COMPACT VALVE ACTUATORS
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KEEP IT SIMPLE, GO ELECTRIC
**M-SERIES ACTUATOR DIMENSIONS AND SPECS**

### Mxx

- **Enclosure**: Aluminum die cast E-coating, stainless NEMA 4 / IP56
- **Temperature range**: 0..70 deg C° internal (derate duty cycle at high temp.)
- **Ext. temp. range**: -40..70 deg C° (option Heater)
- **Stall protection**: Electronic position and motion detection
- **Feedback**: TTL, 4 - 20mA
- **Manual Override**: Optional
- **Gears & Bearings**: Metal and bronze, oiled/greased for life
- **External Fasteners**: Stainless Steel
- **Life Expectance**: 250,000 cycles in specified conditions
- **Motor**: Brushless DC motor, computer control
- **Volatges/Current**: 12-24 VDC/Max3A @ 24VDC 110/220 VAC/Max3A @ 110/220VAC
- **Positioning precision**: +/- 3 deg for 1/4 – 1/2 turn  +/- 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/ Speed setting**: Dip switches inside enclosure
- **Control options**: Analog (4 - 20 mA, 1 - 5 V, 1 - 10 V), Modbus, TTL (on/off)
- **End travel detection**: For needle valve, by motion detection
- **Power setting**: Adjustable
- **Mechanical shock**: Repeated ≤ 130 g - force no effect, occasional ≤ 150 g - force no effect > 150 g - force not tolerated
- **Mechanical vibration**: Random SAE J1211, Chassiss, Exterior
- **Thermal Shock**: -20 deg C° to + 70 deg C° 10 min
- **Failsafe battery**: LiPo rechargeable battery, will position the actuator to predetermined desired position
- **Weight**: Mxx: 650 g  MxH: 1300 g

### MxH

### MCx Multi-turn models

<table>
<thead>
<tr>
<th>Model</th>
<th>Torque range [in-lbs]</th>
<th>Speed range [1 turn in sec]</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCJ</td>
<td>3 .. 17</td>
<td>1 .. 7 *</td>
</tr>
<tr>
<td>MCL</td>
<td>12 .. 48</td>
<td>1 .. 7</td>
</tr>
<tr>
<td>MCM</td>
<td>35 .. 145</td>
<td>4 .. 23</td>
</tr>
<tr>
<td>MCL - F</td>
<td>130 .. 432</td>
<td>13 .. 52</td>
</tr>
<tr>
<td>MCH</td>
<td>120 .. 497</td>
<td>18 .. 72</td>
</tr>
<tr>
<td>MCF</td>
<td>230 .. 915</td>
<td>38 .. 152</td>
</tr>
</tbody>
</table>

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

**Note**: speed and torque depend on settings by dip switch of actuator Consult user manuals of individual units. Actuators are set for optimum speed.

### MDx ¼ and ½ turn models

<table>
<thead>
<tr>
<th>Model</th>
<th>Torque range [in-lbs]</th>
<th>Speed range [1/4 turn in sec]</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDM</td>
<td>120 .. 195</td>
<td>1 .. 3</td>
</tr>
<tr>
<td>MDL - F</td>
<td>390 .. 677</td>
<td>2 .. 6</td>
</tr>
<tr>
<td>MDH</td>
<td>405 .. 657</td>
<td>3 .. 9</td>
</tr>
<tr>
<td>MDF</td>
<td>756 .. 1241</td>
<td>5 .. 15</td>
</tr>
</tbody>
</table>

### Other Specifications Multi-turn Models:

- **Isolated Signals**: Optical isolation 1000V min [Al and AF models only]
- **Feedback 4..20mA**: For sensing resistor of [AF model only] max. 250 ohms. Floats +6VDC / -2VDC from power Gnd
- **Position power loss**: Standard: “remembers” position before shut down, will reseat 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