



Marine & Offshore

Certificate number: 56366/A0 BV

File number: AP4830

Product code: 2811H

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

MARINELEC TECHNOLOGIES

Quimper - FRANCE

for the type of product

NAVIGATION LIGHT COMPONENTS

NORMA.PWR, NORMA.CPU, NORMA_CP

Requirements:

BUREAU VERITAS Rules for the Classification of Steel Ships.

IMO Resolution MSC.253(83).

IEC 60092-504 (2016).

EC code : 31B.

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: 11 Apr 2024

For Bureau Veritas Marine & Offshore,

At BV SAINT-NAZAIRE, on 11 Apr 2019,

Francois Lopinot



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 :

- Product description:

NORMA is a navigation lights control & alarm system which allows monitoring and controlling up to 48 navigation lights.

- Product model or type designation :

NORMA product range: **NORMA.PWR, NORMA.CPU, NORMA_CP.**

The accessories NORMA.NPL, NORMA.NPC_F, NORMA.NP2L delivered with NORMA product.

1.1 - Main Characteristics:

Configuration max	Up to 48 navigation lights, up to 6 NORMA.CPU
Compatible light	Filament (24VDC / 24VAC / 115VAC / 230VAC up to 60W) LEDs navigation lights (24VDC)
Power max	200W (NORMA.CPU)
Communication	RS485 (between modules only)
Digital inputs	1 x control power supply (24VDC) 3 x push Button 3 x switch input 8 x navigation lights control inputs
Digital outputs	8 x navigation lights outputs 8 x navigation light status indication outputs 4 x relay outputs 4 x signaling outputs
Power supply	NORMA.PWR : -25/+30% 24VDC , ±10%, 50-60Hz 230VAC NORMA_CP : -25/+30% 24VDC from NORMA.CPU
Ingress protection	IP44 (NORMA_CP)

1.2 - Software Version:

NORMA.CPU_AC/DC	: 2.0
NORMA_CP	: 2.0

2. DOCUMENTS AND DRAWINGS :

- Navigation lights controller drawings, No. NORMA.ELEC Rev0, dated 13/09/2018.
- NORMA product specifications, No. NORMA.FP GB Rev0, dated 30/11/2018.
- NORMA.CPU Modbus Manual, No. NORMA.CPU_MODBUS_MANUAL_REV0, dated 04/12/2018.
- NORMA.CPU Installation & User Manual, No. NORMA.CPU_USER_MANUAL_EN_REV0.4, dated 06/12/2018.
- NORMA_CP Installation & User Manual, No. NORMA_CP_MANU GB rev1, dated 24/02/2012.
- NORMA Procedure d'essais, No. NORMA_TEST_SPECIFICATION_FR rev0.1, dated 28/01/2019.
- NORMA Software Design Documentation, No. NORMA_SOFT-DESIGN_DOCUMENTAION rev03, dated 28/03/2019.

3. TEST REPORTS :

EMITECH:

- Mechanical test report, No. R240-BNN-18-104895-1/A, dated 13/11/2018.
- Climatic test report, No. R240-BNN-18-104895-2/A, dated 13/11/2018.
- EMC test report, No. R530-18-104241-1-A Ed 02, dated 19/02/2019.

MARINELEC:

- Tests Fonctionnels, No. NORMA.TESTS_FONCTIONNELS_BV_REV_0.2, dated 12/03/2019.

4. APPLICATION / LIMITATION :

- 4.1 - BUREAU VERITAS Rules for the Classification of Steel Ships.
- 4.2 - BUREAU VERITAS Environmental Category, **EC Code: 31B.**
- 4.3 - The equipment fulfils the EMC requirements for installation on the Bridge and Deck Zone.
- 4.4 - Only Hardware and Software successfully tested together in compliance with the regulations as referred to in page one, according to the declaration of the manufacturer are covered by this certificate.
- 4.5 - The installation shall comply with the Manufacturer's recommendation described in documentations.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The NORMA are to be supplied by **MARINELEC TECHNOLOGIES** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

5.3 - **MARINELEC TECHNOLOGIES** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

5.4 - For information, **MARINELEC TECHNOLOGIES** has declared to Bureau Veritas the following production site(s):

MARINELEC TECHNOLOGIES
13 Rue Alfred Le Bars
29000 Quimper
FRANCE

6. MARKING OF PRODUCT :

- Manufacturer's name and Trademark,
- Type and model number,
- Date of manufacture and serial number

7. OTHERS :

It is **MARINELEC TECHNOLOGIES**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

*** END OF CERTIFICATE ***