

CLARK SOLUTIONS

RE Reversing Electronic NEMA 4/4X Actuators

On-Off, Tri-State, & Modulating Control, 150 in-lb to 10,200 in-lb

Model RE electric/electronic actuators are ideal for demanding valve applications and air damper control. The actuators are available with torque ratings from 150 in-lbs to 10,200 in-lbs. They incorporate current limiting as a means of protecting the actuator for over-torque situations and do not depend on torque switches or thermal overload sensing. The current limiting feature activates a light (and an optional relay) upon exceeding the current limit set, to allow for easy field diagnostics.

All actuators accept 24 VAC or VDC power and 120 or 220 VAC with the addition of a transformer. All actuators have field adjustable speed control as a standard feature. Actuators are designed for temperatures ranging from -40 °F to 150 °F (-40 °C to 65 °C). For temperatures below 32 °F (0 °C), outdoor applications, high humidity or wet locations the actuators can be supplied with an electric heater and thermostat.



All actuators shall have a solid state braking system, which works with or without power, (rated to 1-1/4 times the torque rating of the actuator). All units are equipped with a manual override, which will allow the actuator to be rotated in the clockwise or counter-clockwise direction. Optional solid cast aluminum override handwheels are available (spoked handwheels are not acceptable due to safety issues).

The actuator housing is a high strength aluminum casting with an exterior grade polyurethane enamel coating for excellent wear, corrosion, impact and UV resistance. The actuators are NEMA 4/4X type minimum. All cover fasteners are stainless steel. All actuators have a position indicator with the angle of rotation clearly marked. All actuators used in outdoor applications have white covers to lessen the solar heat load.

Model RE is capable of accepting 4-20 mA with 250 Ohms impedance, 0-10 VDC or 2-10 VDC signals. Input signal isolation is provided to isolate the input signal from the actuator power so that the signal and power can come from different sources, without the need for exterior isolation modules.

Table 1 RE Series Industrial Actuators

Actuator Model No.	Output Torque		Speed* sec/90°	Speed** sev/270°	Speed** sec/360°
	in-lb	N-m			
RE1.5	150	17	10-25	-	-
RE3	300	34	10-25	-	-
RE6	600	68	10-25	-	-
RE8.5	850	96	10-25	-	-
RE10	1000	114	35-70	-	-
RE15	1500	170	35-70	-	-
RE20	2000	227	35-70	-	-
RE25	2500	284	35-70	-	-
RE30	3000	340	35-70	-	-
RE15T**	3825	434	-	105-210	-
RE20T**	5100	579	-	105-210	-
RE25T**	6375	724	-	105-210	-
RE30T**	7650	869	-	105-210	-
RE30X**	10200	1158	-	-	140-280

* speed is adjustable and varies slightly with load.

** Requires optional torque maximizer (added gear reduction between actuator & valve/damper)

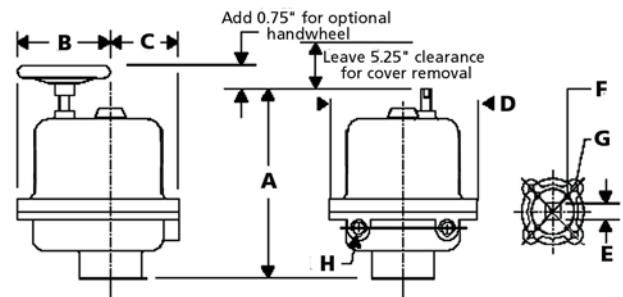


Table 2 RE Dimensions (inches)

Actuator Model No.	A	S	C	D	E	F	G	H
RE1.5 - RE8.5	9.93	5.15	3.48	7.42	0.75 sq. 0.63 deep	N/A	5/16-16UNC-2B 0.625 deep BC: 3.25	1/2" NPT
RE10 - RE30	11.65	6.07	4.40	9.75	1.00 sq. 2.00 deep	3/8-16UNC-2B 1.12 deep BC: 4.00	7/16-16UNC-2B 1.50 deep BC: 4.965	3/4" NPT

Table 3 Specifications	RE1.5F - RE8.5F	RE1.5G - RE8.5G	RE10F - RE30X	RE10XG - RE30XG
Power supply	12 VDC, 24 VAC or DC, 120 VAC, 50/60 Hz			
Transformer sizing**	30 VA(class 2 power source required)		50 VA(class 2 power source required)	
Electrical connection	dual conduit entry (1/2")		dual conduit entry (3/4")	
Control signal	two-position/tri-state*	0-10 VDC 4-20 mA	two-position/tri-state*	0-10 VDC 4-20 mA
Input Impedance	250 Ohms for 4-20 mA			
Operating range	0 to 10 VDC, 2 to 10 VDC, 4 to 20 mA, & custom signal ranges available			
Feedback output	0 to 10 VDC standard, 4 to 20 mA optional			
Manual override	de-clutching shaft with flats, optional override handwheel			
Angle of rotation	Typically 90° - 320°			
Minimum torque	depends on model, see table 1			
Direction of rotation	standard: increase signal = CCW (jumper selectable)			
Position indication	visual mechanical position indicator			
Gear train	heat treated metal gears, permanently lubricated			
Brakes	solid state braking system			
Duty cycle/Life	100%/2000 hours actual drive time			
- Auxiliary switches	cam operated, 1 standard, up to 3 optional			
Switch	form C; SPDT			
Range usage	0-320°			
Factory setting	none			
Ratings	125/250 VAC: 10 Amp, 1/3 hp 125 VDC: 0.5 Amps 250 VDC: 0.25 Amps			
Switch Connections	male quick connect type tabs			
Control signal Adjustment:				
Offset	-	0-3Vdc	-	0-3VDC
Factory Setting	-	0-10 VDC or 4-20 mA	-	0-10 VDC or 4-20 mA
Span	-	adjustable	-	adjustable
Running time for 90°	adjustable- see table 1			
Humidity	95% RH noncondensing			
Housing type	NEMA type 4/4x (pending UL, CSA approval)			
Housing material	cast aluminum			
Operating temperature †	-40°F to 150°F (-40°C to 65°C)			
Noise level	max. 20 dBA	20 dBA	<45 dBA running	
Servicing	maintenance free			
Agency ratings	UL 873 or UL60730 listed, CE-UL certified to CSA C22.2 No. 24-93 (pending CE approval for plenum models)			
Options:	for outdoor & harsh environments			
Heater & Thermostat †	non-spoked for safety			
Override Handwheel	output rating: 130 mA max., 9-130 VAC/DC			
Over current Alarm Relay				
Weight	17 lb		25 lbs‡	

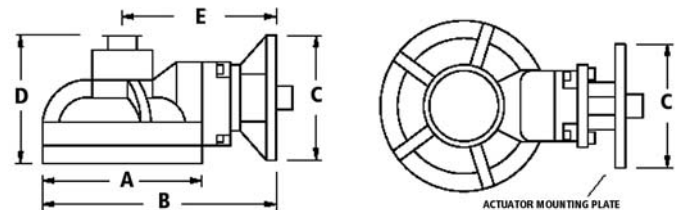
* Input signal range from 9-130 VAC or VDC
 ** Does not include line loss. Add 16 VA if heater and stat (H/S) is used
 †Optional heater and stat required for low temperatures, high humidity, extreme condensation or outdoor applications.
 ‡For "T" & "X" versions add 38 & 78 lbs respectively for the Torque Maximizer.

ORDERING

RE-A-B-C-D-E **EXAMPLE: RE10-F-2**

A Torque in-lbs		B Torque Maximizer Increases Actuator Torque by multiplier of 2.55		C Control Signal		D Power	
1.5	150			F	Two-position/Tri-state with current limiting	1	120 V
3	300			G	Modulating 0(2)-10V or 0(4)-20mA with current limiting	2	24V
6	600					3	220V
8.5	850						
10	1000						
15	1500						
20	2000						
25	2500						
30	3000						
		Torque in-lbs					
		-	none				
		15T	3825				
		20T	5100				
		25T	6375				
		30T	7650				
		Multiplier of 3.40					
		30X	10,200				

E Options	
AS(2,3)=	Auxiliary Switch(es)
HT=	Heater/thermostat
OH=	Override handwheel
AR=	Over Current Alarm Relay



Model	Weight (lbs)	Torque Maximizer Dimensions (inches)				
		A	B	C	D	E
T	38	7.25	10.63	5.25	4.63	7.00
X	78	11.25	15.50	5.25	6.63	9.88

The Torque Maximizer permits Model RE actuators to operate at required torques up to 10,200 in-lbs. It also allows the actuator to be mounted in applications with space or location limitations.

The Torque Maximizer provides added gear reduction between the actuator and the valve or damper, thereby increasing the torque of the actuator. This product is 85% efficient in transferring the torque from the input to output drive shaft. This unit bolts directly onto the base of the RE actuator, then the combined actuator/gear operator unit is mounted to the valve, damper or other application.