



# Limitorque™ MX Single Phase ACV

Brushless DCV motor flexibility in a multi-turn electronic actuator



Flowserve Limitorque introduced the innovative MX electronic actuator with technical features that were market firsts – a patented absolute encoder, patented Limigard technology, and easy-to-use menus in multiple languages. These features and the implementation of a BLDC (brushless DCV) motor were included in the feature-rich QX quarter-turn electronic actuator. All of the innovative features devised for the MX and QX are now combined in the single phase ACV MX, including a BLDC motor. This means the same predictable, reliable and safe operation users have come to expect from the MX/QX actuators are now found in the single phase ACV MX. The 100% solid-state, single-phase MX with BLDC motor includes the following feature set:

- Patented absolute encoder with increased span, improved diagnostics capability, a redundant encoder with (BIST, Built in Self Test) testing for position sensing, part of Flowserve Limitorque's uncompromising commitment to "no batteries required."
  - State-of-the-art controls platform which incorporate BIST and monitors the integrity of its components, resulting in a design that can provide a high level of safety.
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- Graphical display that improves visibility, allows for 180° rotation of the text, displays diagnostic graphs, and permits the support of eleven languages, including Mandarin, Russian, Turkish and Malay.
  - Optional Bluetooth connectivity with a range of up to 10 meters, which can be used to easily transfer diagnostic information to a PDA, laptop computer or cell phone with Flowserve Limitorque's Windows™ CE based Dashboard software.
  - Improved network communications with the addition of HART protocol to complement Modbus, Foundation Fieldbus H1, Proibus DP\_V1 and Profibus PA and DeviceNet.
  - User can connect any single phase ACV from 110V up to 250 Vac, without changing the MX motor or electronics, providing quick and easy connectivity in the field.





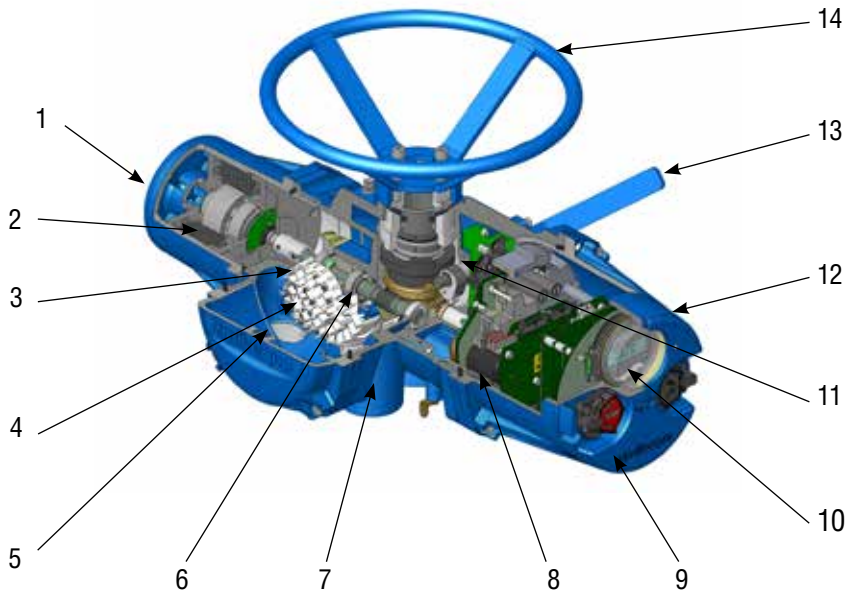
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## MX Series Performance Ratings for Single Phase ACV Applications

MX-05 through MX-10 (single-phase: 50 Hz/230/240 Volt: 60 Hz/110/115/120, 208/230 AC Volt)

Output Speed (RPM)		Rated Output Torque			
		MX-05		MX-10	
60Hz	50 Hz	ft-lb	N m	ft-lb	N m
18	15	55	75	125	170
26	22	55	75	125	170
40	33	55	75	125	170
52	43	55	75	125	170
77	65	48	65	107	145
100	84	39	53	89	121
155	127	41	56	89	121
200	165	34	46	73	99



No.	Description
1	BLDC motor
2	Motor gear attachment
3	Plug-in connectors
4	External connection block
5	Termination chamber
6	Gear set
7	Thrust base / Linear base
8	Control chamber with solid-state motor controller
9	Local control switches
10	Multilingual display
11	Absolute encoder
12	Cast aluminum housing
13	Declutch lever
14	Handwheel

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