



# TYPE APPROVAL CERTIFICATE

Certificate No:  
**TAA00000NH**  
Revision No:  
**1**

## This is to certify:

**That the Isolating switching amplifier**

with type designation(s)  
**Module IMX12-DI**

Issued to

**Hans Turck GmbH & Co. KG**  
**Mülheim an der Ruhr, Nordrhein-Westfalen, Germany**

is found to comply with

**DNV rules for classification – Ships**  
**DNV rules for classification – Ships and offshore units**  
**DNV rules for classification – Naval vessels**  
**DNV rules for classification – High speed and light craft**

## Application :

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

<b>Temperature</b>	<b>B</b>
<b>Humidity</b>	<b>B</b>
<b>Vibration</b>	<b>A</b>
<b>EMC</b>	<b>B</b>
<b>Enclosure</b>	<b>Required protection according to DNV Rules shall be provided upon</b>

Issued at **Hamburg** on **2022-05-05**

This Certificate is valid until **2027-05-04**.

DNV local station: **Augsburg**

Approval Engineer: **Didier Girardin**



for **DNV**

Digitally Signed By: Papanuskas, Joannis  
Location: DNV GL SE Hamburg, Germany

**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.

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.



## Product description

Isolating Switching Amplifier 2-Channel  
Module IMX12-DI

- IMX12-DI01-2S-2T-PR/24VDC
- IMX12-DI01-2S-2T-0/24VDC
- IMX12-DI01-2S-2T-PR/24VDC/CC
- IMX12-DI01-2S-2T-0/24VDC/CC
- IMX12-DI01-2S-2R-PR/24VDC
- IMX12-DI01-2S-2R-0/24VDC
- IMX12-DI01-2S-2R-PR/24VDC/CC
- IMX12-DI01-2S-2R-0/24VDC/CC

## Approval conditions

The Type Approval covers hardware 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 Ships Pt.4 Ch.9 Control and Monitoring Systems.

### Product certificate

Each delivery of the application system is to be certified according to Pt.4 Ch.9 Sec.1. The certification test is to be performed at the manufacturer of the application system according to an approved test program before the system is shipped to the yard. After the certification the clause for application software control will be put into force.

### Clause for application software control

All changes in software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to DNV for evaluation and approval. Major changes in the software are to be approved before being installed in the computer.

## Application/Limitation

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-Certificate issued by a notified/recognized Certification Body.

For Ex-applications the values specified in the corresponding Ex certificates (ATEX, IECEx, UL, etc.) apply.

Ex approval acc. to conformity certificate TÜV 14 ATEX 147004 X

Application area II (1) G, II (1) D

Ignition protection category [Ex ia Ga] IIC; [Ex ia Da] IIIC

Application area II 3 (1) G

Ignition protection type Ex nA nC [ia Ga] IIC T4 Gc

If the device is used in applications to achieve functional safety according to IEC 61508, the safety manual must be used. Information in the data sheet are not valid for functional safety.

SIL safety circuits: SIL 2 acc. to IEC 61508



Job Id: **262.1-021752-2**  
Certificate No: **TAA00000NH**  
Revision No: **1**

## Type Approval documentation

### Test Reports:

U3812 dated 19-01-2016  
E145282E1 Version 2 dated 18-11-2014  
U147566E1 dated 19-12-2014  
U160506E1 dated 02-05-2016  
U3653 dated 24-11-2014  
U3811 and U3812 dated 19-01-2016  
U3813 and U3814 dated 21-01-2016

### Data sheets:

IMX12-DI01-2S-2R-0/24VDC Edition 2016-08-18T  
IMX12-DI01-2S-2R-PR/24VDC Edition 2016-08-18T  
IMX12-DI01-2S-2R-0/24VDC/CC Edition 2016-08-18T  
IMX12-DI01-2S-2R-PR/24VDC/CC Edition 2016-08-18T  
IMX12-DI01-2S-2T-0/24VDC Edition 2016-08-18T  
IMX12-DI01-2S-2T-PR/24VDC Edition 2016-08-18T  
IMX12-DI01-2S-2T-0/24VDC/CC Edition 2016-08-18T  
IMX12-DI01-2S-2T-PR/24VDC/CC Edition 2016-08-18T

### Drawings:

D\_10016069\_000\_01 dated 04-12-2014  
D\_10016065\_000\_01 dated 04-12-2014  
D\_10016068 dated 01-04-2015

### Quick-Start Guide

Isolating Switching Amplifier IMX12-DI01...-2R D201465 2016-06 DE FR EN | V1.2  
Isolating Switching Amplifier IMX12-DI01...-2T D201474 2015-10 DE FR EN | V1.1

Compliance to IACS E10 rev. 07/08

Test report: E212427E1 dated 30.11.2021 in addition to test report E145282E1 2nd

## Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021

## Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number
- power supply ratings

## 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

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