

AOX-M Electric Actuator Series

Intelligent Electric Actuator

OPTION SPECIFICATION

No.	Option scheme	Remark
1	Explosion-proof actuator (Exd II CT4)	AOX-M Series
2	Water-proof actuator (IP68,10M,250HR)	AOX-M Series
3	Potentiometer unit (1K-10K)	AOX-M Series
4	Proportion control unit (control signal 4-20mA)	AOX-M Series
5	Local control units (local control open/stop/close optional switch, local/remote switch)	AOX-M Series
6	High temperature resistance actuator (-10℃ ~ +100℃)	AOX-M Series
7	Low temperature resistance actuator (-60℃ ~ +30℃)	AOX-M Series
8	Special output drive	AOX-M Series
9	Bus Control Unit	AOX-M Series





AOX has been dedicated to the research, design and manufacturing of actuators for more than 20 years. Adhere to strict and reliable principle, rely on rich field application experience, we provide the optimum auto-control products and solution in fluid-control application area such as pressure, flow rate and liquid level.

We have a group of passionate, continuously innovative, high-quality R & D staff to forge ahead. From initial design to the selection of material, the determination of craft, exquisite manufacturing process and rigorous test procedure ensure each product from AOX meets the most severe hazard working condition.

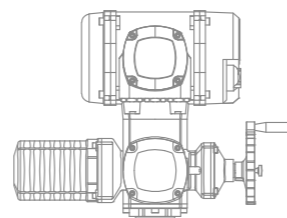
Of course, it is an endless challenge to create more and better industrial process control products.

AOX is brave and strong enough to face this challenge.

We are sure to achieve this aim. OK! AOX

AOX-M Electric Actuator

Patented products, Counterfeiting not allowed.



Production Strength

The basis of market competition is inseparable from the production strength, solid financial strength and advanced, perfect hardware. Knowing the importance of hardware, AOX firstly introduced the advanced equipment from abroad in the same industry. We invested tens of millions to renew the hardware, manufacture international standard superior electric actuators and electric valves with international product facilities.



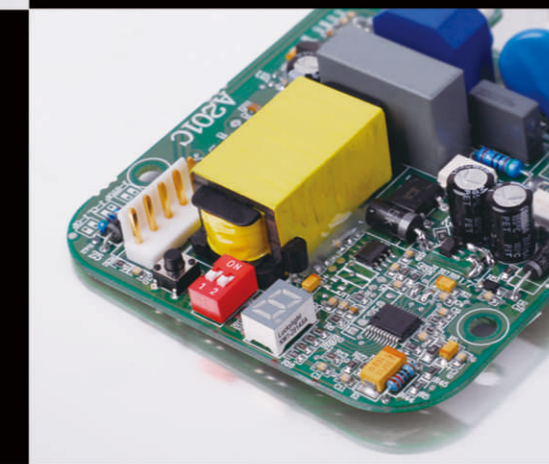


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ELECTRIC VALVES

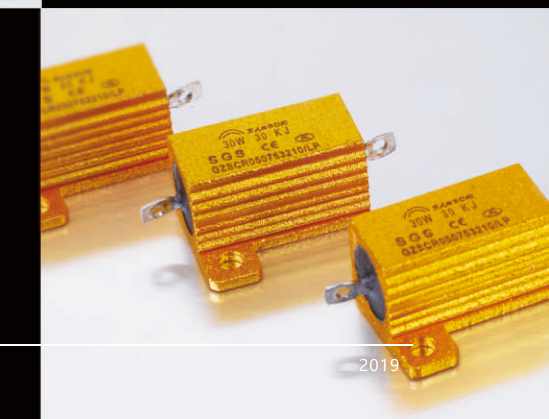
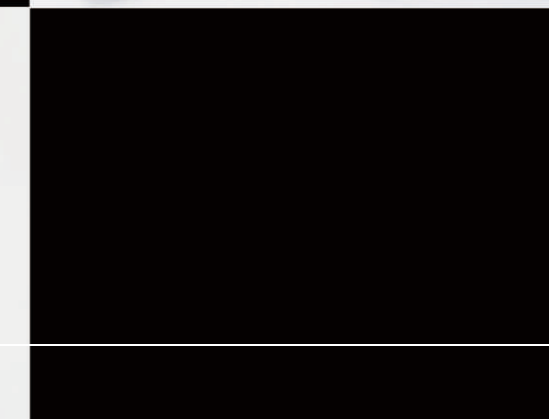
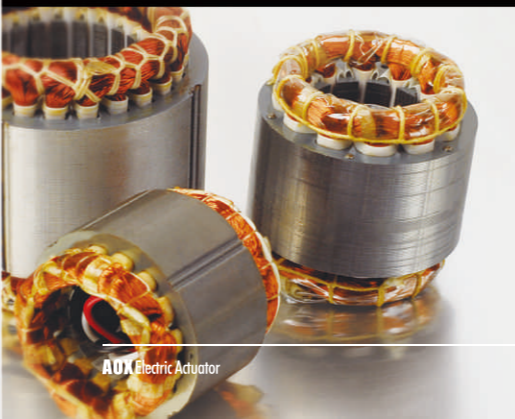
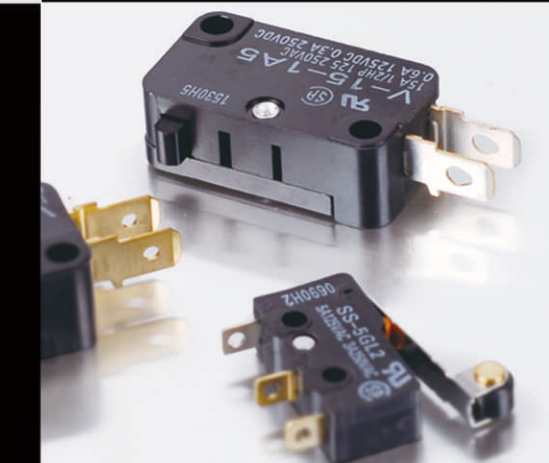


Applications

Our products are used in many fields, petroleum, chemicals, machinery, metallurgy, water treatment, pharmaceutical, marine, HVAC, machinery, etc.



>>> the internationally first-class parts are used to ensure the highly efficient and reliable operation under the most severe working conditions



Terminal box

Terminal box, which is double sealing and separate enclosure protection, assure the sealing integrity of the electronic component if open the box cover to make the on-site wiring.

- Double seal structure
- Latest non-invasive design
- Precise torque measurement
- Infrared setting technology
- Reliable electronic system
- Precise valve position measurement
- Phase sequence self-correction
- Instantaneous reversal protection
- Over torque protection
- Intelligent block protection
- Motor overheat protection

Motor

Specially designed high starting torque motor, can frequent open the valve from fully closed position. In addition to the three-phase AC motors, single-phase AC and DC motors are also suitable for AOX-M series actuators.

Valve control

Using magnetic induction absolute encoder, eliminating the traditional potentiometer, improved location accuracy and does not require battery can be accurately recorded valve position when the actuator power outage.

Infrared setting

The setting and diagnostic of the actuator can be processed via sealing display screen, without opening the housing. The valid distance between the setting tools and display screen is about 1-1.5m.

Local control

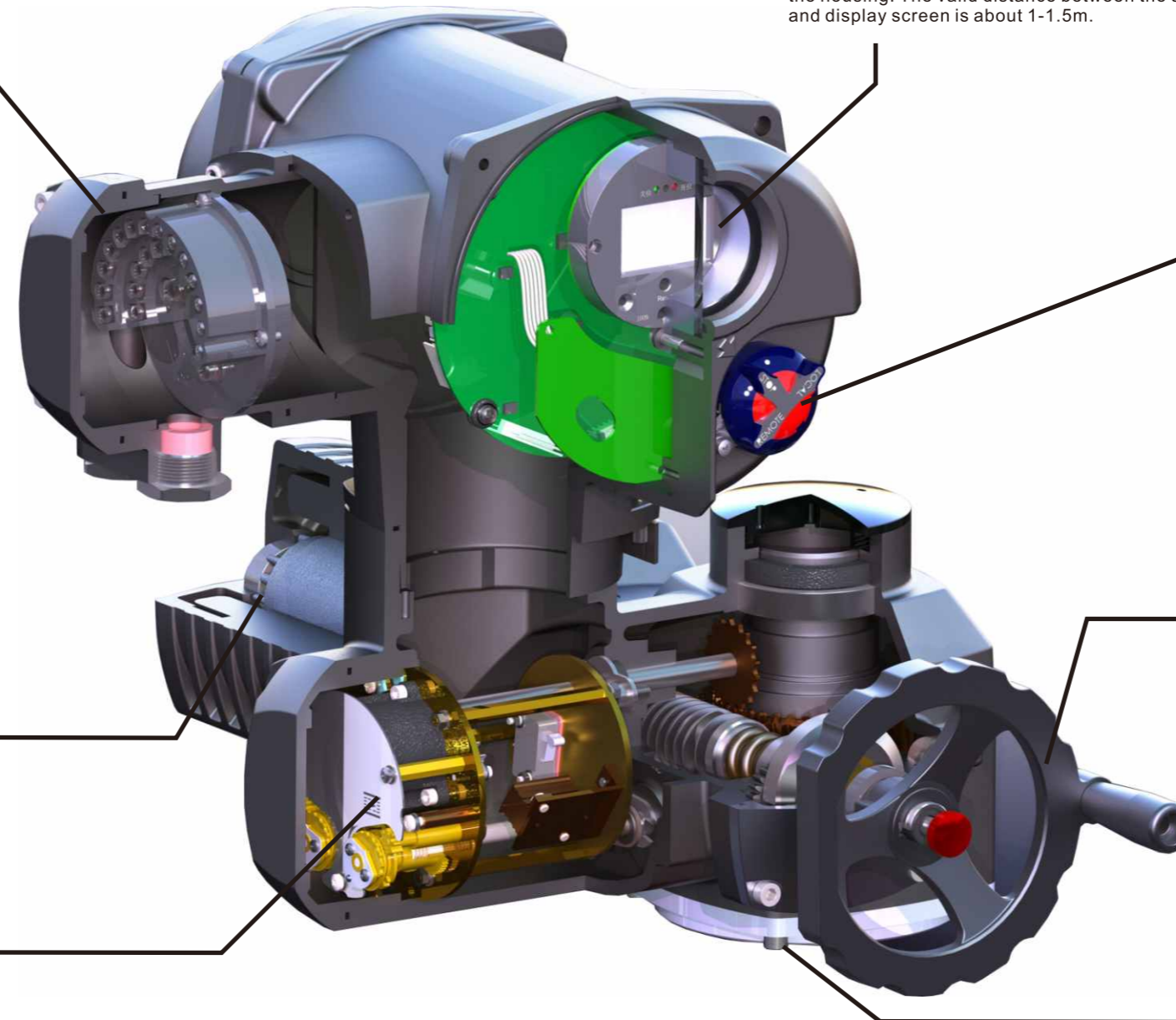
Local control switches and locking type selector switch local/stop/remote are magnetic switches, controlled by magnetic reed, thus assure the damp proof sealing inside of the actuator.

Manual operation

-In the commissioning or in an emergency the actuator can be operated by handwheel.
-By operating the red button to disconnected the actuator and motor and start manual operation. Because the self-locking worm gear between the motor and the operating shaft are separated, it's very easy to turn to manual operation even if the actuator is running at maximum torque.
-After starting the motor, automatically breaks away from manual operation, when the motor is operating the hand wheel does not work.

Valve mounting standard

Installation flange is according to EN ISO5210 or DIN 3210 standard. Various types of output drive types to choose, suitable for different types of valves.



AOX-M Intelligent Electric Actuator
SERIES

Structural characteristics of electric actuator



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SUMMARY

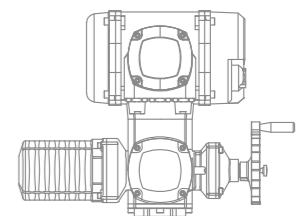
"AOX-M" series intelligent multi-turn actuator is applied in controlling various valves and other similar products, include butterfly valve, ball valve, gate valve, control valve and etc. It is widely applied in petroleum, chemical, water treatment, shipping, paper making, power plants, heating, building automation and other industries. AOX-M series multi-turn actuator combine the characteristic of intelligent and reliable, and expand richer application based on basic modular product, it can meet various kinds of working condition. There are different "AOX-M" valve gear boxes can be configured which greatly expanded the torque range or turn the multi-turn actuator into quarter-turn actuator, linear actuator to meet the different requirements. (AOX-M series products have got CE certificate)

PERFORMANCE FEATURES

- 1.Shell-The main shell is made of cast iron, the output is more stable, and the rest is aluminum alloy, lighter weight. The surface coating of epoxy resin, and go through the 12 step of coating protective treatment, with high corrosion resistance, the protection grade is IP67, NEMA4 and 6, IP68 and explosion-proof is optional.
- 2.Motor-Fully enclosed squirrel-cage motor, small size, large torque, and small inertia force, insulation class F, built-in thermal protection switch to avoid damaging the motor.
- 3.Lubrication-Using oil-immersed type, it can provide excellent lubrication and cooling in case of high strength, large temperature difference and high torque, the oil is more stable.
- 4.Terminal box-Terminal box, which is double sealing and separate enclosure protection, assure the sealing integrity of the electronic component if open the box cover to make the on-site wiring. The motor and the controls are connected by 29 contacts.
- 5.Valve control-Traditional potentiometer is eliminated, and adopt magnetic induction absolute encoder to provide position accuracy. It can record the precise valve position without battery if actuator power off.
- 6.Infrared setting-The setting and diagnostic of the actuator can be processed via sealing display screen, without opening the housing. The valid distance between the setting tools and display screen is about 1-1.5m.
- 7.Local control-Local control switches and locking type selector switch local/stop/remote are magnetic switches, controlled by magnetic reed, thus assure the damp proof sealing inside of the actuator.
- 8.Manual structure-The handle is designed to ensures safe, reliable, labor-saving and small. When the power outage, press the red button in the middle of handwheel to make motor and actuator disconnected, and start manual operation. Because of the automatic clutch between the motor and the operating shaft, it is easy to turn to manual operation even if the actuator at the maximum torque. After starting the motor, automatically breaks away from manual operation. When performing motor operation handwheel does not work. (Note: In the situation of no electricity, the electric actuator will remain permanently manual mode).
- 9.Space heater-It is used to control temperature and remain the internal electrical components dry, it can avoid the moisture condensation inside the actuator because of the change of the temperature and weather.
- 10.Torque switch-Providing overload protection, it can shut down the power automatically when jamming to avoid damaging valves and actuators, torque is adjustable within a certain range.
- 11.Self-locking-Precision worm mechanism can efficiently transfer large torque, high efficiency, low noise (max 50 dB), long life, and have self-locking function to prevent the inversion, transmission part is stable and reliable.
- 12.Anti-off bolt-The bolts will attached to the case and not fall off when removing the shell, external screws are made of 304 stainless steel.
- 13.Installation-The bottom mounting dimensions conform to international standard ISO5210, the drive sleeve can be removed for processing as needed. It can be installed vertically and horizontally.
- 14.Circuit-The control circuit in line with single-phase or three-phase power supply standard, circuit layout is compact and reasonable. (It can be designed according to customer requirements).

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PERFORMANCE PARAMETER

Model	Output torque	Speed	Max shaft diameter	Power	Rated current (A) 50HZ	Flange	Weight
	N · M	RPM	MM	W	AC380V	ISO5210	Kg
AOX-M-007	70	45	Φ28	400	2.42	F10	32
	70	90		400	2.95		
AOX-M-010	120	35	Φ28	600	2.25	F10	38
	120	70		600	3.18		
	120	105		800	5.15		
AOX-M-020	300	34	Φ40	1100	4.50	F14	68
	300	67		1100	6.85		
AOX-M-050	450	34	Φ40	1100	9.58	F14	70
	450	67		1500	14.80		
AOX-M-060	600	34	Φ55	3000	10.89	F16	103
	600	67		4000	16.50		
AOX-M-080	800	34	Φ55	3000	12.43	F16	103
	800	67		4000	23.50		
AOX-M-100	1000	34	Φ55	4000	30.20	F16	103

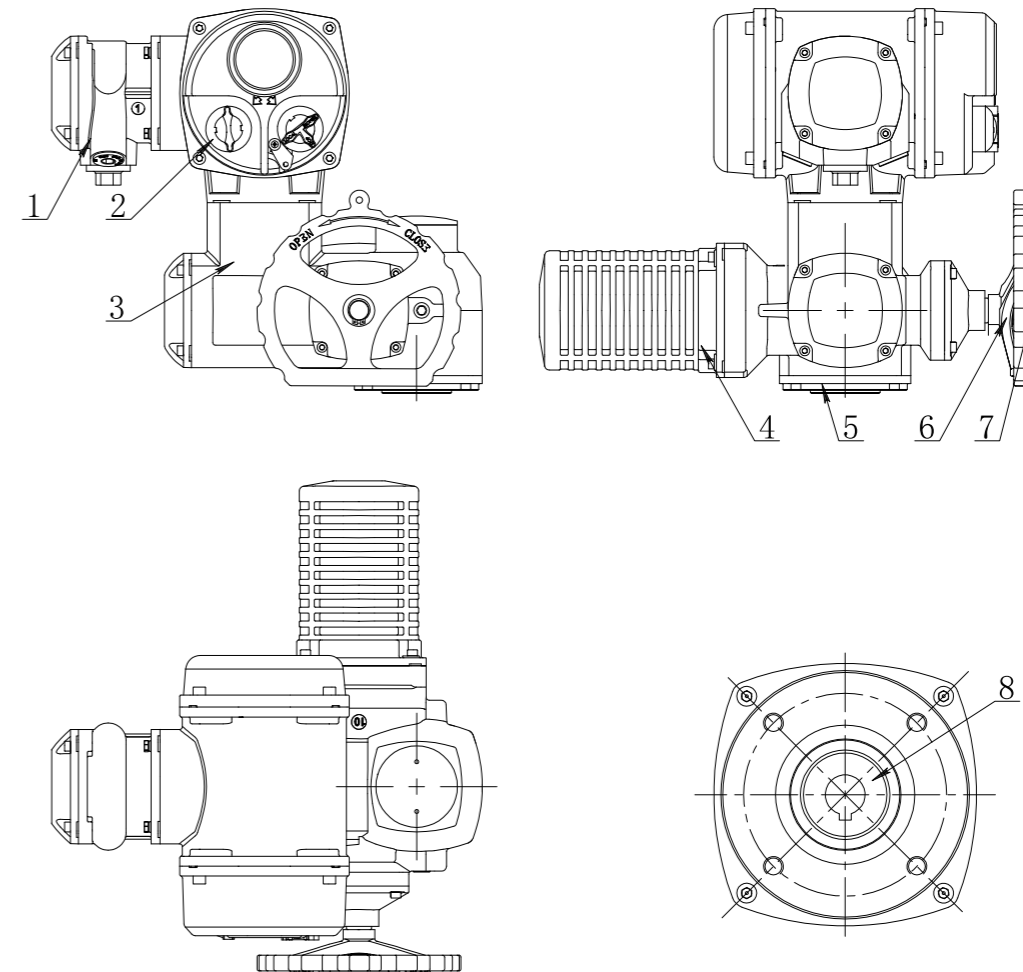
TECHNICAL PARAMETER

Shell	Enclosure :IP67,IP68 is optional,NEMA4, NEM A6	
Power	Standard:380V AC/3ph Optional:110/220V AC/1ph,440V AC/3ph, 50/60Hz, ±10%	
Motor	Asynchronous motor	
Limit switch	1×Open/ Close, SPDT,250V AC 10A (on/off model)	
Auxiliary limit switch	1×Open/ Close, SPDT,250V AC 10A (on/off model)	
Torque switch	1×Open/ Close, SPDT,250V AC 10A	
Operating temperature	Internal-placed thermal protection, Open 120°C ±5°C /Close 97°C ±5°C	
Manual operation	Declutching mechanism,with handwheel operation	
Self-locking device	Self-locking by worm and worm gear	
Space heater	30W (110/220V AC) Condensation preventing (according to conditions, can be adjusted)	
Conduit entry	Double seal 3× (PT3/4", PT1-1/2", PT1"optional)	
Ambient temperature	-25°C ~ +70°C (-30°C, -40°C, -60°C optional)	
Lubrication	Special oil for 00 actuators	
Material	Ductile iron, high-strength aluminum alloys, steel, aluminum bronze, polycarbonate	
Ambient humidity	Max 90% RH	Non-Condensing
Anti-vibration	X Y Z 10g,0.2 ~ 34 Hz,30 minutes	
External coating	Dry powder, epoxy polyester,high anti-corrosion	
Overload protection	Torque peak overload protection	
Display screen	LED display (smart regulation type)	
Setting mode	Non-intrusive setting (without opening the cover set type)	
Electrically	Integrated control unit with a non-invasive rotary switch	

AOX-M Electric Actuator Series

OUTLINE DRAWING

AOX-M Configuration

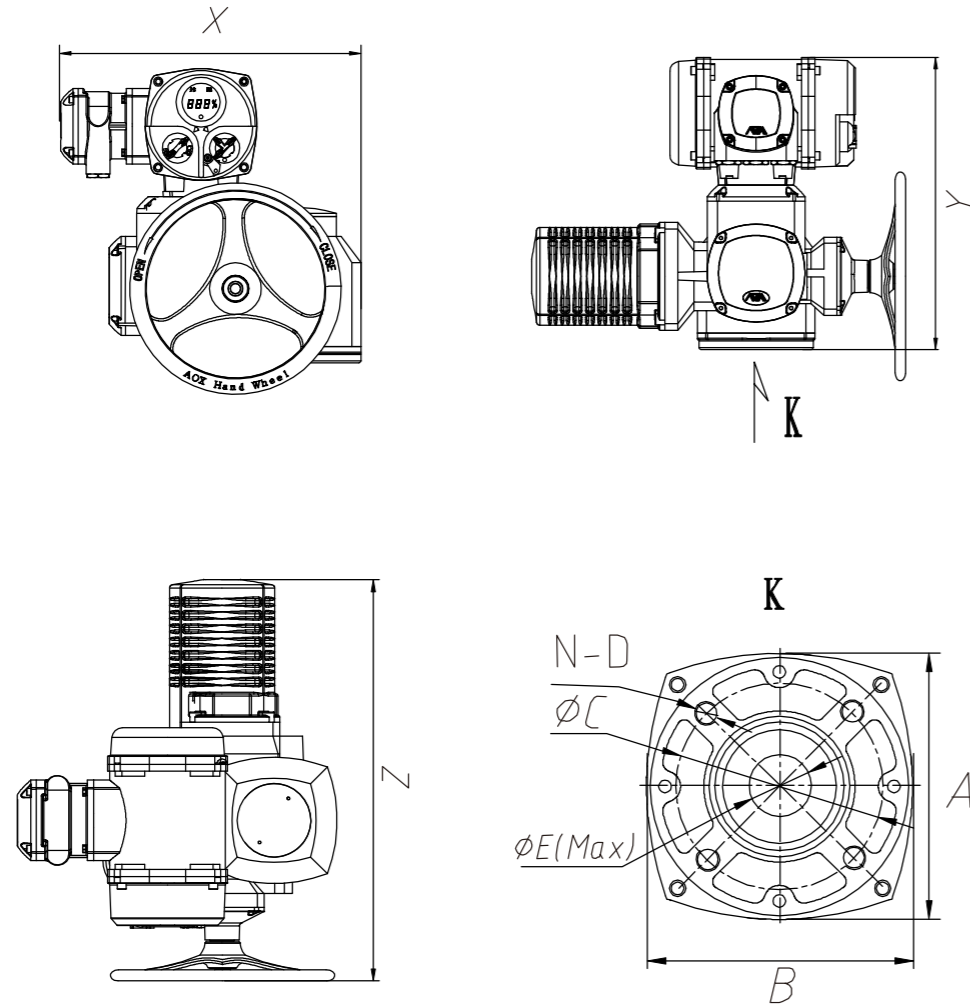


1 Terminal box	5 Connecting flanges
2 Control unit	6 Handwheel
3 Shell	7 Manual/ Auto switch button
4 Motor	8 Output shaft

AOX-M Electric Actuator Series

GENERAL DRAWING

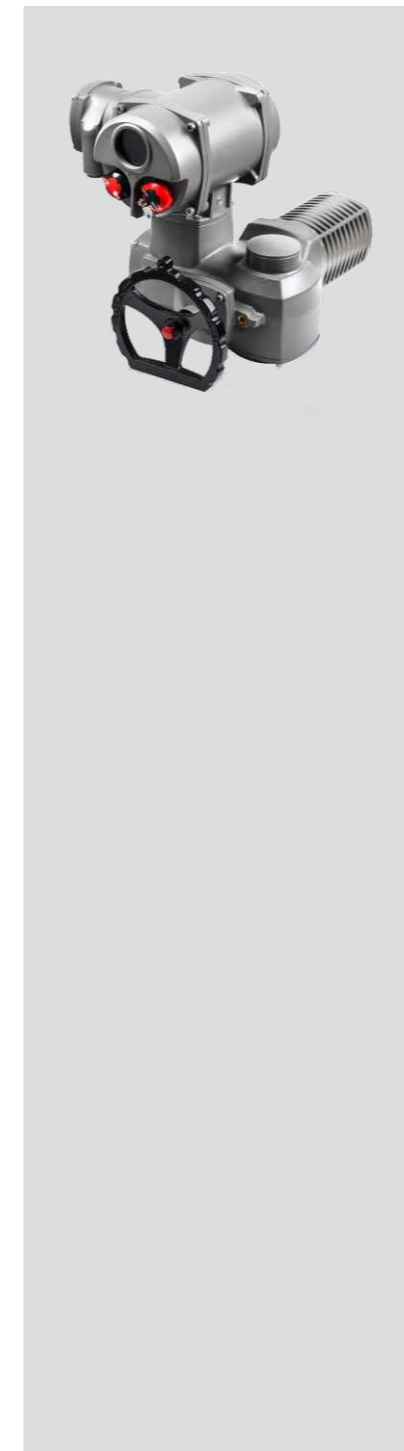
AOX-M



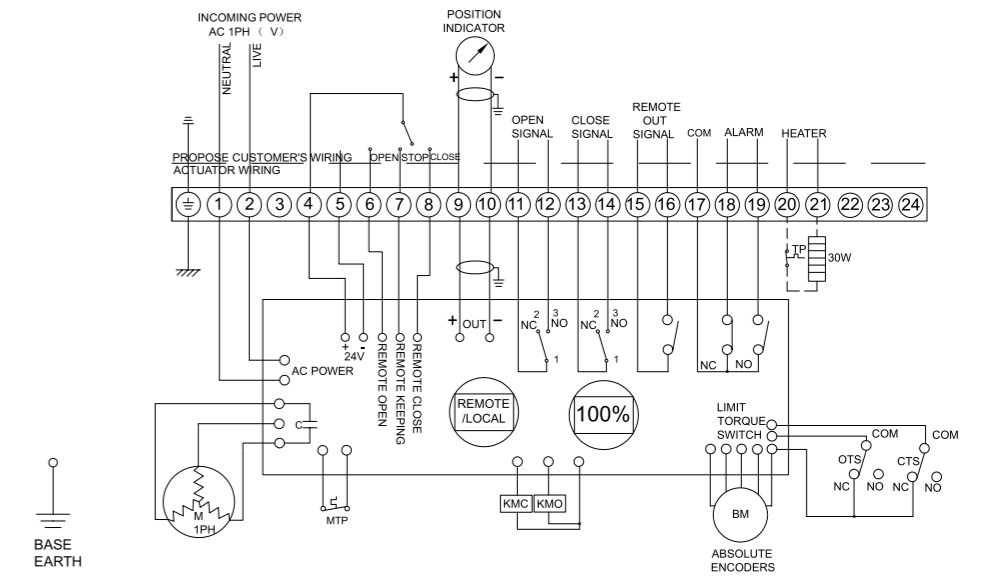
Model	X	Y	Z	A	B	ΦC	N-D	ΦE(Max)
AOX-M-007	393	372	440	115	115	Φ102	4-M10	Φ28
AOX-M-010	433	387	494	132	132	Φ102	4-M10	Φ28
AOX-M-020	509	451	578	180	180	Φ140	4-M16	Φ40
AOX-M-050	509	451	578	180	180	Φ140	4-M16	Φ40
AOX-M-060	605	518	733	220	220	Φ165	4-M20	Φ55
AOX-M-080	605	518	733	220	220	Φ165	4-M20	Φ55
AOX-M-100	605	518	733	220	220	Φ165	4-M20	Φ55

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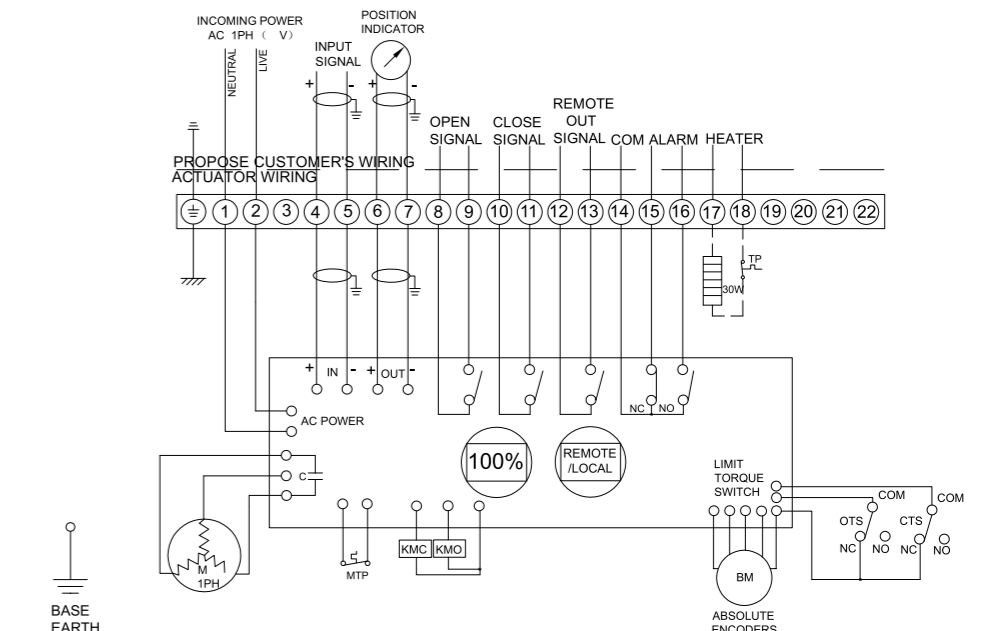
Wiring Diagram



1. AOX-M-007~100 110/220VAC/50/60Hz, 1Ph (Intelligent on/off type) M-130-10



2. AOX-M-007~100 110/220VAC/50/60Hz, 1Ph (Intelligent modulating type) M-140-10

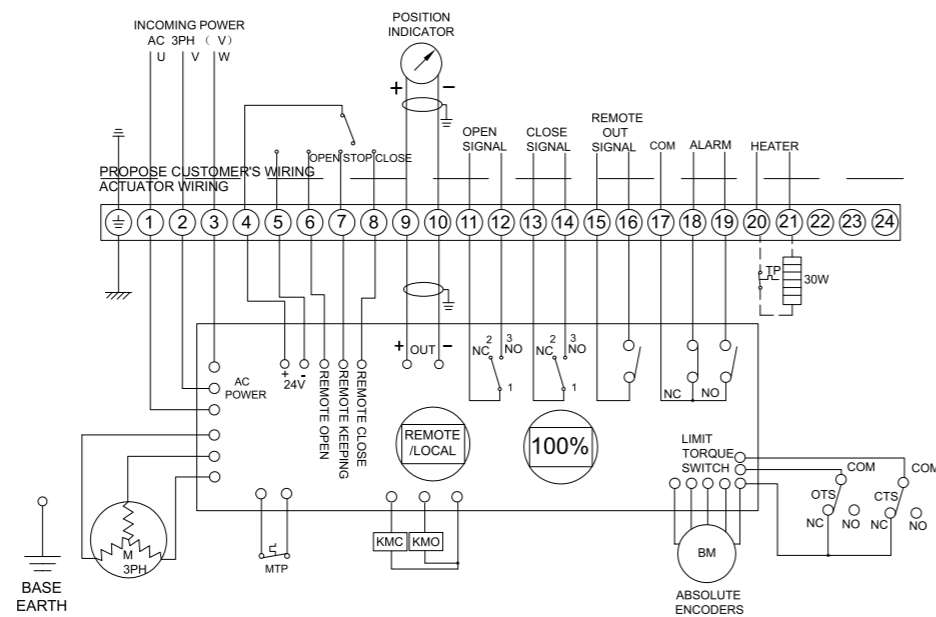


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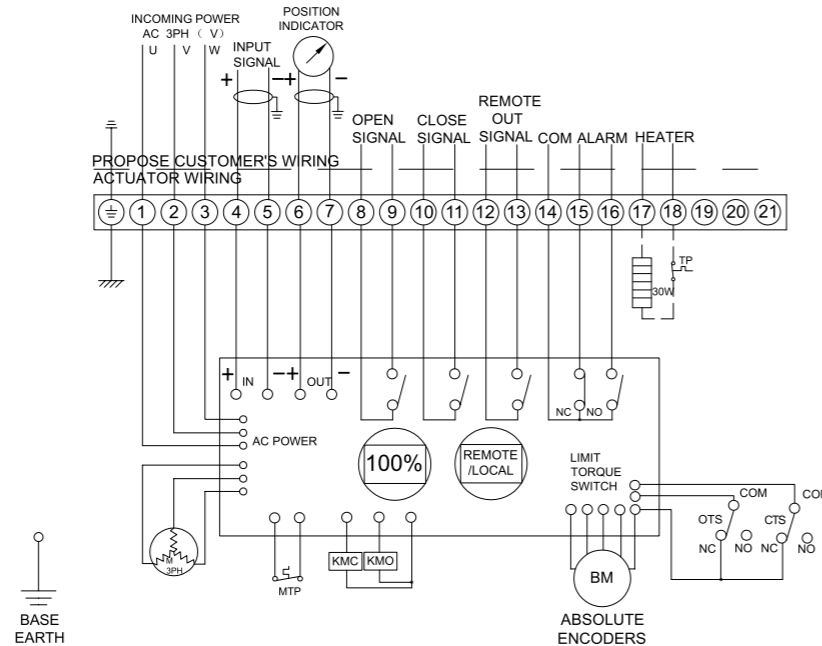
Wiring Diagram



3. AOX-M-007~100 380/440VAC/50/60Hz, 3Ph (Intelligent on/off type) M-230-10



4. AOX-L-30~300 380/440VAC/50/60Hz, 3Ph (Intelligent modulating type) M-240-10



AOX-M Electric Actuator Series

Application

AOX-M series multi-turn actuators are suitable for valve automation of various size and pressure levels within any plant. The application is guaranteed by the following factors:

1. Large torque range.
-The value of torque can be 15 — 12000NM, the speed can be 40 — 140 RPM.
2. Combination with different AOX-M gear box.
3. Many kinds of type selection: ON/OFF model、Modulating model、Explosion-proof model.



Combination with multi-turn gearbox

Automation of gate valve, globe valve, sluice valve.



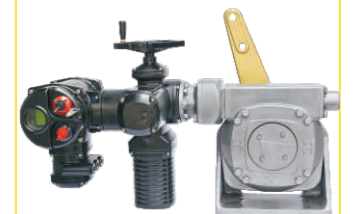
Combination with linear thrust unit

Automation of 3-way control valve, single-seat control valve, double-seat control valve



Combination with quarter-turn gearbox

Automation of ball valve, butterfly valve



Combination with lever gearbox

Automation of butterfly valve with lever arrangement