



Limitorque QX smart valve actuator

The full measure of safety and reliability in the next-generation smart quarter-turn actuator.

The Flowserve Limitorque QX quarter-turn, smart electronic valve actuator mimics the state-of-the-art, non-intrusive, multi-turn MX actuator by including an absolute encoder for tracking position without the use of troublesome batteries. The QX design provides enhanced safety and reduced downtime through improved diagnostics, built-in self-test (BIST) features and LimiGard™ fault protection.

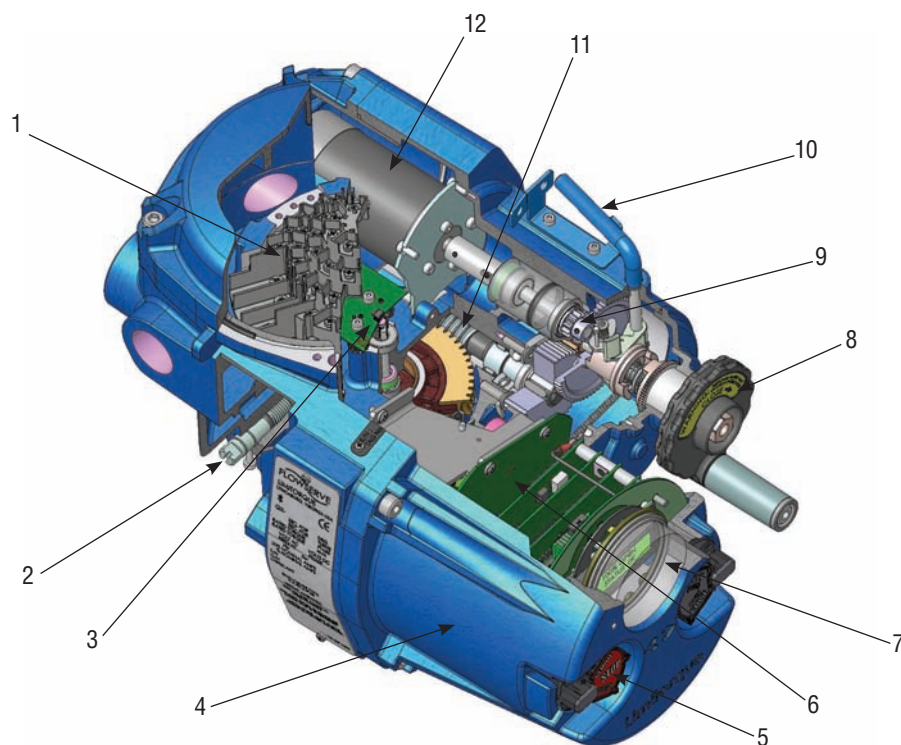
The QX design builds on more than 10 years of experience with proven Limitorque MX technology—the first-generation double-sealed electronic valve actuator from Flowserve designed to provide control, ease of use and accuracy. The QX includes all the user-preferred features of the MX in a quarter-turn, smart actuator package.

Features of the Limitorque QX include:

- An absolute encoder that simplifies valve automation from configuration and setup into normal operations, diagnostics and troubleshooting. The QX encoder employs system-on-chip technology using a contactless magnet that excites Hall effect devices to provide redundant, 12-bit resolution over 360 degrees. This redundancy, part of the BIST feature, means the device can continue to function reliably until a number of faults has been accumulated.
- Advanced brushless DC motors eliminate sparks, reduce mechanical and electrical noise, and dissipate heat better than motors with brushes. Unique to the industry, the brushless actuator design lasts longer than conventional motors and allows for more accurate positioning while permitting a global range of voltages (single-phase and three-phase ACV and DCV) to be connected without modification.
- Graphical dot-matrix display allows 180-degree rotation of text, diagnostic graphs and supports 10 languages: English, Spanish, French, Italian, German, Portuguese, Japanese (Katakana), Mandarin, Russian and Malay.
- Optional Bluetooth® wireless connectivity with a range up to 10 meters. When used with Flowserve Limitorque Dashboard™ Windows®-based software, diagnostic information is easily transferred to a PDA, laptop computer or cell phone.
- Network communications such as Modbus, Foundation Fieldbus H1, DeviceNet, and Profibus DP_V1 and Profibus PA offer the user bit strobe I/O messaging and a host of other benefits. A Device Type Manager (DTM) is also available for Profibus.
- Available in five distinct sizes from 100 ft-lbs (136Nm) to an industry-leading 1500 ft-lbs (2040 Nm).
- Includes innovative handwheel parallel to the LCD screen to permit ease of manual setup and operation and the ability to be installed in areas with limited space.



Actuator Model		QX-1	QX-2	QX-3	QX-4	QX-5
Torque Ratings	Nm	135	339	542	1016	2031
	ft lbs	100	250	400	750	1500
Operating Times	Seconds Minimum	5	8	15	30	60
	Seconds Maximum	20	30	60	120	120
Flange	ISO 5210	F05/F07/F10	F07/F10	F10	F12/F14	F14
	MSS SP-102	FA05/07/10	FA07/10	FA10	FA12/14	FA14



No.	Description
1	Terminal Chamber
2	Drive Sleeve Stop
3	Absolute Encoder
4	Cast Aluminum Housing
5	Local Control Switches
6	Control Chamber
7	LCD Multilingual Display
8	Handwheel
9	Motor Gear Attachment
10	Declutch Lever
11	Worm Gear Set
12	Brushless DC Motor

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