



TYPE APPROVAL CERTIFICATE

Certificate No:
TAA00001U0
Revision No:
5

This is to certify:

That the Peripheral Equipment

with type designation(s)
Series D5000 Series of Isolators and Safety Relays

Issued to
G.M. International S.r.l.
Milano, Italy

is found to comply with
DNV rules for classification – Ships, offshore units, and high speed and light craft

Application :

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

Location classes:

Temperature	D
Humidity	B
Vibration	A
EMC	A
Enclosure	Required protection according to DNV Rules shall be provided upon installation on board

Issued at **Hamburg** on **2024-04-02**

for **DNV**

This Certificate is valid until **2029-03-11**.

DNV local unit: **Italy/Malta CMC**

Approval Engineer: **Dariusz Lesniewski**

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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

Series D5000 Series of Isolators and Safety Relays:

Model	Description
D5011S, D5011D, D5014S, D5014D	Repeater Power Supply
D5015SK, D5015SS	Repeater Power Supply
D5020S, D5020D	Powered Isolating Driver
D5030S, D5030D, D5031S, D5031D, D5032S, D5032D	Switch/Proximity Detector Repeater
D5034S, D5034D	Switch/Proximity Interface
D5036D, D5036S	Switch/Proximity Detector Repeater
D5037D, D5037S	Switch/Proximity Detector Repeater
D5038DA, D5038DB, D5038SA, D5038SB, D5038XA, D5038XB	Switch/Proximity Detector Repeater
D5039DA, D5039DB, D5039SA, D5039SB, D5039XA, D5039XB	Switch/Proximity Detector Repeater
D5040D, D5040S, D5048S	Loop-Powered Digital Output Driver
D5049S	Bus-Powered Digital Output Driver
D5062S	Vibration Transducer Interface
D5072S, D5072D	Multifunction Temperature Converter
D5072S-087, D5072D-087	Resistance Isolator
D5072S-096, D5072D-096	Thermocouple/mV Repeater
D5072S-099, D5072D-099	Sink-Out Temperature Converter
D5090S, D5091S	Relay Out Module
D5098D, D5098S	Relay Out Module
D5090S-086	Relay Out Module
D5093S, D5093D	24/220Vdc/Vac Transistor-Out Detector
D5094S, D5095S, D5094S-104, D5095S-105	Relay Output Module
D5096S, D5097S, D5096S-100, D5096S-106, D5097S-107	Relay Output Module with Diagnostic
D5202S	Power and Diagnostic Module
D5203S	Diagnostic module
D5212Q	Repeater Power Supply
D5231E, D5232Q, D5233Q	Switch/Proximity Detector Repeater
D5244D, 5244S	Digital Relay Output Modules
D5254S	2/4-Wire Transmitter Trip Amplifier
D5263S	Load Cell Driver Repeater
D5264S	Load Cell Driver Converter
D5273S	Temperature Converter
D5290S, D5290S/SA, D5290S-078, D5290S-078/SA, D5290S-079, D5290S-080, D5290S-084, D5291S, D5293S, D5294S, D5295S	Safety Relay Output Module

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 classification of ships Pt.4 Ch.9 Control and monitoring systems.

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.

Type Approval documentation

Data sheets (- means revision):

DTS0280-12, DTS0281-12, DTS0282-14, DTS0283-14, DTS0284-14
 DTS0285-12, DTS0286-13, DTS0287-15, DTS0288-19, DTS0327-14
 DTS0328-4, DTS0329-13, DTS0330-14, DTS0336-13, DTS0337-13
 DTS0339-18, DTS0340-20, DTS0341-8, DTS0347-9, DTS0366-13
 DTS0367-10, DTS0368-13, DTS0375-11, DTS0376-11, DTS0415-10, DTS0417-16
 DTS0420-16, DTS0421-10, DTS0423-13, DTS0428-15, DTS0429-13, DTS0431-9
 DTS0432-13, DTS0434-13, DTS0457-11, DTS0524-13, DTS0538-5, DTS0554-2, DTS0555-2
 DTS0615-7, DTS0616-7, DTS0627-9, DTS0629-6, DTS0636-5, DTS0638-6, DTS0639-5
 DTS0675-5, DTS0780-7
 DTS0813-5, DTS0818-9, DTS0827-8, DTS0829-2, DTS0842-5, DTS0871-1, DTS0872-1, DTS0873-1, DTS0874-1

Test reports:

189935-1TRFEMC rev 1
189935-2TRFEMC rev 0
223748TRFENV, dated 2012-11-19
225629TRFENV, dated 2012-11-21
TRP179, dated 2018-06-22
402056TRFEMC, dated 2020-09-07
REP029541, dated 2024-02-26

Other documents:

A-13625 extension to new D5000 models (technical analysis document)
TAA00001U0 extension to new D5000 models (technical analysis document)
Type approval assessment report issued at Malta on 2023-09-08

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