

MOD SERIES

Single Phase Quarter Turn



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SUPPLY VOLTAGE
220 V AC – (+ 10%), 50 / 60 Hz
110 V AC, 24V DC, 12V DC (Available on request)

ENCLOSURE – IP 67/68
Weatherproof – IS / IEC 60529
Flameproof or Ex-Proof – IS / IEC 60079 | Zone II, Gas Group IIB T4

TORQUE RANGE
15 Nm to 5000 Nm

INTEGRAL STARTER UNIT

Selector Switches	Open / Stop / Close
Indicator Lamps	Auto / Manual or Remote / Local Open / Close / Error

VARIOUS OPTIONS
ON/OFF Type.
Modulating Control (Signal Input - 4 ~ 20mA / 1 ~ 5V DC / 2 ~ 10V DC).
Potentiometer Feedback (4 ~ 20mA).
Auxiliary Limit Switches (2 Units).
2 Wire for ON/OFF Operation.

Single Phase Quarter Turn Electrical Actuators



Design Approvals



Widely Used in Fields Such as

- Water Treatment
- Municipal Water Supply Board
- Petroleum
- Chemical Industry
- Power Plant
- Metallurgy
- Pharmacy
- Paper Industry
- Energy
- Textile
- Food Processing
- Automation etc...

Motorized Valves

- Ball Valves
- Butterfly Valves / Damper Valves
- Fire Safe Ball Valves
- Jacketed Ball Valves
- Wafer Ball Valves
- UPVC / PP Ball Valves



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MANUFACTURING STANDARDS

- Actuator Manufacturing Standard
IEC / EN 15714 – 2 (Electrical Actuator for Industrial Valves)
- Actuator Enclosure Standard – IP 67 / 68
IS / IEC 60529 – 2009
(Degree of Protection provided by Enclosure)
- Actuator Motor Standard
IEC- 60034 – 1 (Rotating Electrical Machines)
IS-996 (Single Phase Induction Motor)
- Actuator Mounting Standard
ISO 5211

APPLICABLE DIRECTIVES

- EC Machinery Directive – 2006 / 42 / EC
- Low Voltage Directive – 2006 / 95 / EC
- EMC Directive – 2004 / 105 / EEC

TECHNICAL DATASHEET

STANDARD SPECIFICATIONS

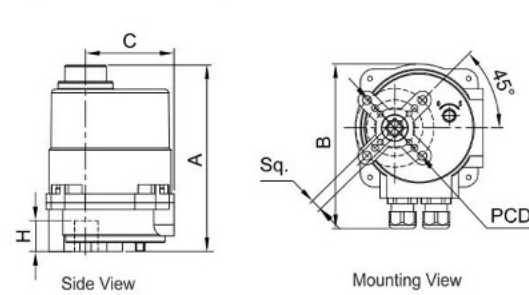
Model No.	Max Torque NM	Motor Watt	Rotation time Second / 90°	220V AC Supply			Manual Over Ride
				RUN (A)	START (A) at 30mS	LOCK Rotor (A)	
MOD 1	35	10	11	0.18	0.58	0.21	Key Wrench (to operate by 8mm Spanner)
MOD 2	50	15	15	0.23	0.72	0.26	
MOD 2-1	50	15	15	0.23	0.72	0.26	
MOD 2-2	95	15	22	0.23	0.72	0.26	
MOD 3	200	40	29	0.41	1.31	0.66	Foldable Round Aluminium Alloy Wheel
MOD 4	400	90	27	0.76	2.62	1.44	
MOD 6	600	90	39	0.79	2.71	1.44	
MOD 8	800	90	47	0.82	2.83	1.44	
MOD 10	1000	120	47	0.89	3.02	2.13	
MOD 12	1500	200	34	1.73	5.98	3.24	
MOD 13	2000	200	47	1.73	5.98	3.24	
MOD 14	3500	200	76	1.75	6.01	3.24	
MOD 15	5000	On Request					

Note : Specifications mentioned here are subject to revision without notice due to continuous product improvements. (Rev.-1)

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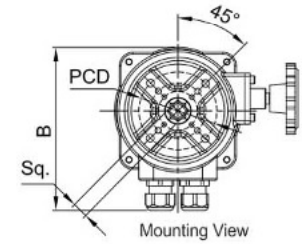
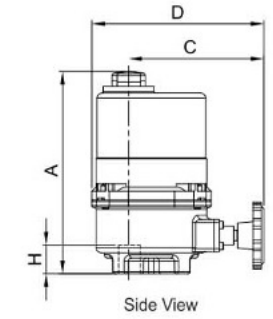


Dimension Details



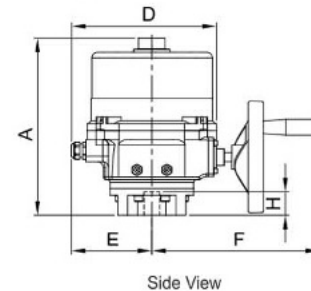
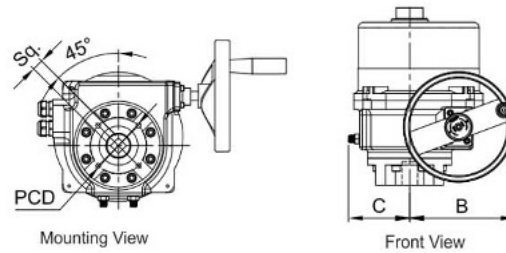
(ALL DIMENSION ARE IN MM)

Model No.	A	B	C	Sq.	H	PCD
MOD 1	162	145	79	11X11	20	F03 / F05
MOD 2	168	145	79	11X11, 14X14	20	F07



(ALL DIMENSION ARE IN MM)

Model No.	A	B	C	D	Sq.	H	PCD
MOD 2-1	188	145	108	165	11X11	20	F03 / F05
MOD 2-2	194	145	108	165	14X14	20	F07

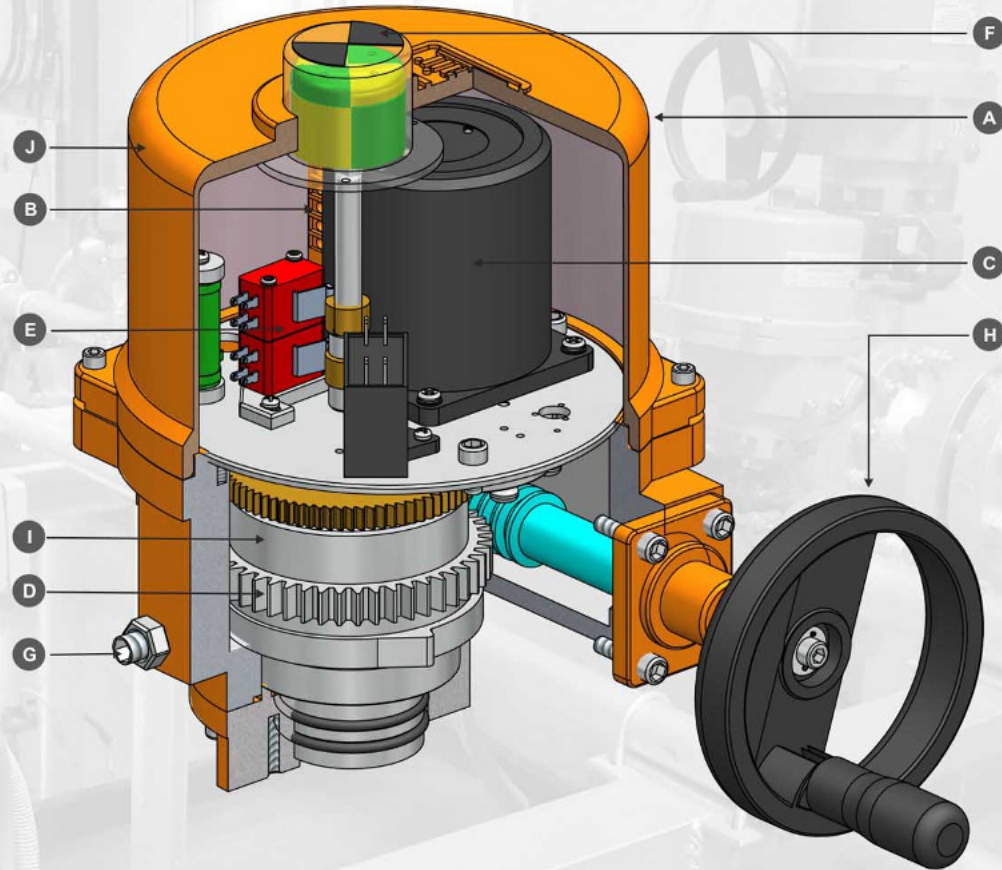


(ALL DIMENSION ARE IN MM)

Model No.	A	B	C	D	E	F	Sq.	H	PCD
MOD 3	265	123	79	216	120	240	17X17	35	F07 / F10
MOD 4	321	187	103	262	150	297	22X22	55	F10
MOD 6	321	187	103	262	150	297	22X22, 27X27	55	F10 / F12
MOD 8	321	187	103	262	150	297	27X27	55	F12
MOD 10	321	187	103	262	150	297	27X27	55	F12 / F14
MOD 12	378	241	119	293	161	346	27X27	65	F12 / F14
MOD 13 / 14	378	241	119	293	161	346	36X36	65	F12 / F14 / F16
MOD 15	On Request								

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A ENCLOSURE

MOD series actuators are available in both Weather Proof and Flame Proof (Ex-Proof) enclosures. These enclosures are watertight to IP 67 / IP 68. The enclosures are hard anodized Aluminium Alloy which provides resistance from high temperatures, acids, alkali and remain water proof and dust proof. All the joints on the enclosure are armed with a waterproofing seal making it suitable for mounting in extreme outdoor environment. Enclosure types with ambient temperatures are indicated below :

Weather Proof - (Standard)		Rating	Ambient Temperature
Manufacturing Standard		IP68	-30°C to +70°C
IEC 60529			
Flame Proof - (Ex-Proof)		Rating	Ambient Temperature
Manufacturing Standard	Enclosure Code	IP68	-20°C to +70°C
IS/IEC 60079	Exd IIB T4		
	Exd IIC T4		

B POWER SUPPLY / TERMINALS

MOD series actuators are suitable for operation with the following Single Phase and DC power supplies.

Standard Supply Voltages	Voltage Tolerance	Frequency Tolerance	Maximum Starting Voltage Drop	Non Standard Tolerance
220 V AC	± 10%	50 / 60 Hz	- ± 10%Applies for rated torque performance; duty cycle and speed not guaranteed	- ± 5%Applies for rated torque performance; duty cycle and speed not guaranteed
Supply Voltages available on request			- 15%Actuator can start and run up to speed	- Available on request
110 V AC	± 10%	50 / 60 Hz		
24V DC	± 10%	50 / 60 Hz		
12V DC	± 10%	50 / 60 Hz		

TERMINALS

MOD series actuators are provided with a separately sealed terminal compartment. Terminal screws and washers are supplied with the actuators.

C MOTOR

MOD series actuators are fitted with specially designed motors integral to the actuator. These motors can be broadly classified on the basis of their duty.

- On-Off Type I Modulating Type (proportionate control)
- Single phase capacitor / run start squirrel cage induction type synchronized motor.
- Continuous duty (S2-15 mins).
- Class F insulation with temperature rise restricted to Class B.
- Thermostat protection : Thermostats embedded in the motor end windings will directly sense motor temperature. Thermostats will open circuit when set temperature is reached, thereby de-energising the motor and auto reset to continue operation once the motor has cooled off.
- Low inertia design.
- Nominal 50 starts per hour, 15 minutes rated based on a nominal torque of 33% of rated torque.
- Micro-processor based modulating control card.

DUTY RATING
ON-OFF / INCHING
MODULATING

D ADVANCED GEAR BOX

MOD series electric actuators are directly coupled with unique planetary gear box. The main sun gear maintains the balance technique of three points. Gearbox is designed eliminating the clutch system. Hardened steel alloy gears resist abrasion to ensure longer lifecycle.

E POSITION SWITCH/SENSOR

Independent limit switches are provided, one for each direction of travel having 2NO + 2NC potential free contacts. Limit switches are operated by gear driven cams, which are mechanically linked to the driving devices. Easy setting of limit switches (counter-wheel-mechanism). If the switching point of limit switch gear has been overturned inadvertently by manual operation, the switching point itself does not change. No resetting is therefore required. All actuators have a continuous local mechanical position indicator.

F 360° INDICATOR

Actuators are fitted with 360° plastic indicator, having high strength and sunlight resistance in outdoor environment. User can visualise position from any angle.

G WRENCH SETTING

Actuators (above MOD3) are provided with wrench setting for assembling and adjusting valve and actuator at the same travel angle.

H HANDWHEEL

Advanced design with auto declutch mechanism to prevent user from injury. Handwheel does not rotate during power operation. Manual drive is automatically disengaged when motor starts.

I LUBRICATION

MOD series actuators come with premium quality lubricants and enable smooth functioning of rotating components at a wide temperature range.

J FINISH

The actuators are powder coated with corrosion proof epoxy coating.

OPTIONAL

CONTROL - LOCAL/REMOTE

Non-intrusive selectors are provided on the actuator. Blinking led lamp indication during open/close operation. Red - Fully Open | Green - Fully Closed. Analogue position feedback can be provided through position transmitter in the range of 4-20mA output proportional to position.

FIELDBUS CONTROL OPTION

MOD series actuators are available with the network interface cards to enable remote control and indication using digital 'bus' network systems communication to the control systems. Network interface cards such as Modbus, Profibus and Foundation Fieldbus are compatible.

FAIL POSITION OPTION

In the event of loss of power supply a battery provides power to the control module/motor to update the valve position.

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Motorized Valves



2 Way Ball Valve
Electrical Actuator Operated

SIZE :
1/2" TO 4" Screwed to BSP / NPT
MOC :
WCB / SS 304 / SS 316 / SS 316L
REPLACEABLE SEAT :
PTFE / Glass Filled PTFE / CFT
TEMP :
220° C / 400° C (On Request)
DESIGN & MANUFACTURING STD.:
BS 5351 / BS 6755



2 Way Ball Valve
Electrical Actuator Operated

SIZE :
1/2" TO 12" Flanged End
150# / 300# / 600# / 900# / 1500#
MOC :
WCB / SS 304 / SS 316 / SS 316L / Alloy Steel / Duplex
REPLACEABLE SEAT :
PTFE / Glass Filled PTFE / CFT
TEMP :
220° C / 400° C (On Request)
DESIGN & MANUFACTURING STD.:
BS 5351 / BS 6755



3 Way / 4 Way / 5 Way Ball
Valve Electrical Actuator Operated

SIZE :
1/2" TO 4" Screwed to BSP / NPT
1/2" TO 8" Flanged End 150# / 300#
MOC :
WCB / SS 304 / SS 316 / SS 316L
REPLACEABLE SEAT :
PTFE / Glass Filled PTFE
TEMP :
220° C
PORT :
1' Port / T Port / X Port
DESIGN & MANUFACTURING STD.:
BS 5351 / BS 6755



PP / UPVC Ball Valve
Electrical Actuator Operated

SIZE :
1/2" TO 4" Screwed to BSP / NPT
1/2" TO 10" Flanged
MOC :
PP / UPVC / CPVC / PVDF LINED
REPLACEABLE SEAT :
PTFE / Glass Filled PTFE / CFT
TEMP :
180° C
DESIGN & MANUFACTURING STD.:
BS 5351 / BS 6755



Wafer Type Butterfly Valve
Electrical Actuator Operated

SIZE :
1.1/2" TO 72"
MOC :
CI / DI / WCB / SS 304 / SS 316 / Alloy Steel / Duplex
MOULDED / REPLACEABLE SEAT :
Nitrile (NBR) / EPDM / VITON / Teflon Muffler
ENDS :
Wafer / Lug Type
RATING :
PN 6 / PN 10 / PN 16 / PN 20 / PN 25
DESIGN & MANUFACTURING STD.:
API 609 Category A / BS 5155 / MSS SP-67 / AWWA C-504



Double Flanged Butterfly Valve
Electrical Actuator Operated

SIZE :
1.1/2" TO 72"
MOC :
CI / DI / WCB / SS 304 / SS 316 / SS 316L / Alloy Steel / Duplex
SEAT :
Nitrile (NBR) / EPDM / VITON
ENDS :
Double Flanged / Lug Type
RATING :
PN 6 / PN 10 / PN 16 / PN 20 / PN 25
DESIGN & MANUFACTURING STD.:
API 609 Category A / BS 5155 / MSS SP-67 / AWWA C-504



High Performance Butterfly Valve
Electrical Actuator Operated

SIZE :
1.1/2" TO 72"
MOC :
CI / WCB / SS 304 / SS 316 / SS 316L
Alloy Steel / Duplex
REPLACEABLE SEAT :
PTFE / Glass Filled Teflon / VITON / Metal to Metal (Temp. 600° C)
ENDS :
Wafer / Double Flanged / Lug Type
RATING :
150# / 300#
DESIGN & MANUFACTURING STD.:
API 609 Category B / MSS SP-68 / AWWA C-504



PP / UPVC Butterfly Valve
Electrical Actuator Operated

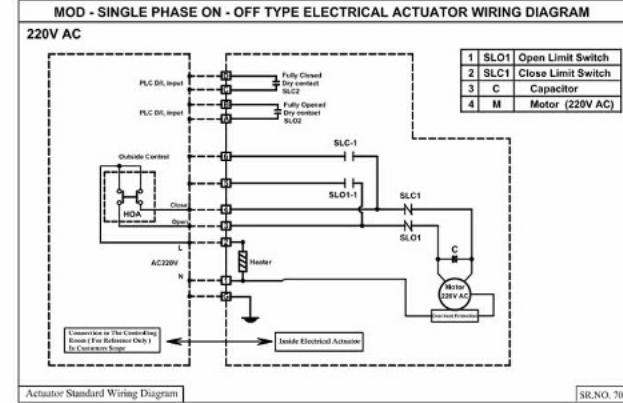
SIZE :
1.1/2" TO 24"
MOC :
PP / UPVC / CPVC / PVDF LINED
REPLACEABLE SEAT :
Nitrile (NBR) / EPDM / VITON
ENDS :
Wafer / Lug Type / Flanged
ANSI / DIN

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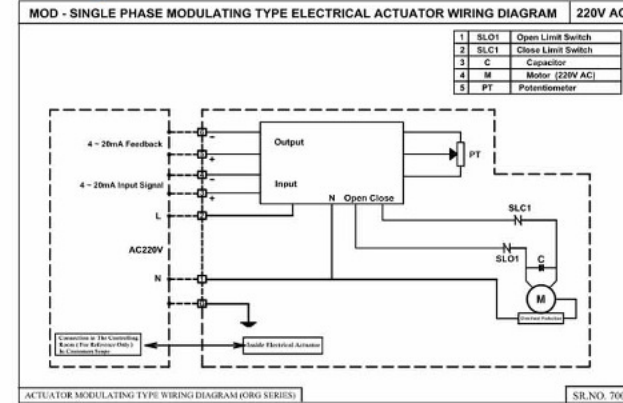


Wiring Diagram

On - Off Duty



Modulating



General Instructions

Important Notices and Maintenance Guidelines

- Check for correct voltage prior to wiring.
- Turn off power before service or for maintenance purposes.
- Use sealant to seal conduit connections after power distribution to prevent from dust or water.
- The electric actuator must not be installed below the horizon or upside down.
- Avoid installing near explosive atmospheres.*

- Not intended for vacuum spaces.
- Actuators should be stored at a clean and dry place, and protected with outer carton from being affected by great temperature difference or serious vibration.
- When more than one electric actuator is needed to operate simultaneously, please connect with individual cables to avoid parallel connection.
- Please connect the ground wire to PE inside the electric actuator.
- The warranty period is one year.

For any queries please contact : Cair Euromatic Automation Pvt. Ltd. - info@cairindia.in

