



EA

Electric Actuator

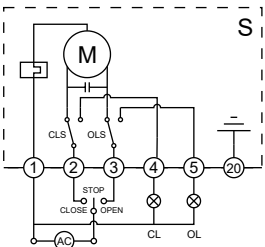
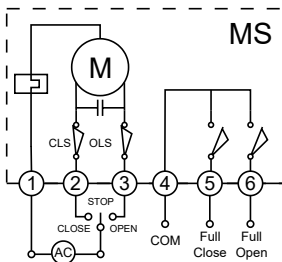
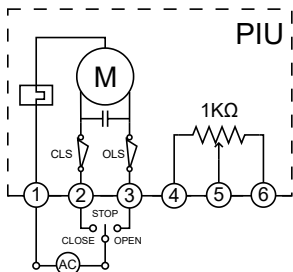
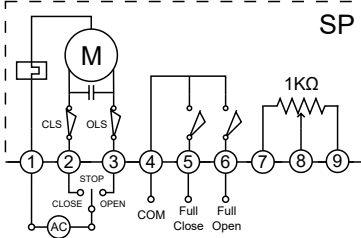
Instruction Manual

- Please read this instruction manual carefully before installation and use.
- Retain this manual for future reference.
- Ensure proper use of the product by thoroughly understanding the contents of this manual.

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Electrical Wiring Diagram

Control Circuit	Model Code	Circuit Diagram
Switching Action Mode: Switching operations (open/close) are achieved via AC switching signals, and a set of active position signals indicating fully open/fully closed status are output.	S	 The diagram for Model S shows a motor (M) connected to a power source (AC) through a switch. The control circuit includes a stop button (STOP) and two position switches (CLS and OLS). The output signals are labeled 1, 2, 3, 4, 5, and 20. The motor is connected to the power source through a switch. The control circuit includes a stop button (STOP) and two position switches (CLS and OLS). The output signals are labeled 1, 2, 3, 4, 5, and 20.
Switching Action Mode: Outputs passive contact signals. Structure: Equipped with two intermediate position switches.	MS	 The diagram for Model MS shows a motor (M) connected to a power source (AC) through a switch. The control circuit includes a stop button (STOP) and two position switches (CLS and OLS). The output signals are labeled 1, 2, 3, 4, 5, and 6. The motor is connected to the power source through a switch. The control circuit includes a stop button (STOP) and two position switches (CLS and OLS). The output signals are labeled 1, 2, 3, 4, 5, and 6.
Switching Action Mode: Outputs 0~1000Ω feedback signal. Structure: Equipped with 500Ω or 1kΩ potentiometer.	PIU	 The diagram for Model PIU shows a motor (M) connected to a power source (AC) through a switch. The control circuit includes a stop button (STOP) and two position switches (CLS and OLS). The output signals are labeled 1, 2, 3, 4, 5, and 6. A 1kΩ potentiometer is connected to the output signals. The motor is connected to the power source through a switch. The control circuit includes a stop button (STOP) and two position switches (CLS and OLS). The output signals are labeled 1, 2, 3, 4, 5, and 6.
Switching Action Mode: Controls valve opening angle via switching circuit, corresponding to potentiometer resistance value, while enabling intermediate position control function. Structure: Integrated with potentiometer and intermediate position switch.	SP	 The diagram for Model SP shows a motor (M) connected to a power source (AC) through a switch. The control circuit includes a stop button (STOP) and two position switches (CLS and OLS). The output signals are labeled 1, 2, 3, 4, 5, 6, 7, 8, and 9. A 1kΩ potentiometer is connected to the output signals. The motor is connected to the power source through a switch. The control circuit includes a stop button (STOP) and two position switches (CLS and OLS). The output signals are labeled 1, 2, 3, 4, 5, 6, 7, 8, and 9.

Electrical Wiring Diagram

Control Circuit	Model Code	Circuit Diagram
Switching Action Mode: Outputs 4~20mA valve position feedback signal. Structure: Equipped with 1kΩ potentiometer and R/I converter.	CPT	
Regulating Action Mode: Accepts 4~20mA control signal input and outputs 4~20mA valve position feedback signal. Structure: Integrated with 1kΩ potentiometer and control module (servo amplifier).	PCU	
DC switching signals are output from the circuit via an external DC power supply to control the opening/closing program, and a set of passive contact signals corresponding to fully open/fully closed positions are provided.	G	
Three-phase AC switching signals are output through an external three-phase power phase-reversing circuit to control opening/closing operations, accompanied by a set of passive contact signals for fully open/fully closed position indication.	H	

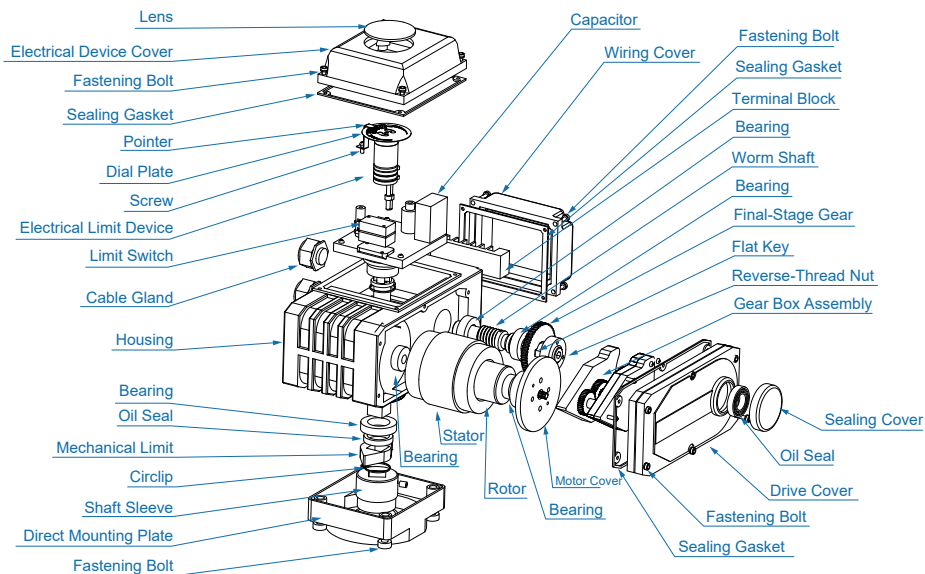
EA Series Performance Parameters

Model		EA-50	EA-100	EA-200	EA-400	EA-600	EA-1000	EA-1600	EA-2500
Output Torque		50N·m	100N·m	200N·m	400N·m	600N·m	1000N·m	1600N·m	2500N·m
Recommended Compatible Valve Bodies	Ball Valve	DN8-32	DN40-50	DN65-80	DN100	DN125-150	DN200-250	DN300	DN350-400
	Butterfly Valve	DN40-65	DN80-100	DN125	DN150-200	DN250	DN300	DN350-450	DN500-600
Actuation Time		15S/30S	15S/30S	15S/30S	30S	45S	30S	48S	60S/75S
Rotation Angle		0-90° 0-360°	0-90° 0-360°	0-90°	0-90°	0-90°	0-90°	0-90°	0-90°
Motor Power	AC220V	10W	25W	40W	90W	90W	210W	210W	220W
	AC380V	6W	15W	30W	40W	40W	300W	300W	320W
	DC24V	13W	25W	35W	70W	70W			
	AC110V	10W	25W	40W	90W	90W	210W	210W	220W
Rated Current	AC220V	0.16A	0.32A	0.35A	0.54A	0.64A	0.96A	0.98A	1.03A
	AC380V	0.07A	0.10A	0.15A	0.29A	0.29A	0.45A	0.46A	0.48A
	DC24V	1.28A	2.03A	3.57A	5.13A	6.04A			
	AC110V	0.24A	0.56A	0.69A	1.12A	1.20A	1.93A	1.75A	1.75A
Motor Lifespan	AC220V/380V	S2 Duty Cycle, Lifespan ≥ 100,000 Hours							
	DC24V	Lifespan: 600 Hours, Maximum Limit: 2000 Hours							
Overall weight		2.5kg	3.5kg	8kg	8.5kg	9kg	20kg	21kg	22kg
Power supply		AC 110V, AC 220V, AC 380V, DC 24V, DC 220V (optional)							
Accuracy		Hysteresis ≤ 0.5% Dead band ≤ 0.5% Feedback error ≤ 0.5%							
Insulation resistance		≥50MΩ/500VDC							
Withstand voltage rating		DC24V: 500V for 1 minute AC110V: 1000V for 1 minute AC220V: 1500V for 1 minute AC380V: 2000V for 1 minute							
Protection class		IP67							
Limit components		■ Electric operation: Full open/close limit switches ■ Manual operation: Mechanical stops							
Protection device		Protection device: Overheat protector (auto-reset type)							
Installation orientation		Installation orientation: 360° adjustable angle							
Electrical interface		Electrical interface: M20×1.5 waterproof cable gland ×2 (power line, signal line)							
Ambient temperature		Ambient temperature: -30 ~-60 (▲ High-temperature resistant type: -50 ~125)							
Testing standard		Testing standard: JB/T8219-2016							

Product Features

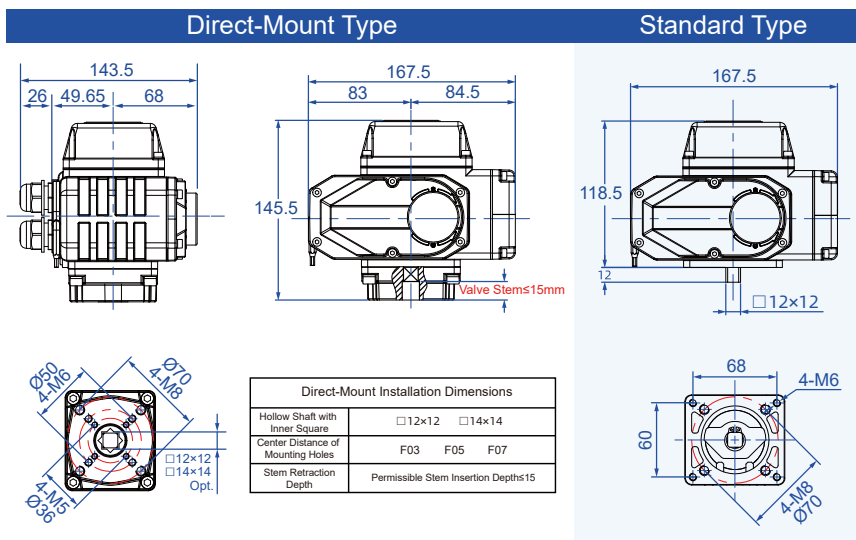
- Compact size and light weight.
- Simple to use, and can be applied in extremely narrow spaces.
- Simple and reliable valve connection, maintenance, and inspection.
- Manual operation function (a handle can be used for manual operation after power cut-off).
- Protection function: A self-resetting overheat protector is built into the motor.
- Simple wiring.

Product Structure Drawing

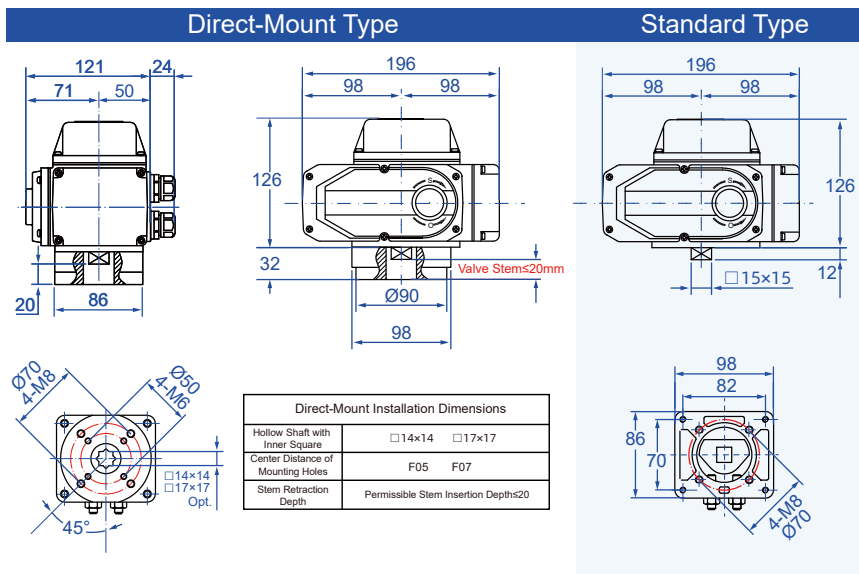


Product Dimensional Drawing

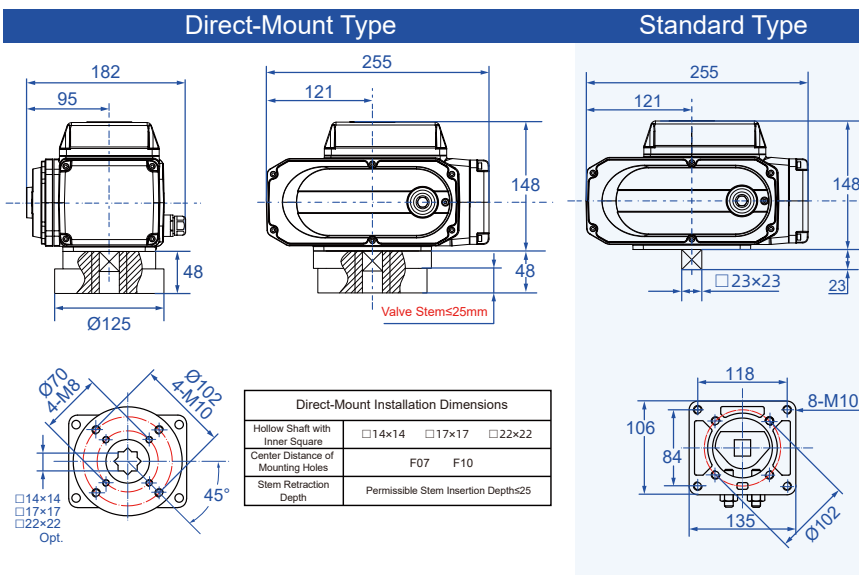
EA-50 Outline Dimension Drawing



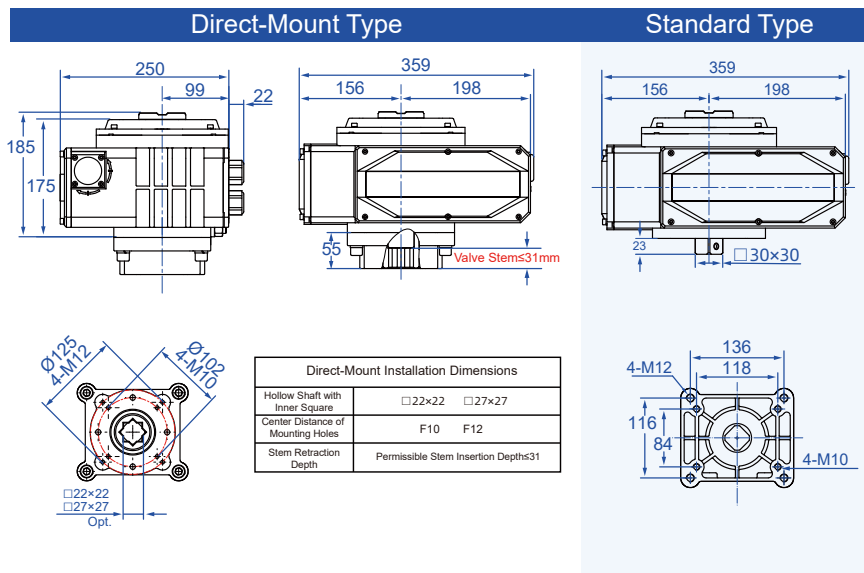
EA-100 Outline Dimension Drawing



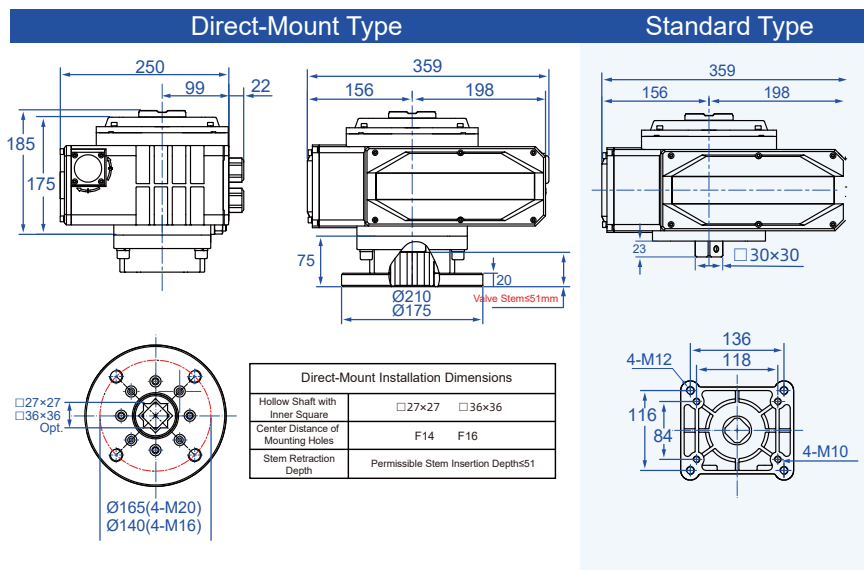
EA-200/400/600 Outline Dimension Drawing



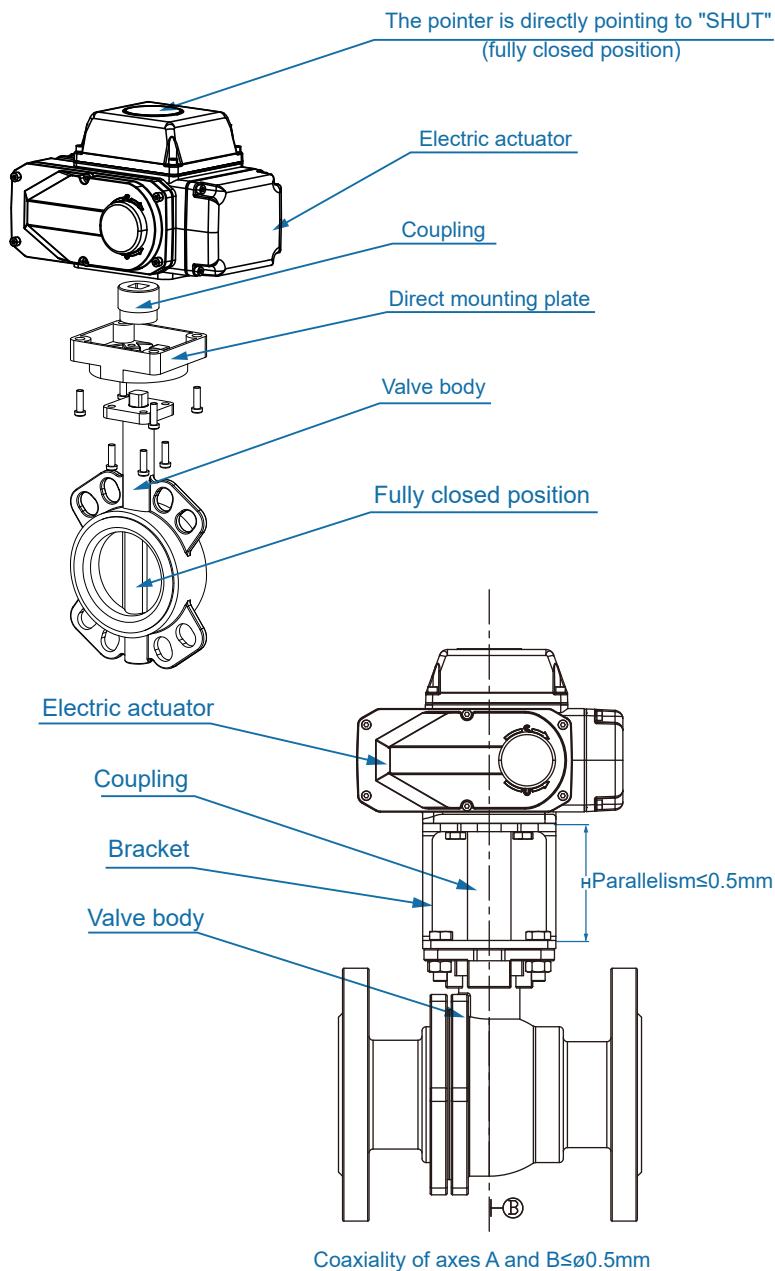
EA-1000/1600 Outline Dimension Drawing



EA-2500 Outline Dimension Drawing



| Valve Body Assembly Drawing



Product Installation

Installation Environment

- This product is a non-explosion-proof type and can be installed both indoors and outdoors.
- It must be kept away from environments with hazardous gases.
- In environments with long-term exposure to splashes (e.g., rainwater, raw materials) and direct sunlight, an integral protective cover must be installed. (Direct sunlight will cause the internal temperature of the machine to rise, and rainwater will accelerate the aging of gaskets.)
- Please reserve space for maintenance activities such as wiring and manual operation.
- The ambient temperature of the surrounding environment shall be within the range of -30°C to 60°C.

Working Medium Temperature

- When used with a valve, the temperature of the working medium will be transferred to the machine body, causing the body temperature to rise.
- When the working medium is at a high temperature, the bracket connected to the valve plays a role in reducing heat conduction.
- Select the standard bracket when the working medium temperature is below +65°C.
- Select the high-temperature bracket when the working medium temperature is above +65°C.

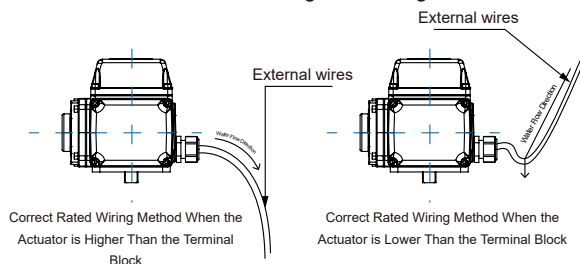
Installed on the Valve

- Drive the valve to the fully closed position.
- Fix the bracket to the valve.
- Slide one end of the coupling onto the valve spindle.
- Rotate the electric actuator to the fully closed position, and insert the output shaft into the square hole of the coupling.
- Tighten the screws between the electric actuator and the bracket. Rotate the actuator using the handle to confirm smooth movement without eccentricity or skewing. Note: Do not rotate beyond the electrical limit range.

Cable Installation

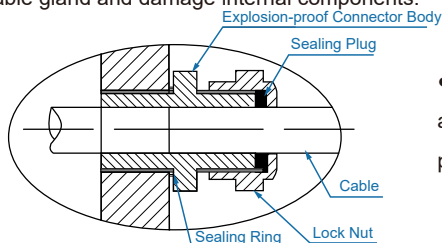
- Please install the electrical conduit as shown in the left diagram. During installation, note the following:

- ① Take adequate waterproof measures.
- ② The machine shall be installed higher than the electrical conduit.



- Use an electrical conduit with an outer diameter of $\phi 9-\phi 11$.

As shown in the diagram below: Do not use a cable conduit that does not match the diameter of the cable gland when installing the cable. It is essential to ensure the cable interface is tightly sealed; otherwise, rainwater may seep into the machine through the cable gland and damage internal components.



- Use shielded cables for signal wires, and do not route them in parallel with power cables.

■ Power Supply

Provide on-site power supply corresponding to the power type indicated on the nameplate of the ordered product.

Note: When selecting AC 380V power supply, pay attention to the phase sequence during wiring to ensure the travel switch can correctly control the opening and closing of the valve. Incorrect phase sequence may damage the actuator.

The on-site power supply voltage shall meet the following requirements:

AC220V $\pm 10\%$	50/60HZ	AC110V $\pm 10\%$	50/60HZ
AC380V $\pm 10\%$	50/60HZ	DC24V $\pm 5\%$	

■ Selection of Circuit Breakers and Fuses

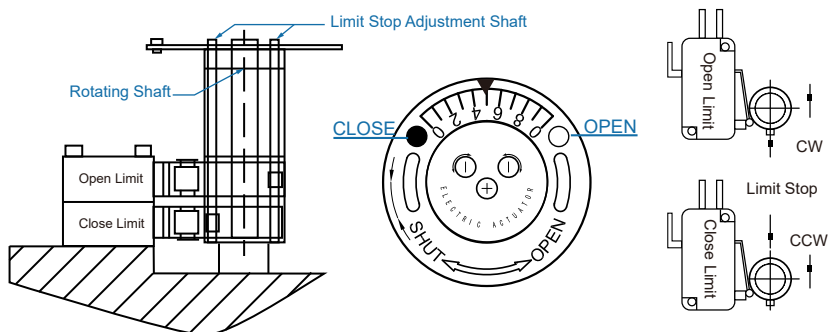
To effectively protect the electric actuator, eliminate short-circuit hazards, and reduce accident risks, install a circuit breaker at the power input terminal of each electric actuator, and select an appropriate fuse as specified in the table below.

Do not connect two or more actuators in parallel, and do not use the same contact to control multiple actuators. Otherwise, it may cause movement failure and motor overheating.

Fuse Specification Model Type \ Voltage	AC220V	AC110V	AC380V	DC24V
EA-20,50	2A	3A	1A	5A
EA-100	3A	5A	2A	7A
EA-200,400,600	5A	7A	3A	15A
EA-1000,1600,2000	7A	10A	5A	

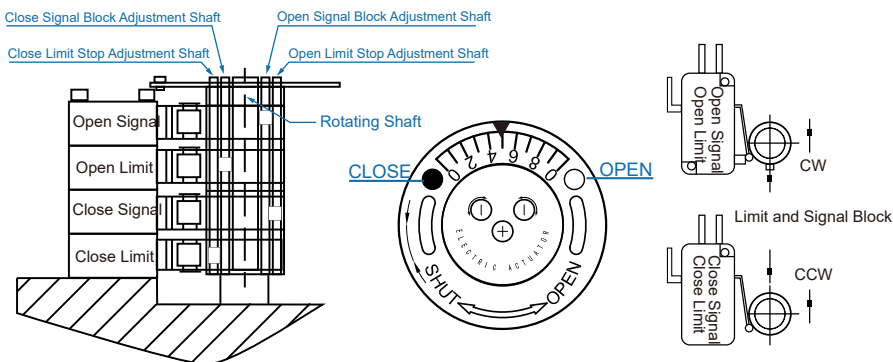
Product Commissioning

■ Adjustment Method for Limit Position Switches (Electrical Protection)



- The lower switch serves as the closed limit position switch; the upper switch serves as the open limit position switch.
- Manually move the valve to the fully closed position.
- Use a small flat-blade screwdriver to rotate the limit stop adjustment shaft, driving the limit stop until the travel switch activates.
- Adjust the fully open position using the same method as above.

■ Adjustment for Intermediate Position Signal Switch



- The adjustment of the limit switches for the fully closed position and fully open position is as above.
 - The actuation position of the intermediate position signal switch must be at least 2° ahead of the actuation positions of the limit switches.
- Adjust it using the same method as for the limit switches.

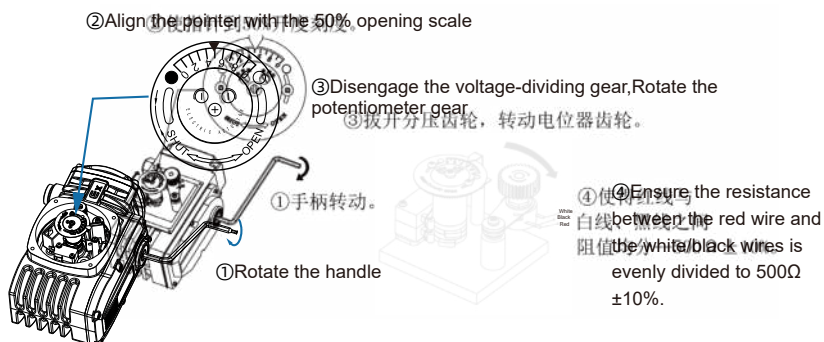
■ Potentiometer Adjustment

(The actuator is pre-calibrated at the factory. Potentiometer adjustment is generally unnecessary. Standard resistance value: 1K Ω . Optional values: 135 Ω /5K Ω)

- Use the manual handle to position the valve at the 50% scale mark.
- Disengage the voltage-dividing gear. Rotate the potentiometer gear while measuring resistance between:

Red lead and black lead: 500 Ω ±10%

Red lead and white lead: 500 Ω ±10%



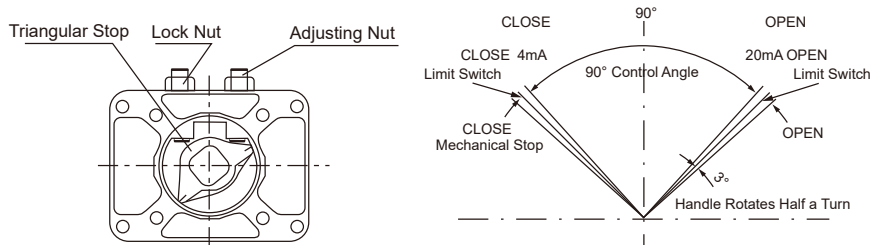
■ Mechanical Stop Adjustment

- On-off type

- ① Use the handle to rotate to the fully open position as shown in the diagram.
- ② Loosen the lock nut, bring the adjusting screw into contact with the stopper, then rotate it back half a turn and tighten the lock nut.
- ③ Adjust the closing direction using the same method.

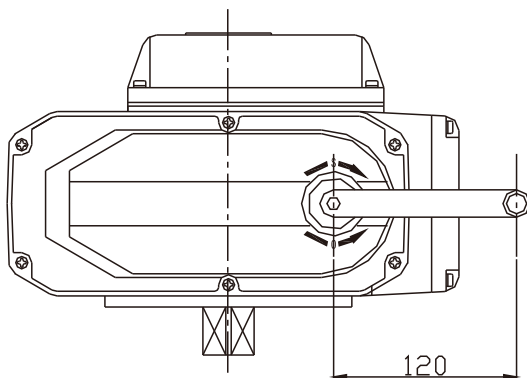
- Regulating type

- ① Adjust the mechanical stopper as shown in the diagram: starting from the fully open position, use the handle to rotate half a turn until the full-open limit switch activates; rotate another half turn, loosen the lock nut, tighten the adjusting screw until it touches the stopper, then secure the lock nut.
- ② Adjust the fully closed position in the opposite direction using the same method.



Motor operation

- For manual operation: First, cut off the power supply, then remove the rubber cap of the drive cover. Insert the attached handle into the hexagonal hole—rotating clockwise reduces the opening, while rotating counterclockwise increases the opening.
- When the scale plate reaches the fully open or fully closed position, the limit switch will be triggered. Rotating an additional half-turn will make contact with the mechanical stop. Excessive rotation may damage other components, so avoid applying excessive force.



Manual operation

- Before electric operation, use manual operation to check whether the position of the scale plate is consistent with the valve's actual position (fully open, fully closed).
- Check that the wiring is correct; at the same time, an external changeover switch must be used to confirm the opening and closing actions.
- After confirming the above conditions, start the electric operation.

| Product Maintenance

■ Maintenance and Servicing

- The product's transmission system uses high-quality molybdenum-based grease with long service life and good pressure resistance, which provides permanent lubrication for the transmission system—no additional refueling is required.
- After the product is installed, it should be operated regularly to check for abnormalities.

■ Common Faults and Troubleshooting

Fault Phenomena	Causes	Countermeasures
Motor fails to start	Power supply not connected	Connect the power supply properly
	Wire breakage or disconnection from terminal block	Repair broken wires and securely connect terminals correctly
	Incorrect power supply voltage or voltage too low	Check the voltage
	Overheat protector activated (check if ambient temperature is too high or if the valve is stuck)	Reduce ambient temperature and manually check if the valve opens and closes normally
	Malfunction of limit switch	Replace the switch
	Improper adjustment of travel stop	Readjust
Open/close indicator light does not illuminate	Burnt-out bulb	Replace the bulb
	Malfunction of limit switch	Replace the switch
	Improper adjustment of stop	Readjust

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