

# AOX-Q Electric Actuator Series

## EXPLOSION-PROOF SERIES

### OPTION SPECIFICATION

No.	Option scheme	Remark
1	Explosion-proof actuator ( Exd II CT5 )	AOX-Q series
2	Potentiometer unit ( 1K-10K )	AOX-Q series
3	Proportion control unit (control signal 4-20mA)	AOX-Q series
4	Local control units (local control open/stop/close optional switch)	AOX-Q series
5	Water-proof actuator (IP68,10M,250HR)	AOX-Q series
6	Direct current motor (24VDC)	AOX-Q series
7	Torque switch (SPDT×2 250VAC 10A)	Except AOX-Q-005/008/010
8	Electric current position sensor (output 4-20mA DC)	AOX-Q series
9	Reverse electromagnetic control and transmission integration electrical machinery starter	AOX-Q series
10	High temperature resistance actuator (-10℃ ~ +100℃)	AOX-Q series
11	Low temperature resistance actuator (-60℃ ~ +30℃)	AOX-Q series
12	Low speed actuator	AOX-Q series
13	Travel 120° ,180° ,270°	AOX-Q series



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**AOX-Q Electric Actuator**  
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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.

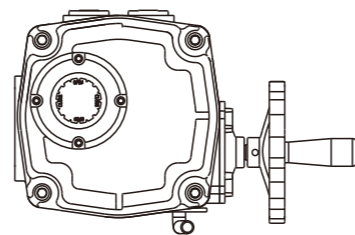
Of course, it is an endless challenge to create more and better industrial process control products.

AOX is brave and strong enough to face this challenge.

We are sure to achieve this aim. OK! AOX

# AOX-Q Electric Actuator

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## 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.



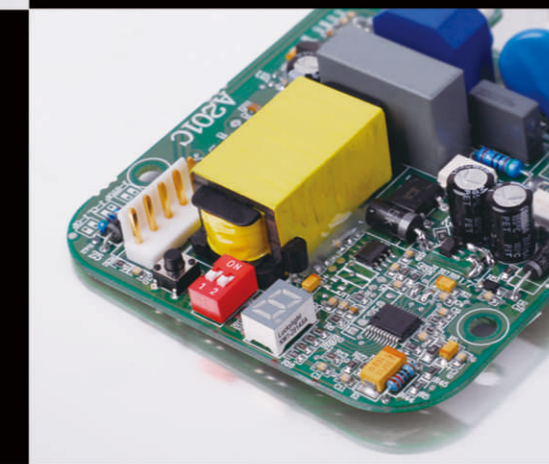


AOXIANG  
ELECTRIC INTELLIGENT ACTUATOR  
ELECTRIC VALVES

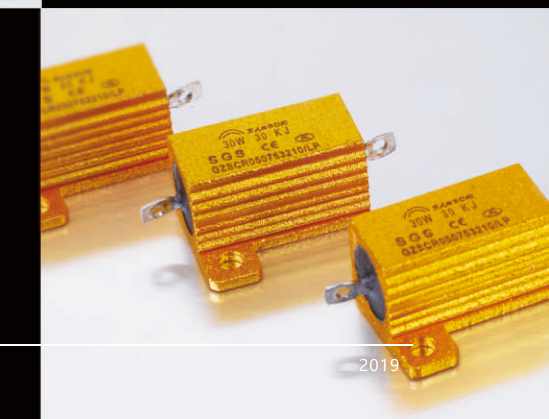
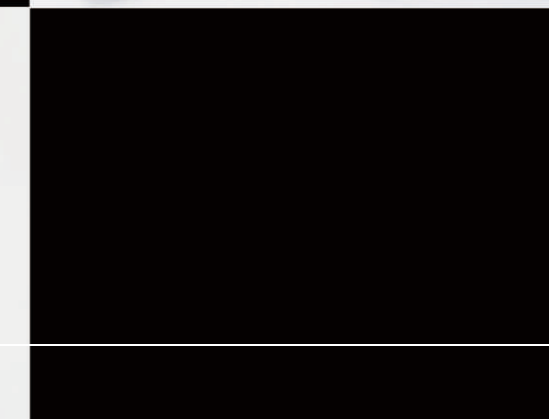
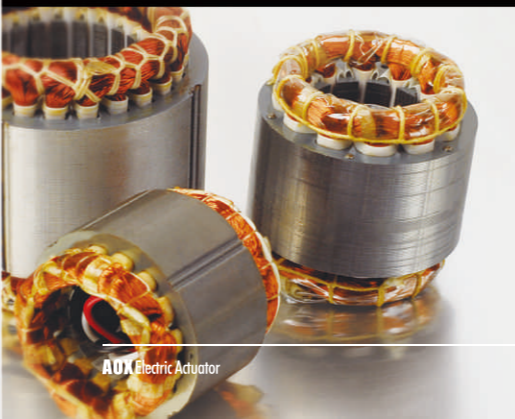
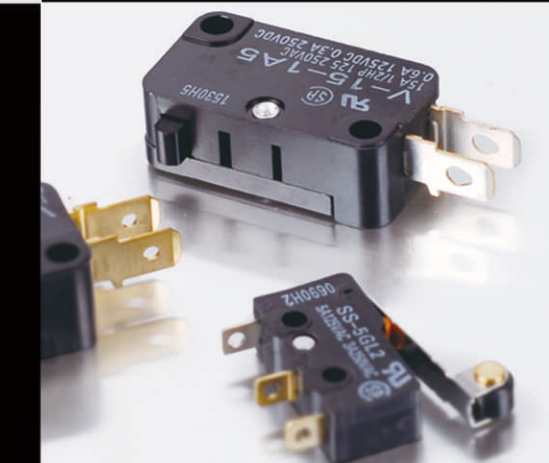


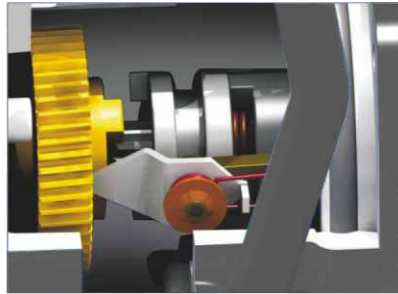
# Applications

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





### 1.Shell

-Hard anodized Aluminum casting and external epoxy powder coated against severe industrial environment.

### 2.Worm gear

-Precisely machined double worm gear c/w minimum back-lash, low noise, high output torque.

### 3.Self locking

-Provided by double worm gearing to keep position of valve unchanged against reverse torque from valve.

### 4.Sealing

-By O-ring in all interfaces IP67(standard), and double o-ring for IP68 (option).

### 5.Handwheel

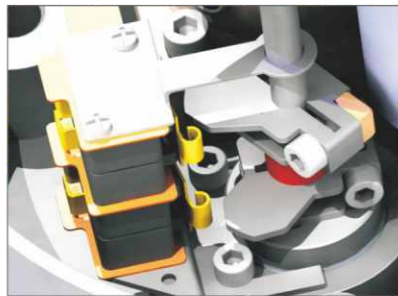
-Different sizes depending on actuator torque, and knob on handwheel for easy operation.

### 6.Motor

-Specially designed induction motor to generate high starting torque and high efficiency equipped with thermal protector to prevent damage from over heating.  
- Insulation class F

### Manual override

- Auto / Manual switchable lever and handwheel engagement for emergency manual operation.  
- Drive force automatically resorted by motor start, unless lever padlocked to prevent this occurring.



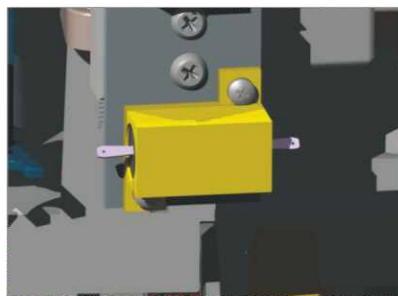
### Limit switches

-It is fastened by the two screws above, the setting is simple, each cam can be set separately.  
-Once the setup is complete, each cam will always remain in this position.



### Terminal

-Spring loaded push type terminal for tight wiring connection under severe vibration.  
-The number of terminals are 22 for users.  
-Terminal length: 8-9mm  
-Terminal size: 10×22×32



### Space heater

-Metal casing, fast heat, long life, with the built-in temperature switch to prevent overheating.  
-Core ceramic sealing member, there is no risk of leakage.



### Captive cover bolts

- Designed to prevent losing it during maintenance or installation.  
-All external bolts are stainless steel for rust prevention.



### Tapered interface between cover and lower housing

- For easy lifting cover up from lower housing for wiring or maintenance.



### Window

- Polycarbonate window, built-in O-rings, fixed metal gland, the gland comes with two drainage channels to prevent water, easy to observe.



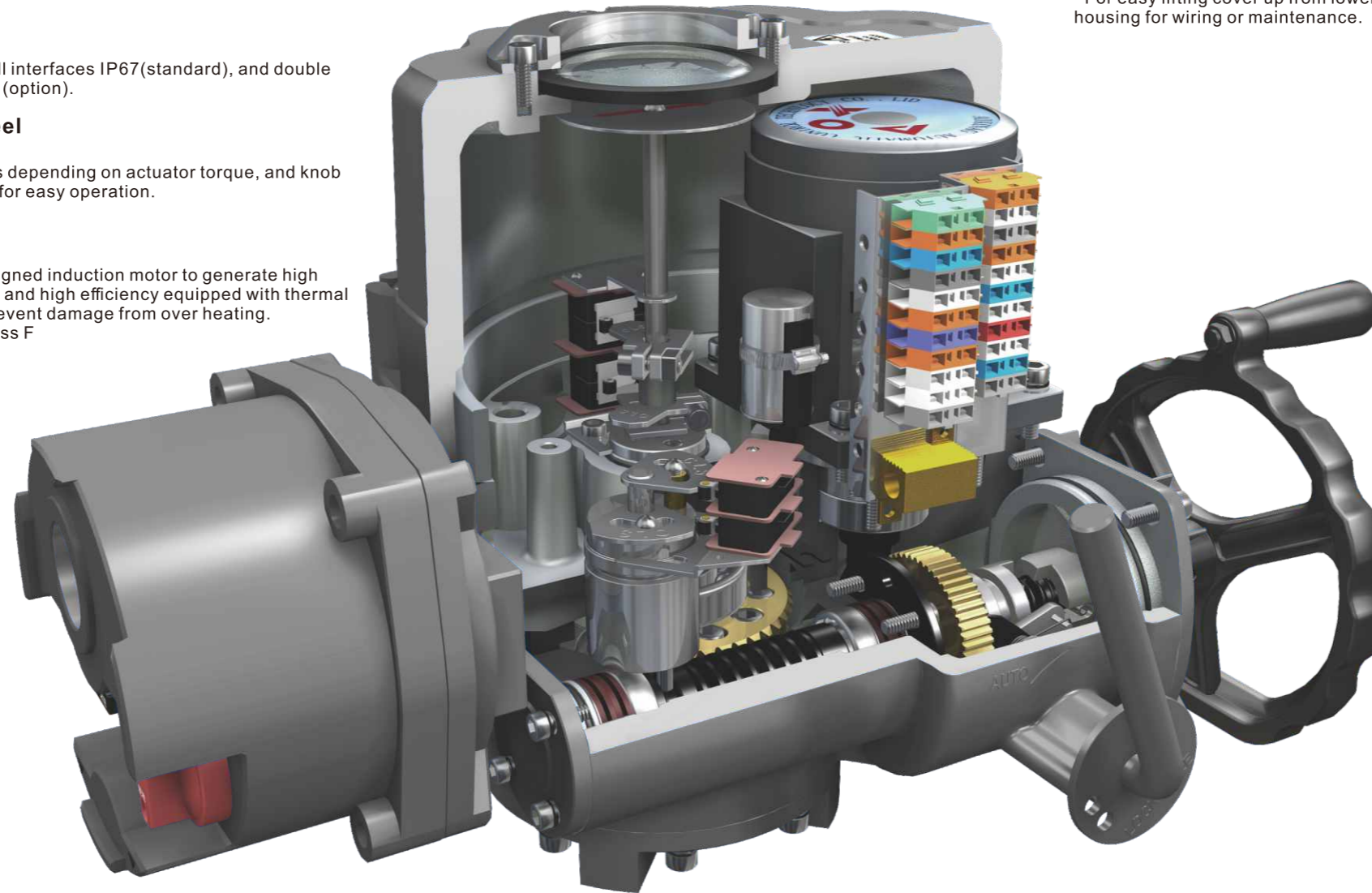
### Torque switches

- Protect actuator from damage caused by overload from the driven valve over the whole travel.  
- Once the torque switching acts, the actuator will be stopped immediately.



### Removable drive bushing

- Easy mounting base standard to ISO5211.  
- Bushings can be processed according to different requirements, four hanging ears made a close fit with shaft and sleeve.



### Indicator sustained by spring

- Direction of visual indicator is set by factory.  
- In case of changing its direction, just grip the indicator plate and change the position.  
- Spring beneath indicator plate sustains the set position unchanged.  
- No need to loose screw and tight it again at all!



# AOX-Q Electric Actuator

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# AOX-Q Series Electric Actuator



AOXIANG  
ELECTRIC INTELLIGENT ACTUATOR  
ELECTRIC VALVES



## SUMMARY

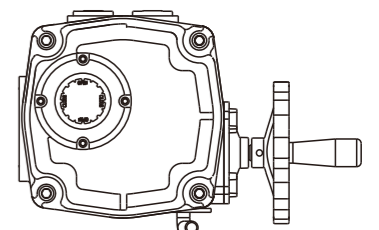
"AOX-Q" series electric actuator is used for controlling 0°~270° rotation of the valves and other similar products, such as butterfly valve, ball valve, damper, flapper valve, cock valve etc. It widely applies to petroleum, chemical, water treatment, shipping, paper making, power plant, heating, light industry and other industries. Driven by 380V/220V/110VAC power or 24V/110VDC power, inputs 4-20mA or 0-10VDC control signal, moves valve to the right position, and achieves to automatic control, maximum output torque is 6000N·M.

## PERFORMANCE FEATURES

1. Shell--The shell is made of aluminum alloy, with anodic oxidation treatment and polyester powder coating. It is strong corrosion-resistant and enclosure IP67, NEMA 4 and 6, IP68 and explosion-proof is optional.
2. Motor--Asynchronous motor, small, large torque, and small inertia force, F-class insulation rating, with thermal protection to avoid damaging.
3. Manual Structure--The design of handwheel is safe, reliable, labor-saving, small. Declutch to operate by handwheel if without power, and reset automatically when power on.
4. Indicator-- Installs indicator in the center axis and adopts convex mirror design, no cumulate water, more convenient to observe.
5. Space heater-- It is used for controlling temperature to avoid condensing internal of housing and keep dry.
6. Limit switch-- Mechanical, electronic double limit. Mechanical limit stopper is adjustable, safe and reliable; electronic limit switch is controlled by cam. Set position accurately and conveniently, and not affected by excessive handle.
7. Torque Switch-- (Except AOX-Q-005/008/010) Providing overload protection to avoid the damage of valve and electric actuator when jammed by cutting power automatically.
8. Self-locking--Accurate worm and worm gear transfer large torque efficiently, high efficiency, low noise (max. 50 dB), long life, with self-locking, prevent inversion, as stable and reliable transmission parts, no need to refuel.
9. Anti-off bolt—The bolt attaches to the shell and be not off when remove the shell.
10. Installation-- The installation size meets international standard ISO5211 / DIN3337.
11. Circuit--Controlling circuit meets the single-phase or three-phase power supply standard, circuit layout is reasonable and compact, terminals meet various of additional functional requirements effectively.
12. The display of valve position—During the opening or closing movement of actuator, the change of valve position on LCD is displayed with large numbers.
13. Adjust the phase sequence automatically—Intelligent actuator check and test the phase sequence for 3 phase power supply automatically, users no need to consider about the phase sequence.

# AOX-Q Electric Actuator

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# AOX-Q Electric Actuator Series

## PERFORMANCE PARAMETER

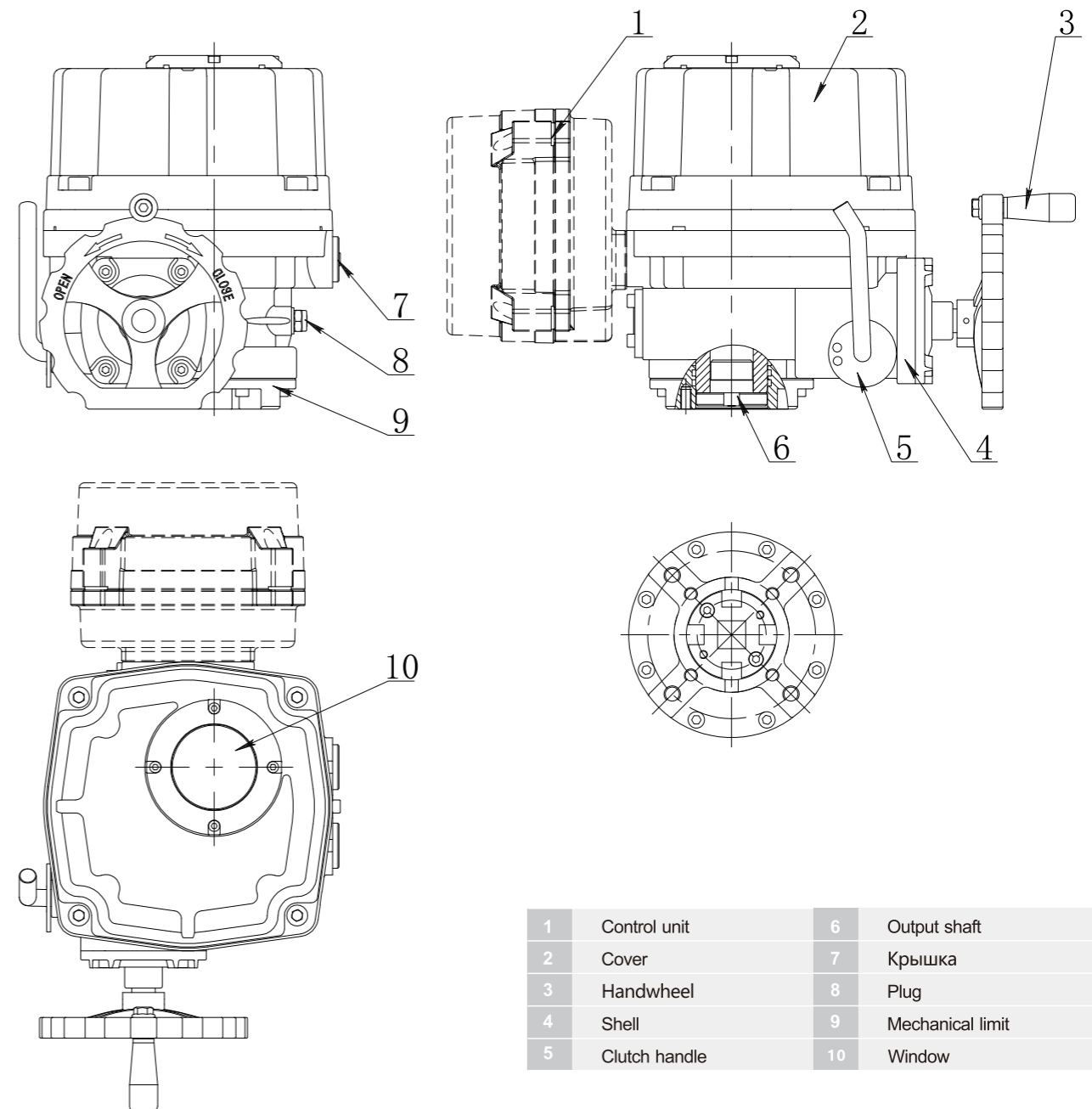
Model	Max Output Torque	Operating Time 60/50Hz	Max Drive Shaft Size	Power	Rated Current(A)				No of handle turn	Flange	Weight
					Single Phase		Three Phases				
	N·M	90°(S)	mm	W	110V	220V	380V	440V	N	ISO5211	(kg)
AOX-Q-005	50	18/22	Φ20	20	1.10/0.95	0.55/0.54	0.30/0.30	N/A	10	F07	7.5
AOX-Q-008	80	18/22	Φ20	20	1.10/0.95	0.55/0.54	0.30/0.30	N/A	10	F07	7.5
AOX-Q-010	100	18/22	Φ20	20	1.10/0.95	0.55/0.54	0.30/0.30	N/A	10	F07	7.5
AOX-Q-015	150	21/25	Φ20	40	1.65/1.67	0.88/0.84	0.31/0.31	0.30/0.31	11	F07/F10	17.3
AOX-Q-020	200	21/25	Φ20	40	1.67/1.67	0.89/0.85	0.31/0.31	0.30/0.31	11	F07/F10	17.3
AOX-Q-030	300	26/31	Φ32	90	1.85/1.86	0.92/0.95	0.35/0.35	0.34/0.34	13.5	F10/F12	22
AOX-Q-050	500	26/31	Φ32	90	3.60/3.62	1.55/1.58	0.59/0.59	0.58/0.58	13.5	F10/F12	23
AOX-Q-060	600	26/31	Φ32	120	3.65/3.62	1.60/2.20	0.60/0.59	0.59/0.58	13.5	F10/F12	23
AOX-Q-080	800	31/37	Φ40	180	4.10/4.10	2.15/2.20	0.85/0.85	0.79/0.79	16.5	F12/F14	29
AOX-Q-120	1200	31/37	Φ40	180	4.20/4.10	2.35/2.30	0.87/0.87	0.81/0.81	16.5	F12/F14	29
AOX-Q-150	1500	78/93	Φ40	120	3.65/3.62	1.60/2.20	0.60/0.59	0.59/0.58	40.5	F14/F16	77
AOX-Q-200	2000	93/112	Φ40	180	4.10/4.10	2.15/2.20	0.85/0.85	0.79/0.79	49.5	F14/F16	83
AOX-Q-300	3000	93/112	Φ40	180	4.20/4.10	2.35/2.30	0.87/0.87	0.81/0.81	49.5	F14/F16	83
AOX-Q-400	4000	155/185	Φ40	180	4.20/4.10	2.35/2.30	0.87/0.87	0.81/0.81	82.5	F14/F16	83
AOX-Q-500	5000	155/185	Φ40	180	4.20/4.10	2.35/2.30	0.87/0.87	0.81/0.81	82.5	F14/F16	83
AOX-Q-600	6000	155/185	Φ40	180	4.20/4.10	2.35/2.30	0.87/0.87	0.81/0.81	82.5	F14/F16	83

## TECHNICAL PARAMETER

Shell	Enclosure :IP67,IP68 is optional,NEMA4 and 6	
Power	Standard:220VAC/1ph Optional:110VAC/1ph, 380V/440V/3ph,50/60HZ, ±10% 24VDC/110VDC/220VDC	
Motor	Asynchronous motor	
Limit switch	2×Open/ Close, SPDT,250VAC 10A	
Auxiliary limit switch	2×Open/ Close, SPDT,250VAC 10A	
Torque switch	Close/Open, each 1, SPDT,250VAC 10A	Except AOX-Q-005/008/010
Travel	90°±10°	0°~270°
Fail safe / Operating temperature	Internal-placed thermal protection, Open 120°C±5°C/Close97°C±5°C	
Indicator	Continuous position indicator	
Manual operate	Declutching mechanism, operate by handwheel	
Self-locking device	Self-locking by worm and worm gear	
Mechanical limit	2 × external adjustable stopper	
Space heater	30 W(110V/220VAC)	
Conduit entry	2xPT3/4"	
Ambient temperature	-25°C~+70°C (-30°C、-40°C、-60°C optional)	
Lubrication	Grease moly(EP type)	
Material	Steel, Aluminium alloy, Aluminium bronze,Polycarbonate	
Ambient humidity	Max 90% RH	Non-Condensing
Anti-vibration	XYZ 10g,0.2~34 Hz,30 minutes	
External coating	Dry powder, Epoxy polyester,high anti-corrosion	

# AOX-Q Electric Actuator Series

## GENERAL DRAWING



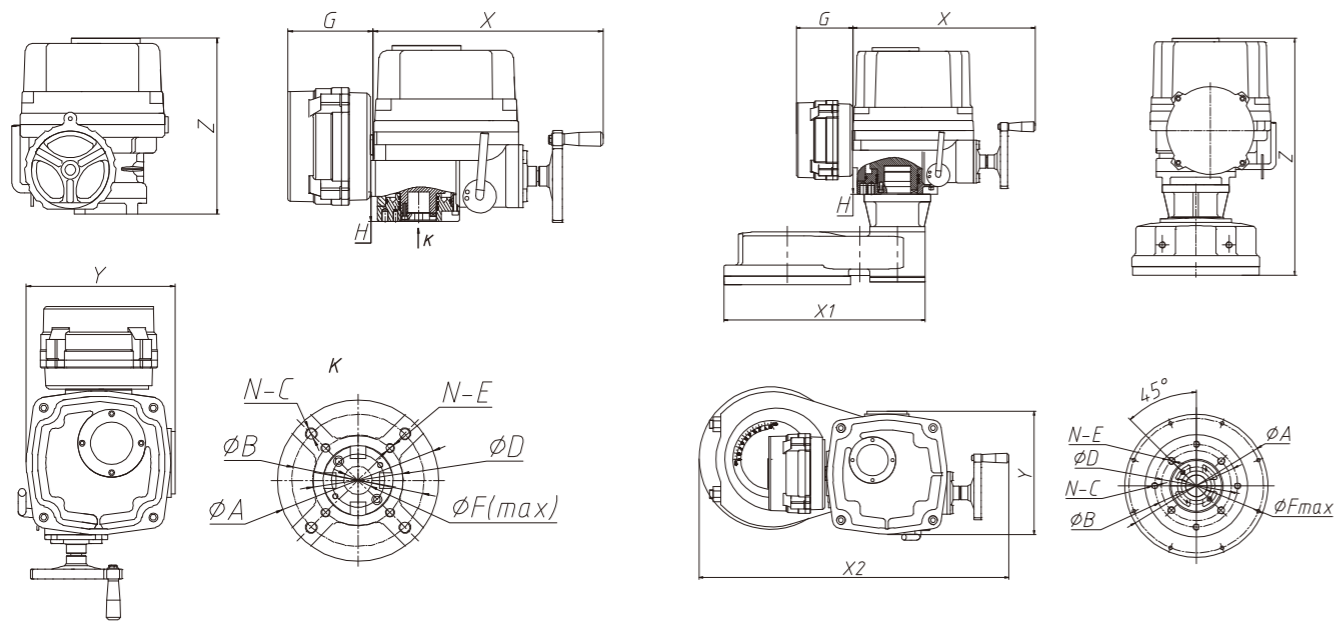
1	Control unit	6	Output shaft
2	Cover	7	Крышка
3	Handwheel	8	Plug
4	Shell	9	Mechanical limit
5	Clutch handle	10	Window

# AOX-Q Electric Actuator Series

## GENERAL DRAWING

AOX-Q-005~120

AOX-Q-150~600



Unit: mm

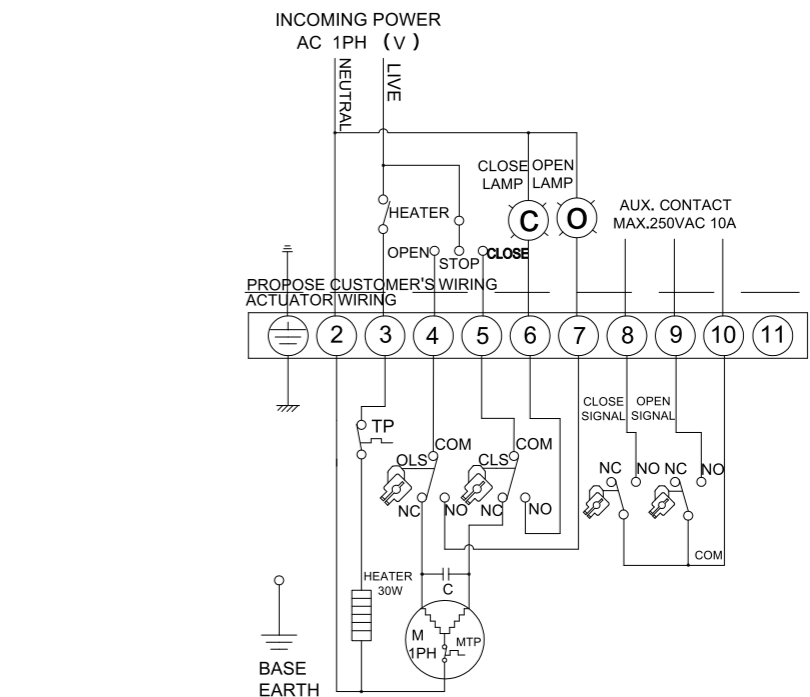
Model	X	Y	Z	φA	φB	N-C	φD	N-E	F	G	H	X1	X2
AOX-Q-005	254	175	236	φ90	φ70	4-M8	///	///	φ20	130	60	///	///
AOX-Q-008	254	175	236	φ90	φ70	4-M8	///	///	φ20	130	60	///	///
AOX-Q-010	254	175	236	φ90	φ70	4-M8	///	///	φ20	130	60	///	///
AOX-Q-015	343	245	271	φ125	φ102	4-M10	φ70	4-M8	φ20	130	50	///	///
AOX-Q-020	343	245	271	φ125	φ102	4-M10	φ70	4-M8	φ20	130	50	///	///
AOX-Q-030	358	258	292	φ150	φ125	4-M12	φ102	4-M10	φ32	130	67	///	///
AOX-Q-050	358	258	292	φ150	φ125	4-M12	φ102	4-M10	φ32	130	67	///	///
AOX-Q-060	358	258	292	φ150	φ125	4-M12	φ102	4-M10	φ32	130	67	///	///
AOX-Q-080	402	291	331	φ180	φ140	4-M16	φ125	4-M12	φ40	130	72	///	///
AOX-Q-120	402	291	331	φ180	φ140	4-M16	φ125	4-M12	φ40	130	72	///	///
AOX-Q-150	358	258	496	φ285	φ165	4-M18	φ140	4-M16	φ40	130	65	454	604
AOX-Q-200	402	291	535	φ285	φ165	4-M18	φ140	4-M16	φ40	130	65	454	625
AOX-Q-300	402	291	535	φ285	φ165	4-M18	φ140	4-M16	φ40	130	65	454	625
AOX-Q-400	402	291	535	φ285	φ165	4-M18	φ140	4-M16	φ40	130	65	454	625
AOX-Q-500	402	291	535	φ285	φ165	4-M18	φ140	4-M16	φ40	130	65	454	625
AOX-Q-600	402	291	535	φ285	φ165	4-M18	φ140	4-M16	φ40	130	65	454	625

# AOX-Q Electric Actuator Series

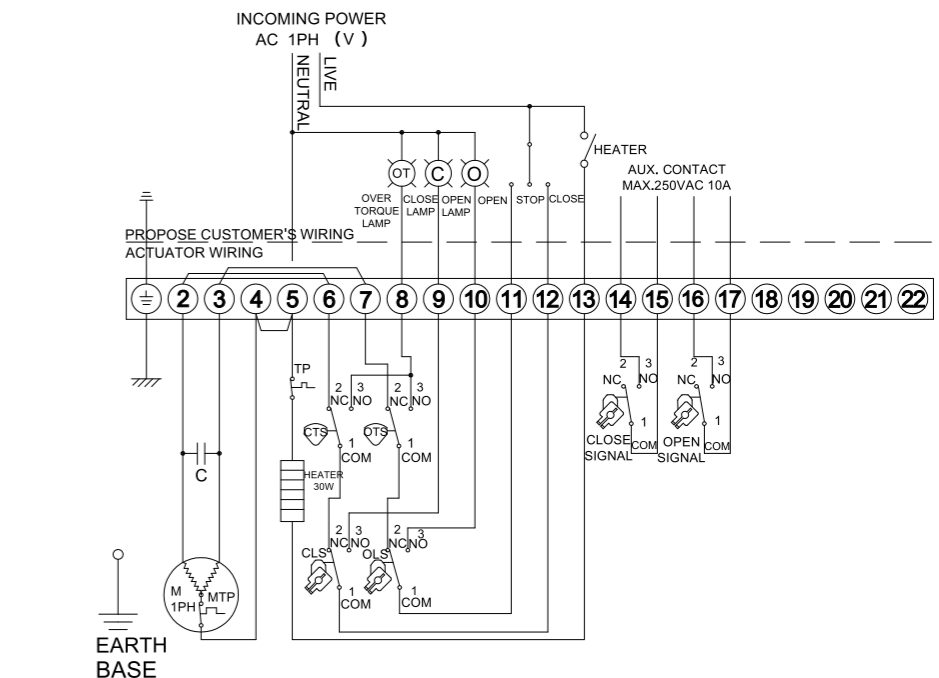
## Wiring Diagram



1. AOX-Q-005-010 110/220VAC/50/60Hz, 1Ph(On/off type) Q-110-10



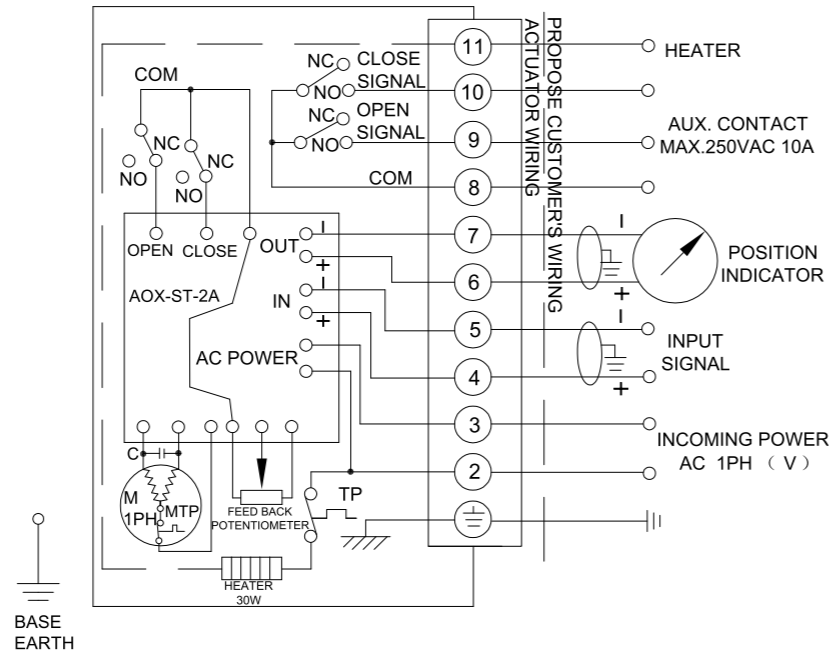
2. AOX-Q-015-600 110/220VAC/50/60Hz, 1Ph(On/off type) Q-110-20



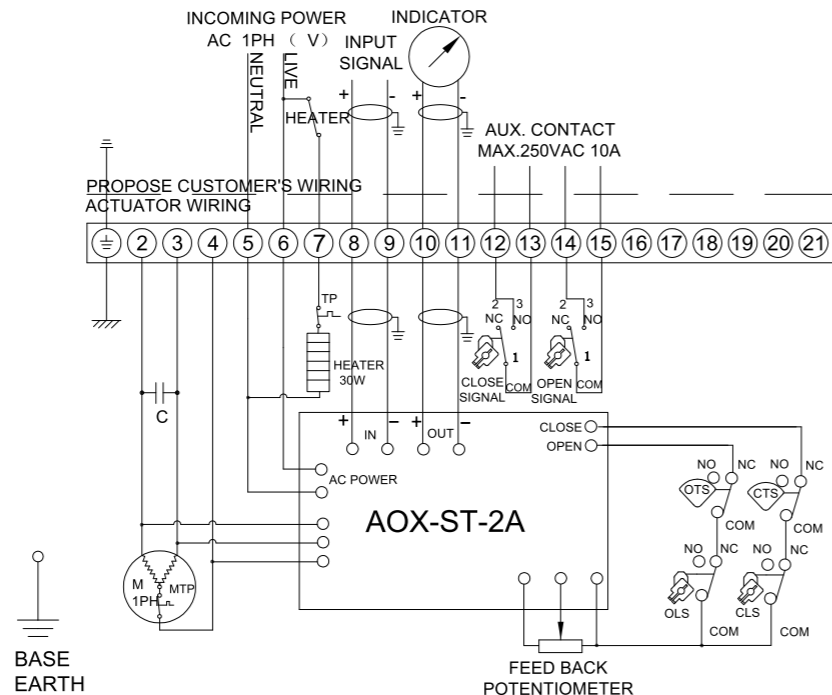
# AOX-Q Electric Actuator Series

## Wiring Diagram

3. AOX-Q-005~010 110/220VAC/50/60Hz, 1Ph (Modulating type) Q-120-10



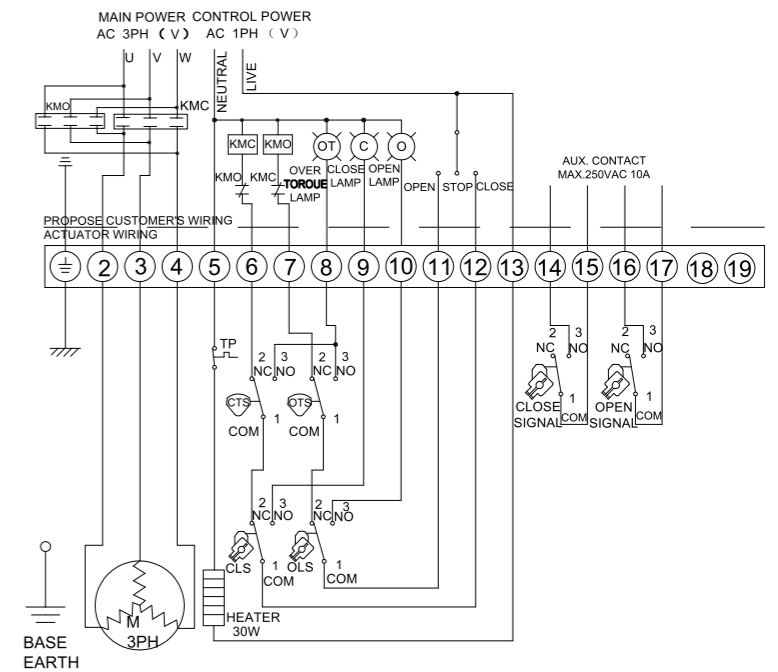
4. AOX-Q-015~600 110/220VAC/50/60Hz, 1Ph (Modulating type) Q-120-20



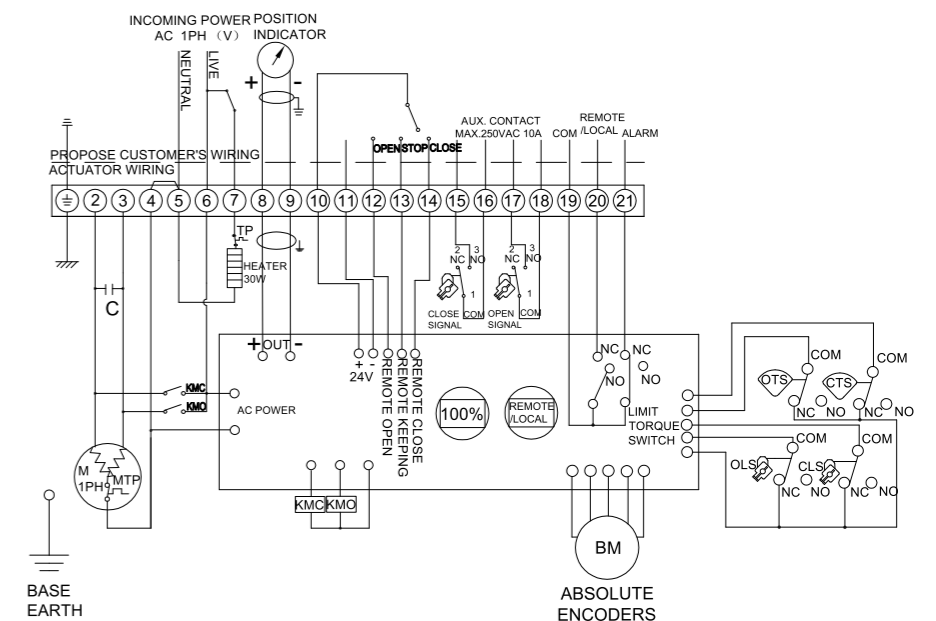
# AOX-Q Electric Actuator Series

## Wiring Diagram

5. AOX-Q-015~600 380/440VAC/50/60Hz, 3Ph (Outer control on/off type) Q-210-20



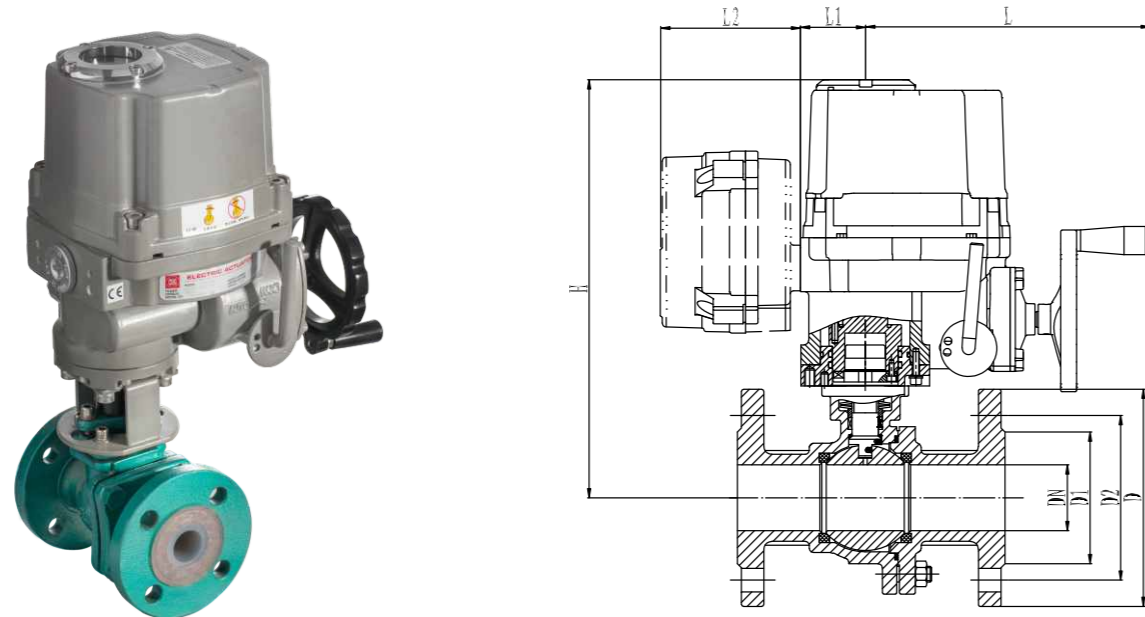
6. AOX-Q-015~600 110/220VAC/50/60Hz, 1Ph (Intelligent control type) Q-130-20





# AOX-Q Electric Actuator Series

Electric Actuator Standard selection guide for valves



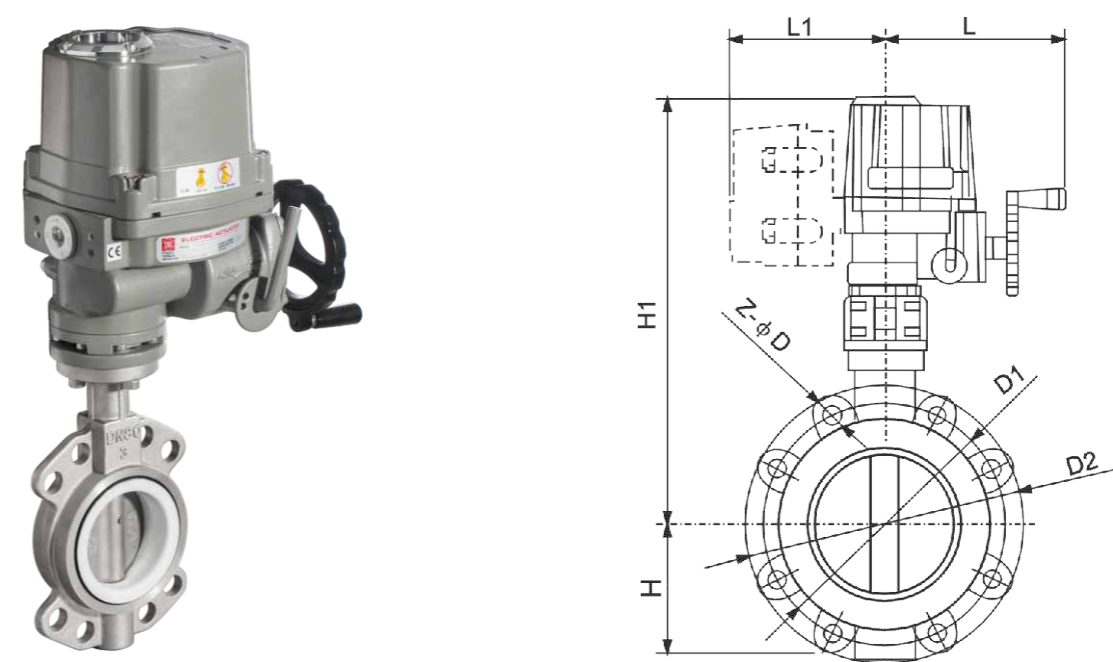
Installation Dimension (mm)

DN(mm)	L3	D	D2	D1	L2	H	L1	Z-d	Optional actuator (normal temperature and pressure)
15	108	95	65	45	138	284	269.5	4-14	AOX-Q-005
20	117	105	75	55	138	284	269.5	4-14	AOX-Q-005
25	127	115	85	65	138	284	269.5	4-14	AOX-Q-005
32	140	135	100	78	138	284	269.5	4-18	AOX-Q-008
40	165	145	110	85	138	284	269.5	4-18	AOX-Q-008
50	178	160	125	100	138	284	269.5	4-18	AOX-Q-008
65	190	180	145	120	138	328	269.5	4-18	AOX-Q-010
80	203	195	160	135	138	380	357	8-18	AOX-Q-015
100	305	215	180	155	138	387	357	8-18	AOX-Q-020
125	256	245	210	185	138	426	358	8-18	AOX-Q-050
150	394	280	240	210	138	458	376	8-23	AOX-Q-080
200	457	335	295	265	138	698	376	12-23	AOX-Q-150
250	533	405	335	320	138	780	376	12-25	AOX-Q-200

Note: the above optional parameter is only for reference, pls take practical situation as standard

# AOX-Q Electric Actuator Series

Electric Actuator Standard selection guide for valves



Installation Dimension (mm)

DN	L	L1	H1	H2	D1	D2	Z-φD	Optional actuator (normal temperature and pressure)
50	216	190	70	412	125	155	4-φ16	AOX-Q-005
65	216	190	76	425	145	175	4-φ16	AOX-Q-005
80	216	190	89	437	160	190	8-φ16	AOX-Q-005
100	216	190	104	452	180	214	8-φ16	AOX-Q-008
125	216	190	120	504	210	252	8-φ16	AOX-Q-010
150	276	221	132	524	240	282	8-φ20	AOX-Q-020
200	276	222	167	607	295	337	8-φ20 12-φ20	AOX-Q-050
250	276	240	202	686	350 355	405	12-φ20 12-φ24	AOX-Q-060
300	276	240	239	714	400 410	460	12-φ20 12-φ24	AOX-Q-080
350	276	240	265	749	460 470	524	16-φ20 16-φ24	AOX-Q-120
400	276	240	297	781	515 525	585	16-φ24 16-φ27	AOX-Q-200

Note: the above optional parameter is only for reference, pls take practical situation as standard