TYPE APPROVAL CERTIFICATE

Certificate No:
TAA00000JG
Revision No:
2

This is to certify:

That the Position Transmitter

with type designation(s)
DWA-Q

Issued to
Noris Automation GmbH
Rostock, **Germany**

is found to comply with
DNV rules for classification – Ships

Application :

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

Temperature	**D**
Humidity	**B**
Vibration	**B**
EMC	**B**
Enclosure	**D**

Issued at **Hamburg** on **2022-01-17**

This Certificate is valid until **2026-07-27**.
DNV local station: **Augsburg**

Approval Engineer: **Jens Dietrich**

for **DNV**
Digitally Signed By: Papanuskas, Joannis
Location: DNV GL SE Hamburg, Germany

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

Rotary position sensor with ohmic, voltage or current signal output

Type Code DWA-Q:

DWA-xxx-yy-zz

xxx: Rotation angle: 50°, 70°, 90°, 180°, 240°, 320°, or customized

yy: Q1: 62x62x115mm design with terminals and 40mm connector pin
Q2: 62x62x66mm design with cable and 30mm connector pin

zz: R1: Dual potentiometer 2kOhm, 0,28W per channel
zz: U2: 2 x voltage output 2…10VDC, crossed characteristics curves

Supply voltage : 15…30VDC (type -U2).

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 rules for classification of ships Pt.4 Ch.9, Control and monitoring systems. Other chapters of the rules may also apply.

Product certificate
If specified in the applicable rule chapters the system in which the above listed hardware is used shall be delivered with a product certificate. For each such delivery the certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. The test shall be done according to an approved test program.

Type Approval documentation

Data sheet DB-DWA-Q-EN, V01.01, 15/12/2017; Drawings: 093.002.03.101.B, 093.002.03.102.B;
Test Reports: Schwille test report nr. 4393, dated 2011-04-06; BV ECL-EMC-TR-16-133-V01.00; BV ECL-ENV-TR-16-010-V1.10; TREO 346-17, issue 1; TREO 237-17, issue 1; Hardware Revision Outline NAR-PD-0116-50-en, Version 1.00, dated 2021-08-25; Product Test Report-6GHz NAR-PB-0116-3-en, Version 1.01, dated 2021-10-14; AMETEK D/20/4792/01, dated 2021-09-28; Assessment Report issued by DNV Hamburg, dated 2021-10-12.

Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021.

Marking of product

-Manufacturer name and address
-Type designation
-Serial number
-Electrical characteristics
-Rotation angle

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, 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, 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, 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