

SmartGen

MAKING CONTROL SMARTER

FPCP1700 JOCKEY PUMP CONTROL PANEL USER MANUAL



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Table 1 Software Version

Date	Version	Note
2024-9-20	1.0	Original release.

Table 2 Notation Clarification

Sign	Instruction
 NOTE	Highlights an essential element of a procedure to ensure correctness.
 CAUTION!	Indicates a procedure or practice, which, if not strictly observed, could result in damage or destruction of equipment.
 WARNING!	Indicates a procedure or practice, which could result in injury to personnel or loss of life if not followed correctly.

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1 OVERVIEW

FPCP1700 Jockey Pump Control Panel can control the start/stop for jockey pump according to the pipe pressure, stabilize the pipe pressure in the setting range and detect the grid voltage to protect pump from the abnormal voltage. It can realize the automation and intelligent control of jockey pump. The controller of the control panel integrates LCD display and with good HMI function.

2 CHARACTERISTICS AND PERFORMANCE

- The AC system is 3P3W type;
- The LCD screen of controller is 128x64 pixels with backlight, optional Chinese and English;
- With MCU, it can realize smart, accurate monitoring and control towards pumps;
- With OFF/Auto/Manual modes;
- With over/under voltage, over/under frequency and reverse phase detection functions, over/under voltage and frequency threshold values are available to set;
- Detection function for the start/stop pressure, and the threshold of start/stop pressure can be set;
- The pipe pressure sensor can be configured as resistance/current/voltage types, and the sensor curves can be customized;
- LCD can visually display the current pipe pressure, total running time, pump start times, AC power status and alarm status;
- All the output ports are relay output;

3 SPECIFICATIONS

Table 3 Technical Parameters

Item	Content
Working Voltage	AC 380V
Rated Frequency	Rated: 50/60Hz
Relay Output Capacity	8A AC250V Volts free output
Weight	14.2kg

4 OPERATION

4.1 DESCRIPTION OF INDICATORS

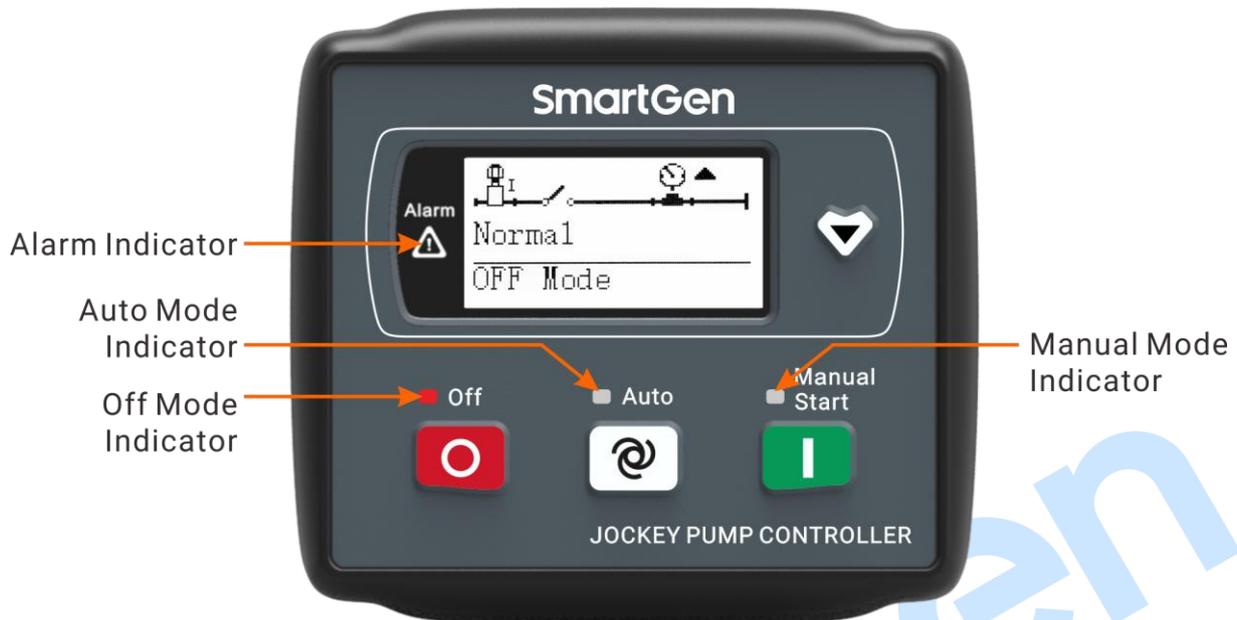


Fig.1 Front Panel Indication

Table 4 Indicators Description

Indicator	Status Description
Alarm	Alarm on: light flashing Alarm-free: light off
OFF Mode	OFF mode: light on Other mode: light off
Auto Mode	Auto mode: light on Other mode: light off
Manual Mode	Manual mode: light on Other mode: light off

4.2 KEYS FUNCTIONS

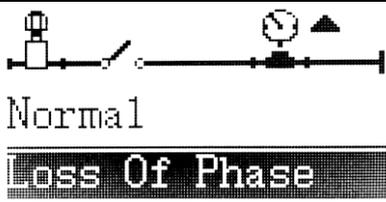
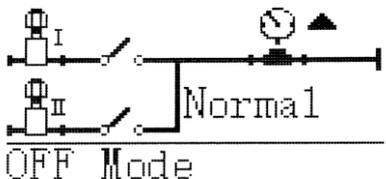
Table 5 Keys Description

Icon	Key	Description
	Page down	Press this key in home page to scroll down; Press this key to enter the menu and can move down the cursor or decrease the value; Press and hold this key in custom curve interface to return to the list.
	Off	In the home page, short press to perform stop operation, long press to enter the menu; Press and hold this key in parameter setting page to return to home page.
	Auto	Press this key to enter the auto mode.
	Manual	Press and hold this key to enter the manual mode, release it to switch to OFF mode.

5 LCD DISPLAY

5.1 MAIN SCREEN DISPLAY

Table 6 Main Screen Display

Content	Description
 <p>Normal Loss Of Phase</p>	<p>The output status of jockey pump If the curve type is set as digital input, it will display the status of pressure switch. If it is set as analog input, it will display the pipe pressure value. Voltage status, alarm information, working mode</p>
 <p>Normal OFF Mode</p>	<p>If the digital input is set as No.4, and the digital output is set as No.7, the home page will display: Jockey Pump I output status; Jockey Pump II output status. If the curve type is set as digital input, it will display the status of pressure switch. If it is set as analog input, it will display the pipe pressure value. Voltage status, alarm information, working mode</p>
<p>LN 220 220 220 V LL 380 380 380 V F 50.0Hz</p>	<p>Phase voltage Line voltage Frequency</p>
 <p>17 00:00 0.0h</p>	<p>Start times Current running time Total running time</p>
 <p>I 17 00:00 0.0h</p>	<p>If the digital input is set as No.4, and the digital output is set as No.7, the Total page will display: Jockey Pump I Start Times Jockey Pump I Current running time Jockey Pump I Total running time</p>
 <p>II 3 00:00 0.0h</p>	<p>If the digital input is set as No.4, and the digital output is set as No.7, the Total page will display: Jockey Pump II Start Times Jockey Pump II Current running time Jockey Pump II Total running time</p>

Alarm01/01 Loss Of Phase	Alarm page
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5.2 STATUS DESCRIPTION

Table 7 Warning Alarm

When controller detects that the warning alarm is active, the alarm indicator will flash, while the alarm indicator will extinguish when the warning recovers, which means the warning alarm does not latch. The pump start relay will stop output when controller detects the alarm.

No.	Status	Description
1	Emergency Stop Input	Alarm when emergency stop input is active.
2	Sensor Open	Alarm when sensor is open.
3	Jockey Pump I Overload	Alarm when jockey pump I overloads.
4	Jockey Pump II Overload	Alarm when jockey pump II overloads.
5	Blackout	The voltage is 0.
6	Over Voltage	The AC voltage is greater than the setting upper limit.
7	Under Voltage	The AC voltage is less than the setting lower limit.
8	Over Frequency	The AC frequency is greater than the setting upper limit.
9	Under Frequency	The AC frequency is less than the setting lower limit.
10	Loss of Phase	Loss of single- phase or 2-phase among A, B, C.
11	Reverse Phase Sequence	Wrong phase sequence of A-B-C.

5.3 MAIN MENU

Press and hold  Off key in the home page to enter the main menu.

Table 8 Main Menu Display

Content	Description
<pre> Menu ----- 1. Configure 2. PumpSet 3. Language 4. About </pre>	Press  to select the different parameter items, and then press  Off key to enter the corresponding display screen.

NOTE: Input password to enter parameter settings, default password "01234"; operator can change the password to prevent others changing controller configurations. After it is changed, please remember it clearly; If it is forgotten, please contact SmartGen's service personnel.

6 OPERATIONS

6.1 CONTROL PANEL KNOB IN OFF MODE

In this mode, the pump motor does not work.

6.2 CONTROL PANEL KNOB IN MANUAL MODE

In this mode, the start/stop of pump motor can only be controlled by the start button or stop button on the control panel.

6.3 CONTROL PANEL KNOB IN AUTO MODE

In this mode, the start/stop of pump motor can only be controlled by the controller's pump control relay.

6.4 CONTROLLER IN OFF MODE

Press Off key , the indicator of OFF mode is illuminated and the controller is in OFF mode.

In this mode, the jockey pump control relay stops to output.

6.5 CONTROLLER IN AUTO MODE

Press the Auto key , the indicator of Auto mode is illuminated and the controller is in Auto mode.

In this mode, when the inputs of AC power normal, emergency stop and start inhibit are all inactive:

Pressure sensor is set as analog input: the jockey pump control relay outputs when the pressure value of sensor is lower than the start pressure threshold (if the aux. input is set as Low Pipe Pressure, the pressure value of sensor is between the start pressure and the stop pressure, when the aux. input is active, the jockey pump will also start), and the jockey pump control relay stops to output when the pressure value is higher than the start pressure return threshold.

6.6 CONTROLLER IN MANUAL MODE

Press and hold the Manual key , the indicator of manual status is illuminated and the controller is in Manual mode.

In this mode, when the inputs of AC power normal, jockey pump overload, emergency stop and start inhibit are all inactive, the pump control relay continuously outputs.

7 CONTROLLER TERMINAL DESCRIPTION



Fig.2 Back Panel

Table 9 Table Terminal Description

No.	Item	Functions	Remark
1	Pump Output	Pump controls relay to output.	Capacity 8A AC250V volts free output
2			
3	NC	Null	
4	+12V Output	The output of 12VDC power	
5	GND	Common port	
6	Pressure Sensor	The input of pipe pressure sensor	
7	Fault Input	Overload of jockey pump	Connect to GND of input port is active.
8	Aux. Input	Aux. input port	Connect to GND of input port is active.
9	AC Power~24V	AC 24V power supply	
10			
11	Aux. Output	Aux. output port	Capacity 8A AC250V volts free output
12			
13	NC	Null	
14	A	AC 3P4W voltage input	If it is single phase input, only connect to A, N
15	B		
16	C		
17	N		

9 CONTROL PANEL APPEARANCE



Fig.4 Control Panel Appearance Diagram

10 INSTALLATION DIMENSIONS

Unit: mm

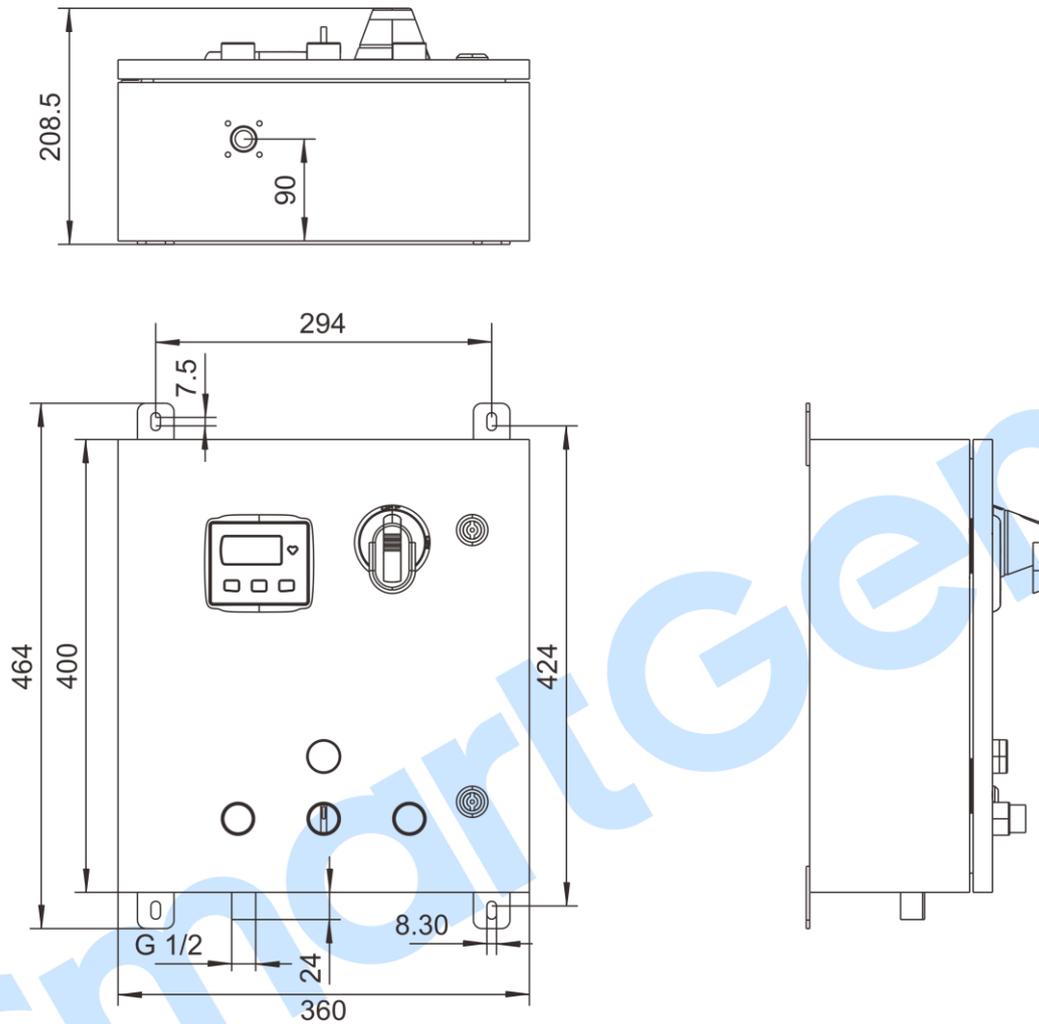


Fig.5 Overall and Installation Dimensions

11 TROUBLE SHOOTING

Table 14 Trouble Shooting

Symptom	Possible Solutions
No response after power-on	Check the AC power supply; Check the wiring connection of control panel.
No output of relay	Controller alarm is available; Unreasonable setting of start/stop pressure threshold value; The start inhibit of input port is active; The working mode is on OFF mode.

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