DNV·GL

Certificate No:
TAA00002B9

TYPE APPROVAL CERTIFICATE

This is to certify:

That the AC Tachogenerators for speed sensing

with type designation(s)
GE 14-09, GE 14-091, GE 14-10, GE 120, GE 121, GE122, GZ 121, GE 1214, GZ 1214, GE 1225-xx, GZ 1225-xx

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	**B**
Humidity	**B**
Vibration	**B**
EMC	**A**
Enclosure	**B (IP54...IP66)**

Issued at **Hamburg** on **2019-04-03**

This Certificate is valid until **2024-04-02**.
DNV GL local station: **Augsburg**

Approval Engineer: **Jens Dietrich**

Digitally Signed By: Rinkel, Marco
for **DNV GL**
Location: Hamburg, on behalf of

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

Type	Range [rpm]	U (AC)	at Hz	Phases	IP
GE 14-09	0 - 3000	20V	100	1	IP 54
GE 14-091	0 - 3000	20V	100	1	IP 54
GE 14-10	0 - 3000	20V	100	1	IP 54
GE 120	60 - 1000	60V	50	1	IP 66
GE 121	150 - 2500	60V	150	1	IP 66
GZ 121-xx*	150 - 2500	60V	150	2	IP 66
GE 1214**	150 - 1750	60V	150	1	IP 66
GZ 1214**	150 - 1750	60V	150	2	IP 66
GE 1225-xx	150 - 3000	25V	100	1	IP 65
GZ 1225-xx**	150 - 3000	25V	100	1	IP 65

*): second output 54V DC, 30mA at 1500 RPM
**): second winding with 90° phase relation

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 classification of ships Pt.4 Ch.9 Control and monitoring systems.

Product certificate

If specified in the Rules, ref. Pt.4 Ch.9 Sec.1, the control and monitoring 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

Drawing: HG-GE 1409/1, HG-GE 14.10, HG-GE 12/1, HG-GE 1214/1, HG-GZ 1214, 40.428, 40.728, F51E.
TA Assessment Report, DNV GL Augsburg, dated 2019-02-18.

Tests carried out

Applicable tests according to DNV GL CG-0339, November 2016.

Marking of product

Maker, type designation, serial no.

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.

Job Id: **262.1-030345-1**
Certificate No: **TAA00002B9**

END OF CERTIFICATE