# **ROTARY & SMART ACTUATOR MOTORS**

TABLE OF<br/>CONTENTS333

Honeywell's HercuLine® rotary actuators feature broad torque and timing ranges, standard end-of-travel limit switches, and rugged enclosures. HercuLine® smart electric actuators are engineered for exceptional reliability, accurate positioning, and low maintenance. Designed for precise positioning of dampers and valves, they perform well in extremely demanding environments requiring continuous duty, and high reliability.

Dricos

Soo

	334
\$3442.00	336
\$399.55	338
	\$3442.00 \$399.55

## **Smart Actuator Motors**

Comparing Continuous Duty Electric Actuator Motors		334
Honeywell HercuLine® 10260S Medium Torque Smart Actuator Motors	\$3442.00	336
Honeywell HercuLine <sup>®</sup> 2000 Low Torque Precision Smart Actuators	\$993.00	335

## Accessories

Honeywell HAL Actuator Motor Linkage Analysis Windows <sup>®</sup> Software	\$121.00	337
---	----------	-----



Rather use pneumatics for valve positioning? Check out Siemens digital pneumatic positioner! See pages 352 to 353 for details.



## 334 COMPARING ACTUATORS

V 12.2014

# **Comparing Rotary and Electric Actuator Motors**

Honeywell

## Which Rotary Actuator Is Right for You?





0			
Ď+	Rotary Actuators	Modutrol IV	HercuLine® 10260A
	Motor Description	Low torque/ medium duty for non-industrially hardened applications. Lowest price/life expectancy/re-positions	Medium torque/heavy duty for industrially hardened applications. High life expectancy/ re-positions.
n	Voltage	24 or 120 VAC, 1 phase	120 VAC, 1 phase
	Duty Cycle	25%	Continuous (100%)
	Approvals/Ratings	NEMA 3, UL, CSA, CE Mark	NEMA 4, UL, CSA, CE Mark
	Gear Train	Powered metal spur	Steel/bronze single reduction worm
D	Lubrication/Maintenance	Oil/None	None
	Brake	Yes	None required
cc (	Manual Override	Optional crank arm	Standard handwheel, crank arm, optional handswitch
Š,	Torque Range	35-150 lb. in.	10-300 lb.ft.
+	Rotation	90/160°	90°
_	Failsafe	In-place/spring return	In-place
	Input Signals	4-20 mA, 1-5 VDC, PAT, floating	4-20 mA, 1-5 VDC, 3-wire position proportional, on/off
	Deadband Adjustment	None	0.2-5% of span
	Feedback Signals	135 $\Omega$ potential	0-20 mA, 4-20 mA, 0-5, 1-5 or 0-16 VDC, 1000Ω, potential
	Hysteresis	0.60%	<0.4% full scale
5	Linearity	Approximately 5%	± 0.25% span
	Mechanical Stops	Standard, fixed	Standard, fixed
2			

## Which Continuous Duty Electric Actuator is Right for You?







-			
Electric Actuators	HercuLine <sup>®</sup> 2000	HercuLine <sup>®</sup> 2001/2002	HercuLine® 10260S
Product Description	Low torque electric actuator	Low torque electric actuator	Medium torque industrial electric actuator
Torque	50 to 400"-Lb ( 6 to 45 N-M)	50 to 400"-Lb ( 6 to 45 N-M)	100 to 300 Lb-ft ( 14 to 400 N-M)
Stroke/Speed	90° to 160°/ 15 to 240 sec	90° to 160°/ 7.5 to 120 sec	90° /20/40/60 sec
Input Signals	2 to 10 VDC, 4 to 20 mA	1 to 5 VDC, 4 to 20 mA floating, position proportional, open/close	1 to 5 VDC, 4 to 20 mA floating, position proportional, open/close
Position Feedback	1000/135Ω over 90°	0/1 to 5 VDC, 0 to 16 VDC 0/4 to 20 mA, software emulation	0/1 to 5 VDC, 0 to 16 VDC 0/4 to 20 mA, software emulation
Position Sensing	Slidewire	2001: Slidewire; 2002: Contactless	Contactless
Environmental	-40° to 185° F (-40° to 85° C)	-40° to 170° F (-40° to 75° C)	-20° to 170° F (-30° to 75° C)
Adjustable Deadband	0.2% to 5% span	2% to 5% span	0.2% to 5% span
Options	Local Auto/Manual Switch	Repeatability, Local Auto/Manual Switch, Local Keypad/Display	Repeatability, Local Auto/Manual Switch, Local Keypad/Display
Communications	None	Modbus RTU, HART®	Modbus RTU, HART®

Instrument Valves

#### LOW TORQUE 335 ACTUATORS

specs and

nstrumen

manuals

online.

Lineywell's HercuLine® electric actuators are low torque, precision electric actuators that incorporate all of the easy-to-use features of tradi-tional HercuLine actuators. Designed for precise positioning of dampers and quarter-turn valves, they perform well in extreme environments that require continuous duty, high reliability, and low maintenance act. HercuLine 2001 and 2002 smart actuators for portional or digital control applications of all parameters for naintena

maintenance decisions is standard through Modbus RTU, or local display. HercuLine 2002 have additional standard features, like non-contact position sensing and slidewire emulation output.



Make one selection from each section below. A finished catalog number looks like this: 2000-\_\_\_-\_000-00

## Model Selection Guide

Description						vai bili		Catalog Number	Price
Basic Motor Unit (No Electronics) Basic Motor Unit plus Digital Electronics Enhanced Performance Motor with Non-Contact Position Sensing						↓	↓	2000- 2001- 2002-	\$993.00 1434.00 1765.00
Torque and Speed Selection per 150° Rot.Torque 100 Lb/In 200 Lb/In 400 Lb/In50 Hz 15 sec 12 sec 30 sec 60 sec60 Hz 12 sec 25 sec 50 secTravel90° Rotation				•	•	•	100- 200- 400-	0.00 0.00 0.00	
Travel		otation Rotation			•	•	•	090- 150-	0.00 0.00
Power	100 to	o 130 VAC, 60	Hz		•	•	•	126-	0.00
Analog Input	0/40 t	e Drive Up/D to 20 mA; 0/1 o 20 mA; 0/1 t	-5,0 to 10		•	•	•	0 2 3	0.00 143.00 0.00
Analog Output		1000Ω (100Ω vire Emulatic		°)	• b	•	•	_ 00- _ 15- _ 60-	0.00 105.00 204.00
Auxiliary Outputs	2 Aux	None 2 Auxiliary Switches 4 Auxiliary Switches					•	0 2 4	0.00 105.00 215.00
Relay Outputs	None 2 Programmable Relay Outputs 4 Programmable Relay Outputs				•	• • e		_0- _2- _4-	0.00 88.00 176.00
Keypad/ Display	None Integrally Mounted Display				•	d •	d •	0 1	0.00 254.00
Auto/ Manual Switch	None Switch with "Out of Auto Contact" Switch with "Out of Auto Contact"				•	•	•	_0 _1 _2	0.00 198.00 198.00
Hand- wheel	None Handwheel				•	•	•	00 10	0.00 38.00
Approvals	UL Ty	pe 4/IP66, CS	A		•	•	•	0	0.00
Shaft Rotation	Counterclockwise on Signal Increase Clockwise on Signal Increase					•	•	0- 1-	0.00 0.00
Commun- ications	None RS485	5 Modbus- St	andard w	ith EEU	•	•	•	0-0-00 1-0-00	0.00 0.00
Linkage	Ball Joint for 5/16" Diam. Pushrod Pushrod 18" Long, 5/16" Diam.							52354-504 52354-506	135.93 226.55

### Notes:

- a Not available with analog output signals. (Available only as Opt. -400-.)
- b  $135\Omega$  available by paralleling 1K potentiometer with  $158\Omega$  resistor.
- c 2001 series available with four relay outputs under future revision
- d HercuLink software, RS232/485 converter, for actuators without display.

HercuLine<sup>™</sup> 2000 Low Torque Precision Actuators

## Features

- No-burnout motor can be stalled up to 100 hours without damage to the actuator
- Mount in any orientation without degrading performance
- NEMA 4X diecast aluminum industrial-grade enclosure
- Two end-of-travel electric limit switches are supplied as standard with all HercuLine 2000 series actuators
- Up to four additional SPDT auxiliary switches are available
- Electric handswitch with auxiliary contacts indicating an "Out-of-Auto" position is available for local electric control
- Pushrod assemblies for valve or damper connection
- Self-locking, self-releasing worm gear maintains position at loss of power. Holds >2X rated output torque
- Manual handwheel operates the actuator when power is off
- CSA, UL, CE certification

## Smart Features of the HercuLine 2001 and 2002 Models

- Alarms can be triggered from stall, temperature limit, motor cycle count, out-of-auto mode, digital input, position input failure, position sensor failure, or power up failure
- Programmable characterization, positioning, and input filters
- Motor/gear train provides accurate positioning with almost instantaneous start/stop characteristics
- Optional LED display and keyboard for configuration
- Programmable auxiliary relay outputs provide indication of position, alarm status, or control of other equipment

## **Specifications**

Rotation: 90° or 150° from 0%-100% scale, limited by mechanical stops **Position Sensing:** 2000: Dual 1000 $\Omega$  film potentiometers

Mechanical Stops: Factory set at 90° or 150° (±5°) adjustable

Crank Arm: Included with actuator; Adjustable, radii 1.0" to 2.8" max.; Scale: 0 to 100% full crank arm travel

Torque Setting: 88 Lb/in (10 N-m)

Output Shaft: 0.625±/ -0.005" (15.88± 0.13 mm) diameter

Local Auto/Manual Switch: For local or automatic actuator operation

Switches: Limit: Two SPDT end of travel; Auxiliary: Up to 4 SPDT switches

Input Signals: 2000: 120 VAC drive open/close; 2001/2002 Analog: 0/4 to 20 mA; 0/1 to 5, 0 to 10 VDC

**Feedback:** 2000: Dual Output 1000Ω over 90° or 150°; 2001/2002: 0 to 20 mA, 4 to 20 mA, 0 to 5 VDC with  $250\Omega$  resistor

Operating Temperature: 2000/2001: -40° to 170° F; 2000: -40° to 185° F

Enclosure: Precision-machined, epoxy-coated, die cast aluminum housing Gear Train: Alloy steel, high efficiency steel spur gear primary train. Precision

ground, self-locking/self-releasing worm gear final mesh

Mains Supply: 100-130 VAC, 60 Hz; Current: 0.4 Amp

Communications: Modbus RTU

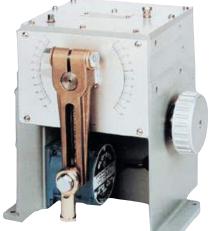
Approvals: CE compliant, UL/CSA, UL Type 4 (NEMA 4X), IP66

0	SOI
ess	ces
00	Ac
P	

es -

Temperature Switches

# **10260A Medium Torque Rotary Actuators**



## Features

- 100% duty cycle motor
- 10 to 300 Lb-Ft Torque High torque capability in a small package
- Accurate Positioning Motor/gear train provides accurate positioning with instantaneous start/stop characteristics
- Rugged industrial-grade enclosure
- Non-Contact Position Sensing Noncontacting sensing lowers maintenance costs
- Control Signals 4-20 mA, 1-5 VDC, position proportional control, open/close
- Output Signals 0/4-20 mA, 0/1-5 VDC (0-16 VDC), and slidewire emulation
- Low Power Consumption 120/240 VAC, 50/60 Hz, single phase ≤ 1 Amp

- Full Travel Speed Full stroke travel speeds from 10 to 60 seconds (90 degrees travel, 60 Hz supply)
- Manual handwheel operates the actuator when power is not available
- Auto/Manual Electric Handswitch With auxiliary contacts indicating an "Out of Auto" position, for local electric control
- Output Shaft Hardware All 10260A actuators come with an adjustable radius and adjustable position crank arm. Optional 12" crank arm, linkage kits, and direct coupling hardware available
- Limit Switches Two end-of-travel electrical limit switches, up to four additional SPDT auxiliary switches available
- Certified to CSA, UL, and CE

Honeywell's 10260A medium torque, industrially rated rotary actuator is engineered for exceptional reliability, accurate positioning, and low maintenance.

Designed for very precise positioning of dampers and quarter-turn valves, the 10260A performs especially well in extremely demanding environments. Typical applications include furnace pressure dampers, fuel/air ratio valves, windbox dampers, coal mine dampers, scoop tubes, and fluid gyrols.

To operate with maximum efficiency and improve process uptime, state-of-the-art control systems require accurate, responsive, and repeatable actuation of final control devices. Actuators are often overlooked when considering maintenance and ancillary support costs, yet they play an important role in system performance, and can directly impact your company's bottom line. Honeywell 10260A actuators implement a variable inductance, noncontact position sensor mounted directly to the actuator output shaft, providing precision position sensing from 0 to 90 degrees. This technology eliminates maintenance items, such as wipers and bearings, as well as static friction, hysteresis, and electrical noise over a wide variety of demanding environmental conditions.

Honeywell slidewire emulation provides backward compatibility for three-wire position proportional control schemes while eliminating maintenance and control issues associated with slidewire wear. The slidewire emulation circuit emulates the proportional voltage output of a typical slidewire through a high-impedance circuit. The voltage output is proportional to the supply voltage and shaft position. A noncontact position sensor is used to determine shaft position in place of the slidewire.

## HercuLine® 10260S Medium Torque Smart Actuators

## Features

- Torque Range 10 to 300 Ft/Lbs
- Continuous Duty Cycle No-Burnout Motor: Heavy duty 72 RPM synchronous induction motor can be stalled without damage and increased current draw or temperature rise
- Full Travel Speeds: From 10-60 sec (90° travel, 60 Hz supply)
- Control Signals: 0/4 to 20 mA, 0/1 to 5 VDC, 0 to 10 VDC, digital RS485 Modbus RTU protocol, and Series 90 control
- Output Signals: 0/4 to 20 mA, 0/1 to 5 VDC, and slidewire emulation; Auxiliary outputs: SPDT switches or electromechanical relay
- Characterization: Programmable linear, equal percentage, quick opening, or user-configured 10-point characterization allows tailored control for specific applications
- Alarm Functions: Alarms can be assigned to relay outputs or accessed through Modbus

- High Accuracy: Typically 0.25% of 90° span
- Brakeless Non-Backdrive Design: Eliminates need for friction brake to prevent drift under live load or overshoot
- Local Configuration: Integral keypad and display for easy local configuration; Eliminates the need for removing covers or letting contaminants into the electronics
- RS485/Modbus RTU communication standard; HART optional

Actuator Motors

ASCO Solenoid Valves

Honeywell

Prices start at

\$3442.00



## **Specifications**

Enclosure: Aluminum alloy casting, precision machined

- Gear Train: Alloy steel, high-efficiency steel spur gear primary train with safety fused idler gear. Precision ground, self-locking/self-releasing worm gear final mesh
- Mechanical Stops: Backup to CW and CCW end-of-travel limit switches to prevent over-travel

Operating Temperature: -20° to 150° F

Relative Humidity: Fully operable over 0%-99% RH noncondensing

Scale: 0% to 100% corresponding to full crank arm travel.

- Crank Arm: Included with actuator. Adjustable radii, 1-7/16" to 5". Position adjustable through 360° rotation. Optional 12" crank arm adjustable 0" to 12" radii.
- Output Shaft: 1" diameter, 1.5" length standard on most models. 1" diameter, 2" length standard on 10263A, 10265A, and 10269A, optional on others.
- Rotation: 90° from 0% to 100% on scale, limited by mechanical stops; Fieldselectable direction via switch and jumper. Default is CCW (determined looking at the shaft)

Manual Handwheel: For positioning during power failure or setup

- Lubrication: Teaco Starplex 2 EP grease
- Fuses: Bussmann GDB1.6 (1.6 Amp fast), Littelfuse 312001 (1.0 Amp fast)

Power: 120 or 240 VAC single phase, 50 or 60 Hz

- Motor: 100% duty cycle, instant start/stop, noncoasting, and nonburnout synchronous induction motor. Can be stalled up to 100 hours without damage.
- Power Loss: Stays in place
- Local Auto/Manual Switch: Optional. Provides local electrical operation with "out of auto" contact for annunciation

Motor Current: No load = full load = locked rotor

- Limit Switches: Two SPDT end-of-travel limits standard
- Auxiliary Switches: Optional. Up to 4 additional SPDT switches, rated 10A @ 125 VAC, 5A @ 250 VAC
- Approvals: CE compliant, CSA, UL approvals available
- Bolts: Clamp: Standard arm 1-7/16-5" adjustment, optional 0-12" adjustment; Rod end: Standard and long arms 30-35 Lb/ft

### Actuator with Motor Positioner Board

Input (CAT/PAT Board): 4-20 mA, 1-5 VDC, 3-wire position proportional, on/off Sensitivity: 0.20% to 5% span adjustable. Shipped at 0.5% span

Hysteresis: Less than 0.4% full scale

Linearity: ±0.25% span

Repeatability: 0.20% span

Voltage/Supply Stability: 0.25% span with +10/-15% voltage change

Zero Suppression: 100% span

Input Filter: Adjustable to smooth input signal

Input Voltage: 5 VDC max.

Output: Two triac switches for raise-or-lower motor operation

Failsafe Operation: If input falls below 2% of span, four choices are selected by movable jumper: stop, go full upscale, go full downscale, or go to selected (adjustable) position

Isolation: Input is isolated from power

### 4-20 mA Output and Slidewire Emulation

- Feedback Signals: 0 to 20 mA, 4 to 20 mA; 0 to 5 mA, 1 to 5 mA with  $250\Omega$ resistor (0 to 16 VDC with  $800\Omega$  resistor)
- Slidewire Emulation: Provides output voltage proportional to shaft position and to supply voltage (1-20 VDC) without slidewire. Emulates  $100\Omega$ to  $1000\Omega$  slidewire.

Isolation: Output is isolated from power and input signal Load Requirement: Current output 0–1000  $\Omega$ 

## **Ordering Instructions**

Make one selection from each table section below. A finished model number looks like this: 1026\_A-\_-\_ - 00

12.2014

### Model Selection Guide

Torque	Full Travel S	Stroking	Catalog	Price	
(Lb/ft)	50 Hz	60 Hz	Number	Each	10
10	12 Sec.	10 Sec.	10261A	\$2637.00	nstrument Valves
20	24 Sec.	20 Sec.	10262A	2658.00	alv
40	48 Sec.	40 Sec.	10264A	2652.00	t <
60	72 Sec.	60 Sec.	10266A	2779.00	L
40	24 Sec.	20 Sec.	10267A	2962.00	Ш
80	48 Sec.	40 Sec.	10268A	3084.00	ru
150 200	72 Sec. 48 Sec.	60 Sec.	10269A	4463.00	Ist
300	48 Sec. 72 Sec.	40 Sec. 60 Sec.	10263A 10265A	4683.00 5219.00	<u> </u>
Power	Single Phase, 120 VAC,		-1	0.00	
Controls	<b>J</b>	00112			
Controis	Drive Up/Down 4-20 mADC, 0-5 VDC, 1	-5 VDC, 1-1.25 VDC	-0 -1	0.00 684.00	
	None		-00	0.00	
Customer	One Slidewire Emulati		-01	419.00	s c
Position	0/4-20 mADC; 0/1-5, 0-		-03	419.00	je
Outputs	Dual 1000 $\Omega$ (Only with		-04	271.00	S S
	Single 1000 $\Omega$ (Only wi	th Control Opt1)	-05	204.00	Process Contro Accessories
Contact	LS + Limit Switch		-0	0.00	Ü Ü
Outputs	LS + 2 SPDT		-2	238.00	δA
(See Codes	LS + AM		-5	238.00	д_
Below)	LS +AM +2 SPDT		-7	479.00	
Shafts	Standard Shaft		-0	0.00	
Scale	No Projecting Scale		0	0.00	
Crank Arm	5" Standard Crank Arm	1	0	0.00	SS
Rod	None		0_	0.00	Ę.
Adapter	3/8" Rod Adapter		1_	0.00	and Switches
Linkage Kits			0	0.00	
Options	12" to 16" Turnbuckle		1	171.00	re
	16" to 20" Turnbuckle	Kit	2	171.00	itu
	1″Pipe Kit		4	188.00	Pressure
Weather-	None		-0	0.00	P Q
proof	NEMA 4/IP66		-1	138.00	E C
Approval	None		0_	0.00	Ĕ
	UL Listed (Good to 149	9° F)	3_	138.00	
Tagging	None		0	0.00	
	Stainless Steel (Specify	3 lines v 22 char ea	- 2	45.00	es

CODES: LS: 1 CW/1CCW Limit Switch, 4-20 IN: Motor Position 4-20 mA Input; SPDT: Aux. SPDT Switch, AM: Auto-Manual Switch with Out-of-Auto Contact

## Actuator Motor Linkage Analysis Software

- Computes arm radius or load Point, Click, Specify, and Size! arm radius, linkage length, and transmitted torque through full travel of the driven shaft
- Displays torgue and link force curves through full travel
- Suggests the right actuator for each linkage application
- Displays data in printable table

## Model Selection Guide

Description	Cat. Number	Price
Honeywell Industrial Motor Actuation and		
Linkage Analysis Software for Windows (HAL)	51197910-001	\$121.00

Change linkage arrangement quickly and easily Displays positive valve

Save linkage design and instal-

lation time and materials

Size and specify actuators

and damper

shutoff data

Gauge Pressure

#### ROTARY 338 ACTUATORS

Accessories

Temperature Switches

30/60

90/160 60 Lb-in



# **Modutrol IV Low-Torque Rotary Actuator Motors**

*Low torque, light duty, rotary action Modutrol IV* motor is designed for accurate positioning of dampers and valves in industrial ovens, furnaces, and process heaters.

Limit Switches: Two end-of-travel limit switches standard

Torque Rating: 25 to 300 Lb-In Approvals: CSA, UL

V 12.2014



Approvals:     CSA, UL       Model Selection Guide       Stroke Timing 90°     Torque 160°     Auxiliary Switches       Product Includes     Functional Replacement for These Obsolete Models       Proportional-Reversing Motors, 24 VAC Power, 135 Ohm Input Signal, 90° to 160° Field-Adjustable Stroke (Unless otherwise specified 15 sec							
90°	1 iming   160°	Rating	Switches	Product Includes	for These Obsolete Models	Catalog Number	Pric
Proporti	onal-Reve	rsing Motor	s, 24 VAC Pov	wer, 135 Ohm Input Signal, 90° to 160° l	ield-Adjustable Stroke (Unless otherwise specifie	d)	
15 sec	30 sec	75 Lb-in	0			M9184D1005	\$92
15 sec	30 sec	75 Lb-in	1	Tapped Shaft	M9484D1002, D1036, and E1116	M9484E1009	111
30 sec	60 sec	60 Lb-in	0*	24 VAC, Spring Return	M7285A1052, M7282A1006, M9175D1014, D1006, and D1014	M9185D1004	106
30 sec	60 sec	60 Lb-in	1			M9185E1019	115
30 sec	60 sec	75 Lb-in	1	Transformer		M9174B1027	90
30 sec	60 sec	150 Lb-in	0		M9484D1028, D1044, and D1051	M9484D1010	95
30 sec	60 sec	150 Lb-in	0*		M9184A1012, A1035, B1009, B1017, B1025, M9184D1013, D1047, and D4009	M9184D1021	95
30 sec	60 sec	150 Lb-in	1		M9484E1090 and E4003	M9484E1017	111
30 sec	60 sec	150 Lb-in	1	Motor Crank Arm, Ships in 90° Position	M9484E1025, E1041, E1058, E1066, M9484E1074, and E1082	M9484E1033	110
30 sec	60 sec	150 Lb-in	2	Ships in 90° Position		M9484F1007	117
30 sec	60 sec	150 Lb-in	2	Tapped Shaft, Ships in 90° Position		M9484F1031	118
30 sec	60 sec	150 Lb-in	2		M9184F1000 and F1018	M9184F1034	115
30 sec		35 Lb-in	2			M9184C1031	94
60 sec	60 sec	60 Lb-in 60 Lb-in	0 2	24 VAC Spring Poturn		M9185A1018	105
—	60 sec 60 sec	150 Lb-in	0	24 VAC, Spring Return	M9181A1012, M9184A1001	M9185C1006 M9184A1019	108 92
 Proporti			-	wer. 135 Ohm Input Signal, 90° to 160°	Field-Adjustable Stroke (Unless otherwise specific		92
30 sec	60 sec	35 Lb-in	0	Adjustable Zero/ Span, Transformer	M8161A1024 and A1032,	M9164A1005	78
30 sec	60 sec	35 Lb-in	0*		M9161A1008, M9164A1021 and A1054 M9164A1120, A1062, A1047, and A1096	M9164D1009	69
30 sec	60 sec	75 Lb-in	2	Transformer		M9174C1025	100
Proporti	onal-Reve	rsing Motor	s, 120 VAC Po	wer, Modulating 4-20 mA Input, Adjusta	able Zero and Span. Transformer and Screw Termi	nal Adapter Include	d
15 sec	30 sec	75 Lb-in	0			M7284A1038	100
30 sec	60 sec	150 Lb-in	0		M281A1007, M7284A1046	M7284A1004	100
30 sec	60 sec	150 Lb-in	0		M7284A1020	M7284A1012	100
30 sec	60 sec	150 Lb-in	2		M7284C1018, M7284C1026	M7284C1000	117
30 sec	60 sec	150 Lb-in	2		M7284Q1017	M7284Q1009	126
60 sec	120 sec	300 Lb-in	2	Caula a Datama		M7294Q1007	110
30 sec	60 sec	60 Lb-in	0 2	Spring Return Spring Return		M7285A1003	112 130
30 sec 30 sec	60 sec 60 sec	60 Lb-in 60 Lb-in	2	Spring Return		M7285C1009 M7285Q1008	130
					 mer Included. Enhanced Resolution Models, Minir	-	
30 sec		150 Lb-in	2	· · · · · · · · · · · · · · · · · · ·	M7284C1059	M7284C1083	120
—	60 sec	150 Lb-in	2		M7284C1067	M7284C1091	124
Motors v			-	tput, 120 VAC Power, SPDT Input, 3-Wire	, Line Voltage, or Position Proportional Controller		
 30 sec	30 sec	75 Lb-in 150 Lb-in	0 0		M6284A1014, A1002, A1048, A1071, and 1063	M6184A1023 M6284A1055-S	71 80
				tput, 24 VAC Power, 3-Wire, SPDT or Volt	age Input		
		75 Lb-in	0	Low Voltage		M6184D1001	63
30 sec	60 sec	150 Lb-in	0*	Low Voltage	M6181A1018, D1004, F1009, F1017, M6161A1004, M6184A1007 and B1021	M6184D1035	67
30 sec	60 sec	150 Lb-in	2	Line Voltage		M6184F1014	84
Stroke		Torque	Auxiliary Switches	Product Indudos	Functional Replacement for These Obsolete Models	Catalog	Duit
<b>Timing</b> Two-Pos	(Deg)	Rating		Product Includes Wire, Voltage Inputs		Number	Pric
30 sec	75°	20 Lb-in	1	120 VAC Power	M436A1041 A1082, A1090, A1165, and A1181	M436A1116	\$39
30 sec	75°	20 Lb-in 20 Lb-in	1	240 VAC Power		M436A11124	339 40
60 sec	160°	60 Lb-in	0	120 VAC Power		M436A1124 M4185A1001	
60 sec	160°	60 Lb-in 60 Lb-in	1	120 VAC Power	M4182B1002	M4185A1001 M4185B1009	60 63
30 sec	90°	60 Lb-in	1	120/208/240 VAC	M4182B1002 M4185B1017	M4185B1009 M4185B1058	69

M8185B1000 and B1034 (w/ 220736A)

M8185D1006

532.82

0\*

24 VAC