

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Electric Actuator

with type designation(s)

QT250 1.0/2.0, QT250 2.4 EX, QT250 1.0 Exd, QT800 1.0/2.0, QT800 2.4 EX, QT800 1.0 Exd, QT2500 3.0, QT4000 1.0

Issued to

Eltorque AS
TRONDHEIM, Norway

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.

Location classes:

Type	Temperature	Humidity	Vibration	EMC	Enclosure
QT250 1.0/2.0	D	B	A	B	C/D
QT250 2.4 EX	D	B	A	B*	C/D
QT250 1.0 Exd	D	B	A	B	C/D
QT800 1.0/2.0	D	B	A	B	C/D
QT800 2.4 EX	D	B	A	B*	C/D
QT800 1.0 Exd	D	B	A	B	C/D
QT2500 3.0	C	B	A	A	D
QT4000 1.0	C	B	A	A	D

Issued at **Høvik** on **2020-10-07**

This Certificate is valid until **2021-12-01**.

DNV GL local station: **Trondheim**

for **DNV GL**

Approval Engineer: **Jens Erling Bråten**

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Jan Tore Grimsrud
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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Job Id: **262.1-004091-11**
 Certificate No: **TAA000011K**
 Revision No: **2**

Place of manufacture

Eltorque AS	Eltorque Automation Xiamen
Verkstedvegen 4	2/F, 1#building, No.168
7125 Vanvikan	Huizuo Road, Haicang District,
Norway	Xiamen,
	China

Product description

Electric quarter turn valve actuator

Power Supply:	QT250, QT 800	230 V AC 50/60 Hz
	QT2500	110-240 V AC 50/60 Hz
	QT4000	110-240 V AC 50/60 Hz
Operating Torque:	QT250	Max. 250 Nm
	QT800	Max. 800 Nm
	QT2500	Max. 2500 Nm
	QT4000	Max. 4000 Nm

Interface options as listed in table below.

Range	Actuator		Description	Firm ware
	Basic	Hybrid Cable Connection		
QT250	250.120.1[.xx]	250.120.1H[.xx]	QT250 1.0 CANopen Actuator	1.1.x
	250.140.1[.xx]	250.140.1H[.xx]	QT250 1.0 Modbus Actuator	1.1.x
	250.130.1[.xx]	N/A	QT250 1.0 Analogue Actuator	1.1.x
	250.110.1[.xx]	N/A	QT250 1.0 Digital Actuator	1.1.x
	250.121.1[.xx]	250.121.1H[.xx]	QT250 2.0 CANopen Actuator *	1.1.x
	250.141.1[.xx]	250.141.1H[.xx]	QT250 2.0 Modbus Actuator *	1.1.x
	250.131.1[.xx]	N/A	QT250 2.0 Analogue Actuator *	1.1.x
	250.111.1[.xx]	N/A	QT250 2.0 Digital Actuator *	1.1.x
	EXD250.125.1[.xx]	EXD250.125.1H[.xx]	QT250 1.0 CANopen EXD Actuator	1.1.x
	EXD250.135.1[.xx]	N/A	QT250 1.0 Analogue EXD Actuator	1.1.x
	EXD250.115.1[.xx]	N/A	QT250 1.0 Digital EXD Actuator	1.1.x
	EX250.125.4[.xx]	EX250.125.4H[.xx]	QT250 2.4 CANopen EX Actuator */**	1.1.x
QT800	800.120.1[.xx]	800.120.1H[.xx]	QT800 1.0 CANopen Actuator	1.1.x
	800.140.1[.xx]	800.140.1H[.xx]	QT800 1.0 Modbus Actuator	1.1.x
	800.130.1[.xx]	N/A	QT800 1.0 Analogue Actuator	1.1.x
	800.110.1[.xx]	N/A	QT800 1.0 Digital Actuator	1.1.x
	800.121.1[.xx]	800.121.1H[.xx]	QT800 2.0 CANopen Actuator *	1.1.x
	800.141.1[.xx]	800.141.1H[.xx]	QT800 2.0 Modbus Actuator *	1.1.x
	800.131.1[.xx]	N/A	QT800 2.0 Analogue Actuator *	1.1.x
	800.111.1[.xx]	N/A	QT800 2.0 Digital Actuator *	1.1.x
	EXD800.125.1[.xx]	EXD800.125.1H[.xx]	QT800 1.0 CANopen EXD Actuator	1.1.x
	EXD800.135.1[.xx]	N/A	QT800 1.0 Analogue EXD Actuator	1.1.x
	EXD800.115.1[.xx]	N/A	QT800 1.0 Digital EXD Actuator	1.1.x
	EX800.125.4[.xx]	EX800.125.4H[.xx]	QT800 2.4 CANopen EX Actuator */**	1.1.x
QT2500	2500.120.3[.xx]	2500.120.3H[.xx]	QT2500 3.0 CANopen Actuator	1.0.x
	2500.140.3[.xx]	2500.140.3H[.xx]	QT2500 3.0 Modbus Actuator	1.0.x
	2500.130.3[.xx]	N/A	QT2500 3.0 Analogue Actuator	1.0.x
	2500.110.3[.xx]	N/A	QT2500 3.0 Digital Actuator	1.0.x

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Range	Actuator		Description	Firm ware
	Basic	Hybrid Cable Connection		
QT4000	4000.120.1[.xx]	4000.120.1H[.xx]	QT4000 1.0 CANopen Actuator	1.0.x
	4000.140.1[.xx]	4000.140.1H[.xx]	QT2500 1.0 Modbus Actuator	1.0.x
	4000.130.1[.xx]	N/A	QT2500 1.0 Analogue Actuator	1.0.x
	4000.110.1[.xx]	N/A	QT2500 1.0 Digital Actuator	1.0.x

* Suitable for use on open deck

** EMC class A is OK without ELTORQUE PSF. Each actuator is to be powered through the ELTORQUE PSF to satisfy the EMC class B requirements.

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.

Ex installations to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

Ex-certification is not covered by this certificate and the following paragraph, which is for information only, is based on information received from the manufacturer, but not verified by DNV GL.

Information on Ex-Certification received from manufacturer			
Basic	Hybrid Cable Connection	Certified	Certificate No.
EX250.125.4[.xx]	EX250.125.4H[.xx]	QT250 2.4 CANopen EX Actuator	IECEx NEM 13.0042 (Valid issue)
EX800.125.4[.xx]	EX800.125.4H[.xx]	QT800 2.4 CANopen EX Actuator	
EX110.0066_00[.xx]	-	Eltorque PSF	
EXD250.125.1[.xx]	EXD250.125.1H[.xx]	QT250 1.0 CANopen EXD Actuator	IECex PRE 14.0056X (Valid issue)
EXD800.125.1[.xx]	EXD800.125.1H[.xx]	QT800 1.0 CANopen EXD Actuator	
EXD250.135.1[.xx]	N/A	QT250 1.0 Analogue EXD Actuator	
EXD800.135.1[.xx]	N/A	QT800 1.0 Analogue EXD Actuator	

Type Approval documentation

Tests carried out

Applicable tests according to Standard for Certification No. 2.4, April 2006 (*)
 QT2500 3.0 and QT4000 1.0 tested for IP68 down to 10 m for 30 min. according to IEC 60529:2001.
 QT250/800 1.0 EXD tested for IP6x, IPx6 and IPx8 down to 10 m for 72 h according to IEC 60529:2001.
 All other models tested for IP6x, IPx6 and IPx8 down to 10 m for 100 h according to IEC 60529:2001.

* EMC in the range 2 GHz to 6 GHz according to DNVGL-CG-0339, December 2019 has not been documented. EMC up to 6 GHz must additionally be documented for installation on ships contracted for construction on or after 2022-01-01.

Marking of product

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

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Revision No: **2**

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

A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE