



Certificate no.:
TAE00004VM

TYPE APPROVAL DESIGN CERTIFICATE

This is to certify:

that the **Electrical Equipment - Lighting Controller**

with type designation(s)

13XX, 320, 321, 329, 444, 454, 474, 478, 498, 499, 905, 910, 920, 935, 939, 942

issued to

Helvar Ltd

DARTFORD, Kent, United Kingdom

is found to comply with

DNV rules for classification – Ships

Application:

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

Type	Temperature	Humidity	Vibration
13XX	A	B	A
320, 321, 329	A	B	A
444, 454, 474, 478, 498, 499	A	B	A
905, 910, 920, 935, 939, 942	A	B	A

Issued at **Høvik** on **2024-04-25**

This Certificate is valid until **2029-04-24**.

for **DNV**

DNV local unit: **UK & Ireland CMC & VMC**

Approval Engineer: **Uwe Supke**

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Form code: TA 291

Revision: 2023-09

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Product description

The equipment is used for public area programmable automated lighting control with manual user overrides/selections; not for use with emergency lighting or fittings.

The equipment does not include lamp loads or lighting fittings. Third party dimmable lamp loads must be mains phase cut compatible or controllable types using DALI, 1-10V, DSI, PWM or DMX.

The lighting system consists of 1 or more controllers (routers) with each supporting a mixture of power modules and control interfaces. Installation design calculations are required for the power module loading and power distributions. In addition, the communication to supported devices from the controllers employs DALI and SDIM(RS485) protocols that impose loading and addressing constraints that require consideration as part of the system design.

Control equipment:

13XX Modular panels	HW rev. 7	SW rev. 12.x
320 PIR sensor	HW rev. 9	SW rev. 12.x
321 Multisensor	HW rev. 9	SW rev. 12.x
329 DALI External Light Sensor	HW rev. 5	SW rev. 6.x
444 DIGIDIM Mini Input Unit	HW rev. 4	SW rev. 2.x
935,939 Lighting Control panel	HW rev. 10	SW rev. 6.x
942 Input Unit	HW rev. 10	SW rev. 6.x

Modules:

454 Transistor Dimmer	HW rev. 8	SW rev. 2.x
474 4-Channel Ballast Controller	HW rev. 10	SW rev. 1.x
478 8-Subnet DALI Controller	HW rev. 11	SW rev. 2.x
498 8-Channel Relay Unit	HW rev. 9	SW rev. 1.x
499 8-Channel Latching Relay Unit	HW rev. 4	SW rev. 3.x
905, 910,920 Router	HW rev. 46	SW rev. 4.x/5.x.x.x

Location classes (DNV CG-0339)

Temperature	Class A
Humidity	Class B
Vibration	Class A
EMC	Class A
Enclosure :	Required protection according to relevant rules shall be provided upon installation on board

Hardware/Software update notification

When the type approved hardware/software is revised (affecting all future deliveries), DNV is to be informed by forwarding updated hardware/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 hardware/software version.

Application/Limitation

All system components must be installed and used in accordance with the product installation and operating user manuals.

For marine applications, the interface to, or control of emergency lights or fittings is not permitted.

System limitations exist, set by the interface protocols, the physical layers of the protocols and hardware resources of the system components. However in general, such limitations greatly exceed the requirements of a practical system implementation.

The Type Approval covers hardware and software listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV rules for classification of ships Pt.4 Ch.8 Electrical installations.

Type Approval documentation

Tests carried out

Applicable tests according to Class Guideline DNV-CG-0339, Edition August 2021 and Class Program DNV-CP-0572, Edition November 2021.

Marking of product

The products to be marked with:

- Manufacturer name
- Type designation
- Serial number

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 the certificate.

END OF CERTIFICATE