

MOD - SERIES SINGLE PHASE QUARTER TURN ELECTRICAL ACTUATOR

MOD – Series Single Phase Quarter Turn Electrical Actuator

- 1) Clutch – Less Handwheel Design
- 2) Product Design
- 3) Continuous Position Indicator
- 4) Corrosion Proof Epoxy Coated Aluminum Enclosure
- 5) Cable Entries
- 6) Direct Mounting



Actuate with Accuracy | Key Features

Supply Voltage

220 VAC- (+ 10%), 50/60 Hz
110 VAC 24V DC 12V DC (Available on request)

Enclosure – IP 67/68

Weatherproof - IS / IEC 60529
Flameproof or Ex Proof IS / IEO 60079 I Zone It. Gas Group IIB T4

Torque Range

15 Nm to 5000 Nm

Integral Starter Unit

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

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

MANUFACTURING STANDARDS

- ❖ **Actuator Manufacturing Standard**
IEC / EN 15714 - 2 (Electrical Actuator for Industrial Valves)
- ❖ **Actuator Enclosure Standard - IP 67 / 68**
IS / IEC 50529 - 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

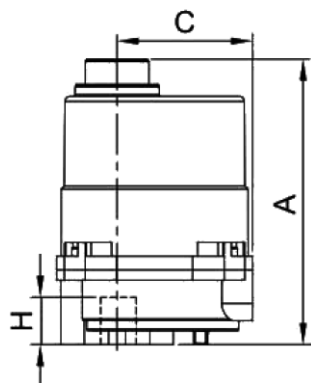
APPLICABLE DIRECTIVES

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

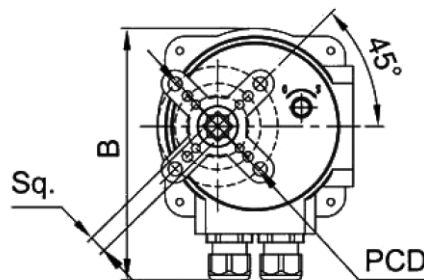
TECHNICAL DATASHEET – (Standard Specifications)

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	Knob type Spring Loaded Wheel
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
MOD4	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			

DIMENSION DETAILS



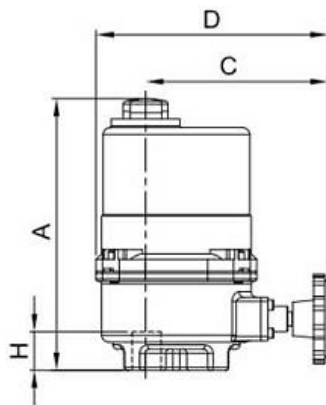
Side view



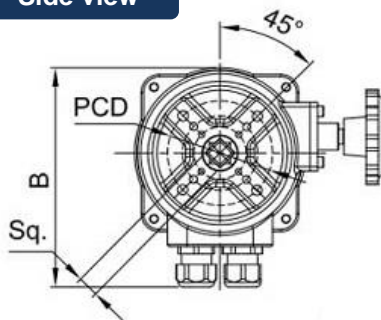
Mounting view

(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	20.00	F07



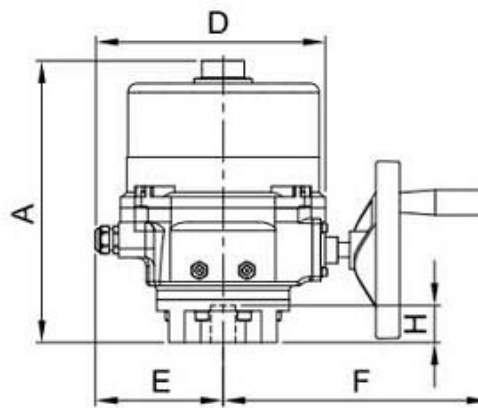
Side view



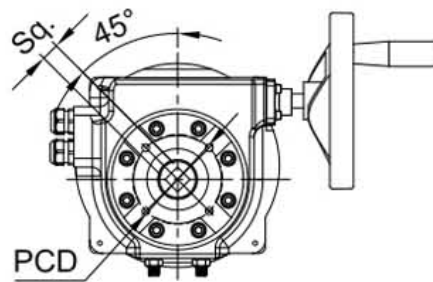
Mounting view

(All Dimension Are in MM)

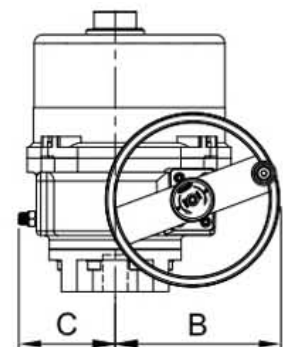
Model No.	A	B	C	D	Sq	H	PCD
MOD 2 - 1	188	145	108	165	11x11	20	F03/F05
MOD 2 - 2	194	145	108	165	14x14	20	F07



Side View



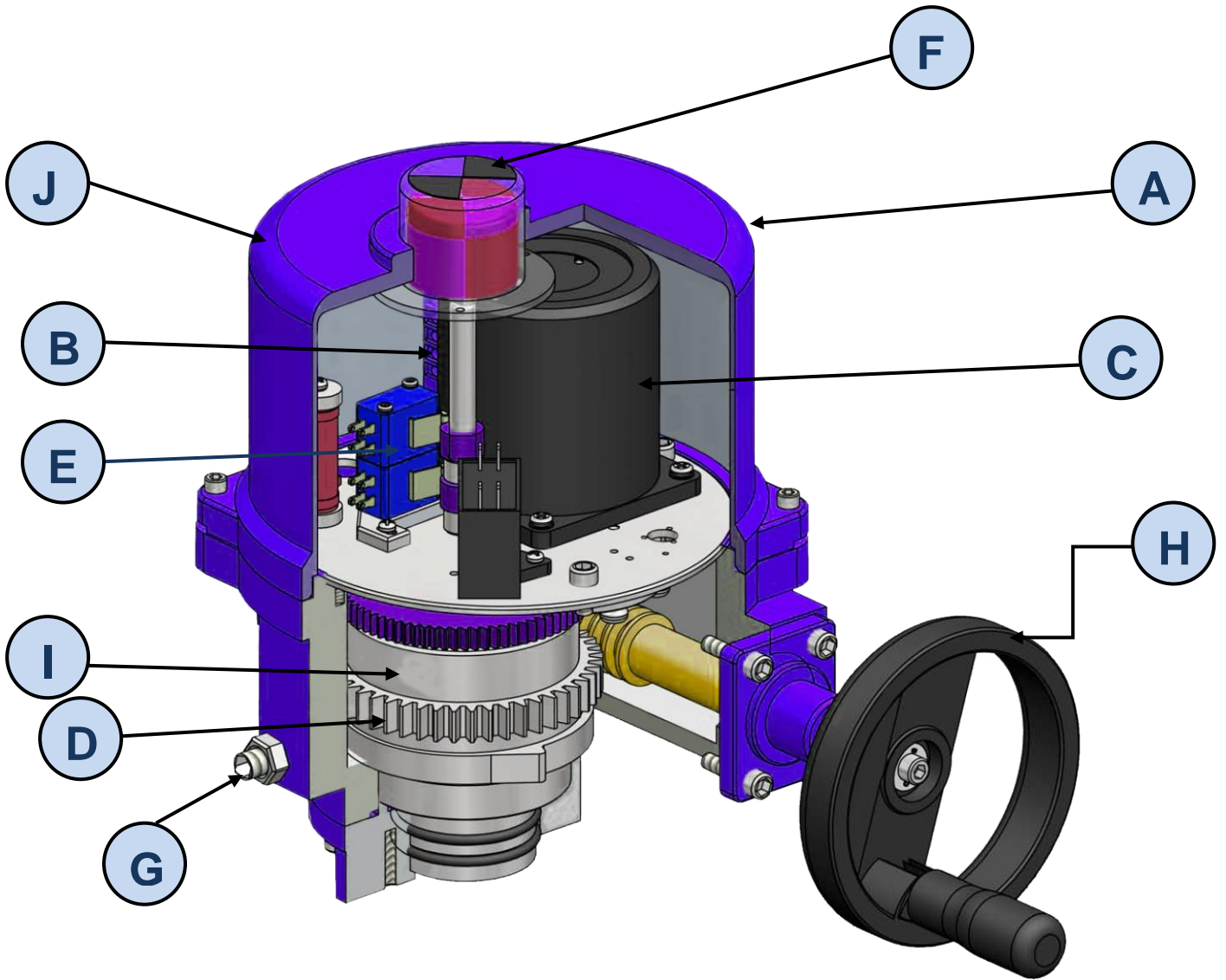
Mounting view



Side view

(All Dimension Are in MM)

Model No.	A	B	C	D	E	F	Sq.	H	PCD
MOD3	265	123	79	216	120	240	17X17	35	F07/F10
MOD4	321	187	103	262	150	297	22X22	55	F10
MOD 5	321	187	103	262	150	297	22X22, 27X27	55	F10 / F12
MOD8	321	187	103	262	150	297	27X27	55	F12
MOD10	321	187	103	262	150	297	27X27	55	F12/F14
MOD12	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								



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. 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)

Manufacturing Standard
IE060529

Rating
IP68

Ambient Temperature
-30°C to +70°C

Flame Proof- (Ex-Proof)

Manufacturing Standard
IS/IEC 60079

Enclosure Code Rating
Exd IIB T4 IP63
Exd IIC T4

Ambient Temperature
-20°C to +70°C

B) POWER SUPPLY

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

Standard Supply Voltages
220VAC : ($\pm 10\%$), 50 / 60 Hz

Supply Voltages available on request
110 V AC : ($\pm 10\%$) 50/60 Hz
24 V AC : ($\pm 10\%$) 50/60 Hz
12 V AC : ($\pm 10\%$) 50/60 Hz

Voltage Tolerance	: $\pm 10\%$ Applies for rated torque performance; duty cycle and speed not guaranteed
Frequency Tolerance	: $\pm 5\%$ Applies for rated torque performance; duty cycle and speed not guaranteed
Maximum Starting Voltage Drop	: - 15% Actuator can start and run up to speed
Non Standard Tolerance	: Available on request

Terminals

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

C) MOTOR

ATM 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% or 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

Actuator are fitted with 360° plastic indicator, having high strength and sunlight resistance in outdoor environment. User can visualize 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

Advance design with auto declutch mechanism to prevent user from injury. Hand wheel 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 f-20mA output proportional to position.

FIELD BUS 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.

SINGLE PHASE QUARTER TURN

2 Way Ball valve Electrical Actuator Operated



- Body & Bonnet :
 - WCB / SS 304 / SS 316 /SS 316L
- Replaceable Seat :
 - PTFE / Glass filled /cft
- Temperature :
 - 220°C to 400°C
- Design & Manufacture STD. :
 - BS 5351 / BS 6755
- Ends : ½" to 4" Screwed to BSP / NPT

2 Way Ball Valve Electrical Actuator Operated



- Body & Bonnet :
 - WCB / SS 304 / SS 316 /SS 316L / Alloy Steel / Duplex
- Replaceable Seat :
 - PTFE / Glass filled PTFE / CFT
- Temp :
 - 220°C to 400°C (On Request)
- Ends :
 - ½" to 12" Flanged to 150# / 300# / 600# / 900# / 1500#
- Design & Manufacture STD. :
 - BS 5351 / BS 6755

3 / 4 / 5 Way Ball valve Electrical Actuator Operated



Body & Bonnet :
 WCB / SS 304 / SS 316 / SS 316L
 Replaceable Seat :
 PTFE / Glass filled PTFE
 Temperature :
 220°C
 Design & Manufacture STD. :
 BS 5351 / BS 6755
 Ends : 1/2" to 4" Screwed to BSP / NPT
 1/2" to 8" Flanged End 150# / 300#

PP / UPVC Ball Valve Electrical Actuator Operated



Body & Bonnet :
 PP / UPVC / CPVC / PVDF LINED
 Replaceable Seat :
 PTFE / Glass filled PTFE / CFT
 Temp :
 180°C
 Ends :
 1/2" to 4" Screwed to BSP / NPT
 1/2" to 10" Flanged
 Design & Manufacture STD. :
 BS 5351 / BS 6755

Wafer Type Butterfly Valve Electrical Actuator Operated



Body :
 CI / DI / WCB / SS 304 / SS 316 / Alloy Steel / Duplex
 Replaceable Seat :
 Nitrile (NBR) / EPDM / VITON / Teflon Muffler
 Rating :
 PN 6 / PN 10 / PN 16 / PN 20 / PN 25
 Design & Manufacture STD. :
 API 609 Category A / BS 5155 / MSS SP - 67 / Awwac-504
 Ends :
 Wafer / Lug Type
 1 1/2" to 72"

Double Flanged Butterfly Valve Electrical Actuator



Body & Bonnet :
 CI / DI / WCB / SS 304 / SS 316L / Alloy Steel / Duplex
 Seat :
 Nitrile (NBR) / EPDM / VITON
 Rating :
 PN 6 / PN 10 / PN 16 / PN 20 / PN 25
 Ends :
 Double Flanged / Lug Type
 Size: 1 1/2", to 72"
 Design & Manufacture STD. :
 API 609 Category A / BS 5155 / MSS-SP / Awwa c -504

High Performance Butterfly Valve Electrical Actuator



Body :
 CI / WCB / SS 304 / SS 316 / SS 316L / Alloy Steel / Duplex
 Replaceable Seat :
 PTFE / Glass Filled Teflon / VITON / Metal to Metal (Temp. 600°C)
 Rating :
 150# / 300#
 Design & Manufacture STD. :
 API 609 Category B / MSS SP - 68 / AWWA C-504
 Ends :
 Wafer / Double Flange / Lug Type
 1 1/2" to 72"

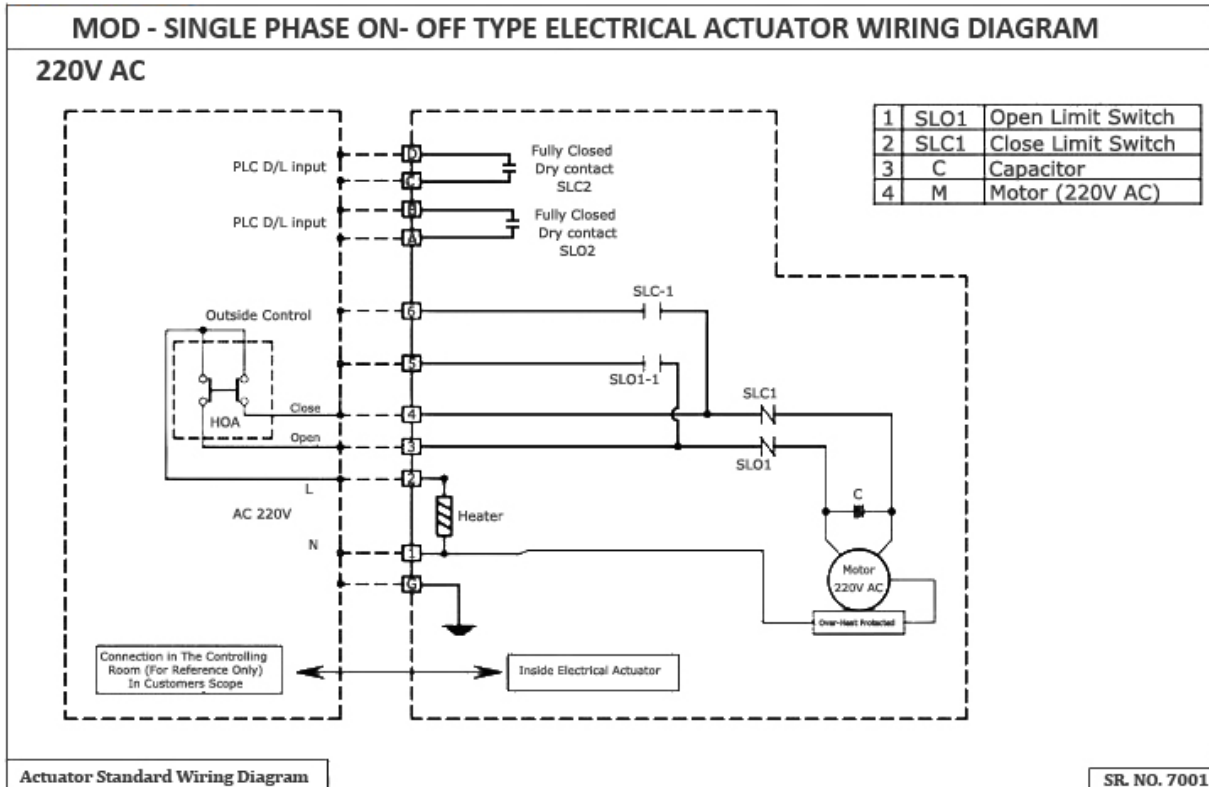
PP / UPVC Butterfly Valve Electrical Actuator



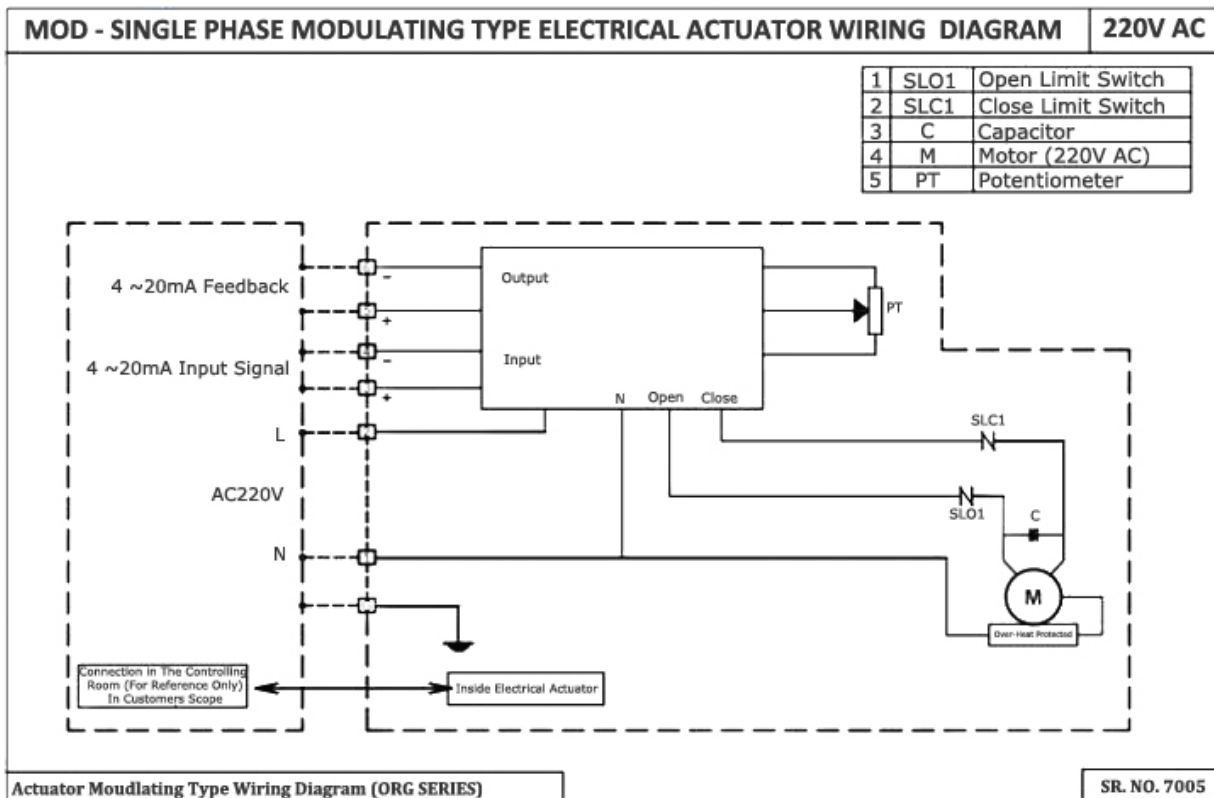
Body & Bonnet :
 PP / UPVC / CPVC / PVDF LINED
 Seat :
 Nitrile (NBR) / EPDM / VITON
 Ends :
 Wafer / Lug Type / Flanged
 Size: 1 1/2", to 24"

Wiring Diagram :-

On Off Duty



Modulating



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