

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Electric Actuator

with type designation(s)

120 series, 175 series, 176 series, 225 series, 275 series, ACB2001 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**

DNV GL local station: **New York**

Approval Engineer: **Jens Dietrich**

for **DNV GL**

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.

Product description

Electric Actuators:

120 series (different wiring/harness/connectors variants):

- ADC120S
- ADD120S
- ACB120
- ADB120

Power supply 12 or 24VDC

Torque: 1,4Nm

Angular Travel: 25°

175 series (different power supply, shut-off and connectors):

- ACD175A
- ACD175
- ADD175
- ADD175A
- ADE175
- ADE175A

Power supply 12 or 24VDC

Force: 27.5N

Operating stroke 21mm

176 series (different power supply, start / stop options, connector variants and feedback sensors):

- ADD176A
- ADD176AF
- ADE176A
- ADE176AA
- ADE176AF

Power supply 12 or 24VDC

Force: 27.5N

Operating stroke 21mm

225 series (different power supply, connector, housing, return spring, position feedback):

- ACB225
- ADB225
- ADB225F
- ADB225G
- ADC225S
- ADC225GS
- ADC225JS
- ADC225KS
- ADD225S
- ADD225GSC

Power supply 12 or 24VDC

Torque: 2.7Nm

Max. operating shaft travel: 25°

275 series (different power supply and harness/connector variants):

- ACB275C
- ACB275H
- ACE275H
- ACE275HD
- ACE275J
- ACE275K

Power supply 12 or 24VDC

Force: 58.7N

Operating stroke: 20mm

ACB2001:
Power supply 24VDC
Torque: 16.3Nm
Max. angular shaft travel: 35°.

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.

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)

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.