

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Miscellaneous Transmitter

with type designation(s)

Inductive displacement transducer IW 000 15...; IW 000 16...

Issued to

Dr. E. Horn GmbH & Co. KG
Schönaich Baden-Württemberg, 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 B

Humidity B

Vibration B

EMC B

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

Issued at **Hamburg** on **2017-09-27**

This Certificate is valid until **2022-09-24**.

for **DNV GL**

DNV GL local station: **Augsburg**

Approval Engineer: **Andrea Grün**

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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

IW 000 160 ... IW 000 167 :

Analogous displacement transducers with 4 ... 20 mA output

IW 000 154.. :

Analogous displacement transducer with 0.5 ... 4.5 V output

Linear output 4 ... 20 mA at displacement between 2 to 6 mm

Aux. Voltage : 24 V DC +/- 25 %

Housing : stainless steel M 18 x 1.5

Front : PTB acc. to UL 94 V-0

Temperature range : 0... +70°C

Degree of Protection : IP 67

Application/Limitation

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/Offshore Standards Pt.4 Ch.9 Control and Monitoring Systems.

Type Approval documentation

Test reports: Nr. 137a/92; prüf_ex\dr_horn9.doc dated 20-02-1997
EMV dated 17-01-1996

Documentation:

Drawing

Drawing

IW000160

dated 15.11.1990

IW000161-x

dated 18.11.2004

IW000166- x and IW 000 167

dated 02-11-2004/ 20.12.2012

IW 000 154K and IW 000 154SC

dated 11-10-2004

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

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