



CERTIFICATE NUMBER
EFFECTIVE DATE
EXPIRY DATE
ABS TECHNICAL OFFICE

20-2040179-PDA
08-Oct-2020
07-Oct-2025
Rio de Janeiro Engineering -
Machinery

CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

PAN ELECTRIC INDUSTRIA ELETROELETRONICA LTDA

located at

**RUA LUIZ PEDRO DE MARCO 799-CONCEICAO, BENTO
GONCALVES, RIO GRANDE SUL, Brazil, 95.700-000**

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product Cable, Instrumentation, Signal, Control and Communication Ca...

Model PANNAV Series Type: IN, IBI, IBIC, IBC, IBICA, IBCA, IBIA, IA and IASC

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.

American Bureau Of Shipping

Roberto B. Assumpção

Roberto B Assumpcao,Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

PAN ELECTRIC INDUSTRIA ELETROELETRONICA LTDA

RUA LUIZ PEDRO DE MARCO 799-CONCEICAO

BENTO GONCALVES RIO GRANDE SUL

Brazil 95.700-000

Telephone: 55-54-2102 3333

Fax: 55-54-2102 3333

Email: carina@pan.com.br

Web: www.pan.com.br

Tier: 2 - PDA Issued

Product: Cable, Instrumentation, Signal, Control and Communication Cables

Model: PANNAV Series Type: IN, IBI, IBIC, IBC, IBICA, IBCA, IBIA, IA and IASC

Intended Service:

Control and Instrumentation Cables for Ships and Offshore Installations.

Description:

Flame retardant, fire resistant, halogen free, low smoke emission cables for control and instrumentation circuits.

Insulation: HF 90, Inner Covering: SHF1, Sheath: SHF1 or SHF2.

Number of cores and cross sectional areas: 1 to 60 pairs x 0.5 to 2.5 mm²; 1 to 50 triples x 0.5 to 2.5 mm²; 1 to 25 quads x 0.5 to 2.5 mm²; 2 to 60 concentric cores x 0.5 to 2.5 mm². Complete description as per attached document.

Rating:

Voltage class: 150/250 V

Temperature class: 90°C

Service Restriction:

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).

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 (U_o/U) and construction (number of cores and cross sectional area of conductor).

Notes/Drawing/Documentation:

Drawing No. 4315733-A, PROTOTYPE TESTING REPORT

Drawing No. 4393743-A, PROTOTYPE TESTING REPORT

DATABOOK INSTRUMENTATION IN, IBI, IBIC, IBC, IBICA, IBCA, IBIA, IA & IASC

Terms of Validity:

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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.

STANDARDS

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 Vessels: 4-8-3/9

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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

National:

NA

International:

IEC 60092-350: 2020

IEC 60092-360: 2014

IEC 60092-376: 2017

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

Government:

NA

EUMED:

NA

OTHERS:

NA