
HRVG-D800

Sequence Injection Controller

USER'S MANUAL



For avoid wrong operation to make human injured or machine damage, please read this instruction carefully before use this product.

1. Warranty

We warrant that this product will be free from defects in materials and workmanship for a period of 18 months from the date of shipment. If any such product proves defective during this warranty period, at our option, either will repair the defective product without charge for parts and labor, or will provide a replacement in exchange for the defective product.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care. We shall not be obligated to furnish service under this warranty; a) to repair damage resulting from attempts by personnel other than our representatives to repair or service the product; b) to repair damage resulting from improper use or connection to incompatible equipment; or c) to service a product that has been modified or integrated with other products when the effect of such modification or integration increases the time or difficulty of servicing the product.

This warranty excludes replacement of fuses and damage to the product from the use of improper fuses. The maximum allowable fuse rating is 2 amps. Lower ratings may be used for improved protection.

2. Safety

The products have been designed to be safe and simple to operate. As with any electronic equipment, you must observe standard safety procedures to protect both yourself and the equipment.

To Prevent Injuries:

- To avoid electrical shock or fire hazard, do not apply voltage to a terminal that exceeds the range specified for that terminal.
- To avoid electrical shock or fire hazard, do not operate this product when wet.
- To avoid injury or fire hazard, do not operate this product in an explosive atmosphere.

To Prevent Product Damage:

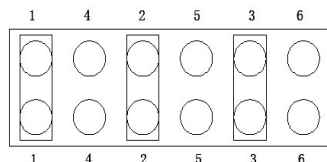
- Do not operate this product from a power source that applies more than the voltage specified.
- Do not operate this product from an injection signal input that mismatches the setting.
- Do not operate this product from a solenoid valve that its power source specified mismatches the gate output type setting.

3. Specifications

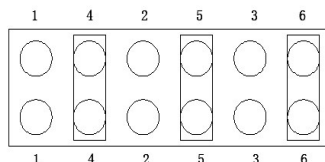
- **Power requirements:** AC85~265V, 50/60Hz
- **Injection signal input** (Selected by JP1 on PCB): DC24V/AC220V or Dry contact
- **Gate output** (Two types of three can be selected when ordering & Selected one by band switch on the side of the product when using):
 - 1) DC24V (50W or 240W for total 8 gates)
 - 2) AC220V (less than 100mA per gate, the voltage is the controller's power source), total 8 gates
 - 3) Relay Contact (AC250V/3A per gate) , total 8 gates
- **HMI:** 7.0" color touch screen
- **Time range:** 0.0~99.9s
- **Operating condition:** 0℃~55℃(32°F~131°F), 10~80% (non-condensing)
- **Storage temperature:** -20℃~70℃ (-4°F~158°F)

4. Injection Signal Input Setting

Caution: Please set the jumpers JP1 (on PCB) correctly.
Otherwise, it may cause the controller damaged.



JP1 setting for Switch Input

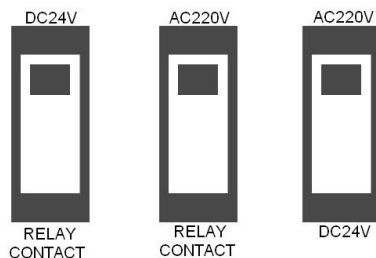


JP1 setting for DC24V/AC220V Input

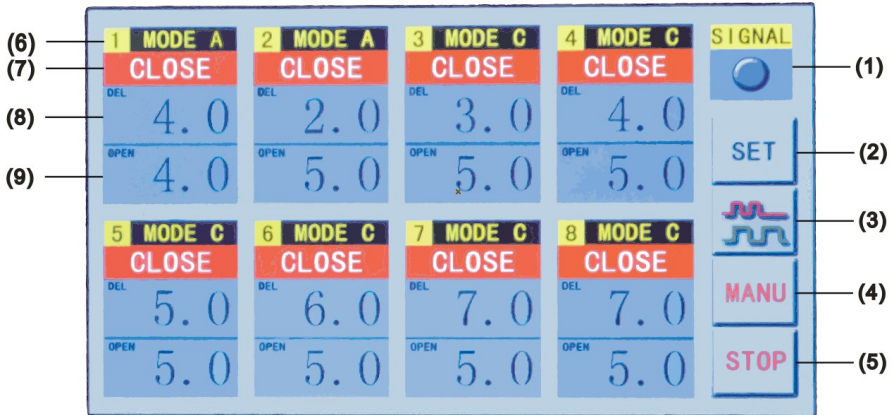
5. Gate Output Setting













Caution: Please set the band switch (covered by a panel) on the side of the product correctly.
Otherwise, it may cause the controller or solenoid valve damaged.

Comment: The band switch on the product is one of the following.






6. Main Interface






- (1)  **Injection signal input indicator (Auto mode) :** Lights when signal input.
Open / Close all gates button (Manual mode) .
- (2)  **SET button:** Used to enter the parameters setting interface.
- (3)  **Preview button:** Used to preview the time sequence setting by chart.
- (4)   **Control mode selection button:** Enabled when system is running;
"MANU" button is displayed under Auto Control mode (default);
"AUTO" button is displayed under Manual Control mode.
- (5)   **System RUN / STOP button:** Used to run / stop the system;
"RUN" button is displayed when system is stopped;
"STOP" button is displayed when system is running.
- (6)  **Valve gate number & Auto operating mode (Set by parameters).**
- (7)   **Valve gate state & Manual Open/Close button:**
Used to open/close valve gate when system is running in manual control mode.
- (8)  **Delay Time:** Display the count-down delay time to open the valve gate;
Display the setting delay time 1 when system is stopped or standby.
- (9)  **Delay Time:** Display the valve gate opening time;
Display the setting open time 1 when system is stopped or standby.

7. Control Mode

➤ **Manual Control:** It doesn't need injection signal, can be used to debug system or test valve gate.


1) When system is running ( is displayed), click  to select Manual Control mode, then  is displayed.

2-a) Open / Close all gates: Click , you can open / close all gates.


2-b) Open / Close the specified valve: Click  () on the specified gate, then the selecting option  is displayed, then click "OPEN" or "CLOSE".


➤ **Auto Control** (default mode when running system): It needs injection signal.

1) Click  to select Auto Control mode, then  is displayed.

2) When system is running ( is displayed), system auto open/close valve gates according to the pre-setting parameters.


8. Parameters Setting

Click  on the main interface, you can enter parameters setting interface of auto control.

Click  on the parameters setting interface, you can exit to main interface.

GATE 1		GATE 2		GATE 3		GATE 4		PAS
T1: 4. 0	T1: 2. 0	T1: 3. 0	T1: 4. 0					20
T2: 4. 0	T2: 5. 0	T2: 5. 0	T2: 5. 0					
T3: 5. 0	T3: 7. 0	T3: 7. 0	T3: 7. 0					DAC
T4: 6. 0	T4: 8. 0	T4: 8. 0	T4: 8. 0					0
MODE A	MODE A	MODE C	MODE C					

GATE 5		GATE 6		GATE 7		GATE 8	
T1: 5. 0	T1: 6. 0	T1: 7. 0	T1: 7. 0				
T2: 5. 0	T2: 5. 0	T2: 5. 0	T2: 5. 0				
T3: 7. 0	T3: 7. 0	T3: 7. 0	T3: 7. 0				
T4: 8. 0	T4: 8. 0	T4: 8. 0	T4: 8. 0				
MODE C	MODE C	MODE C	MODE C				



➤ **Injection Signal:**

- 1) **Filter (PAS):** Used to reduce the influence of interference. **Unit:** ms
The larger the value is, the slower the controller responded.

- 2) **AC Signal Identified (DAC):** 0-Off; 1-On.

Click the parameter value, input pad will be displayed;

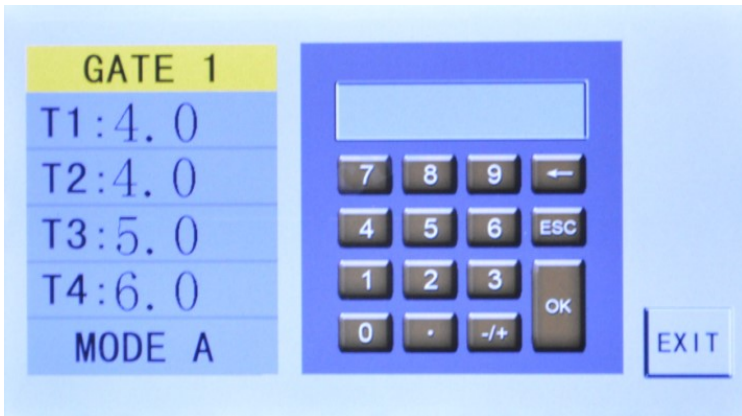
Input the value required;

Click “OK” to confirm and close the input pad.



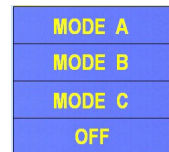
➤ **Parameters of Auto Control:**

Click the parameters area, you can enter the parameters setting interface of specified valve gate.



☑ **Valve Gate Auto Operating Mode:**

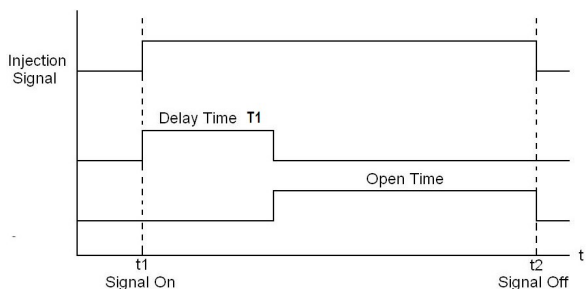
Click **MODE A**, you can see a mode selection pad,
click the mode required.



Note:

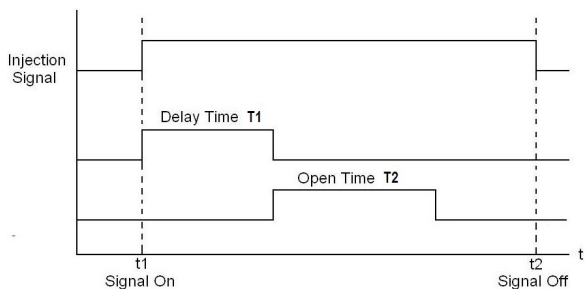
In “OFF” mode, the valve gate is off, and it cannot respond to auto or manual control.

Mode A:



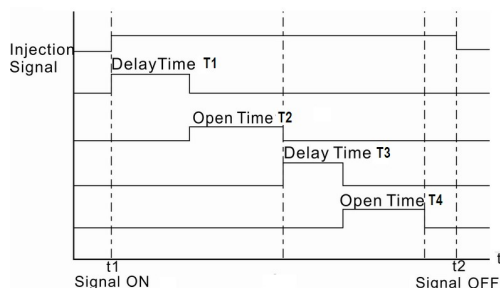
- 1) When the controller receives the injection signal (t_1), the delay time T1 begins.
- 2) The controller counts down the delay time T1 and keeps the gate close.
- 3) At the end of delay time T1, the controller opens the gate, counts up the open time and shows it on T2 unit.
- 4) The controller keeps the gate open until the injection signal is off (t_2).
- 5) When the injection signal is off, the controller resets the delay time T1. And the counted open time is showed on T2 unit until the next injection signal comes on.
- 6) If the injection signal is off before the delay time T1 passed, the controller will reset the delay time T1 and wait for the next injection signal.

Mode B:



- 1) When the controller receives the injection signal (t_1), the delay time T1 begins
- 2) The controller counts down the delay time T1 and keeps the gate close.
- 3) At the end of delay time T1, the controller opens the gate, counts down the open time T2, and keeps the gate open.
- 4) At the end of open time T2, the controller closes the gate, and keeps the gate close.
- 5) When the injection signal is off (t_2), the controller resets the delay time & open time.
- 6) If the injection signal is off before the process finished, the controller will close the gate, and reset the delay time & open time, then wait for the next injection signal.

Mode C:



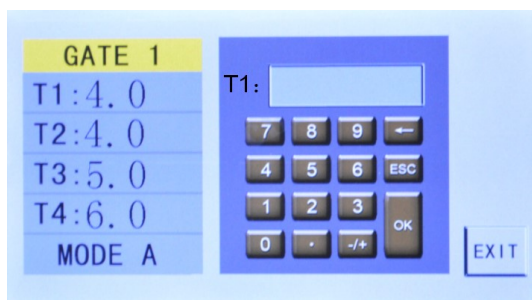
- 1) When the controller receives the injection signal (t1), the delay time T1 begins.
- 2) The controller counts down the delay time T1 and keeps the gate close.
- 3) At the end of delay time T1, the controller opens the gate, counts down the open time T2, and keeps the gate open.
- 4) At the end of open time T2, the controller closes the gate, counts down the delay time T3, and keeps the gate close..
- 5) At the end of delay time T3, the controller opens the gate, and counts down the open time T4, and keeps the gate open.
- 6) At the end of open time T4, the controller closes the gate, and keeps the gate close..
- 7) When the injection signal is off (t2), the controller resets the delay time & open time.
- 8) If the injection signal is off before the process finished, the controller will close the gate, and reset the delay time & open time, then wait for the next injection signal.

☒ Delay Time & Open Time:

Click **T1:4.0**, you can see a small pad for specified time;

Input the value required;


Click “OK” to confirm, and the pad quit the specified time setting mode.




Set T1~T4 one by one (0.0 means this time will be ignored).

Click **EXIT**, you can back the previous interface to select another gate to set parameters.


9. Sequence Setting Preview


Click  on the main interface, you can preview the sequence setting of auto control by chart.


Click  on the preview interface, you can exit to main interface.



10. Run/Stop the System

- ◆ Click  on the main interface, you can run the system.

In manual control mode ( is displayed), you can open / close the specified gate or all gates by manual (see “Control Mode”).

In auto control mode ( is displayed), system works in standby state. When it receives the injection signal, it will auto open / close gates according to the pre-setting parameters.

- ◆ When the system is running, you can click  on the main interface to stop the system.

Note:

When the system is stopped, it will not respond to injection signal or manual control.
