



CERTIFICATE NUMBER	23-2425827-PDA
EFFECTIVE DATE	07-Sep-2023
EXPIRY DATE	06-Sep-2028
ABS TECHNICAL OFFICE	Hellenic - Piraeus Eng Department

CERTIFICATE OF Product Design Assessment

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

NAUTOMAR IKE

located at

223, SALAMINOS AVE., , KERATSINI, Greece, 18756

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: Programmable Controller, I/O Units, Operator & Communication...

Model: MFC-151, MDU-102

Endorsements:

Tier: 2 - PDA Issued

This Product Design Assessment (PDA) Certificate remains valid until 06/Sep/2028 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

Ion Koumbarelis

Ion G. Koumbarelis, 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)

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Tier: 2 - PDA Issued

Product: Programmable Controller, I/O Units, Operator & Communication Interfaces

Model: MFC-151, MDU-102

Endorsements:

Intended Service:

MFC-151: Data Multi-Functional Converter of NMEA 0183 signals for Marine and Offshore installations for navigation equipment.

MDU-102: Data Amplifier - Multiplier of NMEA signals for Marine and Offshore installations for navigation equipment.

Description:

MFC-151: The product is designed to receive, multiplex, convert and multiply NMEA 0183 standard messages transmitted via RS-422 / RS-485 interfaces, Ethernet and USB with customized operation algorithm.

MDU-102: The product is designed for the multiplication of NMEA 0183 signals, version 1-3 (IEC 61162-1, 61162-2) or other serial data transmissions via RS-232 and RS-422/ RS-485 interfaces from one or two sources. The product provides a checksum test for data received on the first channel.

Rating:

MFC-151:

Input Voltage Range: 9.5-36 V DC

Max. Power Consumption: 7 W

Degree of Protection: IP 22

Compass Safe Distance: 0.13 m

Operating temperature: -15 to +55 deg Celsius

MDU-102:

Input Voltage Range: 10-36 V DC

Nominal Supply Voltage: 24 V DC

Max. Power Consumption: 3 W

Degree of Protection: IP 22

Compass Safe Distance: 0.11 m

Operating temperature: -15 to +55 deg Celsius

Service Restriction:

1. Unit Certification is not required for this product. 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.

2. This product is intended only for navigation equipment.

Comments:

1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

2. Tests and approval are for hardware only. Each vessel's configuration and external connection is to be specifically approved.

Notes/Drawing/Documentation:

1. EN IEC 60945 – Test Report No 100576.1 A1 (for MDU-102) dated 21 July 2023

2. EN IEC 60945 – Test Report No 100576.2 A1 (for MFC-151) dated 21 July 2023

3. Multifunctional Converter MFC-151 – Operational Manual (Version 0.8.1)

4. Amplifier – Multiplier of NMEA Signals MDU-102 – Operating Manual (Version 1.1)

5. Bill of Materials MDU-102 – NMEA0183 Amplifier – Distributor

6. Bill of Materials MFC-151 – Multi-Functional Converter NMEA

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7. Drawing No. NM-230721-31 (issue A) "IEC 60945-4-1-1(a) (2002) & IEC 60945-4-6-3 (2002) Waiver MDU-102 – NMEA0183 Amplifier - Distributor"

8. Drawing No. NM-230721-32 (issue B) "IEC 60945-4-1-1(a) (2002) & IEC 60945-4-6-3 (2002) Waiver MFC-151 - Multi-Functional Converter NMEA"

Terms of Validity:

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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.

STANDARDS

ABS Rules:

2023 Rules for Conditions of Classification 1-1-4/7.7, 1-1-A3 and 1-1-A4, which covers the following:
2023 Rules for Building and Classing Steel Vessels 4-1-1/7.15, 4-8-3/1.7, 4-8-3/1.9 and 4-8-3/15 Table 2.

2023 Rules for Conditions of Classification - Offshore Units and Structures 1-1-4/9.7, 1-1-A2 and 1-1-A3, which covers the following:
2023 Rules for Building and Classing Mobile Offshore Units 4-1-1/7.9, 4-3-1/9, 4-3-1/11 and 4-3-3/9.7.3 Table 1.

National:

NA

International:

IEC 60945 (2002 edition)

Government:

NA

EUMED:

NA

OTHERS:

NA