

KITZ Electric Actuators

EXC SERIES



Features

Electric motor operated modulating quarter turn actuator for 1/4 turn valves.
 High durability planetary gear with self locking function.
 High resolution control (1/200 electric range ability).
 Linearity +/- 1.0% F.S.(without load condition).
 Hysteresis Min +/- 0.5% F.S.(Adjustable).
 Input signal:
 4 to 20 mA DC (Standard)
 0 to 5V /1 to 5V /0 to 10V /2 to 10V DC (Option)
 0 to 135 Ohm (Option)
 Precise potentiometer with non back lash gear.
 (1K Ohm)
 Action on process signal failure (selectable).
 Fully Open /Hold current position /Fully Close.
 Manual override with interlocking switch for safe operation.
 No voltage position feed back switches.
 Terminal box.
 ISO 5211 bottom mount.



Type EXC actuator design specifications

Actuator size	Size 2		Size 3		Size 4	
Actuator type	EXC***-2		EXC***-3		EXC***-4	
Power supply	50Hz	AC 115V(+5% to -10%) • AC230V(±10%) • AC240V(+5% to -10%)				
	60Hz	AC 115V(+5% to -10%) • AC120V(+5% to -10%) • AC230V(+5% to -10%) • AC240V(±10%)				
Rated current(A)*1	50Hz	AC115V	0.6	0.95	2.4	
		AC230/240V	0.3	0.55	1.2	
	60Hz	AC115/120V	0.6	0.95	2.2	
		AC230/240V	0.3	0.5	1.2/1.1	
90°operation time(second)*2	50Hz	25	35	49		
	60Hz	21	30	41		
Rated output torque [In-lbs]		434	1736	5208		
Motor output [W]	50Hz	13	26	72		
	60Hz	16	31	85		
Power consumption [W]	50Hz	AC115V	60	100	240	
		AC230/240V	70	115	260	
	60Hz	AC115/120V	70	110	250	
		AC230V	60	100	260	
	AC240V	65	105			
Overload protection	Built-in thermal protector (Activated at 248°F)					
Rotating direction	Counterclockwise to open/Clockwise to close					
Duty factor	Maximum 30%ED at 20°C					
Limit switch*3	2 each for opening / closing (2 position limit switches and 2 signal limit switches)					
Switch contact capacity	250V AC 11A least resistance load					
Service environment	Indoor / Outdoor (No water immersion/No exposure to sunlight)					
Water-proof/dust-proof	NEMA 4 Enclosure					
Heater capacity [W]	AC115/120V	10	10	20		
	AC230/240V	15	15	20		
Control of motor drive mode	Direct or Reverse. (Switchable: Shipment preset for reverse mode.)					
Input signal	DC4 to 20mA (Standard) , DC0 to 5 /1 to 5 /0 to 10 /2 to 10V , 0 to 135 Ω					
Input impedance	DC4 to 20mA : 240 Ω , DC0 to 5V /1 to 5V /0 to 135 Ω : 10k Ω , DC0 to 10V /2 to 10V : 20k Ω					
Valve opening angle signal	DC 4 to 20mA (Maximum load: 300 Ω)					
For input signal cutoff	Actuation	Full closing • Stopping • Full opening (Switchable: Preset for stopping mode for shipment)				
	Output	Warning signal by relay contact (Contact capacity: 3A DC 30V resistance load)				
Motor linearity	±1.0%F.S.(Unloaded actuator output shaft)					
Dead band	±0.5% to ±4.0% F.S. (Adjustable)					
Adjusting function	[Zero] point adjustment: 0% to +50% F.S. on reverse mode					
	Spanned adjustment: +50% to +200% F.S.					
Ambient temperature [°F]	15 to 120					
Insulation class	JIS C4003 Class E (Equivalent to UL Class A)					
Insulation strength	Max.10mA leakage current with 1 min./AC 1500V or 1 sec./AC 1800V					
Insulation resistance	100MΩ minimum / 500V DC					
Mounting orientation	Vertical to horizontal (No downward orientation)					
Lubrication	Grease					
Conduit port	Two NPT½ on the left side of control box (standard)					
Mechanical stopper	Fixed opening stopper • Adjustable closing stopper					
Manual operation	Pulling up and turning a handle, while the motor is switched off with a built-in interlocking switch.					
Automated operation	Pushing down a handle to restore electric operation					
Valve mounting flange	ISO 5211					
Painting color	Metallic silver cover / Metallic dark grey case / Frosted black handle					
Actuator weight (Approx) [lbs]*4		13.2	19.4	32.3		

*1 At the moment of start-up operation, actuator motors are loaded with a surge of approximately ten times rated current. Switch contact capacities of all electric devices connected to actuators must be provided with a sufficient margin to absorb such a high current.

*2 Valve closing times are calculated for actuators only. Add 3% to 10% to the listed closing time for the actuators assembled with valves.

*3 If the load current is 50mA or smaller, contact Kitz Corporation for supply of optional auxiliary limit switches provided with gold contacts.

*4 Net weight of the actuator with excluding the weight of the valve.