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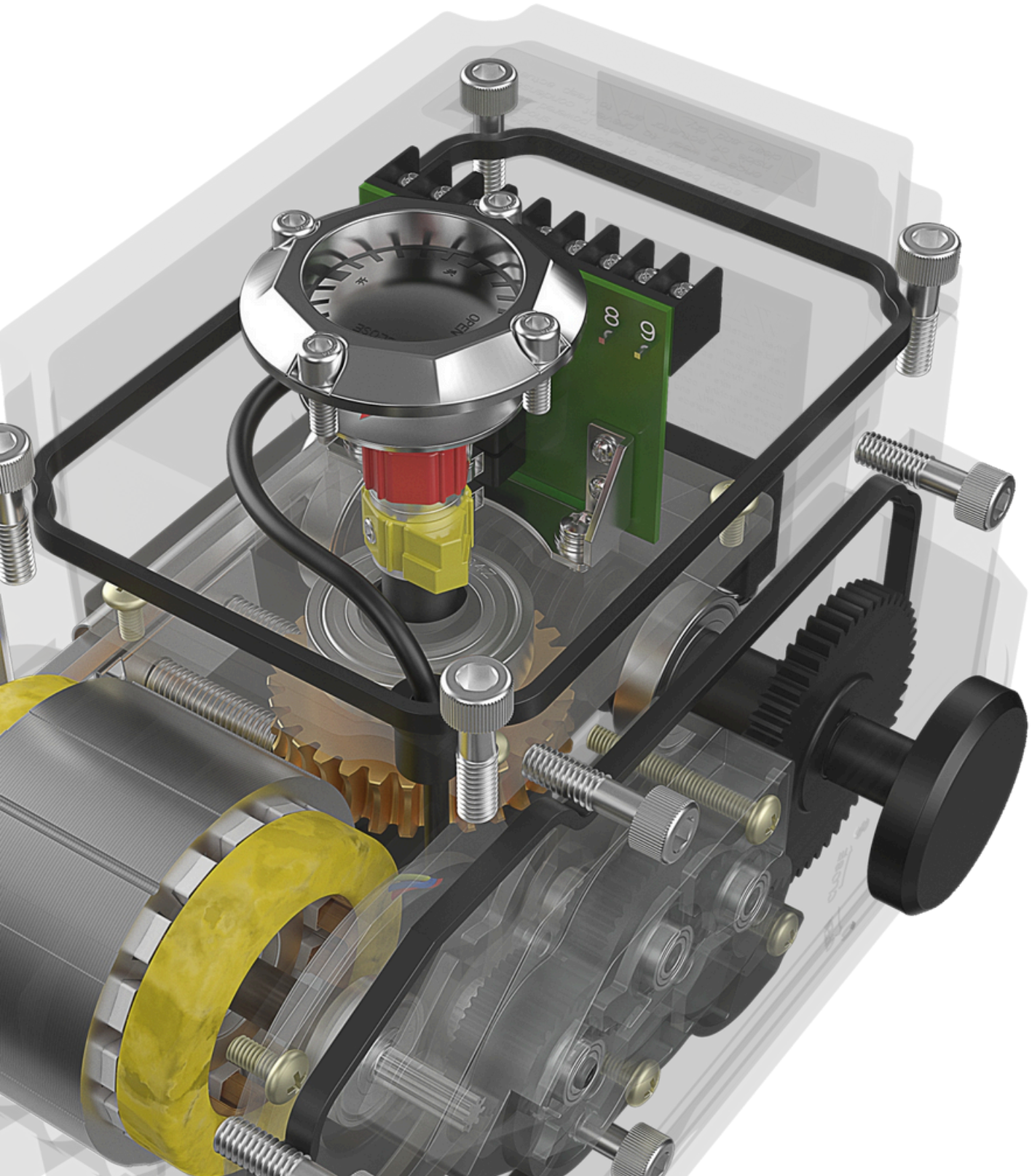
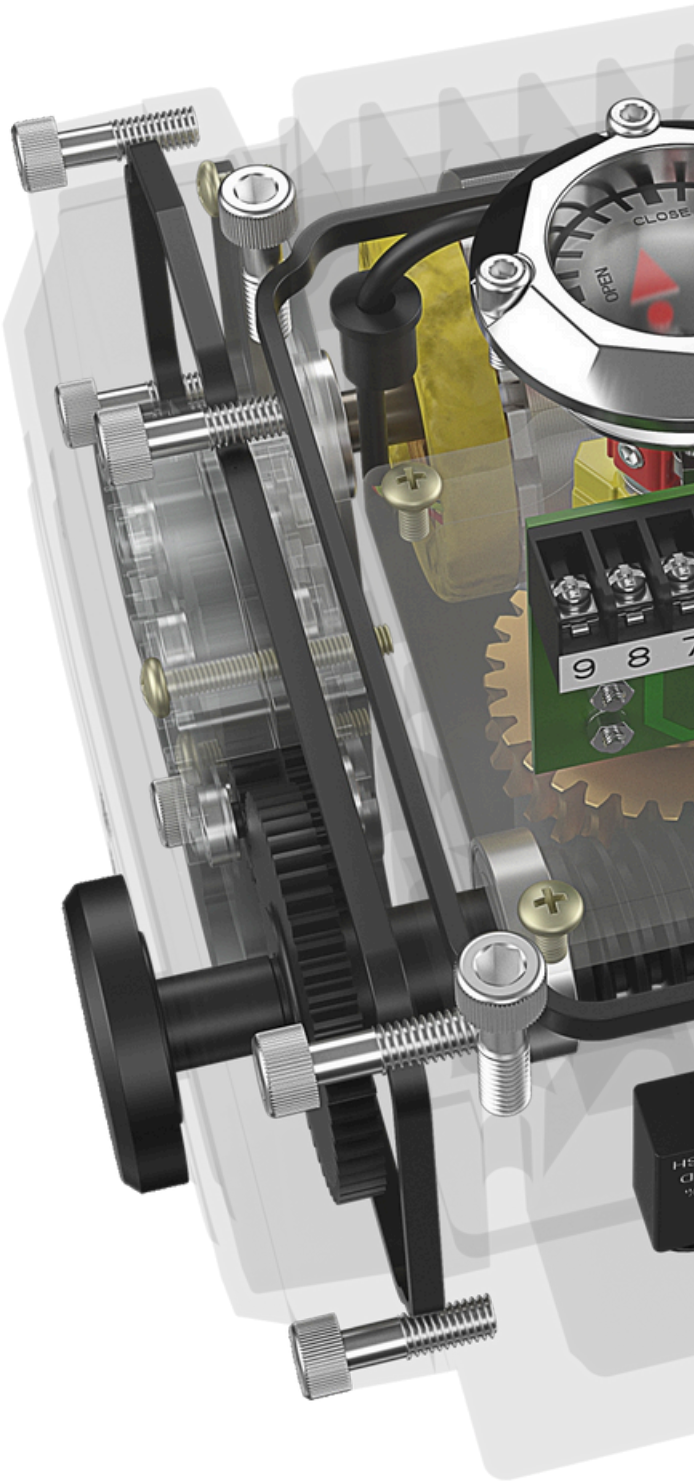


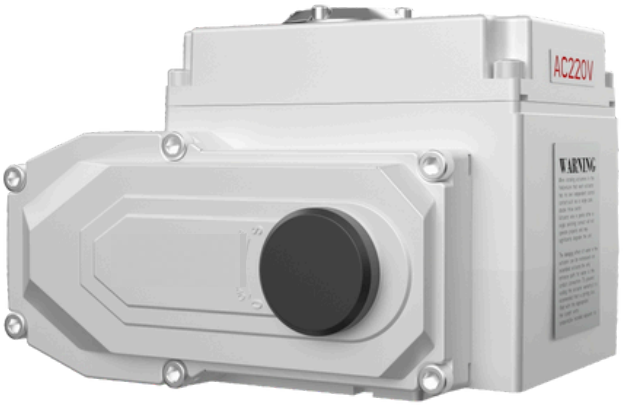
Catalog



VAX Type Electric Actuator

Product Overview

This electric actuator is a new generation product developed by introducing the latest foreign technology. It has a unique design and novel style. It has the characteristics of high intelligence, high protection performance, small size, high integration, long service life, stable performance, etc. It can be operated on site or remotely controlled. It is suitable for controlling valves with a rotation range of 0 to 270 degrees and other similar products. It can meet various requirements of industrial automation control management. It uses DC24V/DC220V DC power supply or AC110V/AC220V/AC380V AC power supply as the driving power supply and 4~20mA current signal as the control signal. It can move the valve to the required position and realize its automatic control. The maximum output torque is 2000Nm. It is widely used in many industries such as petroleum, chemical, metallurgy, water treatment, shipbuilding, papermaking, electrical appliances, printing and dyeing, food processing, pharmaceuticals and building automation systems.



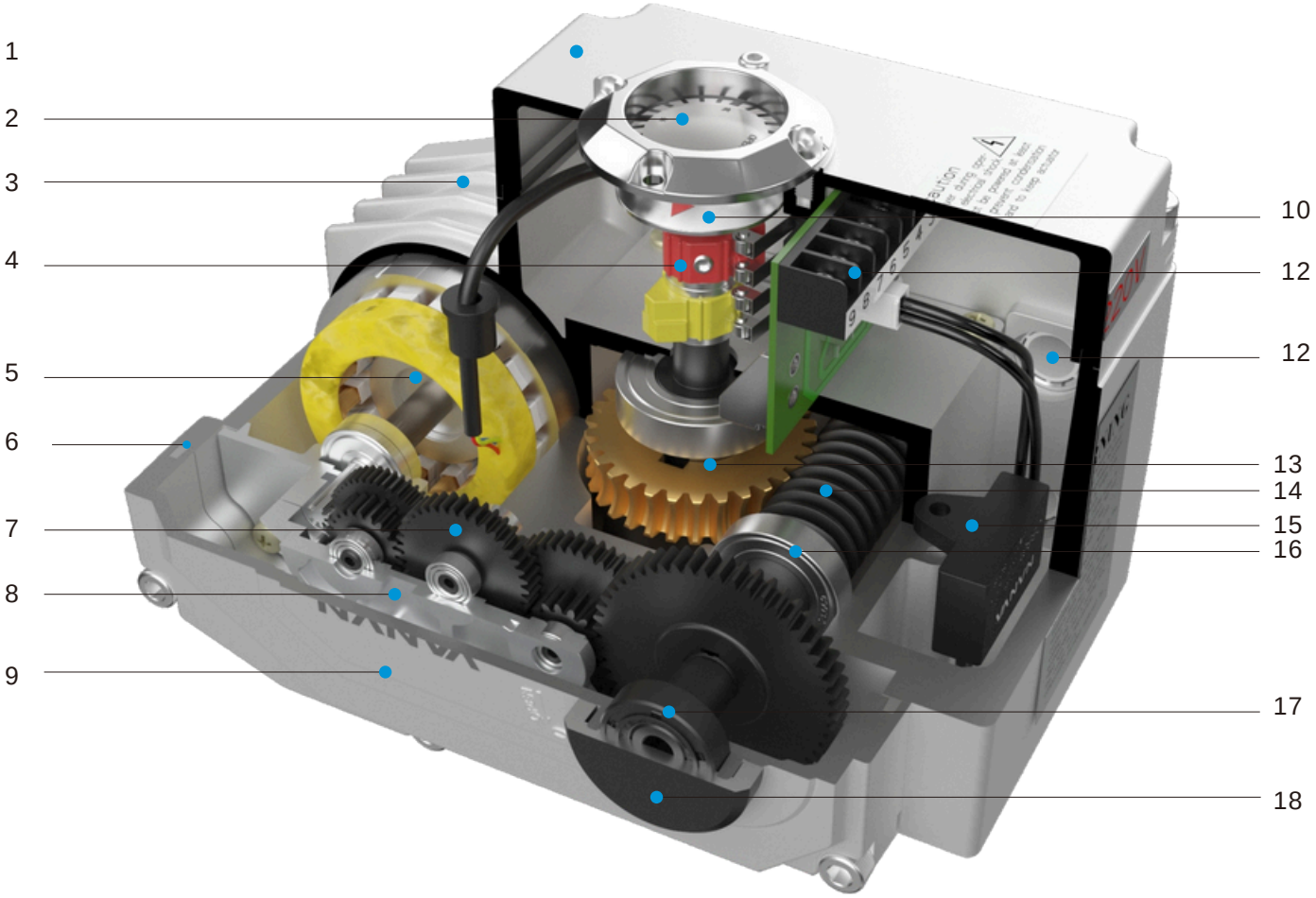
Features

◆Strong applicability: optional switch type, intelligent adjustment type.
◆Small and light: the volume and weight are only about 35% of traditional products.
◆Beautiful and elegant: aluminum alloy die-cast shell, delicate paint surface, and can reduce electromagnetic interference.
◆Reliable performance: key components such as bearings and electrical components are all industry-leading products.
◆Precision and wear-resistant: the turbine output shaft is forged with a special copper alloy with high strength and good wear resistance.
◆Minimal hysteresis: the integrated structure avoids the gap of the connection and has high transmission accuracy.
◆Safety guarantee: passed the 1500V withstand voltage test, F-class insulation motor.
◆Simple matching: can be driven by DC24V/DC220V DC power supply, or AC110V/AC220V/AC380V AC power supply.
◆Easy to use: no need to add oil, no need to check, waterproof and rust-proof, can be installed at any angle.
◆Multiple speeds: full-time 10s, 15s, 30s, 50s, 100s, etc. are available.
◆Manual integration: when the power is cut off or the power fails, the electric actuator can be manually switched on and off.
◆Intelligent CNC: The intelligent control module is integrated into the electric actuator body, no external positioner is required, digital setting, digital adjustment, high precision, automatic diagnosis, one machine with multiple functions.

Precautions

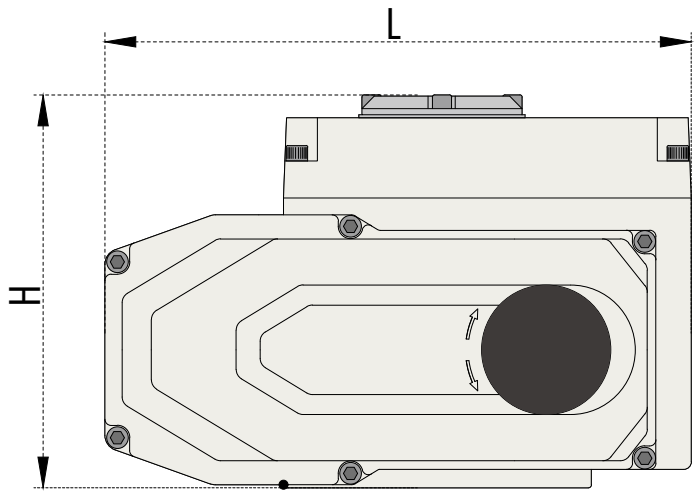
1. Manual operation is prohibited when power is on.
2. The actuator is equipped with an overheat protection device. When the motor temperature exceeds 125℃, the overheat protection device will automatically cut off the motor power supply.
3. A leakage protection device must be installed when using it.
4. Please confirm whether the input voltage and wiring contacts are correct before powering on.
5. The drive power lines of two or more electric actuators cannot be connected in parallel, and the same contact cannot be used to control multiple electric actuators, otherwise it will cause loss of control and motor overheating.
6. The wiring entrance must be sealed with waterproof cable connectors in accordance with the requirements of the instruction manual, otherwise the electric actuator will be damaged due to the entry of water or stains.
7. The intelligent adjustment type must be wired and debugged in accordance with the requirements of the instruction manual to avoid damage.
8. The installation and debugging personnel must have relevant operating qualifications.
9. It is forbidden to use the electric actuator under overload. 10. The manufacturer does not assume any responsibility for improper changes or repairs to the electric device.

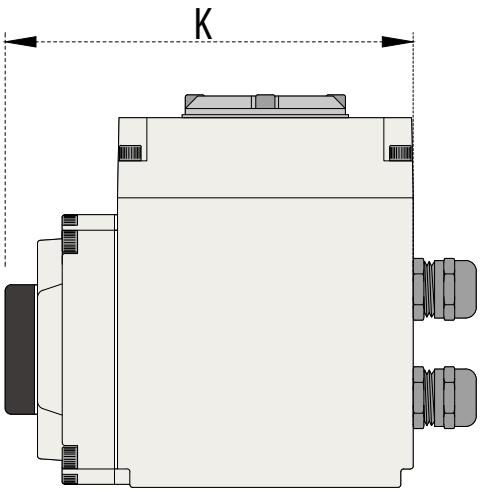
Components And Materials

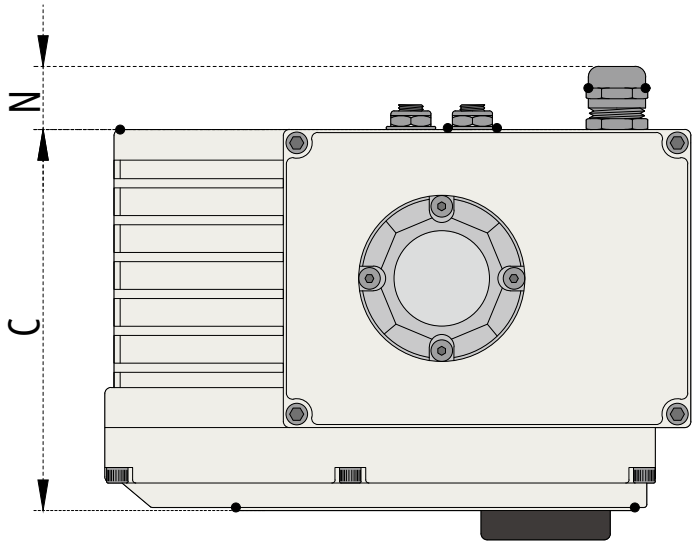


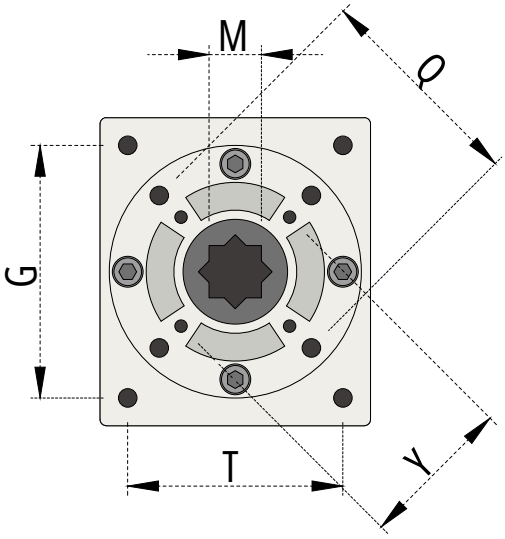
Part Number	Part Name	Material/Features	Part Number	Part Name	Material/Features
1	Upperr Cover	Aluminum Alloy	10	Indicator	Stainless Steel
2	Indicator Window	Plastic	11	Circuit Board	Composite Material
3	Cabinet	Aluminum Alloy	12	Grant's Head	Stainless Steel
4	Travel Stop	Aluminum Alloy	13	Turbine	Copper
5	Motor	Copper Core	14	Worm	Carbon Steel
6	Sealing ring	EPDM	15	Capacitance	Composite Materials
7	Transmission Gear	#40 Chrome Steel	16	Bearing	Chromium Manganese High Carbon Steel
8	Gearbox	Aluminum Alloy	17	Oil Sael	Nitrile Rubber
9	Side Cover	Aluminum Alloy	18	Manul Protective Cover	Rubber

Dimensions





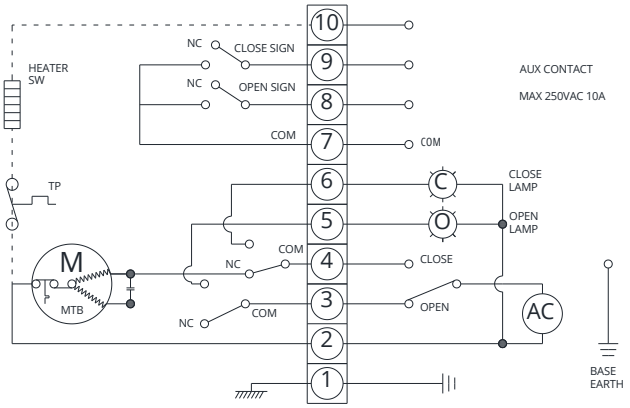




Electric Actuator Model	Dimension code Unit: mm									
	L	H	K	C	N	G	T	Q	Y	M
VAX03	140	118	109	103	25	57(M6)	57(M6)	50(M6)	36(M5)	11
VAX05	166	122	118	110	25	68(M6)	60(M6)	70(M8)	50(M6)	11/14
VAX10	200	128	133	125.5	25	82(M6)	70(M6)	70(M8)	50(M6)	14/17
VAX16	200	128	133	125.5	25	82(M6)	70(M6)	70(M8)	50(M6)	14/17
VAX20	269	155	177	174	25	118(M10)	84(M10)	102(M10)	70(M8)	17/22
VAX60	269	155	177	174	25	118(M10)	84(M10)	102(M10)	70(M8)	17/22
VAX100	309	178	203	200	25	-	-	125(M10)	102(M10)	27/32
VAX200	309	178	203	200	25	-	-	125(M10)	102(M10)	27/32

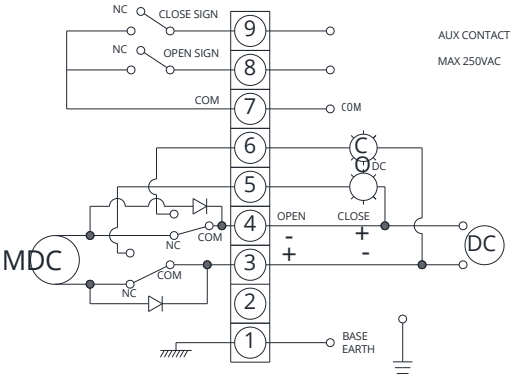
Control Circuit -AC220V

①: Ground wire ②③④: Power supply wiring (② is the common line, ②③ is on when powered on, ②④ is off when powered on.) ⑤⑥: Switch indicator light wiring (②⑤ is powered on when fully on, ②⑥ is powered on when fully off.) ⑦⑧⑨: Switch feedback signal wiring (⑦⑧ is connected when fully on, ⑦⑨ is connected when fully off.) ⑩: Heater wiring (②⑩ is connected, the heater works.)



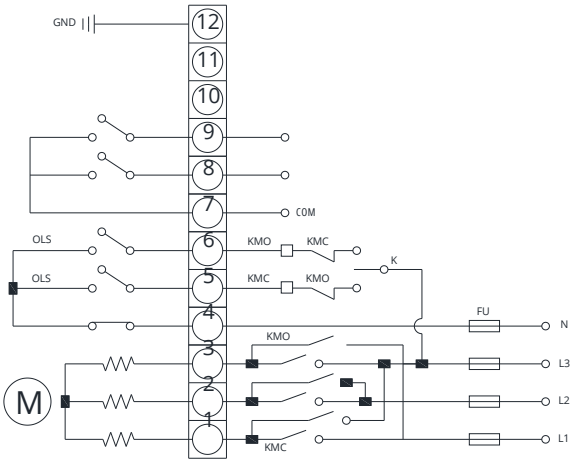
Control Circuit -DC24V

①: Ground wire ②: No wiring ③④: Power supply wiring (③ is on when positive, ④ is off when positive) ⑤⑥: Switch indicator light wiring (④⑤ are powered when fully on, ③⑥ are powered when fully off) ⑦⑧⑨: Switch feedback signal wiring (⑦⑧ are connected when fully on, ⑦⑨ are connected when fully off) ⑩: No wiring

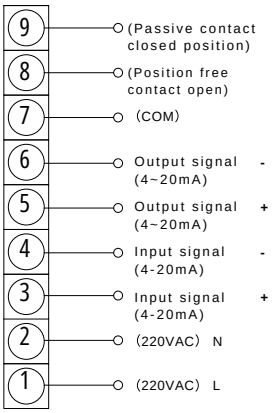


Control Circuit -AC380V

①②③: Connect to three-phase AC power, and use external inverter circuit to realize the forward and reverse rotation of the motor ④: Common point of external control circuit ⑤: "Open" operation control ⑥: "Close" operation control ⑦⑧⑨: Switch feedback signal wiring (⑦⑧ is connected when fully open, and ⑦⑨ is connected when fully closed.) ⑩ 11: No wiring 12: Ground wire



Control Circuit - Regulating Type



①: Connect the power line (L, neutral line) ②: Connect the power line (N, phase line)

③④: Connect the input signal (4~20mA) line, ③ connects to the "+" pole, ④ connects to the "-" pole.

⑤⑥: Connect the output signal (4~20mA) line, ⑤ connects to the "+" pole, ⑥ connects to the "-" pole.

⑦⑧⑨: Switch feedback signal wiring (⑦⑧ is connected when fully open, ⑦⑨ is connected when fully closed.)

Performance Parameters - Adjustable Type

Model	03	05	10/16	20	60	100	200
Optional power supply	DC24V,DC220V,AC24V,AC110V,AC220V,AC380V						
Motor power	8W	15W	25W	40W	90W	150W	250W
Rated current (AC220V)	0.2A	0.24A	0.32A	0.48A	0.92A	1.0A	1.2A
Output torque	40Nm	50Nm	100Nm	200Nm	600Nm	1000Nm	2000Nm
Running time	18S	20S	23S	45S		60S	
Rotation angle	0~270°			0~90°			
Weight	2.35kg	3.26kg	4.6kg	10kg	10.8kg	11.9kg	12.2kg
Input signal	4~20mADC, 1~5VDC, 0~10VDC (others can be selected before delivery)						
Output signal	4~20mADC (others can be selected before delivery)						
Accuracy level	1%						
Hysteresis	less than 0.3%						
Dead zone	0.4%~1.5% adjustable						
Insulation resistance	DC24V: 100MΩ/300VDC, 100MΩ/500VDC						
Withstand voltage level	DC24V: 500VAC/min, 1500VAC/min						
Protection level	IP67						
Ambient temperature	-25℃～60℃ (other temperatures can be customized)						
Installation angle	360°						
Housing material	aluminum alloy precision die casting						
Optional function	Over torque protection, heating dehumidifier, passive contact type						

Performance Parameters-03/05

Model	03A				05A			
Optional power supply	Motor Power	Rated current	Output torque	Running time	Motor Power	Rated current	Output torque	Running time
DC 24V	9W	0.7A	40Nm/ 65Nm	18S	20W	2A	30Nm/ 50Nm	6S/10S
DC 220V		-				0.21A		
AC 24V	7W	-	15Nm/ 30Nm/ 45Nm/ 65Nm	9S/10S	10W	2.2A	15Nm/ 30Nm/ 50Nm	10S/20S /30S
AC 110V		-				0.48A		
AC 220V		0.2A				0.24A		
AC 380V		-				0.15A		
Output shaft	Inner octave: 11×11; Depth: 17				Inner corners: 11×11/14×14; Depth: 15/18			
Rotation angle	0~270°							
Weight	2.35kg				3.26kg			
Signal	Electric shock signal/opening signal/4-20mA							
Insulation resistance	DC 24V: 100M / 300VDC; Others: 100M / 500VDC							
Withstand voltage level	DC 24V: 500VAC/min; others: 1500VAC/min							
Protection level	IP67							
Ambient temperature	-25℃~60℃ (other temperatures can be customized)							
Installation angle	360°							
Housing material	Aluminum alloy die casting							
Optional function	Over torque protection, heating dehumidifier							

Performance parameters - 10/16

Model	10A				16A			
Optional power supply	Motor Power	Rated current	Output torque	Running time	Motor Power	Rated current	Output torque	Running time
DC 24V	40W	2.4A	100Nm	10S	40W	2.4A	150Nm	10S
DC 220V		0.32A				0.32A		
AC 24V	25W/30W	3A	50Nm/ 60Nm/ 100Nm	13S/15S/ 20S/30S	25W/30W	3A	60Nm/ 80Nm/ 100Nm 150Nm	13S/15S/ 20S/30S
AC 110V		0.64A				0.64A		
AC 220V		0.32A				0.32A		
AC 380V		0.19A				0.19A		
Output shaft	Inner octave: 14×14/17×17; Depth: 18/23							
Rotation angle	0~270°							
Weight	4.6kg							
Signal	Electric shock signal/opening signal/4-20mA							
Insulation resistance	DC 24V: 100M / 300VDC; Others: 100M / 500VDC							
Withstand voltage level	DC 24V: 500VAC/min; others: 1500VAC/min							
Protection level	IP67							
Ambient temperature	-25℃~60℃ (other temperatures can be customized)							
Installation angle	360°							
Housing material	Aluminum alloy die casting							
Optional function	Over torque protection, heating dehumidifier							

Performance parameters - 20/60

Model	20A				60A			
Optional power supply	Motor Power	Rated current	Output torque	Running time	Motor Power	Rated current	Output torque	Running time
DC 24V	40W	8A	200Nm	10S	90W	7A	150Nm/ 250Nm/ 300Nm/ 500Nm	9S/15S/ 20S/ 30S/60S
DC 220V		0.35A	80Nm/ 100Nm/ 150Nm/ 200Nm	9S/15S/ 20S/30S /60S		0.9A		
AC 24V		5A				8A		
AC 110V		0.9A				2A		
AC 220V		0.48A				0.92A		
AC 380V		0.25A				0.45A		
Output shaft	Inner corner: 14×14/17×17; Depth: 18/23							
Rotation angle	0~270°							
Weight	10kg				10.8kg			
Signal	Electric shock signal/opening signal/4-20mA							
Insulation resistance	20A- DC 24V/ DC 220V: 500M / 300V DC; Others: 100M / 500V DC							
Withstand voltage level	20A-DC 24V/220V: 100VAC/min; others: 1500VAC/min							
Protection level	IP67							
Ambient temperature	-25℃～60℃ (other temperatures can be customized)							
Installation angle	360°							
Housing material	Aluminum alloy die casting							
Optional function	Over torque protection, heating dehumidifier							

Performance parameters - 100/200

Model	100A				200A			
Optional power supply	Motor Power	Rated current	Output torque	Running time	Motor Power	Rated current	Output torque	Running time
DC 24V	-							
DC 220V								
AC 24V	150W	9A	800Nm/ 1000Nm	30S/50S	250W	9A	2000Nm	100S
AC 110V		2.2A				2.2A		
AC 220V		1.2A				1.2A		
AC 380V		0.48A				0.48A		
Output shaft	Inner corners: 27×27; Depth: 32				Max: 45; Depth: 65			
Rotation angle	0~270°							
Weight	11.9kg				12.2kg			
Signal	Electric shock signal/opening signal/4-20mA							
Insulation resistance	20A- DC 24V/ DC 220V: 500M / 300V DC; Others: 100M / 500V DC							
Withstand voltage level	20A-DC24V/DC220V: 100VAC/min; others: 1500VAC/min							
Protection level	IP67							
Ambient temperature	-25℃～60℃ (other temperatures can be customized)							
Installation angle	360°							
Housing material	Aluminum alloy die casting							
Optional function	Over-torque protection, heating dehumidifier							

Usage requirements

Power supply voltage

●Please select the power supply voltage according to the product nameplate or wiring diagram.

●When the power supply is AC380V, pay attention to the order of the phase lines when wiring, and ensure that the travel switch can correctly control the opening and closing of the valve, otherwise the actuator will be damaged.

●In order to better protect the electric actuator, eliminate circuit short circuits, and reduce accident damage, a circuit breaker can be added to the power input terminal of each electric actuator, and the appropriate fuse can be selected according to the table below:

Model/ Voltage	AC 380V	AC 220V	AC 110V	AC 24V	D C 220V	D C 24V
VAX03	-	0.2A	-	-	-	0.7A
VAX05	2A	2A	3A	5A	2A	5A
VAX10	2A	3A	5A	7A	3A	7A
VAX20/VAX60	3A/5A	5A/7A	7A/10A	10A/11A	5A/7A	15A
VAX100/VAX200	5A	7A	10A	20A	20A	-

Requirements for the installation environment

Indoor environment:

1. Non-explosion-proof products should not be installed indoors with explosive gases.
2. When installed in places with rain and splashing of raw materials, please install a protective cover to cover the entire machine.
3. Please reserve space for wiring and manual operation.

Outdoor environment:

1. Please install a protective cover to cover the entire machine to avoid rain and direct sunlight.
2. Please reserve space for wiring and manual operation.

Note: Direct sunlight outdoors can cause high temperatures, accelerate the aging of components, and even fail; rain can accelerate the aging of rubber pads.

Ambient temperature and fluid temperature conditions

1. The ambient temperature should be within the range of -25℃～60℃.
2. When the fluid temperature is high, the actuator should be installed on the valve using a high-temperature connection frame and connector.

Note: When used in an environment below zero or with a large temperature difference, a model with a dehumidification heater to prevent condensation should be used.

Requirements for on-site cable and wire tube installation

1. When using wire tubes, please install according to Figure (1):

① The outer diameter of the wire tube is Φ8 to Φ12; ② Waterproof measures must be fully taken;

Figure (1)

③ The actuator mechanism should be higher than the wire tube, and the water droplets in the wire tube should not flow into the actuator to ensure safety.

2. When using cables, the outer diameter is Φ8~Φ12. As shown in Figure (2), cables that are not compatible with waterproof cable connectors are not allowed to enter the actuator to damage all internal parts.

3. In principle, shielded wires should be used for signal wires, and they should be wired separately from power wires.

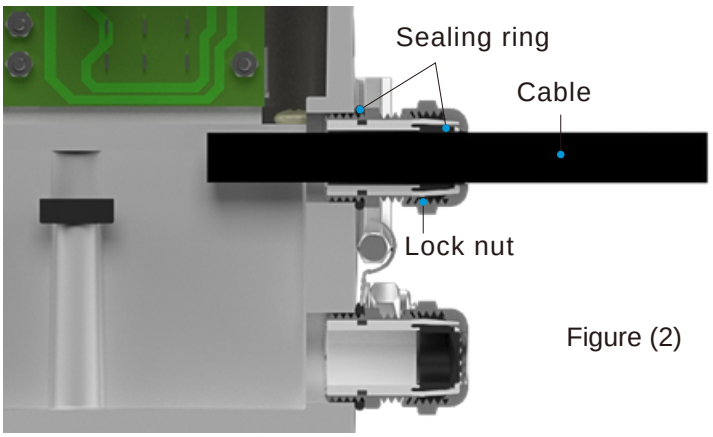


Figure (2)

Power supply requirements

1. Provide the corresponding on-site power supply according to the power supply type of the ordered model.
2. For the on-site power supply, the voltage should meet the following requirements:

AC380V±1 0 % 50/60 H z AC220V±10% 50/60Hz AC110V±10% 50/60Hz A C24V±10%5 0 /60Hz D C 2 4V±5%

Valve Installation

1. Turn the valve manually to confirm that there is no abnormality, and turn the valve to the fully closed position.
2. Lightly fix the bracket to the valve with bolts.
3. Turn the handle of the electric actuator to the fully closed position (pointer CLOSE, on the closing scale line).
4. Place the electric actuator on the bracket, fix the valve shaft and the output shaft of the electric actuator with a coupling, and lightly tighten the bracket with bolts and nuts.
5. Check the coaxiality of the output shaft of the electric actuator and the valve shaft to ensure that the error is ≤0.2mm, and tighten the bolts and nuts on the bracket.
6. Turn the manual mechanism of the electric actuator by hand to ensure that there is no eccentricity, no bending, no jamming, and smooth rotation. Check whether the valve can be fully opened and fully closed within the opening indication range of the electric actuator.

Note: Do not use too much force, otherwise it will cause the electric actuator to overtravel and cause damage.

During installation, make sure that the switch of the electric actuator is consistent with the switch of the valve.

The flange at the bottom of the actuator complies with the ISO05211 standard. If the valve connected to it also complies with this standard, it can be directly connected (as shown in Figure (4)); if it does not meet this standard, an additional bracket connection is required (as shown in Figure (3)).

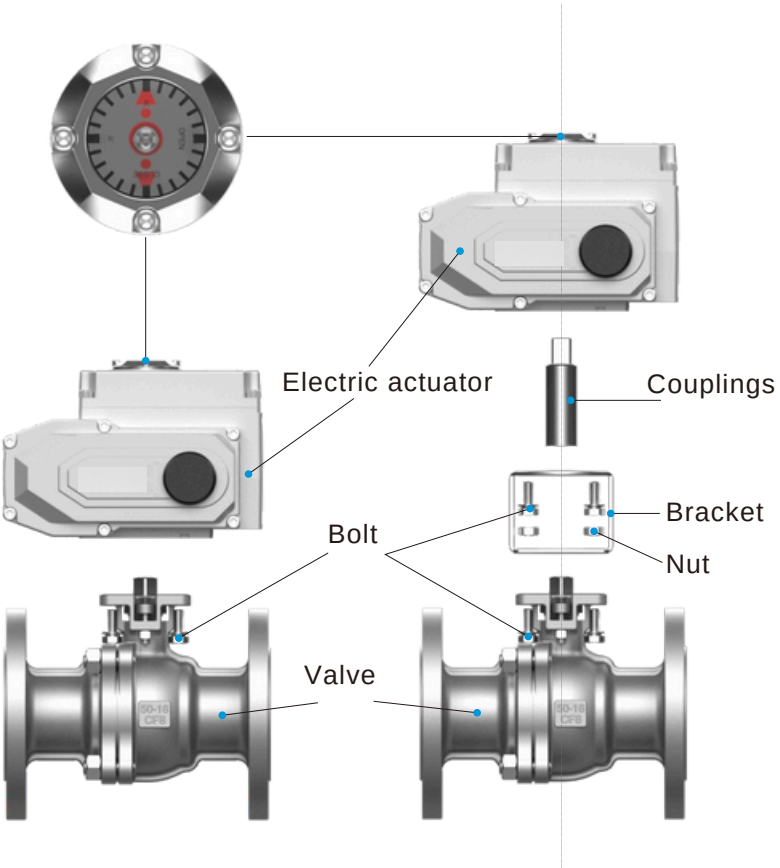


Figure (4)
Figure (3)

Machine Debugging

Electrical Limit Adjustment

1. Before adjusting the electrical limit, loosen the adjustment bolt of the mechanical limit, wait until the electrical limit is adjusted, and then re-fix the mechanical limit to prevent the machine from getting stuck.

2. Turn the manual mechanism of the electric actuator to move the valve to the fully closed/fully open position, then loosen the fastening bolt of the travel stop, turn the travel stop (red for close, yellow for open), adjust it to the position that just presses down the micro switch, and then tighten the fastening bolt of the travel stop.

Note: ① Manual operation is strictly prohibited when power is on.

② When adjusting the electric actuator with a rotation angle of 0°~90°, the rotation angle cannot be excessively adjusted or arbitrarily enlarged.

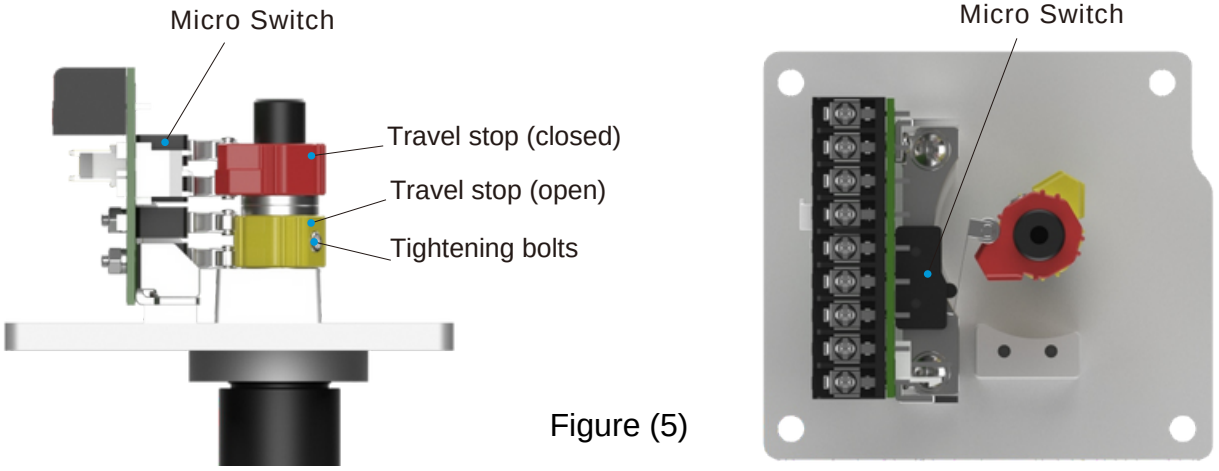


Figure (5)

Mechanical Limit Adjustment

1. Turn the manual mechanism of the electric actuator to the fully closed position (a "click" sound will be heard when the micro switch is actuated).

2. Loosen the mechanical limit fastening nut, rotate the mechanical limit bolt clockwise, stop rotating when it hits the limit shaft inside, then rotate the mechanical limit bolt counterclockwise for two turns, and tighten the mechanical limit fastening nut.

3. The same method can be used to adjust the mechanical limit of the fully open position.

Note: The electrical limit and mechanical limit positions of the electric actuator must meet the requirements of Figure (7). If the mechanical limit is ahead of or heavier than the electrical limit, the electric actuator motor will be blocked, heated, or even burned out.

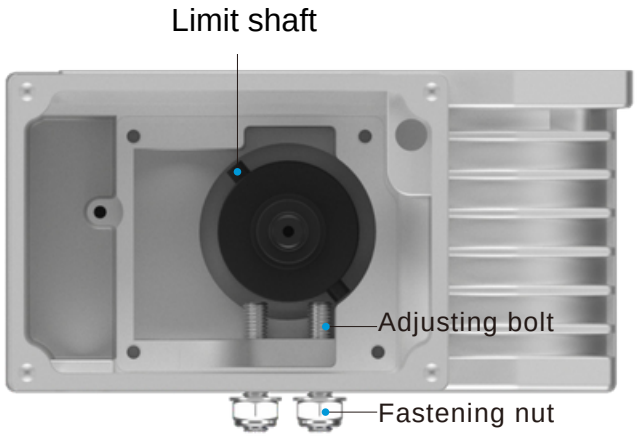


Figure (6)

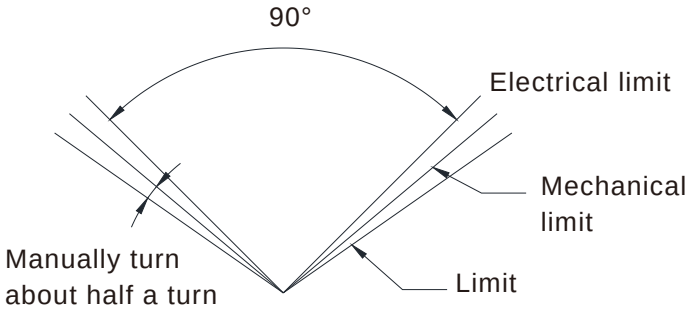


Figure (7)

Electrical limit adjustment

1. The resistance value of the potentiometer is: 1K (5K).

2. Turn the manual mechanism of the electric actuator to the fully closed position of the valve gate.

3. Loosen the bolts of the opening gear wheel, turn the opening gear wheel, adjust the potentiometer, and use a multimeter to measure the resistance value between the 4~5 terminals. Make the resistance value between the 4~5 terminals reach about 10, and tighten the bolts of the opening gear wheel. (If it is an adjustable seven-wire connector, please measure the resistance value of the corresponding RV and RS jacks)

Note: You can also directly loosen the potentiometer to adjust it, but when fixing it, please pay attention to the fit between the potentiometer gear wheel and the opening gear wheel. The gap cannot be too large or too tight, otherwise it will directly affect the accuracy of the actuator.

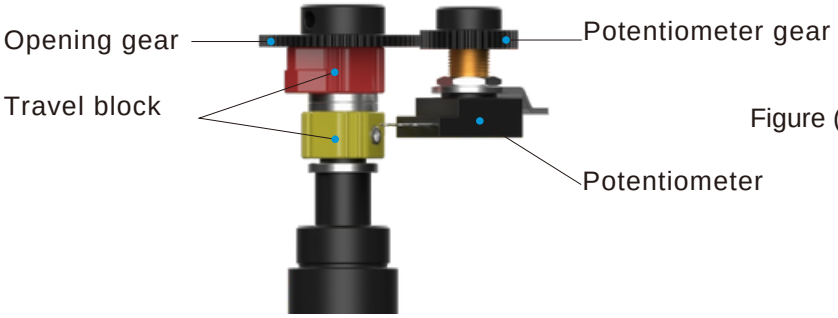
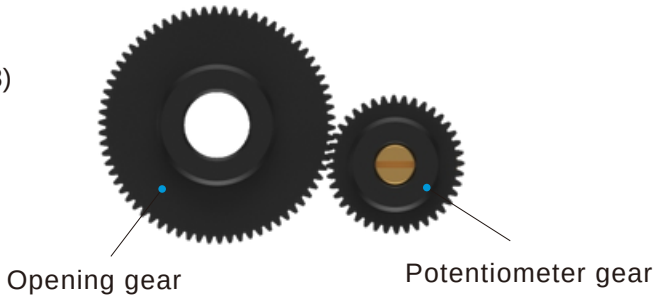


Figure (8)



Adjustment type

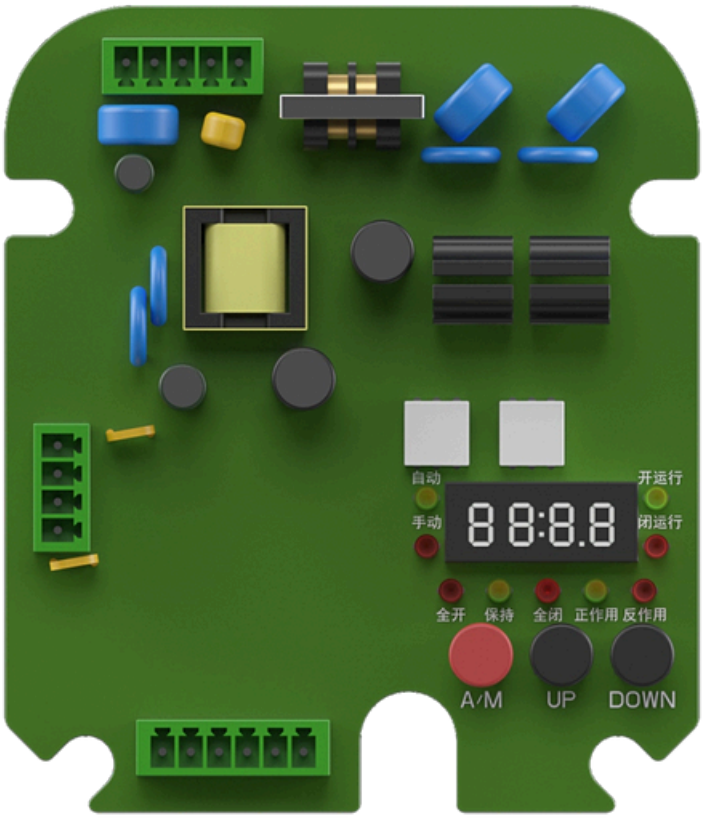


Figure (9)

Ⅰ. Operation method

1. Manual (local) and automatic (remote) control conversion:

Press the "A/M" key to switch between manual (local) and automatic (remote) control; "Manual/Automatic" status indicator light indication: red for manual (local) control mode, green for automatic (remote) control mode.

2. Manual (local) operation method: Press the "+" or "-" button in manual state, and the positioner can control the "open" or "close" of the valve.

3. Automatic (remote) operation method:

① In automatic state, the operation of the actuator is controlled by receiving a remote 4~20mA proportional control signal.

② Press the "+" key, the positioner digital tube displays the input set valve position value.

③ Press the "-" key, the positioner digital tube displays the current module temperature value.

4. Enter parameter setting operation method:

Press and hold the "A/M" key for about 2 seconds, and the positioner digital tube displays flashing numbers. (Press the "+" or "-" key to modify the value of the "P" parameter, and press "A/M" to confirm and enter the corresponding parameter setting.)

Ⅱ. Zero and full position calibration

1. Manual (local) calibration method:

① First enter manual calibration through the P=3.1 parameter, at this time the "manual/automatic" status indicator lights up at the same time.

② Secondly, calibrate the zero position: At this time, the digital tube displays the closed position "uL" value. By pressing the "+" or "-" key, the electric actuator will operate in the "open" or "closed" direction accordingly. At the same time, the actual valve position opening value displayed will gradually increase or decrease accordingly. When it reaches the expected zero position (usually set at the fully closed position), press the "A/M" key to confirm the zero position "uL" parameter value, and enter the "uH" parameter at the same time.

③ Finally, calibrate the full position: The digital tube displays the "uH" value and enters the full position parameter calibration. Similarly, press "+" or "-" to set it to the expected full position (usually set at the fully open position), press the "A/M" key to confirm the full position "uH" parameter value and complete the manual calibration procedure.

2. Automatic (remote) calibration method: Manual (local) operation, make the valve reach the half-open/half-closed state, press the "+" and "-" keys for 3 seconds at the same time, and start the automatic calibration of zero and full position procedures. The calibration process does not require human intervention. After the calibration is completed, the positioner will automatically save and return to the state before the calibration is started. (Note: This method requires the electric actuator to have an electric limit switch.)

III. Input current calibration

1. First, pass P = 11.1 to enter the "iL" parameter.

2. Secondly, calibrate the "iL" parameter (calibrate the input current zero point): During calibration, it is necessary to input a zero point signal of 4mA. After stabilization, press the "A/M" key to confirm, and then enter the "iH" parameter.

3. Finally calibrate the "iH" parameter (calibrate the input current full point): When calibrating, you need to input a full-point signal of 20mA. After it stabilizes, press the "A/M" key to confirm. (The above operations must ensure the stability of the input signal)

Note: ● This operation is generally not required after leaving the factory. If necessary, please use it under the guidance of an engineer.

● When calibrating the input current, a signal source with an output capacity of 4~40mA is required.

IV. Output current calibration

1. First, enter the "oL" parameter through P=1.1.

2. Then calibrate the "oL" parameter (calibrate the output current zero value): press the "+" or "-" key to modify the value of "oL" so that the output current = 4mA, press the "A/M" key to confirm,

And enter the "oH" parameter.

3. Then calibrate the "oH" parameter (calibrate the full value of the output current): press the "+" or "-" key to modify the value of "oH" so that the output current = 20mA, press the "A/M" key to confirm, and enter the "t" parameter for the internal alarm temperature.

4. Finally enter the "t" parameter (internal alarm temperature): press the "+" or "-" key to modify the value of "t", generally set to 70~80, press the "A/M" key to confirm, and return to the "P" parameter.

Note: ● This operation is generally not required after leaving the factory. If necessary, please use it under the guidance of an engineer.

● When calibrating the output current, an ammeter with an input range of 4~20mA is required.

Ⅴ. Other parameter settings

1. Pass P=2.1 to enter the "Eb" parameter.

2. Calibrate the "Eb" parameter (electronic brake): Press the "+" or "-" key to modify the "Eb" value, "1" to use electronic braking, "0" to cancel electronic braking, press the "A/M" key to confirm, and enter the "Ac" parameter.

3. Calibrate the "Ac" parameter (positive and negative action): Press the "+" or "-" key to modify the "Ac" value, "1" negative action mode, "0" positive action mode, press the "A/M" key to confirm, and enter the "I" parameter.

4. Calibrate the "I" parameter (interrupt signal mode): Press the "+" or "-" key to modify the "I" value, "1" open action, "2" no action, "3" closed action, press the "A/M" key to confirm, and enter the "cL" parameter.

5. Calibrate the “cL” parameter (lower limit value of electronic limit): Press the “+” or “-” key to modify the “cL” value, the default is “0”, press the “ A/M” key to confirm, and enter the “cH” parameter.

6. Calibrate the “cH” parameter (upper limit value of electronic limit): Press the “+” or “-” key to modify the “cH” value, the default is “100”, press the “A/M” key to confirm, and enter the “d” parameter.

6. Calibrate the “d” parameter (control accuracy value): Press the “+” or “-” key to modify the “d” value, the default is “0.4”, press the “A/M” key to confirm, and return to the “P” parameter.

Ⅵ. Exit method

1. Save exit method: Press the "+" or "-" key to modify the "P" value to "5.0", press the "A/M" key to confirm, the positioner automatically saves and exits the setting state.

2. No save exit method: Press the "+" or "-" key to modify the "P" value to "4.9", press the "A/M" key to confirm, the positioner exits the setting state.

Ⅶ. Restore factory settings

Enter the parameter setting, make P=20.1, press the "A/M" key to confirm, the positioner will automatically restore the input/output current calibration value, other parameter settings, automatically calibrate the motor zero and full position and save and exit.

Ⅷ. Error code table

Error Code	Meaning	Solution
Errr	The motor or potentiometer is not properly connected, and the upper and lower directions are blocked at the same time.	Check if the motor wiring and potentiometer wiring are loose.
Err2	Overtemperature alarm in the machine	The temperature of the equipment or the machine is too high
Err3	Opening direction is blocked	Take cooling measures.
Err4	Closed direction is blocked	Check the mechanical part of the valve or electric actuator.
Err5	Motor drive is overloaded	Check the mechanical part of the valve or electric actuator.
Err6	The given current is too small	The manufacturer retains the "iL" value and increases the given signal to 4mA.

Err7	The given current is too large.	“iH” value, reduce the given signal to 20mA.
Err8	The valve position is smaller than the lower limit.	Check “cL” value to 0.00%.
Err9	The valve position is larger than the upper limit.	Check “cH” value to 100.0%.
Err10	The difference between zero and full stroke is too small.	The running stroke difference is too small. Recalibrate the valve zero and full position.

Selection Suggestions

Product Model	Output torque	Action Time	Power Supply	Available ball valve soft port diameter	Available butterfly valve soft port diameter
VAX03	40Nm	9s/10s/18s	DC 24V/ AC 24V/ AC 110V/ AC 220V/ AC 380V	DN10-DN20	DN32-DN65
VAX05	50Nm	6s/10s/20s/30s		DN15-DN40	DN32-DN80
VAX10	100Nm	10s/13s/15s/20s/30s		DN25-DN50	DN80-DN125
VAX20	200Nm	9s/15s/20s/30s/60s		DN50-DN80	DN125-DN250
VAX60	500Nm	9s/15s/20s/30s/60s		DN50-DN125	DN125-DN300
VAX100	1000Nm	30s/50s	AC24V/AC110V/AC 220V/ AC 380V	DN65-DN150	DN125-DN350
VAX200	2000Nm	100s		DN65-DN250	DN125-DN400

Note: Due to the wide variety of valves, the actual working torque of valves of the same specifications and models from different manufacturers and in different usage environments is also different. Therefore, it is recommended that when selecting the electric actuator model, the working torque of the valve should be 60% to 80% of the rated torque of the actuator.

Use and Maintenance

Ⅰ. Instructions for use

Note: This product has been fully debugged and tested before leaving the factory. When installing and connecting the product to the valve, the valve may not be fully closed or fully opened due to reasons such as the valve coupling, and it is necessary to readjust it. The following steps should be followed when adjusting:

1. Connect and install the electric actuator to the valve correctly.

2. Manual test run: (Note: When operating manually, the power supply must be cut off first.) Remove the dust plug on the front cover, insert the included hexagonal wrench into the hexagonal hole of the manual mechanism, and turn it clockwise. The valve opening should decrease. When the valve is in the fully closed position, observe whether the closing direction travel switch is actuated (a "click" sound will be heard when the switch is actuated). Turn the wrench again to check whether the mechanical stopper touches the adjusting bolt; turn counterclockwise, the valve opening should increase. In the same way, check the opening direction travel switch and the mechanical stopper; after the manual operation is completed, plug in the dust plug.

3. Electric test run:

① Remove the line inlet cover and connect the wires correctly according to the circuit diagram.

② Before power-on test run, first use manual operation to check whether the angles of the opening gauge and the valve (fully open, fully closed) are consistent.

③ Check whether the wiring is correct. At the same time, you must first use the external switch to confirm that the actuator and valve are working normally. After confirmation, power on the operation.

Note: 1. Check the wiring diagram to see if the power supply, input, and output signals are correct.

2. Try not to change the internal wiring.

3. If the power supply is three-phase, check whether the rotation direction is correct (clockwise for closing, counterclockwise for opening); manually put the actuator in the middle position, then power on and input the opening command; if the actuator runs to the open direction and stops after touching the limit switch, it means that the wiring is correct.

4. If the actuator runs in the opposite direction, any two of the three-phase power lines must be swapped.

Troubleshooting

Fault Phenomenon	Check Items	Solution
Motor does not rotate	No power supply connected	Connect the power supply
	The power supply voltage is incorrect or too low	Check if the power supply voltage is normal
	The wire is broken, or the wire is disconnected from the terminal	Connect the line, connect correctly and tighten the terminal
	Overheat protector action (whether the ambient temperature is too high, whether the valve is stuck).	Lower the ambient temperature and manually check if the valve is open and closed normally
		Reduce the frequency of use
		Comply with overload
	The travel switch has been activated.	Adjust the travel block
	The capacitor for the motor phase advance is damaged.	Contact the manufacturer to replace the capacitor
	The diode of the DC electric actuator is broken.	Contact the manufacturer to replace the diode
The switch indicator light is off	The indicator light is broken.	Replace the indicator light
	The travel switch is not operating properly.	Replace the travel switch
The motor cannot stop when it reaches the limit position	The travel switch is not operating properly	Replace the travel switch
	The phase sequence of the three-phase AC power supply is reversed.	Adjust the phase sequence of the three-phase AC power supply
	The travel switch is connected to the wrong control circuit.	Adjust the wiring
	The mechanical limit is ahead of the electrical limit.	Re-adjust the mechanical block according to the adjustment instructions of the mechanical limit block.
	The diode of the DC electric actuator is broken.	Contact the manufacturer to replace the diode
Water ingress into actuator	The electric sight glass is broken.	Please contact the manufacturer for repair.
	The bolts of the electric cover, the wire cover, the front cover, etc. are not tightened properly.	
	The wire cable is not standardized or the wire inlet is not waterproofed according to the instructions.	