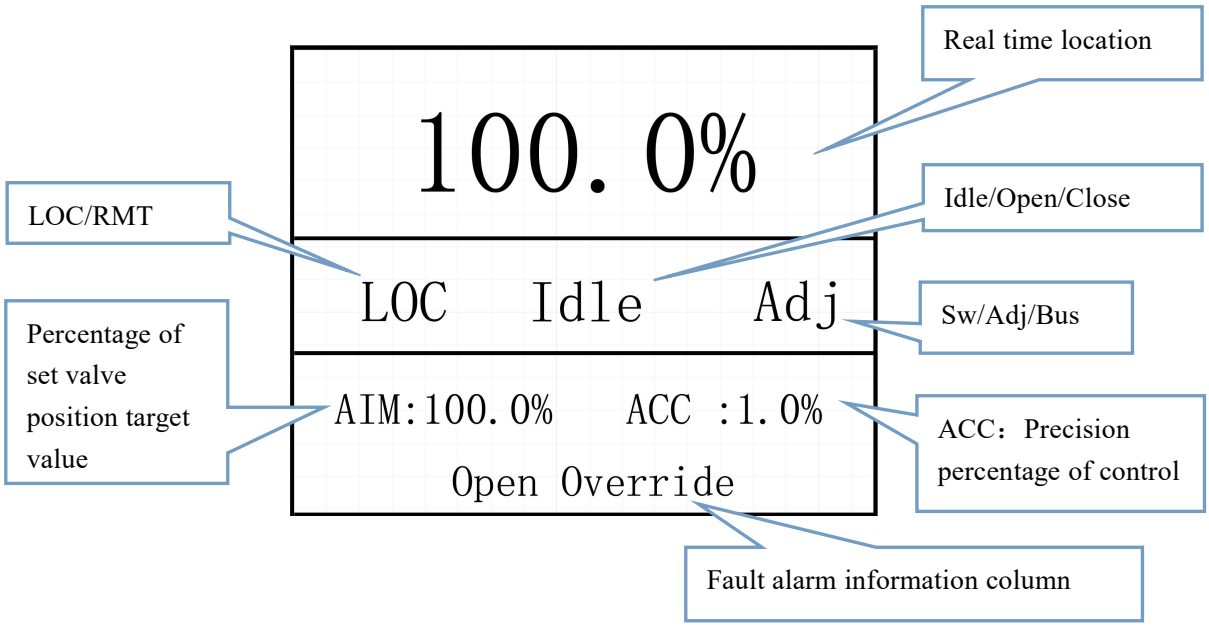
EA-50
IOT Intelligent Electric Actuator
Instruction Manual

English

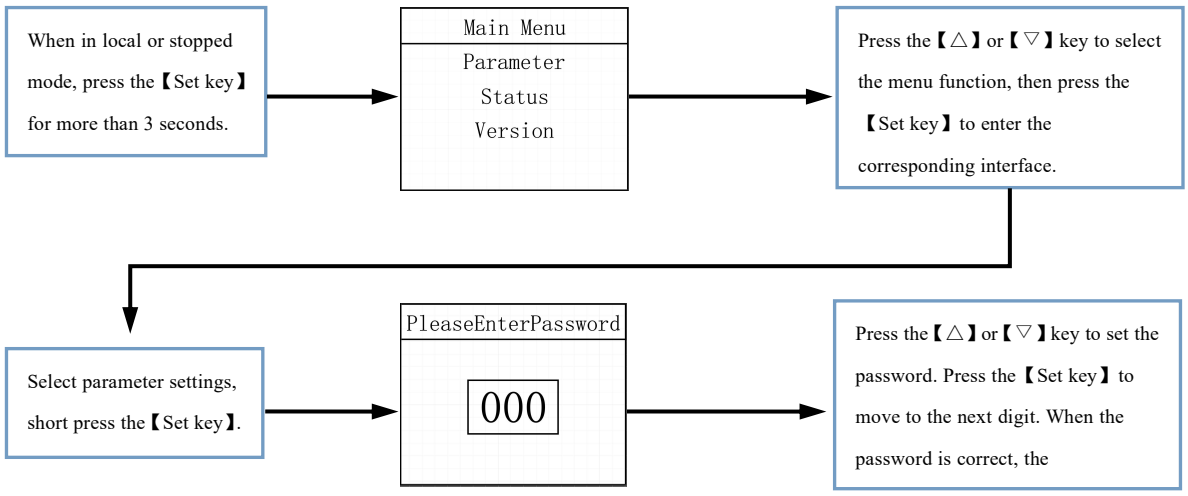
- **Before using this product and during installation, please read this instruction manual carefully.**
- **Please keep this manual for future reference.**
- **Use the product correctly based on a thorough understanding of the content.**

Interface Description

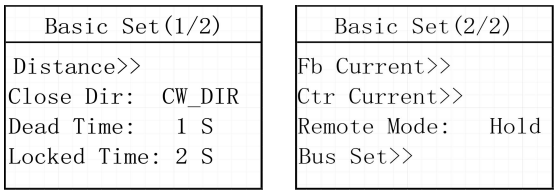


Operating instructions

1. The【△】key refers to UP, and the【▽】key refers to Down.
2. A short press of the【Set key】for 0.3 seconds switches between **Local** and **Remote** modes.
   A long press of the【Set key】for 3 seconds enters the main menu.
3. Simultaneously pressing the 【△】 and 【▽】 is equivalent to returning.
4. When setting parameters or stroke values, any return action will lead to the previous menu.
5. In the setting interface, use the【△】and【▽】to select the menu.
   Press the【Set key】to confirm and enter.
6. Enter the password input interface.

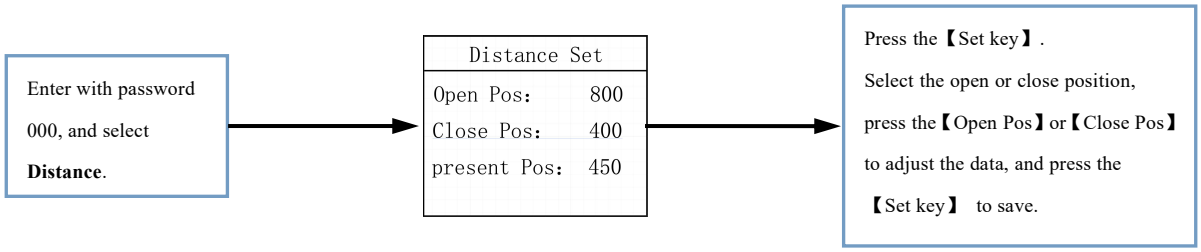


Basic Set (Password: 000)



Distance Set

Note: First, determine the direction of the electric actuator;

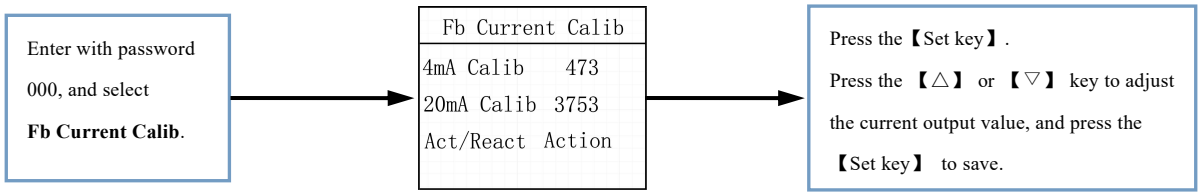


the switch position should have a minimum interval of 200.

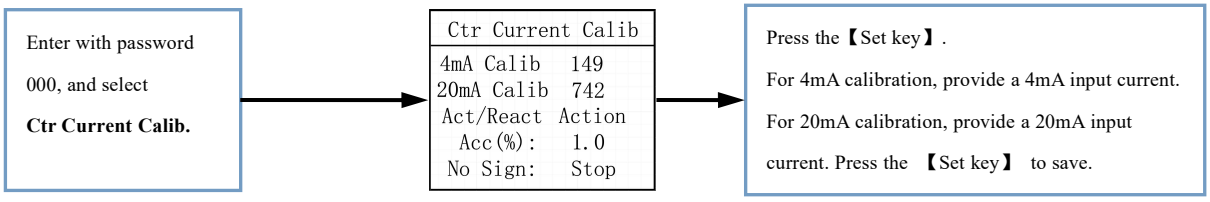
You can make the following settings in the **Basic Set**:

- **Close Direction (Close Dir)**: Clockwise (CW_DIR), Counterclockwise (CCW_DIR)
- **Dead Time**
- **Locked Time**
- **Feedback Current (Fb Current)**
- **Control Current (Ctr Current)** (Adjustable Type - Adj)
- **Remote Mode** (Switch Type - SW): Jog (Moment), Hold (Hold), Open on Signal (Open), Close on Signal (Close)
- **Bus Set** (Bus Type - Bus), etc.

Output Current Calibration (Fb Current Calib)



Input Current Calibration (Ctr Current Calib) (Required for Adjustable Type)



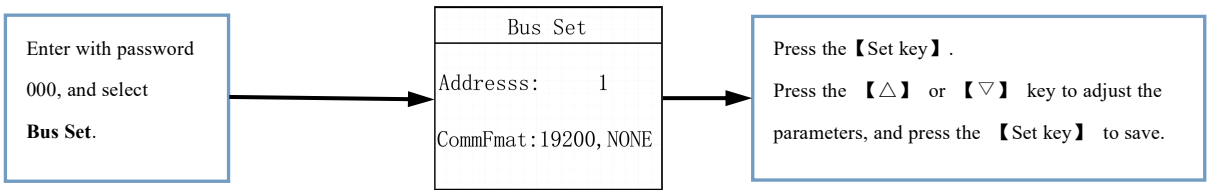
In this interface, you can set Accuracy (Acc (%)) and Loss of Signal Mode (No Sign:).

If the stroke is long and the inertia is small, the control accuracy can be set higher.

Conversely, it should be lowered (larger value).

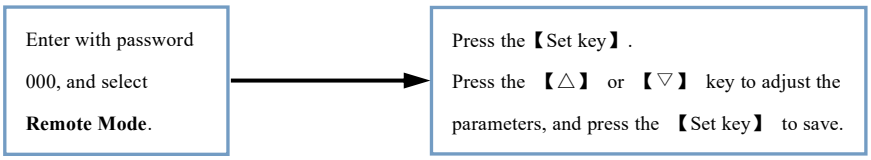
Loss of Signal Mode refers to the situation where, in Adjustable Type mode, if there is no external 4~20mA signal input, the controller will enter the loss of signal mode and drive the actuator to the selected position (Stop, Close, Open, or any other position).

Bus Settings (Bus Set)



Note: The address range is 1~250, with a total of 6 communication formats.

Remote Signal (Remote Mode) Selection (When set to Switch Type (SW))

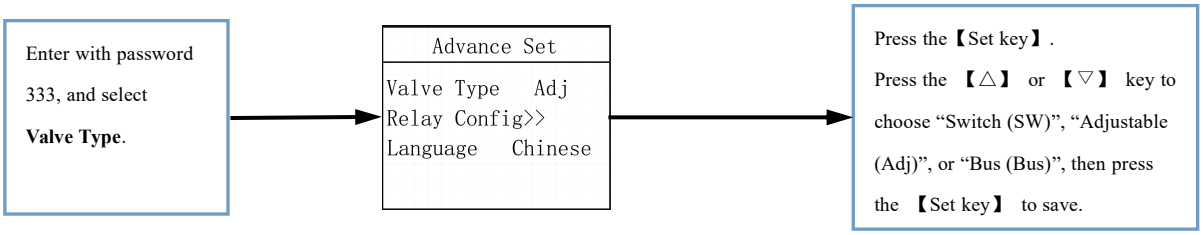


Note: The Remote Mode options are as follows: Jog (Moment), Hold (Hold), Open on Signal (Open), Close on Signal (Close).

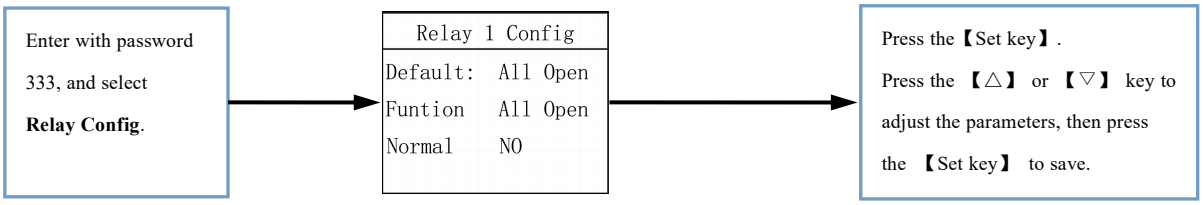
Advanced Set (Password: 333)

In the Advanced Set, you can set Valve Type, Relay Config, Language Selection, and more. The valve type and language selection can be adjusted as needed.

Valve Type Setting (Valve Type)



Relay Configuration Setting (Relay Config)



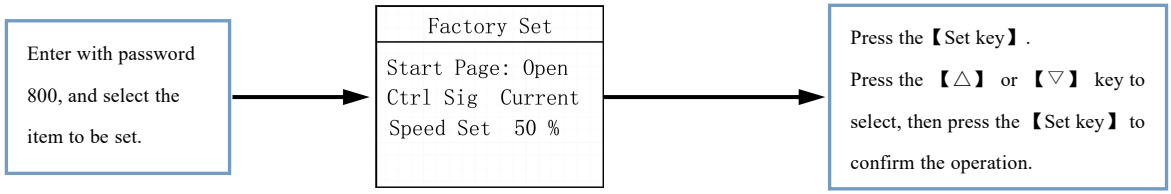
Language Selection (Language)

You can choose between Chinese (Chinese) or English (English) display.

Factory Set (Password: 800)

In the Factory Set, you can set the Start Page, Control Signal (Ctrl Sig), Speed Setting (Speed Set), and other configurations. The actuator manufacturer can set the startup screen according to the need for a boot page.

Factory Settings (Factory Set)



Control Signal: Refers to the type of analog input/output signal used:

1.Current Type (4-20m input，4-20mA output);

2.Voltage Type (0-10V input，0-10V output).

Note: When selecting the Voltage Type:

The 0~10V analog input signal does not require calibration.

The 0~10V analog output signal can be calibrated using the following two methods:

(For voltage calibration, first rotate the range potentiometer counterclockwise for 5 full turns, then perform the following steps.)

A. When calibrating the feedback current output, also adjust the 0~10V output. (For example, after the 4mA calibration is complete, adjust the **zero-point** potentiometer to make the voltage output 0V. After the 20mA calibration is complete, adjust the **range** potentiometer clockwise to make it output 10V.)

B. First, move the valve to the fully closed position (0%), adjust the **zero-point** potentiometer (clockwise to increase, counterclockwise to decrease) to make the voltage output 0V. When the valve reaches the fully open position (100%), adjust the **range** potentiometer clockwise to make it output 10V (clockwise to increase, counterclockwise to decrease).

3.**Speed Setting:** The range is from 20% to 100%, and users can set it as needed.

Troubleshooting Common Issues

Fault Phenomenon	Solution
Motor Stall Display	1. Motor lockup 2. Motor reverse rotation 3. Encoder failure
Command Conflict Display	1. Simultaneous remote open and remote close signal inputs
Valve Position Overflow or Underflow Display	1. Encoder reading exceeds 2.5 turns of the output shaft 2. Stroke not set
Display Does Not Show When Powered On	1. Power not connected or voltage too low 2. Loose internal wiring in the module 3. Circuit damage
No Action on Site or Remote Control When Powered On	1. Fault protection2. Motor failure or seized 3. Circuit damage
Works on Site but Remote Control Does Not Work	1. Abnormal remote control signal 2. Not in remote mode 3. Circuit damage
No Action on Site but Remote Control Works	1. Not in local mode 2. Operation button not pressed properly 3. Circuit damage
Can Open but Cannot Close, or Can Close but Cannot Open	1. Motor failure, lockup, or incorrect wiring 2.Circuit damage
No Control Signal but Actuator Moves on Power On	1. Control signal is present or loss of signal action 2. Set to two-wire control 3. Circuit damage
Moves to Limit but Cannot Move Further in the Middle Position	1. Motor failure or open circuit in wiring 2.Circuit damage
Movement Direction Reversed	1. Valve position calibration reversed2. Forward/reverse action set incorrectly 3.Signal reversed
No Output Current or Intermittent Output	1. Incorrect wiring or poor connection 2. Encoder failure 3. Circuit damage
Feedback Current Too High, Too Low, or Constant	1. Encoder failure or poor engagement with drive gears 2. Calibration error 3.Circuit damage
Normal Action but Valve Position Display Does Not Change	1. Encoder failure 2. Circuit damage
Actuator Motor Keeps Running After Valve Reaches Position	1. Stroke setting error 2. Encoder malfunction 3.Circuit damage
Loss of Signal Display	1.4-20mA signal source abnormal 2. Wiring error or loose connection 3. Circuit damage

Note: When the device reports a fault, the customer can simultaneously press and hold the【△】and【▽】keys to exit the fault state.

Appendix 1: Wiring Table (Wiring Definitions Labeled on the Control Board)

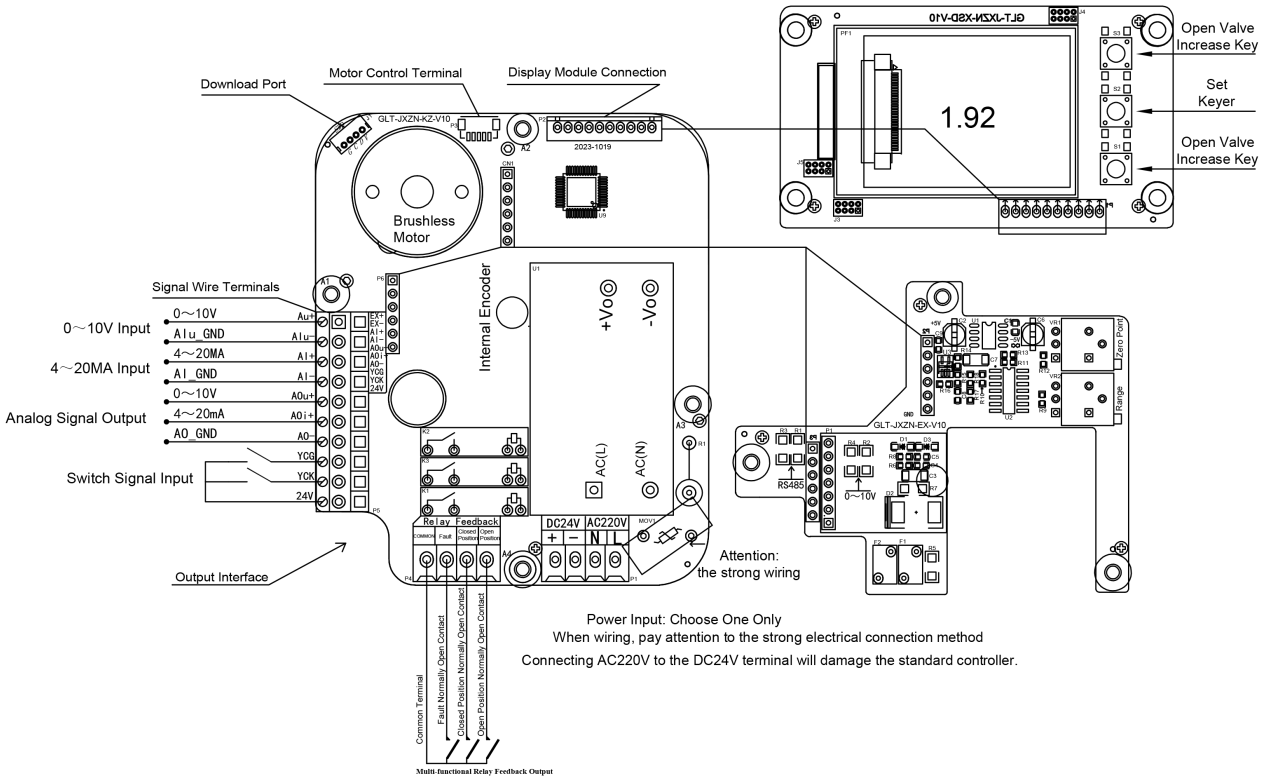
Module Position	interface position	Signal Definition	Signal Type
P1 Power Input	1	DC24V+	Direct Current DC24V Output
	2	DC24V-	
	3	AC220V-N	Alternating Current AC220V Input
	4	AC220V-L	
P4 Relay Feedback	1	Common Terminal	Relay Feedback
	2	Fault Normally Open Contact	
	3	Closed Position Normally Open Contact	
	4	Open Position Normally Open Contact	
P5 Signal Input	1	EX+	1:0～10V+/2：RS485A
	2	EX-	1:AIu-/2：RS485B
	3	AI+	4~20mA Input
	4	AI-	
	5	AOu+	Voltage Type: 0~10V Output
	6	AOi+	Current Type: 4~20mA Output
	7	AO-	Common Terminal for Analog Signal Output
	8	YCG	(Switch Type) Remote Close Signal
	9	YCK	(Switch Type) Remote Open Signal
	10	24V	(Switch Type) Common Terminal 24V+

Note: For the P5 signal connector's position 1 and 2, the terminals are shared signal terminals.

- For the standard analog model, it serves as the 0~10V analog input.
- For the bus model, it serves as the RS485 input terminal.

Appendix 2: Wiring Diagram for Standard Type

Wiring Diagram for Standard Type



Appendix 3: Wiring Diagram for Bus Type

Wiring Diagram for Bus Type