DNV·GL

Certificate No:
TAA00001A9

TYPE APPROVAL CERTIFICATE

This is to certify:

That the RPM sensor

with type designation(s)
FA

Issued to
NORIS Automation GmbH
Nürnberg, Bayern, 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.

Temperature	**D**
Humidity	**B**
Vibration	**B**
EMC	**A**
Enclosure	**B (IP66…IP68)**

Issued at **Hamburg** on **2018-01-29**
This Certificate is valid until **2023-01-28**.
DNV GL local station: **Augsburg**

Approval Engineer: **Jens Dietrich**

for **DNV GL**

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

Type designation key:

FA (1) (2) – (3) (4) – (5)

(1):
H : One channel Differential-Hall system
J : One channel inductive system
R : One channel quick inductive system
RW: One channel quick inductive system with +/- output
HZ : Two channel Differential-Hall system, Q2 to Q1 is 90° phase shifted
HD : Two channel Differential-Hall system, galvanically isolated
HQ : Two channel Differential-Hall system, 4 outputs (Q1/2_N is inverted to Q1/2)
HS : Two channel Differential-Hall system, Q2 to Q1 is 90° phase shifted, Q3 status signal

(2):
11 : Sensor tube: Brass
12 : Sensor tube: Stainless Steel with LED
13 : Sensor tube: Stainless Steel

(3):
xx : Nominal length of the sensor: 60mm to 200mm

(4):
xx : Thread type

(5):
A : DIN43650-A pin connector
C : MIL 14-5PN VG95234 pin connector
E : Euro M12x1 pin connector
H1: DIN72585 Bajonett
X : Cable up to 10m length

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 Pt.4 Ch.9 Control and Monitoring Systems.

Tests carried out

Applicable tests according to DNV GL class guideline CG-0339, ed. Nov.2016.

Marking of product

Manufacturer name, type designation, 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 this certificate.

END OF CERTIFICATE