

1 EC-TYPE EXAMINATION CERTIFICATE



2 Equipment or Protective systems intended for use in Potentially
Explosive Atmospheres - Directive 94/9/EC

3 EC-Type Examination Certificate No: FM13ATEX0046X

4 Equipment or protective system: TQ-010, TQ-020, TQ-040, TQ-060, TQ-080, TQ-120,
(Type Reference and Name) TQ-200 and TQ-300 Electric Actuators

5 Name of Applicant: Enertork Ltd

6 Address of Applicant: 64-6 Ogye-Ri Neungseo-Myeon
Yeosu-Gun, Gyeonggi-Do 469-811
Republic of Korea

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and documents therein referred to.

8 FM Approvals Ltd, notified body number 1725 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report number:

3043316 dated 12th July 2013

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN 60079-0: 2009, EN 60079-1: 2007, and EN 60529 (+A1): 1991 (2000)

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC-Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include:



II 2 G Ex d IIB T4 Gb Ta = -20°C to +40°C; IP68

Mick Gower
Certification Manager, FM Approvals Ltd.

Issue date: 23rd June 2015

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

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13 Description of Equipment or Protective System:

The TQ-010, 020, 040, 060, 080, 120, 200 or 300 Electric Actuators are stationary motor-operated devices designed for multi turn valves - globe, gate valves, and also for quarter turn valves - butterfly, ball valves with 2nd worm reducer to drive valves open and closed. The actuator has end of travel limit switches, torque limit switches, local control selector switches, and a visual LCD or LED display. The TQ Series can support a variety of communication systems which include (Mod Bus-RTU, Profibus-DP, Foundation FieldBus or HART).

The enclosure of the TQ-010, 020, 040, 060, 080, 120, 200 or 300 Electric Actuator consists of a switch and gear case with internal motor, integral controller which contains the electronics and LED or LCD screen and to operate the valve actuator manually. The thrust unit at the valve stem connection consists of two types of drive bushings. A threaded bushing is used for multi-turn valves and a keyed bushing for quarter turn valves. A handwheel is side mounted to the TQ-010, 020, 040, 060, 080, 120, 200 or 300 Electric Actuators to allow for manual operation. A change lever is used to shift the valve actuator from power operation to manual operation

The TQ-010, 020, 040, 060, 080, 120, 200 or 300 Electric Actuators consists of switch and gear case which contains the electric motor manufactured from 308 Cast Aluminum) which contains the switching devices. The integral case which contains the electronics, manual operating switches and wiring terminals consist of ALDC 8 383 Cast Aluminum. The window cover of the integral controller consists of an o-ring under the cover and a metal ring compression fit under the glass. Motors are internal to the switch and gear case for all the TQ Series electric actuators.

Electrical ratings: 100-240V, single phase, 50/60Hz; 220-480V, three phase, 50/60 Hz.

TQ-ab-cde. Electric Actuator.

a = Model Number: 010, 020, 040, 060, 080, 120, 200 or 300.

b = Model Type: none or i.

c = Control Type: DA, DAC, DAE, DB, DBC, DE, DPR, DMO, DFF or DHA.

d = Motor (W): When a = 010: 15.0.

When a = 020, 040: 40.

When a = 060, 080, 200: 90.

When a = 120, 300: 180.

e = Voltage: 100Vac (1ph), 110Vac (1ph), 120Vac (1ph), 130Vac (1ph), 200Vac (1ph), 220Vac (1ph), 230Vac (1ph), 240Vac (1ph), 220Vac (3ph), 380Vac (3ph), 400Vac (3ph), 415Vac (3ph), 440Vac (3ph), 460Vac (3ph) or 480Vac (3ph).

14 Specific Conditions of Use:

Consult the manufacturer if dimensional information on the flameproof joints is necessary.

15 Essential Health and Safety Requirements:

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

16 Test and Assessment Procedure and Conditions:

This EC-Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Ltd's ATEX Certification Scheme.

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to EC-Type Examination Certificate No. FM13ATEX0046X

17 **Schedule Drawings**

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by the Notified Body

18 **Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
16 th July 2013	Original Issue.
18 th October 2013	<u>Supplement 1:</u> Report Reference: 3043316 rev130731 dated 9 th October 2013. Description of the Change: Documentation updates and minor mechanical and electrical changes not affecting compliance.
23 rd June 2015	<u>Supplement 2:</u> Report Reference: 3054054 dated 19 th June 2015. Description of change: Single Phase Motor option added to the TQ Series Electric Actuator. Corrections made under variable "d".

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