DNV·GL

Certificate No:
TAA00002DZ

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Digital Synchronizer

with type designation(s)
EAS-201

Issued to
Terasaki Electric Co., Ltd.
Osaka, Osaka Pref, Japan

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	**A**
EMC	**B**
Enclosure	**Required protection according to DNVGL Rule**

Issued at **Busan** on **2019-07-01**
This Certificate is valid until **2024-06-30**.
DNV GL local station: **Kobe**

Approval Engineer: **Baeg Soon Choi**

for **DNV GL**

Andreas Kristoffersen
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.

© DNV GL 2014. DNV GL and the Horizon Graphic are trademarks of DNV GL AS.

Product description

Digital Synchronizer EAS-201

Auxiliary power supply
- AC power supply : AC110V, AC220V (+-20%)
- Frequency range : 42Hz – 68Hz
- DC power supply : DC110V (-25% - +30%)
- Power consumption : 5VA (max. 7VA)

Voltage measurement
- Measurement range : AC100V – AC240V

Frequency measurement
- Measurement range : 42.00Hz – 68.00Hz

Input for Synchro-lamp
- Rating : AC100V rms – AC240V rms
- Number of points : 2 points (three phase)

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

Type Approval documentation

Tests carried out

Applicable tests according to Class Guidance DNVGL-CG-0339 November 2016

Periodical assessment

The scope of the retention/renewal survey 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 survey 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