



中国船级社
CHINA CLASSIFICATION SOCIETY

证书编号/Certificate No.
SZ24PTB00026_01

型式认可证书 CERTIFICATE OF TYPE APPROVAL

兹证明本证书所述制造厂具备按照下列标准的要求生产本证书所列产品的能力和条件。

This is to certify that the manufacturer stated in the certificate meets the requirements of the standards listed below and is available with the ability and conditions to produce the products described in the certificate.

制造厂/Manufacturer

广东逸动科技有限公司
Guangdong ePropulsion Technology Co.,Ltd.

地址/Address

广东省东莞市松山湖园区大学路11号1栋801室
Room 801, Building 1, 11 Daxue Road, Songshan Lake, Dongguan, Guangdong Province, China

产品名称/Product

电池管理系统
Battery Management System

附加标志/Notations

无/Nil.

认可标准/Approval Standard

1. 中国船级社《钢质海船入级规范》第4篇，第1、3章
Chapter 1 and 3, Part Four of China Classification Society "Rules for Classification of See-going Steel Ships"
2. 中国船级社《船舶应用电池动力规范》第1、6章
Chapter 1 and 6 of China Classification Society Rules for Ships Using Battery-Power
3. 中国船级社《钢质内河船舶建造规范》第3篇，第1、5章
Chapter 1 and 5, Part Three of China Classification Society Rules for Construction of Inland Waters Steel Ships
4. 中国船级社《船舶设备与系统可靠性验证指南》（2023）第4、5章
Chapter 4 and 5, China Classification Society Guidelines for Reliability Verification of Ship Equipment and Systems 2023

用于/Intended for

船舶/Ships



证书有效期至/This Certificate is valid until 2029年05月19日/ May. 19,2029

发证机构/中国船级社深圳分社
Issued by CCS Shenzhen Branch

签发日期 2024年12月02日
Date Dec. 02,2024

本证书根据中国船级社规范和相关规定签发。所有证书页为一个整体，必须同时使用。纸质证书每页均须由本社盖章方为有效，电子证书含数字签名方为有效，本证书复印件无效。任何单位和个人均不应摘录或节选本证书的部分内容。有关方对所持证书的真实性有疑问时，可以向本社检验机构咨询。本证书凡是未注明版本的规范，其（发证时）最新版本适用于本证书。
This Certificate is issued pursuant to the Rules of the Society and related regulation. All pages of the certificate are taken as a whole and are used simultaneously. No paper certificate page is valid without bearing the stamp of the Society, no electronic certificates is valid without the digital signature, and no copied form of the certificate is regarded as valid. Any part of the certificate is not to be extracted or abridged by any unit or individual in any form. Related parties who are doubted about the authenticity of the certificate may inquire of the Society or its offices. **For Rules with no version indication, their latest version (at the time of issuance of the certificate) applies to the this certificate.**



Form No: T01.

联系方式/Contact Us, 见本社官方网站/See official web site of the Society (<http://www.ccs.org.cn>)

UTN:P024-36607956

产品明细/Product Description

电池管理系统/Battery Management System (M0001)

名称/Name	属性（值）/Value	单位/Unit
型号/Type	见附页 See additional page(s)	
系统组成/System Component	见附页 See additional page(s)	
电池类型/Battery Type	磷酸铁锂电池 Lithium-iron Phosphate Battery	

批准的图纸/Approved Drawings

图纸批准号/ Drawings Approval No. : GP23PPP00188

产品认可试验报告/ Approval Test Report

试验报告编号/ Test Report No. : H202407034202-01
试验报告日期/ Test Report Date : 2024-10-25

试验报告编号/ Test Report No. : ENS2402260240E00201R
试验报告日期/ Test Report Date : 2024-04-24

试验报告编号/ Test Report No. : EP-FM-RP-001
试验报告日期/ Test Report Date : 2024-03-20

试验报告编号/ Test Report No. : ENS2401180008S00101R
试验报告日期/ Test Report Date : 2024-01-24

试验报告编号/ Test Report No. : EDG2402260240R00102R
试验报告日期/ Test Report Date : 2024-04-26

认可后的产品检验方式/ Method of Product Inspection after Approval

主控模块：按规范认可后应进行产品检验的产品/The main control module should be inspected in term of the rules:

认可后的产品检验应由本社验船师根据本社规范规定按批准的产品检验计划进行检验，经检验合格后由本社颁发船用产品证书。

After approval, product inspection should be carried out by the Surveyor of the Society in accordance with the approved product inspection scheme, and the Marine Product Certificate will be issued by the Society upon satisfactory inspection.

从控模块：按规范只认可不进行产品检验的产品//The slave control module approved only in term of the rules:

认可后的产品由制造厂检验合格后签发合格证明，并连同该产品的本社认可证书复印件一并交付用户，制造厂对产品的符合公约、法规、本社规范和本社认可的标准规定负责。

After approval, product inspection should be carried out by the Manufacturer. Upon satisfactory inspection, and the Quality Certificate issued by the Manufacturer should be provided to the purchaser together with the copy of the approval certificate issued by the Society. The manufacturer should take responsibility for the product being in compliance with the convention, statutory regulation, the Society rules and the standard accepted by the Society.

认可保持条件/ Maintenance Requirements of Approval

1. 型式认可后，如果产品及其重要零部件的设计、所用材料或制造方法有所改变，且影响到产品的主要特性、特征；或产品的性能指标有所更改，且超过认可的范围，则有关图纸和文件应经检验机构审批。并在检验机构认为必要时，经本社检验人员见证有关试验和进行检查，其结果应能证实仍符合认可条件。

After type approval, if there are changes to the design, materials used or manufacturing method of the product and important components and such changes affect major characteristics and properties of the product, or property indexes of the product are changed and exceed the scope of approval, related drawings and documents are to be examined and approved by the concerned survey office. Where deemed necessary by the survey office, the surveyor to the Society will go to witness relevant tests and conduct inspection and the results should be able to demonstrate compliance with the approval conditions.

2. 工厂的质量管理体系应保持有效运行，并且与认可时一致。如果质量管理体系发生改变，应经原体系认证机构审核并报本社批准。

The quality management system of the factory shall be ensure effective operation, and shall be the same as the situation of approval. If there are any changes to the quality management system, auditing of the original certification organization for quality management system and the society's approval shall be obtained.

3. 认可证书有效期内, 如果出现可能导致本社取消认可的情况, 工厂应及时采取有效的纠正措施。

Within the validity of the approval certificate, if cases occur that may cause the Society to withdraw the approval, the manufacturer should take corrective actions in a prompt and effective manner.

4. 在认可证书有效期内, 本社检验人员可在未经事先通知的情况下对工厂的产品制造过程进行审核, 以验证产品的生产是否符合业经本社批准的图纸和文件。工厂应予以配合。

Within the validity of the approval certificate, the surveyor to the Society may pay unannounced audit to the manufacturing process of the product in order to confirm whether it is in compliance with the drawings and documents approved by the Society. The factory should provide an active cooperation and necessary for the surveyor.

备注/Remarks

本证书由原型式认可证书 (No. GZ23PTB00115_01) 变更并替代原证书。

This Certificate is modified from and supersedes the previous Type Approval Certificate No. GZ23PTB00115_01.

本产品不包含充放电硬件电路以及传感器。

This product does not include charge and discharge hardware circuits and sensors.

本产品不可直接安装于海船开敞甲板区域。

This product can not be installed directly in open decks area of sea-going ship.

本产品应由其监控蓄电池外的其他电源系统供电。

This product shall be powered by an power supply system other than its monitoring battery.

本产品依据中国船级社《船舶设备与系统可靠性验证指南》(2023) 第4、5章的要求进行了可靠性验证, 引用环境参数严酷度为 6K3/6B1/6C1/6S1/6M3。

This product has been verified for reliability according to the requirements of Chapter 4 and 5, China Classification Society Guidelines for Reliability Verification of Ship Equipment and Systems 2023, the severity of the cited environmental parameter is 6K3/6B1/6C1/6S1/6M3.

本社已审核了产品厂无石棉声明, 但本社的审核不免除产品厂按照合同关系向订货方保证产品无石棉的责任。

The declaration of asbestos-free submitted by manufacturer has been reviewed by the Society.

However, liability of the manufacturer to guarantee the products are asbestos-free to purchaser under contract will not be exempted.

工厂地址/Factory address: 广东省东莞市松山湖园区兴业路2号2栋101室201室、301室、401室。

Room 101, Room 201, Room 301, Room 401, Building 2, 2 Xingye Rd, Songshan Lake, Dongguan City,

中国船级社深圳分社

CCS Shenzhen Branch

注: 本证书含有附页, 共1页

Note: The certificate is attached with additional 1 page(s)

产品明细

Product Description

产品名称 Product Name	电池管理系统 Battery Management System	
型号 Type	EP-BMS-12/24V-1000V-A	
系统组成 System composition	(1) 电池簇管理单元 (一级主机) /BCMU	
	型号/Type:	EP-BCMU-12/24V-1000V-A
	工作电压/Working voltage:	DC 24V (9V~32V)
	总电压测量范围/Total voltage measurement range:	0~1000V (3路/3 channels)
	总电流采样范围/Total current sampling range:	-500~500A
	防护等级/Degrees of protection	IP40
	(2) 电池控制单元 (二级主机) /BCU	
	型号/Type:	EP-BCU-12/24V-1000V-A
	工作电压/Working voltage:	DC 24V (9V~32V)
	总电压测量范围/Total voltage measurement range:	0~1000V (3路/3 channels)
	总电流采样范围/Total current sampling range:	-500~500A
	防护等级/Degrees of protection	IP40
	(3) 电池温度控制单元 (二级主机) /TCU	
	型号/Type:	EP-TCU-12/24V-A
	工作电压/Working voltage:	DC 24V (9V~32V)
	总电压测量范围/Total voltage measurement range:	0~1000V (3路/3 channels)
	环境温度监测路数/Number of environmental temperature mon	1~3 (路/C)
	温度监测范围/Temperature monitoring range:	-40℃~125℃
	防护等级/Degrees of protection	IP40
	(4) 电池采集单元 (从机) /BMU	
	型号/Type:	EP-BMU-12/24V-32S-A
	工作电压/Working voltage:	DC 24V (9V~32V)
	均衡电流/Balance current:	50mA (被动均衡/Passive balance)
	电池监控串数/Number of battery monitoring strings:	8~32 (串/S)
	温度监测路数/Number of temperature monitoring channels:	1~32 (路/C)
	单体电压测量范围/Single voltage measurement range:	0~5V
	温度监测范围/Temperature monitoring range:	-40℃~125℃
	防护等级/Degrees of protection	IP40
	(5) 电池温度扩展采集单元 (从机) /TMU	
	型号/Type:	EP-TMU-12/24V-32S-A
	工作电压/Working voltage:	DC 24V (9V~32V)
	温度监测路数/Number of temperature monitoring channels:	1~32 (路/C)
	温度监测范围/Temperature monitoring range:	-40℃~125℃
	防护等级/Degrees of protection	IP40
	(6) 显示器/LCD (选配/Optional)	
	型号/Type:	EP-LCD-12V/24V-5in-A
	工作电压/Working voltage:	DC24V (9V~32V)
	屏幕尺寸/Screen size:	5 (寸/inch)
	防护等级/Degrees of Protection	IP40