DNV·GL

Certificate No:
TAA000007W

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Electronic Speed Control Units

with type designation(s)
ESD5100, ESD5200, ESD5300, ESD5500 series and Magnetic Speed Pick-ups MSP67X and MSP67XX series

Issued to
Governors America Corp.
Agawam MA, United States

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	**A**

Enclosure (IP rating): Required protection according to DNV GL rules shall be provided upon installation onboard.

This Certificate is valid until **2021-02-17**.

Issued at **Hamburg** on **2016-02-23**

for **DNV GL**

DNV GL local station: **New York**

Approval Engineer: **Jens Dietrich**

Duy Nam Le
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

Analogue Electronic Speed Controllers
ESD5100, ESD5200, ESD5300, ESD5500
Common features:
-Isochronous / droop operation
-Speed range: Speed range : 1…7,5kHz continuous
-Power supply: 12V or 24VDC

-ESD5200, ESD5300 and ESD5500 (ESD5550/5570) series with over speed output contact.

Magnetic speed pickups :
MSP67X
MSP67YY
Various mechanical dimensions / threads

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.

Independent over speed protection required.

Cabling/Harness: Used cables shall be free of PVC and shall comply with flame retardant requirements stated in IEC 60332-1 and for bunches IEC 60332-3.

The following documentation of the actual application is to be submitted for approval in each case:

- Reference to this Type Approval Certificate
- System block diagram
- Power supply arrangement (may be part of the System block diagram)
- List of control & monitored points

Product certificate
As long as the units are covered by the Type Approval, a product certificate according to Pt.4 Ch.9 will not be required. Correct configuration and set up for each delivery to be tested during commissioning after installation.

Type Approval documentation

Tests carried out

Applicable Tests according to Class Guideline DNVGL-CG-0339, edition November 2015.

Marking of product

The products to be marked with:
- model name
- manufacturer 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, 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 at least every second year and at renewal of this certificate.