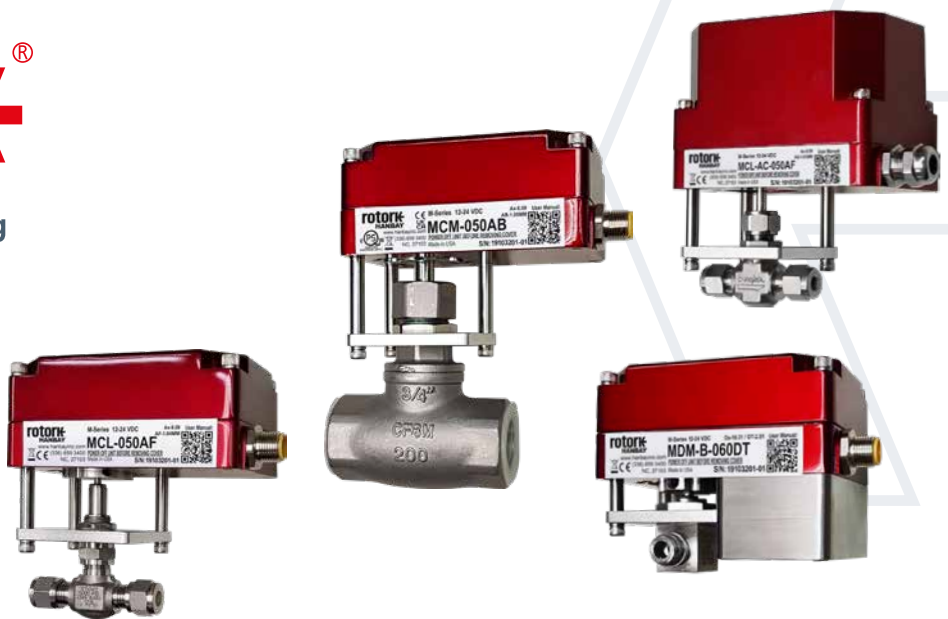




Keeping the World Flowing  
for Future Generations



## M series

Compact electric actuators

M series multi-turn actuators provide precision modulating control for needle, metering, globe and control valves, as well as pressure regulators.

M series part-turn actuators deliver fast open/close operation for ball, diverter, multi-port, shut-off, internal and butterfly valves.

### Specifications

Enclosure:	Aluminum die cast E-coating, stainless
Temperature range:	0 to +65 °C internal (derate duty cycle at high temp.)
Ext. temp. range:	-40 to +60 °C (option heater)
Stall protection:	Electronic position and motion detection
Feedback:	TTL, 4-20 mA, Modbus®
Manual override:	Optional
Gears and bearings:	Metal and bronze, oiled/greased for life
External fasteners:	Stainless steel
Life expectancy:	250,000 cycles in specified conditions
Motor:	Brushless DC motor, computer control
Voltages/current:	12-24 VDC/Max 3A, 110/220 VAC/Max 1.5A @ 50/60 Hz
Positioning precision:	+/- 3 deg for ¼ and ½ 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  $\leq 130$  g – force no effect,  
occasional  $\leq 150$  g – force no effect  
> 150 g – force not tolerated

Mechanical vibration: Random SAE J1211, chassis, exterior

Thermal shock: -20 to +60 °C 10 min

Failsafe battery: LiPo rechargeable battery, will position  
the actuator to predetermined desired  
position

Weight: MxJ, MxL, MxM: 650 g;  
MxH, MxF: 1300 g

### Certifications

FCC 47 CFR PART 15 SUBPART B  
ICES-001 ISSUE 5 July 2020  
IEC 61000-6-2:2016, IEC 61000-6-4:2018  
EN 61326-1:2013 (GROUP 1, CLASS A; Industrial  
electromagnetic environment)  
IP66 (60529:2013)



**HANBAY INC.**

A rotork Brand

### Specifications cont.

#### Multi-turn models

Isolated signals [AI and AF models only]:  
Optical isolation 1,000 V min

#### Feedback 4-20 mA [AF model only]:

For sensing resistor of max. 250 Ohms. Floats +6 VDC/-2 VDC from power Gnd

#### Position power loss:

Standard: "remembers" position before shut down, will reset valve based on torque setting when the signal is between 3 and 4 mA

#### ¼ and ½ turn models

##### MDx-xxxDx24

TTL signals in (control): Float at 24 V, < 1 mA to pull to 0 V

TTL signals out (feedback): 24 V at 0.5 A max.

### Performance data

#### MCx multi-turn models

Model	Torque range (lbf.in)	Torque range (Nm)	Speed range (1 turn in sec)
MCJ	4 to 16	0.45 to 1.81	1 to 7*
MCL	12 to 48	1.36 to 5.42	1 to 7
MCM	35 to 145	3.95 to 16.38	4 to 23
MCH	120 to 497	13.56 to 56.15	18 to 90
MCF	230 to 915	25.99 to 103.38	38 to 186

#### MDx ¼ and ¾ turn models

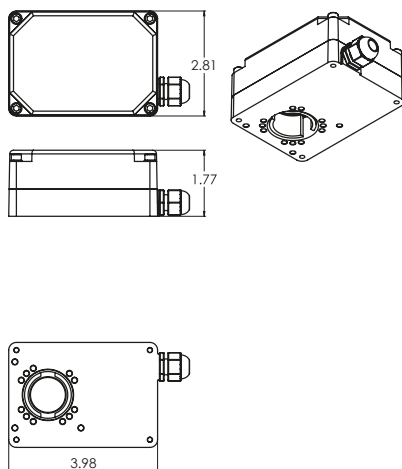
Model	Torque range (lbf.in)	Torque range (Nm)	Speed range (¼ turn in sec)
MOM	212 to 247	23.95 to 27.91	1 to 3
MDH	430 to 532	48.58 to 60.11	3 to 9
MDF	710 to 1050	80.22 to 118.63	5 to 15

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

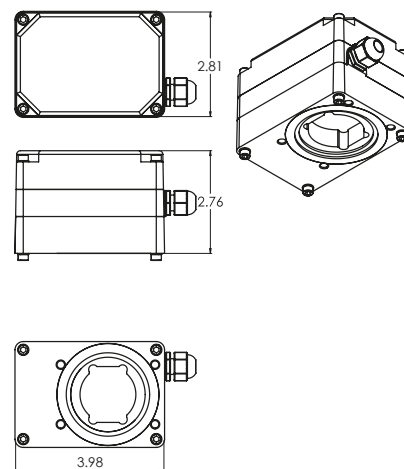
**Note:** Speed and torque depend on settings by dip switch of actuator. Consult user manuals of individual units. Actuators are set for optimum speed.

### Dimensional data

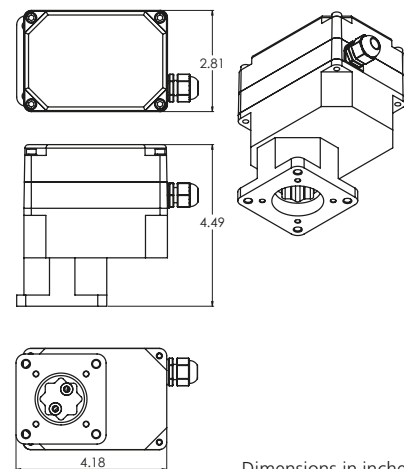
#### MxJ / MxL / MxM



#### MxH



#### MxF



Dimensions in inches

A full listing of the Rotork sales and service network is available on our website.

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