Part-Turn Electric | Multi-Turn Electric

Optional 7” Handwheel Available

NEMA 4 Enclosure

Approvals

MAR Models Only
(Canadian Standard Association)

CSA NRTL/C – Enclosure

NEMA 7 Enclosure

Approvals

MAR Models Only
(Canadian Standard Association)

CSA NRTL/C	Class I, Divisions 1 & 2, Groups C & D
CSA NRTL/C	Class II, Divisions 1 & 2, Groups E, F, & G
CSA NRTL/C	Approved to UL Standard No. 429, Electrically Operated Values
CSA NRTL/C	Approved to UL Standard No. 1203, Electrical Equipment for use in Explosion - proof And Dust - Ignition - proof Hazardous (Classified) Locations

Models

MAR10, 50, 90 – A.C. Supply
DCR10, 50, 90 – D.C. Supply

Typical Application

For on/off and modulating control of:

- Part turn ball, butterfly or plug valves
- Rotary dampers
- Rotating equipment
- Multi-turn valve types

Temperature Range

Standard: -40°F to +150°F
-40°C to +66°C

Optional: -60°F to +120°F
-51°C to +49°C

(Note: With Heaters Installed)

Optional: Compliance to NFPA 130, capable of operation after exposure to ambient temperature of 482°F (250°C) for a minimum of 1 hour

Voltage

115 VAC, 1 Phase, 50/60 Hz.
230 VAC, 1 Phase, 50/60 Hz.
24 VAC, 1 Phase, 50/60 Hz.
12 VDC / 24 VDC

Torque Range

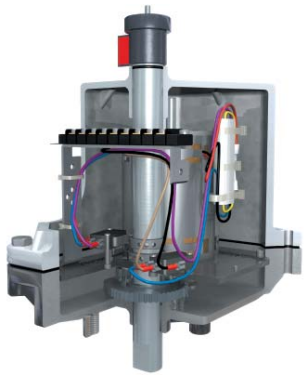
30 to 1,000 inch pounds
(3.4 to 113.0 newton meters)

Speed Range

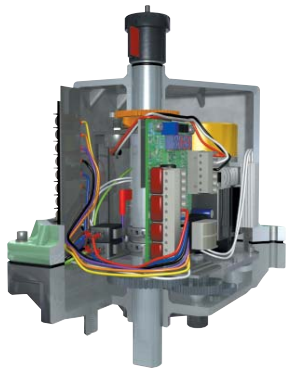
For 60 Hz. operation:
.6 to 60 seconds for 90° revolution
.3 and 30 RPM for multi-turns

Standard Features

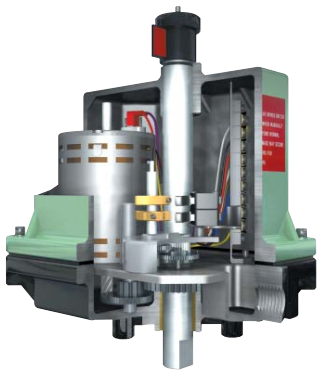
AC Voltages
2 – SPDT Switches, PTC Heater
DC Voltages
2 – SPDT (High Current) Switches



Open/Close



Modulating

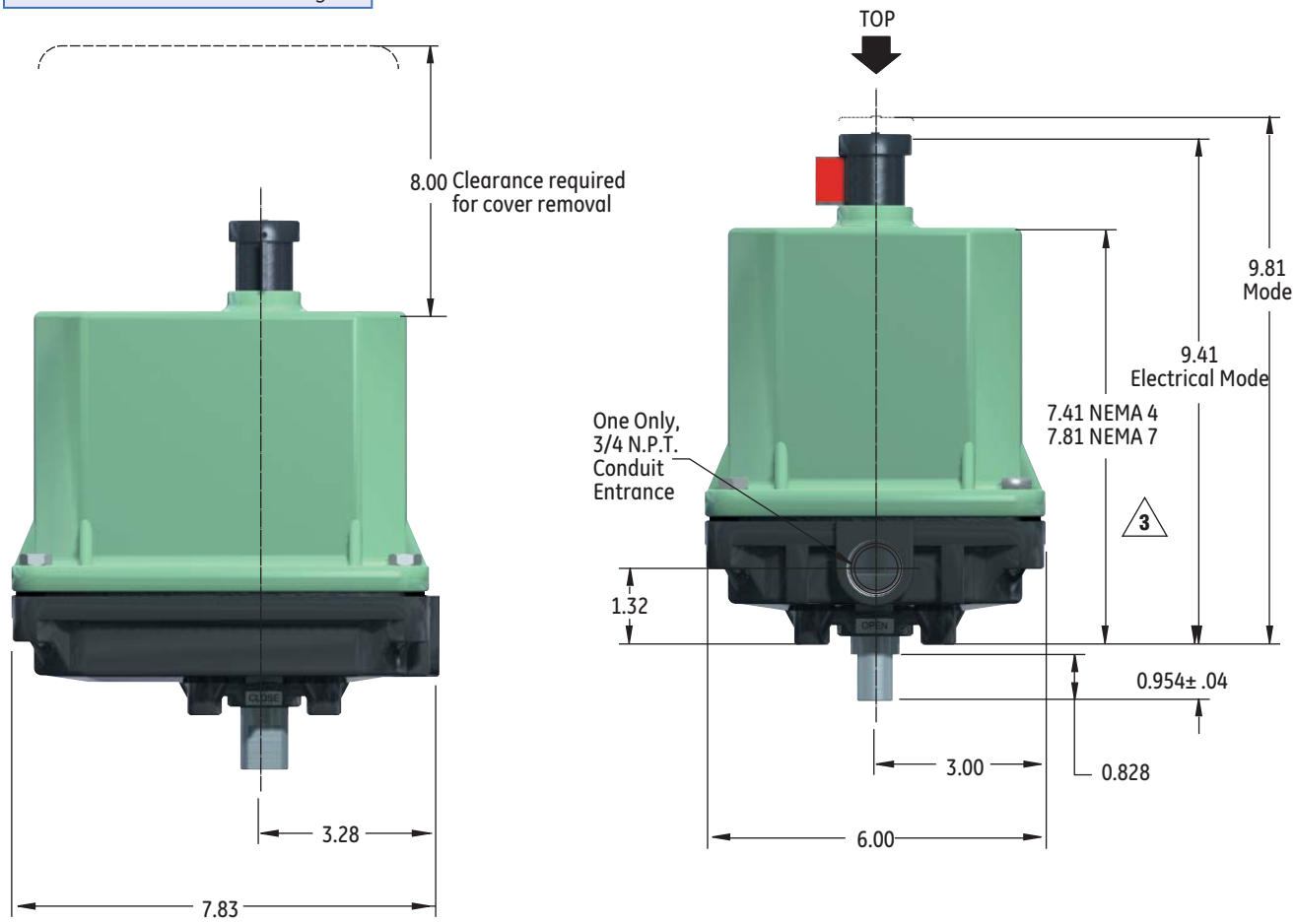


Multi-Turn

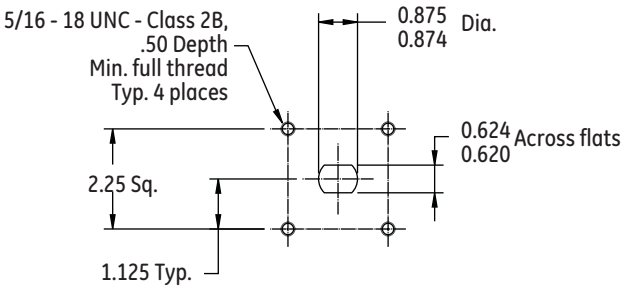
Part-Turn Electric | Multi-Turn Electric

Outline Dimensions (Inches) – MAR & DCR 10, 50, & 90

Weight
NEMA 4 Enclosure: 12 lbs./5.4 kg
NEMA 7 Enclosure: 16 lbs./7.3 kg



Mounting Geometry - Bottom View



Notes

1. Direction of rotation is based on viewing actuator from top.
2. Drawing shows output shaft in a fully clockwise (closed) position.
3. Actuator shown with indicator in electrical mode.
4. A NEMA 4 control enclosure is shown. Dimensions given are accurate for NEMA 7.

Part-Turn Electric | Multi-Turn Electric

115 & 230 VAC, 1 Phase, 50/60 Hz.

Model	Output Torque Inch Pounds (N.m)	Type	Speed of Operation 60 Hz. (50 Hz.)	Duty Cycle Rating 115 Vac, 1Ph., 50/60 Hz.	Duty Cycle Rating 230 Vac, 1Ph., 50/60 Hz.	Current Ratings 115 VAC		Current Ratings 230 VAC	
						NLA*	LRA*	NLA*	LRA*
MAR 10-.5MT	30 (3.4)	Multi-Turn	30 RPM N/A	25% (2)	25% (2)	0.50	0.82	0.25	0.40
MAR 10-2	120 (13.6)	Part Turn	2 second/90° (2.5 seconds/90°)	50% (1)	50% (1)	0.40	0.60	0.30	0.40
MAR 10-2MT	120 (13.6)	Multi-Turn	7.5 RPM (6.2 RPM)	50% (2)	50% (2)	0.40	0.60	0.20	0.25
MAR 10-10	350 (39.5)	Part Turn	10 seconds/90° (12 seconds/90°)	50% (1)	50% (1)	0.40	0.60	0.20	0.25
MAR 10-30	425 (48.0)	Part Turn	30 seconds/90° (35 seconds/90°)	50% (2)	50% (2)	0.30	0.50	0.20	0.25
MAR 10-60	400 (45.2)	Part Turn	60 seconds/90° (70 seconds/90°)	50% (2)	50% (2)	0.35	0.55	0.20	0.25
MAR 50-.5MT	200 (22.6)	Multi-Turn	30 RPM N/A	25% (2)	–	1.90	3.10	–	–
MAR 50-2	600 (67.8)	Part Turn	2 seconds/90° (2.5 seconds/90°)	40% (1)	50% (1)	1.60	2.20	0.50	0.95
MAR 50-2MT	600 (67.8)	Multi-Turn	7.5 RPM (6.2 RPM)	40% (2)	50% (2)	1.60	2.20	0.50	0.95
MAR 50-10	600 (67.8)	Part Turn	10 seconds/90° (12 seconds/90°)	50% (1)	50% (1)	0.50	0.80	0.30	0.50
MAR 50-30	700 (79.1)	Part Turn	30 seconds/90° (35 seconds/90°)	50% (2)	50% (2)	0.35	0.55	0.20	0.25
MAR 50-60	600 (67.8)	Part Turn	60 seconds/90° (70 seconds/90°)	50% (2)	50% (2)	0.30	1.50	0.20	0.25
MAR 90-5	1,000 (113.0)	Part Turn	5 seconds/90° (6 seconds/90°)	50% (1)	50% (1)	0.55	1.55	0.25	0.85
MAR 90-5MT	1,000 (113.0)	Multi-Turn	3 RPM (2.5 RPM)	50% (2)	50% (2)	0.55	1.55	0.25	0.85
MAR 90-15	1,000 (113.0)	Part Turn	15 seconds/90° (17.5 seconds/90°)	75% (2)	50% (2)	0.50	0.60	0.20	0.35

* (N.L.A.) — No Load Ampere (L.R.A.) — Locked Rotor Ampere (1) — Open/Close Service (2) — Open/Close or Modulating Service

Duty Cycle

The percentage of time the electric motor is energized vs. the time it is at rest, in reversing duty and with the actuator running at it's rated load maximum published torque.

Standard Modulating Duty Rating

- 12 motor starts (corrections) per minute
- At the rated duty cycle for that model
- With the speed of operation a minimum of 15 seconds for 90° or slower
- With positioning accuracy of (+/-) 1% of total span

Isolation Relays

To operate multiple actuators in parallel from a single signal requires isolating relays in the field wiring. Consult factory.

Note — Multi-turn models are available with the following number of turns:

1.4, 5, 8, 13, 18, 26 or 50. Must be specified when the order is placed.

Part-Turn Electric | Multi-Turn Electric

24 VAC

Model	Output Torque Inch Pounds (N.m)	Type	Speed of Operation 60 Hz. (50 Hz.)	Duty Cycle Rating 24 VAC	Current Ratings 24 VAC	
					NLA*	LRA*
MAR 10-2	120 (13.6)	Part Turn	2 seconds/90°	25% (1)	2.80	3.50
MAR 10-2MT	120 (13.6)	Multi-Turn	7.5 RPM	25% (1)	2.80	3.50
MAR 10-10	350 (39.5)	Part Turn	10 seconds/90°	25% (1)	1.90	2.70
MAR 10-30	425 (48.0)	Part Turn	30 seconds/90°	25% (1)	1.70	2.40
MAR 10-60	400 (45.2)	Part Turn	60 seconds/90°	25% (1)	1.80	2.50
MAR 50-10	600 (67.8)	Part Turn	10 seconds/90°	25% (1)	3.80	4.70
MAR 50-30	700 (79.1)	Part Turn	30 seconds/90°	25% (1)	1.90	2.70
MAR 90-15	1,000 (113.0)	Part Turn	15 seconds/90°	25% (1)	2.40	4.00

12 & 24 VDC

Model	Output Torque Inch Pounds (N.m)	Type	No Load Speed of Operation	Duty Cycle Rating 12 VDC	Duty Cycle Rating 24 VDC	Current Ratings 12 VAC		Current Ratings 24 VAC	
						NLA*	LRA*	NLA*	LRA*
DCR 10-2	250 (28.2)	Part Turn	.6 seconds/90°	50% (1)	50% (1)	1.00	12.5	0.75	6.80
DCR 10-2MT	250 (28.2)	Multi-Turn	25 RPM	50% (2)	50% (2)	1.00	12.5	0.75	6.80
DCR 10-10	400 (45.2)	Part Turn	6.4 seconds/90°	50% (1)	50% (1)	0.19	3.90	0.08	2.10
DCR 50-2	600 (67.8)	Part Turn	.7 seconds/90°	50% (1)	50% (1)	1.00	22.00	0.75	12.00
DCR 50-2MT	600 (67.8)	Multi-Turn	21 RPM	50% (2)	50% (2)	1.00	22.00	0.75	12.00
DCR 50-10	600 (67.8)	Part Turn	5.6 seconds/90°	50% (1)	50% (1)	0.90	5.80	0.5	2.40
DCR 50-30	700 (79.1)	Part Turn	21 seconds/90°	50% (2)	50% (2)	0.15	2.65	0.06	1.15
DCR 90-5	900 (101.7)	Part Turn	2.2 seconds/90°	50% (1)	50% (1)	1.00	12.50	0.75	6.80
DCR 90-5MT	900 (101.7)	Multi-Turn	7 RPM	50% (2)	50% (2)	1.00	12.50	0.75	6.80
DCR 90-15	900 (101.7)	Part Turn	5.6 seconds/90°	50% (2)	50% (2)	0.90	5.80	0.50	2.40

* (N.L.A.) — No Load Ampere (L.R.A.) — Locked Rotor Ampere (1) — Open/Close Service (2) — Open/Close or Modulating Service

Limit Switches (MAR Models)

Standard: Two-single pole, double throw type (SPDT) with an option for 2 or 4 additional.

Ratings: UL and CSA listed.
15 amp & 1/2 H.P. at 125 or 250 VAC;
1/2 amp at 125 VDC;
1/4 amp at 250 VDC; 5 amp at 120 VAC

Optional: All double pole, double throw type (DPDT).

Ratings: UL and CSA listed.
10 amp at 125/250 VAC (form ZZ);
1/2 H.P. at 125 VDC; 3/4 H.P. at 250 VAC

Limit Switches (DCR Models)

Ratings: Ratings: UL and CSA listed.
MIL-PRF-8805 Qualified Listing
25 amp at 277 VAC; 1 H.P. at 125 VAC;
2 H.P. at 250 VAC

Isolation Relays

To operate multiple actuators in parallel from a single signal requires isolating relays in the field wiring. Consult factory.

Note — Multi-turn models are available with the following number of turns: 1.4, 5, 8, 13, 18, 26 or 50. Must be specified when the order is placed.

Part-Turn Electric | Multi-Turn Electric

NEMA 4 Enclosure	
Approvals	
MAR Models Only (Canadian Standard Association)	
CSA NRTL/C	Type 4

NEMA 4/6/7 Enclosure	
Approvals	
MAR Models Only (Canadian Standard Association)	
CSA NRTL/C	Type 4 and 6
CSA NRTL/C	Class I, Divisions 1 & 2, Groups C & D
CSA NRTL/C	Class II, Divisions 1 & 2, Groups E, F & G
CSA NRTL/C	Approved to UL Standard No. 429, Electrically Operated Valves
CSA NRTL/C	Approved to UL Standard No. 1203, Electrical Equipment for use in Explosion - proof And Dust - Ignition - proof Hazardous (Classified) Locations

Models	
A.C. Voltage	D.C. Voltage
MAR100 MAR120 MAR160 MAR250 MAR800	DCR100 DCR160 DCR250 DCR800

Typical Application

For on/off and modulating control of:

- Part turn ball, butterfly or plug valves
- Multi-turn valve types
- Rotary dampers
- Rotating equipment

Temperature Range

Standard: -40°F to +150°F
-40°C to +66°C

Optional: -60°F to +120°F
-51°C to +49°C

(Note: With Heaters Installed)

Optional: Compliance to NFPA 130, capable of operation after exposure to ambient temperature of 482°F (250°C) for a minimum of 1 hour

Voltage

115 VAC, 1 Phase, 50/60 Hz.
230 VAC, 1 Phase, 50/60 Hz.
24 VAC, 1 Phase, 50/60 Hz.
220 VAC, 3 Phase, 60 Hz.
440 VAC, 3 Phase 60 Hz.
12 VDC
24 VDC

Torque Range

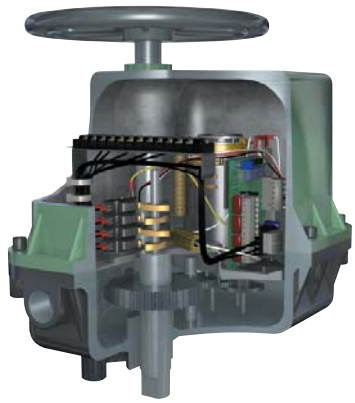
1,500 to 10,000 inch pounds
(169.5 to 1129.8 newton meters)

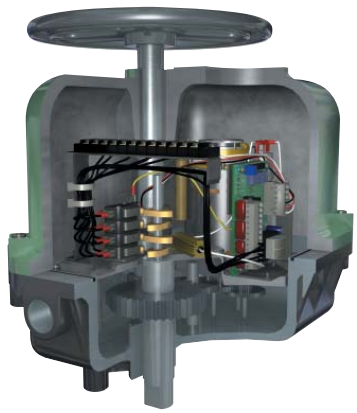
Speed Range

For 60 Hz. operation:
1.25 to 60 seconds for 90° revolution
5 and 12 RPM for multi-turns

Standard Features

AC (Single and Three Phase) Voltages
4 – SPDT Switches, PTC Heater
DC Voltages
4 – SPDT (High Current) Switches

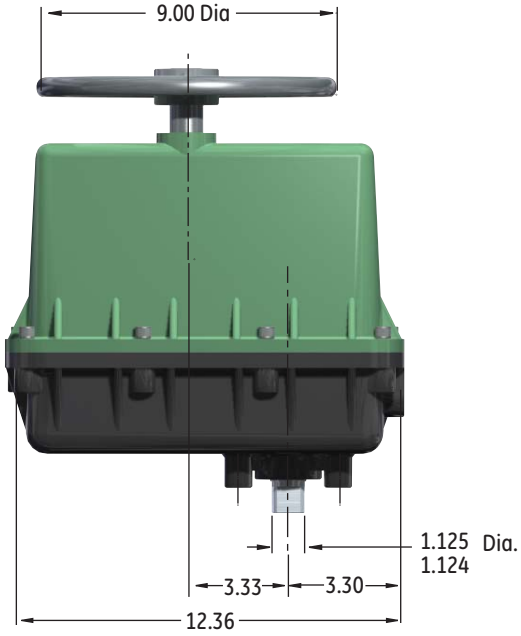


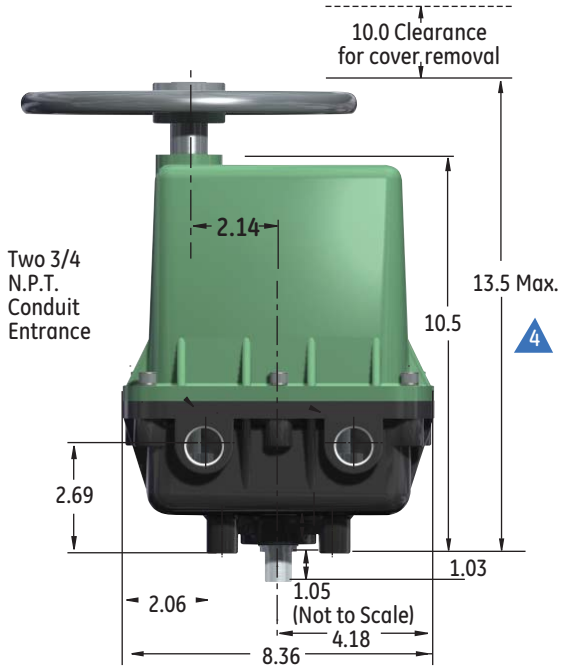


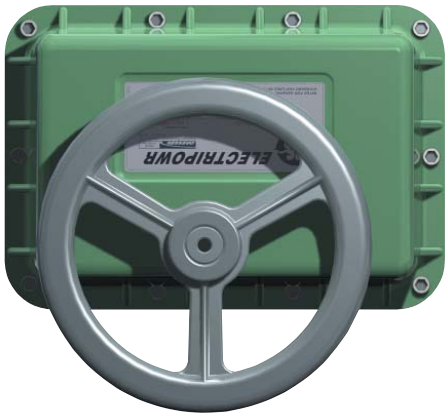
Part-Turn Electric | Multi-Turn Electric

Outline Dimensions (Inches) – MAR & DCR 100, 120, 160 & 250

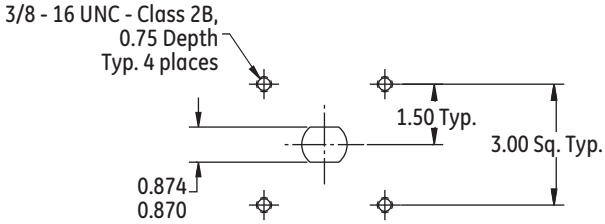
Weight
NEMA 4 Enclosure: 34 lbs/15.45 kg NEMA 4/6/7 Enclosure: 44 lbs/20 kg







Mounting Geometry



Notes

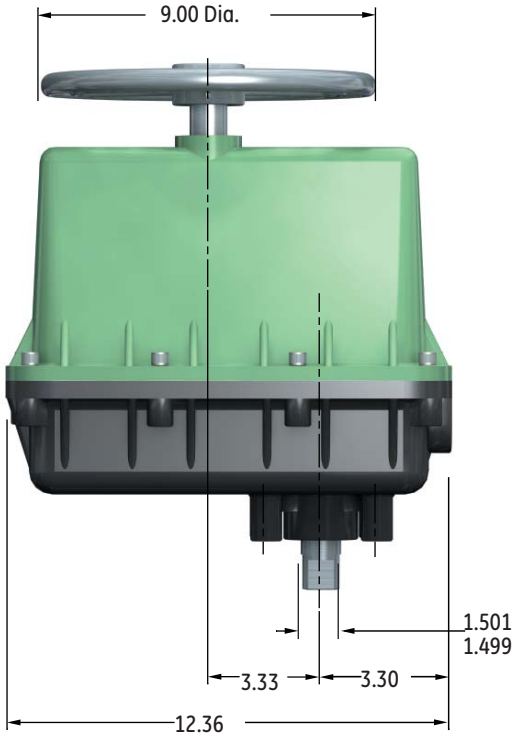
1. Drawing shows the actuator output shaft in a fully clockwise (closed) position.
2. Direction of actuator rotation is based on the top view from the handwheel.
3. A NEMA 4 control cover is shown. Dimensions given are accurate for NEMA 4/6/7.

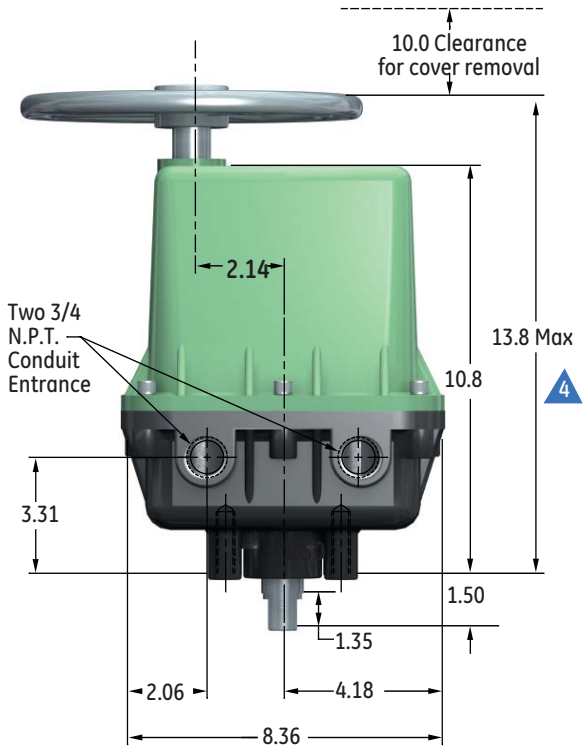
4. Actuator is shown with handwheel in auto position. Height is 13.0" when manual override is used.

Part-Turn Electric | Multi-Turn Electric

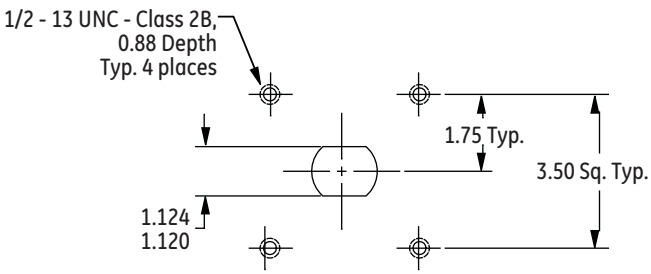
Outline Dimensions (Inches) – MAR & DCR 800

Weight
NEMA 4 Enclosure: 34 lbs/15.4 kg NEMA 4/6/7 Enclosure: 44 lbs/20 kg





Mounting Geometry



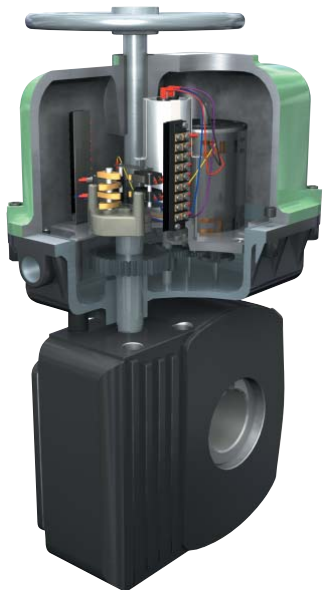
Notes

1. Drawing shows the actuator output shaft in a fully clockwise (closed) position.
2. Direction of actuator rotation is based on the top view from the handwheel.
3. A NEMA 4 control cover is shown. Dimensions given are accurate for NEMA 4/6/7.

4. Actuator is shown with handwheel in auto position. Height is 13.3" when manual override is used.

Part-Turn Electric

Models
MAR 1600, MAR 4000
Typical Application
For on/off and modulating control of: ■ Part turn ball, butterfly or plug valves ■ Multi-turn valve types ■ Rotary dampers ■ Rotating equipment
Temperature Range
Standard: -40°F +150°F -40°C to +65°C Optional: -60°F to+150°F -50°C to +65°C Optional: Compliance to NFPA 130, capable of operation after exposure to ambient temperature of 482°F (250°C) for a minimum of 1 hour or a maximum of 3 hours.
Voltage
115 VAC, 1 Phase, 50/60 Hz. 230 VAC, 1 Phase, 50/60 Hz. 220 VAC, 3 Phase, 60 Hz. 440 VAC, 3 Phase 60 Hz.
Torque Range
21,000 to 48,000 inch pounds (2,373 to 5,424 newton meters)
Speed Range
70 & 170 seconds for 90° revolution
Standard Features
AC (Single or Three Phase) Voltages 4 – SPDT Switches, PTC Heater

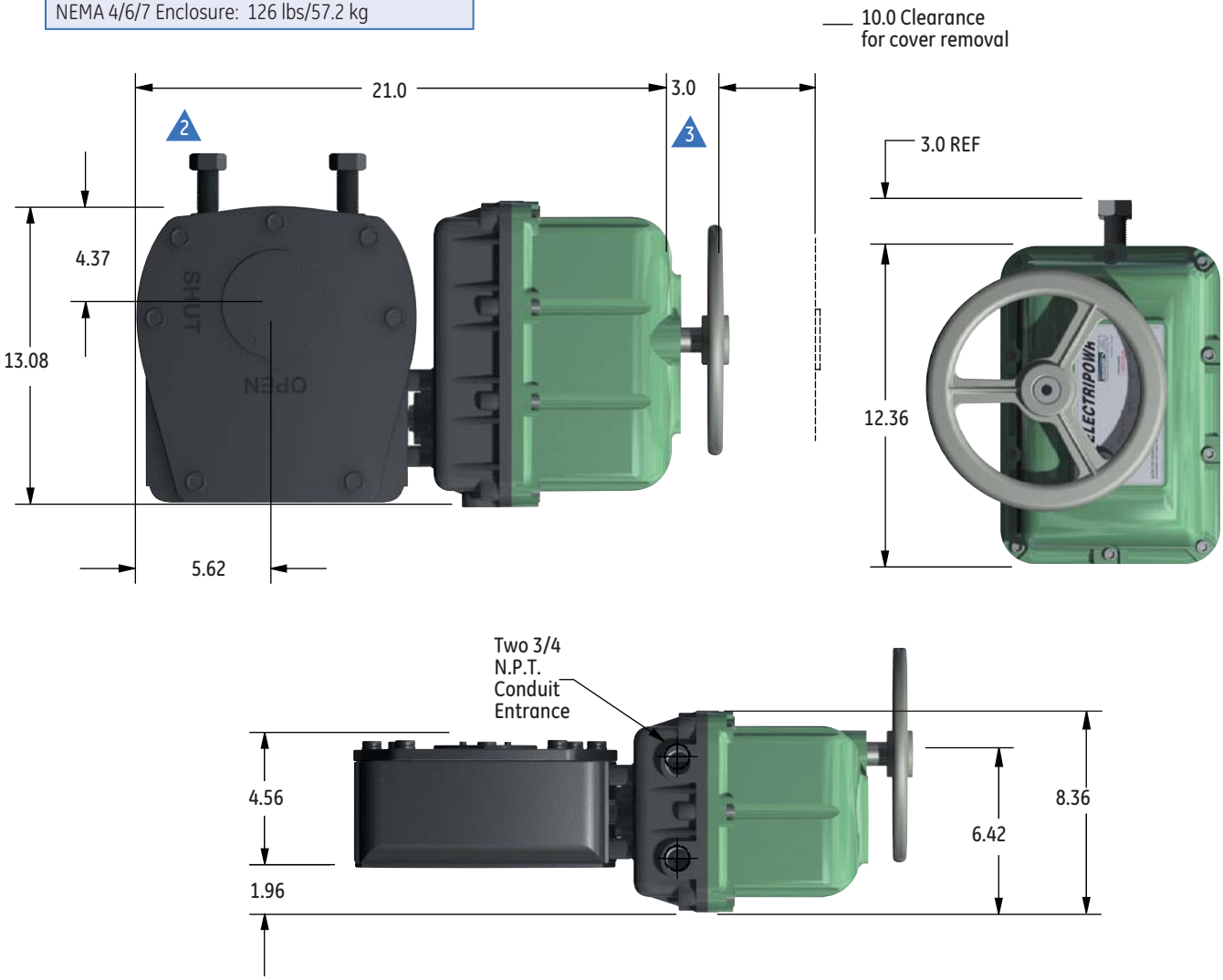


NEMA 4/6/7 Enclosure	
Approvals	
A.C. Models Only (Canadian Standard Association)	
CSA NRTL/C	Type 4 and 6
CSA NRTL/C	Class I, Divisions 1 & 2, Groups C & D
CSA NRTL/C	Class II, Divisions 1 & 2, Groups E, F & G
CSA NRTL/C	Approved to UL Standard No. 429, Electrically Operated Valves
CSA NRTL/C	Approved to UL Standard No. 1203, Electrical Equipment for use in Explosion - proof And Dust - Ignition - proof Hazardous (Classified) Locations

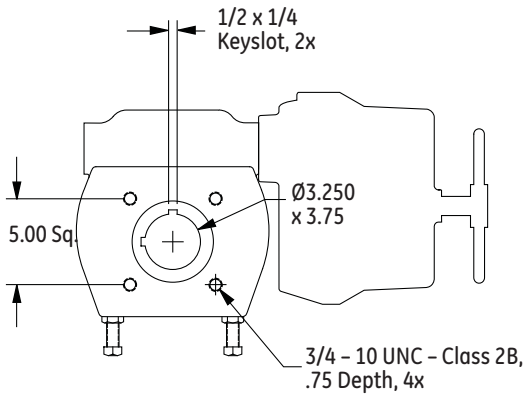
Part-Turn Electric

Outline Dimensions (Inches) – MAR 1600-70 and 4000-170

Weight
NEMA 4/6/7 Enclosure: 126 lbs/57.2 kg



Mounting Geometry



Notes

1. Drawing shows the actuator output shaft in a fully clockwise (closed) position.
2. Direction of actuator rotation is based on the top view of the eternal gearbox.
3. Actuator is shown with handwheel in auto position. Height is 2.4" when manual override is used.

Part-Turn Electric | Multi-Turn Electric

115 & 230 VAC, 1 Phase, 50/60 Hz.

Model	Output Torque Inch Pounds (N.m)	Type	Speed of Operation 60 Hz. (50 Hz.)	Duty Cycle Rating 115 Vac, 1Ph., 50/60 Hz.	Duty Cycle Rating 230 Vac, 1Ph., 50/60 Hz.	Current Ratings 115 VAC		Current Ratings 230 VAC	
						NLA*	LRA*	NLA*	LRA*
MAR 100-16	1,500 (169)	Part Turn	16 seconds/90° (19 seconds/90°)	100% (2)	50% (2)	0.55	1.55	0.25	0.85
MAR 100-30	1,800 (203)	Part Turn	30 seconds/90° (35 seconds/90°)	100% (2)	50% (2)	0.50	0.60	0.30	0.35
MAR 100-60	2500 (282)	Part Turn	60 seconds/90° (70 seconds/90°)	100% (2)	50% (2)	0.35	0.55	0.20	0.35
MAR 120-1.25	1,500 (169)	Part Turn	1.25 seconds/90° (2 seconds/90°)	25% (1)	25% (1)	3.30	7.40	1.30	3.60
MAR 120-1.25 MT	1,500 (169)	Multi-Turn	12 RPM (10 RPM)	25% (2)	25% (2)	3.30	7.40	1.30	3.60
MAR 160-8	1,920 (217)	Part Turn	8 seconds/90° (9 seconds/90°)	50% (1)	50% (1)	0.75	1.65	0.70	1.05
MAR 160-16	2,000 (226)	Part Turn	16 seconds/90° (19 seconds/90°)	75% (2)	50% (2)	0.60	1.60	0.35	0.90
MAR 160-30	2,500 (282)	Part Turn	30 seconds/90° (35 seconds/90°)	75% (2)	50% (2)	0.65	0.70	0.45	0.50
MAR 160-60	2,800 (316)	Part Turn	60 seconds/90° (70 seconds/90°)	100% (2)	50% (2)	0.50	0.60	0.30	0.35
MAR 250-3	3,500 (395)	Part Turn	3 seconds/90° (4 seconds/90°)	25% (1)	50% (1)	3.30	7.40	0.90	3.40
MAR 250-3MT	3,500 (395)	Multi-Turn	5 RPM (4 RPM)	25% (2)	50% (2)	3.30	7.40	0.90	3.40
MAR 250-8	3,000 (339)	Part Turn	8 seconds/90° (9 seconds/90°)	40% (1)	50% (1)	1.60	2.20	1.00	1.25
MAR 250-16	4,000 (452)	Part Turn	16 seconds/90° (19 seconds/90°)	50% (2)	50% (2)	1.10	1.80	0.70	1.05
MAR 250-30	5,000 (565)	Part Turn	30 seconds/90° (35 seconds/90°)	50% (2)	50% (2)	0.75	1.65	0.50	0.95
MAR 250-60	5,000 (565)	Part Turn	60 seconds/90° (70 seconds/90°	75% (2)	50% (2)	0.65	0.70	0.30	0.35
MAR 800-12	7,500 (847)	Part Turn	12 seconds/90° (14 seconds/90°)	25% (1)	25% (1)	3.30	7.40	0.90	3.40
MAR8 00-30	10,000 (1,130)	Part Turn	30 seconds/90° (35 seconds/90°)	40% (2)	50% (2)	1.60	2.20	1.00	1.20
MAR 800-60	10,000 (1,130)	Part Turn	60 seconds/90° (70 seconds/90°)	75% (2)	50% (2)	0.55	1.55	0.50	0.95
MAR 1600-70	21,000 (2,373)	Part Turn	70 seconds/90° (82 seconds/90°)	25% (2)	50% (2)	3.30	7.40	0.90	3.40
MAR 4000-170	48,000 (5,424)	Part Turn	170 seconds/90° (200 seconds/90°)	25% (2)	50% (2)	3.30	7.40	0.90	3.40

* (N.L.A.) — No Load Ampere (L.R.A.) — Locked Rotor Ampere (1) — Open/Close Service (2) — Open/Close or Modulating Service

Duty Cycle

The percentage of time the electric motor is energized vs. the time it is at rest, in reversing duty and with the actuator running at it's rated load maximum published torque.

Standard Modulating Duty Rating

- 12 motor starts (corrections) per minute.
- At the rated duty cycle for that model
- With the speed of operation a minimum of 15 seconds for 90° or slower
- With positioning accuracy of (+/-) 1% of total span

Isolation Relays

To operate multiple actuators in parallel from a single signal requires isolating relays in the field wiring. Consult factory.

Note — Multi-turn models are available with the following number of turns: 1.4, 5, 8, 13, 18, 26 or 50. Must be specified when the order is placed.

Part-Turn Electric | Multi-Turn Electric

12 & 24 VDC

Model	Output Torque Inch Pounds (N.m)	Type	No Load Speed of Operation	Duty Cycle Rating 12 VDC	Duty Cycle Rating 24 VDC	Current Ratings 12 VAC		Current Ratings 24 VAC	
						NLA*	LRA*	NLA*	LRA*
DCR 100-30	2,000 (225)	Part Turn	11.5 seconds/90°	50% (2)	50% (2)	0.90	5.80	0.50	6.80
DCR 160-16	2,200 (248)	Part Turn	5.5 seconds/90°	50% (1)	50% (1)	1.00	12.50	0.75	6.80
DCR 160-60	3,600 (406)	Part Turn	22 seconds/90°	50% (2)	50% (2)	0.90	5.80	0.50	2.10
DCR 250-8	3,000 (339)	Part Turn	3.2 seconds/90°	50% (1)	50% (1)	1.00	22.00	0.75	12.00
DCR 250-16	4,000 (452)	Part Turn	5.7 seconds/90°	50% (1)	50% (1)	1.00	22.00	0.75	12.00
DCR 250-30	5,000 (565)	Part Turn	11.2 seconds/90°	50% (2)	50% (2)	1.00	12.50	0.75	2.40
DCR 800-30	10,000 (1,130)	Part Turn	13.3 seconds/90°	50% (2)	50% (2)	1.00	22.00	0.75	1.15
DCR 800-60	10,000 (1,130)	Part Turn	23 seconds/90°	50% (2)	50% (2)	1.00	12.50	0.75	1.15

24 VAC

Model	Output Torque Inch Pounds (N.m)	Type	Speed of Operation 60 Hz. (50 Hz.)	Duty Cycle Rating 24 VAC	Current Ratings 24 VAC	
					NLA*	LRA*
MAR 100-16	1,500 (169)	Part Turn	16 seconds/90° (19 seconds/90°)	50% (2)	5.60	6.00
MAR 100-30	1,800 (203)	Part Turn	30 seconds/90° (35 seconds/90°)	75% (2)	2.40	4.50
MAR 100-60	2,500 (282)	Part Turn	60 seconds/90° (70 seconds/90°)	100% (2)	1.80	3.80
MAR 160-30	2,500 (282)	Part Turn	30 seconds/90° (35 seconds/90°)	75% (2)	4.50	5.00
MAR 160-60	2,800 (316)	Part-Turn	60 seconds/90° (70 seconds/90°)	75% (2)	2.40	4.50
MAR 250-60	5,000 (565)	Part Turn	60 seconds/90° (70 seconds/90°)	50% (2)	4.50	5.00

* (N.L.A.) — No Load Ampere (L.R.A.) — Locked Rotor Ampere (1) — Open/Close Service (2) — Open/Close or Modulating Service

Limit Switches (MAR Models)

Standard: Four-single pole, double throw type (SPDT) with an option for 2 additional.

Ratings: UL and CSA listed.
15 amp & 1/2 H.P. at 125 or 250 VAC
1/2 amp at 125 VDC;
1/4 amp at 250 VDC
Lamp Load: 5 amp at 120 VAC

Optional: All double pole, double throw type (DPDT).

Ratings: UL and CSA listed.
10 amp at 125/250 VAC (form ZZ);
1/2 H.P. at 125 VDC; 3/4 H.P. at 250 VAC

Limit Switches (DCR Models)

Ratings: Ratings: UL and CSA listed.
MIL-PRF-8805 Qualified Listing
25 amp at 277 VAC; 1 H.P. at 125 VAC;
2 H.P. at 250 VAC

Isolation Relays

To operate multiple actuators in parallel from a single signal requires isolating relays in the field wiring. Consult factory.

Heater

PTC (Positive Temperature Coefficient)
Heater standard in an AC Voltage Models

Part-Turn Electric | Multi-Turn Electric

220 & 440 VAC, 3 Phase, 60 Hz.

Model	Output Torque Inch Pounds (N.m)	Type	Speed of Operation 60 Hz. (50 Hz.)	Duty Cycle Rating 220 Vac, 3Ph., 60 Hz.	Duty Cycle Rating 440 Vac, 3Ph., 60 Hz.	Current Ratings 220 VAC		Current Ratings 440 VAC	
						NLA*	LRA*	NLA*	LRA*
MAR 100-16	1,500 (169)	Part Turn	16 seconds/90° (19 seconds/90°)	25%	25%	0.34	1.20	0.15	0.75
MAR 120-1.25	1,500 (169)	Part Turn	1.25 seconds/90° (2 seconds/90°)	25%	25%	1.60	3.50	0.82	1.80
MAR 120-1.25 MT	1,500 (169)	Multi-Turn	12 RPM (10 RPM)	25%	25%	1.60	3.50	0.82	1.80
MAR 160-8	1,920 (217)	Part Turn	8 seconds/90° (9 seconds/90°)	25%	25%	0.34	1.20	0.15	0.75
MAR 160-16	2,000 (226)	Part Turn	16 seconds/90° (19 seconds/90°)	25%	25%	0.34	1.20	0.15	0.75
MAR 250-3	3,500 (316)	Part Turn	3 seconds/90° (4 seconds/90°)	25%	25%	1.60	3.50	0.82	1.80
MAR 250-3MT	3,500 (316)	Multi-Turn	5 RPM (4 RPM)	25%	25%	1.60	3.50	0.82	1.80
MAR 250-16	4,000 (452)	Part Turn	16 seconds/90° (19 seconds/90°)	25%	25%	0.34	1.20	0.15	0.75
MAR 250-30	5,000 (565)	Part Turn	30 seconds/90° (35 seconds/90°)	25%	25%	0.34	1.20	0.15	0.75
MAR 250-60	5,000 (565)	Part Turn	60 seconds/90° (70 seconds/90°)	25%	25%	0.34	1.20	0.15	0.75
MAR 800-12	7,500 (847)	Part Turn	12 seconds/90° (14 seconds/90°)	25%	25%	1.60	3.50	0.82	1.80
MAR 800-30	10,000 (1,130)	Part Turn	30 seconds/90° (35 seconds/90°)	25%	25%	0.34	1.20	0.15	0.75
MAR 800-60	10,000 (1,130)	Part Turn	60 seconds/90° (70 seconds/90°)	25%	25%	0.34	1.20	0.15	0.75
MAR 1600-70	21,000 (2,373)	Part Turn	70 seconds/90° (80 seconds/90°)	25%	25%	1.60	3.50	0.82	1.80
MAR 4000-170	48,000 (5,424)	Part Turn	170 seconds/90° (200 seconds/90°)	25%	25%	1.60	3.50	0.82	1.80

NOTE — Multi-turn models are available with the following number of turns: 1.4, 5, 8, 13, 18, 26 or 50. Must be specified when the order is placed.

* (N.L.A.) — No Load Ampere (L.R.A.) — Locked Rotor Ampere (1) — Open/Close Service (2) — Open/Close or Modulating Service

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