

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Magnetostrictive Linear Position Sensor

with type designation(s)
BTL7-A/C/E/Guvw-Mxxxx-A/B/Y/Z-zzzz

Issued to
Balluff GmbH
Neuhausen a.d. F., Germany

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 B
EMC B
Enclosure B

Issued at **Hamburg** on **2018-08-08**

This Certificate is valid until **2023-08-07**.
DNV GL local station: **Augsburg**

Approval Engineer: **Dariusz Lesniewski**



for DNV GL
Digitally Signed By:
Papanuskas, Joannis
Signing Date: Mittwoch, 8. August 2018

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.



Job Id: **262.1-028215-1**
Certificate No: **TAA00001Y9**
Revision No: **2**

Product description

Power supply: u = 5 : 24V DC nom. (min. 10V, max. 30V DC)
 1 : 24V DC nom. (min. 20V, max. 28V DC)
Output signal: A = 0...10V or 10...0V
 C = 0...20mA or 20...0mA
 E = 4...20mA or 20...4mA
 G = -10...10V or 10...-10V
Output gradient / Data format:
vw = 00: Rising
 10: Rising + falling
 70: Falling
 01: 2 outputs, configurable
 04: 1 output rising, configurable
 05: 1 output falling, configurable
Rod length (max.): xxxx = without support 300mm
 supported 500mm
Mounting thread: A/B(8): M18x1.5, Y/Z(8): 3/4"-16UNF
Electrical connection:
zzzz = S32: 8-pin, M16 plug per IEC 130-9
 S115: 8-pin, M12 plug
 S135: 6-pin, M16 plug per IEC 130-9
 KA__: Cable, PUR
 FA__: Cable, PTFE
Degree of protection: IP67 (plugs), IP68 (KA/FA)
Firmware version. 1.xx.xxx
Serial number 150201000xxxxx xx = Production date 2015-02-01

Place of manufacture

Balluff GmbH
D-73765 Neuhausen, Germany

Balluff Elektronika Kft.
H-8200 Veszprém, Hungary

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

This certificate is valid from serial number 150201000xxxxx xx

Type Approval documentation

User's Guide No. 858412-726 D (Edition B15)
Circuit diagrams; Part Lists; Assembly drawings
GL Software Questionnaire; Software Development Documentation
Balluff Test Reports "Baumusterprüfung-GL_01...22_xxx_140725"
Balluff Test Report "Baumusterprüfung-GL_IP67_140725"
Test Report: No. 2014.051.01 Index 00
Test Report: No. 2014.039.01.000
Test Report: 201403901_SuS.pdf
Type Approval Assessment Report issued at Augsburg on 2018-05-23
Type Approval Assessment Report issued at Veszprém on 2018-06-22

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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