

# 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:**

<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 installation on board</b>

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

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

DNV GL local station: **Milan**

Approval Engineer: **Dariusz Lesniewski**



**for DNV GL**  
Digitally Signed By:  
Papanuskas, Joannis

**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.

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

## 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