



WECHAT



WEB

Welcome to HEARKEN

Actuators and Controls

**Hearken
Here We
Can**

The Trusted, Passionate and focused Partner in Valve Automation

At HEARKEN FLOW, The founding principle of Hearkenflow is simple: to Listen our customers needs first, to develop the innovative valve actuators solutions , to meet the unique needs of our customers, Along the way, To help our customers to solve the problems in Valve Automation. We are growing our brand in Pneumatic and Electric Actuators, Accessories..



WHY WE ARE DIFFERENT

We offer a complete valve automation solution by the applications experience and customization capabilities, with an experienced support team to guide you in selection, installation, and project support. In addition we maintain an extensive supply of product inventory on hand so that we can quickly fulfill orders and reduce wait times. Our sales and support staff are readily available and accessible so that customers get the answers they need quickly.



Experienced team



Large inventory



Convenient consultation

THE TARGET WE ARE PURSUING



High-quality



low cost



Reliable solution

- To built A strong Reputation in Providing Quality, Cost Effective , Reliable And Robust Performance Solutions for Valve Automation,
- Included Pneumatic Actuators, Electrically Actuators, Actuated Valves.



COMMITMENT TO QUALITY

At HEARKEN FLOW means performance, All products manufactured by HEARKEN FLOW are warranted against defects in material and workmanship for a period of 18 months from the day of startup. Each of our products are tested at the factory. we are confident that our products meet or exceed all applicable standards before they ever leave our facility. We are an ISO 9001-2008 certified company. Our Valve Actuators Has Applied for SIL3 Certificate, ATEX Certificate ,CE, Explosion-proof Certificate, IP68 Weather proof etc....

HEA Series Electric Actuator

Quarter-Turn Design

Description



This is kind of rotary electric valve device, which can realize open and closed control through the external switch (fully open and fully closed switch).

The device realizes the reduction of operation cost and no need to maintain.



Main Product features



- Small, light weight, compact, simple to use, and can be used in narrow places.
- Simple structure reduce the breakdown.
- Connecting with the valve for use and maintenance, it's easy to inspect and it is sturdy and reliable.
- Water resistance is equivalent to IP-67.
- Fully open and fully closed passive contact signal output.
- Open and close mechanical limit, overload protection.

Testing For All Actuators



All actuators manufactured by HEARKEN are individually tested, Testing is carried out to check the leakage in both internal and external, The angle of rotation and Torque values. All bodies are stamped with year, month of production, size and serial number.

Performance features



Power Supply	DC24V; AC85V-AC260V	Output Shaft	Internal Octagon; square 11*11; deep 15
Output Torque	12 Nm 20 Nm	Handle Spindle	Hexagonal Hole Opposite Side; 4mm (with cover)
Actuation Range	0~90°	Protection Level	IP-67
Actuation Time	8 S 14 S	Mounting Direction	360° omnidirectional
Rated Current	0.2A/AC85-260V; 0.25A/AC24V/DC24V; 0.4A	Distributing Cable	0.3×5 Core Cable 30mm DC24V 0.3×6 Core Cable 30mm 24VAC/DC AC85V/AC260V
Drive Motor	4.6 W	Body Material	Aluminum Alloy Die casting /ABS
Output Signal	DC24V Fully open and fully closed passive contact signal output. 24V AC /DC AC85 -260V Fully open and fully closed output signal.	Machine Weight	0.75 kg

Cautions



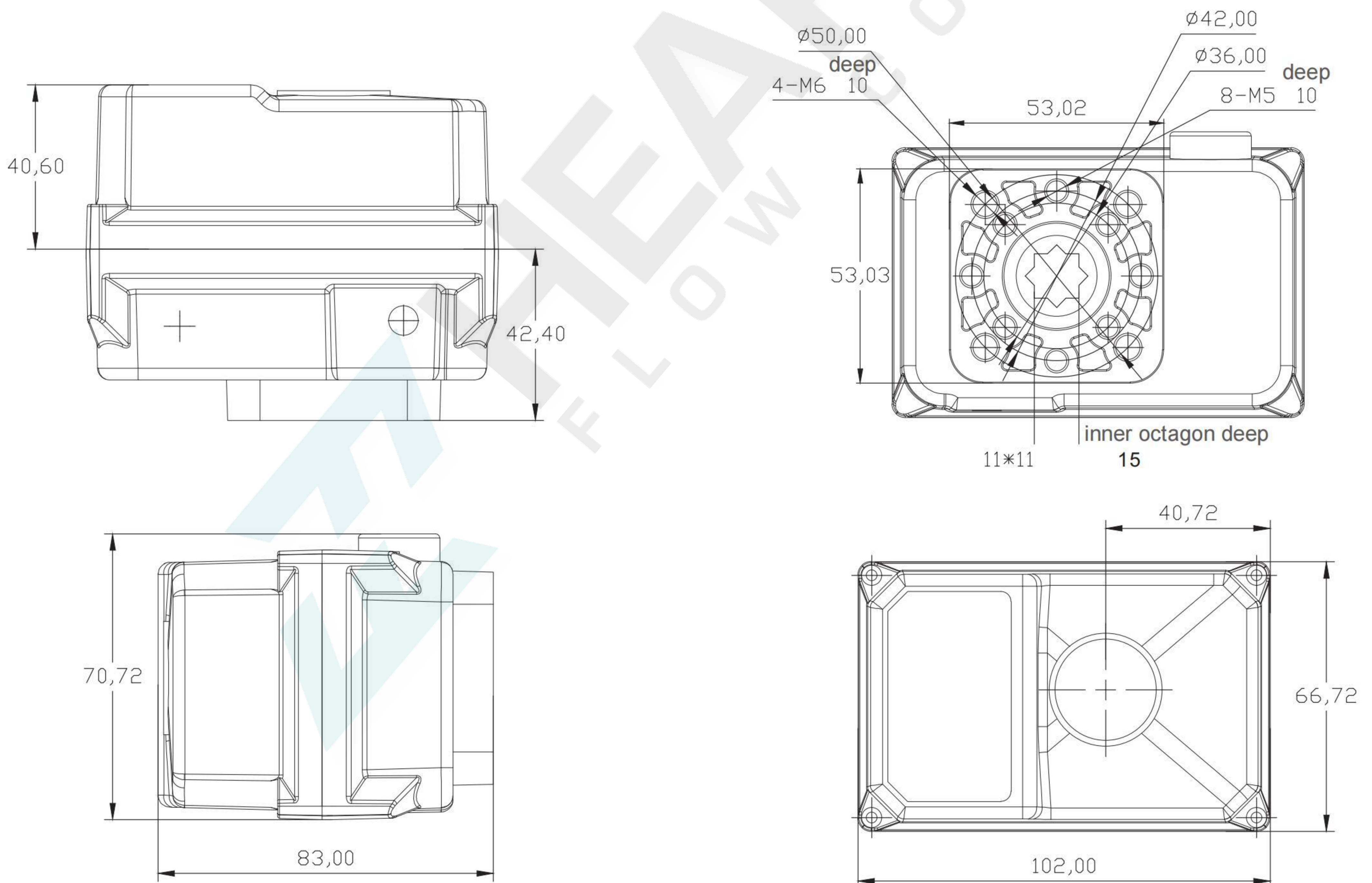
- This product is not explosion-proof, can not be use in the room with explosive gas and corrosive gas.
- Wiring work cannot be done when the power is on.
- It is forbidden to drop the product and give the product impact, which causes bad action.
- It is absolutely forbidden to step on the product, which may cause driving device failure or human fall off.

Warning: Never remove the top cover and valve while the power is on. This may cause death or serious injury.

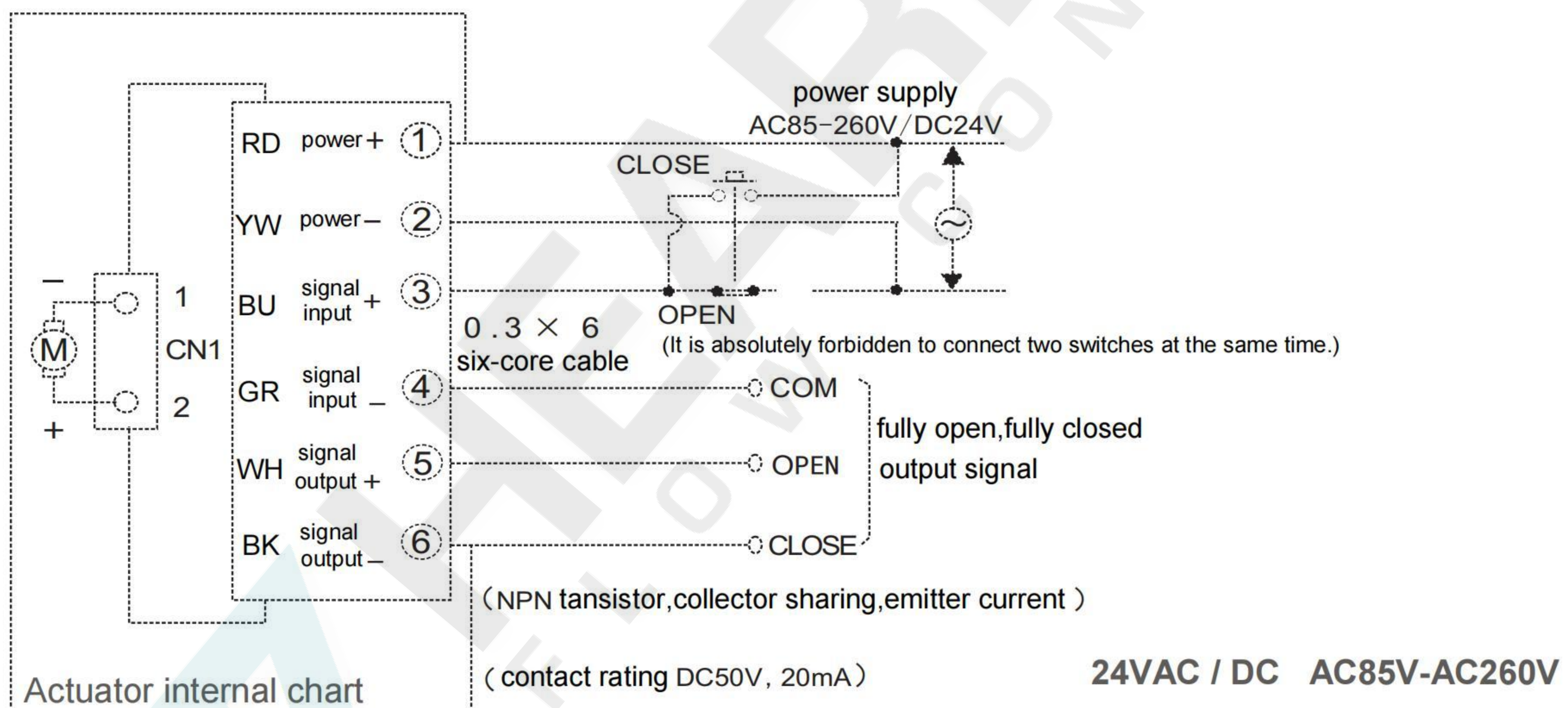
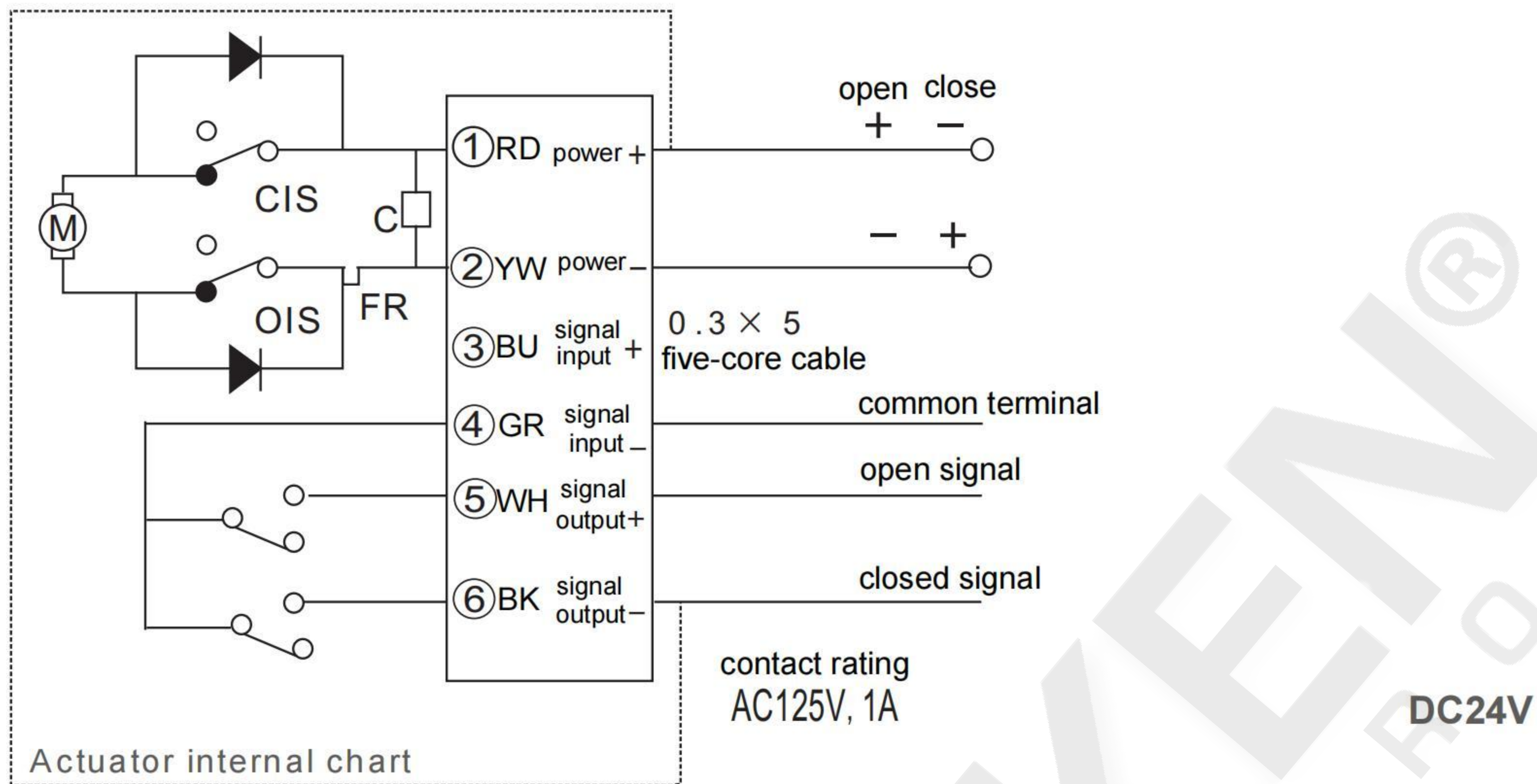
External view

No.	Name	Material	No.	Name	Material
1	Engine Body	ADC12	5	Screws	M2.5×12
2	Upper Cover	ABS	6	Handle Insert Hole Cover	MC Nylon
3	Waterproof Connector	Cuprum	7	Line Locking	MC Nylon
4	Opening Meter	0~90°	8	Five(Six) Core Cable	

Dimension in mm



Wiring diagram



Manual operation

- Remove the manual insert hole cover, there's the hexagonal hole below the handle shaft (opposite side 4mm).
- Insert the hex wrench into the hex hole, clockwise for "close" direction, counterclockwise for "open" direction.

Note: Manual operation is prohibited when power is on; When manually operating, you must confirm the opening of the opening meter. In order to prevent faults, do not overpower rotation with hexagonal wrench outside the range of fully open or fully closed action.

Electric operation

- DC24V : Before electric operation, make sure the opening meter is in the same position as the valve by manual operation. Please confirm that the wiring is correct, and then perform the electric operation.
- 24VAC / DC AC85V-AC260V : Indicator plate shows yellow when fully open, LED light green; Indicator plate shows red when fully closed, LED light red.

Faults and Policies

Fault Status	Cause	Solution
Motor does not turn	No Power Supply	Provide Power Supply
	Disconnection or cable separation	Replace the cable and connect the wire
	Low voltage or wrong voltage	Check the voltage
	The on/off LED light is not on	Replace the device
Position Signal Failure	Collector current signal is not good	Replace the device

02A Adjustable Electric Actuator

Main Technology Data

- Service Voltage: AC85—260VAC , DC18— 30V。
- Control Precision: 0 . 1%~3 .0% (Adjustable By C4 Parameter)
- Feedback signal of electric actuator can be connected: Potentiometer 500 Ω ~10K Ω
- External control signals can be received: (DC) : 4~20mA , 0~ 10V (1~5V、 switching volume and other customized before delivery).
- Output actuator position signal: Low drift output DC 4~20mA or 0- 10V Corresponding actuator is fully closed or fully open, Signal completely isolated from input (photoelectric isolation), the output load ≤500 Ω 。
- Ambient temperature: 0~80°C , Relative humidity: ≤90%RH。
- It has the function of overtemperature protection(configurable) , .At the temperature inside ≥70°C,the control of the actuator will stop.
- The action range of the actuator corresponding to the input signal which can be freely calibrated through the key (generally calibrated as the fully closed and fully open position of the electric actuator).
- Maximum and minimum valve position limits can be set.
- Combination lock to prevent misoperation.
- Prevent actuator from frequently starting.
- With fault alarm and code indication (E-0X) .
- According to the input signal and actuator corner position for intelligent step adjustment and precise positioning.

Panel Instructions

Parameter Display	1	LED window	By switching the button to display the actual valve opening value ,the valve set opening value,the temperature in the positioner case and set parameters.
Status Indicator	2	ON	Indicator yellow light on: the actuator is running.
	3	OFF	Indicator red light on: the actuator is off.
	4	scene	Red light on: the actuator can be opened or closed by pressing the button.
	5	remote	Remote Green light on: Automatic,controlled by a given external signal.
Key	6	A/M	Click: manual/automatic switch key or confirm after parameter modification. Hold down for 4 seconds to enter and modify parameters.
	7	▲	The value increase key is also used to switch the display valve position and set the opening value in the automatic state,and "on" in the manual state.
	8	▼	The value decrease key is also used to switch the display of the temperature inside the locator shell under the automatic state and "close" under the manual state

Function Indicators

1、Parameter List:

Parameter	Display value	Implication	Factory default
C0	00x.0	X=1 Electronic braking allowed, Electronic braking is not allowed.	1.0
	000.x	①X=0 Not allowed to change the positioning accuracy,but it is allowed to change the rescale time ②X=1, 2, 3 Does not change the rescale time,but allows the positioning accuracy to be changed.	
C1	00x.0	Set positive and negative, is positive, is negative.	1.2
	000.x	Interrupt signal mode, (Ignore) (open) (stop) (closed)	
C2	xxx.x	Control output lower limit value , manual and calibration points, not limited by this parameter in the process of full position.	0.0
C3	xxx.x	Control output upper limit value manual and calibrated zero, not limited by this parameter in the process of full position.	100.0
C4	00x.0	Adjustable precision,equals x.x/100.	0.4
C5	xxx.x	Operation password, (C 5 = 0 0 3 . 1 is to enter the actuator opening calibration)	000.5
C6	xxx.x	Actuator zero position confirmation, press ▲▼ When reaching the specified zero position, press the key A/M to confirm the zero point, and then enter the parameter C7 (the current displayed value does not represent the actual valve position).	The displayed value does not represent the valve position.
C7	xxx.x	Actuator full position confirmation, press ▲▼ when reaching the specified full position, press the key A/M to confirm the full position (the current displayed value does not represent the actual valve position)	

Note: other use of parameters are reserved by factory and can be consulted by customer service department.

This actuator product has no automatic calibration,adjust the valve position through manual calibration.

2、 Adjustment calibration method:

(This callibration method ensures that the button idle time is less than 8 seconds during the calibration process.)

In the automatic state, press the key A/M for 4 seconds to enter the parameter C5, change the C5 to 003.1 and then press the key A/M.

(1) Enter the parameter C6, press ▲ or ▼ the actuator corresponding to the "open" or "closed" direction operation, while the actual value valve position displayed also gradually become larger or smaller, when reaching the desired zero position (such as valve can be visually measured valve opening, generallyly located in the fully closed position), press the key A/M ,zero confirm, enter the parameter C7.

(2) In the display of parameter C7, press ▲ or ▼to the expected full position (such as valve can be visually measured valve opening, gene located in the full open position), press the key A/M full position confirm,return to the parameter C5.

(3) Change the parameter C5=000.5 and return to the measurement and control state.

Locked-rotor Processing Program

If the resistance value of the potentiometer does not change within the blocking judgment time (Cd parameter) when the control actuator motor is energized, the positioner is judged to be blocking, and report E-07 or E-06, and respond to the blocking alarm and processing procedure.

Note: Blocking judgment time = $(5U_d+2)$ seconds, stopping output time = $10U_d$ seconds after blocking, and it has circulating since the failure, if there is a given counter-trend signal in blocking, immediately respond to the given signal, and then the blocking interval time is cleared.

The U_d value ranges from 1.6 to 6.0

(E-06 is displayed in the off direction and E-07 fault code is displayed in the open direction. The code flashes alternately with the valve position value, and the controller disconnects the motor drive power). If the fault is considered eliminated during the above fault process, the measurement and control can be restored by pressing the button on the panel or powering on again.

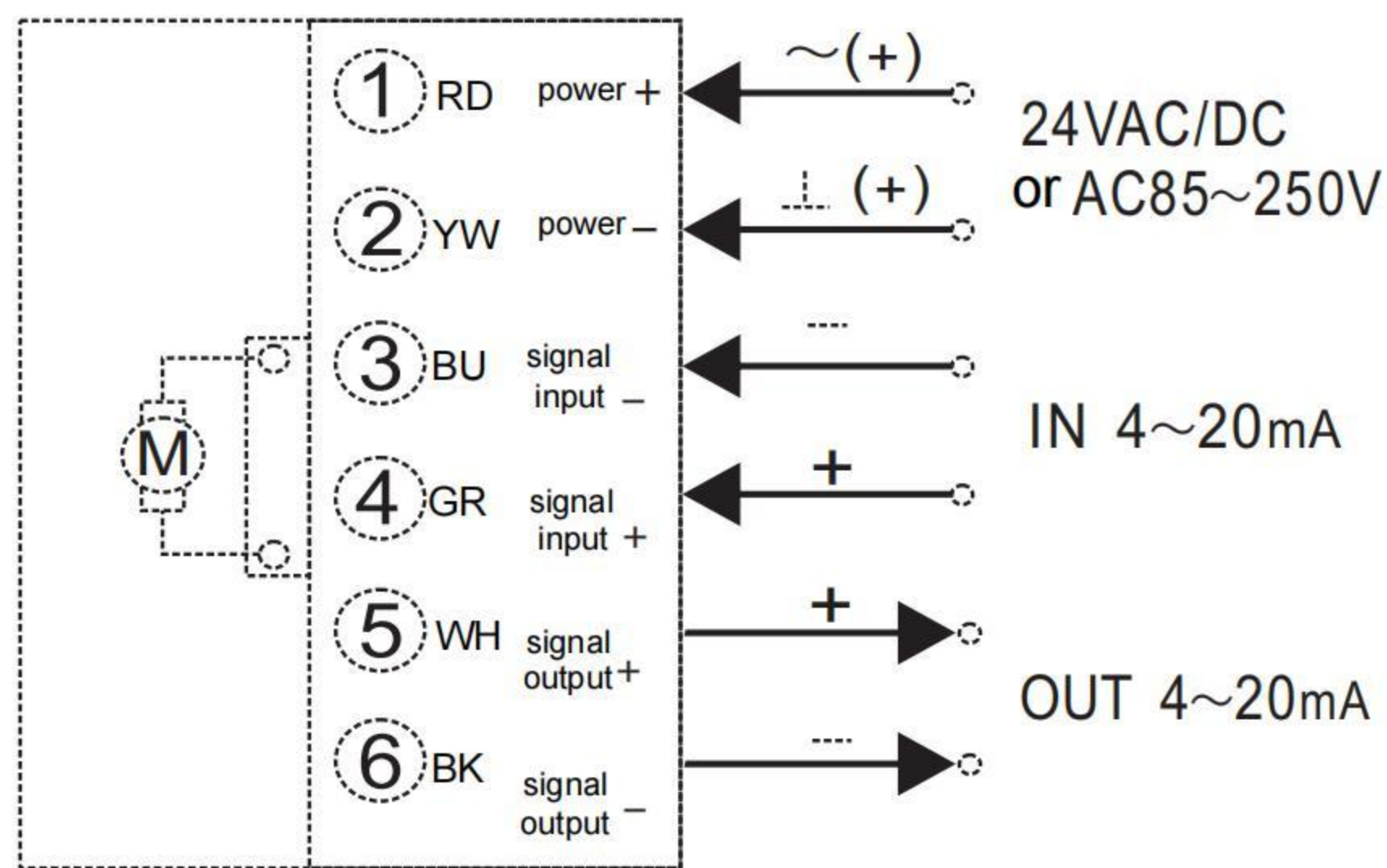
There's failure code if the product has alarm port output, the alarm relay change from normally open to nomally closed; the code disappeared, and the alarm relay returned to normal, fully synchronized with the fault code, passive contact output (2A, 265V).

Note: The overheat protection of actuator, large gap of actuator transmission gear, large gap of potentiometer transmission gear and potentiometerquality will all respond to the blocking transfer measurement and control procedure. Therefore, this fault occurs. Please check the problem of actuator and valve first.

Error Code List and Exclusion Methods

Error Code	Implication
E-01	If the calibration input given zero-terminal signal is when the given current $\leq 3.0\text{mA}$, the signal is considered to be interrupted, and the signal interrupt processing program will be carried out, while the screen displays E-01.
E-03	The signal feedback wire or switch wire between the positioner and the actuator is reversed.
E-05	The actuator oscillates greatly, possibly because the input signal or feedback is unstable and the precision is too high.
E-06	The actuator is blocked in the closed direction.
E-07	The actuator is blocked in the open direction.
E-08	The temperature in the positioner case exceeds the specific temperature is related to its setting.

Wiring diagram



Adjustable wiring diagram

Actuator internal chart

Show Value	General Exclusion Method
E-01	If there is no reliable signal source on site, the positioner reading signal output positive and negative corresponding access input. E-01 is cleared. The locator is not faulty (note that the locator reading value must be greater than 0 for this operation).
E-03	Refer to the manual calibration method: that is, when C7 is opened for manual calibration, observe whether the display number changes continuously from small to large, and E-03 can be eliminated if continuous changes are completed. The numbers vary large or small or stop and go, fault in potentiometer.
E-06 E-07	1.whether the valve is stuck; 2.whether the motor is normal; 3.whether the connection is firm. The above three points are normal: make the locator switches to manual state, press INC first and then DEC to check whether the actuator is running properly. If not, the locator is faulty. (This operation must require the door to be half-open).

Input current signal calibration

If you need to perform this operation after delivery, please use it under the guidance of engineers.

- In the normal measurement and control state of the locator, press the key A/M for about 4 seconds, it will enter the setting parameter state; Display the parameter "C5". Press to change the value of "C5" to 011.1 (Refer to the table above).
 - Enter the parameter "C8" to calibrate the input current zero point: when calibrating, input the zero point signal 4mA (0V), press the key A/M to confirm, and then enter the "C9".
 - The parameter "C9" is the calibration full-scale input current: when calibrating, input the full-scale signal 20mA (10V), press the key A/M to confirm, and then enter the "C5".
- ◆ The above operation ensures that the input signal is clean and stable.

Output feedback current calibration

If you need to perform this operation after delivery, please use it under the guidance of engineers.

In the same way, first enter the "C5".

- Change the parameter "C5" to 001.1, and press the key A/M to enter the "C6";
- Skip the parameter C5, C6, C7, C8, and enter the "CA";
- The "CA" is the calibration output current zero point: when calibrating, press ▲、▼ to make the calibration output as 4mA (0V) or other values, corresponding to the actuator zero output signal value, press the key A/M to confirm, and then enter the parameter "Cb";
- The "Cb" is the full scale of the calibrated output current: press ▲、▼ to make the calibration output as 20mA (10V) or other values, corresponding to the full-position output signal value of the actuator, press the key A/M to confirm, and then enter the "Cc";
- The "Cc" is to correct the temperature inside the case, and you can adjust it by pressing the key ▲、▼;
- Press the key A/M to confirm, then return to the parameter "C5". Change the value of the "C5" to 000.5. Press the key A/M to confirm and return to the measurement and control state.