



General Description:

Type Mxx electric / electronic actuator are used to precisely position small valves and devices

Gears: Mxx actuators use sintered, greased for life metal gearing only

Housing: all housing parts are aluminum die cast and are protected by an electrophoresis paint

Bearings: oiled for life porous bronze bearings

External Fasteners: Stainless Steel

Manual Override: optional, mounted directly on the output shaft

Mxx actuators offer a full range of control options:
 - Multiturn Analog, Partial Turn Analog
 - ¼ - ½ turn TTL

External Gear Stages: Metal Gears for additional reduction:
 MxH 3.75 additional gear ratio
 MxU 15 additional gear ratio

General Specifications:

- Enclosure:** NEMA 4 / IP56
- Temperature range:** 0 .. 70 deg Cel (derate duty cycle at high temp.)
- Extended temperature range:** -40 .. 70 deg Cel [w. Heater option]
- Finish:** E-coating, Stainless
- Stall protection:** by electronic position and motion detection
- Feedback:** TTL, 4.20mA
- Life Expectance:** 250,000 cycles or equivalent under specified conditions
- Motor:** BLDC brushless DC motor.
- Voltages:** 12-24 VDC
- Stall protection:** by electronic position and motion detection
- Positioning precision:** +/- 3 deg for 1/4 – ½ turn models
 +/- 0.25 deg for multi turn
- Positioning resolution:** +/- 0.15 deg max. adjusting to electronic signal resolution of 12 bit
 additional signal filters available
- Range setting:** dip switches inside enclosure
- Speed setting:** dip switches inside enclosure
- End of travel detection:** for needle valve closing, by motion detection
- Power setting:** adjustable to protect delicate needle valves on closing operation
- Position detection:** Hall detectors
- Motor control:** Electronic, full computer control
- Mechanical shock:** 1 m drop test no damage to function
 Random SAE J1211, Chassis, Exterior
- Mechanical vibration:** Random SAE J1211, Chassis, Exterior
- Thermal Shock:** -20 deg cel to + 70 deg cel 10 min

Performance: Mxx Multi-turn models:

Model	Torque Range [in-lbs]	Speed range [time for 1 turn]
MCJ	3 .. 20	1 .. 5 sec*
MCL	18 .. 60	1 .. 5 sec
MCM	44 .. 132	3 .. 9 sec
MCH	88.5 .. 400	15 .. 60 sec

* Speed decreased at lowest torque settings

Performance: Mxx ¼ and ½ turn models:

Model	Torque Range [in-lbs]	Speed range [time for ¼ turn]
MDM	44 .. 132	0.75 .. 2.5 sec
MDH	88.5.. 400	3 .. 9 sec

Note: the speed and torque depend on the settings by dip switch of the actuator, selectable by user. Consult user manuals of individual units.

* De-rate the duty cycle to 25% for the highest torque values

Other Specifications Multi-turn Models:

- Isolated Signals:** optical isolation 1000V min.
[AI and AF models only]
- Feedback 4..20mA:** for sensing resistor of max. 250 ohms. Floats +6VDC / -2VDC from power Gnd
[AF model only]
- Position on power loss:** - Standard, “remembers” the position it was in before shut down.
- will reseal the valve based on torque setting when the signal is between 3 and 4 mA

Other Specifications ¼ and ½ turn Models:

- TTL Signals in:** internal pull up, <1mA required to pull down
- TTL signals out (Feedback):** will drive max 2.5mA

