

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Electric Actuator

with type designation(s)
AOX-Q Series

Issued to

Zhejiang Aoxiang Auto-control Technology Co., Ltd.
Rui'an,, Zhejiang,, China

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 A

Humidity B

Vibration A

EMC A

Enclosure Required protection according to DNV GL Rules shall be provided upon installation on board

Issued at **Hamburg** on **2020-11-04**

This Certificate is valid until **2025-11-03**.

for **DNV GL**

DNV GL local station: **Ningbo FIS**

Approval Engineer: **Didier Girardin**

.....
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

AOX-Q series electric actuator is used for controlling 0°~ 270° rotation valves and other similar products, such as butterfly valve, ball valve etc. It widely applies to petroleum, chemical, water treatment, shipping, and other industries.

AOX-Q Series	(N.m)	AC 220V 50HZ (A)	operating power	IP Grade	Application
AOX-Q-005	50	0.54	20 W	IP67	ball valveDN20-25, butterfly valveDN50
AOX-Q-008	80	0.54	20 W		ball valveDN32-40, butterfly valveDN65
AOX-Q-010	100	0.54	20 W		ball valveDN50, butterfly valveDN100-125
AOX-Q-015	150	0.84	40 W		ball valveDN65, butterfly valveDN125-150
AOX-Q-020	200	0.85	40 W		ball valveDN80, butterfly valveDN150
AOX-Q-030	300	0.92	90 W		ball valveDN100, butterfly valveDN150-200
AOX-Q-050	500	1.58	90 W		ball valveDN125, butterfly valveDN200-250
AOX-Q-060	600	2.2	120 W		ball valveDN125, butterfly valveDN250
AOX-Q-080	800	2.2	180 W		ball valveDN150, butterfly valveDN250-300
AOX-Q-120	1200	2.3	180 W		ball valveDN150, butterfly valveDN300-350

Interface type	AOX-Q series
Digital (Open – Close)	
Limit switch	2×Open/ Close, SPDT,250VAC 10A
Auxiliary limit switch	2×Open/ Close, SPDT,250VAC 10A
Torque switch	Close/Open, each 1, SPDT,250VAC 10A (Except AOX-Q-005/008/010)

Place of manufacture

Zhejiang Aoxiang Auto-control Technology co.,Ltd.
No.2608, Development Road, Economic Development Area,
Ruian City, Zhejiang Province, P. R. China

Approval conditions

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. After certification the clause for software control will be put into force.

Application/Limitation

- Equipment intended to be installed on ships contracted for construction on or after 1 January 2022 is to comply with IACS UR E10 Rev.7 by amended requirements (Day of signature of contract to build the vessel between the prospective owner and the shipbuilder)
- Any Ex-equipment (equipment to be used in areas with explosive atmosphere) listed in this certificate or provided optionally are subject to separate Ex- approvals.
- 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

Hidden

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016

Marking of product

- Actuator model name
- Interface type
- Manufacturer name
- Serial number
- Input power ratings

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.

END OF CERTIFICATE