DNV·GL

Certificate No:
TAA00001U0

TYPE APPROVAL CERTIFICATE

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 SRL
Villasanta MB, Italy

is found to comply with
DNV GL 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 GL.

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 **2018-10-04**
This Certificate is valid until **2023-10-03**.
DNV GL local station: **Milan**

for **DNV GL**

Approval Engineer: **Dariusz Lesniewski**

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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Job Id: **262.1-016840-4**
Certificate No: **TAA00001U0**

Product description

Series D5000 Series of Isolators and Safety Relays:

Model	Description
D5011S, D5011D, D5014S, D5014D	Repeater Power Supply
D5020S, D5020D	Powered isolating driver
D5030S, D5030D, D5031S, D5031D, D5032S, D5032D	Switch/Proximity detector repeater
D5034S, D5034D	Switch/Proximity interface
D5040D, D5040S, D5048S, D5049S	Solenoid driver
D5060S	Frequency converter
D5062S	Vibration transducer
D5072S, D5072D	Temperature converter
D5072S-087, D5072D-087	Resistance isolator
D5072S-088, D5072D-088	Current input converter
D5072S-089, D5072D-089	Temperature converter
D5090S, D5091S	Safety Relay Output
D5093S, D5093D	Loop Switch repeater
D5094S, D9095S	Relay output module
D5096S, D9097S	Relay output module with diagnostic
D5202S	Power and diagnostic module
D5212Q	Analog Input repeater
D5231E	Switch/Proximity detector repeater
D5240T	Solenoid driver
D5254S	Repeater power supply / analog signal module
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

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, 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 GL 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

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.

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