



VTM4 Series Electric Actuator **Commissioning Instructions**

Control Types:Modulating control

Function:Battery Backup

- Quickly locate your needs ————— P3
- Preface ————— P4
- 1.1 Confirm that the product is allowed to be powered on ————— P8
- 1.2 Installing the actuator to the valve ————— P11
- 1.3 Power on ————— P12
- 1.4 Control card information ————— P15
- 2. Position calibration ————— P21
- 3. 4~20mA Remote control signal ————— P35
- 4. 4~20mA analog output signal ————— P47
- 5. Auxiliary contact of product ————— P59
- 6. BB function setting ————— P62
- 7. Change Control signal from Modulating(M1) to ON/OFF ————— P71
- 8. End of commissioning ————— P80

If you don't have time to read the V-TORK product documentation completely and are eager to solve problems on the spot, Please use this page.

Situation/Problem	Solution	Page
When the valve position displayed on the control card is 0% and 100%,The valve still has gaps, leaks, and is not fully opened or closed.	Recalibrate the valve position	P23-P34
When a 4mA signal is input, the valve position on control card display screen is not at 0%.	Using the setup menu, recalibrate the 4mA input signal	P35-P46
When a 20mA signal is input, the valve position on control card display screen is not at 100%.	Using the setup menu, recalibrate the 20mA input signal	
The valve has been completely closed, and the 4mA signal output by the product is inaccurate.	Recalibrate the output signal	P49-P58
The valve has been completely opened, and the 20mA signal output by the product is inaccurate.	Recalibrate the output signal	

First of all,
thank you for trusting and purchasing VTM Series Electric Actuator.
This manual will help you understand and use this product.

Positioning of this operation manual:

This operation manual is used to confirm and verify that each function of the product can work properly after the customer receives the purchased product, and to enable the customer's on-site operators, installation and commissioning personnel, or engineering personnel to have the ability to apply and adjust the product by reading this manual when adjustments are needed;

The "functions" described above include:

- 1: After the product arrives, it can operate normally on site, allowing the output shaft to reach the fully open/fully closed valve position that was calibrated by our company when leaving the factory;
- 2: After the customer inputs a 4mA analog control signal to the product on site, the product will automatically close the valve until the valve position on the control card display screen shows 0%;
- 3: After the customer inputs a 20mA analog control signal to the product on site, the product will automatically open the valve until the valve position on the control card display screen shows 100%;
- 4: The “fully open” port of the product changes from disconnect state to connect state after the valve is fully opened;
- 5: The “fully closed” port of the product changes from disconnect state to connect state after the valve is fully closed;
- 6: The “fault” port of the product will change from disconnected to connected status after an error is displayed on the intelligent integrated panel of the product;

..... Please refer to the next page for the rest of the content

Operation qualification:

In order to avoid additional expenses caused by technical services/repair services, and to prevent property damage and personal injury caused by electrical/mechanical accidents, we recommend that:

1. Operators with electrical knowledge or low voltage electrical capability on the installation team need to read this document to avoid electrical accidents or product damage.
2. Operators in the field of Valve/Execution Installation in the installation team need to read this document to avoid blocking or damage due to incorrect positioning of electric actuators/valves connected to output shafts/other mechanical equipment on site during installation and debugging.

About reading this manual:

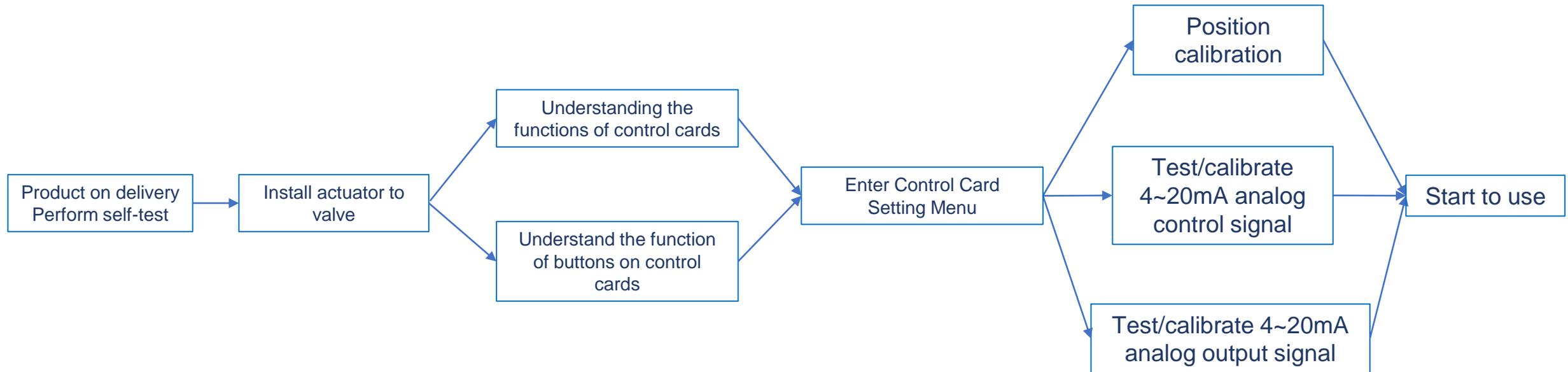
If you have no debugging experience with electric execution agencies, according to the estimates of our electrical engineers and production line engineers, Complete reading and operation of this manual, learning until fully understood, will take not less than 3 hours, please arrange the time reasonably;

Operations cover 70% of the electrical engineering field, 20% of the electric actuator installation/calibration field, and 10% of the valve application field.

We recommend that you read this manual together with the drawings to get a general idea of how the product works after you receive it and before it arrives.

After the product arrives, confirm the function of the product through the contents of this manual to familiarize yourself with the working principle of the product.

Operation flow of the product



In the following operation content page:

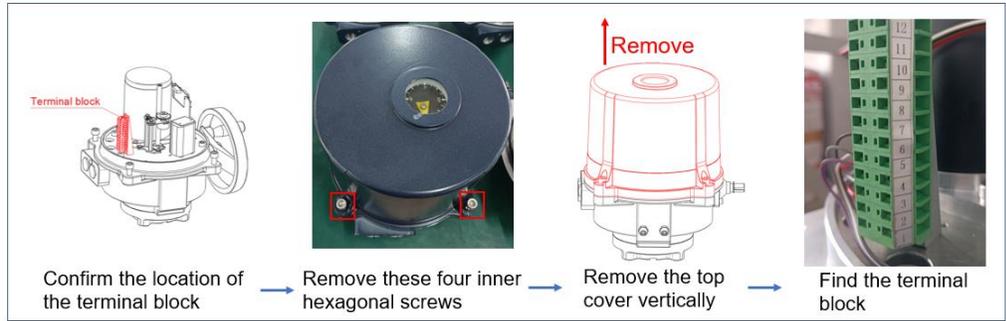
- 1.You can understand from the top half of each page : what this page is about and what needs to be done.
- 2.The lower part of the operation page will show the operation process, these has high reference value.

Example :

1.1 Confirm that the product is allowed to be powered on  Title

Our products are electrically debugged before they leave the factory to ensure that their functions are normal. But we can't guarantee a stable transportation environment for our products.Minimal probability, it may be damaged by rough and careless transportation. Therefore, after the product arrives, the power supply port of the product should be checked with the universal meter to ensure that the product is allowed to be powered on. Brief description of operation content

Test method :



Confirm the location of the terminal block → Remove these four inner hexagonal screws → Remove the top cover vertically → Find the terminal block

For the rest, see the next page

Actual operation process
(Reading order is from left to right)

8

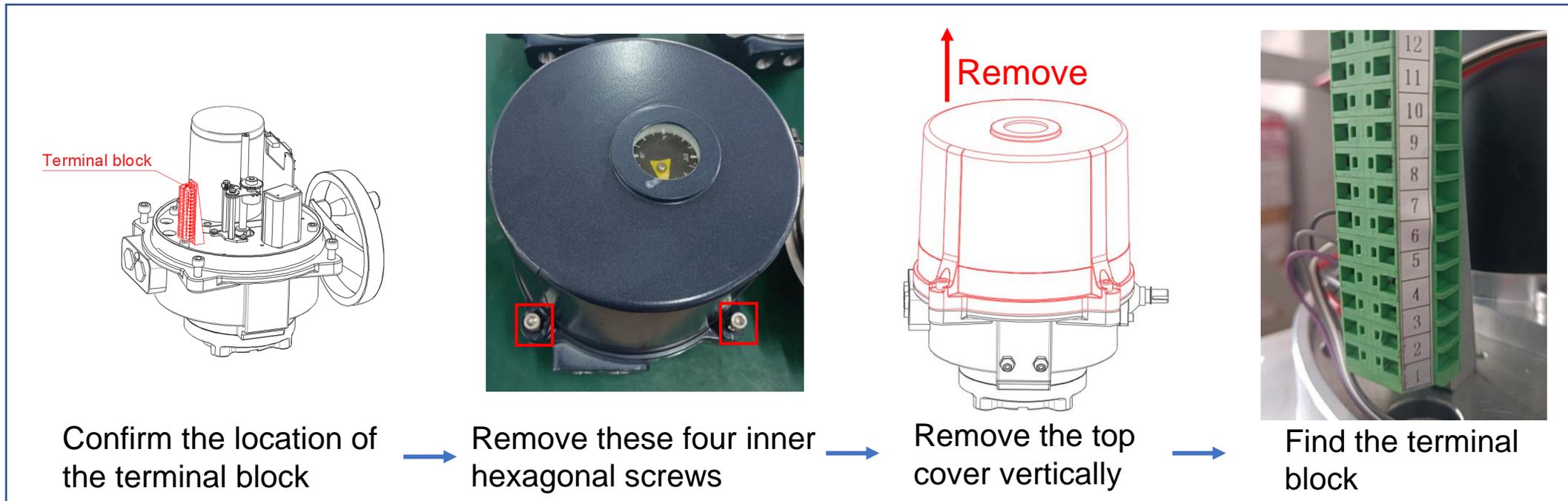
1.1 Confirm that the product is allowed to be powered on

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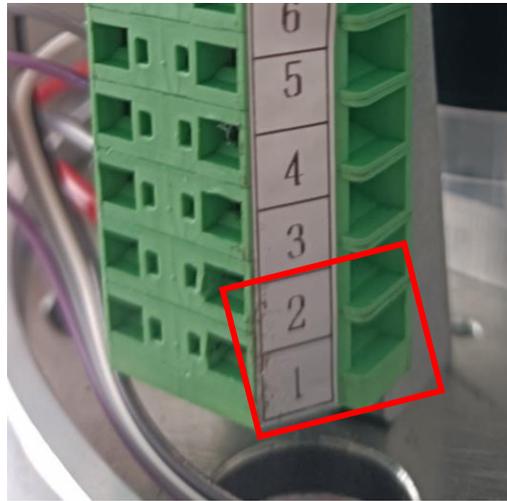
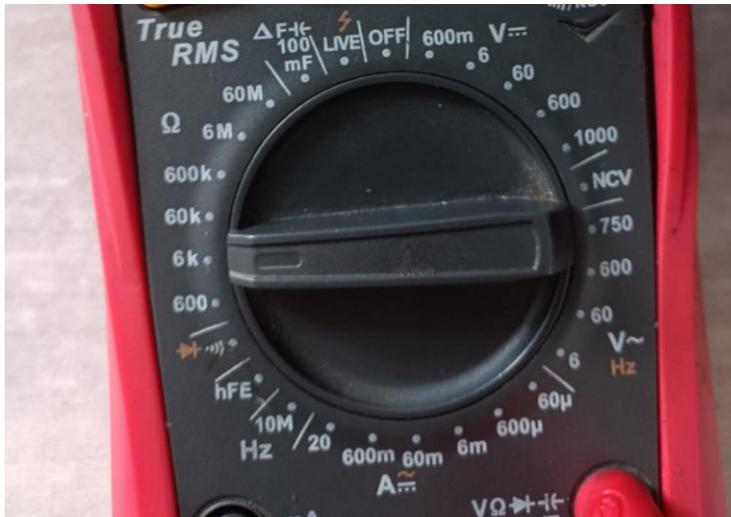
Test method :



For the rest, see the next page →

1.1 Confirm that the product is allowed to be powered on

Test method :



When the product is powered off, use a multimeter to measure the resistance between the power ports.

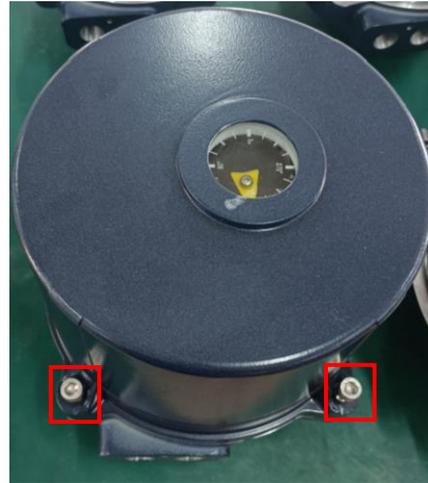
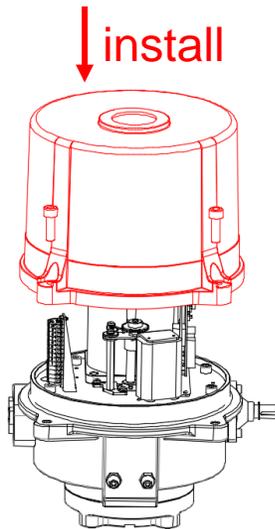


Infinity of measurement result is normal.

For the rest, see the next page



1.1 Confirm that the product is allowed to be powered on



Install the Allen screw

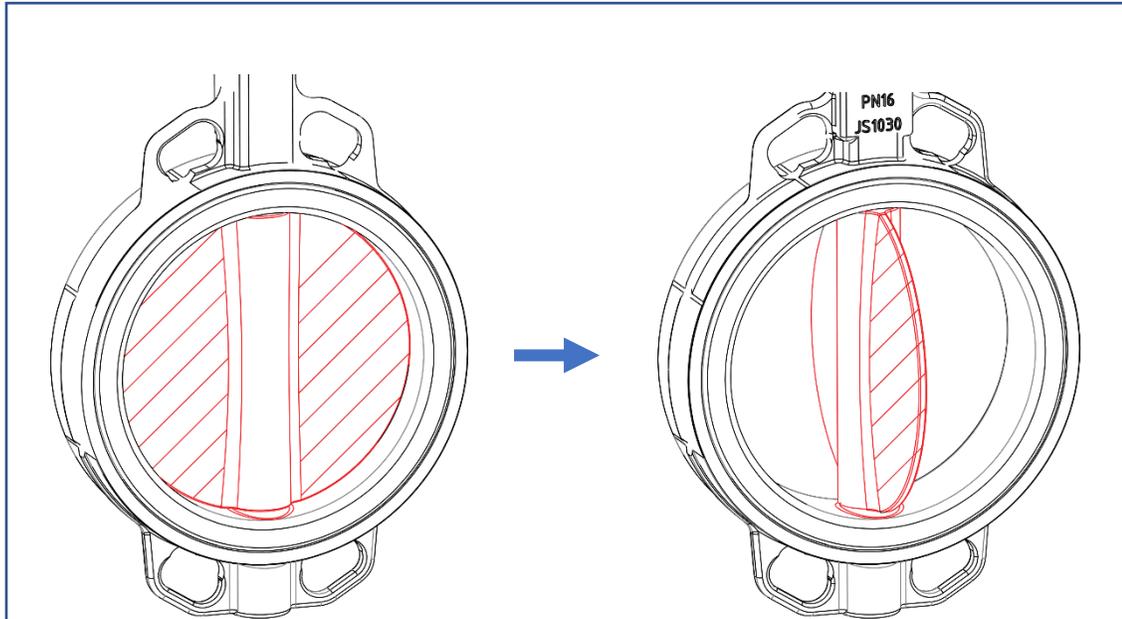
If the product still needs to be stored in the warehouse for some time, install the protective cover and inner hexagon screw back in place.

1.1 Confirm that the product is allowed to be powered on

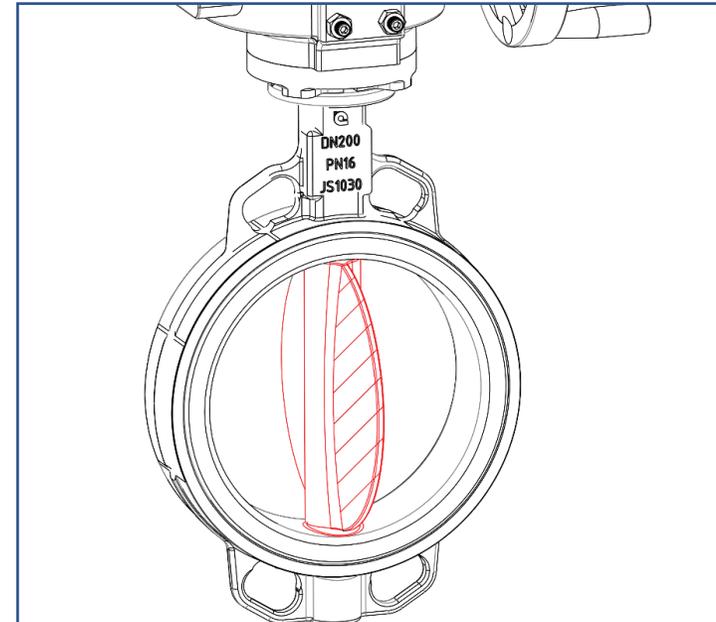
End

1.2 Installing the actuator to the valve

1. Unless customers have special requirements, our products will be adjusted to the full open position when leaving the factory.
2. During installation, the valve position should also be adjusted to the fully open or nearly fully open position for installation.
3. If the working torque of the valve on site is large and cannot be adjusted manually, it does not matter. Install the actuator first, and be sure to perform position calibration (continue reading or directly refer to the catalog).



1. Adjust the valve to a position close to full open



2. Assemble the adjusted valve and actuator

Before combining the actuator with the valve through an ISO mounting base, adjust the valve to a position close to the fully open position, and then install it with the actuator. The picture uses a DN200 valve as a reference.

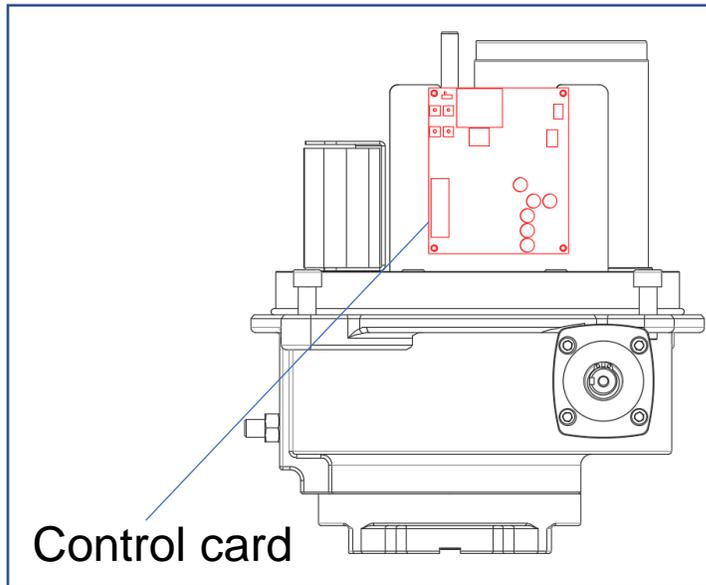
1.2 Installing the actuator to the valve

END

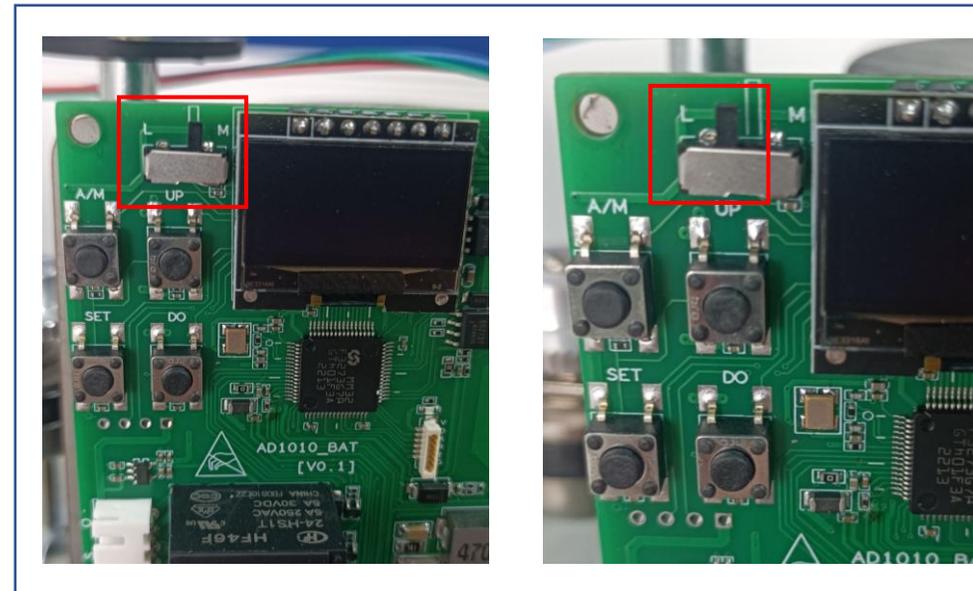
1.3 Power on

1. Conduct wiring according to the wiring diagram, and in order to prevent the connected analog control signal from randomly driving the electric actuator after being powered on without calibration, ensure that no equipment is inputting 4-20mA analog control signals to the product.

2. According to the wiring diagram, input 24VDC to the power port. When the control card is lit, it indicates successful power on.



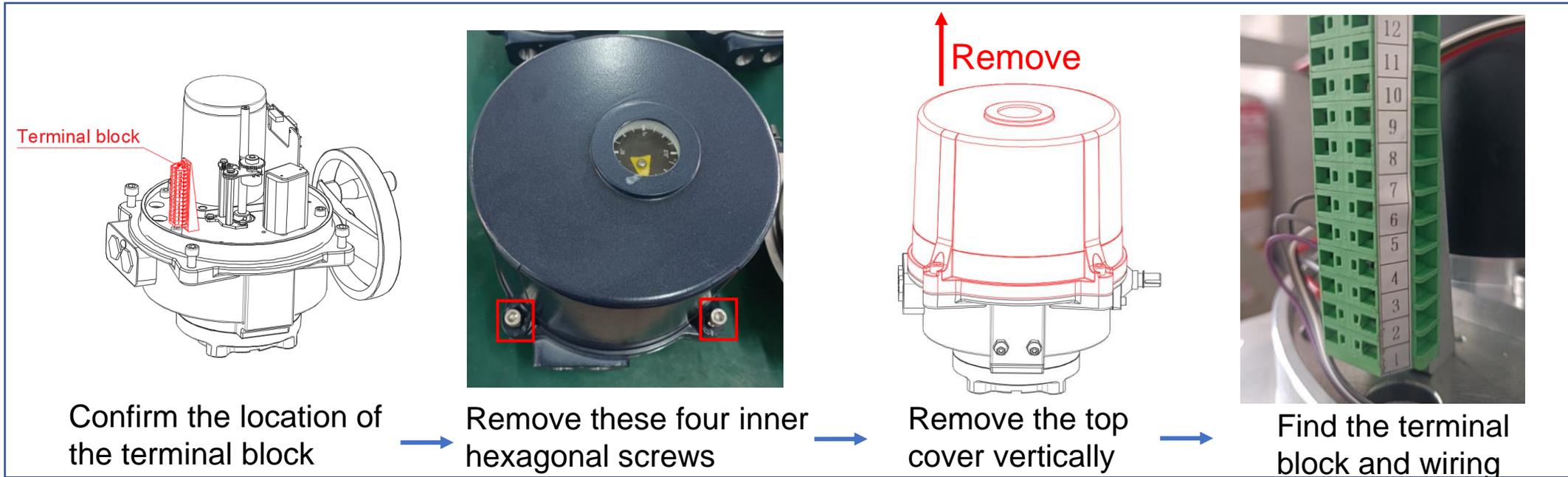
1. Look at the control card first



2. Adjust this small movable black vertical bar to L

For the rest, see the next page →

1.3 Power on

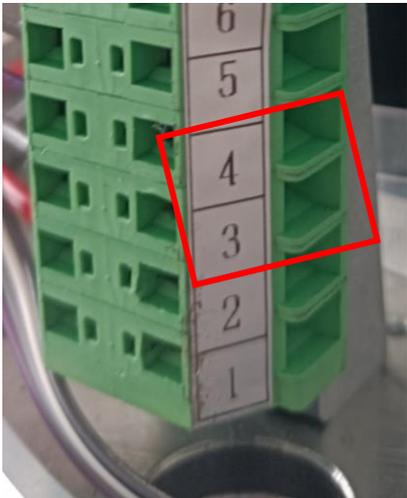


For the rest, see the next page

3. According to the drawings provided by us, use an Allen wrench to open the upper cover and let the cable pass through the wiring port and connect to the wiring terminal.

Note: See the drawing for the functions of each port of the wiring terminal.

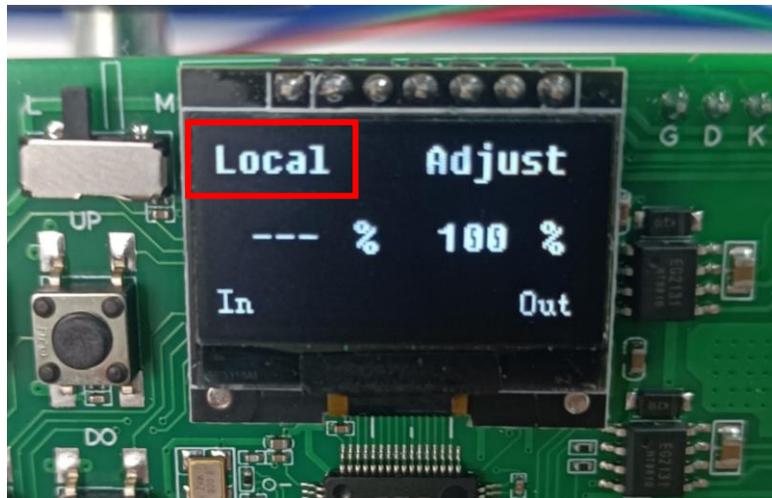
1.3 Power on



Ensure that there is no signal from the IN port



Power the corresponding port according to the wiring diagram



Power on and look at the control card screen. The upper left corner reads "Local". The rest of the content can be ignored temporarily.

1.3 power on
END

1.4 Control card main page

After performing 1.3, we will see the main page of the control card.

This page is mainly used to display the real-time status of the product: percentage of valve opening, mode of control card, received remote control signals, etc.



Control card status

Remote control type of control card

Current valve position

Fault display area

The remote analog signal received by the product will be converted into a percentage and displayed here;

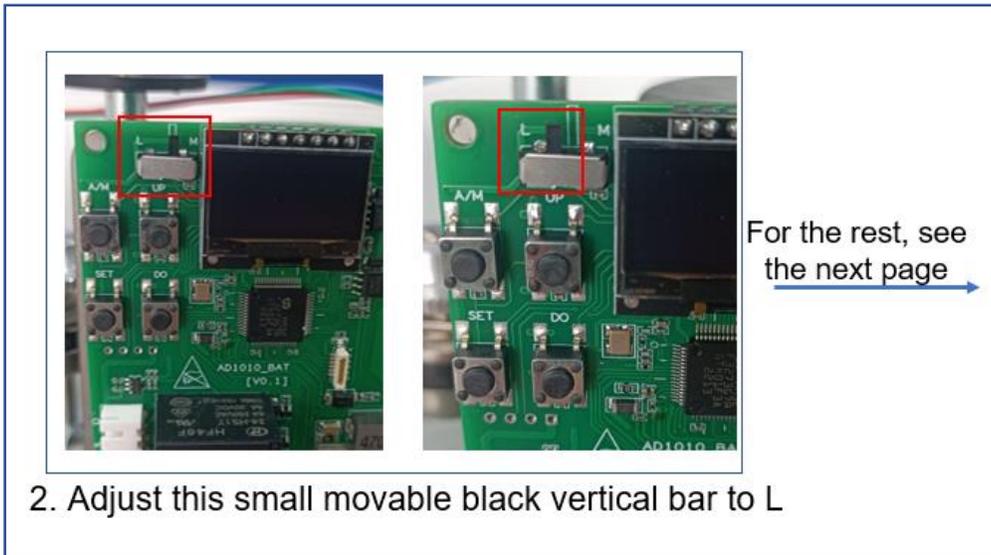
1.4.1 Control card status

In 1.3 power on, we adjusted a movable black small vertical bar.

It is mainly used for switching signal reception of control cards,

“L” refers to the LOCAL mode, which means that the control card allows its own buttons to be used for control. At this time, the control card will shield the 4~20mA control signal on the wiring terminal. This mode is commonly used in debugging.

“M” means REMOTE mode, which means that the control card allows control using the 4~20mA control signal on the wiring terminal. At this time, the button function of the control card when it is in LOCAL will be shielded. Unless there is a debugging requirement, the control card should remain in this mode.

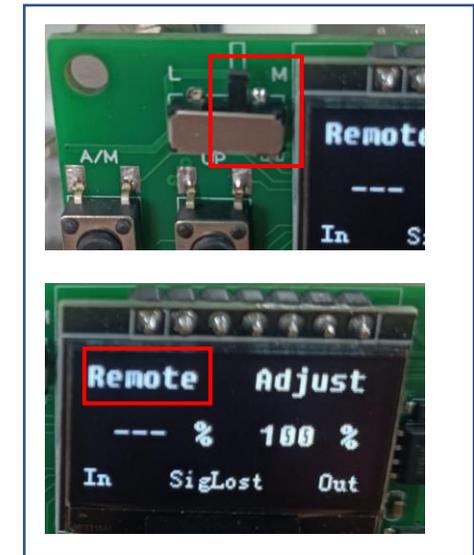


2. Adjust this small movable black vertical bar to L

An operation in “1.3 power on”



Control card-s “LOCAL mode”



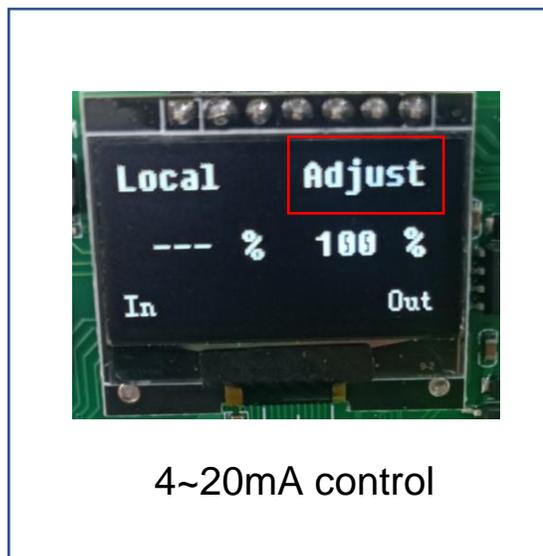
Control card-s “REMOTE mode”

1.4.2 Remote control type of control card

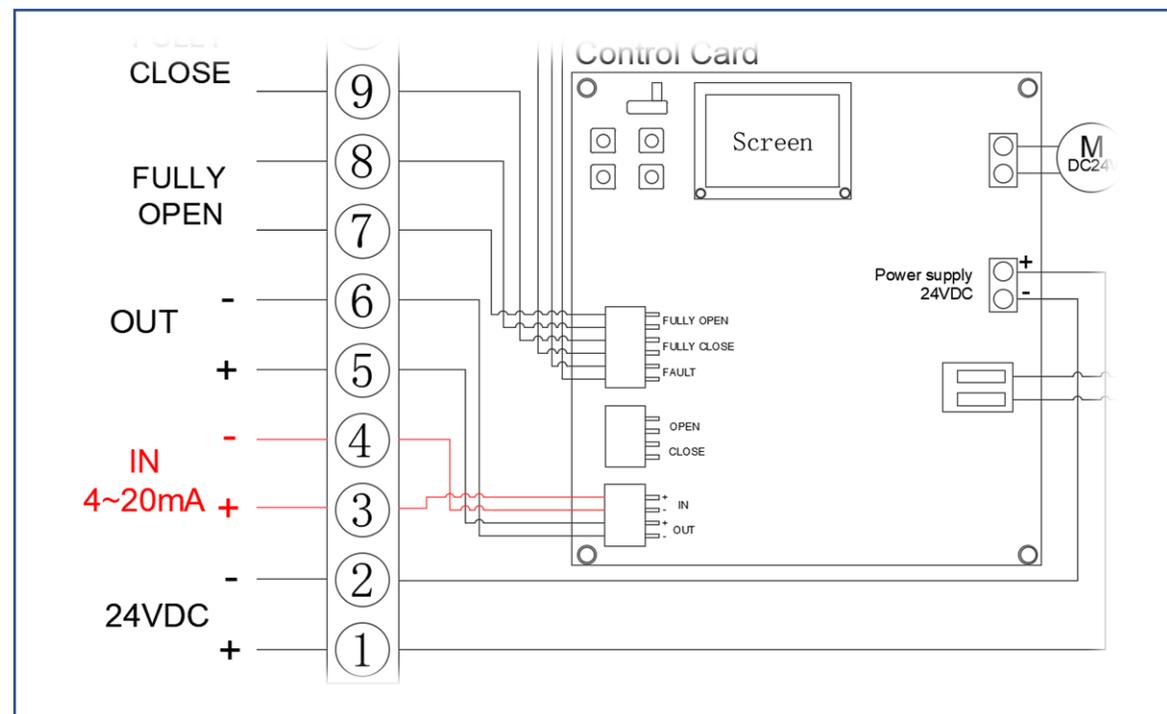
According to the control method of the product you purchased, we have already set the control card at the factory, In this product,

“Adjust” means that the product will receive and recognize the 4~20mA control signal connected to the terminal block in the REMOTE mode.

Generally, there is no need to adjust the factory settings related to this. If there is a need to switch the Modulating M1 control to ON/OFF control, please go to the directory or guidance page



4~20mA control



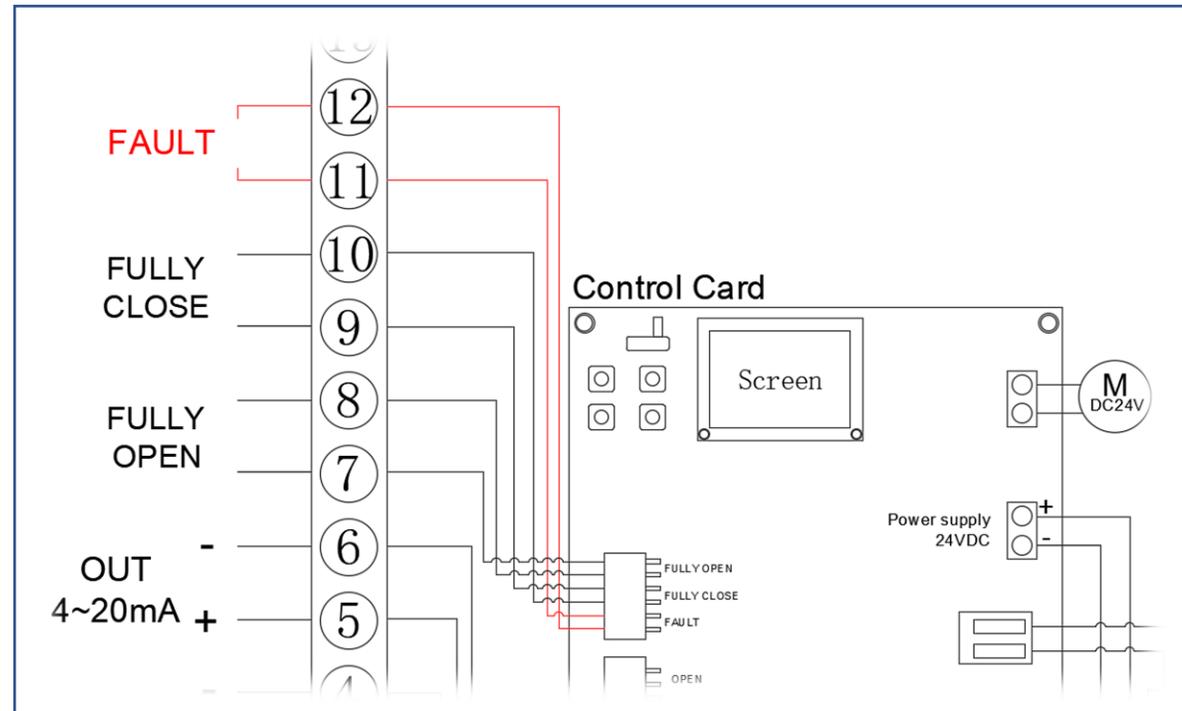
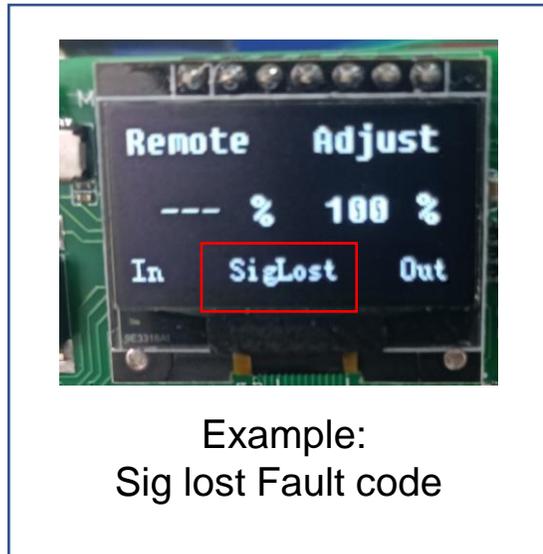
Relationship between terminal block and control card

1.4.3 Fault display area

When a failure description pops up in this area, the corresponding product FAULT port will change from disconnect to connect.

For debugging purposes, our common failure code is "siglost", which is short for "signal lost". This error is shown only because we did not input 4~20mA signal to the terminal block according to the previous operation process, so there is no need to be nervous.

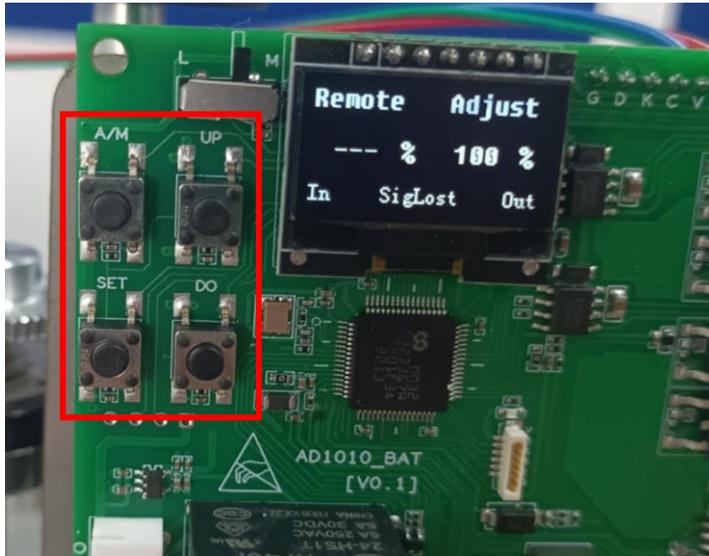
This error will disappear when debugging is completed by following this file



Relationship between terminal block and control card

1.5 Control card buttons

There are four buttons on the control card of the product, and we will fully explain their respective functions on this page.



4 Control buttons



A/M is a "return key" and "exit key" that is mainly used after entering the setup menu of the control card.



The Set key is used to enter the setting menu of the control card in the LOCAL mode.
And as the "enter" / "select" / "save" keys in the setting menu



When entering the control card LOCAL mode, press and hold UP to control the valve opening.
When entering the setting menu, UP can page up in the menu or add parameters when adjustable parameters are selected.



When entering the control card LOCAL mode, press and hold DO to control the valve opening.
When entering the setting menu, DO can page down in the menu or decrease parameters when adjustable parameters are selected.

1.6.1 Setting Menu

The on-site calibration and debugging of the product mainly involves modifying parameters through the setting menu in the control card.

Common customer problems: Inaccurate switch valve position, inaccurate received mA analog signal, and inaccurate output mA analog signal can be resolved in this setup menu.

In order to access the setup menu, we need to switch modes and use the control card buttons, which we will describe on the next page.



Setting Menu Home Page

2.1 Position calibration

"Position calibration" refers to "teaching" the product through the relevant page of the setup menu to allow the product to move from a fully open to a fully closed active area, consistent with the valves connected on site.

Glossary

"Calibration": In the instrument and appliance industry, calibration often refers to manually adjusting/saving parameters to improve the display/activity accuracy of precision equipment such as machines and instruments.

"Teaching": Commonly used in the field of industrial robots and electrical automation, it refers to operating programmable automation equipment in a manual state, allowing them to stay in various states and positions that need to be achieved during work, allowing the equipment to record parameters, thereby solving problems such as incorrect active positions of the equipment.

Q/A

Q:What are the consequences of not performing a calibration?

A: In machinery, a common phenomenon is that the on-site valve cannot be fully closed, there is a leak, or the on-site valve has been closed, but the product is still working. Finally, the product directly shuts down, and the intelligent integrated panel reports fault codes such as "motor overcurrent", "overload", and "Locked".If a valve with limited angle of movement is usedFrom a mechanical perspective, non calibration can easily impact the mechanical structure of the product and the valve connected;From an electrical perspective, non calibration can lead to mild motor overheating and overcurrent in the electronic control system, which can affect the service life of the wiring harness and the product. Working torque can decay prematurely within the warranty period, and in severe cases, it can potentially damage the motor or PCB circuit board, leading to short circuits.

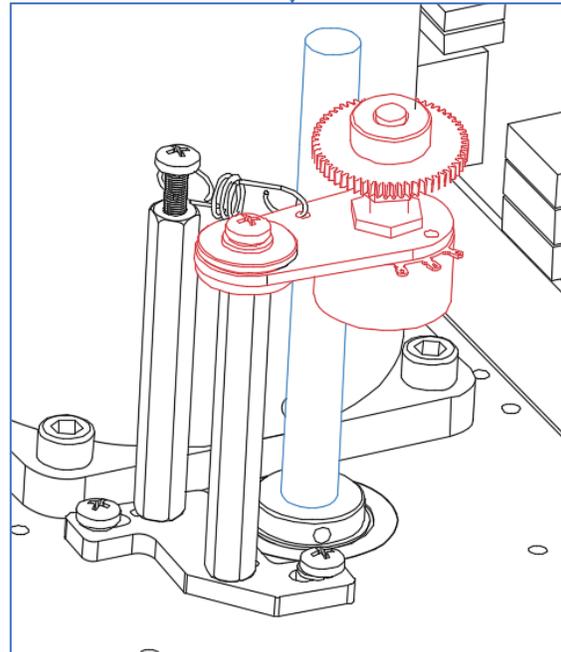
2.1 Position calibration

In the later two parts: "2.2 Full Open Position Calibration" and "2.3 Full Close Position Calibration", you will often see some parameters appearing on the right side of the setting page. If you do not often work in the field of electric actuator installation, we will advance science popularization on this page.

① Let's first look at the parameters in the figure below



② This parameter is actually the resistance value of the internal "potentiometer" of the product.



Our potentiometer (the red mechanism in the lower left corner) is combined with a column with a toothed surface (the blue column in the lower left corner). Through the mechanical structure of the product, the column will drive the potentiometer and rotate along with the valve.

When opening the valve, the resistance of the potentiometer will increase as it rotates. Generally, the factory calibrated fully open position has a resistance of around 3000.

When closing the valve, the resistance of the potentiometer will decrease as it rotates. Generally, the factory calibrated fully closed position has a resistance of around 200.

The control card also displays the percentage of valve opening by receiving and calculating this resistance value. The potentiometer has a limit of rotation angle, with a resistance value limit of about 100 for closing the valve and a resistance value limit of about 950 for opening the valve. When you perform calibration, you should try to avoid approaching the limit to prevent the potentiometer from getting stuck after reaching the limit, causing the transmission gear to slip away from the mechanical structure. Once the gear slips, it represents mechanical damage and also indicates that the valve position is disrupted, requiring a complete recalibration before recovery.

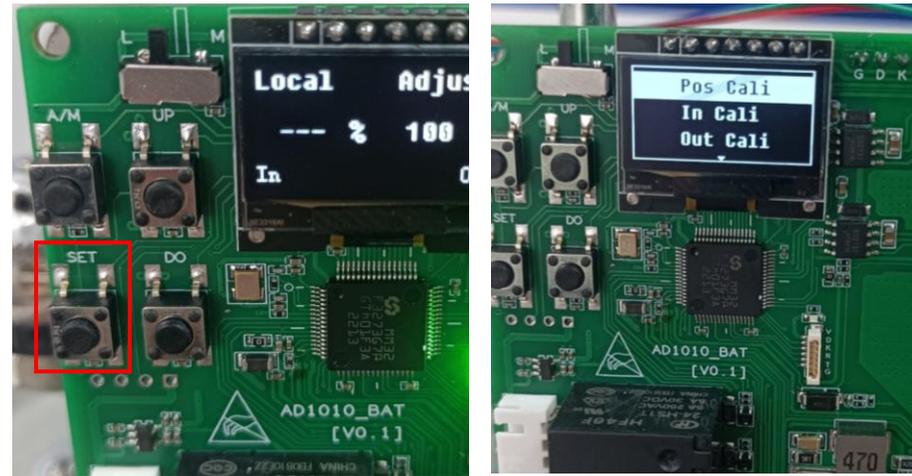
2.2 Full close position calibration

In "2.2 Full close position calibration", we will guide you to teach the full close position of the product.

1. Switch the control card mode to LOCAL and enter the setup menu.
2. Enter the "Pos Cali" submenu and select "ShutCali".
3. Adjust the valve position on the ShutCali page and save the parameters.
4. Return to the control card main page.



Power on, look at the control card, and switch the mode to LOCAL.



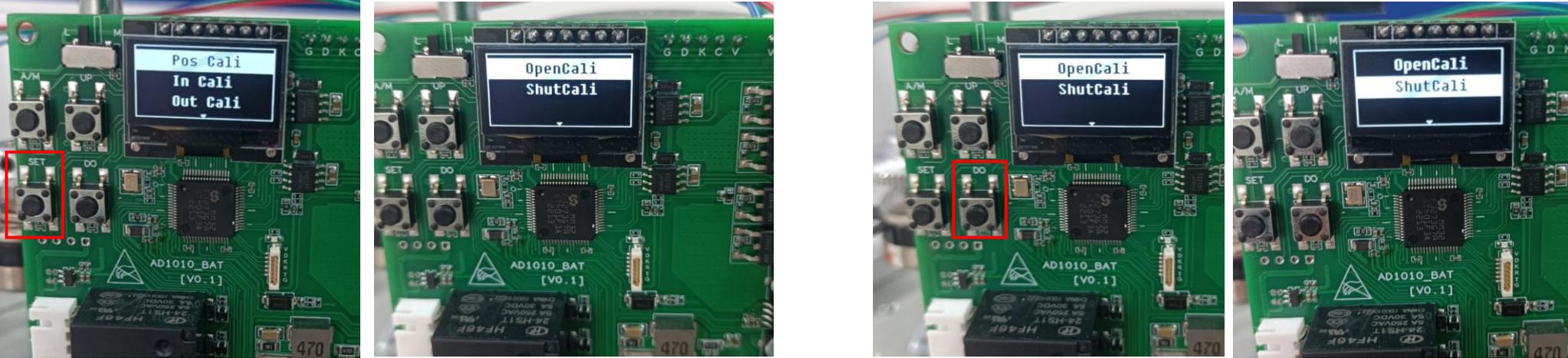
Press the SET key once to enter the menu

For the rest, see the next page



1. Switch the control card mode to LOCAL and enter the setup menu.

2.2 Full close position calibration



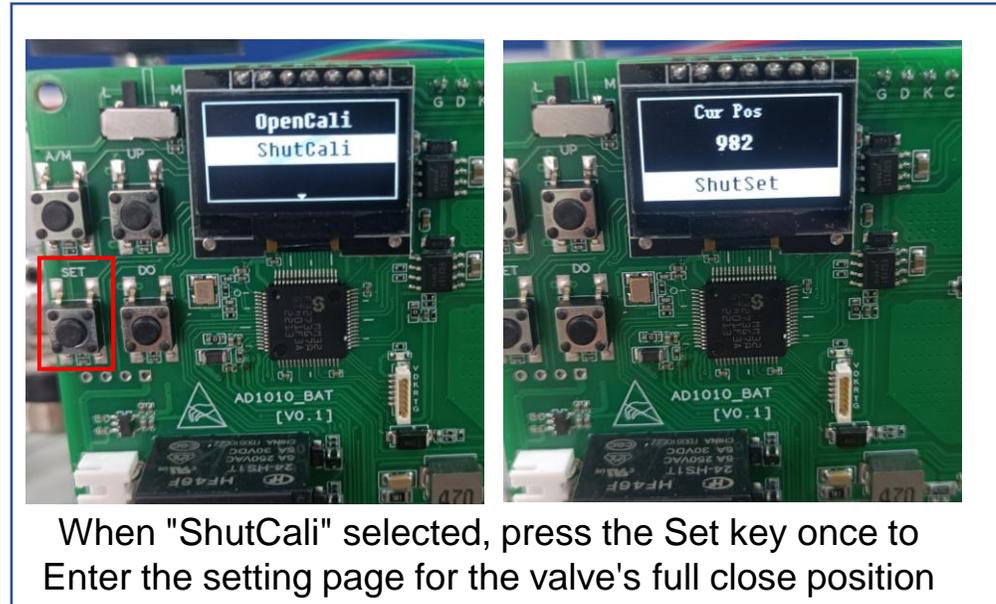
When "Pos Cali" selected, press Set key to enter its submenu
At the same time, you can see that the cursor has selected "Open Cali" →

Press the DO key once to select "ShutCali"

For the rest, see the next page →

2. Enter the "Pos Cali" submenu and select "ShutCali"

2.2 Full close position calibration

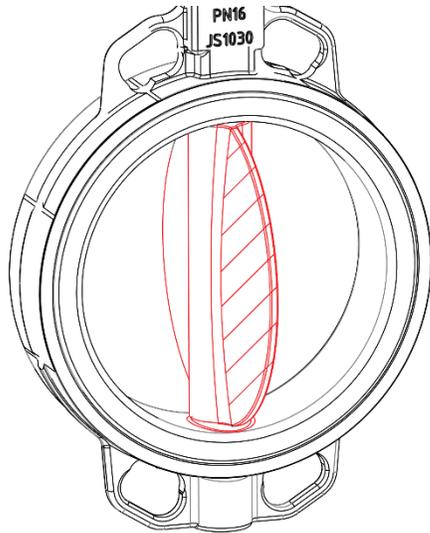


For the rest, see the next page

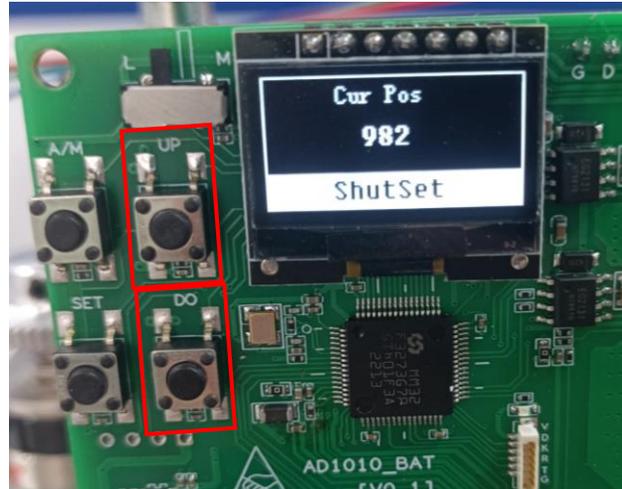


2. Enter the "Pos Cali" submenu and select "ShutCali"

2.2 Full close position calibration



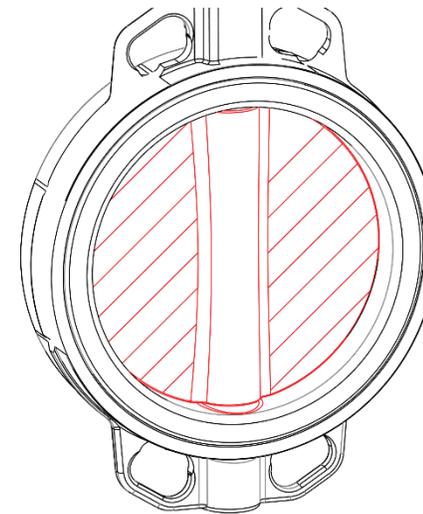
Always check the actual valve position on site during operation



Adjust the valve to the correct closing position:

If the valve is not fully closed, press and hold the DO key of the control card to close the valve. If closed too much, press the UP key to open the valve a little.

If the valve is fully closed and you are satisfied with the current position, skip this page.

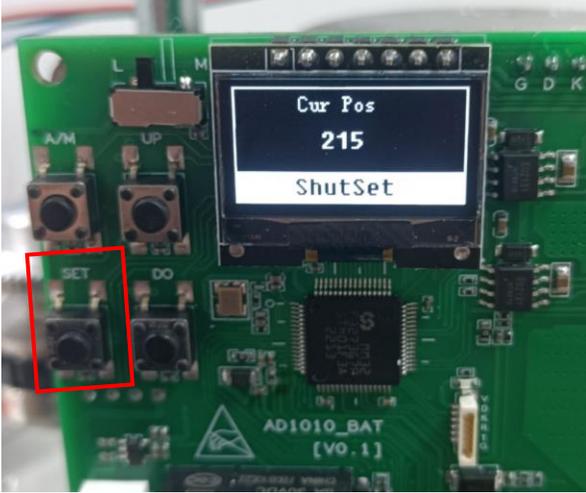
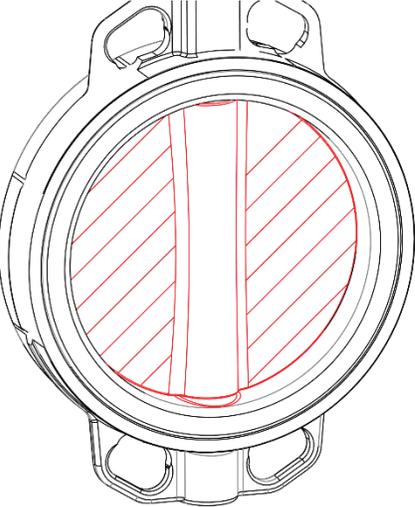


Keep an eye on the position of the valve and stop operation as soon as it reaches the fully closed position.

For the rest, see the next page

3. Adjust the valve position on the ShutCali page and save the parameters.

2.2 Full close position calibration



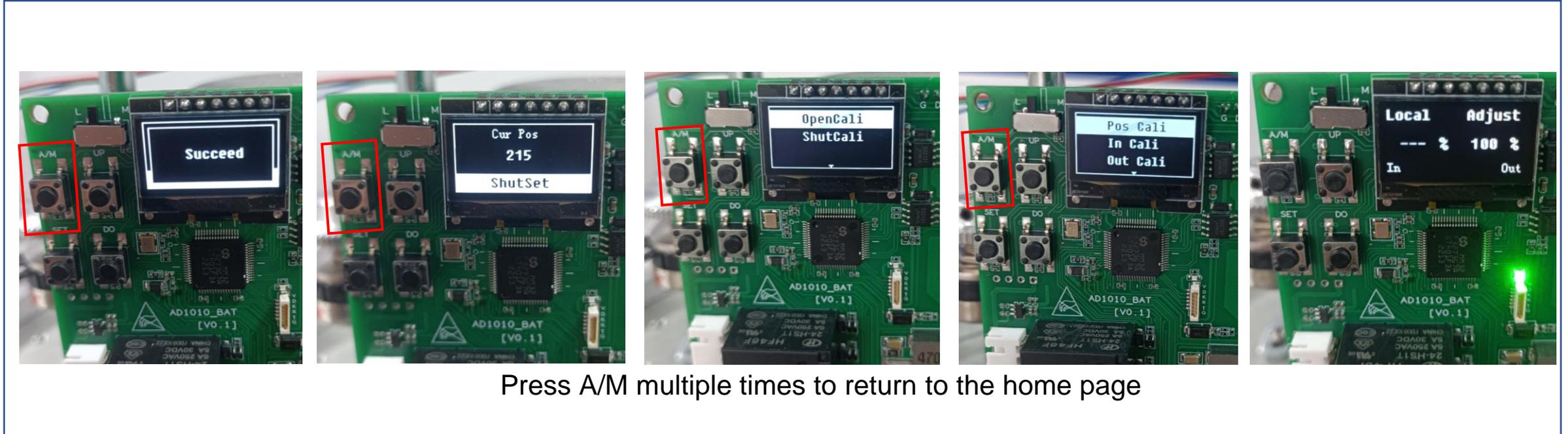
After the valve is completely closed → Press set key once to save resistance value and valve position → "Success" on the screen means the save was successful

For the rest, see the next page



3. Adjust the valve position on the ShutCali page and save the parameters.

2.2 Full close position calibration



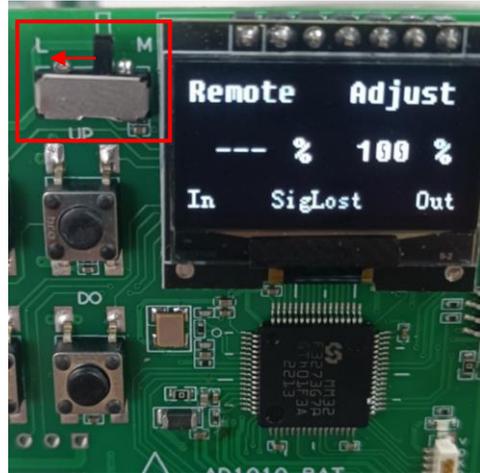
4. Return to the control card main page.

2.2 Fully Close Position Calibration
END

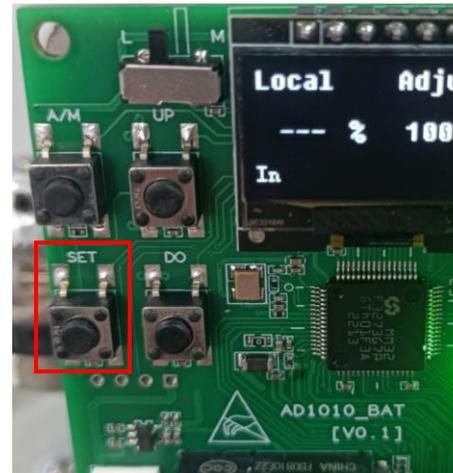
2.3 Full open position calibration

In "2.3 Full open position calibration", we will guide you to teach the full close position of the product.

1. Switch the control card mode to LOCAL and enter the setup menu.
2. Enter the "Pos Cali" submenu and select "OpenCali".
3. Adjust the valve position on the OpenCali page and save the parameters.
4. Return to the control card main page.



Power on, look at the control card, and switch the mode to LOCAL.



Press the SET key once to enter the menu

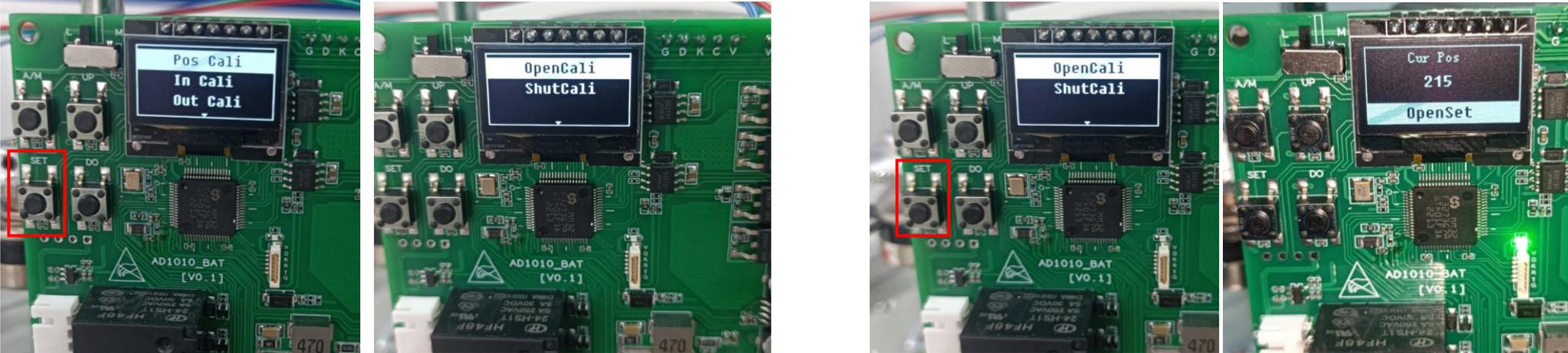


For the rest, see the next page



1. Switch the control card mode to LOCAL and enter the setup menu.

2.3 Full open position calibration



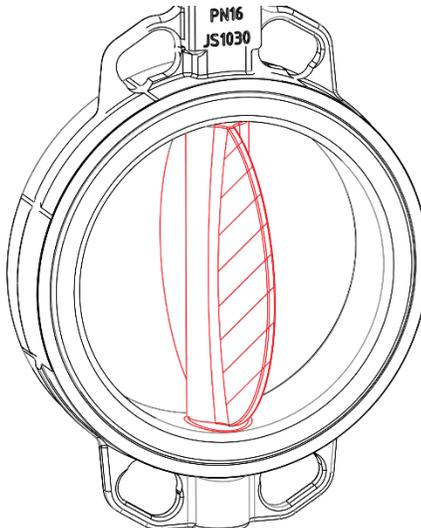
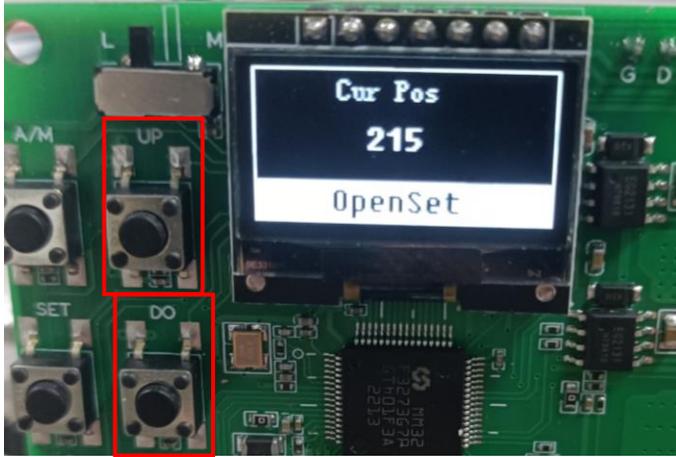
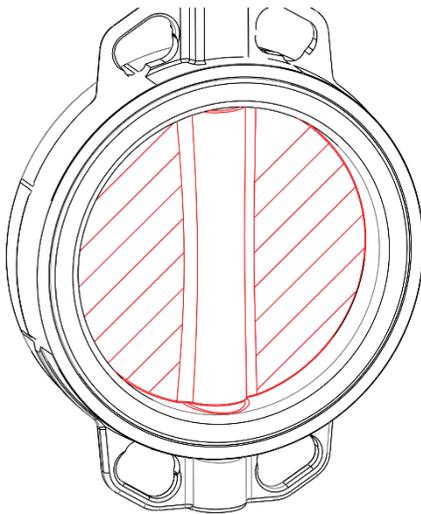
When "Pos Cali" selected, press Set key to enter its submenu
At the same time, you can see that the cursor has selected "Open Cali" →

Press the Set key once to enter "OpenCali"

For the rest, see the next page →

2. Enter the "Pos Cali" submenu and enter "OpenCali"

2.3 Full open position calibration



Always check the actual valve position on site during operation

Adjust the valve to the correct open position:
If the valve is not fully open, press and hold the UP key on the control card to open the valve. If there is too much opening, press the DO key to slightly close the valve.

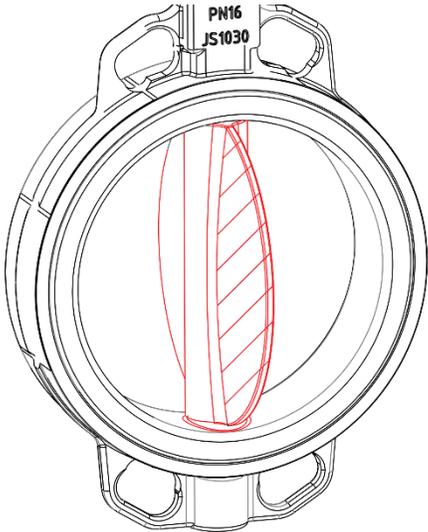
If the valve is open and you are satisfied with the current valve closing condition, skip the operation on this page.

Keep an eye on the position of the valve and stop operation as soon as it reaches the fully closed position.

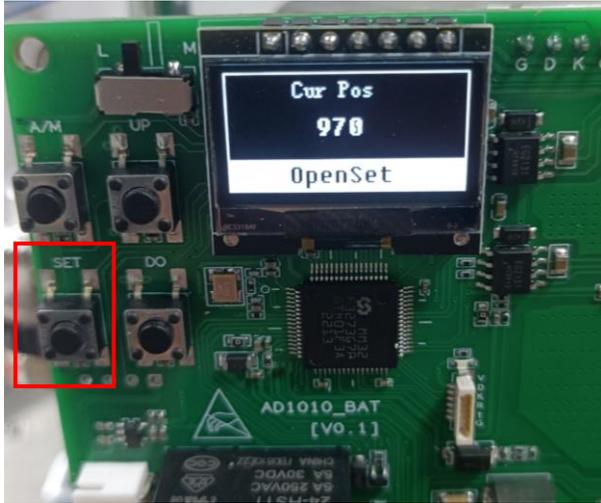
For the rest, see the next page

3.Adjust the valve position on the OpenCali page and save the parameters.

2.3 Full open position calibration



PN16
JS1030



Cur Pos
970
OpenSet



Succeed

AD1010_BAT
[V0.1]

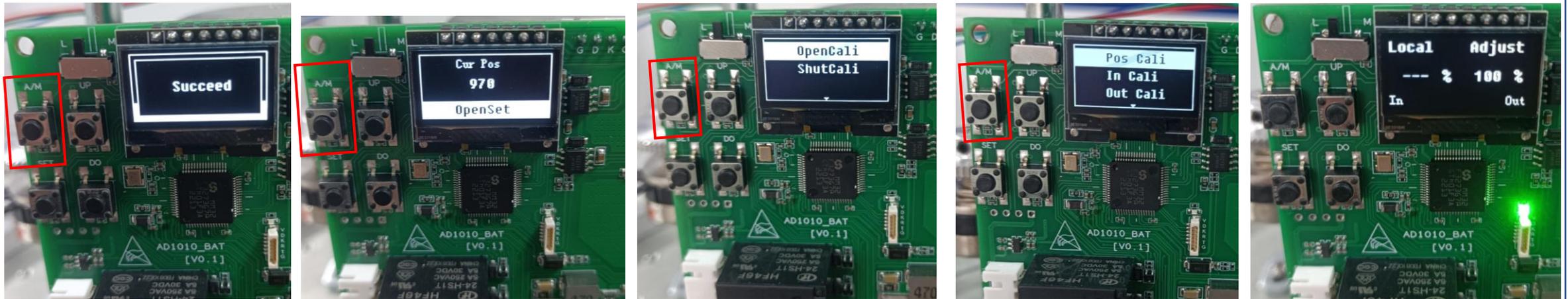
After the valve is completely opened → Press set key once to save resistance value and valve position → "Success" on the screen means the save was successful

For the rest, see the next page



3. Adjust the valve position on the OpenCali page and save the parameters.

2.3 Full open position calibration



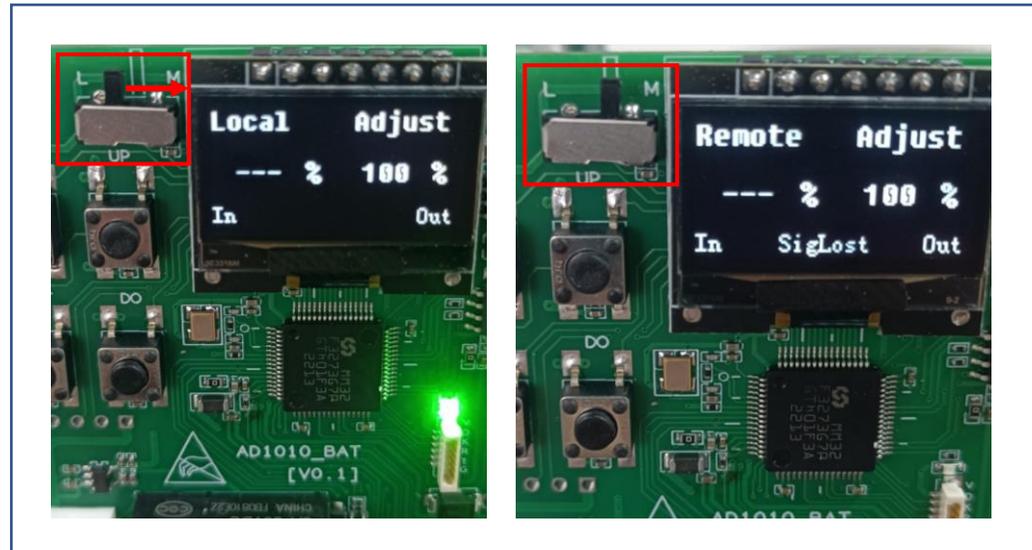
Press A/M key multiple times to return to the main page

4. Return to the control card main page.

2.3 Fully open position calibration
END

2.4 Restore normal working condition

If you feel that the product no longer requires adjustment, you can switch the mode back to Remote



2.4 Restore normal working condition
END

Switch the mode to REMOTE.

3.1 Test 4~20mA Remote control signal

1. After the valve position calibration is completed, the product can safely use the remote control function, that is, it can receive 4~20mA analog control signals and adjust the valve to the corresponding position of the analog signal.

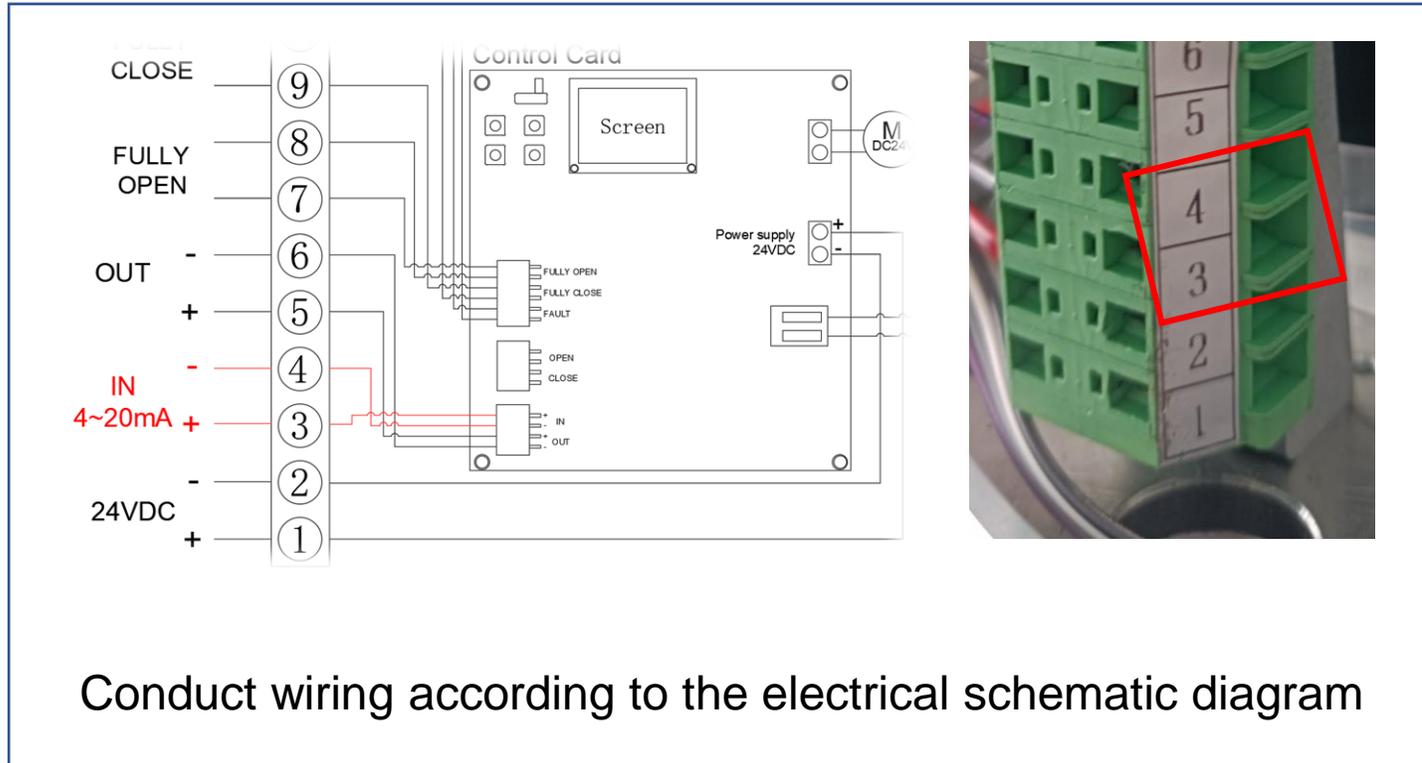
2. In order to test whether the analog signal can work properly, we need to input a control signal of 4 mA and 20 mA analog to the corresponding port to check whether the receiving end of the intelligent integrated panel can display the correct valve position. See the next page for the specific operation process.

Q/A

Q: What is a 4~20mA control signal? How does it control the product?

A: 4-20mA is a digital control signal that is typically input into the corresponding port of the product by a device that can output this analog control signal. When our product receives a 4mA signal in remote mode, it will fully close the valve, that is, reach the 0% valve position. When our product receives a 20mA signal in remote mode, it will fully open the valve, that is, reach the 100% valve position. When receiving a signal between 4 mA and 20 mA, the product will operate to the corresponding percentage valve position.

3.1 Test 4~20mA Remote control signal



For the rest, see the next page

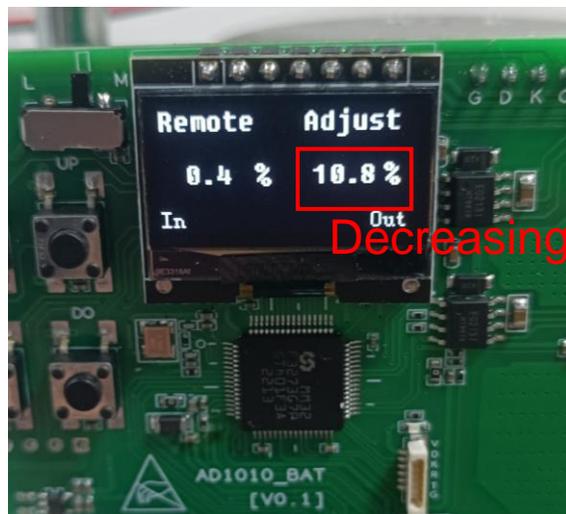


1. Power off and wire the IN port of the terminal block.

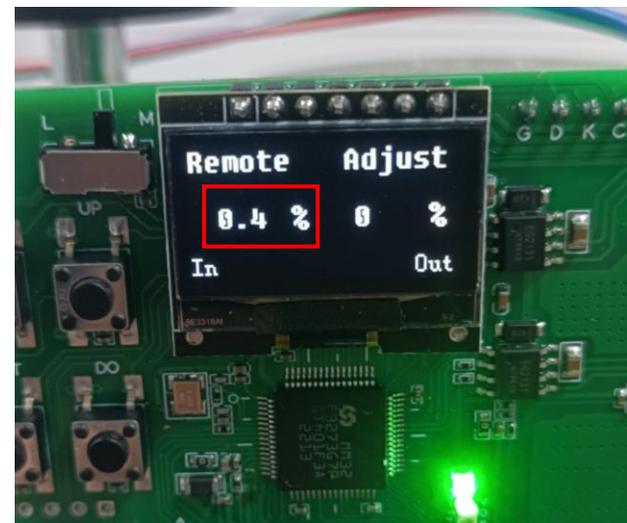
3.1 Test 4~20mA Remote control signal



Power on the product and use the on-site 4~20mA output device to input a 4mA signal to the product



The product may start working after receiving a 4mA signal, this is a normal state.



When the product receives a 4mA analog signal, the percentage on the left will display 0%. If the number is not at 0%, it indicates that calibration is required.

For the rest, see the next page

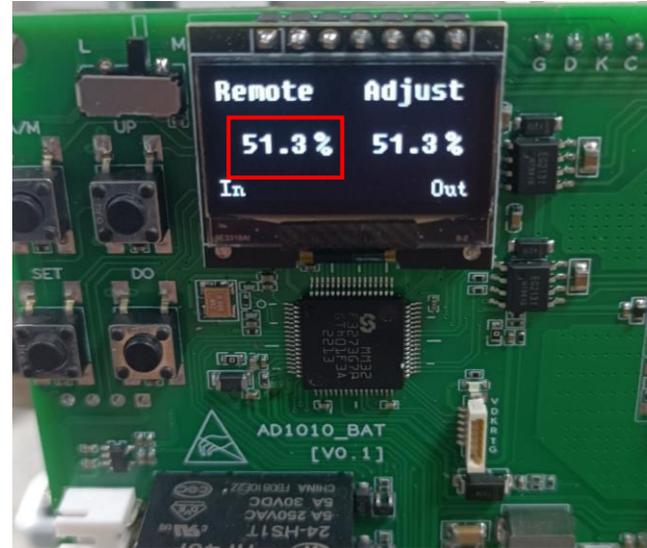


2. Check the wire sequence of the port, power on the product, input a 4mA analog signal, and check whether the control card can display 0% normally.

3.1 Test 4~20mA Remote control signal



Use the on-site 4-20 mA output device to input a 12 mA signal to the product →



When the product has no signal or receives a 12 mA analog signal, the percentage on the left will display 50%. If not, check whether the parameter is between 49.6% and 50.4%. If not, it indicates that calibration is required.

For the rest, see the next page →

3. Input a 12 mA analog signal and check whether the control card can display 50% normally

3.1 Test 4~20mA Remote control signal



Use the on-site 4~20mA output device to input 20mA signal to the product



When the product has no signal or receives a 20mA analog signal, the percentage on the left will display 100%. If the number is not at 100%, it indicates that calibration is required.

3.1 Test 4~20mA Remote control signal
END

4. Input 20mA analog signal and check whether the control card can display 100% normally

3.2 Calibrate 4~20mA remote analog control signal

If the signal received by the product has a deviation, it can be adjusted using the analog control signal calibration function of the control card.

1. Switch the control card mode to LOCAL and enter the setup menu.
2. Enter the "In Cali" submenu and select "4mA Cali", Calibrate to improve signal accuracy.
3. Select and enter "20mA Cali", Calibrate to improve signal accuracy.
4. Return to the control card main page and back to REMOTE mode

Power on, look at the control card, and switch the mode to LOCAL. → Press the SET key once to enter the menu

For the rest, see the next page



1. Switch the control card mode to LOCAL and enter the setup menu.

3.2 Calibrate 4~20mA remote analog control signal



Press the DO key once to select "In Cali"



Press SET key once to enter the "In Cali" submenu



For the rest, see the next page



2. Enter the "In Cali" submenu and select "4mA Cali", Calibrate to improve signal accuracy.

3.2 Calibrate 4~20mA remote analog control signal



Press the SET key once to enter "4mA Cali"



use the on-site 4~20mA output device to input a 4mA signal to the product.



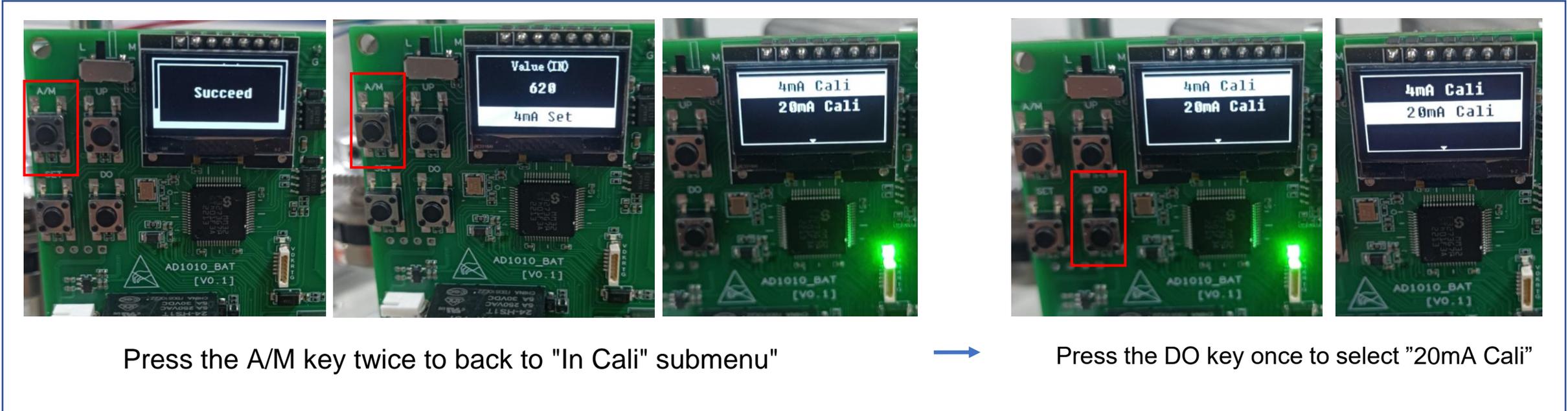
Press the SET key once to calibrate 4mA signal



2. Enter the "In Cali" submenu and select "4mA Cali", Calibrate to improve signal accuracy.

For the rest, see the next page

3.2 Calibrate 4~20mA remote analog control signal



3. Select and enter "20mA Cali", Calibrate to improve signal accuracy.

For the rest, see the next page



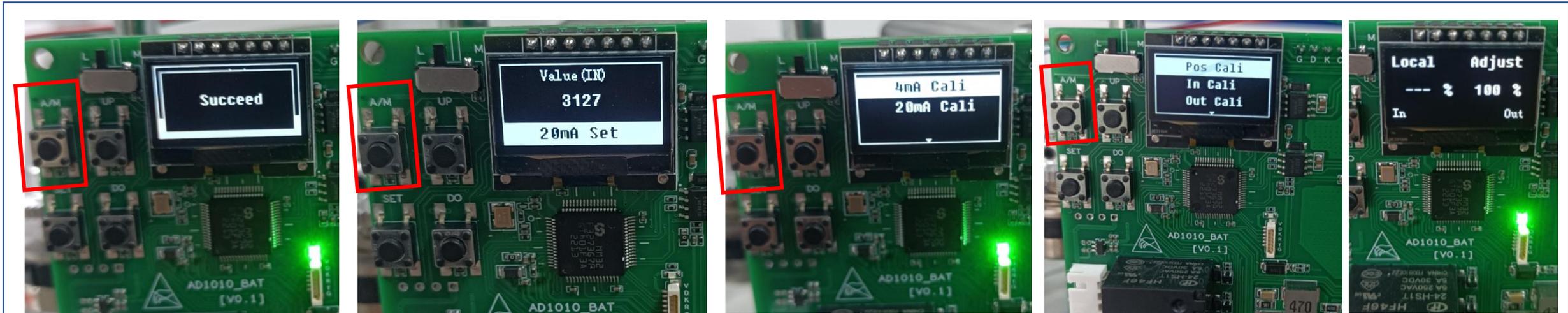
3.2 Calibrate 4~20mA remote analog control signal

Press the SET key once to enter 20mA Cali → use the on-site 4~20mA output device to input a 20mA signal to the product. → Press the SET key once to calibrate 20mA signal

3. Select and enter “20mA Cali”, Calibrate to improve signal accuracy.

For the rest, see the next page

3.2 Calibrate 4~20mA remote analog control signal



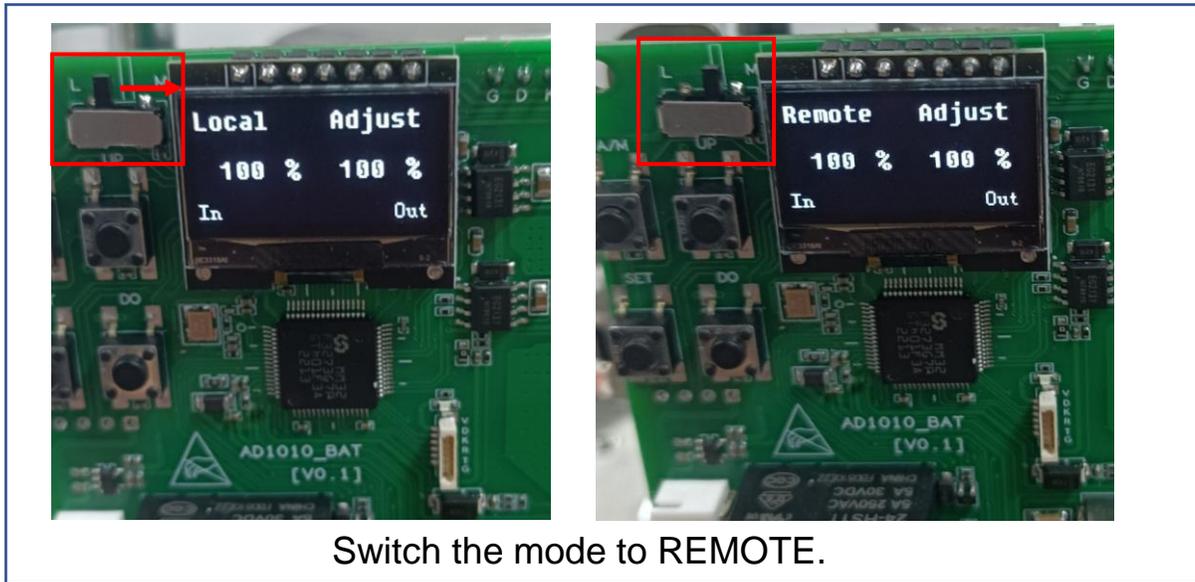
Press A/M key multiple times to return to the main page

4. Return to the control card main page and back to REMOTE mode

For the rest, see the next page



3.2 Calibrate 4~20mA remote analog control signal



3.2 Calibrate 4~20mA
remote analog control signal
END

4. Return to the control card main page and back to REMOTE mode

4.1 Test 4~20mA analog output signal

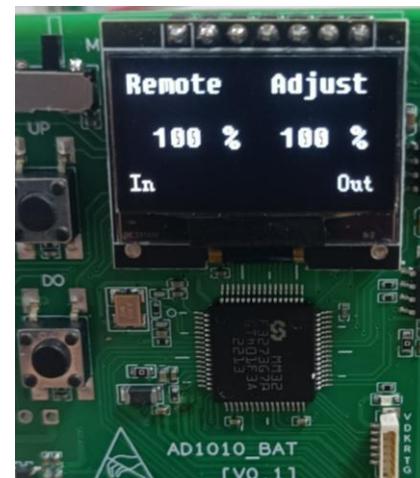
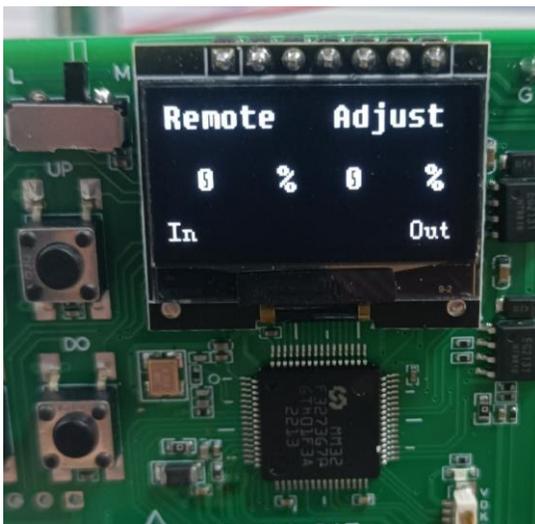
If the product is required to output mA signals for the actual valve position on site, you can adjust the product to the fully open and fully closed positions by connecting the device or multimeter to the port to check whether the 4mA and 20mA signals at the output port are accurate. In the content of 4.1, we will guide you to test the 4~20mA analog output signal of the product.

Power off, connect a multimeter to the OUT port of the Terminal block to test DC current or connect to on-site signal receiving equipment. → Adjust the valve to the fully closed position using any method

For the rest, see the next page →

4.1 Test 4~20mA analog output signal

If the product is required to output mA signals for the actual valve position on site, you can adjust the product to the fully open and fully closed positions by connecting the device or multimeter to the port to check whether the 4mA and 20mA signals at the output port are accurate. In the content of 4.1, we will guide you to test the 4~20mA analog output signal of the product.



When the valve is fully closed, check the parameters of the connected multimeter. If it is not a 4mA signal, it means that the output signal needs to be recalibrated



Next, use any control method to adjust the valve to the fully open position



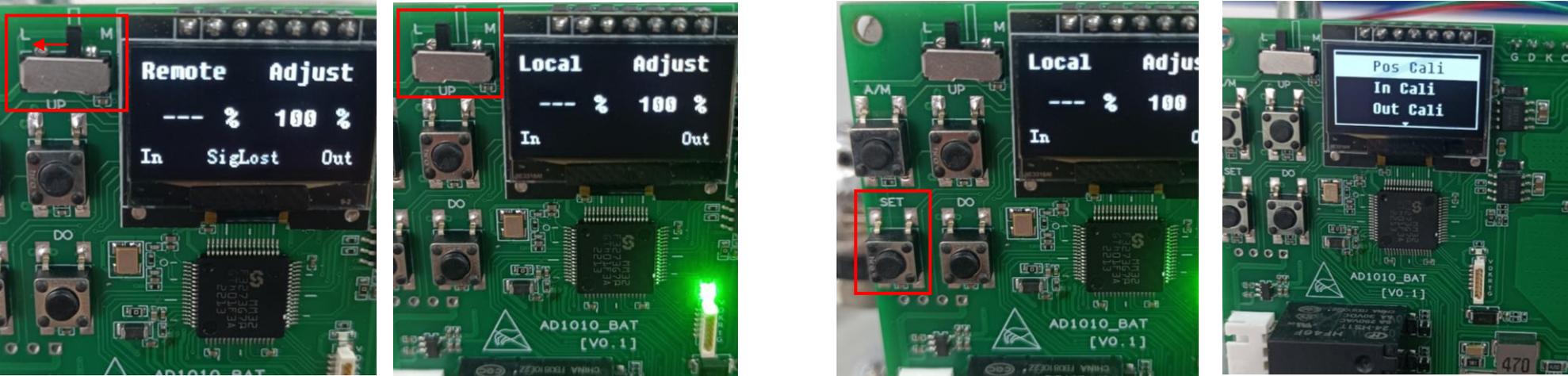
When the valve is fully open, check the parameters of the connected multimeter. If it is not a 20mA signal, it means that the output signal needs to be recalibrated

4.1 Test 4~20mA analog output signal
END

4.2 Calibrate 4~20mA analog output signal

If there is a deviation in the output signal of the product, it can be adjusted using the calibration function of the intelligent integrated panel.

1. Switch the control card mode to LOCAL and enter the setup menu.
2. Enter the “Out Cali” submenu and select “4mA Cali”, Calibrate to improve signal accuracy.
3. Select and enter “20mA Cali”, Calibrate to improve signal accuracy.
4. Return to the control card main page and back to REMOTE mode



Power on, look at the control card, and switch the mode to LOCAL. → Press the SET key once to enter the menu

For the rest, see the next page →

1. Switch the control card mode to LOCAL and enter the setup menu.

4.2 Calibrate 4~20mA analog output signal



Press the DO key twice to select "Out Cali"



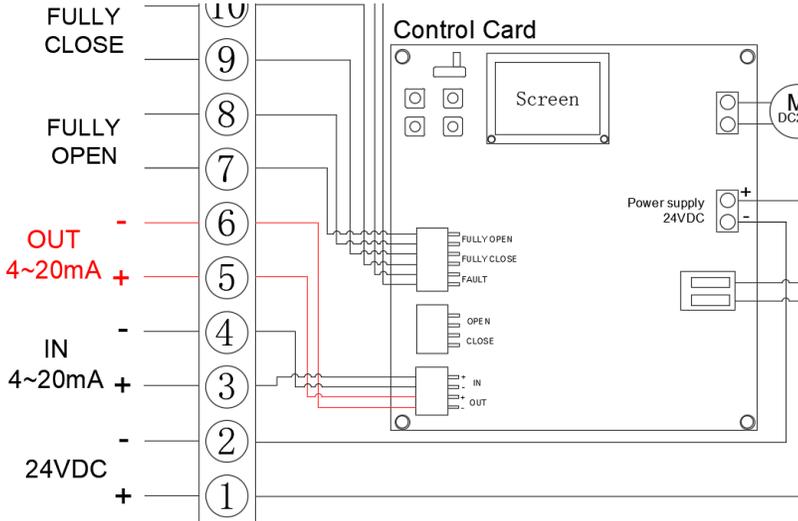
Press the SET key once to enter "Out Cali"

2. Enter the "Out Cali" submenu and select "4mA Cali", Calibrate to improve signal accuracy.

For the rest, see the next page



4.2 Calibrate 4~20mA analog output signal



Press the SET key once to enter "4mA Cali"

Connect a multimeter to the OUT port of the Terminal block to test DC current or connect to on-site signal receiving equipment.

For the rest, see the next page

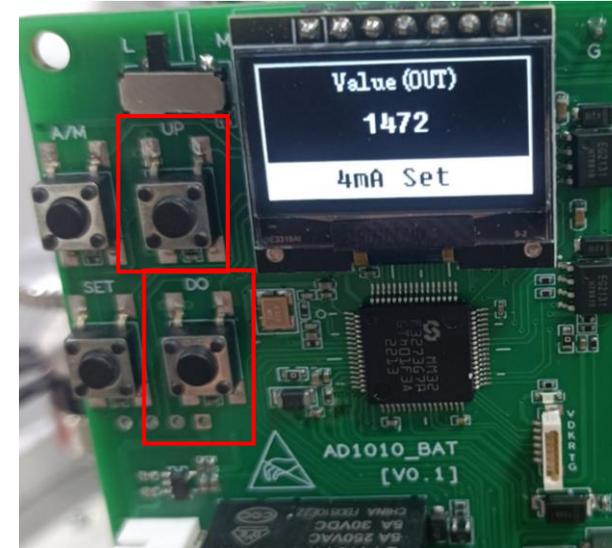


2. Enter the "Out Cali" submenu and select "4mA Cali", Calibrate to improve signal accuracy.

4.2 Calibrate 4~20mA analog output signal



After entering "4mA Cali", the OUT port of the terminal block will automatically output a 4mA signal when the valve reaches the fully closed position



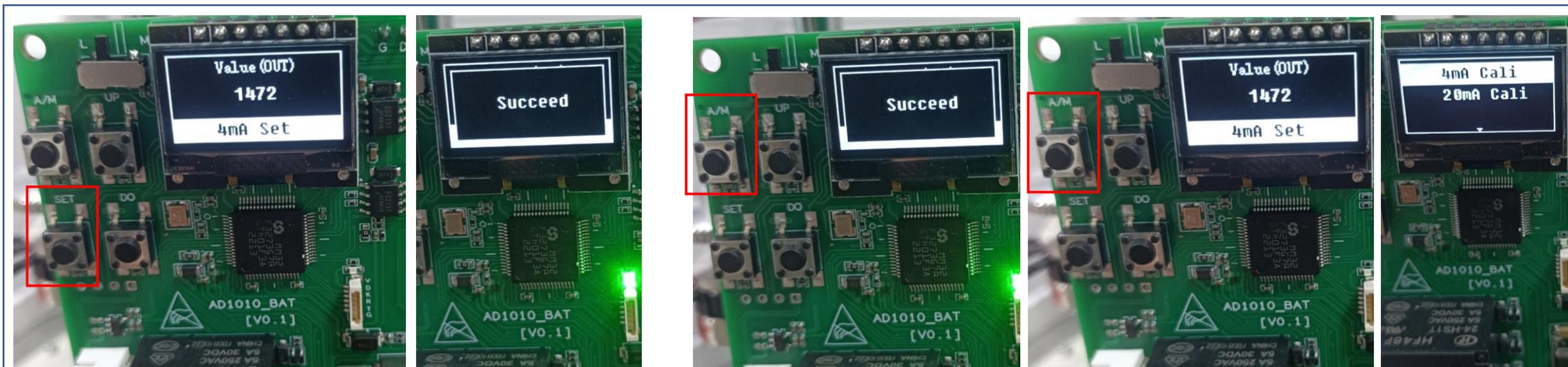
Connect a device that can receive and display mA signals at the OUT port. Adjust parameters by pressing the "UP" and "DO" keys on the remote control. Press the "DO" key to decrease the current 4mA signal, and press the "UP" key to increase the current 4mA signal. Adjust until the accuracy of the 4mA signal is satisfactory



2. Enter the "Out Cali" submenu and select "4mA Cali", Calibrate to improve signal accuracy.

For the rest, see the next page

4.2 Calibrate 4~20mA analog output signal



After completing the adjustment, press the SET key to save the current 4mA signal parameters.



Press the A/M key twice to return to the "Out Cali"

2. Enter the "Out Cali" submenu and select "4mA Cali", Calibrate to improve signal accuracy.

For the rest, see the next page



4.2 Calibrate 4~20mA analog output signal

Press the DO key once to return to select “20mA Cali” → Press the SET key once to enter “4mA Cali”

For the rest, see the next page

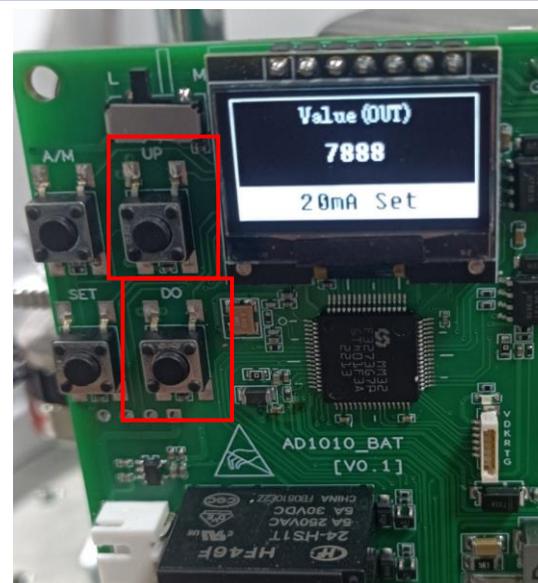


3. Select and enter “20mA Cali”, Calibrate to improve signal accuracy.

4.2 Calibrate 4~20mA analog output signal



After entering "20mA Cali", the OUT port of the terminal block will automatically output a 20mA signal when the valve reaches the fully closed position



Connect a device that can receive and display mA signals at the OUT port. Adjust parameters by pressing the "UP" and "DO" keys on the remote control. Press the "DO" key to decrease the current 20mA signal, and press the "UP" key to increase the current 20mA signal.

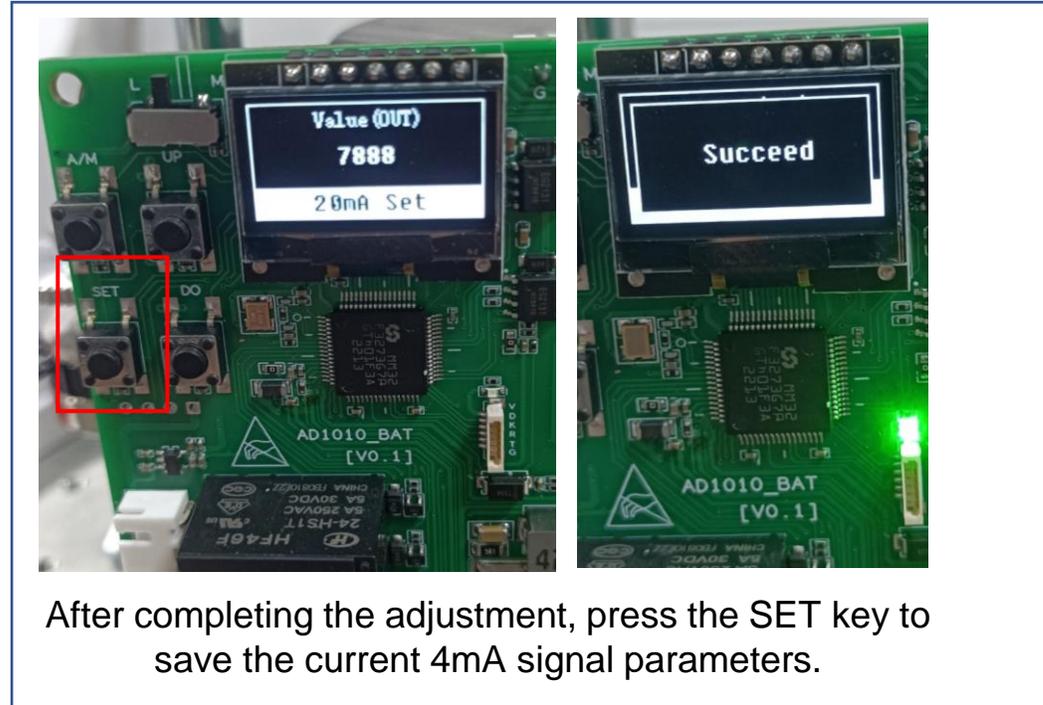
Adjust until the accuracy of the 20mA signal is satisfactory



3. Select and enter "20mA Cali", Calibrate to improve signal accuracy.

For the rest, see the next page

4.2 Calibrate 4~20mA analog output signal

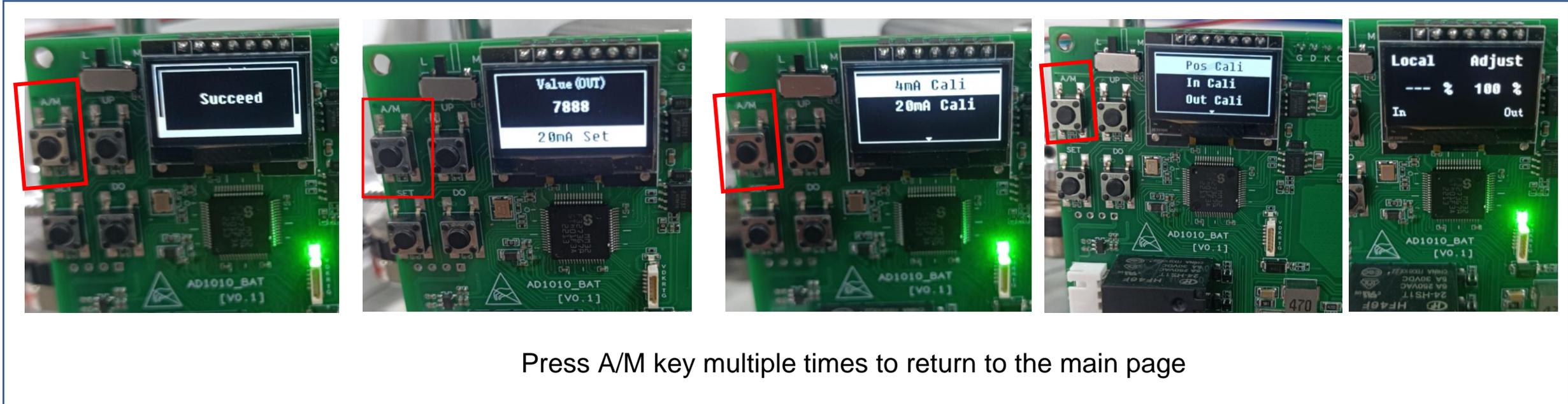


For the rest, see
the next page



3. Select and enter “20mA Cali”, Calibrate to improve signal accuracy.

4.2 Calibrate 4~20mA analog output signal

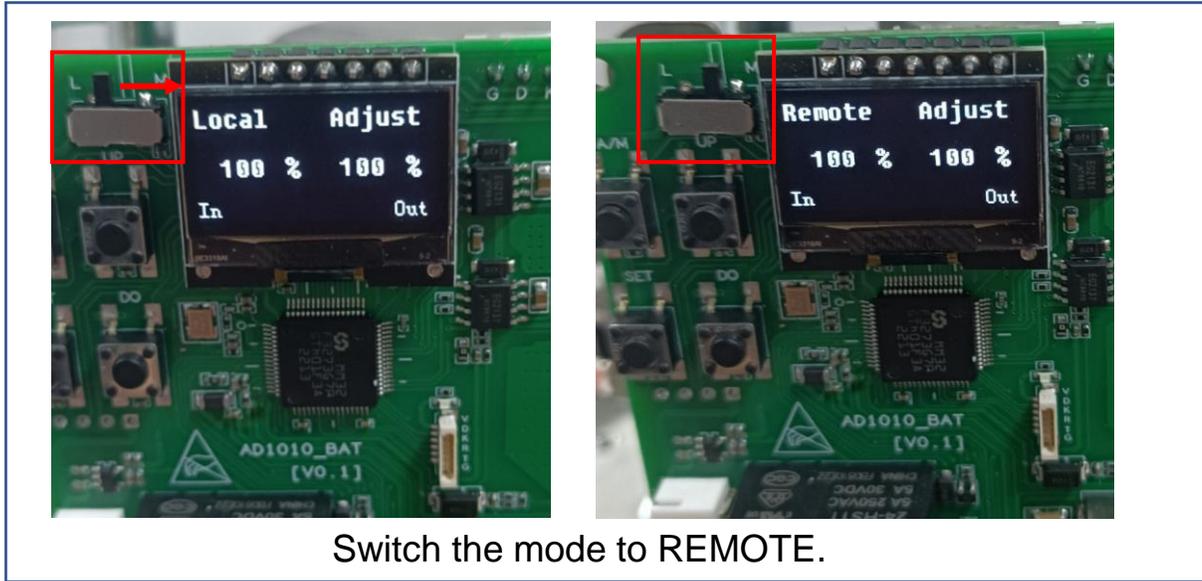


4. Return to the control card main page and back to REMOTE mode

For the rest, see the next page



4.2 Calibrate 4~20mA analog output signal



4.2 Calibrate 4~20mA
remote analog output signal
END

4. Return to the control card main page and back to REMOTE mode

5.1 Test the Auxiliary contact of product

When our product reaches the fully open and fully closed positions, there is an auxiliary contact on the terminal block that changes from disconnect to connect as a signal.

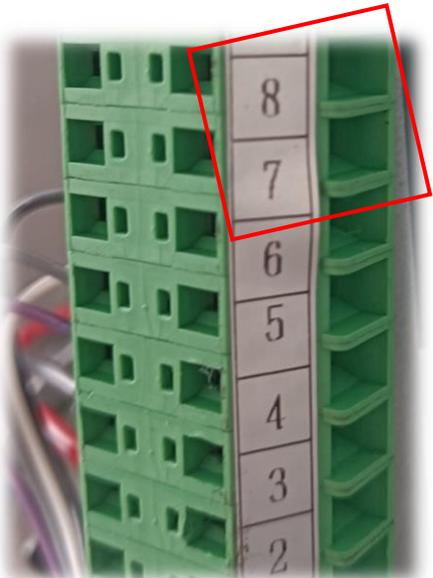
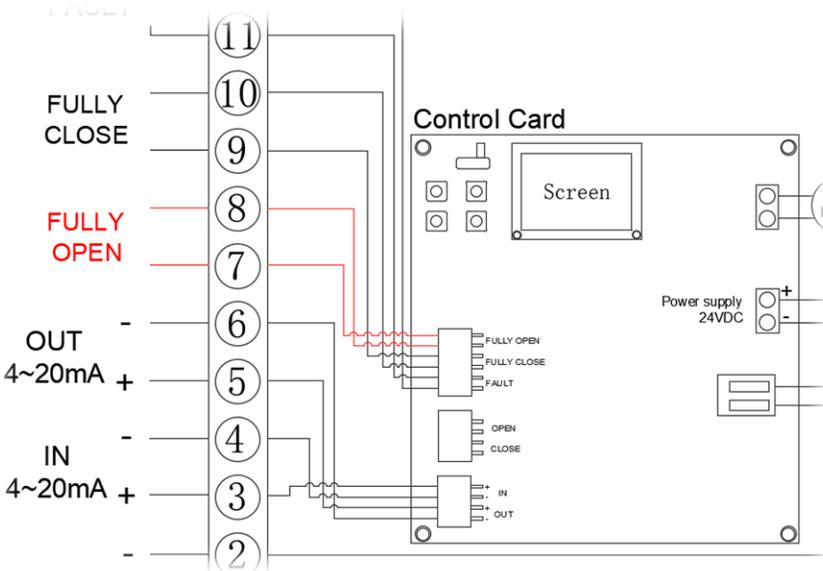
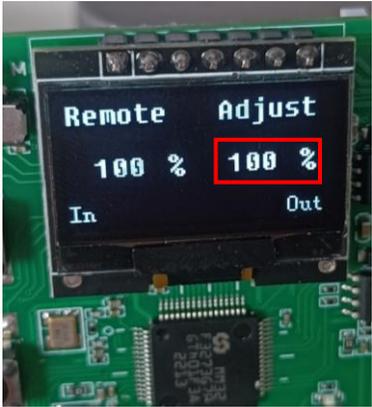
Fully closed the valve first → Access the multimeter or related devices on port 9 and 10 of the terminal block Normal if ports 9 and 10 are connected.

For the rest, see the next page



1. Completely close the valve by using any control, then plug in the multimeter or related equipment at port 9 and 10 of the terminal block to check if the port changes from disconnect to connect when the valve is completely closed.

5.1 Test the Auxiliary contact of product

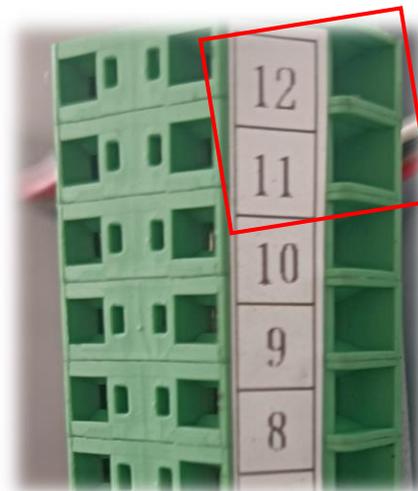
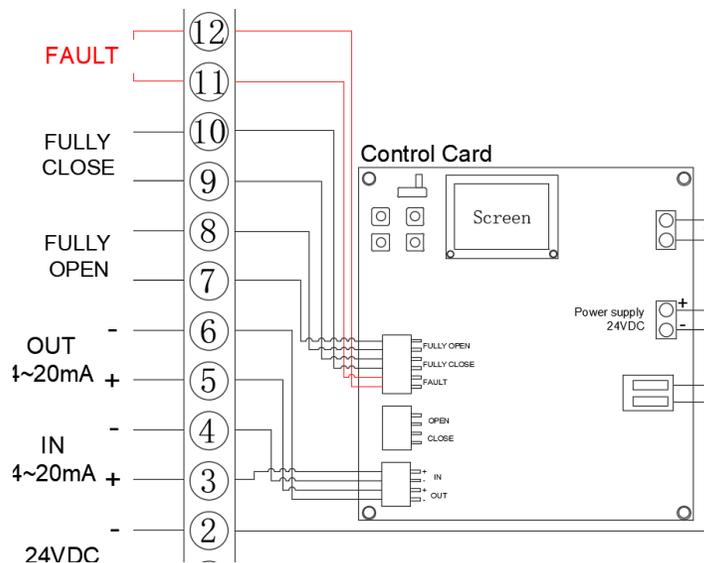


Fully opened the valve first → Access the multimeter or related devices on port 7 and 8 of the terminal block Normal if ports 7 and 8 are connected.

For the rest, see the next page →

2. Completely open the valve by using any control, then plug in the multimeter or related equipment at port 7 and 8 of the terminal block to check if the port changes from disconnect to connect when the valve is completely opened.

5.1 Test the Auxiliary contact of product



When you see a Error code on control card



Access the multimeter or related devices on port 11 and 12 of the terminal block Normal if ports 11 and 12 are connected.

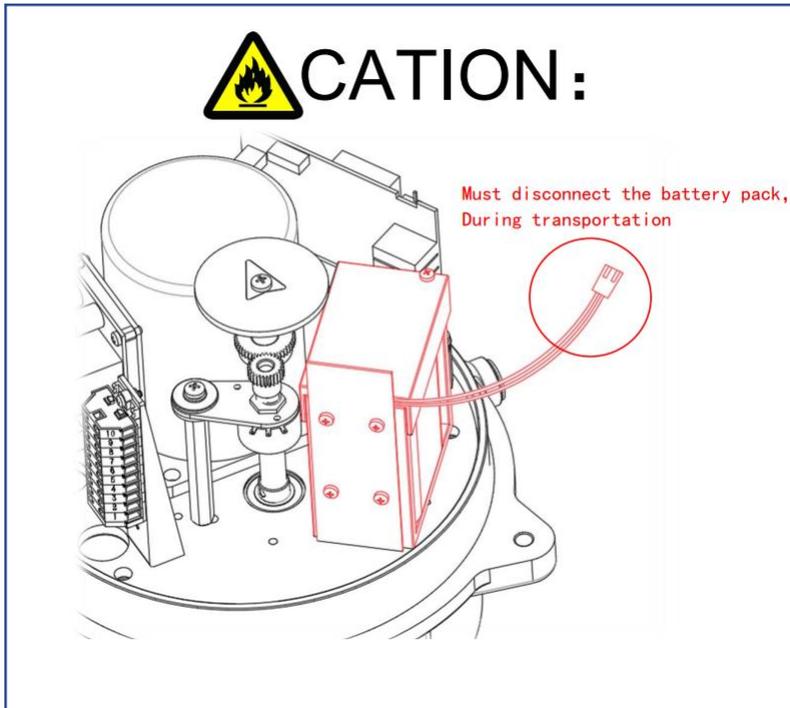
5.1 Test the Auxiliary contact of product
END

3. When the product has an error code, ports 10 and 11 will change from disconnect to connect. The simplest test method is to disconnect the 4~20mA signal in REMOTE mode and the product will report "Siglost" when the FAULT port will change from disconnect to connect

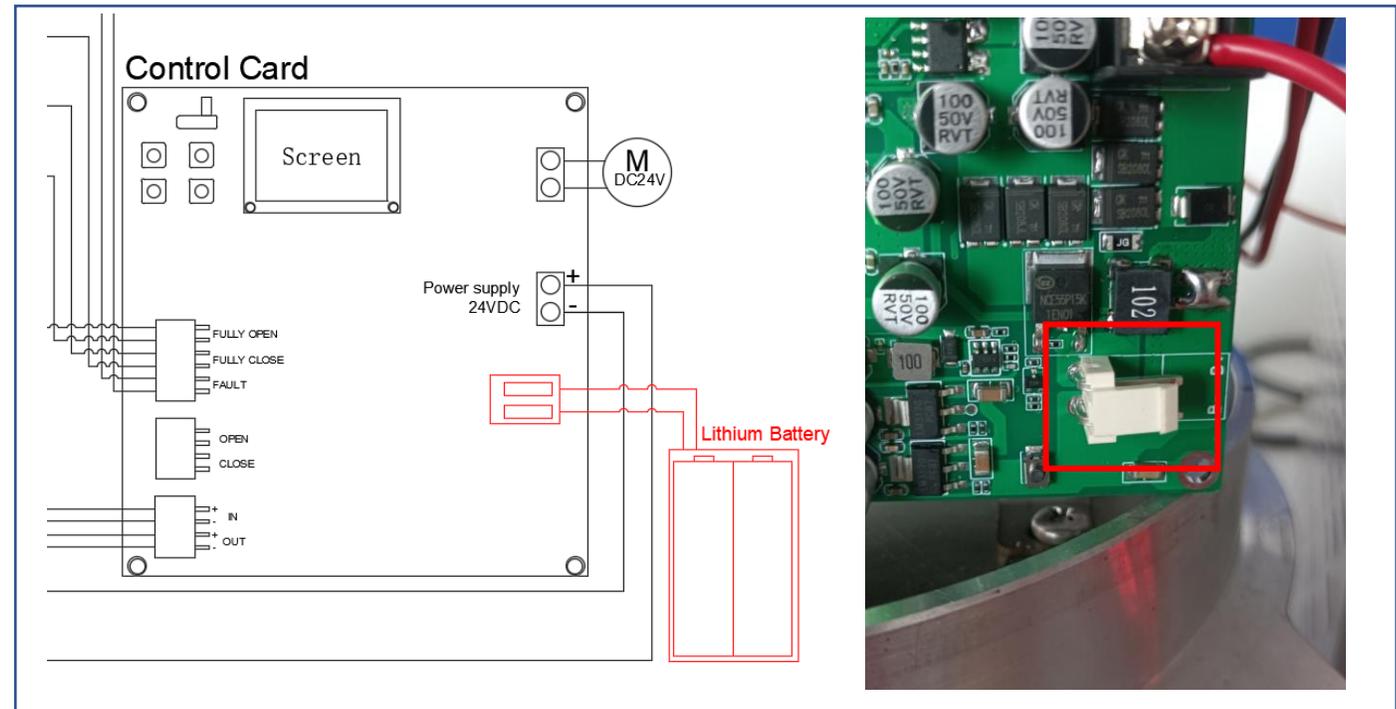
6. BB function setting

Usually we unplug the lithium batteries when transporting the product. Connect the lithium batteries to the printed circuit board after you have made the relevant settings.

When the lithium battery is connected to the control card, the power-off reset function of the product is activated. When the product is disconnected, the lithium battery will drive the product and close the valve. If you want the lithium battery to open the valve after the product has been disconnected or move to any open position, read the instructions on the next page.



The connection between the lithium battery and the control card should be disconnected during debugging, transportation and storage.



Connection port for lithium battery

6. BB function setting

If you want to modify the valve position of BB function:

1. Switch the control card mode to LOCAL and enter the setup menu.
2. Enter the “Sys Set” submenu and select “PwrLosOp”
3. Enter “PwrLosOp” to change power lost setting
4. Return to the control card main page and back to REMOTE mode

Power on, look at the control card, and switch the mode to LOCAL. → Press the SET key once to enter the menu

For the rest, see the next page

1. Switch the control card mode to LOCAL and enter the setup menu.

6. BB function setting



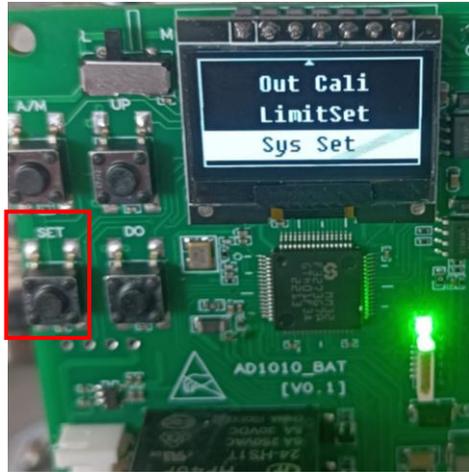
Press DO multiple times until “Sys Set” is selected

2. Enter the “Sys Set” submenu and select “PwrLosOp”

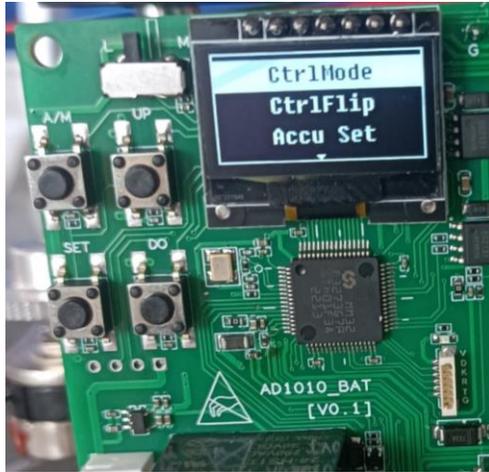
For the rest, see the next page



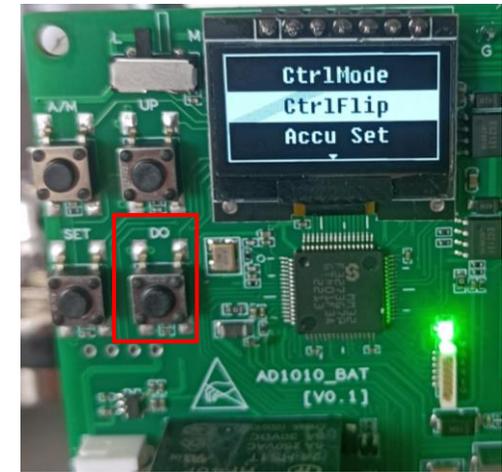
6. BB function setting



Press SET key once to enter "Sys Set"



Press DO multiple times until "PwrLosOp" is selected

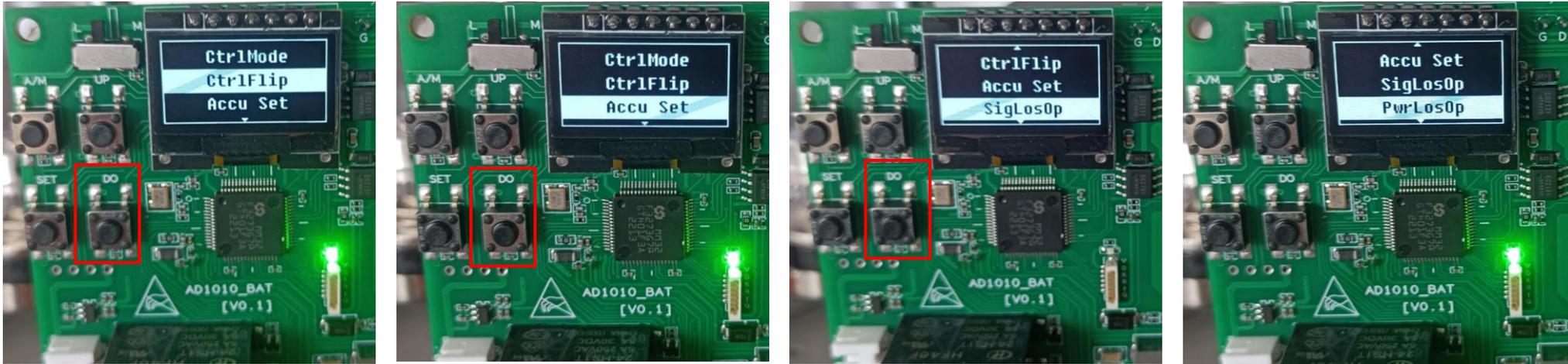


2. Enter the "Sys Set" submenu and select "PwrLosOp"

For the rest, see the next page



6. BB function setting



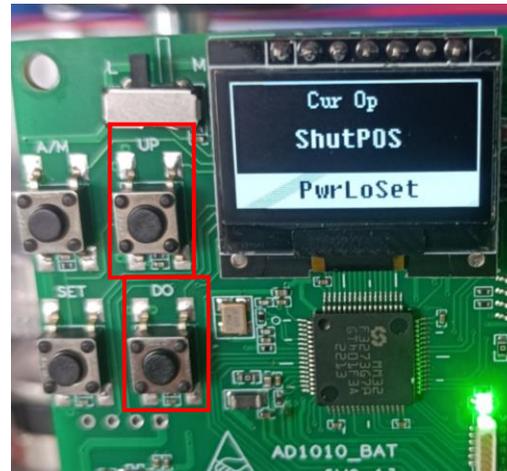
For the rest, see the next page



Press DO multiple times until “PwrLosOp” is selected

2. Enter the “Sys Set” submenu and select “PwrLosOp”

6. BB function setting



Use UP and DO keys to switch functionality of this page

“ShutPOS”:Valve move to fully close position after power failure.

“OpenPOS” :Valve move to fully open position after power failure.

“Custom” :Valve move to custom position after power failure.

“Keep” :Valve will not move after power failure.

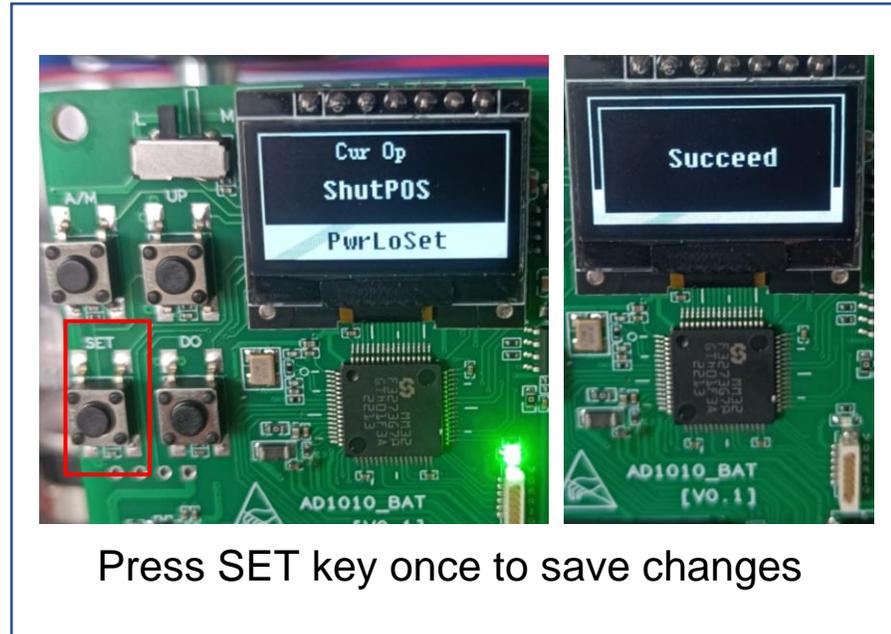
Press SET key once to enter “PwrLosOp” →

3.Enter “PwrLosOp” to change power lost setting

For the rest, see the next page



6. BB function setting

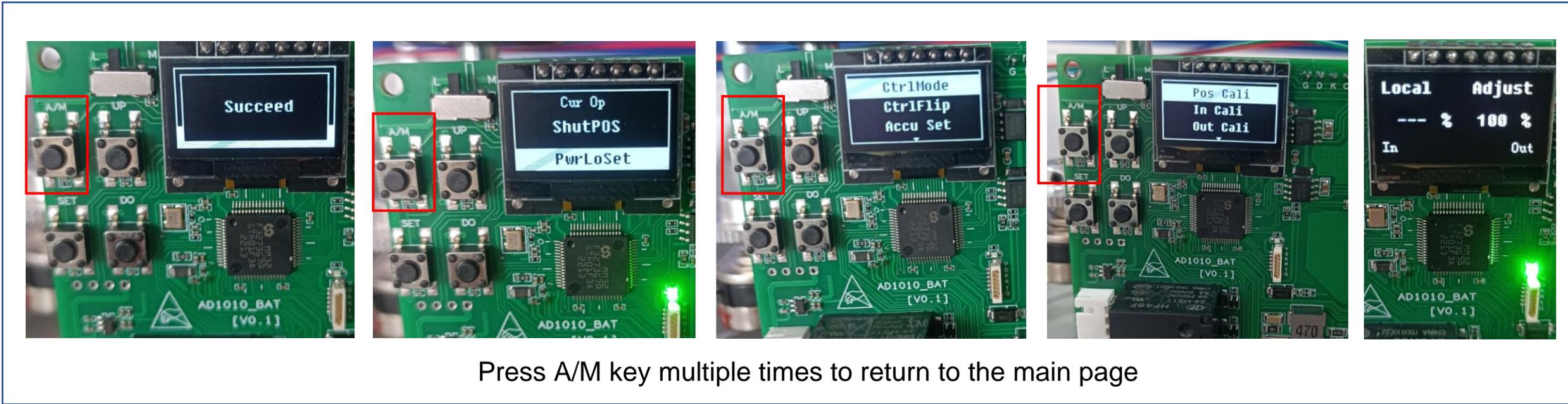


For the rest, see the next page



3. Enter “PwrLosOp” to change power lost setting

6. BB function setting

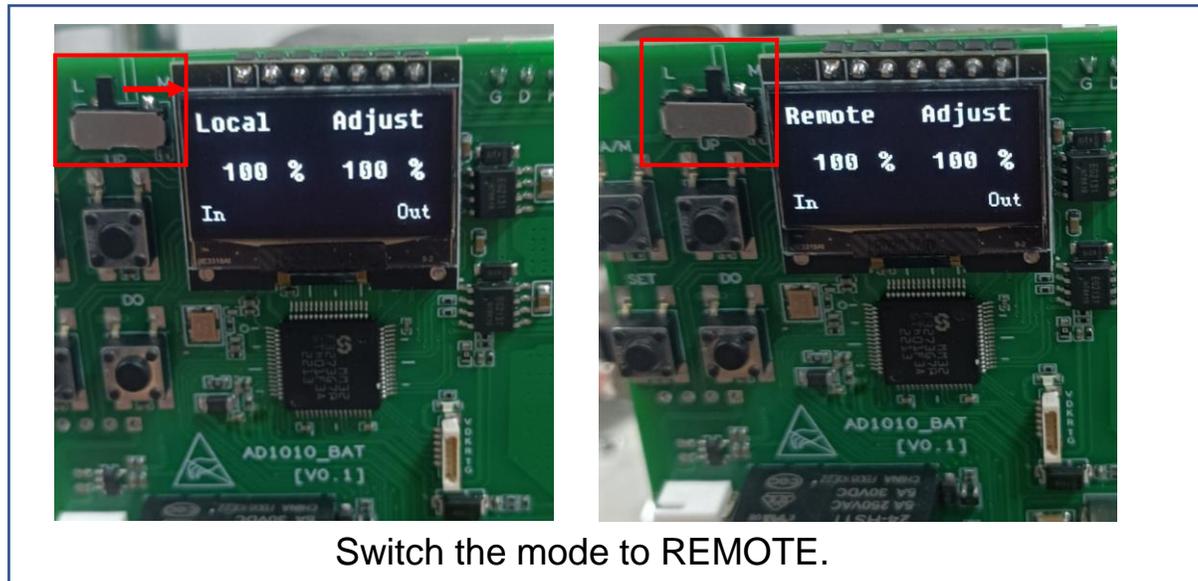


4. Return to the control card main page and back to REMOTE mode

For the rest, see the next page



6. BB function setting

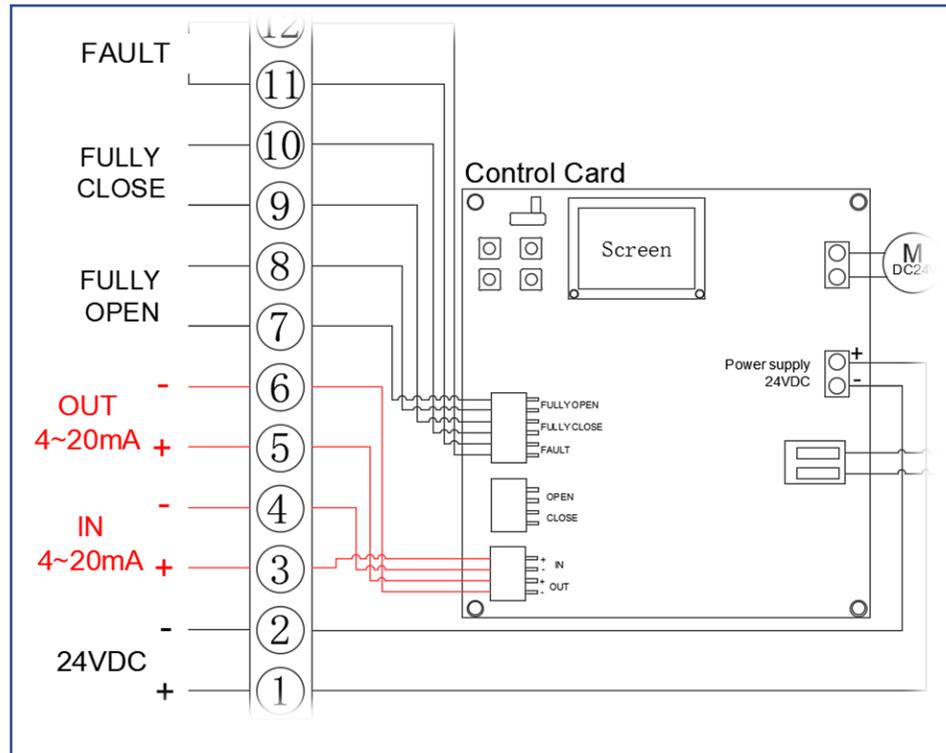


6.BB function setting
END

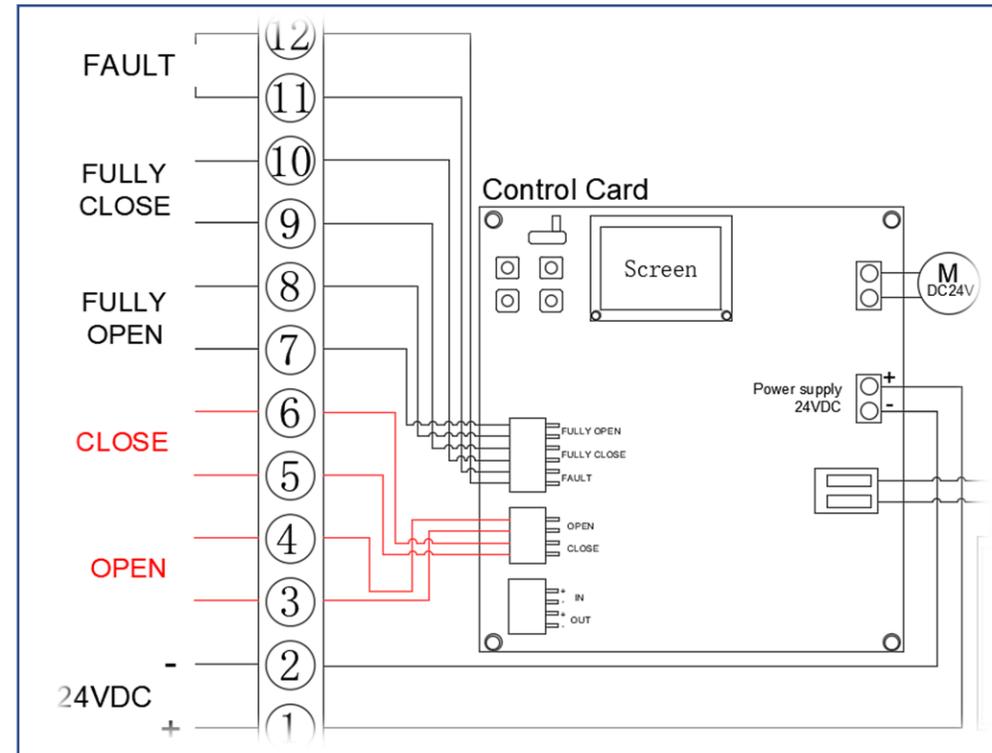
4.Return to the control card main page and back to REMOTE mode

7. Change Control signal from Modulating (M1) to ON/OFF

The control card of the VTM4-10S series has the ability to switch the modulating control mode. We will explain how to switch on the next page



Modulating(M1)



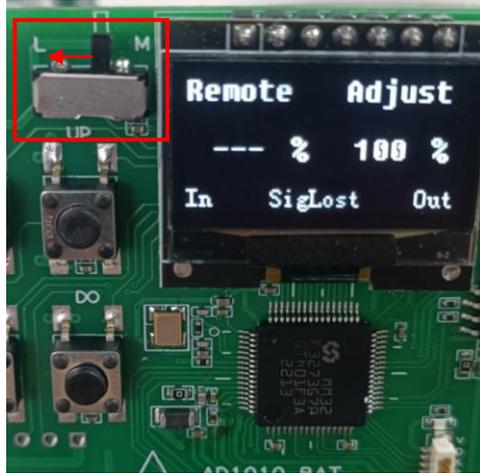
ON/OFF

For the rest, see the next page →

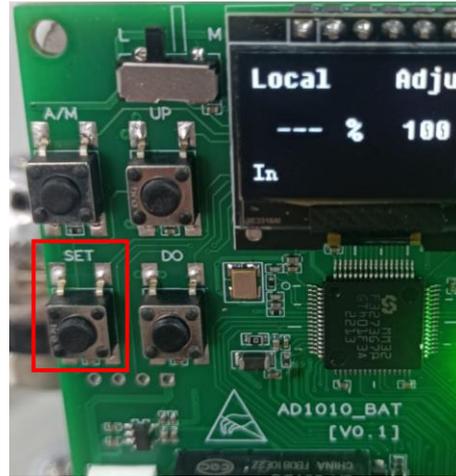
7. Change Control signal from Modulating (M1) to ON/OFF

If you want to change the control signal to ON/OFF:

1. Switch the control card mode to LOCAL and enter the setup menu
2. Enter the "Sys Set" submenu and select "CtrlMode"
3. Enter "CtrlMode" to change control setting
4. Return to the control card main page and back to REMOTE mode



Power on, look at the control card, and switch the mode to LOCAL.



Press the SET key once to enter the menu



For the rest, see the next page



1. Switch the control card mode to LOCAL and enter the setup menu.

7. Change Control signal from Modulating (M1) to ON/OFF



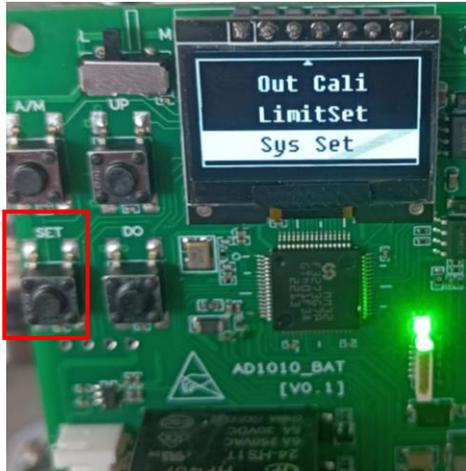
Press DO multiple times until “Sys Set” is selected

2. Enter the “Sys Set” submenu and select “CtrlMode”

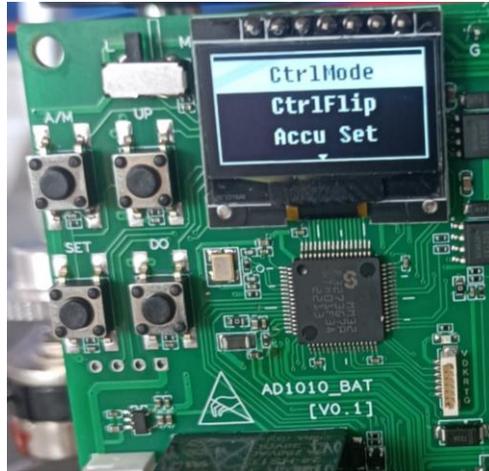
For the rest, see the next page



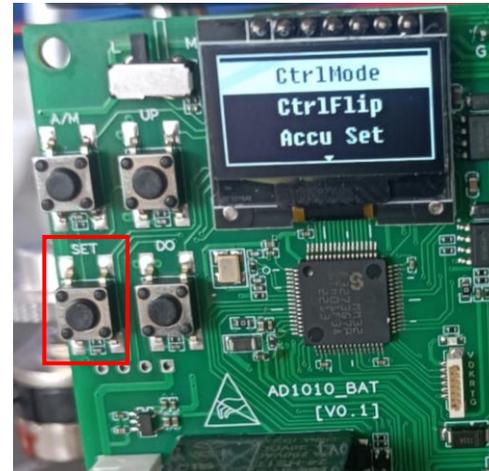
7. Change Control signal from Modulating (M1) to ON/OFF



Press SET key once to enter "Sys Set"



Press SET key to enter "CtrlMode"

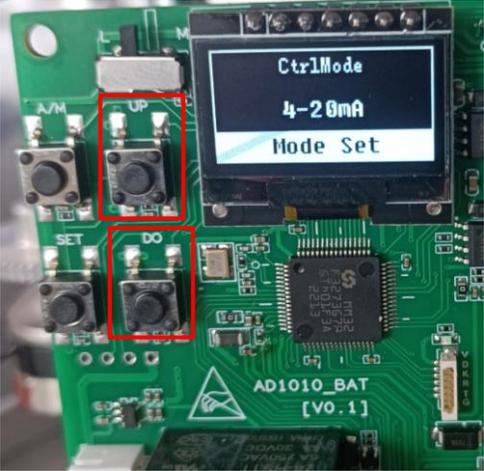


For the rest, see the next page

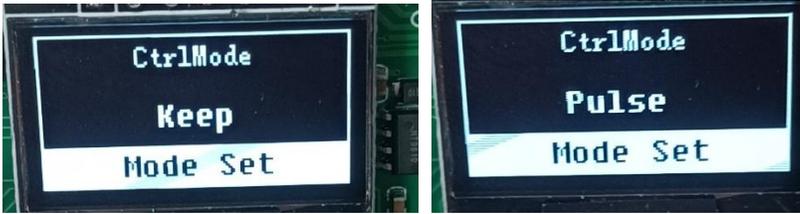


2. Enter the "Sys Set" submenu and select "CtrlMode"

7. Change Control signal from Modulating (M1) to ON/OFF



Use the UP and DO keys to switch the mode of this page until you see:



"KEEP" means that after connecting the "OPEN" and "CLOSE" ports on the terminal block once, the product will continue to work until it is fully opened or fully closed.

"Pulse" means inching to open or close the valve. It is necessary to continuously connect the "OPEN" and "CLOSE" ports on the terminal block until the valve is fully opened or closed.

For the rest, see the next page
→

3. Enter "CtrlMode" to change control setting

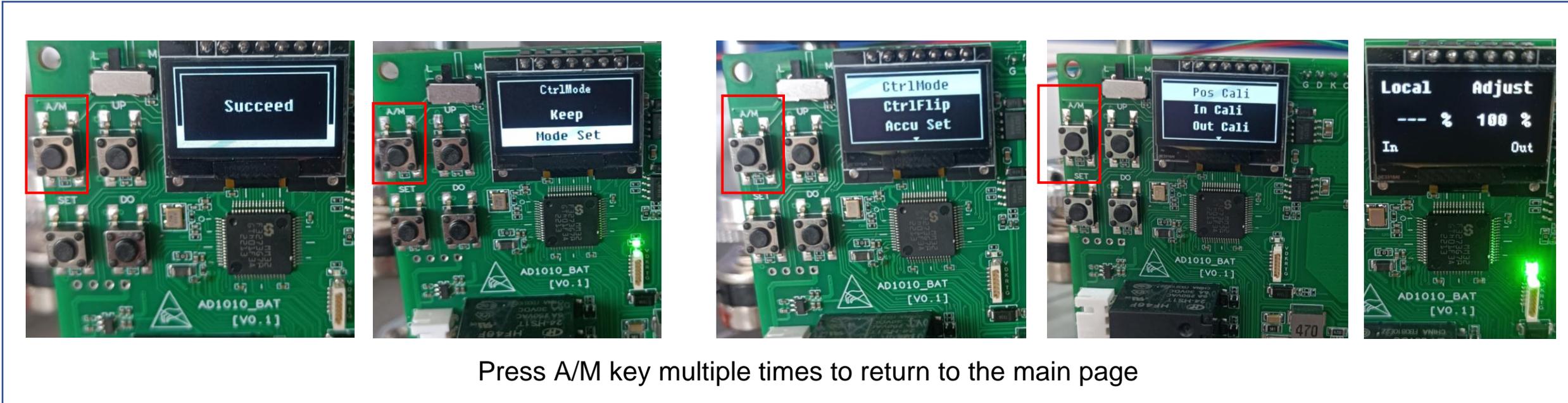
7. Change Control signal from Modulating (M1) to ON/OFF

Press SET key once to save changes → Pull out the port at the lower left corner of the control card and install it at the central socket.

For the rest, see the next page →

3. Enter "CtrlMode" to change control setting

7. Change Control signal from Modulating (M1) to ON/OFF



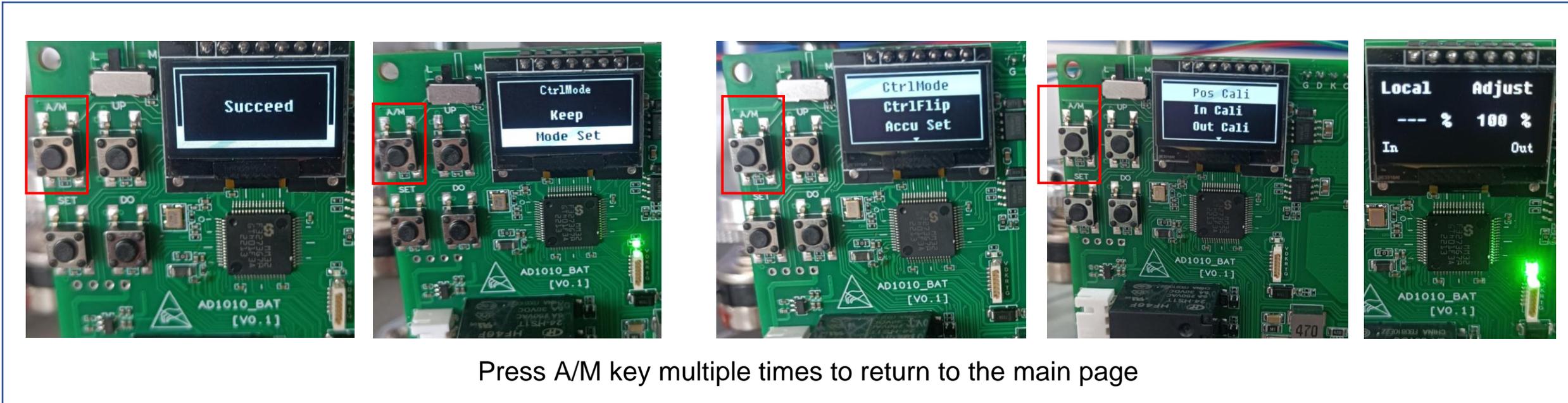
Press A/M key multiple times to return to the main page

4. Return to the control card main page and back to REMOTE mode

For the rest, see the next page



7. Change Control signal from Modulating (M1) to ON/OFF



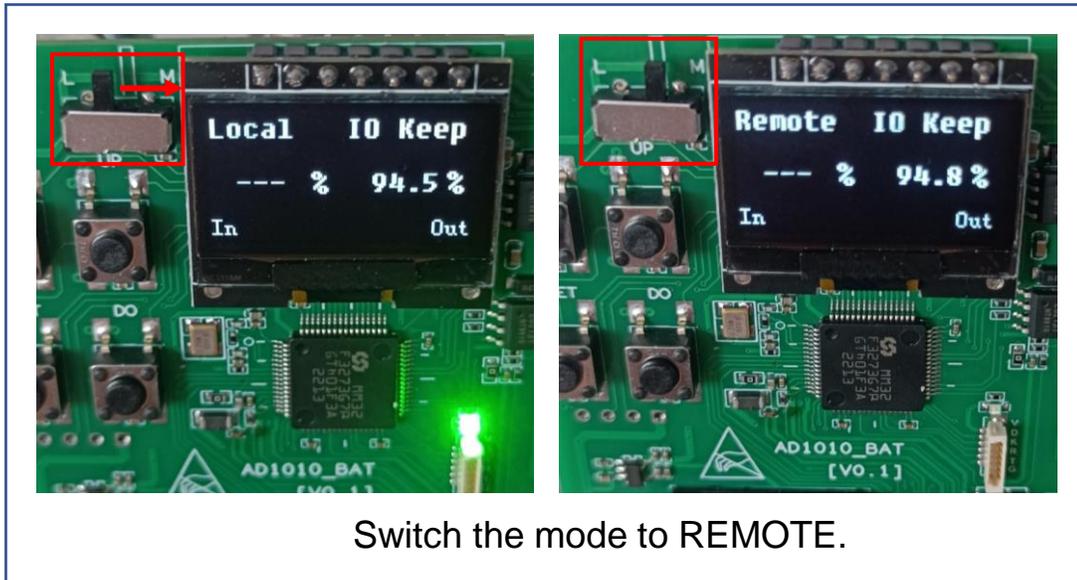
Press A/M key multiple times to return to the main page

4. Return to the control card main page and back to REMOTE mode

For the rest, see the next page



7. Change Control signal from Modulating (M1) to ON/OFF

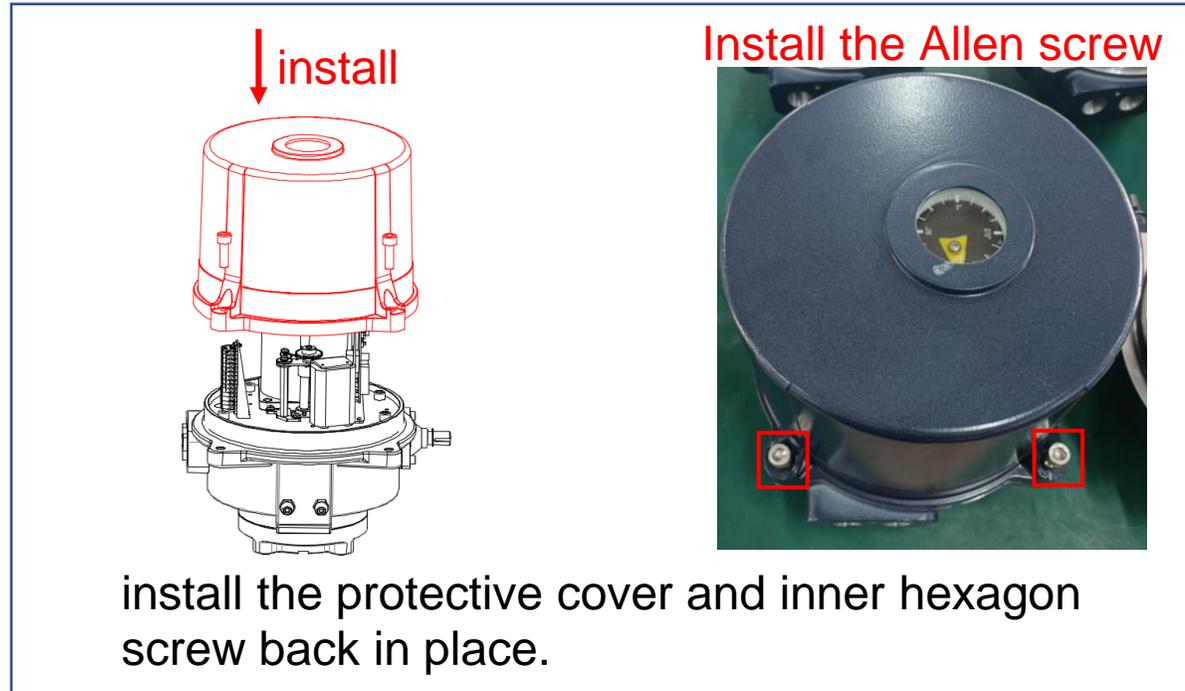


7.Change Control signal from Modulating(M1) to ON/OFF
END

4.Return to the control card main page and back to REMOTE mode

8. End of commissioning

After all the above contents have been operated and confirmed, the product can operate normally on site. Power off, switch the mode of the product to remote, enable it to enter the on-site control circuit, install the protective cover of the wiring port, ensure that the wiring is secure, all fixing screws have been tightened, and power on to enable the product to start working.



This Commissioning Instructions was last updated on:

2023/3/26(March 26, 2023)

Version No : V2.5

Please note the last update date If the date difference is too large, or the product has been updated after this date, some of the operations may deviate from the page.