

# RCS Actuators

## MAR 1600, 4000



### NEMA 4/6/7 Enclosure

#### Approvals

A.C. Models Only

*Canadian Standards Association*

CSA NRTL/C—Enclosure 4 and 6

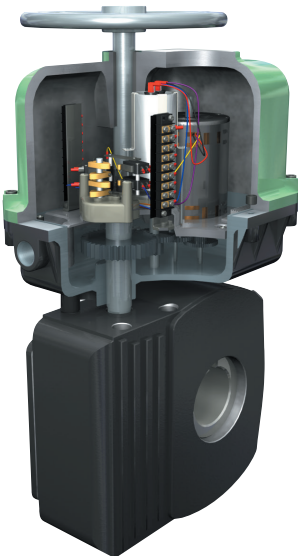
CSA NRTL/C—Class I, Divisions 1 and 2,  
Groups C and D

CSA NRTL/C—Class II, Divisions 1 and 2,  
Groups E, F and 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

MAR1600, MAR4000

#### 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 +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 and 48,000 inch pounds  
(2,373 and 5,424 newton meters)

#### Speed Range

65 and 160 seconds for 90° revolution

#### Standard Features

AC (Single or Three Phase) Voltages  
4 – SPDT Switches,  
PTC Heater

DC Voltages  
2 – SPDT (High Current)  
Switches

## 115 and 230 VAC, 1 Phase, 50/60 Hz.

Model	Output Torque Inch Pounds (N.m)	Type	Speed of Operation 60 Hz. (50 Hz.)	Duty Cycle		Current Ratings 115 VAC		Current Ratings 230 VAC	
				Rating 115 Vac, 1Ph., 50/60 Hz.	Rating 230 Vac, 1Ph., 50/60 Hz.	N.L.A.*	L.R.A.*	N.L.A.*	L.R.A.*
MAR100-16	1500 (169)	Part Turn	16 seconds/90° (19 seconds/90°)	100% (2)	50% (2)	0.55	1.55	0.25	0.85
MAR100-30	1800 (203)	Part Turn	30 seconds/90° (35 seconds/90°)	100% (2)	50% (2)	0.50	0.60	0.30	0.35
MAR100-60	2500 (282)	Part Turn	60 seconds/90° (70 seconds/90°)	100% (2)	50% (2)	0.35	0.55	0.20	0.35
MAR120-1.25	1500 (169)	Part Turn	1.25 seconds/90° (2 seconds/90°)	25% (1)	25% (1)	3.30	7.40	1.30	3.60
MAR120-1.25 MT	1500 (169)	Multi-Turn	12 RPM (10 RPM)	25% (2)	25% (2)	3.30	7.40	1.30	3.60
MAR160-8	1920 (217)	Part Turn	8 seconds/90° (9 seconds/90°)	50% (1)	50% (1)	0.75	1.65	0.70	1.05
MAR160-16	2000 (226)	Part Turn	16 seconds/90° (19 seconds/90°)	75% (2)	50% (2)	0.60	1.60	0.35	0.90
MAR160-30	2500 (282)	Part Turn	30 seconds/90° (35 seconds/90°)	75% (2)	50% (2)	0.65	0.70	0.45	0.50
MAR160-60	2800 (316)	Part Turn	60 seconds/90° (70 seconds/90°)	100% (2)	50% (2)	0.50	0.60	0.30	0.35
MAR250-3	3500 (395)	Part Turn	3 seconds/90° (4 seconds/90°)	25% (1)	50% (1)	3.30	7.40	0.90	3.40
MAR250-3MT	3500 (395)	Multi-Turn	5 RPM (4 RPM)	25% (2)	50% (2)	3.30	7.40	0.90	3.40
MAR250-8	3000 (339)	Part Turn	8 seconds/90° (9 seconds/90°)	40% (1)	50% (1)	1.60	2.20	1.00	1.25
MAR250-16	4000 (452)	Part Turn	16 seconds/90° (19 seconds/90°)	50% (2)	50% (2)	1.10	1.80	0.70	1.05
MAR250-30	5000 (565)	Part Turn	30 seconds/90° (35 seconds/90°)	50% (2)	50% (2)	0.75	1.65	0.50	0.95
MAR250-60	5000 (565)	Part Turn	60 seconds/90° (70 seconds/90°)	75% (2)	50% (2)	0.65	0.70	0.30	0.35
MAR800-12	7500 (847)	Part Turn	12 seconds/90° (14 seconds/90°)	25% (1)	25% (1)	3.30	7.40	0.90	3.40
MAR800-30	10000 (1130)	Part Turn	30 seconds/90° (35 seconds/90°)	40% (2)	50% (2)	1.60	2.20	1.00	1.20
MAR800-60	10000 (1130)	Part Turn	60 seconds/90° (70 seconds/90°)	75% (2)	50% (2)	0.55	1.55	0.50	0.95
MAR1600-65	21000 (2373)	Part Turn	65 seconds/90° (82 seconds/90°)	25% (2)	50% (2)	3.30	7.40	0.90	3.40
MAR4000-160	48000 (5424)	Part Turn	160 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 its 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.

## 220 and 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	
						N.L.A.*	L.R.A.*	N.L.A.*	L.R.A.*
MAR100-16	1500 (169)	Part Turn	16 seconds/90° (19 seconds/90°)	25%	25%	0.34	1.20	0.15	0.75
MAR120-1.25	1500 (169)	Part Turn	1.25 seconds/90° (2 seconds/90°)	25%	25%	1.60	3.50	0.82	1.80
MAR120-1.25 MT	1500 (169)	Multi-Turn	12 RPM (10 RPM)	25%	25%	1.60	3.50	0.82	1.80
MAR160-8	1920 (217)	Part Turn	8 seconds/90° (9 seconds/90°)	25%	25%	0.34	1.20	0.15	0.75
MAR160-16	2000 (226)	Part Turn	16 seconds/90° (19 seconds/90°)	25%	25%	0.34	1.20	0.15	0.75
MAR250-3	3500 (316)	Part Turn	3 seconds/90° (4 seconds/90°)	25%	25%	1.60	3.50	0.82	1.80
MAR250-3MT	3500 (316)	Multi-Turn	5 RPM (4RPM)	25%	25%	1.60	3.50	0.82	1.80
MAR250-16	4000 (452)	Part Turn	16 seconds/90° (19 seconds/90°)	25%	25%	0.34	1.20	0.15	0.75
MAR250-30	5000 (565)	Part Turn	30 seconds/90° (35 seconds/90°)	25%	25%	0.34	1.20	0.15	0.75
MAR250-60	5000 (565)	Part Turn	60 seconds/90° (70 seconds/90°)	25%	25%	0.34	1.20	0.15	0.75
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MAR1600-65	21000 (2373)	Part Turn	65 seconds/90° (80 seconds/90°)	25%	25%	1.60	3.50	0.82	1.80
MAR4000-160	48000 (5424)	Part Turn	160 seconds/90° (200 seconds/90°)	25%	25%	1.60	3.50	0.82	1.80

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### Industrial Products Group

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