Huanyang FC01 VFD Variable Frequency Drive Instruction Manual

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This manual gives a brief introduction of FC01 inverter's terminal functions, keypad, operation, frequently used functions' parameters, etc.

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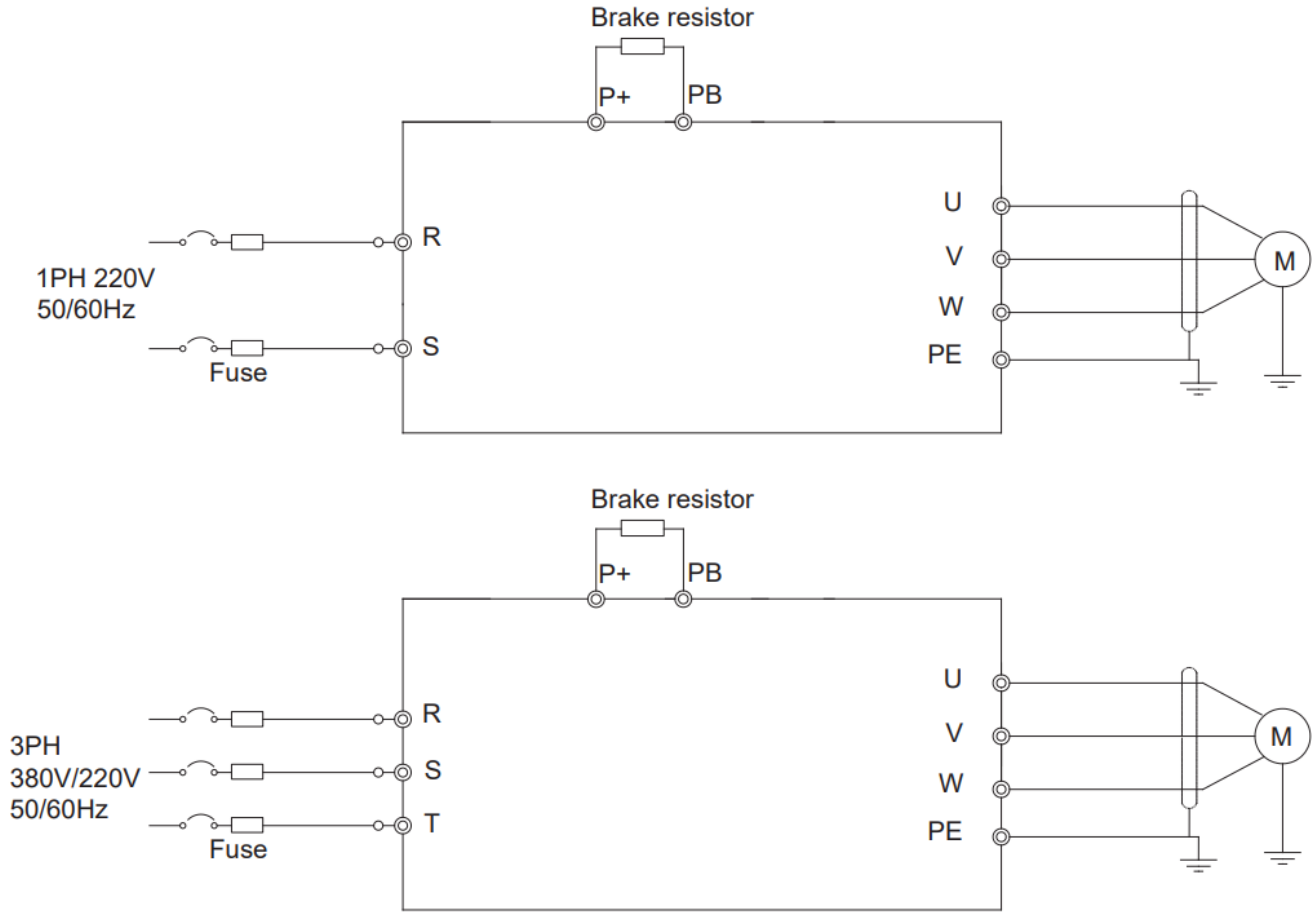
Terminal function description

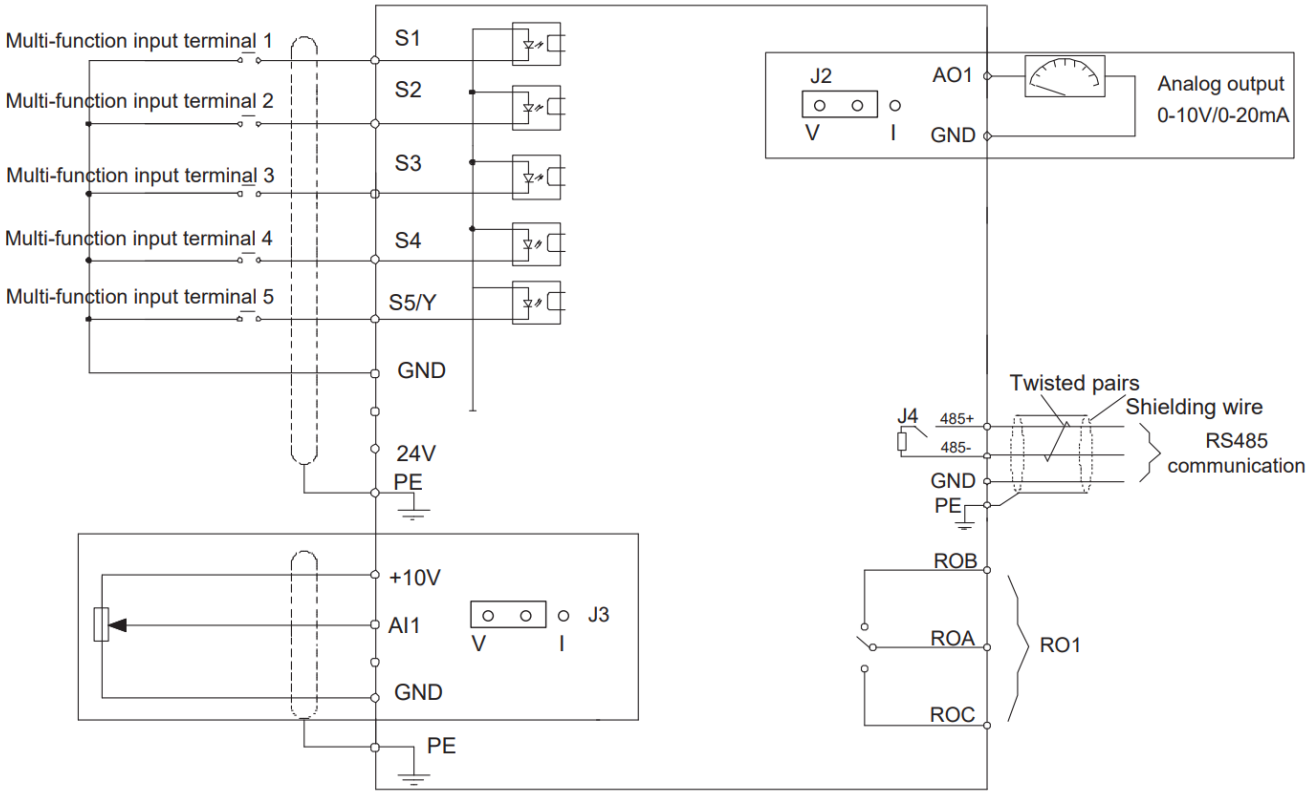
- **Figure 1-1 Connection diagram of main circuit**



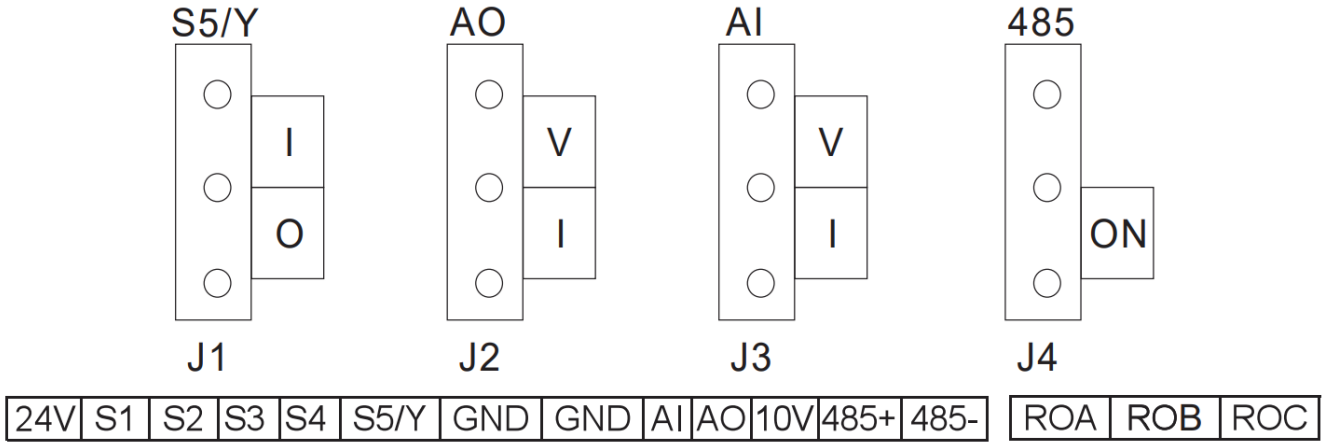
- **Figure 1- 2 Terminals of main circuit**

Terminal sign	Terminal name	Function
P+	Braking resistor terminal	P+ and PB are connected to the external resistor.
PB		
R	Power input of the main circuit	3-phase/single-phase AC input terminals which are generally connected with the grid.
S		
T		
U	The VFD output	3-phase AC output terminals which are generally connected with the motor.
V		
W		
⏚	Grounding terminal	

- **Figure 1- 3 Connection diagram of the control circuit**



- **Figure 1- 4 Control circuit wiring**

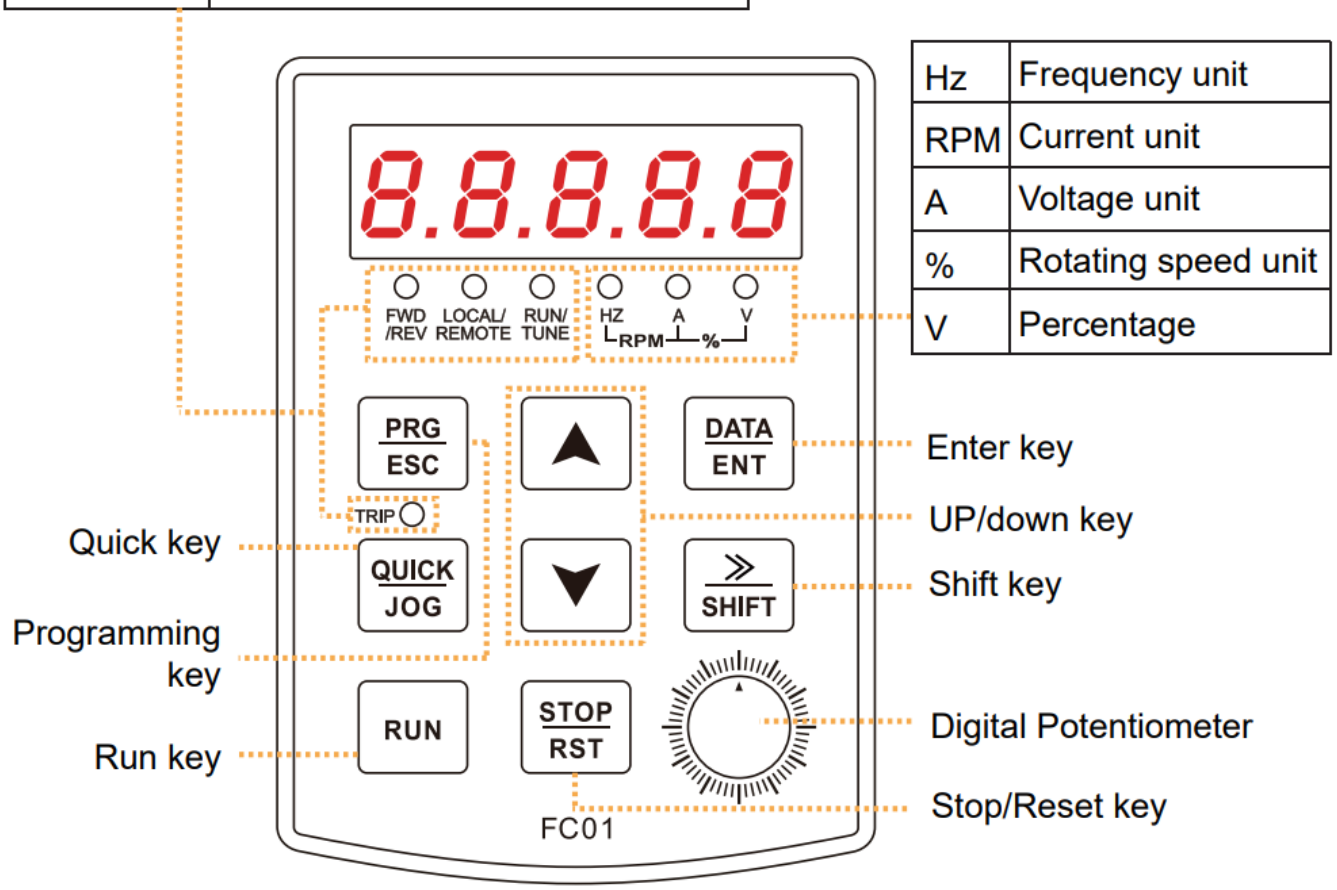


Description	
ROA	RO relay output , ROA+ROB normally open, ROA+ROC normally closed Contactor capability: 3A/AC250V,1A/DC30V
ROB	
ROC	
+10V	Local power supply +10V
AI	1. Input range: AI voltage and current: 0–10V/0–20mA and switch by J3 2. Input impedance:voltage input: 20kΩ; current input: 500Ω 3. Resolution: the minimum one is 5mV when 10V corresponds to 50Hz 4. Deviation ±1%, 25℃ **Note:** Keyboard potentiometer set AI1 parameters and AI terminal set AI2 parameters
24V	Local +24V power supply, 100mA
GND	+10V reference zero potential
AO	1. Output range:0–10V or 0–20mA 2. The voltage or the current output is depended on J2
S1-S5	Multiple input terminals, please refer to parameter setting P05
485+	485 communication interface and 485 differential signal interface If it is the standard 485 communication interface, please use twisted pairs or shield cable.
485-	

Keypad description

Indicator status description	
●	Indicator is on
◑	Indicator blinks
○	Indicator is off

FWD/REV	Forward / reverse running lamp
LOCAL/ REMOTE	LED for keypad operation, terminals operation and remote communication control
RUN/TUNE	LED for status indicator
TRIP	LED for faults



Hz	Frequency unit
RPM	Current unit
A	Voltage unit
%	Rotating speed unit
V	Percentage

Fast running description

Note: the symbol " **V** " indicates the position where the cursor flashes

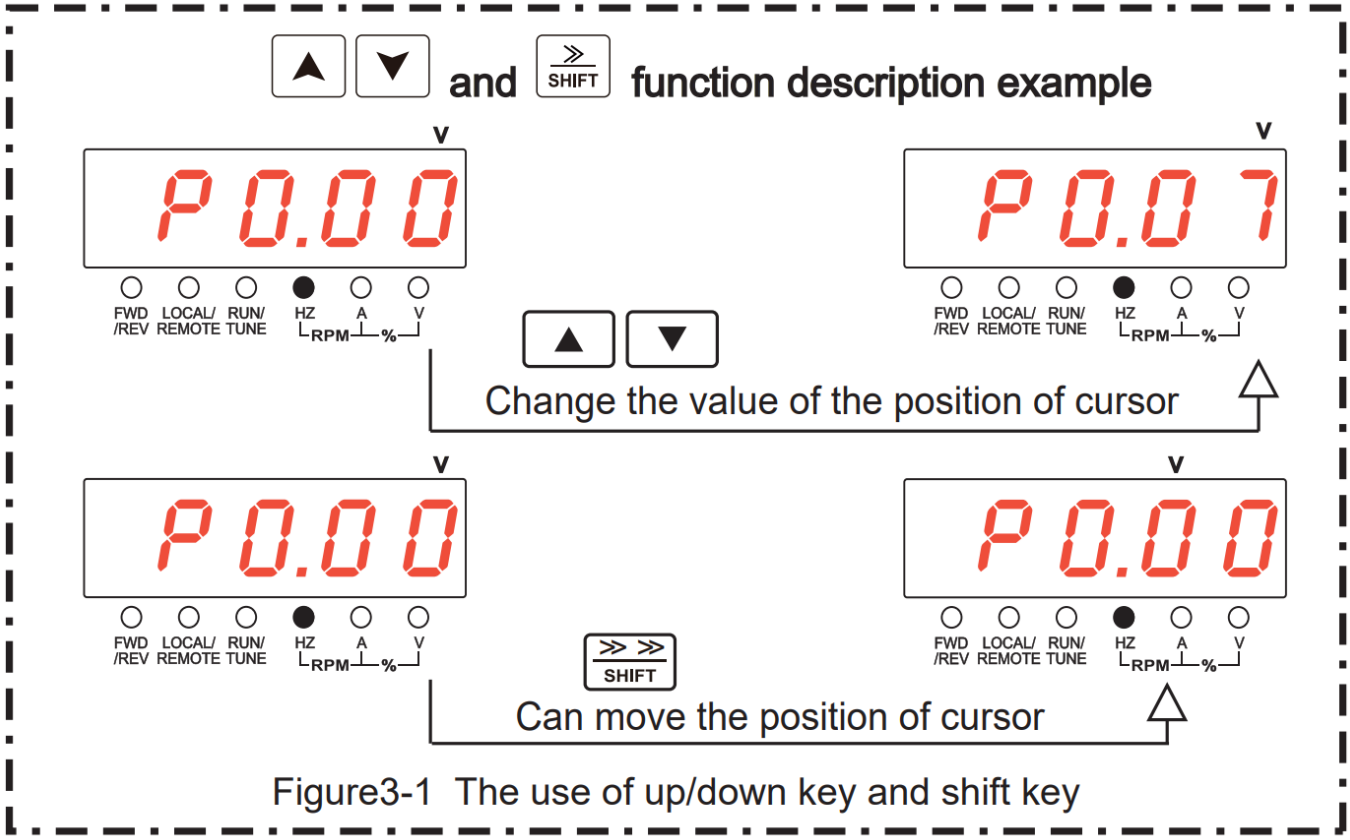
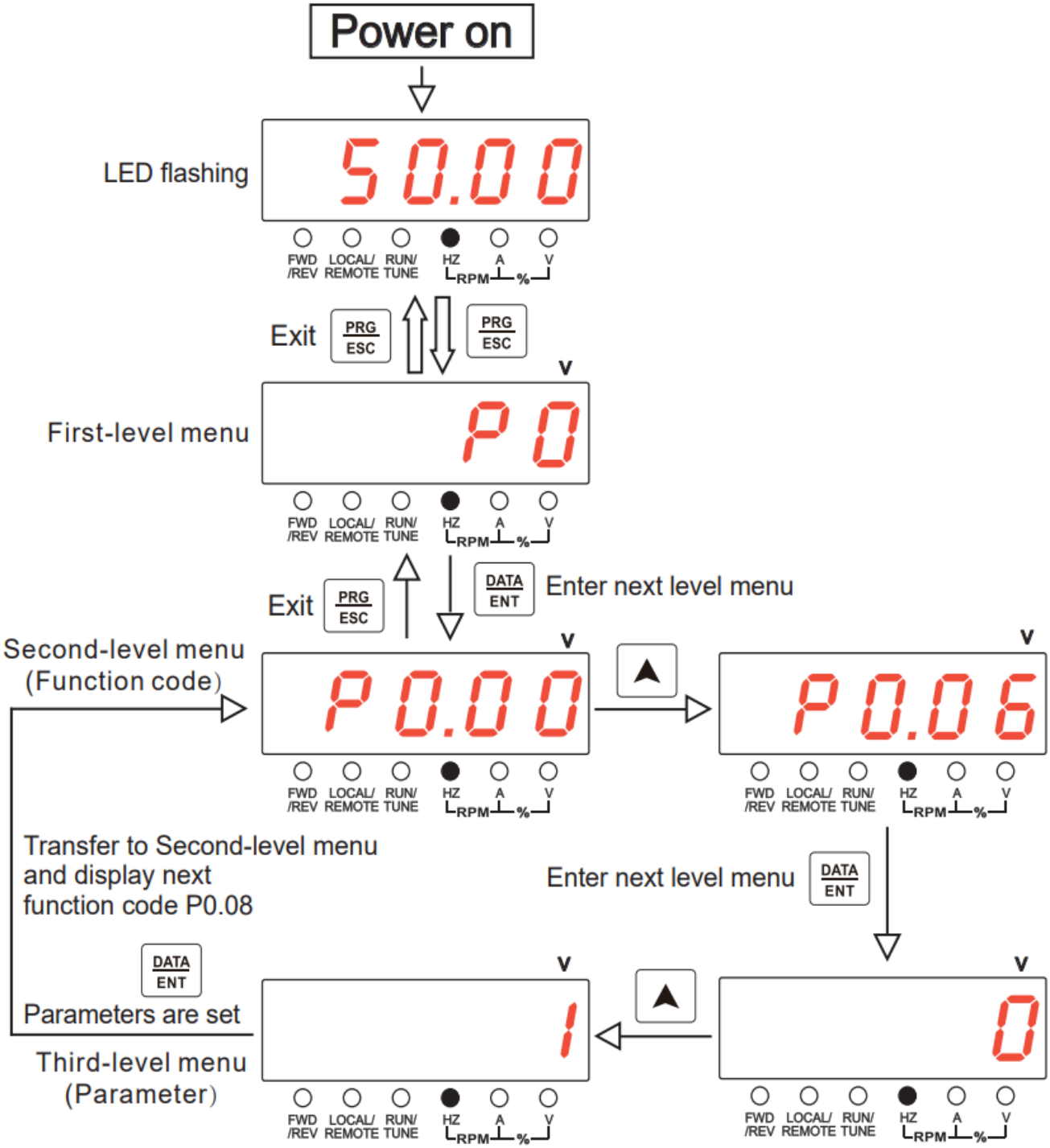


Figure3-1 The use of up/down key and shift key

Parameter setting flow chart

The operation panel of FC01 series adopts three-level menu structure for parameter setting and other operations. The following flowchart is an example of how to set function code P0.06 to 1 (Set keyboard potentiometer to effective)

- **Figure 3.1 Parameter setting figure**

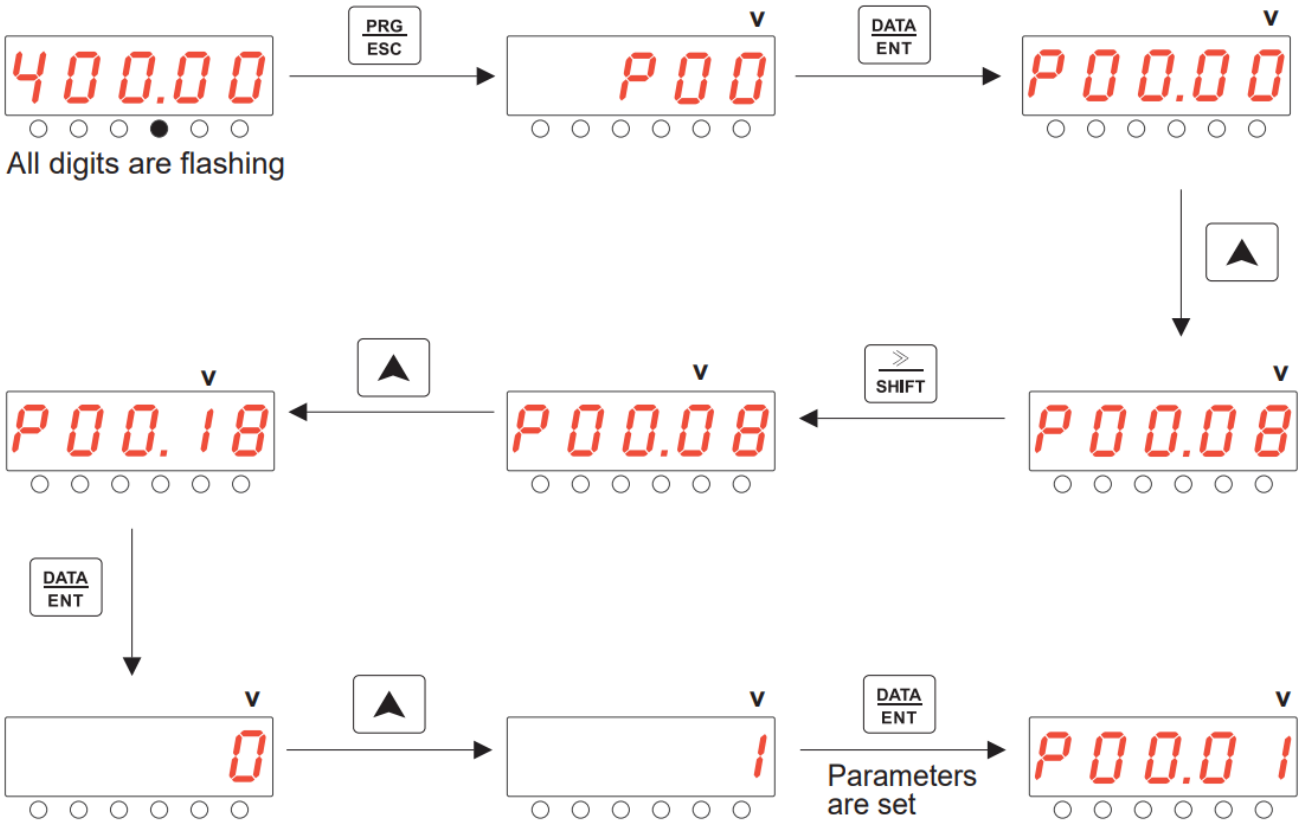


Remarks:Press either the PRG/ESC or the DATA/ENT can return to the second- level menu from the third- level menu. The difference is: pressing DATA/ENT will save the set parameters into the control panel and then return to the second-level menu with shifting to the next function code automatically; while pressing PRG/ESC will directly return to the second-level menu without saving the parameters and keep staying at the current function code.

Cases about operation

Note: the symbol " **v** " indicates the position where the cursor flashes

- **Example 1:** Restore factory setting, set function code P00.18 from 0 to 1 After the factory set, VFD defaults to 50hz
- **Figure 4-1 Diagram of restore factory setting**



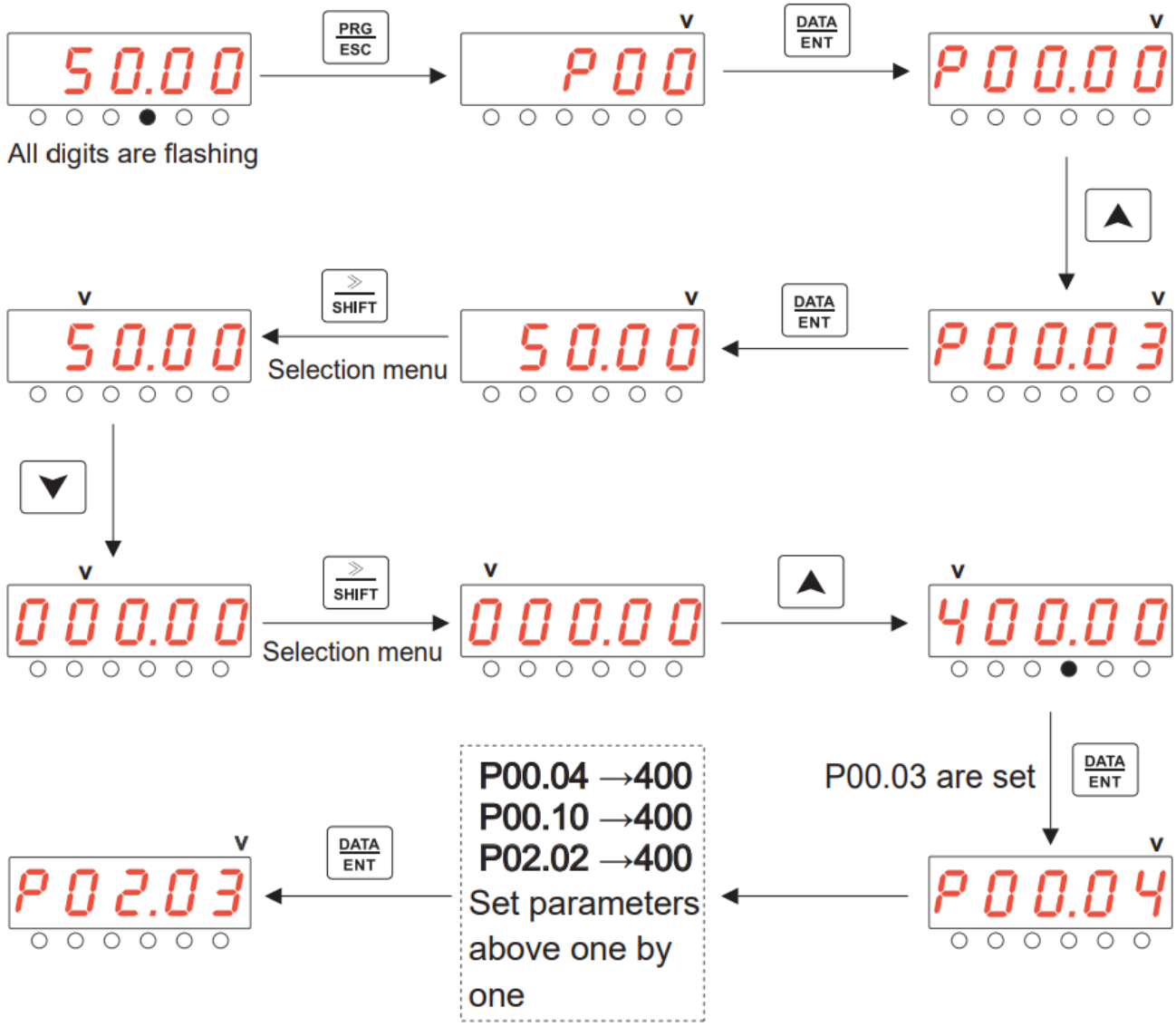
Note: After factory set, panel potentiometer needs to be set to work (P0.06=1)

Example 2: Set frequency to 400Hz

① Set function code P00.03 to 400
② Set function code P00.04 to 400
③ Set function code P00.10 to 400
④ Set function code P02.02 to 400

(Note: The setting sequence cannot be changed)

- **Figure: 4-2 Frequency setting figure**



General functional parameters

Function code	Name	Detailed description of parameters	Default value
P00.01	Channel of running commands	**0:** Keypad data setting **1:** Terminal running command	0
P00.03	Max. output frequency	This parameter is used to set the maximum output frequency of the VFD.Users should pay attention to this parameter because it is the foundation of the frequency setting and the speed of acceleration and deceleration. **Setting range:** P00.04-400.00Hz	50.00Hz
P00.04	Upper limit of the running frequency	The upper limit of the running frequency is the upper limit of the output frequency of the VFD which is lower than or equal to the maximum frequency. **Setting range:** P00.05-P00.03 (Max.output frequency)	50.00Hz
P00.06	A frequency command selection	**0:** Keypad data setting Modify the value of function code P00.10 (set the frequency by keypad) to modify the frequency by the keypad.	0

P00.07	B frequency command selection	**1:** Analog AI1 setting (correspond to AI) **2:** Analog AI2 setting (correspond to terminal AI) AI2 is current – voltage (0-10V/0-20mA), and can be switched by jumper J3.	2
P00.10	Keypad set frequency	Keypad potentiometer, set frequency Set range: 0.00Hz~P00.03 (Max output frequency)	50.00Hz
P00.11	ACC time 1	ACC time means the time needed if the VFD speeds up from 0Hz to the Max.One (P00.03). DEC time means the time needed if the VFD speeds down from the Max.Output frequency to 0Hz (P00.03). FC01 series VFDs define four groups of ACC/DEC time which can be selected by P05.The factory default ACC/DEC time of the VFD is the first group. Setting range of P00.11 and P00.12:0.0-3600.0s	Depend on model
P00.12	DEC time 1		Depend on model
P00.13	Running direction selection	**0:** Runs at the default direction, the VFD runs in the forward direction. FWD/REV indicator is off. **1:** Runs at the opposite direction, the VFD runs in the reverse direction. FWD/REV indicator is on. Modify the function code to shift the rotation direction of the motor. This effect equals to the shifting the rotation direction by adjusting either two of the motor lines (U, V and W).The motor rotation direction can be changed by QUICK/JOG on the keypad.Refer to parameter P07.02. **Note:** When the function parameter comes back to the default value,the motor's running direction will come back to the factory default state too. In some cases it should be used with caution after commissioning if the change of rotation direction is disabled. **2:** Forbid to run in reverse direction: It can be used in some special cases if the reverse running is disabled.	0
P00.18	Function restore parameter	**0:** No operation **1:** Restore the default value 2: Clear fault records **Note:** The function code will restore to 0 after finishing the operation of the selected function code. Restoring to the default value will cancel the user password, please use this function with caution.	0
P01.08	Stop selection	**0:** Decelerate to stop: after the stop command becomes valid, the VFD decelerates to decrease the output frequency during the set time. When the frequency decreases to 0, the VFD stops. **1: Coast to stop:** after the stop command becomes valid, the VFD ceases the output immediately. And the load coasts to stop at the mechanical inertia.	0
P02.02	Asynchronous motor rated frequency	0.01Hz–P00.03(the Max. frequency)	50.00Hz

Function code	**Name**	**Detailed description of parameters**	**Default value**
P05.01	S1 terminal function selection		1

P05.02	S2 terminal function selection	**0:** No function **1:** Forward rotation operation **2:** Reverse rotation operation **3:** 3-wire control operation **4:** Forward rotation jogging **5:** Reverse rotation jogging **6:** Coast to stop **7:** Fault reset **8:** Operation pause **9:** External fault input **10:** Increasing frequency setting(UP) **11:** Decreasing frequency setting(DOWN) **12:** Cancel the frequency change setting **13:** Shift between A setting and B setting **14:** Shift between combination setting and A setting **15:** Shift between combination setting and B setting **16:** Multi-stage speed terminal 1 **17:** Multi-stage speed terminal 2 **18:** Multi-stage speed terminal 3 **19:** Multi-stage speed terminal 4 **20:** Multi-stage speed pause **21:** ACC/DEC time option 1 **25:** PID control pause **26:** Traverse Pause(stop at the current frequency) **27:** Traverse reset(return to the center frequency) **28:** Counter reset **30:** ACC/DEC prohibition **31:** Counter trigger **33:** Cancel the frequency change setting temporarily **34:** DC brake **36:** Shift the command to the keypad **37:** Shift the command to the terminals **38:** Shift the command to the communication	4
P05.03	S3 terminal function selection		7
P05.04	S4 terminal function selection		0
P05.05	S5 terminal function selection		0

P06.03	3 Relay RO output	**0:** Invalid **1:** On operation **2:** Forward rotation operation **3**: Reverse rotation operation **4:** Jogging operation **5:** The VFD fault **6:** Frequency degree test FDT1 **7:** Frequency degree test FDT2 **8:** Frequency arrival **9:** Zero speed running **10:** Upper limit frequency arrival **11:** Lower limit frequency arrival **12:** Ready for operation **14:** Overload pre-alarm **15:** Underload pre-alarm **16:** Completion of simple PLC stage **17:** Completion of simple PLC cycle **18:** Setting count value arrival **19:** Defined count value arrival **20:** External fault valid **22:** Running time arrival **23:** MODBUS communication virtual terminals output	1

Note: The function code parameters can be changed under the status of inverter stopping output.

Customers Support

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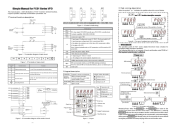
Documents / Resources

	**Huanyang FC01 VFD Variable Frequency Drive** [pdf] Instruction Manual FC01 VFD Variable Frequency Drive, FC01, VFD Variable Frequency Drive, Variable Frequency Drive, Frequency Drive, Drive

References

- **User Manual**