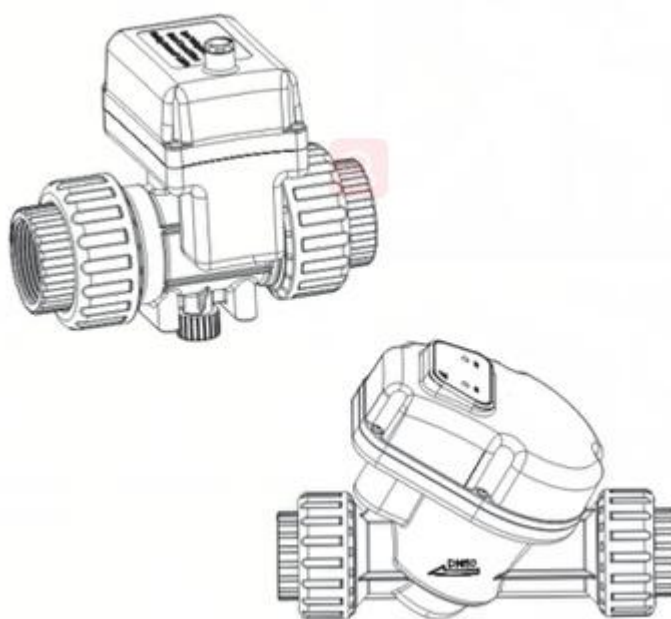




# Automatic Ceramic Ball Valve, Ceramic Disk with Hermetic Head Faces Sealing Automatic Shut-off Valve

## User Manual



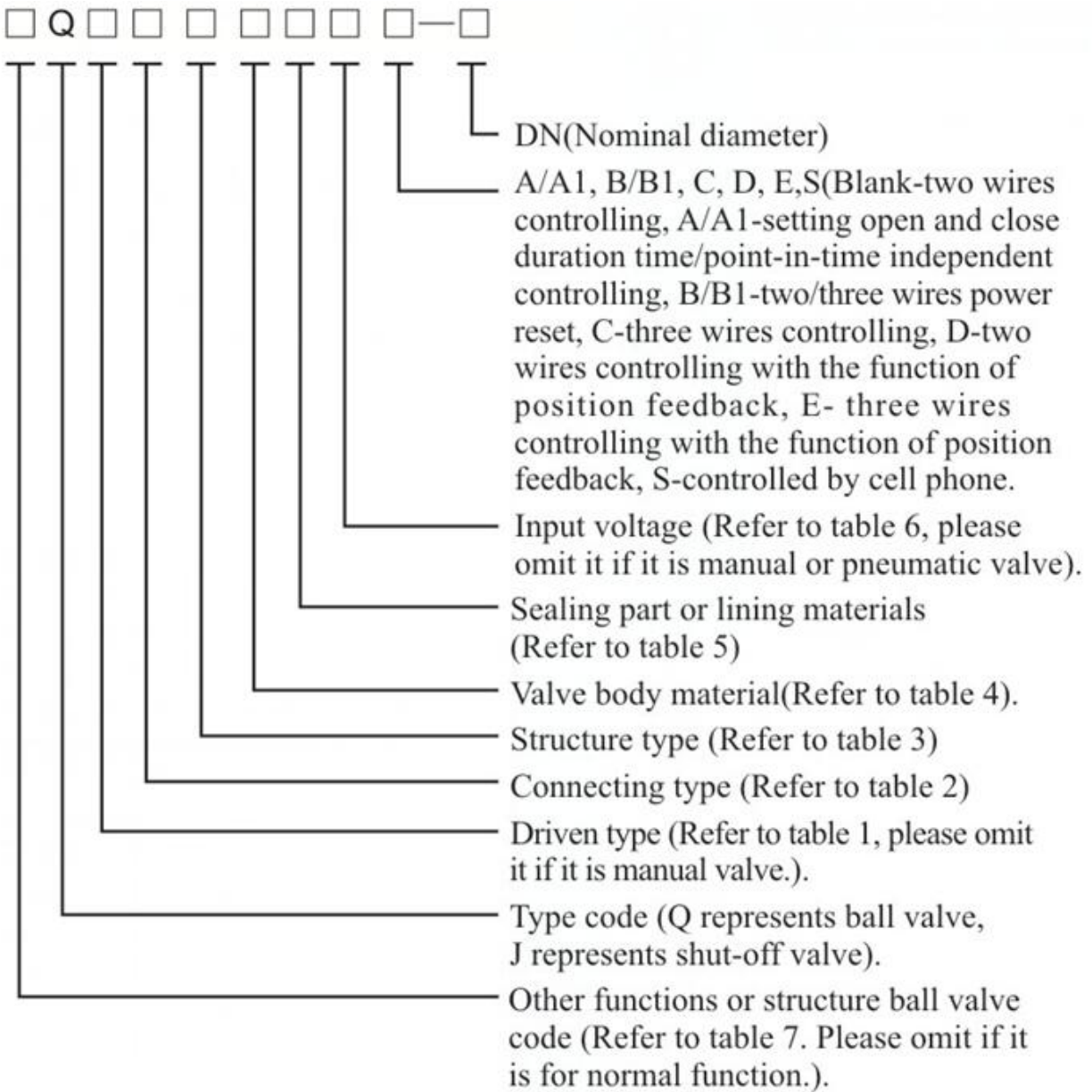
Please read this manual in details before using the valve and keep it properly in order to consult in the future.

0WRX.466.611

# Catalogue

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# 1. Model Denotation Method



**Table 1 Driven Type Code**

Driven Type	Solenoid Driven	Worm Gear Driven	Bevel Gear Driven	Pneumatic Driven	Electronic Driven
Code	0	2	5	6	9

Please omit if it is manual ball valve. For pneumatic driven valve, “6k” represents normal open, “6B” represents normal close; For power reset valve, “9k” represents normal open, “9B” represents normal close.

**Table 2 Connecting Type Code**

Connecting Type	Code		Connecting Type	Code
Female Thread	1		Weld	6
Male Thread	2		Butt Clamp	7
Glue	3		Clamp	8
Flange	4		Clip	9
Hot Melting	5			

**Table 3 Structure Type Code**

Structure Type		Code		Structure Type		Code
Floating Ball, Shut-off valve	Straight Flow Path	1	Fixed Ball	Four-way Flow Path	6	
	Y Shape Three-way Flow Path	2		Straight Flow Path	7	
	L Shape Three-way Flow Path	4		T Shape Three-way Flow Path	8	
	T Shape Three-way Flow Path	5		L Shape Three-way Flow Path	9	

**Table 4 Valve Body Material Code**

Valve Body Material	PPO	HPb59-1	304	316	316L	UPVC	CPVC	PPH
Code	0	1	2	3	4	5	6	7

**Table 5 Sealing Part or Lining Materials Code**

Sealing Part	95% Al <sub>2</sub> O <sub>3</sub>	SiC	ZrO <sub>2</sub>	Si <sub>3</sub> N <sub>4</sub>	95% Al <sub>2</sub> O <sub>3</sub>
Code	1	2	3	4	5

**Table 6 Input Voltage Code**

Input Voltage	DC6V	DC12V	DC24V	DC36V	AC220V
Code	1	2	3	4	5

If valve has other function or structure, a letter will be added before valve type code.

**Table 7 Other Function or Structure Valve Code**

Function	Fireproof Type	Slow-closure Type	Slagging Type	Fast Type	Auxiliary manual type	Adjustable Type	(Shaft seal) Corrugated Pipe Type
Code	F	H	P	Q	S	V	W

**Example:** Q911011-20; According to the sequence; Q-Ball valve, 9-Electronic driven, 1-Female thread, 1-Straight flow path of floating ball, 0-Material of valve body is PPO, 1-95% Al<sub>2</sub>O<sub>3</sub> sealing part, 1-Input voltage: DC6V, 20-DN20.

## 2. Classification (Power off after Open or Close in Place)

### 1. Two wires controlling (DC)

Two wires as controlling wires, and control ball valve open or close by switching the polarity of motor.

### 2. Three wires controlling (DC, AC)

Three wires as controlling wires. When one wire is connected with public wire, it means open; when the other wire is connected with public wire, it means close.

### 3. Power reset (DC)

#### 1) Two wires power reset

It adopted Super Capacitor so that its function is equal to solenoid valve, power reset automatically when power off. Normal open or normal close is for optional.

A. Normal close: Before switching from open to close, it should keep at least 20 minutes on open status in order to keep Super Capacitor charging. No time requested on close status before switching from close to open.

B. Normal open: Before switching from close to open, it should keep at least 20 minutes on close status in order to keep Super Capacitor charging. No time requested on close status before switching from open to close.

#### 2) Three wires power reset

Three wires as controlling wires, during working status, it means open that one wire is connected with public wire, and it means close that the other wire is connected with public wire. Charging Super Capacitor for stand-by during working status, once the power off, Super Capacitor discharged for making the valve reset automatically.

### 4. Can be controlled individually by setting open-close duration time or point-in-time (DC)

#### 1) Can be controlled individually by setting open-close duration time

A. The length of duration can be set, without clock function, the valve is cycled open and close according to the set length of time.

B. Two types of open and close time range: 000:01-999:59 (hour: minute) or 000:15-999:59 (minute: second).

2) Can be controlled individually by setting open- close point-in-time

A. Can be set open and close for each day from Monday to Sunday at different time points.

B. Each day 5 groups of time points can be set at most. If the number of switch is set to 0, then switch state will keep the same as last day.

C. First use or power-off exceeds three days, time and week needs to be corrected.

### **5. Valve with the function of position feedback**

1) Five wires as controlling wires (DC)

Two wires as power controlling wires, three wires as feedback wires. It means open when power controlling wires are connected with forward voltage, and provides signal of opening, otherwise provides signal of closing.

2) Six wires as controlling wires (DC, AC)

Three wires as power controlling wires, three wires as feedback wires. It means open when power controlling wires are connected with public wire, and provides signal of opening, otherwise provides signal of closing.

### **6. Valve with adjustable function**

A. The opening degree of valve has equal percentage flow characteristic.

B. The angle of opening can be automatically adjusted by PLC, which is used for adjusting flow, temperature, pressure, etc

C. Position feedback signal: 0-5V, controlling signal: 0-5V.

### **7. Auxiliary manual type**

When there is no power or air supply, it can open and close the ball valve manually.

### **8. Valve controlled by cell phone**

Installing a cell phone card on the valve to establish interconnected with Android system phone. It can remote control valve open and close and inquire historical information by cell phone.

## **3. Power Supply**

**Table 8 Power Supply Configuration Table**

Nominal Diameter	Open-close Time(S)		Rated Voltage(V)	Motor Power(W)	Actual Power(W)
	Ball Valve	Shut-off valve			
DN15/DN20	12.5		DC6V, 12V, 24V	2W	0.4W
DN25				2W	0.7W
DN15/DN20	3		DC6V, 12V, 24V	4W	1.5W
DN25				4W	2.5W
DN15/DN20	12		AC220V	6W	0.4W
DN25				6W	0.7W
DN32	7.5		DC12V	6W	2W
DN40	7.5		DC24V	10W	5W
DN50	7.5	26	DC24V	16W	6W
DN32	12		AC220V	11W	1W
DN40	12		AC220V	11W	3W
DN50	15	26	AC220V	14W	3.5W
DN65	15	18	DC24V/AC220V	45W	8W
DN80	15	22	DC24V/AC220V	45W	10.5W
DN100	30		AC220V	25W	/
DN125	30		AC220V	35W	/
DN150	30		AC220V	45W	/
DN200	40		AC220V	90W	/

Note: The actual power is tested at the 1.0Mpa load.

## 4. Installation Requirements and Attentions

1. The power adapter must match with the valve model (Refer to table 8);
2. During installation, the flow direction should be same as the symbol “ $\Rightarrow$ ” on valve body, otherwise, it will cause leakage; DN65 and bigger ball valves, when installed horizontally, the actuator must be directed upward (as the Figure 1 shows); When installed vertically, the actuator can be oriented in any direction (as the Figure 2 shows);

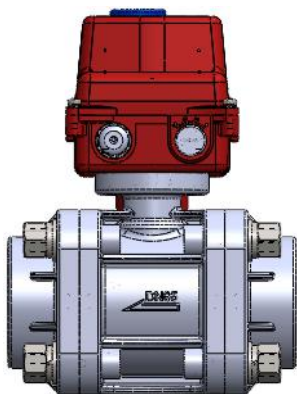


Figure 1

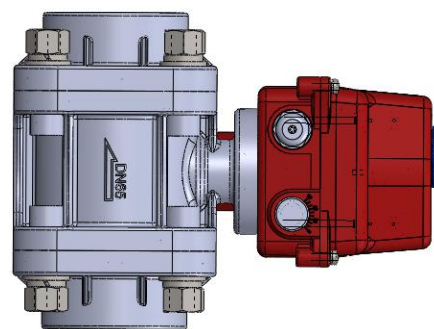
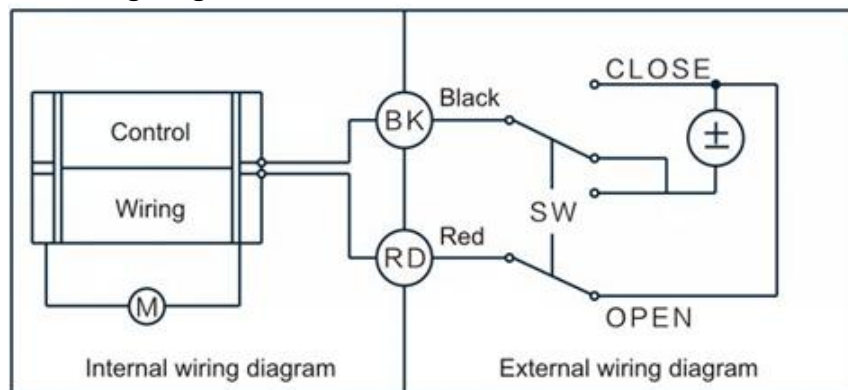


Figure 2

3. Non-professional person is not allowed to disassembly, assembly or maintenance for valve;
4. As factory default, the power reset valve is normal closed, please note your specific demands when you place an order;
5. The valve is not applicable to occasions with larger impurity particles. It should be set up a filter device in front of valve when hard impurity particles reach or are bigger than 0.2mm.
6. It is forbidden to install and use under environmental conditions where the freezing occurs easily.
7. The medium pressure shall not exceed the nominal pressure of the valve.

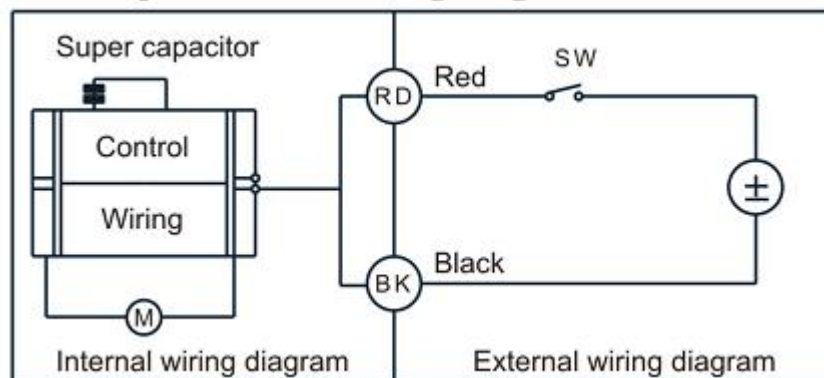
## 5. Wiring Diagram

### 1. Two wires control wiring diagram



- ① When SW and OPEN are connected, valve opens, and keeps the same position after putting in place.
  - ② When SW and CLOSE are connected, valve closes, and keeps the same position after putting in place.
- Suitable for DC6V, DC12V, DC24V valve. SW is two-wire switch.

### 2. Two wires power reset wiring diagram



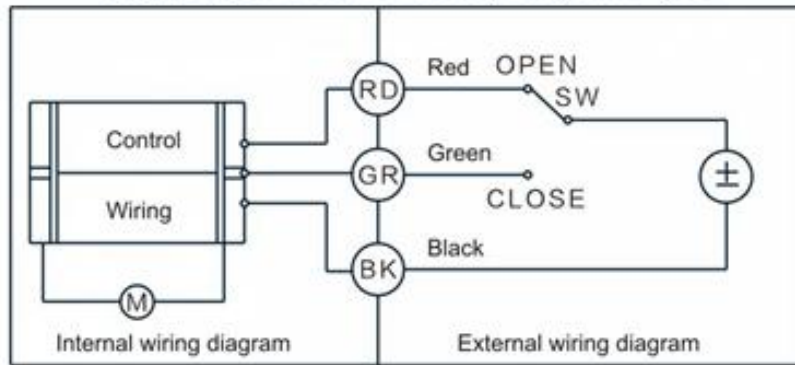
- ① When SW closes, valve opens, and keeps the same position after putting in place.



② When SW opens, valve closes, and keeps the same position after putting in place.

Suitable for DC9~24V valve.

### 3. Three wires control wiring diagram

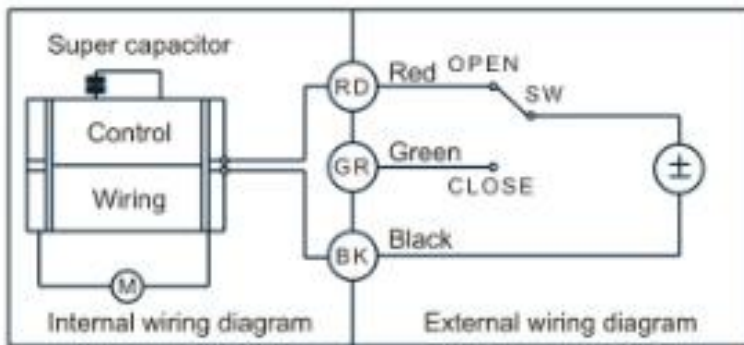


① When SW and the red wire are connected, valve opens, and keeps the same position after putting in place.

② When SW and the green wire are connected, valve closes, and keeps the same position after putting in place.

Suitable for DC6V, DC12V, DC24V valve.

### 4. Three wires power reset wiring diagram

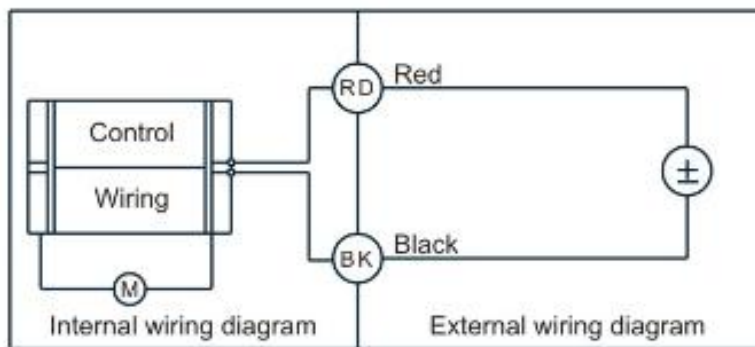


① When SW and the red wire are connected, valve opens, and keeps the same position after putting in place.

② When SW and the green wire are connected, valve closes, and keeps the same position after putting in place.

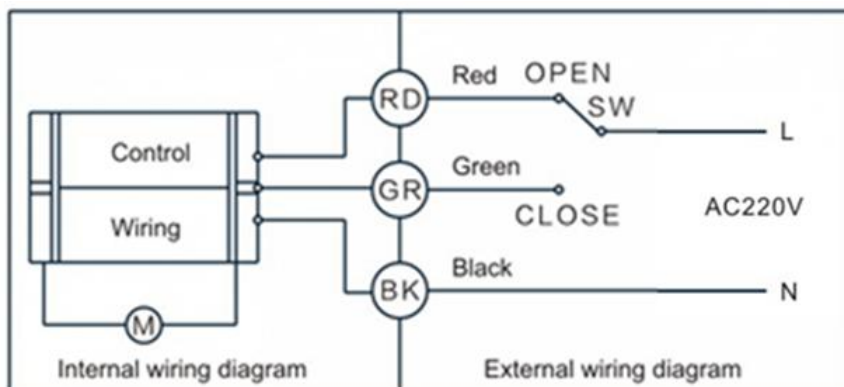
Suitable for DC12V, DC24V valve.

### 5. With Open-close time settable wiring diagram



- ①. In set duration time or point-in-time, electronic valve opens;
  - ②. In set duration time or point-in-time, electronic valve closes;
- Suitable for DC12V, DC24V valve.

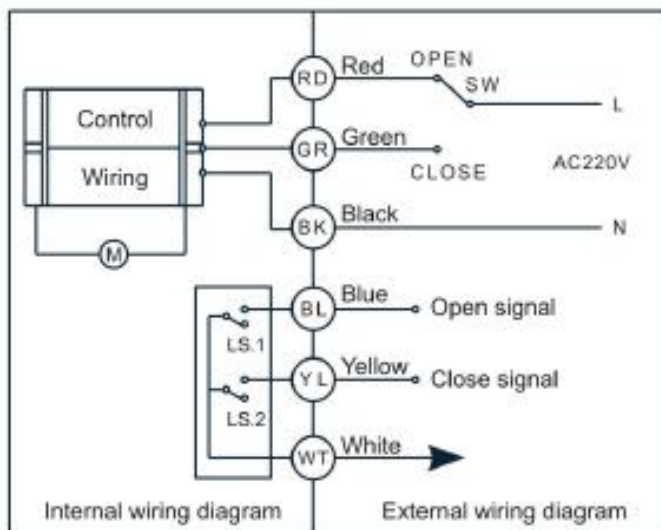
### 6. 220V three wires control wiring diagram



- ①. When SW and the red wire are connected, valve opens, and keeps the same position after putting in place.
- ②. When SW and the green wire are connected, valve closes, and keeps the same position after putting in place.

Suitable for AC220V valve.

### 7. 220V Three wires control with the function of position feedback wiring diagram

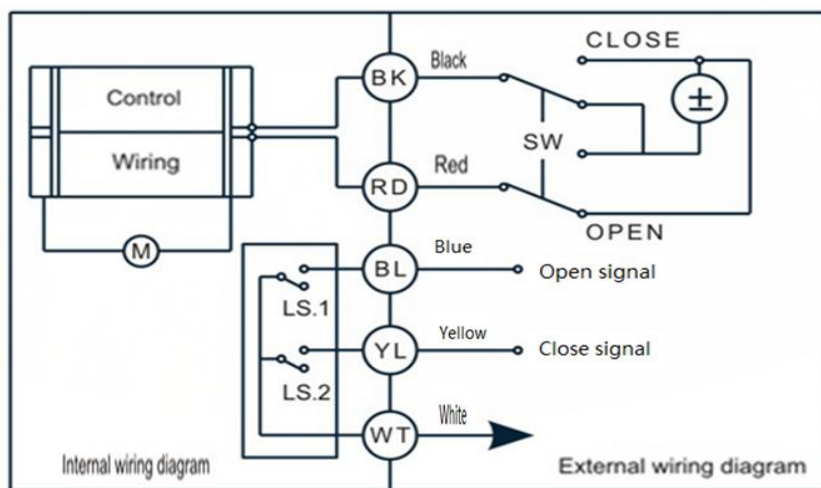


① When SW and the red wire are connected, valve opens, and keeps the same position after putting in place. Meanwhile, LS.1 is connected and sent the open signal, which means blue wire and white wire are connected.

② When SW and the green wire are connected, valve closes, and keeps the same position after putting in place. Meanwhile, LS.2 is connected and sent the close signal, which means yellow wire and white wire are connected.

Suitable for AC220V valve.

### 8. DC Two wires control with the function of position feedback wiring diagram

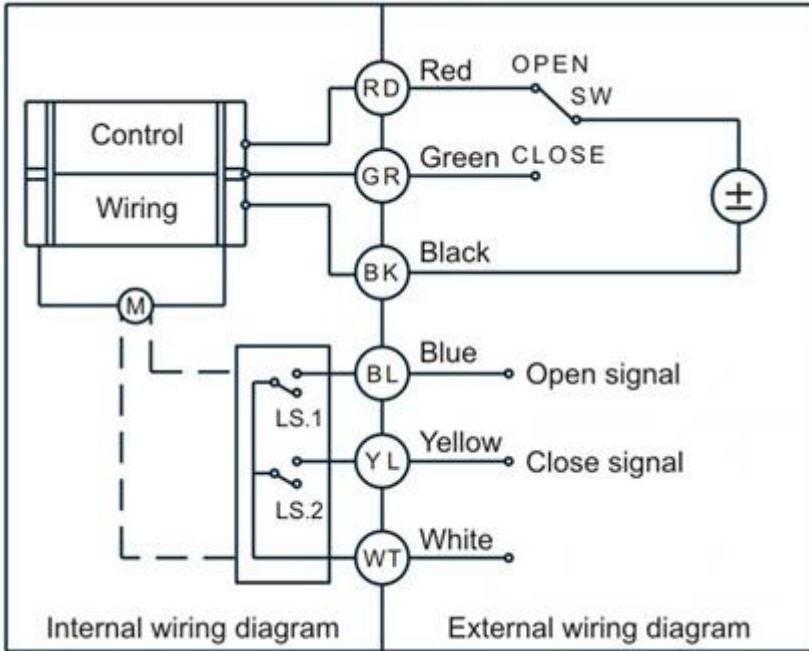


① When SW and OPEN are connected, valve opens, and keeps the same position after putting in place. Meanwhile, LS.1 is connected and sent the open signal, which means BL and WT are connected.

② When SW and CLOSE are connected, valve closes, and keeps the same position after putting in place. Meanwhile, LS.2 is connected and sent the close signal, which means YL and WT are connected.

Suitable for DC24V valve.

## 9. DC Three wires control with the function of position feedback wiring diagram



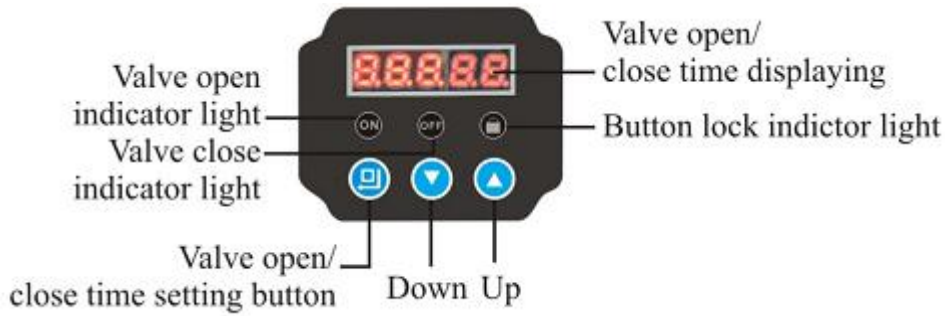
① When SW and the red wire are connected, valve opens, and keeps the same position after putting in place. Meanwhile, LS.1 is connected and sent the open signal, which means blue wire and white wire are connected.

② When SW and the green wire are connected, valve closes, and keeps the same position after putting in place. Meanwhile, LS.2 is connected and sent the close signal, which means yellow wire and white wire are connected.

Suitable for DC24V valve.

## 6. Parameter Setting of Open-close Duration Time Control Valve

### 1. Display



2. Parameter Setting

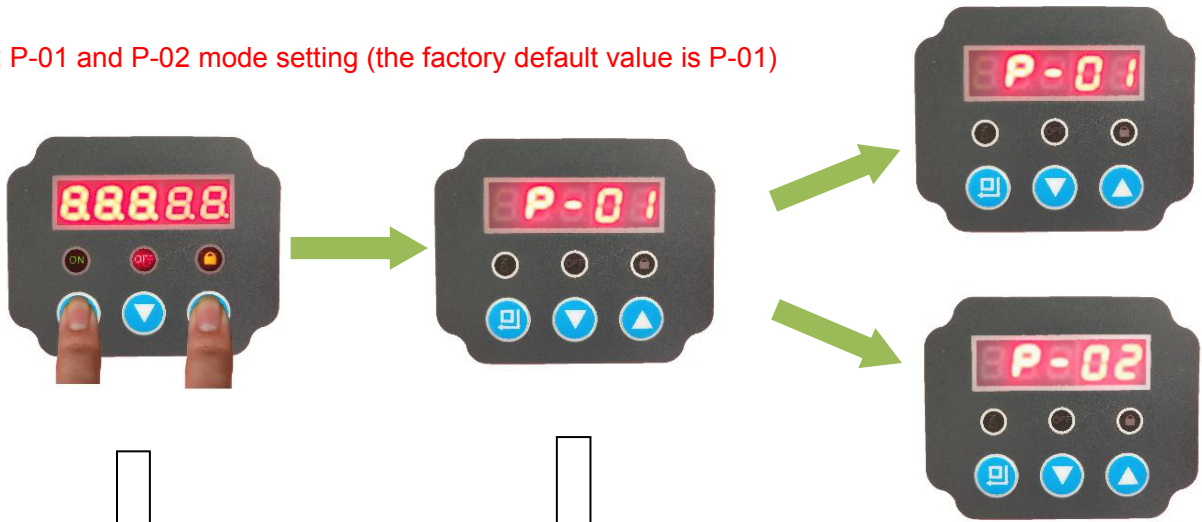
2.1 Buttons lock and unlock

All parameter setting should be carried out with the buttons are unlocked.



When there is no operation for more than 1 minute, the buttons will be locked. Press and hold both and button for 2 second to unlock.

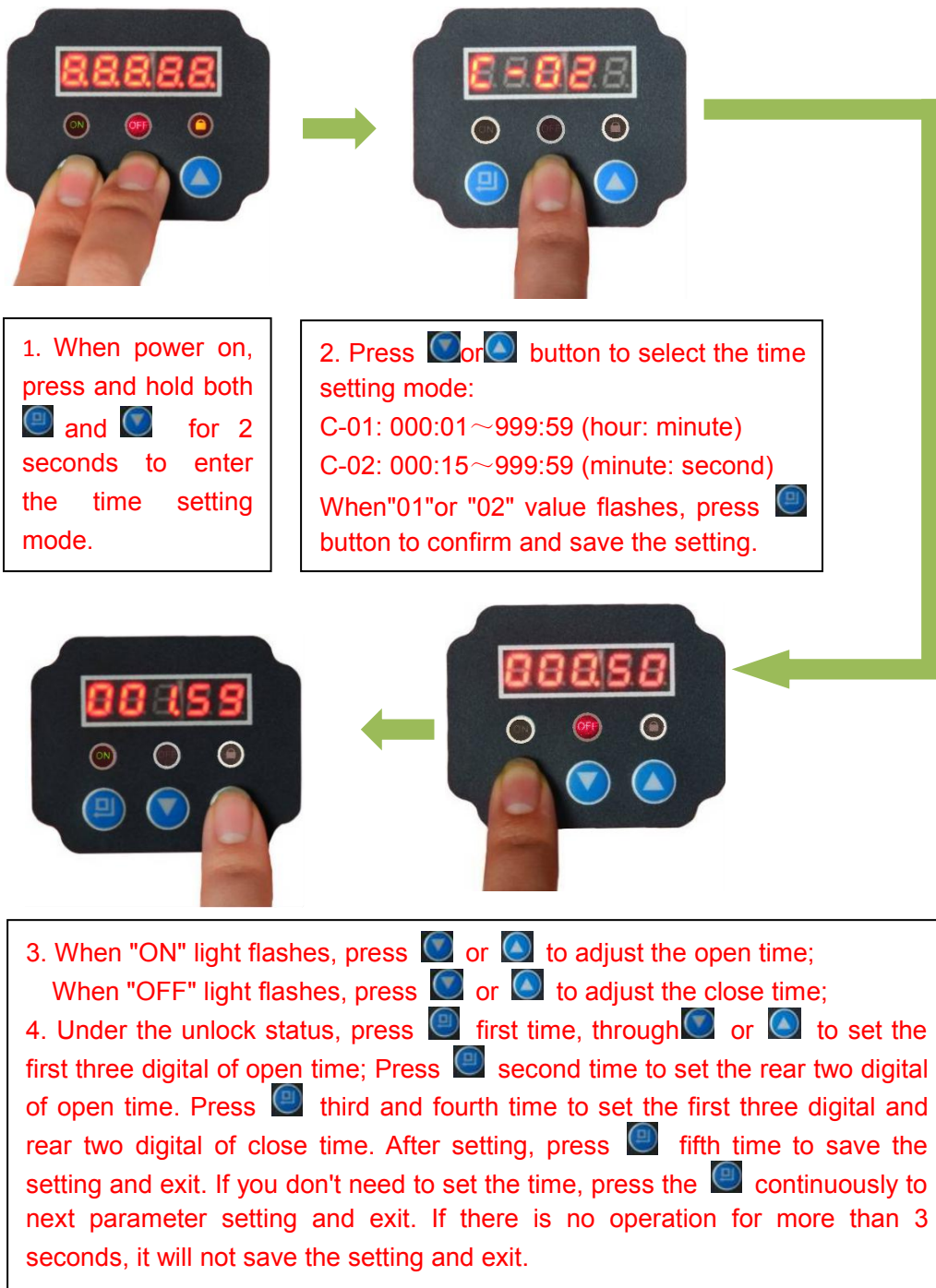
2.2 P-01 and P-02 mode setting (the factory default value is P-01)



When power on, press and hold both and button for 2 seconds to enter the mode selection menu.

Press or button to select the mode:  
 P-01: Automatic mode  
 P-02: Manual mode  
 When "01" or "02" value flashes, press button to confirm and save the setting.

### 2.3 Setting process under P-01 mode



2.4 Under manual mode P-02, through button (when button is locked, press and hold both and button for 2 second to unlock) to control the ball valve open and close.

## 7. Parameter Setting of Open-close Point-in-time Control Valve




### 1. Display





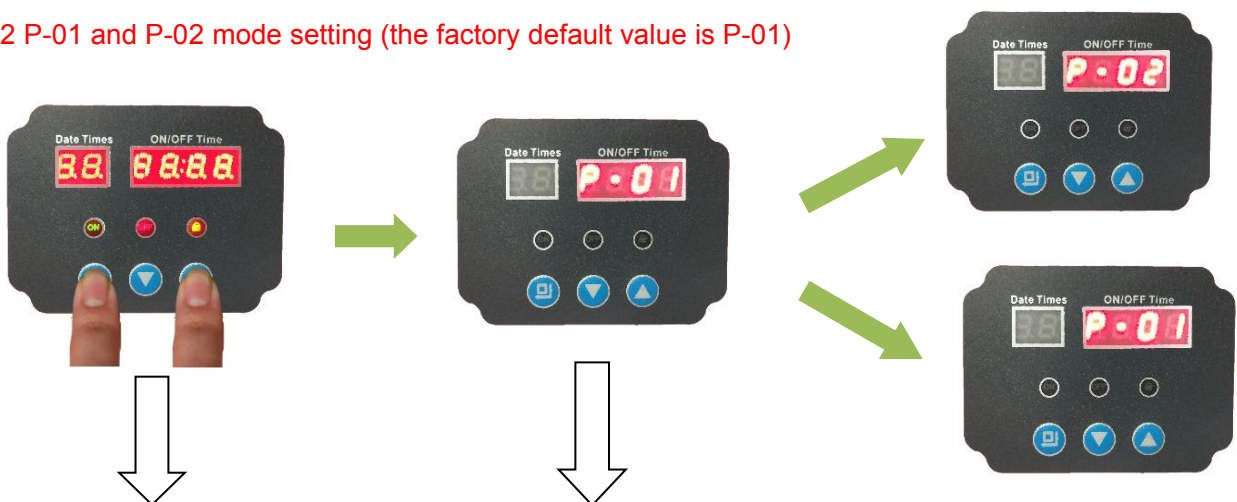
## 2. Parameter Setting



### 2.1 Buttons lock




No operations to buttons within 1 minute,  lights on which represent buttons are locked. Before operation, press and hold the “” and “” buttons for 2 seconds to unlock.



### 2.2 P-01 and P-02 mode setting (the factory default value is P-01)




When power on, press and hold both  and  button for 2 seconds to enter the mode selection menu.

Press  or  button to select the mode:  
 P-01: Automatic mode  
 P-02: Manual mode  
 When "01" or "02" value flashes, press  button to confirm and save the setting.


## 2.3 Setting process under P-01 mode

### 2.3.1 Setting time of day





1. Press  enter into enquiry mode; it shows the time 09:14; we will adjust it to 13:09 for example.




2. Press  again quickly, and the first two digits flash in "ON/OFF Time" column, 09 flashes.





3. Press  or  to set the hour value. For example, adjust the time from 09:14 to 13:14.




6. Press  to save the setting and turn back. Finish the setting for time of day.



5. Press  or  to set the minute value. For example, adjust the time from 13:14 to 13:09.



4. Press  again, and the rear two digits flash in "ON/OFF Time" column, 14 flashes.



### 2.3.2 Proofread the day of week



1. Press to enter into enquiry mode; it shows 6 that means Saturday.



2. Press to check whether the day of week is correct or not in "Date Times" column. If it is incorrect, please adjust it as following.



5. Press to save the setting and turn back. Saturday 6 is adjusted to Monday 1.



4. Press or to set the day of week. For example, adjust to the digit 1 that means Monday.



3. Press again, and the first digit flashes in "Date Times" column, 6 flashes.

### 2.3.3. Setting times



1. Press to enter into enquiry mode; it shows the times of 2.



2. Press to find out which day you want to set, it shows Monday (First digit 1 means Monday in "Date Times" column).



3. Press and the second digit in "Date Times" lights up, namely, digit 2 lights up.



6. Press to save the setting and turn back. Times of open/close is adjusted from 2 to 3.



5. Press or to set the times. For example, adjust the times to 3.



4. Press again, and the second digit in "Date Times" flashes, namely digit 2 flashes.



7. Press or to set hours for this open/close. For example, adjust 13 to 12.



8. Press again, and the rear two digits flash in "ON/OFF Time" column, then 00 flashes.



9. Press or to set minutes for this open/close. For example, adjust 00 to 05.

**Illustration:** When flashes, the time of opening can be set; when flashes, the time of closing can be set.

1. Display Content: "Time of day" and "last time of opening/closing" display circularly in each 5 seconds.
2. When set the point-in-time for next opening/closing, it should be based on the premise of ball valve current status. For example, if the valve is in open status now, then it will turn to close when reach to the next point-in-time set before. Otherwise, valve will turn to open.
3. If outage overrides 3 days, the time of day and the day of week needs to be proofread when power on. If outage doesn't override 3 days, the time of day and the day of week should be correct, otherwise, they also need to be proofread.



10. Press to save the setting and turn back. The second open time 13:00 has been adjusted to 12:05 in Tuesday by these steps.

2.4 Under manual mode P-02, through button (when button is locked, Press and hold both and button for 2 second to unlock) to control the ball valve open and close.

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