DNV·GL

Certificate No:
TAA00001W7

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Navigation Light Controllers

with type designation(s)
AHD-DPS02

Issued to
Böning Automationstechnologie GmbH & Co.KG
Ganderkesee, Niedersachsen, Germany

is found to comply with
DNV GL rules for classification – Ships

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Temperature	**B**
Humidity	**B**
Vibration	**A**
EMC	**B**
Enclosure	**A**

Issued at **Hamburg** on **2018-06-12**
This Certificate is valid until **2023-06-11**.
DNV GL local station: **Bremerhaven**

Approval Engineer: **Jens Dietrich**

for **DNV GL**

Joannis Papanuskas
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

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Product description

System is comprising the following modules:

AHD-DPS02 G14:
Basic Module with 14 lamp circuits, 3 relay outputs and 1 binary input, Recording of operation hours individual for each lamp, CAN and Modbus communication.

AHD-DPS02 A07: Extension Module with 7 lamp circuits.

AHD-DPS02 BS: Operation and Indicator module for console flush mounting with buzzer and backlight dimming, Functions: Lamp switching, lamp status indication (on, off, failure with alarm); power status, system status, remaining lamp life time warning.

A250: Main selector switch for power supply

AHD-DPS02 E07, AHD-DPS02 E14: Emerg. Switch Units with 7/14 switches.
Cold test at -25°C passed.

SW Versions:
AHD-DPS02 G14: V3.39
AHD-DPS02 A07: V12.0
AHD-DPS-02 BS: V3.0.

Application/Limitation

The Type Approval covers hardware and software listed under Product description.
Suitability of the interface for incandescent lamps and LEDs has to be checked in accordance with navigation light manufacturer's specification and in regard to light failure indication. Connected lights shall provide failure behaviour described in EN 14744 (2005), 4.10.1.

When the type approved software is revised (affecting all future deliveries) DNV GL is to be informed by forwarding updated software version documentation. If the changes are judged to affect functionality for which rule requirements apply a new functional type test may be required and the certificate may have to be renewed to identify the new software version.

The following documentation of the actual application is to be submitted for approval in each case:
- Reference to this Type Approval Certificate
- Functional description
- System block diagram
- Power supply and light circuit fuse arrangement

Tests carried out

Applicable tests according to DNV GL class guideline CG-0339, Nov.2016.
Functional tests based on IMO Performance Standard MSC.253(83) for Navigation Light Controllers, applicable part NLC.

Marking of product

Components are marked with maker, type designation and serial number.

Periodical assessment

Periodical assessment
The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of this certificate.

END OF CERTIFICATE