

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Level Switches

with type designation(s)
OPG052

Issued to

IMB Industrielle Messtechnik GmbH & Co. KG
Mosbach, Germany

is found to comply with
DNV GL rules for classification – Ships

Application :

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

Temperature A

Humidity B

Vibration A

EMC B

Enclosure Required protection according to the Rules shall be provided upon installation on board*

*** see Application/Limitation**

Issued at **Hamburg** on **2018-05-02**

This Certificate is valid until **2023-05-01**.

DNV GL local station: **Augsburg**

for **DNV GL**

Approval Engineer: **Heinz Scheffler**

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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.



Product description

Optoelectronic level switch in stainless steel with PNP or Current output

Max. pressure: 2.5MPa

Ambient temperature: -40°C to +80°C

Operating temperature: -40°C to +130°C

Measuring accuracy: +/- 0.5mm

Material housing: stainless steel 1.4571

Power supply: 12 - 32 VDC

Supply current max.: 40mA

Output: PNP DC (200mA) or Current output

Protection class: IP 65

OPG 052 XYZU

X = A: PNP; B: Current

Y = Switch function: S: closer; O: opener

Z = Electr. connection: Twisted pair 2x2x0.75mm² or 3x0.75mm²

U = A: fixing screw thread M18x1.5; B: fixing screw thread BSP 1/2"

Application/Limitation

*Location Class Enclosure: IP 65

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 Ships Pt.4 Ch.9 Control and Monitoring Systems.

Type Approval documentation

Test reports: CEcert 412.351.1 dated 2013-01-29, CEcert 412.351.2 dated 2013-02-11,

CEcert 412.351.3 dated 2013-03-13, IP65 test dated 2013-01-24

Documents: Operating instructions 14235426.01 08/2017; Data sheet LM 31.06 07/2017

Tests carried out

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

Marking of product

The products to be marked with:

- Model name
- Manufacturer name
- 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)

Job Id: **262.1-028692-1**
Certificate No: **TAA00001U7**

- 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