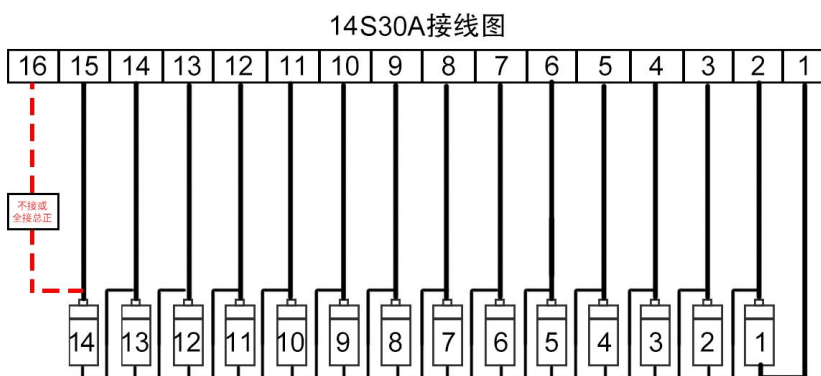
10S30A接线图



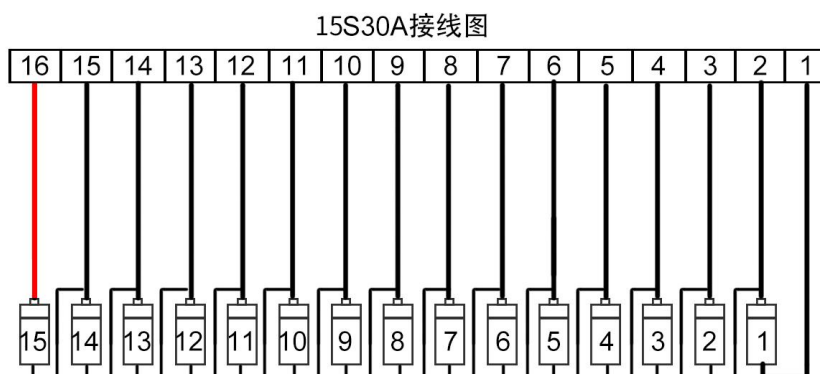
13 串接线图 13 String wiring diagram



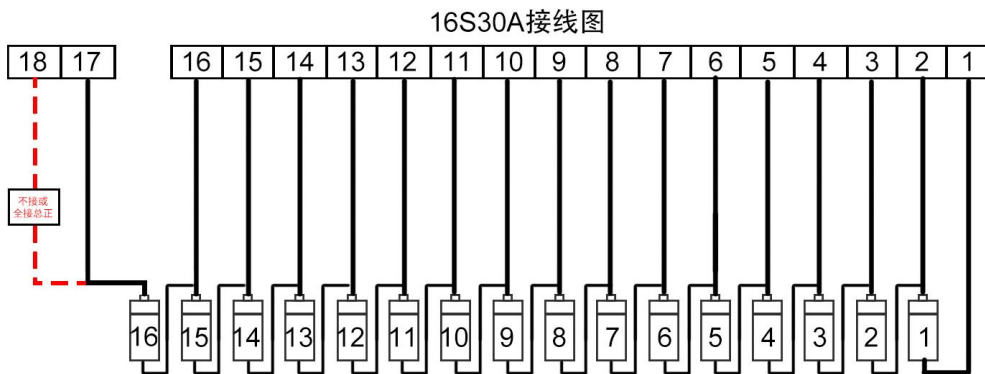
14 串接线图 14 String wiring diagram



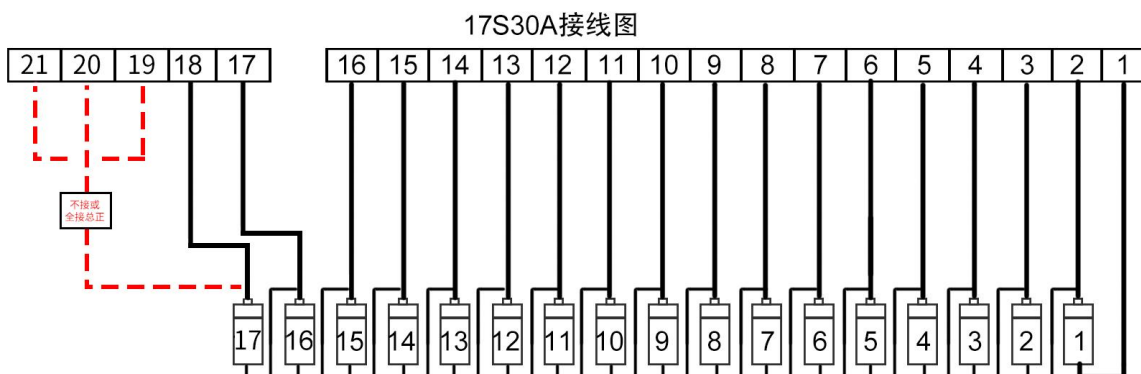
15 串接线图 15 String wiring diagram



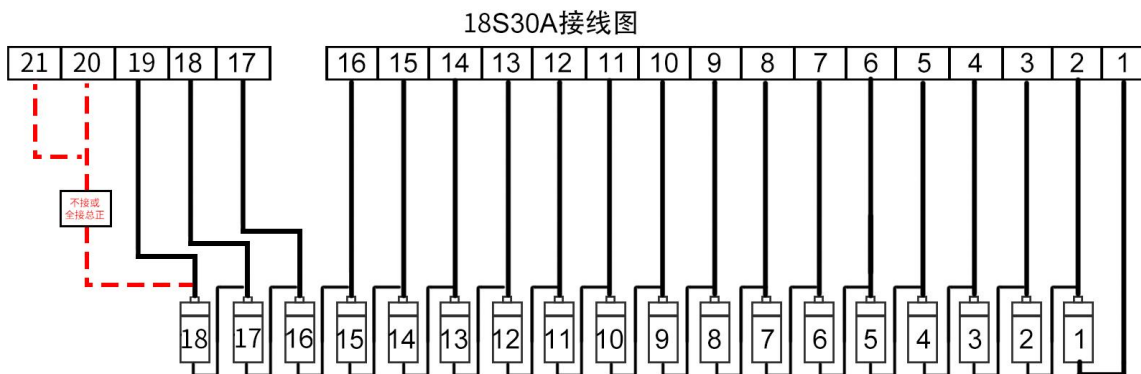
16 串接线图 16 String wiring diagram



17 串接线图 17 String wiring diagram



18 串接线图 18 String wiring diagram



20 串接线图 20 String wiring diagram



公司简介 Company Introduction

武汉彦阳物联科技有限公司成立于2015年06月，专注智能BMS、库仑计、能源物联网产品的研发设计和生产的高科技公司，国家高新技术企业，ISO9001认证企业，公司拥有一支高素质的研发管理团队，本科以上学历100%，核心人员从事锂电BMS行业10年以上。公司拥有完善的测试实验室，具备从BMS基础测试到可靠性实验、老化、震动、拉力、高低温实验全套测试设备，为产品试验、检验提供可靠的品质保证。

Wuhan Yanyang IOT Technology Co., Ltd. was established in June 2015. It is a high-tech company focusing on the R&D, design and production of smart BMS, coulomb counters, and cloud terminal products. The company's cloud terminal products have broad applications in the field of takeaway leasing and smart travel. In the market, the products are sold to many countries at home and abroad. The company has a high-quality R&D management team, with a master's degree or above accounting for 50%, and a bachelor degree or above 100%. The core personnel have been engaged in the lithium battery industry for an average of more than 10 years. The company has a complete testing laboratory, with a complete set of testing equipment from BMS basic testing to reliability testing, aging, high and low temperature testing to provide reliable quality assurance for product testing and inspection.

团队近年来开发的智能BMS广泛应用于各类动力锂电系统如电摩、AGV、叉车、电动自行车/低速电车电池领域，也服务于全球新能源行业如风光储能系统、家庭储能系统、UPS后备电源、通信基站电源、太阳能路灯等。业务范围以中国为基点，辐射东南亚、欧美等国家和地区，得到了海内外客户的一致好评。

The BMS system developed by the team in recent years is widely used in various power lithium battery systems such as electric motorcycles, AGVs, forklifts, electric bicycles/low-speed electric car batteries, and also serves the global new energy industry such as wind and solar energy storage systems, home energy storage systems, UPS Back-up power supply, communication base station power supply, solar street lights and other fields. The business

scope is based on China, radiating to Southeast Asia, Europe and the United States and other countries and regions, and has won unanimous praise from customers at home and abroad.

