YUGE 禹格

上海禹格工业设备有限公司

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YGK/YGKM Smart
Quarter-turn Electric Actuator

ASSEMBLY AND OPERATION INSTRUCTIONS



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Introduction

Thank you for choosing the YGK/YGKM series of quarter-turn electric actuators. Please read all instructions carefully prior to the installation and operation.

▲ About the Manual

(1) This manual should be stored safely for future reference.
(2) Prior to working on this product, please ensure that all personnel have thoroughly read and understood these instructions.
(3) Copying any content of this manual without specific permission is strictly prohibited.
(4) The contents of these instructions are subject to change without notice.

▲ Safety Instructions

(5) All personnel who work with this device must be familiar with the safety instructions and warnings provided in this manual and follow the guidelines for safe operation. Any consequences resulting from failure to observe these instructions will be at your own risk, and our company will not be held liable.
(6) If independent protective devices or safety circuits are to be installed on this product or the systems controlled by this product, please install them outside the product. Do NOT modify this product or install these circuits inside it.
(7) Please use our recommended spare parts or consumables if needed.

▲ Disclaimers

(8) We do not make any warranties with respect to the product except as stated in the warranty otherwise provided.
(9) Our company shall not be liable for any loss caused by unforeseeable failures in the process of direct or indirect use of the product.

▲ Overview

(10) This product of YGK series is a new generation, fully intelligent electric valve actuator. It features a unique double-sealed structure and non-intrusive setting for all parameters using an infrared remote control. A range of unique technologies is in place to ensure the safety, reliability, and convenience of the YGK series actuator.
(11) This manual is intended to guide users through the basic operations, assembly, commissioning (including basic and advanced settings), and diagnostic to achieve better operation and maintenance of the device.

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1 Safety Instructions

Read the instructions carefully for proper installation, commissioning, and servicing. The equipment integrates advanced technologies to withstand harsh conditions and maintain long-term reliability. It also offers flexible functions to meet specific needs.

The actuator features double O-ring sealing, achieving IP68 enclosure protection of the device. The cable entries are sealed by temporary threaded plugs at the factory to protect the terminal compartment from moisture during transportation. If the actuator will not be installed immediately, it should be stored in a clean, dry area with minimal temperature fluctuations.

The actuator is fully tested at the factory. If properly installed, wired, commissioned, and sealed, it can operate reliably without faults for years.

Seal the cable entries per applicable local and international specifications during on-site installation and electrical connection. Replace all the temporary plugs and seal unused cable entries in compliance with relevant regulations.

Disconnect the device from the main power supply before removing any cover of the device. Use qualified personnel to install, operate, and maintain the product. Follow the instructions in the manual and observe applicable local and international regulations.

Do NOT open the cover of the terminal compartment except for the electrical connection. Parameters can be conveniently set through infrared remote control or two-wire control system. The manufacturer will not be held liable for any consequential damage if any cover is removed on-site.

Caution: Do NOT remove any cover in explosive environments.

The inspection and maintenance in explosion-hazardous places should comply with the applicable safety regulations of the country. It is strictly prohibited to make any changes to the structure or components of the actuator as it may invalidate the explosion-proof certification and other warranties. When the actuator is connected to AC power, do NOT touch the conductive parts of the actuator with conductive objects. Only perform maintenance and repair tasks when the device is powered off and moved to a safe area.

2 Transport, Storage, and Packaging

▲ 2.1.Transport

To transport to the place of installation, use sturdy packaging.

Danger

Suspended load! May cause death or serious injury.

- Do NOT stand below the suspended load.
- Attach ropes or hooks for the purpose of lifting only to housing and NOT to handwheel.
- To lift actuators mounted on valves: Attach ropes or hooks to the valve and NOT to the actuator.
- To lift actuators mounted to gearboxes: Attach ropes or hooks only to the gearbox and NOT to the actuator.
- To lift actuators mounted to controls: Attach ropes or hooks only to the actuator and NOT to the controls.

▲ 2.2.Storage

Caution

Danger of corrosion due to inappropriate storage!

- Store the actuator in a well-ventilated, dry room.
- Protect against floor dampness by storage on a shelf or on a wooden pallet.
- Cover the actuator to protect against dust and dirt.
- Apply suitable corrosion protection agents to uncoated surfaces.

Caution

Risk of damage to LCD due to excessively low temperatures!

- YUGE actuator controls may only be stored permanently down to –30 °C.

Caution

For long-term storage (more than 6 months), observe the following guidelines:

- Prior to storage: Apply long-term corrosion protection agent to uncoated surfaces, especially output drive parts and mounting surfaces.
- At an interval of approx. 6 months: Check for corrosion. If signs of corrosion show, apply new corrosion protection.

▲ 2.3.Packaging

Our product is well-protected with special packaging suitable for transportation. We use environmentally friendly packaging materials that are easy to decompose and recycle, including wood, cardboard, paper, and PE film. To dispose of the packaging, we recommend that you take them to your local waste recycling center.

3 Operation

▲ 3.1.Manual Operation

The actuator has a handwheel and a motor/manual switching lever for manual operation in case of power loss or control failure. To use the handwheel, set the knobs to “STOP” or “LOCAL” mode, push down the motor/manual lever to the manual position, and turn the handwheel to engage the clutch. The lever will spring back when being released, but the clutch will stay in manual mode. Then, manually turn the handwheel to rotate the output shaft. The clutch has a motor priority design, which will automatically switch to motor mode when the motor runs. The lever can be locked in either mode via a padlock. However, if you lock it in manual mode, the motor will not switch the clutch to motor mode.

Caution

If the actuator cannot be switched in place by pushing down the lever, rotate the handwheel first and try again. Do NOT force the switch as it may damage the switching mechanism.

▲ 3.2.Motor Operation

The supply voltage must match the data on the name plates. No phase test is needed. Do NOT start the motor without preliminary inspection. At the very least, use the infrared remote control to complete the basic parameter setting before starting the motor operation.

3.2.1.Local/Stop/Remote Control Mode

Depending on the red knob position, the control switch performs different functions: LOCAL, REMOTE, and STOP. Each position can be locked in place with a locking screw.



LOCAL



STOP



REMOTE

3.2.2.Local Control

Set the red knob to the LOCAL position and use the infrared remote control or the black knob to issue commands.

The actuator can be operated by rotating the black knob. The black knob snaps back automatically into its neutral position, and when the black knob returns to its initial position, the command will be canceled.

If the actuator is not set to the self-hold mode (Hold), the actuator will stop operating when the command is canceled.

If the actuator is set to the Hold mode, even if the command is canceled, the actuator will continue to operate to the end position. Rotating the knob in the reverse direction will stop the actuator halfway. For example, when the actuator is operating the opening command, setting the black knob to the position CLOSE will stop the operation (if the close command is issued again, the actuator will perform the close operation), and vice versa.

Local control is also available via infrared remote control. Use the open and close buttons to issue commands.

3.2.3.Remote Control

The actuator can process the following signals:

Remote switch signals;

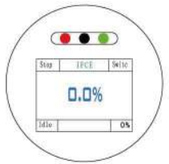
Remote analog signals;

Bus communication signals.

To perform remote control, set the red knob to the REMOTE position. In this mode, local control is disabled, but the actuator can still be stopped by turning the red knob to the STOP position.

3.2.4.Interface Panel

The interface panel on the actuator consists of three parts: two valve position status indicator lights at the top, an LCD in the center, and an infrared receiver located in the middle of the top. The LCD is equipped with a backlight that only illuminates when powered. The panel displays the status and configuration information of the actuator and receives infrared signals from the remote control, which offers great convenience for on-site commissioning, operation, and monitoring.



3.2.5.Valve Position Status Indicators

The red and green valve position status indicators are located at the top of the panel, red at the left and green at the right. The users are able to check the valve status through the lights from a distance.

Red indicator: Valve fully open.

Green Indicator: Valve fully closed.

Note

The meaning of the red and green lights can be swapped upon users' requirements.Indicators only illuminate when the actuator is connected to the power supply.

If any fault occurs, the LCD will display an English fault prompt near the lower edge. Consult the instruction manual for diagnostic information.

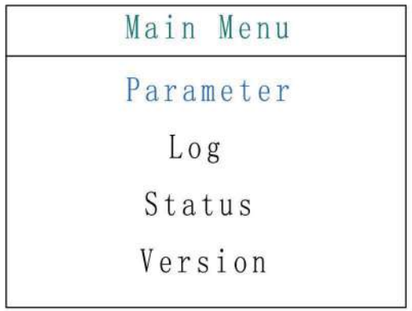
3.2.6.Initial Interface

The initial page of the display shows the valve position in % of the travel distance.



3.2.7.Parameter Settings

Users can access the parameter settings using the infrared remote control.



To set the parameters, select "Parameter" in the menu. Here users can set the parameters such as limit or torque seating.

"Status" is where the users check the current working status and operation information no matter in the LOCAL and REMOTE mode. The information improves the efficiency of maintenance and troubleshooting.

If any fault occurs, the display will show the alarm message near the lower edge of the LCD to guide maintenance. Fault information can also be output to the control room through either passive contact or bus communication (only available for bus-enabled actuators).

The S1-S4 status output relays utilize Omron magnetic latching relays with a contact capacity of 30V DC, 5A or 250VAC, 5A. Additional relay outputs can be added as an option.

4 Assembly

Before installing the actuator to the valve or equipment, ensure that:

* The flange of the actuator's coupling is compatible with the flange of the valve or gearbox and is perpendicular to the valve stem or gearbox input shaft;
* The drive shaft sleeve inside the coupling is compatible with the valve stem or gearbox input shaft;
* The connecting bolts match the thickness of the coupling and valve flange for a tight fit.

Securely fasten the valve or gearbox before mounting the actuator to prevent instability caused by a change in the center of gravity.

For heavy actuators, lifting equipment and straps may be required. The lifting must be carried out exclusively by experienced and qualified personnel, and particular attention should be paid to personnel and equipment safety when mounting the actuator from a non-standard angle.

When mounting the actuator, fully engage the input shaft of the valve or reducer with the drive shaft sleeve of the actuator, and firmly place the flange of the actuator's coupling and the flange of the valve or reducer together.

The coupling flange of YG actuator complies with the ISO5210 standard. If the connection flange of the user's valve or gearbox does not comply with this standard, it should be specified in the order in advance.

Respect the total weight of the combination and the center of gravity when moving or lifting the assembled whole. Apply force primarily to the valve or reducer instead of the actuator.

Caution

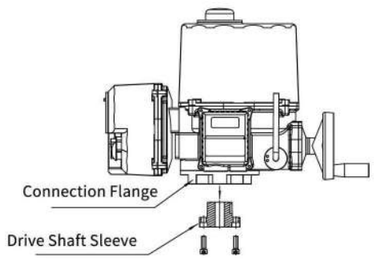
Do NOT apply force to the handwheel when moving the actuator, as doing so may easily damage the handwheel.

Connection Between Drive Shaft Sleeve and Valve Shaft

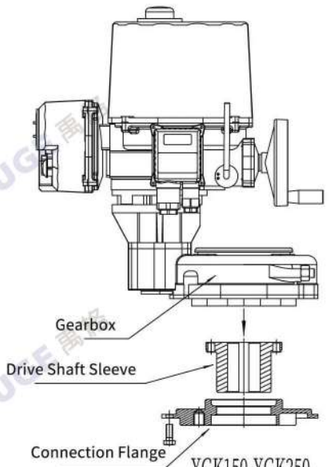
The drive shaft sleeve attached to the output shaft releases the torque output, which can be detached or modified to fit the valve shaft.

4.1.1 Disassembly

To remove the drive shaft sleeve, you need to unscrew four attachment screws. For YGK006-YGK100, the drive sleeve is in the round hole of the base and you can take it out easily. For YGK150-YGK250, it is in the gearbox and you need to do some extra steps. First, remove the upper cover of the gearbox. Then, push the drive shaft sleeve out from the base side of the gearbox. After disassembly, you should put back the screws and related parts to avoid loss.



YGK006-YGK100

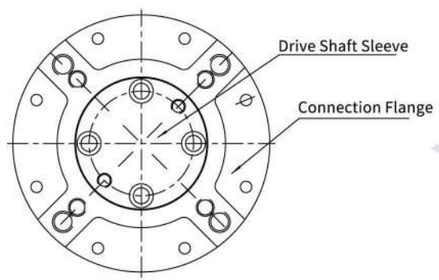


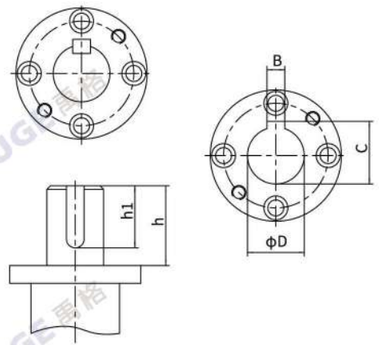
YGK150-YGK250

4.1.2 Processing

When the actuator is closed, the drive shaft sleeve mounting holes and the flange screw holes usually form a 45-degree angle as shown in the figure below. The only exception is for YGK060-YGK100 actuators, where the four M12 holes with a center distance of Φ125 on the base are aligned with the drive shaft sleeve mounting holes. In this case, when processing the drive shaft sleeve inner bore, use its four mounting holes as a reference and keep the inner bore and the outer circle of the drive sleeve coaxial.

The drive shaft sleeve and the valve shaft are recommended to be connected by keys where the key slot on the drive shaft sleeve should point to any mounting hole. Besides that, other options are also open to your discretion.





The drive shaft sleeve can be made to order upon delivery. If necessary, customers can specify requirements and size details on their drawings in advance.

4.1.3 Assembly

Before installing the drive shaft sleeve, test it with the valve shaft to make sure they fit well.

Then put the drive sleeve back to its original position on the actuator and secure it with the screw. Pay attention to the direction of the drive sleeve so that the actuator and the valve are aligned properly after installation. For YGK150-YGK250 actuators, the arrow on the gearbox cover should point to the same direction as before to avoid incorrect indication.

5 Electrical Connection

Caution: Disconnect all power supplies before removing any protective cap!

▲ 5.1.Earth Connection

5.1.1 Pluggable Connect



Note: Electrical cable connection is internal thread with an M36×1.5 and an M22×1.5 (Please contact us if cable glands are needed.)

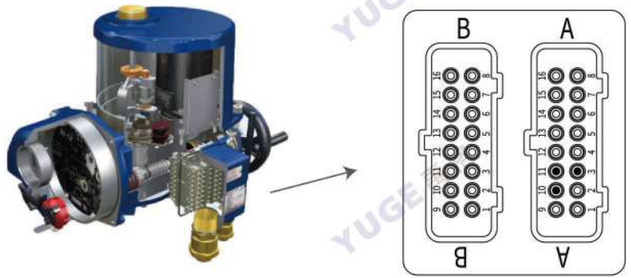
5.1.2接线式连接



Note: Electrical cable connection is internal thread with an 1½ˢ NPT×1和1ˢ NPT×2 (Please contact us if cable glands are needed.)

▲ 5.2 Wiring Terminal Allocation

5.2.1 Pluggable connection



Note: A and B terminals are different. A1, A2 and A9 are designated as power terminals while A terminals exclude 3 and 10 (2, 3 and 10 are single-phase).

The external wiring of the YGK/YGKM actuator is led by two rectangular plugs whose wire terminals are descried in the following table.

No.	Name	Description	No.	Name	Description
A1	Power1 *	AC power supply input terminal L1	B2	RELAY2	Relay 2, NO
A2	Power2 *	AC power supply input terminal L2	B3	RELAY3	Relay 3, NO
A9	Power3 *	AC power supply input terminal L3	B4		
A4	CPT(+)	Valve position current feedback (+) terminal	B5	RELAY4	Relay 4, NO
A5	CPT(-)	Valve position current feedback (-) terminal	B5		
A6	APC(+)	Proportional control current input (+) terminal	B6	A	MODBUS-A
A7	APC(-)	Proportional control current input (-) terminal	B7	B	MODBUS-B
A8	R-FZ	Auxiliary control	B9	L-OL	Interlock Open
A11	R-COM-220VAC	Remote switch signal common terminal (220VAC)	B10	L-CL	Interlock Close
A12	R-STOP	Remote stopping signal input terminal	B11	MONI-COM	Monitoring relay common contact
A13	R- OPEN	Remote opening signal input terminal	B12	MONI-1	Monitoring relay NO contact.If the actuator is not remote or alarming, it cannot be remotely controlled and will disconnect from the MONI-COM contact.
A14	R- CLOSE	Remote closing signal input terminal	B13	MONI-2	If the actuator is not remote or alarming, it cannot be remotely controlled and will disconnect from the MONI-COM contact.
A15	RELAY1	Relay 1, NO	B14	24Vdc(+)	Unregulated 24 Vdc (+) output terminal
A16			B15	24Vdc_Gnd	Unregulated 24 Vdc_Gnd output terminal
B1	RELAY2	Relay 2, NO	B16	ESD	ESD

5.2.2 Wired Connection

For single-phase actuators, connect the single-phase power to terminals A1 and A9 marked with *.

CPT = Current Position Transmitter

APC = Automatic Proportion Controller. The polarity of the 4-20mA proportional control signals does not matter for APC.

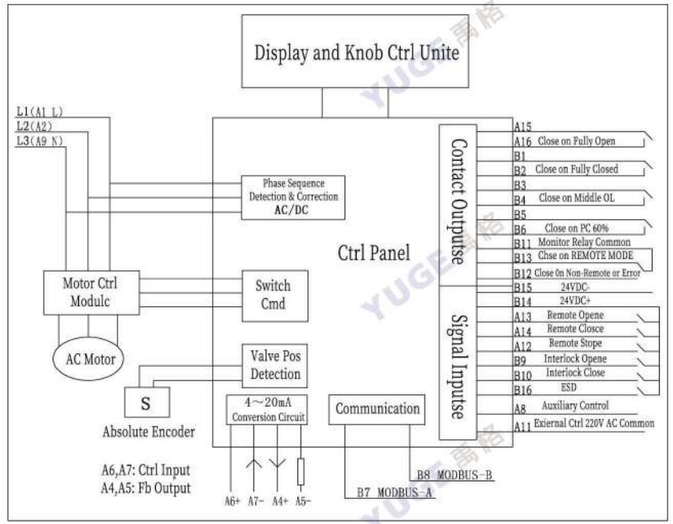
The switching of the external 220VAC power supply controls the common port of the signal.

The 24Vdc (+) and 24Vdc_Gnd terminals provide unregulated 24VDC internally, which can power the switching control signals.



No.	Name	No.	Name
1	Terminals for power supplies U(L)	16	Signal grounding terminal
2	Terminals for power supplies V(N)	17	Auxiliary control (part distance test)
3	Terminals for power supplies W	18	Monitor relay common
⏚	Earth terminal	19	Monitor relay NC contact（When mode control knob in the REMOTE position）
4	24VDC- (24V DC minus)	20	Monitor relay NO contact（When mode control knob in the REMOTE position）
5	24VDC + (24V DC add)	21	ESD input terminal
6	S1-1 Default full open closed	22	Current feedback (+) terminal
7	S1-2	23	Current feedback (-) terminal
8	S2-1 Default full closure	24	Interlock open input end
9	S2-2	25	Interlock close input end
10	S3-1 Default overtorque closed	26	Control current input（+）
11	S3-2	27	Control current input （-）
12	S4-1 Default, 60% closed	28	Remote closing input terminal
13	S4-2	29	Remote stopping input terminal
14	485A input terminal	30	Remote opening input terminal
15	485B input terminal	31	Remote high voltage common port

▲ 5.3 Wiring Diagram



Caution: Disconnect the electric actuator from the power supply before removing the separate terminal chamber cover.

6 Operation Guide

▲ 6.1.Infrared Remote Control

The infrared remote control is the most convenient tool for YGK series actuators' on-site commissioning and operation. It allows users to browse and set various parameters and functions, including controls and protection, according to field requirements. A special encoding method is in place to enhance the anti-interference ability.

▲ 6.2.Buttons on Remote Control

(1) **R** Reset: Reset the control chip;

(2) Return: Return to the previous menu;

(3) Down: Select the next item on the same page;

(4) + Plus: Increase the parameter value or move the menu down;

(5) Close the valve in "Hold" or "Moment" control mode (the red knob must be set to the LOCAL position);

(6) − Minus: Decrease the parameter value or move the menu up;

(7) **OK** Confirm: Save the parameter setting or enter the corresponding status query;

(8) Open the valve in "Hold" or "Moment" control mode (the red knob must be set to the LOCAL position).

Note: Press and hold the plus or minus button to repeat the commands. Other buttons require being pressed again to re-send the command.



▲ 6.3.Battery Installation

To replace the battery of the remote control, loosen the 6 screws and remove the rear cover.



Log in to the actuator:

After completing the installation and wiring, switch on the main power supply and set the red knob to the LOCAL or STOP position. Then the LCD will display the initial page, the valve position. Press and hold the confirmation button for 3 seconds, and the LCD will display the setting menu.

Caution

Do NOT enter the parameter setting menu during the operation of the actuator.

▲ 6.4.Status Query

Set the red knob in the LOCAL or STOP position, hold the confirmation button for 3 seconds to enter the initial menu, and select "Status" to check the working status of the actuator.

In query mode, the parameters cannot be edited. This mode is designed to provide supportive information on the running status for maintenance.

▲ 6.5.Notes about Indicator Lights and Value Input

The lights above the display always indicate the current valve position regardless of which page the LCD shows.

Setting parameters or functions may require either entering a value or selecting a value from options.

For value editing, press the ⊕ button or the ⊖ button to change the value shown on the screen, press the OK button after entering or selecting a new value, and the item will turn from red to blue, indicating successful modification.

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7 Commissioning (Basic Settings)

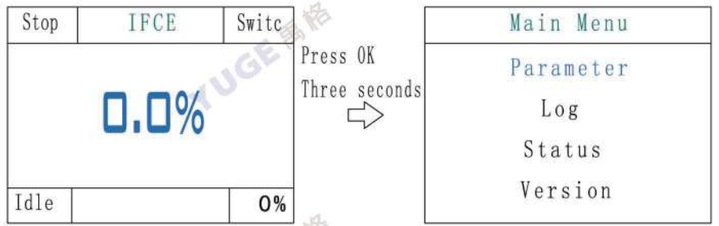
The basic functions must be correctly set up for the actuator to operate the valve properly. If the actuator is already assembled with the valve upon delivery, the manufacturer or supplier may have already completed the basic settings. Do NOT perform electric operation until the basic settings are completed.

The item selected is indicated in blue, and the editable items are in red. When an editable item is selected, it will turn from red to blue.

▲ 7.1.Access Basic Settings

After installation, switch on the power supply and set the red knob to the LOCAL or STOP position. Point the remote control at the display window, and press and hold the OK button for 3 seconds.

Now the LCD shows the initial menu. Select "Parameter ", press the OK button, and enter the password. The password for the basic settings is "000", and the advanced settings "333".

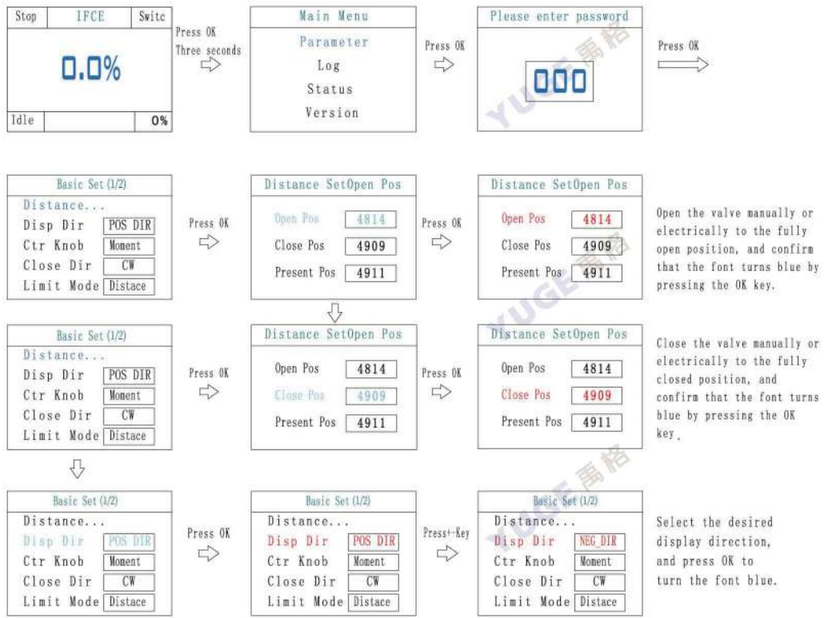


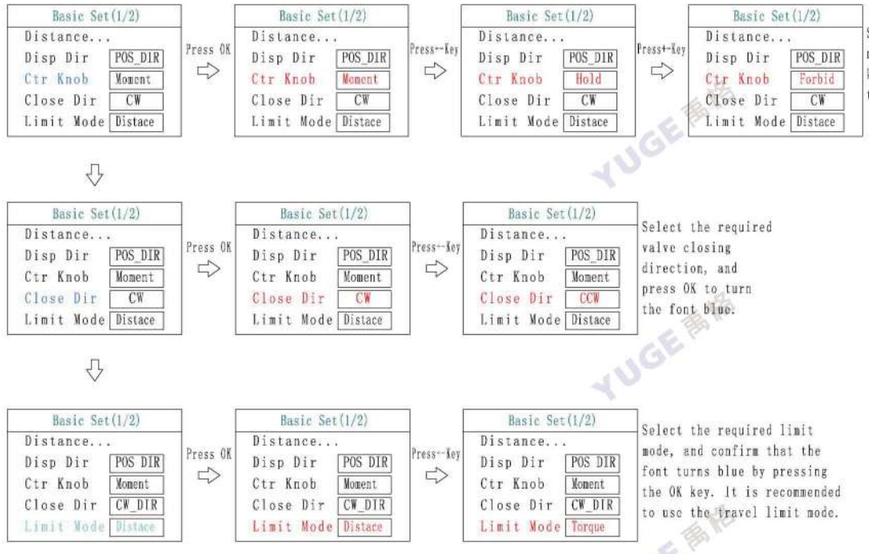
Caution

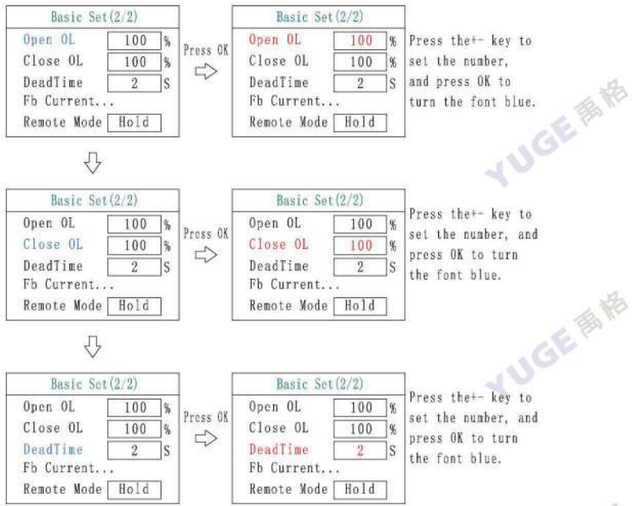
Perform electric operation tests and functional tests after completing the settings to ensure proper operation.

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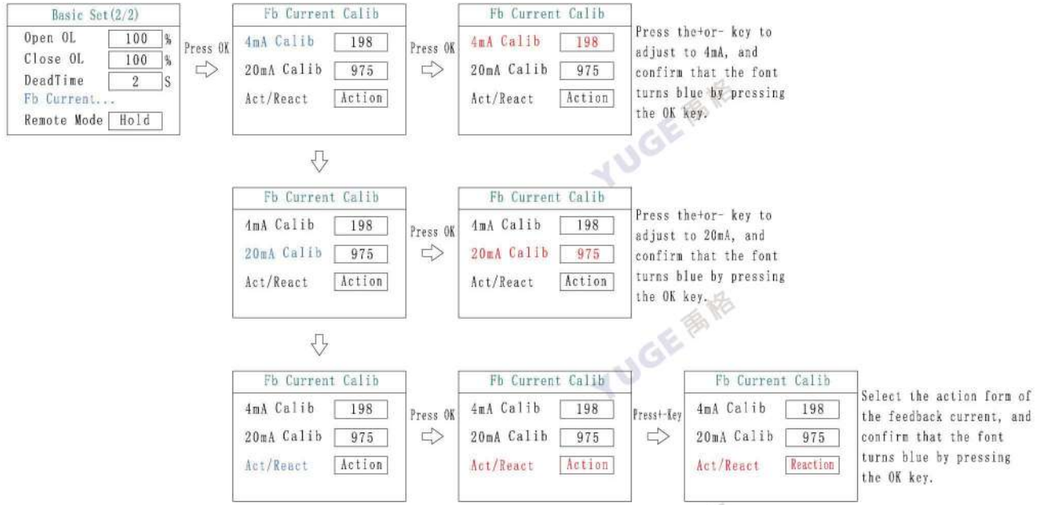
▲ 7.2.Basic Parameters



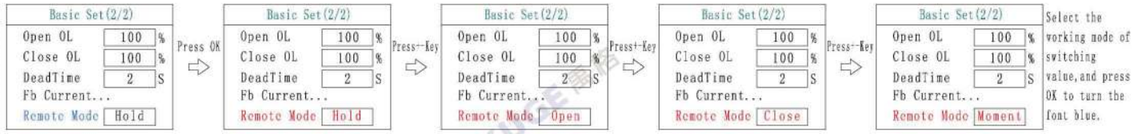




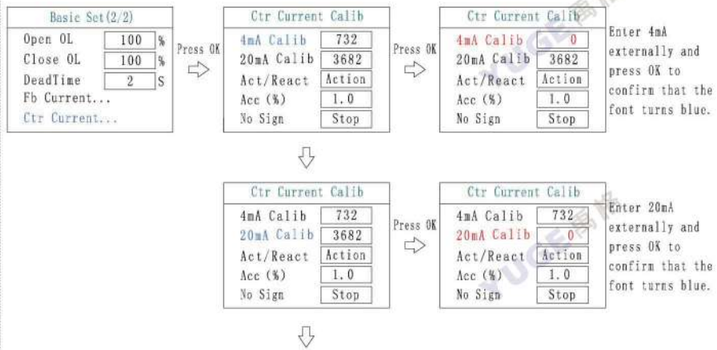
Note: The dead time mentioned above refers to the lockout time for forward and reverse rotation.

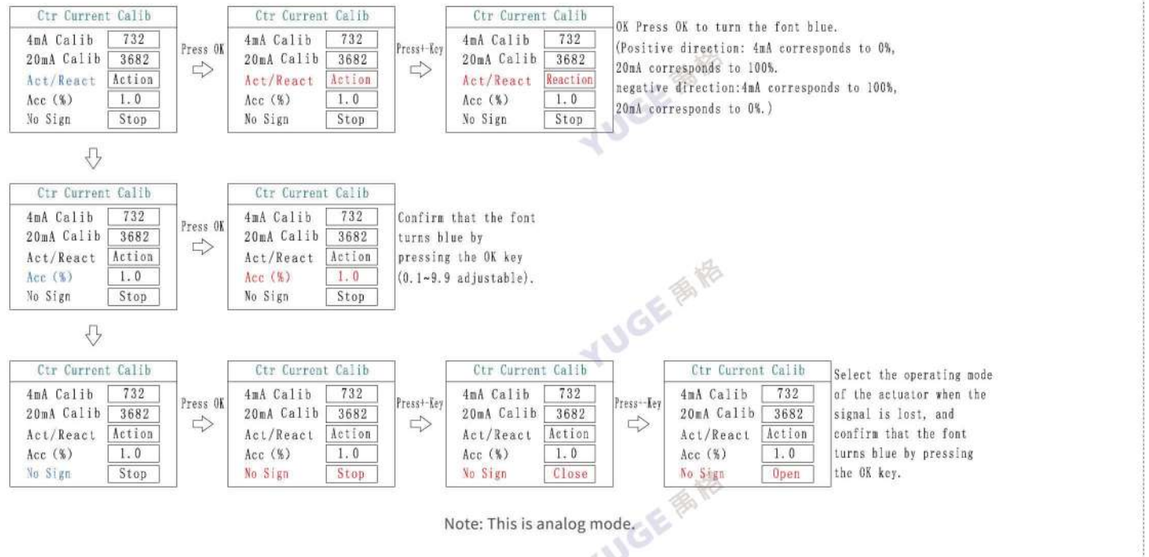


Note: When “Action” is selected, 4mA corresponds to 0% valve position and 20mA corresponds to 100%. However, when “Reaction” is selected, 4mA corresponds to 100% valve position and 20mA corresponds to 0%.

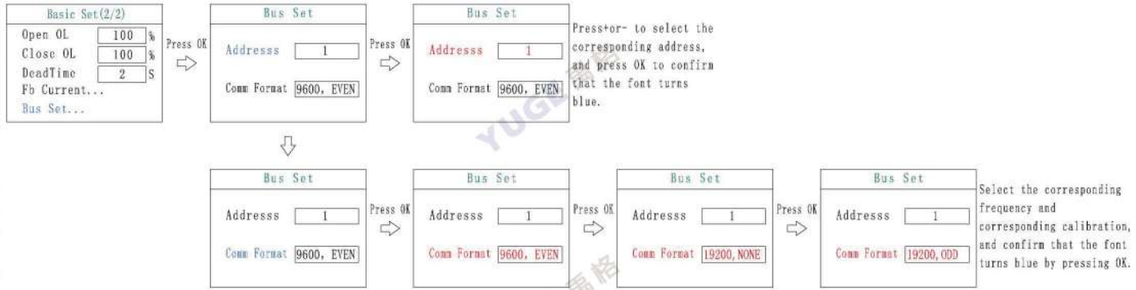


Note: This is switching mode.





Note: This is analog mode.



Note: This is bus mode.

▲ 7.3.Valve Limit Settings

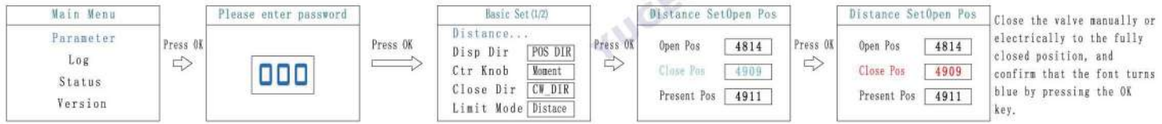
Before normal operation, set distance first to ensure proper running.

Check the connection between the actuator and the valve and other pipeline parts. Make sure the valve and the actuator are both fully closed or fully open when connected, as the actuator can only travel 90 degrees. Before turning on the power, use a multimeter to test if the power terminal is shorted to ground. Ask the staff if it is safe to open the valve. Confirm all those points before turning on the power.

Follow these steps after powering on the actuator:

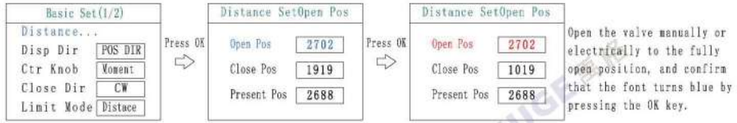
Set the knob to LOCAL mode.
Turn the valve manually to fully closed, then turn it back half a cycle.v
Aim the setter at the infrared receiver on the display window and press and hold the OK button for 3 seconds to access the menu. The default password is “000”. Then, press OK to see the following menu.

7.3.1.End Position: Closed



When "Close Pos 4909" is selected and turns red, manually or electrically close the valve to the fully closed position, press the OK button to confirm the position, and "Close Pos 4909" will turn blue, indicating a successful setting.

7.3.2.End Position: Open



When "Open Pos 4814 " is selected and turns red, manually or electrically open the valve to the fully open position, pre the button to confirm the position, and "Open Pos 4814 " will turn blue, indicating a successful setting.

Warning: we strongly recommend using the handwheel to set the electric actuator.

parameters to avoid damaging the valve by accident. If the parameters are too long, the handwheel may be difficult to use. Make sure the valve is at safe status before turning on the motor mode. When the valve is approaching the fully open or closed position, switch to manual mode and use the handwheel to travel the valve to the full position.

Warning: You MUST check the settings.

Use the handwheel to turn the valve to a safe position in the middle of the stroke. Then use the local knob to open and close the actuator. Check if the valve turns in the right direction and reaches the fully open or closed positions correctly.

Do not use remote control until you have verified the settings.

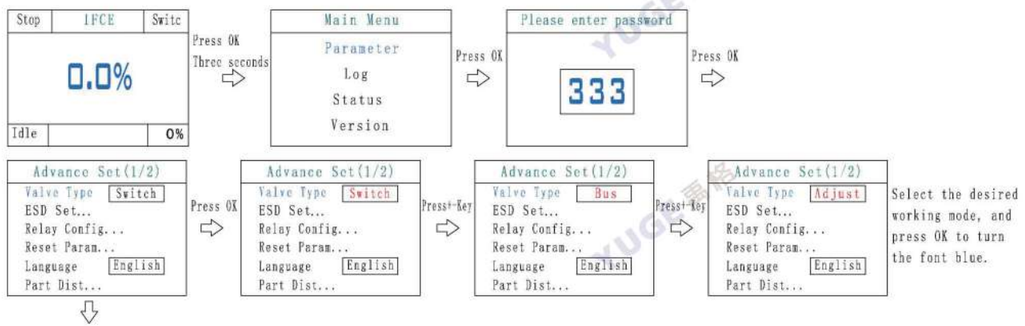
8 Commissioning (Advanced Settings)

▲ 8.1.Access Advanced Settings

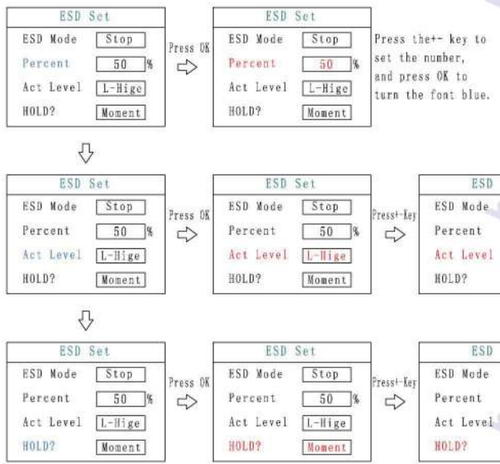
After completing the basic settings, users can proceed to the advanced settings if needed.

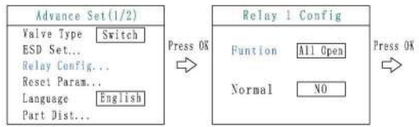
First, turn the red knob to the LOCAL or STOP position, and press and hold the confirmation button for 3 seconds to enter the initial menu. Next, select "Parameter " and press the button to enter the password page, where the screen shows "000". Set the first digit to "3" using the button "+" or "-", and when the first digit is set to "3", press to edit the second digit (now "300" is displayed on the screen). Also, use "+" or "-" to set the number to "3" and press to proceed to the third digit. Set the third digit in the same way, then "333" will be shown on the page, and press the button to access the advanced settings.

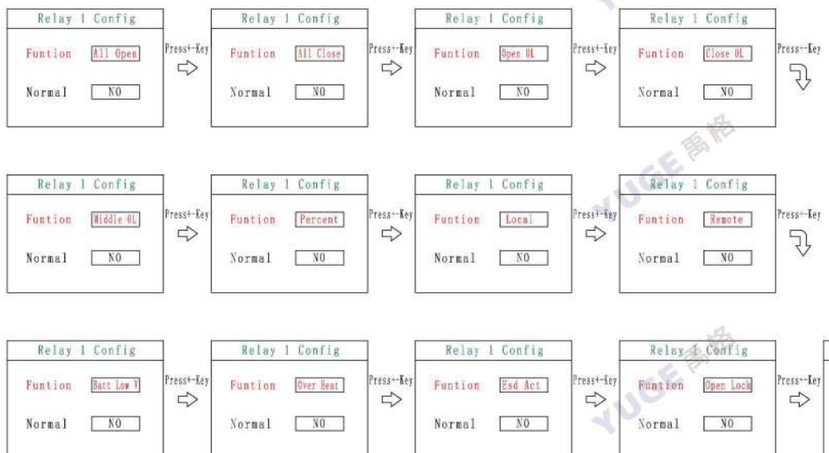
▲ 8.2.Advanced Parameters

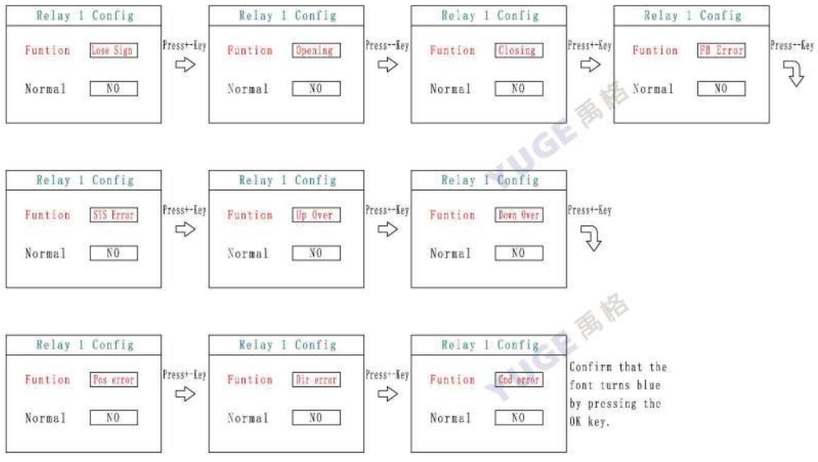


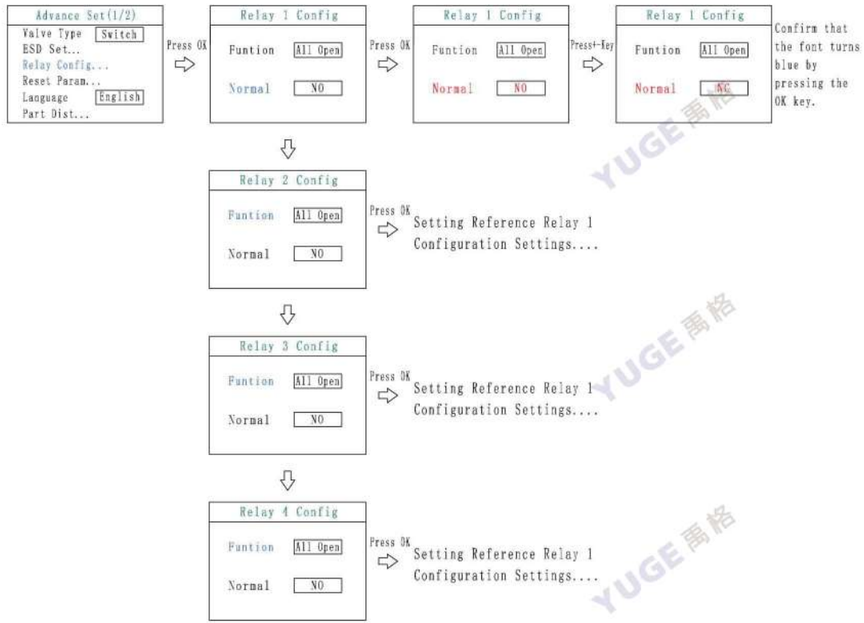

Advance Set(1/2)
Valve Type Switch
ESD Set...
Relay Config...
Reset Param...
Language English
Part Dist...
Press OK
ESD Set
ESD Mode Stop
Percent 50 %
Act Level L-Hige
HOLD? Moment
Press OK
ESD Set
ESD Mode Stop
Percent 50 %
Act Level L-Hige
HOLD? Moment
Press+-Key
ESD Set
ESD Mode Close
Percent 50 %
Act Level L-Hige
HOLD? Moment
Press+-Key
ESD Set
ESD Mode Open
Percent 50 %
Act Level L-Hige
HOLD? Moment
Press+-Key
ESD Set
ESD Mode PC
Percent 50 %
Act Level L-Hige
HOLD? Moment
Confirm that the font turns blue by pressing the OK key.

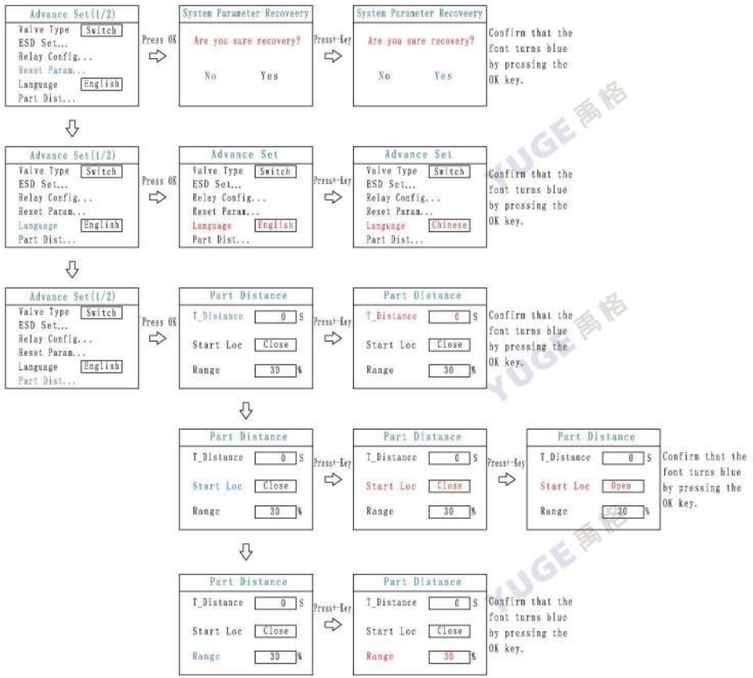

ESD Set
ESD Mode Stop
Percent 50 %
Act Level L-Hige
HOLD? Moment
Press OK
ESD Set
ESD Mode Stop
Percent 50 %
Act Level L-Hige
HOLD? Moment
Press the+- key to set the number, and press OK to turn the font blue.
ESD Set
ESD Mode Stop
Percent 50 %
Act Level L-Hige
HOLD? Moment
Press OK
ESD Set
ESD Mode Stop
Percent 50 %
Act Level L-Hige
HOLD? Moment
Press+-Key
ESD Set
ESD Mode Stop
Percent 50 %
Act Level L-Low
HOLD? Moment
Confirm that the font turns blue by pressing the OK key.
ESD Set
ESD Mode Stop
Percent 50 %
Act Level L-Hige
HOLD? Moment
Press OK
ESD Set
ESD Mode Stop
Percent 50 %
Act Level L-Hige
HOLD? Moment
Press+-Key
ESD Set
ESD Mode Stop
Percent 50 %
Act Level L-Hige
HOLD? Hold
Confirm that the font turns blue by pressing the OK key.


Advance Set(1/2)
Valve Type Switch
ESD Set...
Relay Config...
Reset Param...
Language English
Part Dist...
Press OK
Relay 1 Config
Funtion All Open
Normal NO
Press OK

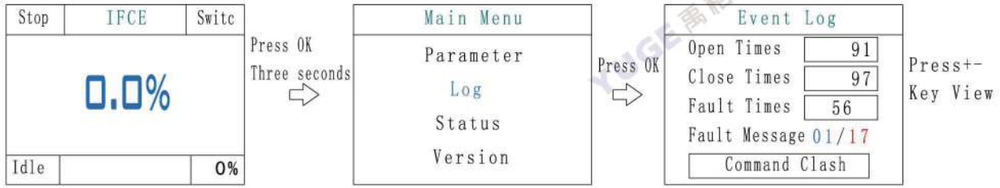

Relay 1 Config
Funtion All Open
Normal NO
Press+-Key
Relay 1 Config
Funtion All Close
Normal NO
Press+-Key
Relay 1 Config
Funtion Open OL
Normal NO
Press+-Key
Relay 1 Config
Funtion Close OL
Normal NO
Press+-Key
Relay 1 Config
Funtion Middle OL
Normal NO
Press+-Key
Relay 1 Config
Funtion Percent
Normal NO
Press+-Key
Relay 1 Config
Funtion Local
Normal NO
Press+-Key
Relay 1 Config
Funtion Remote
Normal NO
Press+-Key
Relay 1 Config
Funtion Batt Low V
Normal NO
Press+-Key
Relay 1 Config
Funtion Over Heat
Normal NO
Press+-Key
Relay 1 Config
Funtion Esd Act
Normal NO
Press+-Key
Relay 1 Config
Funtion Open Lock
Normal NO
Press+-Key
Relay 1 Config
Funtion Close Lock
Normal NO
Press+-Key


Relay 1 Config
Funtion Lose Sign
Normal NO
Press+-Key
Relay 1 Config
Funtion Opening
Normal NO
Press+-Key
Relay 1 Config
Funtion Closing
Normal NO
Press+-Key
Relay 1 Config
Funtion FB Error
Normal NO
Press+-Key
Relay 1 Config
Funtion STS Error
Normal NO
Press+-Key
Relay 1 Config
Funtion Up Over
Normal NO
Press+-Key
Relay 1 Config
Funtion Down Over
Normal NO
Press+-Key
Relay 1 Config
Funtion Pos error
Normal NO
Press+-Key
Relay 1 Config
Funtion Dir error
Normal NO
Press+-Key
Relay 1 Config
Funtion End error
Normal NO
Confirm that the font turns blue by pressing the OK key.

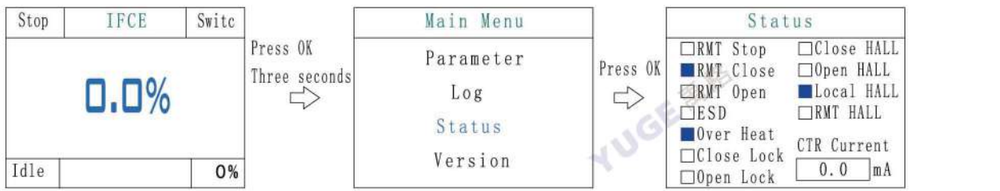

Advance Set(1/2)
Valve Type Switch
ESD Set...
Relay Config...
Reset Param...
Language English
Part Dist...
Press OK
Relay 1 Config
Funtion All Open
Normal NO
Press OK
Relay 1 Config
Funtion All Open
Normal NO
Press+-Key
Relay 1 Config
Funtion All Open
Normal NC
Confirm that the font turns blue by pressing the OK key.
Relay 2 Config
Funtion All Open
Normal NO
Press OK
Setting Reference Relay 1 Configuration Settings....
Relay 3 Config
Funtion All Open
Normal NO
Press OK
Setting Reference Relay 1 Configuration Settings....
Relay 4 Config
Funtion All Open
Normal NO
Press OK
Setting Reference Relay 1 Configuration Settings....



9 Event Log

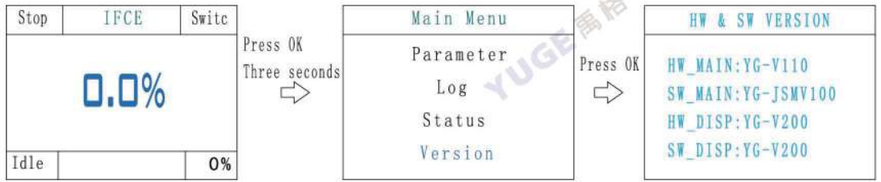


10 Status Query



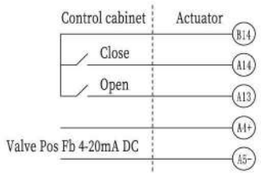
*For query only. Status cannot be edited here.

11 Version Query

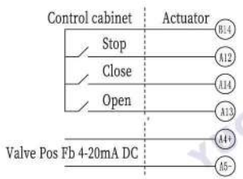


12 Controls

▲ 12.1.Internal 24VDC Control

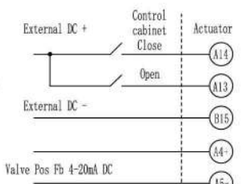


Open and Close in the "Moment" or "Hold" Mode

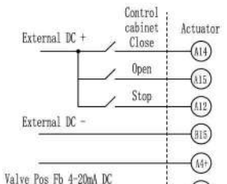


Open, Close, and Stop

▲ 12.1.12.2 External DC 24VDC-60VDC Control

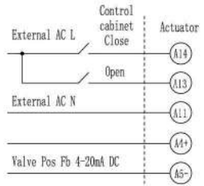


Open and Close in the "Moment" or "Hold" Mode

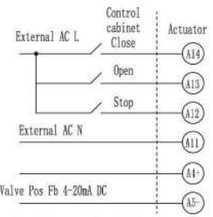


Hold, Open, Close, and Stop

▲ 12.3.External AC 110VAC-220VAC Control

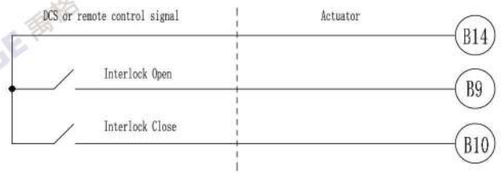


Open and Close in the "Moment" or "Hold" Mode



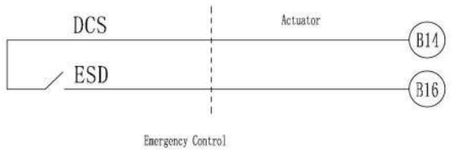
Open, Close, and Stop in the "Hold" Mode

▲ 12.4 External Interlock Control



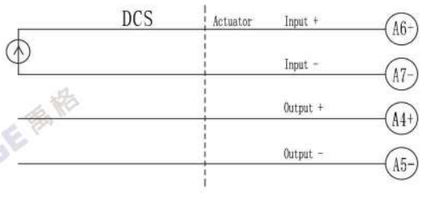
Interlock Control

▲ 12.5.ESD Emergency Control



Emergency Control

▲ 12.6.Analog Signal Control



Analog Signal Control

▲ 12.7.Two-Wire Control

When the “Remote Mode” is set to "Open", upon receiving a signal, the contact closes and the actuator performs the open operation, and when the contact opens, the actuator performs the close operation.

Conversely, when the “Remote Mode” is set to "Close", upon receiving a signal, the contact closes and the actuator performs the close operation, and when the contact opens, the actuator performs the open operation.

Refer to the figure below for external wiring for two-wire control.



▲ 12.8.Auxiliary Control (with Part Distance Testing)

Auxiliary control is a necessary function for emergency shut-down of the valve. It is designed to test the actuator during extended periods of valve ESD inactivity without disrupting the flow. In auxiliary control, the starting position can be set to either fully open or fully closed, and the movement distance can be adjusted according to on-site needs. When the CPU receives the command to activate auxiliary control, the actuator moves in the set direction, stops when it reaches the set position, and remains in place for 3 seconds. After the 3-second pause, the actuator returns to the initial position. Refer to the following figure for wiring.



13 Troubleshooting

NO.	Troubles	Causes	Solutions
1	Valve position over limit	The current position exceeds the distance range that was previously set.	Reset the distance or set the current position within the range. (Adjust the distance range based on the alarm signal when the valve goes beyond the preset positions at full open or close.)
2	Encoder failure	There could be one of these three causes: 1. The cable connecting the encoder with the motherboard is disconnected. 2. The encoder is damaged. 3. The potentiometer is toppled over.	1.Check if the three wires connecting the motherboard and the potentiometer are loosened or unstable and make them secure. 2. Change a new encoder. 3. Reposition the potentiometer.
3	Missing signal	The signal from the control room has not been sent to the terminal of the actuator.	Check if the signal has been sent to the terminal.
4	Motor stall	There could be one of the following causes: 1. The motor is damaged. 2. The drive module is damaged; 3. The drive module and the motherboard are poorly connected; 4. The motherboard is damaged; 5. The valve is blocked or cannot be open. 6. Wrong connection.	1. Change a new motor. 2. Change a new drive module. 3. Check the connecting wires between the drive module and the motherboard, and make sure they connect well. 4. Change a new motherboard. 5. Check the valve and make sure it can operate well. 6. Check the connection between the valve and the actuator.
5	Motor overheating	The motor is overheated or the temperature switch is damaged.	Change a new motor.

NO.	Troubles	Causes	Solutions
6	Open and close commands coexist	Open and close commands are given at the same time while using remote switching control.	Check if the commands from the control room and the connecting wires.
7	Remote dysfunction in analog control	Nothing happens and no alarm raises to warn missing signal when the remote command (4MA) has been sent.	Re-calibrate the current signal.
8	Excessive torque when open or close	The valve is blocked or the motherboard is damaged.	Remove the obstruction from the valve or change a new motherboard.
9	Fail to open or close remotely (through switching control)	The valve can be open or closed locally, but not remotely.	Check if internal 24VDC is normal. If not, change a new motherboard. Check if the remote knob of the display panel works. If not, change a new display panel.

14 Maintenance

Each YGK series actuator is fully tested before delivery to ensure high quality and durability. With proper installation, wiring, sealing, and maintenance, the device can promise long-term, trouble-free performance.

YGK series actuator features a unique double-sealed structure with a non-intrusive housing, providing comprehensive protection for the internal components. The terminal cover should NOT be opened during routine inspections, as doing so could affect the reliability of the actuator. The electrical control unit is encapsulated by our quality control department and contains no on-site adjustable components, as a result, the cover of this unit should NOT be opened without good reason.

Isolate the power supply before any maintenance or inspection, except for battery replacement. Isolate the power supply before removing any cover, except for the battery seal.

Routine maintenance should include:

* Check the security of the set bolts and nuts connecting the actuator and the valve.
* Ensure the cleanliness and lubrication of the valve stem and drive shaft sleeve.
* Conduct scheduled operation if the valve is rarely electrically operated.

If the battery of the actuator is depleted during extended downtime periods, reconnect it to the power supply for recharging, or replace it with a dedicated rechargeable lithium battery (replace it only when the power supply is connected).

The battery of the actuator serves to record the valve position changes and operate the LCD when the main power is disconnected.

Warning

The battery is housed in a compartment for explosion-proof operation. Ensure that the compartment is free from damage. If the battery needs to be removed, the actuator must be isolated or disconnected. If the battery icon is empty after a power outage, the battery must be replaced. In hazardous areas, live-line work should be authorized or comply with local regulations before removing or replacing the battery. In non-hazardous areas, it is recommended to replace the battery with the main power connected. If the main power supply is down and the battery is exhausted, check the position limit and parameter settings of the actuator after replacing the battery.

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