DNV·GL

Certificate No:
TAA00002BM
File No:
899.60
Job Id:
262.1-006795-6

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Peripheral Equipment

with type designation(s)
D1000

Issued to
G.M. International S.r.l.
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	**B**
Humidity	**B**
Vibration	**A**
EMC	**B**
Enclosure	**Required protection according to DNV Rules shall be provided upon installation on board**

This Certificate is valid until **2024-05-12**.

Issued at **Hamburg** on **2019-05-13**
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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Product description

Intrinsically safe isolators D1000 series as listed below:

Analog Input:

D1010S/D	Single/Double Channel Repeater Power Supply, Smart Compatible
D1010S/D-046	Single/Double Channel Repeater Power Supply, Smart Compatible
D1012Q	Quad Channel Repeater Power Supply
D1014S/D	Single/Double Channel Repeater Power Supply, HART Compatible
D1054S	Single Channel Repeater Power Supply, HART Compatible and Double Trip Amplifier

Analog Output:

D1020S/D	Single/Double Channel Isolating Driver, Smart Compatible
D1022S/D	Single/Dual Channel Fire/Smoke Detector Interface, Loop Powered

Digital Input:

D1030S/D	Single/Double Channel Switch/Proximity Detector Repeater Relay Output
D1130S/D	Single/Double Channel Switch/Proximity Detector Repeater Relay Output
D1031D/Q	Dual/Quad Channel Switch/Proximity Detector Repeater Transistor Output
D1032D/Q	Dual/Quad Channel Switch/Proximity Detector Repeater Relay Output
D1033D/Q	Dual/Quad Channel Switch/Proximity Detector Repeater Transistor Output
D1034S/D	Single/Dual Channel Switch/Proximity Detector Repeater Current Output
D1035S	Single channel Frequency Pulse repeater
D1080D	Double channel Flammable Liquid Presence Detector interface Relay Output
D1081D	Double channel Flammable Liquid Presence Detector interface OC Transistor Output
D1180D	Double channel Flammable Liquid Presence Detector interface Relay Output

Digital Output:

D1040-2-3Q	Quad Channel Solenoid Driver, Loop/Bus Powered
D1041Q	Quad channel LED driver, loop/bus powered
D1044S/D	Single / Double channel Digital Relay output loop/bus powered
D1045Y	Digital output loop/bus powered
D1046Y	Digital output loop/bus powered
D1048S	Single channel Digital output driver, NE Loads, loop powered
D1049S	Single channel Digital output driver, NE Loads, bus powered

Power Supply:

PSD1000	Single Channel AC input, 24 V dc, 600 mA output
PSD1000F	Single channel AC input 24 Vdc 600 mA Output with fault
PSD1001	Quad channel AC input 15 Vdc 20 mA Output
PSD1001C	Single Channel 10 Vdc, 160 mA output
PSD1004	Single Channel 5 Vdc, 160 mA output

Signal Converter & Trip Amplifier:

D1052S/D	Single/Dual Channel Analog Signal Converter
D1052X/Y	Analog signal Duplicator / Adder-Subtractor
D1053S	Single Channel Analog Signal Converter and Trip Amplifier
D1060S	Single Channel Frequency Pulse Converter Repeater and Trip Amplifier
D1061S	Single Channel RS422/RS485 Fielbus Isolating Repeater
D1061S-077	Single Channel RS422/RS485 Fielbus Isolating Repeater
D1062S	Single channel Vibration Transducer Interface
D1063S	Single Channel Strain Gauge Bridge Isolating Repeater
D1064S	Single channel Load Cell/Strain Gauge Bridge Isolating Converter

Temperature Converter & Trip Amplifier:

D1072S/D	Single/Dual Channel Temperature / Tx Potentiometer Converter
D1073S	Single Channel Temperature / Tx Potentiometer Converter and Trip Amplifier

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Safety Relay:

D1092S/D	Single / Double channel Relay Output Module
D1092S/D-069	Single / Double channel Relay Output Module
D1093S	Single channel Relay Output Module with Line and Load diagnostics

All models can be provided with Power Bus enclosure (indicated by "/B" suffix after model code)

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 modules are marked with manufacturer name (G.M. International SRL), model name as listed in Product description and a unique 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