



## Confirmation of Product Type Approval

**Company Name:** PAN ELECTRIC INDUSTRIA ELETROELETRONICA LTDA

**Address:** RUA LUIZ PEDRO DE MARCO 799-CONCEICAO RIO GRANDE SUL 95.700-000 Brazil

**Product:** Cable, Power

**Model(s):** PANNAV Series Type: PN, PNB and PSBSC

**Endorsements:**

<b>Certificate Type</b>	<b>Certificate Number</b>	<b>Issue Date</b>	<b>Expiry Date</b>
Product Design Assessment (PDA)	20-2040181-1-PDA	07-JAN-2022	07-OCT-2025
Manufacturing Assessment (MA)	20-4509552	04-NOV-2020	03-NOV-2025
Product Quality Assurance (PQA)	NA	NA	NA

### **Tier**

3 - Type Approved, unit certification not required

### **Intended Service**

Power Cables for Ships and Offshore Installations.

### **Description**

Flame retardant, fire resistant, halogen free, low smoke emission cables for low voltage power circuits. Insulation: HF 90, Inner Covering: SHF1, Sheath: SHF1 or SHF2.

Number of cores and cross sectional areas: 1 x 1.0 to 500 mm<sup>2</sup>; 2 to 4 x 1.0 to 300 mm<sup>2</sup>; 2 to 60 x 1.0 to 2.5 mm<sup>2</sup>. Complete description as per attached document.

### **Ratings**

Voltage class: 0.6/1 kV

Temperature class: 90°C

### **Service Restrictions**

1. Unit certification is not required except where they are used for electric propulsion systems. All propulsion cables, other than internal wiring in control gears and switchboards, are to be subjected to dielectric and insulation tests in the presence of the Surveyor (see 4-8-5/5.17.11 of the Marine Vessel Rules).

2. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

### **Comments**

1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
2. The following markings are to be provided in accordance with IEC 60092-350: identification of origin (manufacturer's name or trade name); rated voltage (Uo/U) and construction (number of cores and cross sectional area of conductor).

### **Notes, Drawings and Documentation**

Drawing No. 2111065-2-001, REP-RELATORIO DE ENSAIOS DE PRODUTOS, dated 14-Dec-2021

Drawing No. 2111067-3-001, REP-RELATORIO DE ENSAIOS DE PRODUTOS, dated 13-Dec-2021

Drawing No. 5058482-A, PROTOTYPE TESTING REPORT, dated 14-Dec-2021

Drawing No. TEST PROGRAM-TYPE APPROVAL, TEST PROGRAM-TYPE APPROVAL

Drawing No. DATABOOK, NEW DATABOOK PANNAV PN, PNB & PSBSC - 2021, Revision: 0

Support documentation from previous review:

Drawing No. 4315733-A, PROTOTYPE TESTING REPORT

Drawing No. 4393743, PROTOTYPE TESTING REPORT

DATABOOK POWER PN, PNB & PSBSC

### **Term of Validity**

This Product Design Assessment (PDA) Certificate remains valid until 07/Oct/2025 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

### **ABS Rules**

2020 Rules for Conditions of Classification: 1-1-4/7.7, 1-1-A3, 1-1-A4

2020 Rules for Building and Classing Marine Vessel Rules: 4-8-3/9

2020 Rules for Conditions of Classification - Offshore Units and Structures: 1-1-4/9.7, 1-1-A2, 1-1-A3

2020 Rules for Building and Classing Mobile Offshore Units: 4-3-4/7

### **International Standards**

IEC 60092-350: 2020

IEC 60092-353: 2016

IEC 60092-360: 2014

IEC 60331-11: 1999+AMD1:2009

IEC 60331-21: 1999

IEC 60332-1-1/2: 2004+AMD1:2015

IEC 60332-3-22: 2018

IEC 60754-1: 2011+AMD1:2019

IEC 60754-2: 2011+AMD1:2019  
IEC 60684-2: 2011  
IEC 61034-1: 2005+AMD1:2013+AMD2:2019  
IEC 61034-2: 2005+AMD1:2013+AMD2:2019

**EU-MED Standards**

NA

**National Standards**

NA

**Government Standards**

NA

**Other Standards**

NA



A handwritten signature in black ink, appearing to read 'James W. ...', is positioned above the printed name.

Corporate ABS Programs  
American Bureau of Shipping  
Print Date and Time: 31-May-2022 11:47

ABS has used due diligence in the preparation of this certificate, and it represents the information on the product in the ABS Records as of the date and time the certificate is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval**.

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or prior to the effective date of the ABS Rules and standards applied at the time of PDA issuance. ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.