

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.

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## Smart Actuator Motors

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## Accessories

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**Honeywell**

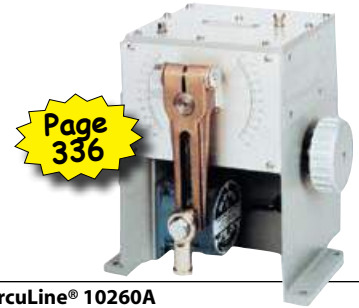


**Rather use pneumatics for valve positioning?  
Check out Siemens digital pneumatic positioner!  
See pages 352 to 353 for details.**

# Comparing Rotary and Electric Actuator Motors

## Honeywell

### Which Rotary Actuator Is Right for You?



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.
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
Lubrication/Maintenance	Oil/None	None
Brake	Yes	None required
Manual Override	Optional crank arm	Standard handwheel, crank arm, optional handswitch
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	135Ω potential	0-20 mA, 4-20 mA, 0-5, 1-5 or 0-16 VDC, 1000Ω, potential
Hysteresis	0.60%	<0.4% full scale
Linearity	Approximately 5%	± 0.25% span
Mechanical Stops	Standard, fixed	Standard, fixed

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

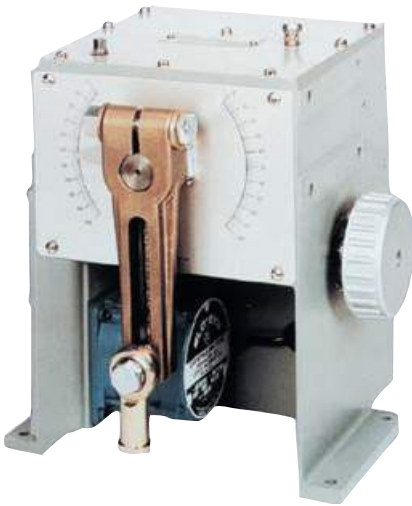


Electric Actuators	HercuLine® 2000	HercuLine® 2001/2002	HercuLine® 10260S
Product Description	Low torque electric actuator	Low torque electric actuator	Medium torque industrial electric actuator
Torque	50 to 400"-Lb ( 6 to 45 N-M)	50 to 400"-Lb ( 6 to 45 N-M)	100 to 300 Lb-ft ( 14 to 400 N-M)
Stroke/Speed	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	1000/135.Ω 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®



## 10260A Medium Torque Rotary Actuators

# Honeywell



### 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 — Non-contacting 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  $\leq 1$  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, non-contact 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 non-contact 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



Prices start at  
**\$3442.00**

**HART**  
FIELD COMMUNICATIONS PROTOCOL

**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; Field-selectable 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, 1-5VDC, 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 250Ω resistor (0 to 16 VDC with 800Ω resistor)  
**Slidewire Emulation:** Provides output voltage proportional to shaft position and to supply voltage (1-20 VDC) without slidewire. Emulates 100Ω to 1000Ω slidewire.  
**Isolation:** Output is isolated from power and input signal  
**Load Requirement:** Current output 0-1000 Ω

**Ordering Instructions**

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

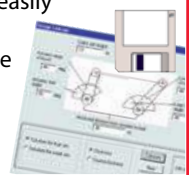
**Model Selection Guide**

Torque (Lb/ft)	Full Travel Stroking		Catalog Number	Price Each
	50 Hz	60 Hz		
10	12 Sec.	10 Sec.	10261A	\$2637.00
20	24 Sec.	20 Sec.	10262A	2658.00
40	48 Sec.	40 Sec.	10264A	2652.00
60	72 Sec.	60 Sec.	10266A	2779.00
40	24 Sec.	20 Sec.	10267A	2962.00
80	48 Sec.	40 Sec.	10268A	3084.00
150	72 Sec.	60 Sec.	10269A	4463.00
200	48 Sec.	40 Sec.	10263A	4683.00
300	72 Sec.	60 Sec.	10265A	5219.00
Power	Single Phase, 120 VAC, 60 Hz		-1	0.00
Controls	Drive Up/Down		-0	0.00
	4-20 mADC, 0-5 VDC, 1-5 VDC, 1-1.25 VDC		-1	684.00
Customer Position Outputs	None		-00	0.00
	One Slidewire Emulation Output (Note c)		-01	419.00
	0/4-20 mADC; 0/1-5, 0-1.25 VDC (Note e)		-03	419.00
	Dual 1000Ω (Only with Control Opt.-0)		-04	271.00
	Single 1000Ω (Only with Control Opt.-1)		-05	204.00
Contact Outputs (See Codes Below)	LS + Limit Switch		-0	0.00
	LS + 2 SPDT		-2	238.00
	LS + AM		-5	238.00
	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		_ _ _ 0 _ _	0.00
Rod Adapter	None		_ _ _ _ 0 _ _	0.00
	3/8" Rod Adapter		_ _ _ _ 1 _ _	0.00
	None		_ _ _ _ 0	0.00
Linkage Kits Options	12" to 16" Turnbuckle Kit		_ _ _ _ _ 1	171.00
	16" to 20" Turnbuckle Kit		_ _ _ _ _ 2	171.00
	1" Pipe Kit		_ _ _ _ _ 4	188.00
Weather-proof	None		-0 _ _ _	0.00
	NEMA 4/IP66		-1 _ _ _	138.00
Approval	None		_ _ 0 _ _	0.00
	UL Listed (Good to 149° F)		_ _ 3 _ _	138.00
Tagging	None		_ _ _ 0	0.00
	Stainless Steel (Specify 3 lines x 22 char ea.)		_ _ _ 2	45.00

**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 arm radius, linkage length, and transmitted torque through full travel of the driven shaft
  - Displays torque and link force curves through full travel
  - Suggests the right actuator for each linkage application
  - Displays data in printable table
- Point, Click, Specify, and Size!**
- Save linkage design and installation time and materials
  - Size and specify actuators
  - Change linkage arrangement quickly and easily
  - Displays positive valve and damper shutoff data



**Model Selection Guide**

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



## 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



### Model Selection Guide

Stroke 90°	Stroke 160°	Torque Rating	Auxiliary Switches	Product Includes	Functional Replacement for These Obsolete Models	Catalog Number	Price
Proportional-Reversing Motors, 24 VAC Power, 135 Ohm Input Signal, 90° to 160° Field-Adjustable Stroke (Unless otherwise specified)							
15 sec	30 sec	75 Lb-in	0	Tapped Shaft 24 VAC, Spring Return	M9484D1002, D1036, and E1116 M7285A1052, M7282A1006, M9175D1014, D1006, and D1014	M9184D1005	\$921.49
15 sec	30 sec	75 Lb-in	1			M9484E1009	1116.15
30 sec	60 sec	60 Lb-in	0*			M9185D1004	1065.88
30 sec	60 sec	60 Lb-in	1	Transformer	M9484D1028, D1044, and D1051 M9184A1012, A1035, B1009, B1017, B1025, M9184D1013, D1047, and D4009	M9185E1019	1158.47
30 sec	60 sec	75 Lb-in	1			M9174B1027	907.91
30 sec	60 sec	150 Lb-in	0			M9484D1010	950.96
30 sec	60 sec	150 Lb-in	0*			M9184D1021	956.26
30 sec	60 sec	150 Lb-in	1	Motor Crank Arm, Ships in 90° Position	M9484E1090 and E4003 M9484E1025, E1041, E1058, E1066, M9484E1074, and E1082	M9484E1017	1116.15
30 sec	60 sec	150 Lb-in	1			M9484E1033	1103.41
30 sec	60 sec	150 Lb-in	2	Ships in 90° Position	M9484F1007 M9484F1031	M9484F1007	1172.31
30 sec	60 sec	150 Lb-in	2			M9484F1034	1184.93
30 sec	60 sec	150 Lb-in	2	Tapped Shaft, Ships in 90° Position	M9184F1000 and F1018	M9184F1034	1152.92
30 sec	—	35 Lb-in	2			M9184C1031	949.15
60 sec	60 sec	60 Lb-in	0	24 VAC, Spring Return	M9181A1012, M9184A1001	M9185A1018	1055.12
—	60 sec	60 Lb-in	2			M9185C1006	1080.79
—	60 sec	60 Lb-in	2			M9184A1019	921.49
—	60 sec	150 Lb-in	0				
Proportional-Reversing Motors, 120 VAC Power, 135 Ohm Input Signal, 90° to 160° Field-Adjustable Stroke (Unless otherwise specified)							
30 sec	60 sec	35 Lb-in	0	Adjustable Zero/ Span, Transformer	M8161A1024 and A1032, M9161A1008, M9164A1021 and A1054 M9164A1120, A1062, A1047, and A1096	M9164A1005	781.45
30 sec	60 sec	35 Lb-in	0*	Transformer	M9164D1009	M9164D1009	695.16
30 sec	60 sec	75 Lb-in	2			M9174C1025	1000.31
Proportional-Reversing Motors, 120 VAC Power, Modulating 4-20 mA Input, Adjustable Zero and Span. Transformer and Screw Terminal Adapter Included							
15 sec	30 sec	75 Lb-in	0	Spring Return Spring Return Spring Return	M281A1007, M7284A1046 M7284A1020 M7284C1018, M7284C1026 M7284Q1017	M7284A1038	1005.82
30 sec	60 sec	150 Lb-in	0			M7284A1004	1004.85
30 sec	60 sec	150 Lb-in	0			M7284A1012	1004.85
30 sec	60 sec	150 Lb-in	2			M7284C1000	1178.16
30 sec	60 sec	150 Lb-in	2			M7284Q1009	1260.63
60 sec	120 sec	300 Lb-in	2			M7294Q1007	1106.72
30 sec	60 sec	60 Lb-in	0			M7285A1003	1128.15
30 sec	60 sec	60 Lb-in	2			M7285C1009	1300.35
30 sec	60 sec	60 Lb-in	2			M7285Q1008	1391.37
30 sec	—	150 Lb-in	2			M7284C1059 M7284C1067	M7284C1083
—	60 sec	150 Lb-in	2	M7284C1091	1245.63		
Motors with Switched SPDT or Floating Output, 120 VAC Power, SPDT Input, 3-Wire, Line Voltage, or Position Proportional Controller							
—	30 sec	75 Lb-in	0	M6284A1014, A1002, A1048, A1071, and 1063	M6184A1023 M6284A1055-S	M6184A1023	719.45
30 sec	—	150 Lb-in	0			M6284A1055-S	809.88
Motors with Switched SPDT or Floating Output, 24 VAC Power, 3-Wire, SPDT or Voltage Input							
15 sec	30 sec	75 Lb-in	0	Low Voltage Low Voltage	M6181A1018, D1004, F1009, F1017, M6161A1004, M6184A1007 and B1021	M6184D1001	634.12
30 sec	60 sec	150 Lb-in	0*			M6184D1035	671.10
30 sec	60 sec	150 Lb-in	2	Line Voltage	M6184F1014	848.10	
Two-Position Spring Return Motors, SPST, 2-Wire, Voltage Inputs							
30 sec	75°	20 Lb-in	1	120 VAC Power 240 VAC Power 120 VAC Power 120 VAC Power 120/208/240 VAC 24 VAC	M436A1041 A1082, A1090, A1165, and A1181  M4182B1002 M4185B1017 M8185B1000 and B1034 (w/ 220736A)	M436A1116	\$399.55
30 sec	75°	20 Lb-in	1			M436A1124	403.16
60 sec	160°	60 Lb-in	0			M4185A1001	603.62
60 sec	160°	60 Lb-in	1			M4185B1009	639.64
30 sec	90°	60 Lb-in	1			M4185B1058	697.53
30/60	90/160	60 Lb-in	0*			M8185D1006	532.82

\* Field-addable auxiliary switches