**Certificate No.:** 2207141348014381

TÜRK LOYDU

# TYPE APPROVAL CERTIFICATE

This is to certify that the

## Actuators

| | |
|---|---|
| **Manufacturer** | ELTORQUE AS |
| **Address** | Julianus Holms Veg 34 7041 Trondheim NORWAY |
| **Product Type** | Quarter-Turn Electric Valve Actuator |
| **Particulars / Designation** | QT Series Generation 2.5 (QT70, QT250, QT400, QT800, QT1000); QT2500 3.0, QT4000 1.0; QT250 2.4 EX, QT400 2.4 EX, QT800 2.4 EX, QT1000 2.4 EX |
| **Application** | Electric actuators for butterfly and ball valves connection |
| **Reference Rule** | TL Rules, Part A, Chapter 2 - Material, 01.01.2021<br>TL Rules, Part B, Chapter 4 - Machinery, 01.01.2021<br>TL Rules, Part E, Chapter 107 - Naval Ship Technology, Ship Operation Installations and Auxiliary System, 01.01.2016 |
| **Place and Date** | ISTANBUL / 07.09.2022 |

Subject to the conditions referred to in the following pages, this certificate is valid until 07.08.2027.

128394

**Emrah SÖĞÜTÇÜ**

**New Building Division Manager**

This certificate is subject to terms and conditions described below:

- Any significant change in design or construction may render this Certificate invalid. Type Approval Certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. This certificate is not valid for products without marking above mentioned. The manufacturer should notify TÜRK LOYDU of any modifications or changes to equipment in order to obtain valid certificate. This certificate shows that tested specimens as representative of the product complies of the TÜRK LOYDU rules, and revelant international instruments that apply to it.

**Product Details:** Quarter-turn valve actuators

QT Series Generation 2.5 (QT70, QT250, QT400, QT800, QT1000), CAN bus, Digital, Analog;

Option: Failsafe, Dual Power, CANOnly, Dual CAN

QT250 EX 2.4, QT800 EX 2.4 CAN bus

QT2500 3.0, QT4000 1.0 CAN bus, Analog, Digital

**Application / Limitation (Approval Conditions) :**

Approved products can be used navy and commercial vessels

**Documentation:**

TL Plan approval letters: PAE-EPAS/010722/21-0344/VA 19.10.2021, PAE-EPAS/011064/21-0344/VA 24.11.2021

Manufacturer Drawings for QT 250, QT 800, QT 2500, QT 4000

Test reports for Endurance test of EN 15714, hazardous "ex" classification, Ingress Protection levels

**Performed Tests:** Following tests were carried out with satisfactory results.

Type tests according to EN 15714

**Product Description** : Quarter-Turn valve actuators

QT Series Generation 2.5 (QT70, QT250, QT400, QT800, QT1000)
CAN bus, Digital, Analog;
Option: Failsafe, Dual Power, CANOnly, Dual CAN

QT250 2.4 EX, QT400 2.4 EX, QT800 2.4 EX, QT1000 2.4 EX
CAN bus

QT2500 3.0/QT4000 1.0
CAN bus, Analog, Digital

Electrical Characteristics
QT Series Generation 2.5
110 - 240 V AC/DC, 50/60 Hz, Max 240 VA, optional 24 V DC

QT2500 3.0/QT4000 1.0
110 - 240 V AC/DC, 50/60 Hz, 4 A@110 V/2 A@230 V, Max 200 W, stand by 25 W

QT250 2.4 EX, QT400 2.4 EX, QT800 2.4 EX, QT1000 2.4 EX
110 - 240 V AC, 50/60 Hz, Max 130 W

Interfaces

Digital: 2 DI (Open - Close) & 3 DO (Open - Closed - Alarm) Analog: AI (Set position), AO (Feedback position) & DO (Alarm). 4-20 mA AI/AO signal.

CAN Fieldbus: Max 127 nodes per network. Fieldbus allows positioning and other extended control of actuator.

Connection cable: Hybrid Connection Cable Eltorque CHMS (i) 250V 3G2,5mm2 + 1x0,75mm2 + 1x2x0,75mm2

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| | Type of Product | Electric Motor Type | Size | Operating Time | Max. Output Torque | Max. Stern. Diameter | Total Weight | IP Rating |
|---|---|---|---|---|---|---|---|---|
| 1 | QT70 2.5 | Permanent Magnet | DN25/80 | 3/8 s | 70 Nm | 17.0 mm | 12 kg | IP68 (10 m – 100 h) |
| 2 | QT250 2.5 | Permanent Magnet | DN50/200 | 13/60 s | 250 Nm | 17.0 mm | 12 kg | IP68 (10 m – 100 h) |
| 3 | QT400 2.5 | Permanent Magnet | DN80/300 | 20/37 s | 380 Nm | 22.0 mm | 12 kg | IP68 (10 m – 100 h) |
| 4 | QT800 2.5 | Permanent Magnet | DN250/350 | 45/180 s | 800 Nm | 27.0 mm | 21 kg | IP68 (10 m – 100 h) |
| 5 | QT1000 2.5 | Permanent Magnet | DN250/400 | 63/127 s | 1000 Nm | 27.0 mm | 21 kg | IP68 (10 m – 100 h) |
| 6 | QT2500 | Permanent Magnet | DN450/600 | 30/120 sec | 2500 Nm | 36.0 mm | 69 kg | IP68 (10 m - 30 min) |
| 7 | QT4000 | Permanent Magnet | DN600/800 | 45/140 sec | 4000 Nm | 46.0 mm | 78 kg | IP68 (10 m - 30 min) |
| 8 | QT250 2.4 EX | Permanent Magnet | DN25/80 | 13/60 s | 250 Nm | 17.0 mm | 12 kg | IP68 (10 m – 100 h) |
| 9 | QT400 2.4 EX | Permanent Magnet | DN80/300 | 20/37 s | 380 Nm | 22.0 mm | 12 kg | IP68 (10 m – 100 h) |
| 10 | QT800 2.4 EX | Permanent Magnet | DN250/350 | 45/180 s | 800 Nm | 27.0 mm | 21 kg | IP68 (10 m – 100 h) |
| 11 | QT1000 2.4 EX | Permanent Magnet | DN250/400 | 63/127 s | 1000 Nm | 27.0 mm | 21 kg | IP68 (10 m – 100 h) |

**Approval No / Date** : PAE-EPAS/010722/21-0344/VA 19.10.2021
PAE-EPAS/011064/21-0344/VA 24.11.2021

**Performed Tests** : Type tests according to EN 15714

**Test Place** : Vanvikan/NORWAY

**Last Inspection Date** : 16.06.2022

Surveyor Name: Caner COŞKUN

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