Marine & Offshore

Certificate number: 77040/A0 BV
File number: MPA2400642
Product code: 4421I

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

V.E.B.R.A.T.

SAINT-ANDRE-DES-EAUX - FRANCE

for the type of product

ELECTRICAL POWER MANAGEMENT SYSTEMS

PCU 600 Energy and Propulsion Management System.

Requirements:
Bureau Veritas Rules for the Classification of Steel Ships/Naval Ships/Inland Navigation Vessels.

EC Code: 41

For information only

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 12 May 2030

For Bureau Veritas Marine & Offshore,
At BV SAINT-NAZAIRE, on 12 May 2025

This certificate was created electronically and is valid without signature

This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

The **PCU 600** is the main control unit for the battery system. It is the master BMS which communicates with the slave BMS integrated in the K31 modules and centralizes the data from all the K31 modules (up to 6). The PCU mainly consists of String Management Controller (SMC), Monitoring box, 2 contactors and a fuse.

PCU600 Main Specifications:

Parameter	**Value**	**Condition**
Output voltage	614 V	Max. 1000V
Current	315A	Max. 500A
Communication voltage	24V	16 - 28V
Ambient temperature	-20°C to +55°C	
Operation Temperature	-40°C to 70°C	
IP protection	IP 44	
Signal (Master BMS)	CAN bus	Master BMS
Master BMS firmware version	19.xx	For modules K31

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4. APPLICATION / LIMITATION :

4.1 - BV Rules for the Classification of Steel Ships/Naval Ships/Inland Navigation Vessels.

4.2 - Approval also valid for ships to be granted for the notations: **AUT-UMS, AUT-CCS, AUT-PORT, AUT-IMS, AUT-QAS, AUT-IAS** & **BATTERY SYSTEM.**

4.3 - BUREAU VERITAS Environmental Category, **EC Code: 41.**

4.4 - The equipment fulfils the EMC requirements for installation in General Power Distribution Zones.

4.5 - The installation and ventilation arrangement shall comply with the Manufacturer's recommendation described in the above-referenced documentation.

4.6 - Battery System Risk Analysis document (referenced in 2) should inform project-specific battery space risk analysis.

4.7 - Only Hardware and Firmware successfully tested together in compliance with the rules as referred to in cover page, according to the declaration of the manufacturer are covered by this certificate.

4.8 - Any modification of the hardware, firmware having an impact on the product performance or functionality has to be validated with type testing.

4.9 - Equipment covered by this Type Approval certificate has been tested according to requirements of IACS UR E10 rev 9.

***** END OF CERTIFICATE *****

For information only