VH1 series general frequency converter Simple operation manual

Thank you for using this product. This fast manual provides relevant information about VH1 series variable frequency drives. Please read this manual carefully before use to ensure the correctness of installation and use. More detailed information about VH1 series frequency converter (parameters, alarms, etc.) can be found in the VH1 frequency inverter manual.

Product information

■ Naming rule

VH 1 - 4 0.7G/1.5P - B

① ② ③ ④ ⑤

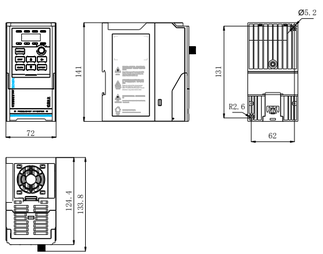
Code	Description	
①	Product identification	VH: General frequency converter
②	Product series	1: Open-loop vector frequency converter
③	Input voltage level	4: AC 380V 2: AC 220V
④	Power level	P: Light load G: Heavy load
⑤	Braking unit	B: built-in braking unit Vacant: no

■ Technical specification

Model VH1-_ _ _ _-B	20P4	20P7	40.4G/0.7P	40.7G/1.5P	41.5G/2.2P
Adaptive motor (KW)	0.4	0.75	0.4	0.75	1.5
Input rated current (A)	5.4	5.6	1.9	3.4	5.0
Power supply capacity (KVA)	1	1.5	1	1.5	3.0
Output rated current (A)	2.3	4.0	1.5	2.1	3.8

■ Mounting dimension (Unit : mm)

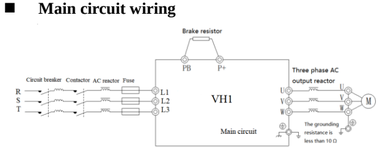
■ **VH1-20P4, 20P7, 40.4G/0.7P, 40.7G/1.5P, 41.5G/2.2P-B**



Note: The installation screw is M4.

VFD system terminal wiring

■ Main circuit wiring



■ Definition of main circuit terminals

● **VH1-20P4, 20P7, 40.4G/0.7P, 40.7G/1.5P, 41.5G/2.2P-B**

■ Instructions of main circuit terminals

Terminal	Name	Description
L1,L2,L3	Three phase power supply input	AC three phase power supply input
L1,L3	Single phase power supply input	AC single phase power supply input
U,V,W	VFD output terminal	Connect to the three phase motor
PE	Grounding terminal	Connect to the ground
P+,PB	Brake resistor terminal	Connect to the brake resistor

Note:

1. Input power supply L1, L2, L3/L1,L3

1) There is no phase sequence requirement for input side wiring of frequency converter.
2) Circuit breaker, contactor, AC reactor, fuse, brake resistor and output reactor are optional parts. Please refer to chapter 6 for details.

2. P+, PB

1) Refer to the recommended value for brake resistance selection, and the wiring distance is less than 5m, otherwise the inverter may be damaged.

3. Output U, V, W

1) Please refer to chapter 6 for output cable.
2) No capacitor or surge absorber can be connected to the output side of the inverter, otherwise the inverter will be damaged.
3) When the length of motor cable is more than 100m, it is easy to produce electrical resonance due to the influence of distributed capacitance, so it is necessary to install AC output reactor near the frequency converter.

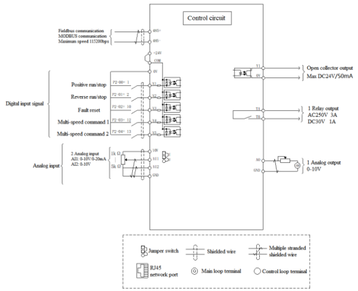
4. Grounding terminal PE

1) The terminal must be reliably grounded, and the grounding resistance must be less than 10Ω. Otherwise, the equipment will work abnormally or even be damaged.
2) It is not allowed to share the grounding terminal PE and the power zero cable N terminal.
3) The impedance of protective grounding conductor must meet the requirement of withstanding large short-circuit current in case of fault.
4) The size of protective grounding conductor shall be selected according to the table below.

Cross section area of a single phase line (S)	Minimum cross section area of protective conductor (S_P)
S≤16mm^2	S
16mm^2＜S≤35mm^2	16mm^2
35mm^2＜S	S/2

5) Yellow and green cable must be used for protective grounding.

■ Distribution diagram of control loop



■ Definition of control loop terminals

TA	TB	X4	X5	Y1	AI2	AI1	GND	A0

X1	X2	X3	24V	COM	0V	10V	B	A

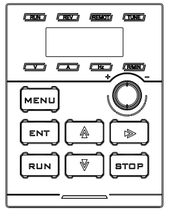
■ Instructions of control loop terminals

Number	Name	Implication	Remark
1	A	485 communication terminal	Without isolation
2	B		
3	24V	X1-X5 Bidirectional input, only support normal input, not support high-speed pulse input	24V and COM are short circuited to form NPN input, 0V and COM are short circuited to form PNP input
4	COM		
5	X1		
6	X2		
7	X3		
8	X4		
9	X5		
10	0V	Only support open collector output, not support high-speed pulse	
11	Y1		
12	TA	Relay output, contact drive capability: AC 250V, 3A, DC 30V, 1A	1 CH normal ON point
13	TB		
14	10V	10V-GND outputs 10V voltage externally AI1, AI2-GND input to frequency converter 0-10V AO1-GND frequency converter outputs 0-10V externally	AI1 supports 0-10V voltage and 0-20mA, with switching by jump cap (the upper two pins are in current mode, and the lower two pins are in voltage mode). AI2 doesn't support current, only support voltage.
15	AI1		
16	AI2		
17	GND		
18	AO		

The use of the operation panel

■ Keyboard layout

The operation panel and control terminal of the frequency converter can control the starting, speed regulating, stopping, braking, operation parameter setting and peripheral equipment of the motor.
The appearance of the operation panel is shown in the figure below.



■ Keyboard function description

There are 8 keys on the frequency converter operation panel, and the functions are defined as follows:

Button	Name	Function
MENU	Programming/exit	Enter or exit the programming status
ENT	Save/switch	Save the parameter or enter next menu in programming status
RUN	Forward run	Press this button to run forward in operation panel running command mode
STOP	Stop/reset	Stop/reset the fault
▲	Increase	Increase the value or pause frequency in operation
▼	Decrease	Decrease the value or pause frequency in operation
▶	Shift/monitor	In the editing state, you can choose to set the modification bit of the data; in other states, you can switch the display state and monitor parameters
	Frequency setting	The operating frequency is timed by the panel potentiometer to adjust the frequency.

■ LED and indicator description

There are 5-digit 7-segment LED digital tubes, 4 status indicators and 4 unit indicators on the inverter operation panel.
The four status indicators are located above the LED tube, from left to right: RUN, REV, REMOT, TUNE. The following table describes the indicator lights.

Indicator lights	Meaning	Function
RUN	Operation indicator	ON: running OFF: stop
REV	Forward/reverse operation indicator	ON: reverse operation OFF: forward operation Flashing: status switching
REMOT	Command source indicator	OFF: panel start/stop ON: terminal start/stop Flashing: communication start/stop
TUNE	Tuning indicator	Flash slowly: tuning status Flash quickly: fault status ON: torque status

The four unit indicators are located below the LED digital tube, from left to right: V, A, Hz, R/MIN. The following table is a description of unit indicators.

Indicator lights	Meaning	Function
V	Voltage	ON: Display voltage
A	Current	ON: Display current
Hz	Frequency	OFF: Display frequency
R/MIN	Speed/%	ON: Display speed Flash: Display %

Alarm analysis

■ Fault alarm processing

When the inverter is abnormal, the LED digital tube will display the function code and its content of the corresponding fault, the fault relay will act, and the inverter will stop output. In case of fault, if the motor is rotating, it will stop freely until it stops rotating. The possible fault types of frequency converter are shown in the table.
Note: When the frequency converter malfunctions, the user should first follow the prompts in this table for inspection and record the fault phenomenon in detail.

Code	Name	Reason	Solution
Err01	Acceleration over current	1. There is grounding or short circuit in the output circuit of frequency converter 2. The control mode is vector control without parameter tuning 3. The acceleration time is too short 4. Improper manual torque lifting or VF curve 5. The voltage is low 6. Start the rotating motor 7. Sudden loading during acceleration 8. The selection of frequency converter is too small	1. Remove peripheral faults 2. Tuning of motor parameters 3. Increase acceleration time 4. Adjust the manual lifting torque or VF curve 5. Adjust the voltage to the normal range 6. Select speed tracking start or wait until the motor stops 7. Cancel sudden loading 8. Choose the frequency converter with higher power level
Err02	Deceleration over current	1. There is grounding or short circuit in the output circuit of frequency converter 2. The control mode is vector control without parameter tuning 3. The deceleration time is too short 4. The voltage is low 5. Sudden loading during deceleration 6. There is no additional brake unit and brake resistor	1. Remove peripheral faults 2. Tuning of motor parameters 3. Increase deceleration time 4. Adjust the voltage to the normal range 5. Cancel sudden loading 6. Add brake unit and resistor
Err03	Constant speed over current	1. There is grounding or short circuit in the output circuit of frequency converter 2. The control mode is vector control without self learning 3. The voltage is low 4. Is there sudden load in operation 5. The selection of frequency converter is too small	1. Remove peripheral faults 2. Tuning of motor parameters 3. Adjust the voltage to the normal range 4. Cancel sudden loading 5. Choose the frequency converter with higher power level
Err04	Acceleration overvoltage	1. High input voltage 2. There is external force to drive the motor during acceleration 3. Acceleration time too short 4. There is no additional brake unit and brake resistor	1. Adjust the voltage to the normal range 2. Cancel additional force or add brake resistor 3. Increase acceleration time 4. Add brake unit and resistor
Err05	Deceleration overvoltage	1. High input voltage 2. There is external force to drive the motor during deceleration 3. Deceleration time too short 4. There is no additional brake unit and brake resistor	1. Adjust the voltage to the normal range 2. Cancel additional force or add brake resistor 3. Increase deceleration time 4. Add brake unit and resistor
Err06	Constant speed over voltage	1. High input voltage 2. In the process of operation, there is external force to drive the motor	1. Adjust the voltage to the normal range 2. Cancel additional force or add brake resistor
Err07	Buffer resistance overload fault	1. Unstable supply voltage 2. The main control board is abnormal	1. Adjust the voltage to the normal range 2. Contact us
Err08	Under voltage	1. Instantaneous power failure 2. The input voltage of frequency converter is not in the range of specification requirements 3. Abnormal bus voltage 4.Abnormal rectifier bridge and buffer resistance 5. Abnormal drive board 6. Abnormal control board	1. Reset fault 2. Adjust the voltage to the normal range 3. Contact us
Err09	VFD overload	1. Whether the load is too large or the motor stalls 2. The selection of frequency converter is too small	1. Reduce the load and check the motor and mechanical condition 2. Choose the frequency converter with higher power level
Err10	Motor overload	1. Is the setting of motor protection parameters appropriate 2. Whether the load is too large or the motor stalls 3. The selection of frequency converter is too small	1. Set this parameter correctly 2. Reduce the load and check the motor and mechanical condition 3. Choose the frequency converter with higher power level

Code	Name	Reason	Solution
Err11	Input lack phase	1. Abnormal three-phase input power supply 2. Abnormal drive board 3. Abnormal lightning protection board 4. The main control board is abnormal	1. Check and eliminate problems in peripheral circuit 2. Contact us
Err12	Output lack phase	1. The lead from inverter to motor is abnormal 2. The three-phase output of inverter is unbalanced when the motor is running 3. Abnormal drive board 4. Module is abnormal	1. Remove peripheral faults 2. Check whether the three-phase winding of the motor is normal and remove the fault 3. Contact us
Err13	Overheated radiator / module	1. The ambient temperature is too high 2. Air duct blocked 3. The fan is damaged 4. Module thermistor damaged 5. Inverter module damaged	1. Reduce the ambient temperature 2. Clean the air duct 3. Replace the fan 4. Replace the thermistor 5. Replace inverter module
Err14	Contactor fault	1. Abnormal drive board and power supply 2. The contactor is abnormal	1. Replace the drive board or power board 2. Replace the contactor
Err15	Current detection fault	1. Check the Hall device 2. Abnormal drive board	1. Replace Hall element 2. Replace the drive plate
Err16	Motor tuning fault	1. The motor parameters are not set according to the nameplate 2. Parameter tuning process timeout	1. Set the motor parameters correctly according to the name plate 2. Check the lead from inverter to motor
Err18	Short circuit fault of motor to ground	Motor short circuit to ground	Replace motor or cable
Err19	Load drop	VFD operation current is lower than P7-61	Confirm whether the load is separated or whether the P7-61 and P7-62 parameter settings conform to the actual operating conditions
Err20	Wave by wave current limiting fault	1. Whether the load is too large or the motor stalls 2. The selection of frequency converter is too small	1. Reduce the load and check the motor and mechanical condition 2. Choose the frequency converter with higher power level
Err21	Pole position detection failed	The deviation between the motor parameters and the actual value is too large	Re-determine the motor parameters, focusing on whether the motor rated current is too small
Err23	Brake resistance short circuit	Output current too high	1. Increase acceleration and deceleration time 2. Reduce the load
Err26	SVC stall fault	1. Excessive load 2. Torque limit too small (P6-11)	1. Reduce the load 2. Increase torque limit
Err43	External fault	1. Input the signal of external fault through multi-function terminal X 2. Input external fault signal through virtual Y function	Reset and run again
Err44	Communication (timeout) fault	1. The upper computer is not working properly 2. The communication cable is abnormal 3. Incorrect setting of communication parameter group PC	1. Check the upper computer wiring 2. Check the communication cable 3. Setting communication parameters correctly
Err45	EEPROM read write error	EEPROM chip damaged	Replace the main circuit board
Err46	Operation time arrival	The accumulated running time reaches the set value	Use the parameter initialization function to clear the record information
Err47	Power on time arrival	The accumulated power on time reaches the set value	Use the parameter initialization function to clear the record information
Err48	User defined fault 1	1. Input user-defined fault 1 signal through multi-function terminal X 2. Input user defined fault 1 signal through virtual IO function	Reset and run again
Err49	User defined fault 2	1. Input user-defined fault 2 signal through multi-function terminal X 2. Input user defined fault 2 signal through virtual IO function	Reset and run again
Err50	PID feedback lost in operation	PID feedback is less than P7-27 setting value	Check PID feedback signal or set P7-27 to an appropriate value

Code	Name	Reason	Solution
Err51	Switch motor in operation	In the process of inverter operation, change the current motor selection through the terminal	Switch the motor after the frequency converter stops
Err52	Speed offset too large	1. Encoder parameter setting incorrect 2. Motor blocked 3. Incorrect UVW wiring	1. Setting encoder parameters correctly 2. Check whether the machine is abnormal 3. Check whether the wiring between frequency converter and motor is abnormal
Err53	Motor overspeed fault	1. Incorrect setting of encoding parameters 2. The motor is not tuned 3. Unreasonable setting of motor over speed detection parameters P7-63 and P7-64	1. Setting encoder parameters correctly 2. Tuning correctly 3. Set reasonable parameters according to the actual situation
Err54	Motor overheat fault	1. Loose wiring of temperature sensor 2. Motor temperature too high	1. Check the wiring of temperature sensor 2. Reduce the carrier wave or take other measures to dissipate the motor heat.
Err56	Power on lock time reached	Power on time arrival	When the usage time arrives, please enter the password in A4-00.

Note:
Specific alarm information, please refer to 'VH1 Series Frequency User Manual'.

Common parameter

Group P0: Basic functional parameters			
Parameter	Name	Setting range	Default value
P0-01	First motor control mode	0: VF control mode 1: No speed sensor vector control (SVC)	0
P0-02	Operation command channel selection	0: Operate panel 1: Terminal 2: Communication port	0
P0-03	Main frequency source A selection	0: Digital set (Power-off no memory) 1: Digital set (Power-off memory) 2: AI1 3: AI2 4: Body panel knob set 5: Terminal pulse X4 set 6: Communication set 7: Multi-segment instruction set 8: PID set 9: Simple PLC operation 10: Special mode for drawing and winding 11:External pilot panel knob set	0
P0-04	Auxiliary frequency source B selection	0: Digital set (Power-off no memory) 1: Digital set (Power-off memory) 2: AI1 3: AI2 4: Body panel knob set 5: Terminal pulse X4 set 6: Communication set 7: Multi-segment instruction set 8: PID set 9: Simple PLC operation 10: Special mode for drawing and winding 11:External pilot panel knob set	0
P0-05	Frequency source superposition selection	Ones bit: frequency source selection 0: Main frequency source A 1: Calculation results of main and auxiliary frequency sources 2: Switching between main frequency source A and auxiliary frequency source B Tens bit: the operation relationship of main and auxiliary frequency sources 0: A+B 1: A-B 2: max (A, B) 3: min (A, B)	00
P0-06	Auxiliary frequency source B range selection	0: Relative to the maximum frequency 1: Relative to the main frequency source A	0
P0-07	Auxiliary frequency source	0%~150%	100%

Group P0: Basic functional parameters			
Parameter	Name	Setting range	Default value
	B range		
P0-09	Digital set of auxiliary frequency source offset	0.00Hz~max frequency P0-13	0.00Hz
P0-10	Preset frequency	0.00Hz~max frequency P0-13	50.00Hz
P0-12	Frequency shutdown memory selection for digital set	0: No memory 1: Memory	1
P0-13	Max output frequency	50.00Hz~600.00Hz	50.00Hz
P0-14	Upper limit frequency source	0: Set by P0-15 1: AI1 set 2: AI2 set 3: Body panel knob set 4: Pulse set 5: Communication set	0
P0-15	Upper limit frequency	Lower frequency P0-17~Max output frequency P0-13	50.00Hz
P0-16	Upper limit frequency offset	0.00Hz~ Max output frequency (P0-13)	0.00Hz
P0-17	Lower frequency	0.00Hz~ Upper limit frequency (P0-15)	0.00Hz
P0-18	Acceleration time 1	0~65000s (PC-09=0) 0.0~6500.0s (PC-09=1) 0.00~650.00s (PC-09=2)	Model setting
P0-19	Deceleration time 1	0~65000s (PC-09=0) 0.0~6500.0s (PC-09=1) 0.00~650.00s (PC-09=2)	Model setting
P0-20	Operation direction	Ones bit: running direction 0: Run in the default direction 1: Run in the opposite direction to the default direction Tens bit: Disable Inversion 0: Invalid 1: Valid	00
P0-21	Reverse frequency disable	0: Valid 1: Invalid	0
P0-22	Dead time of forward and reverse rotation	0.0s~3600.0s	0.0s
P0-23	Run-time frequency instruction UP/DOWN benchmark	0: Operating frequency 1: Set frequency	0
P0-25	Motor parameter group selection	0: Motor parameter group 1 1: Motor parameter group 2	0

Group P1: First motor parameters			
Parameter	Name	Setting range	Default value
P1-00	Motor type selection	0: Common asynchronous motor	0
P1-01	Motor rated power	0.1KW~650.0KW	Model setting
P1-02	Motor rated voltage	1V~1200V	Model setting
P1-03	Motor rated current	0.01A~655.35A (VFD power ≤55kW) 0.1A~6553.5A (VFD power >55kW)	Model setting
P1-04	Motor rated frequency	0.01Hz~ max output frequency	Model setting
P1-05	Motor rated speed	1rpm~65535rpm	Model setting
P1-06	Asynchronous motor stator resistance	0.001Ω ~ 65.535Ω (VFD power ≤55kW) 0.0001Ω ~ 6.5535Ω (VFD power >55kW)	Tuning parameter
P1-07	Asynchronous motor rotor resistance	0.001Ω ~ 65.535Ω (VFD power ≤55kW) 0.0001Ω ~ 6.5535Ω (VFD power >55kW)	Tuning parameter
P1-08	Leakage inductance of induction motor	0.01mH ~ 655.35mH(VFD power ≤55kW) 0.001mH ~ 65.535mH (VFD power >55kW)	Tuning parameter
P1-09	Mutual inductance of induction motor	0.01mH ~ 655.35mH (VFD power ≤55kW) 0.001mH ~ 65.535mH (VFD power >55kW)	Tuning parameter
P1-10	No load current of asynchronous motor	0.01A ~ P1-03 (VFD power ≤55kW) 0.1A ~ P1-03 (VFD power >55kW)	Tuning parameter
P1-35	Self learning of motor parameters	0: No operation 1: Static self learning 1 2: Motor rotation self-learning 3: Static self learning 2	0

Group P2: Input terminal function parameters			
Parameter	Name	Setting range	Default value
P2-00	Input terminal X1 function selection	0: No function 1: FWD or run command	01

Group P2: Input terminal function parameters			
Parameter	Name	Setting range	Default value
P2-01	Input terminal X2 function selection	2: REV or Fwd/Rev direction (Note: when it is set to 1 or 2, it should be used with P2-10. See the parameter for details) 3: Three wire mode operation 4: Forward jog (FJOG) 5: Reverse jog (RJOG) 6: Terminal UP 7: Terminal DOWN 8: UP/DOWN setting clear 9: Free stop 10: Fault reset 11: Frequency source switching 12: Multi-segment command terminal 1 13: Multi-segment command terminal 2 14: Multi-segment command terminal 3 15: Multi-segment command terminal 4 16: Acc/Dec time terminal 1 17: Acc/Dec time terminal 2 18: Acc/Dec prohibited 19: Pulse input 20: Counter input 21: Counter reset 22: Length counter input 23: Length counter reset 24: Swing frequency pause 25: Operation pause 26: PLC status reset 27: Run command switch to keyboard 28: Run command switch to communication 29: Torque control prohibited 30: Switch between speed control and torque control 32: PID pause 33: PID reverse direction of action 34: PID integral pause 35: PID parameter switching 36: External fault normally open input 37: External fault normally close input 38: User-defined fault 1 39: User-defined fault 2 40: Motor parameter selection 41: Switch between main frequency X and preset frequency 42: Switch between auxiliary frequency Y and preset frequency 43: Frequency setting effective terminal 44: DC braking 45: Deceleration DC braking 46: Emergency stop 47: External stop terminal (only valid for panel control) 48: External terminal stop (according to deceleration time 4) 49: Reverse run prohibited 50: The running time is cleared 51: Two wire / three wire switching	02
P2-02	Input terminal X3 function selection		10
P2-03	Input terminal X4 function selection		00
P2-04	Input terminal X5 function selection		00
P2-10	XI terminal command mode	0: Two wire mode 1 1: Two wire mode 2 2: Three wire mode 1 3: Three wire mode 2	0
P2-11	XI terminal UP/DOWN changing rate	0.001Hz/s~50.000Hz/s	1.000Hz/s
P2-12	XI terminal filtering time	0.000s~1.000s	0.010s
P2-13	X1 delay time	0.0s~3600.0s	0.0s
P2-14	X2 delay time	0.0s~3600.0s	0.0s
P2-15	X3 delay time	0.0s~3600.0s	0.0s
P2-16	XI terminal effective state selection 1	0: Low level valid 1: High level valid Ones bit: X1 Tens bit: X2 Hundreds bit: X3 Thousands bit: X4 Ten thousands bit: X5	00000
P2-18	AI curve 1 min setting	0.00V~P2-20	0.00V
P2-19	AI curve 1 min setting corresponding frequency percentage	-100.0%~+100.0%	0.0%
P2-20	AI curve 1 max setting	P2-18~+10.00V	10.00V
P2-21	AI curve 1 max setting	-100.0%~+100.0%	100.0%

Group P2: Input terminal function parameters			
Parameter	Name	Setting range	Default value
	corresponding frequency percentage		
P2-22	AI curve 2 min setting	0.00V~P2-24	0.00V
P2-23	AI curve 2 min setting corresponding frequency percentage	-100.0%~+100.0%	0.0%
P2-24	AI curve 2 max setting	P2-22~+10.00V	10.00V
P2-25	AI curve 2 max setting corresponding frequency percentage	-100.0%~+100.0%	100.0%
P2-26	AI curve 3 min setting	-10.00V~P2-28	-10V
P2-27	AI curve 3 min setting corresponding frequency percentage	-100.0%~+100.0%	0.0%
P2-28	AI curve 3 max setting	P2-26~+10.00V	10.00V
P2-29	AI curve 3 max setting corresponding frequency percentage	-100.0%~+100.0%	100.0%
P2-54	AI curve selection	Ones bit: AI1 curve selection 1: Curve 1 (2 points, see P2-18 ~ P2-21) 2: Curve 2 (2 points, see P2-22 ~ P2-25) 3: Curve 3 (2 points, see P2-26 ~ P2-29) 4: Curve 4 (4 points, see P2-30 ~ P2-37) 5: Curve 5 (4 points, see P2-38 ~ P2-45) Tens bit: AI2 curve selection, ditto Hundreds bit: AI3 curve selection, ditto	321
P2-55	AI below minimum input setting selection	Ones bit: AI1 below minimum input setting selection 0: Corresponding minimum input setting 1: 0.0% Tens bit: AI2 below minimum input setting selection	000
P2-56	AI1 filter time constant	0.00s~10.00s	0.10s
P2-57	AI2 filter time constant	0.00s~10.00s	0.10s
P2-60	AI1 jump point	-100.0%~+100.0%	0.0%
P2-61	AI1 jump range	0.0%~100.0%	0.5%
P2-66	PULSE min setting	0.00kHz~P2-68	0.00kHz
P2-67	PULSE min setting corresponding frequency percentage	-100.0%~+100.0%	0.0%
P2-68	PULSE max setting	P2-66~50.0kHz	50.00kHz
P2-69	PULSE max setting corresponding frequency percentage	-100.0%~+100.0%	100.0%
P2-70	PULSE filter time constant	0.00s~10.00s	0.10s

Group P3: output terminal function parameters			
Parameter	Name	Setting range	Default value
P3-00	Y2 output mode	0: High speed pulse output	0
P3-01	Y1 output function selection	0: No output 1: Inverter in operation	01
P3-04	Relay 1 output function selection	2: Fault output (free stop fault) 3: Frequency level detection FDT1 output 4: Frequency level detection FDT2 output 5: Frequency arrival 6: Zero speed operation (no output during shutdown) 7: Zero speed operation 2 (output when shutdown) 8: Upper limit frequency arrival 9: Lower limit frequency arrival (operation related) 10: Motor overload alarm 11: Inverter overload alarm 12: Communication settings 13: In torque limit 15: Frequency 1 reached output 16: Frequency 2 reached output 17: Current 1 reached output 18: Current 2 reached output 19: Set counting value reached 20: Specified counting value reached 21: Ready for operation 23: AI1 input overrange	02

Group P3: output terminal function parameters			
Parameter	Name	Setting range	Default value
		24: Under voltage state output 25: Cumulative power on time reached 26: Timing arrival output 27: Length arrived 28: Simple PLC cycle completed 29: Cumulative running time arrival 32: Lower limit frequency reached (output when shutdown) 33: Fault output (free stop fault and no output under voltage) 34: Module temperature reached 35: Warning output (all faults) 37: In reverse operation 39: Output current overrange 40: Zero current state 41: This time of running time arrived 42: Bus voltage reaches	
P3-06	Y1 output delay time	0.0s~3600.0s	0.0s
P3-09	Relay 1 output delay time	0.0s~3600.0s	0.0s
P3-11	Y terminal effective state selection	0: Positive logic 1: Negative logic Ones bit: Y1 Thousands bit: relay 1	00000
P3-13	AO1 output selection	0: Operating frequency 1: Set frequency 2: Output current 3: Motor output torque (absolute value, percentage relative to motor) 4: Output power 5: Output voltage 6: AI1 7: AI2 9: PULSE input (100.0% corresponding to 100.0 KHz) 10: Output speed 11: Communication control output 12: Counting value 13: Length	00
P3-15	AO1 zero bias coefficient	-100.0%~+100.0%	0.0%
P3-16	AO1 gain	-10.00~+10.00	1.00

Group P4: Start stop mode			
Parameter	Name	Setting range	Default value
P4-00	Starting mode	0: Direct start 1: Speed tracking restart 2: Pre-excitation starting (AC asynchronous motor)	0
P4-01	Starting frequency	0.00Hz~10.00Hz	0.00Hz
P4-02	Start frequency duration	0.0s~100.0s	0.0s
P4-03	Percentage of starting DC braking current / pre-excitation current	20%~100%	20%
P4-04	DC braking time / pre-excitation time at start-up	0.0s~100.0s	0.0s
P4-05	Start protection selection	0: No protection 1: Protection	0
P4-06	Speed tracking mode	0: Start from shutdown frequency 1: Starting from power frequency 2: Starting from maximum output frequency	0
P4-07	Speed tracking speed	1~100	20
P4-10	Speed tracking closed loop current	30%~200%	Model confirmed
P4-19	Acceleration and deceleration mode	0: Linear acceleration and deceleration 1: Continuous S-curve acceleration and deceleration 2: Intermittent S-curve acceleration and deceleration	0
P4-20	Time proportion at the beginning of the S curve	0.0%~ (100.0% - P4-21)	30.0%
P4-21	Time proportion at the end of the S curve	0.0%~ (100.0% - P4-20)	30.0%
P4-22	Stop mode	0: Deceleration stop 1: Free stop	0
P4-23	Starting frequency of DC braking during shutdown	0.00Hz~P0-13	0.00Hz
P4-24	DC braking time during shutdown	0.0s~100.0s	0.0s
P4-25	Percentage of DC braking current when shutdown	0%~100%	0%
P4-26	Waiting time of DC braking	0.0s~100.0s	0.0s

Group P4: Start stop mode			
Parameter	Name	Setting range	Default value
	during shutdown		

Group P5: VF parameters			
Parameter	Name	Setting range	Default value
P5-00	VF curve selection	0: Linear VF 1: Multipoint VF 2: Square VF 3: the 1.2nd power VF 4: the 1.4th power VF 6: the 1.6th power VF 8: the 1.8th power VF 10: VF complete separation mode 11: VF semi separation mode	00
P5-01	Multipoint VF frequency point F1	0.00Hz~P5-03	0.00Hz
P5-02	Multipoint VF voltage point V1	0.0~100.0%	0.0%
P5-03	Multipoint VF frequency point F2	P5-01~P5-05	0.00Hz
P5-04	Multipoint VF voltage point V2	0.0~100.0%	0.0%
P5-05	Multipoint VF frequency point F3	P5-05~P1-04 (motor rated frequency)	0.00Hz
P5-06	Multipoint VF voltage point V3	0.0~100.0%	0.0%
P5-07	Torque boost	0.0% (automatical torque boost) 0.1%~30.0%	Model setting
P5-08	Cut-off frequency of torque boost	0.00Hz~ P0-13	50.00Hz
P5-09	VF separated voltage source	0: Digital setting 1: AI1 2: AI2 4: PULSE setting (X4) 5: Communication setting 6: Multi-speed command 7: PID setting 8: Simple PLC operation	0
P5-10	VF separated voltage source digital setting	0~motor rated voltage	0V
P5-11	VF separated voltage acceleration time	0.0s~1000.0s	0.0s
P5-12	VF separated voltage deceleration time	0.0s~1000.0s	0.0s
P5-13	VF separated stop mode selection	0: The frequency voltage reduced to 0 independently 1: When the voltage decreases to zero, the frequency begins to decrease again	0
P5-14	VF slip compensation gain	0.0%~200.0%	0.0%
P5-15	Slip compensation time constant	0.1~10.0s	0.1s
P5-16	VF over excitation gain	0~200	64
P5-17	VF oscillation suppression gain	0~100	Model setting
P5-18	VF oscillation suppression mode selection	0~4	3
P5-19	VF over current stall action current	50~200%	150%
P5-20	VF over current stall suppression enable	0: invalid 1: valid	1
P5-21	VF over current stall suppression gain	0~100	10
P5-22	VF over current stall action current compensation coefficient	50%~200%	50
P5-23	Overvoltage stall action voltage	200.0V~2000.0V	Model setting
P5-24	Overvoltage stall enable	0: invalid 1: valid	1
P5-25	Over voltage stall suppression frequency gain	0~100	30
P5-26	Over voltage stall suppression voltage gain	0~100	30
P5-27	Limit of maximum rise frequency of over voltage stall	0~50Hz	5Hz

Group P6: Vector control parameters			
Parameter	Name	Setting range	Default value
P6-00	Speed loop proportional gain 1	1~100	30
P6-01	Speed loop integration time 1	0.01s~10.00s	0.50s
P6-02	Speed loop proportional gain 2	1~100	20

Group P6: Vector control parameters			
Parameter	Name	Setting range	Default value
P6-03	Speed loop integration time 2	0.01s~10.00s	1.00s
P6-04	Switching frequency 1	0.00~P6-05	5.00Hz
P6-05	Switching frequency 2	P6-04 ~ P0-13	10.00Hz
P6-06	Speed loop integration attribute	Ones bit: integral separation 0: invalid 1: valid	0
P6-07	Vector slip compensation coefficient	50%~200%	Model setting
P6-08	SVC speed feedback filter time	0~50s	50s
P6-10	Speed control (drive) torque upper limit source	0: Set by P6-11 1: AI1 2: AI2 4: PULSE setting 5:Communication setting 6: min(AI1,AI2) 7: max(AI1,AI2)	0
P6-11	Speed control (drive) torque upper limit digital setting	0.0%~200.0%	150.0%
P6-14	Excitation regulation proportional gain	0 ~ 60000	2000
P6-15	Excitation regulation integral gain	0 ~ 60000	1300
P6-16	Torque regulated proportional gain	0 ~ 60000	2000
P6-17	Torque regulated integral gain	0 ~ 60000	1300

Group P7: Fault parameters			
Parameter	Name	Setting range	Default value
P7-00	Third time (last) fault type	0: No fault 1: Accelerated overcurrent 2: Deceleration overcurrent 3: Constant speed overcurrent 4: Acceleration overvoltage 5: Deceleration overvoltage 6: Constant speed overvoltage 7: Buffer resistance overload fault 8: Under voltage fault 9: Inverter overload 10: Motor overload 11: Input phase loss 12: Output phase loss 13: Radiator overheating 14: Contactor fault 15: Current detection fault 16: Motor tuning fault 17: Code disk fault 18: Motor short circuit fault to ground 19: Load drop 20: Wave by wave current limiting fault 21: Pole position detection failed 22: UVW signal feedback error 23: Brake resistance short circuit 24: Brake pipe overload 25: Brake pipe straight through 26: SVC stall fault 43: External fault 44: Communication fault 45: EEPROM read / write fault 46: Operation time arrival 47: Power on time arrival 48: User defined fault 1 49: User defined fault 2 50: PID feedback loss during operation 51: Running switch motor 52: Speed feedback deviation too large 53: Motor over speed 54: Motor over temperature fault 55: Point to point slave failure 56: Power on lock time arrival	-
P7-01	Second time fault type		-
P7-02	First time fault type		-
P7-03	Third time (last time) fault frequency	-	-
P7-04	Third time (last time) fault current	-	-
P7-05	Third time (last time) fault bus voltage	-	-
P7-06	Third time (last time) fault input terminal status	-	-
P7-07	Third time (last time) fault output terminal status	-	-
P7-08	Third time (last time) fault VFD status	-	-
P7-09	Third time (last time) fault power on time	Unit: minutes	-

Group P7: Fault parameters			
Parameter	Name	Setting range	Default value
P7-10	Third time (last time) fault operation time	Unit: minutes	-
P7-11	Third time (last time) fault location information	-	-
P7-13	Second time fault frequency	-	-
P7-14	Second time fault current	-	-
P7-15	Second time fault bus voltage	-	-
P7-16	Second time fault input terminal status	-	-
P7-17	Second time fault output terminal status	-	-
P7-18	Second time fault VFD status	-	-
P7-19	Second time fault power on time	Unit: minutes	-
P7-20	Second time fault operation time	Unit: minutes	-
P7-21	Second time fault location information	-	-
P7-23	First time fault frequency	-	-
P7-24	First time fault current	-	-
P7-25	First time fault bus voltage	-	-
P7-26	First time fault input terminal status	-	-
P7-27	First time fault output terminal status	-	-
P7-28	First time fault VFD status	-	-
P7-29	First time fault power on time	Unit: minutes	-
P7-30	First time fault operation time	Unit: minutes	-
P7-31	First time fault location information	-	-
P7-33	Motor overload protection mode selection	0: Forbidden 1: Allow	1
P7-34	Motor overload protection gain	0.20~10.00	1.00
P7-35	Motor overload warning coefficient	50%~100%	80%
P7-39	Input phase loss / contactor closing protection selection	Ones bit: Input phase loss protection Tens bit: Contactor closing protection selection 0: Forbidden 1: Allow	11
P7-40	Output phase loss protection selection	0: Forbidden 1: Allow	1
P7-41	Power on short circuit protection function to ground	0: Invalid 1: Valid	1
P7-42	Action selection of fault relay during automatic fault reset	0: No action 1: Action	0
P7-43	Fault automatic reset interval time	0.1s~60.0s	1.0s
P7-44	Number of automatic reset times of faults	0~20	0
P7-45	Protection action selection 1 when fault	Ones bit: motor overload (Err 10) 0: free stop 1: stop as stop mode Tens bit: input phase loss (Err11) 0: free stop 1: stop as stop mode Hundreds bit: output phase loss (Err12) 0: free stop 1: stop as stop mode Thousands bit: output load drop (Err19) 0: free stop 1: stop as stop mode Ten thousand bit: pole position detection failed (Err21) 0: free stop 1: stop as stop mode	00000
P7-46	Protection action selection 2 when fault	Ones bit: external fault 1 (Err43) 0: free stop 1: stop as stop mode Tens bit: communication error (Err44) 0: free stop 1: stop as stop mode Hundreds bit: EEPROM read write error (Err45) 0: free stop 1: stop as stop mode Thousands bit: operation time	00000

Group P7: Fault parameters			
Parameter	Name	Setting range	Default value
		arrival (Err46) 0: free stop 1: stop as stop mode Ten thousand bit: power on time arrival(Err47) 0: free stop 1: stop as stop mode	
P7-47	Protection action selection 3 when fault	Ones bit: user defined fault 1 (Err48) 0: free stop 1: stop as stop mode Tens bit: user defined fault 2 (Err49) 0: free stop 1: stop as stop mode Hundreds bit: PID feedback loss during operation (Err50) 0: free stop 1: stop as stop mode Thousands bit: speed feedback deviation too large (Err52) 0: free stop 1: stop as stop mode Ten thousand bit: motor over speed (Err53) 0: free stop 1: stop as stop mode	00
P7-48	Protection action selection 4 when fault	Ones bit: motor over temperature (Err54) 0: free stop 1: stop as stop mode	00
P7-52	Brake starting voltage	200.0V ~ 2000.0V	Model setting
P7-53	Utilization rate of brake resistor	0 ~ 100%	100%
P7-55	Overvoltage stall gain	0 ~ 100	30
P7-56	Overvoltage stall protection voltage	200.0V ~ 2000.0V	Model setting
P7-61	Load drop detection level	0.0%~100.0%	10.0%
P7-62	Load drop detection time	0.0~60.0s	1.0s
P7-63	Over speed detection value	0.0% ~ 50.0% (unit: P0-13)	20.0%
P7-64	Over speed detection time	0.0s~60.0s	1.0s
P7-65	Detection value of excessive speed deviation	0.0% ~ 50.0%(unit: P0-13)	20.0%
P7-66	Excessive speed deviation detection time	0.0s ~ 60.0s	5.0s
P7-67	Selection of instantaneous stop non-stop function	0: Transient power failure invalid 1: Deceleration in case of instantaneous power failure 2: Deceleration stop in case of instantaneous power failure	0
P7-68	Pause judgement voltage of transient stop action	80%~100%	85%
P7-69	Judgment time of instantaneous stop non-stop voltage rising	0.0s~30.0s	0.5s
P7-70	Judgement voltage of instantaneous stop non-stop action	60%~100% (bus voltage)	80%
P7-71	Proportional gain of instantaneous stop non-stop	0 ~ 100	40
P7-72	Integral coefficient of instantaneous stop non-stop	0 ~ 100	30
P7-73	Deceleration time of instantaneous stop non-stop	0 ~ 300.0s	20.0

Group P8: Keyboard and display			
Parameter	Name	Setting range	Default value
P8-01	STOP/REST function	0: Only in keyboard operation mode, STOP/REST key shutdown function is effective 1: In any operation mode, STOP/REST key is effective	1
P8-02	Parameter initialization	0: No operation 1: Restore factory parameters, excluding motor parameters, P0-13 and P0-15 2: Clear record information 3: Restore factory parameters (including motor parameters)	0
P8-03	User password	0~65535	00000
P8-06	Parameter modification attribute	0: Modifiable 1: Not modifiable	0
P8-07	LED operation display parameter 1 (Low 16 bits)	The bit meaning Bit0: Operating frequency Bit1: Setting frequency	001F
P8-08	LED operation display		0000

Group P8: Keyboard and display			
Parameter	Name	Setting range	Default value
	parameter 2 (High 16 bits)	Bit2: Bus voltage Bit3: Output current Bit4: Output voltage Bit5: Output torque Bit6: Output power Bit7: X input status Bit8: Y output status Bit9: AI1 voltage Bit10: AI2 voltage Bit12: PULSE input pulse frequency, unit: 0.01kHz Bit13: PULSE input pulse frequency, unit: 1Hz Bit14: PID setting Bit15: PID feedback Bit16: Load speed display Bit17: Feedback speed, unit: 0.1Hz Bit18: Actual feedback speed Bit19: Line speed Bit20: PLC stage Bit21: Counting value Bit22: Length value Bit23: Main frequency A display Bit24: Auxiliary frequency B display Bit25: Communication setting value Bit26: Voltage before AI1 correction Bit27: Voltage before AI2 correction Bit29: Remaining running time Bit30: Current power on time Bit31: Current running time	
P8-09	LED stop display parameters	The bit meaning Bit0: Setting frequency Bit1: Bus voltage Bit2: X input status Bit3: Y output status Bit4: AI1 voltage Bit5: AI2 voltage Bit7: PULSE input pulse frequency Bit8: PID setting Bit9: Load speed display Bit10: PLC Step Bit11: Counting value Bit12: Length value	0033
P8-10	Accumulated running time	0~65535h	-
P8-11	Cumulative power on time	0~65535h	-
P8-12	Cumulative power consumption	0~65535 degree	-
P8-15	Software version	-	-
P8-16	Firmware version	-	-
P8-19	Inverter module radiator temperature	0.0℃~100.0℃	-
P8-20	Output power factor	0.00% ~ 200.0%	100.0
P8-21	Load speed display factor	0.0001~6.5000	1.0000
P8-22	Load speed display decimal position	Ones bit: U0-16 decimal position 0: 0 decimal places 1: 1 decimal place 2: 2 decimal places Tens bit: U0-17 decimal position 1: 1 decimal place 2: 2 decimal places	11

Group P9: Communication parameters			
Parameter	Name	Setting range	Default value
P9-00	Serial communication protocol selection	0: Modbus-RTU protocol	0
P9-01	Local address	0: Broadcast address 1 ~ 247 (Modbus valid)	1
P9-02	Communication baud rate	Ones bit: MODBUS 0: 300 BPS 1: 600 BPS 2: 1200 BPS 3: 2400 BPS 4: 4800 BPS 5: 9600 BPS 6: 19200 BPS	06
P9-03	MODBUS data format	0: No parity (8-N-2) 1: Even parity (8-E-1) 2: Odd parity (8-O-1) 3: No parity (8-N-1) (Modbus valid)	1
P9-04	Communication timeout	0.0: Invalid 0.1~60.0s	0.0
P9-05	MODBUS response delay	0~20ms (Modbus valid)	2

Group PA: Process control closed-loop parameters			
Parameter	Name	Setting range	Default value
PA-01	Setting channel selection	0: PA-05 setting 1: AI1 2: AI2 4: PULSE pulse setting (X4) 5: Communication setting 6: Multi-segment command setting	0
PA-02	Feedback channel selection	0: AI1 1: AI2 3: AI1-AI2 4: AI1+AI2 5: PULSE pulse setting (X4) 6: Communication setting	0
PA-03	PID feedback filter time	0.00s~30.00s	0.00s
PA-04	PID output filter time	0.00s~30.00s	0.00s
PA-05	PID value setting	0.0%~100.0%	50.0%
PA-06	PID setting change time	0.00s~300.00s	0.00s
PA-07	PID reverse cut-off frequency	0.00Hz~P0-13	0.00Hz
PA-08	PID deviation limit	0.0%~100.0%	0.0%
PA-09	PID differential limit	0.00%~100.00%	0.10%
PA-10	Proportional gain P	0.0~100.0	20.0
PA-11	Integral time I	0.01s~10.00s	2.00s
PA-12	Differential time D	0.000s~10.000s	0.000s
PA-13	PID parameter switching condition	0: Not switch 1: Switch through X terminal 2: Automatically switch based on deviation 3: Automatically switch based on operating frequency	0
PA-14	PID parameter switching deviation 1	0.0%~PA-15	20.0%
PA-15	PID parameter switching deviation 2	PA-14~100.0%	80.0%
PA-16	PID proportional gain P2	0.0~100.0	20.0
PA-17	PID integral time I2	0.01s~10.00s	2.00s
PA-18	PID differential time D2	0.000s~10.000s	0.000s
PA-19	PID action direction	0: Positive action 1: Reverse action	0
PA-20	PID given feedback range	0~65535	1000
PA-21	PID maximum deviation between two outputs	0.00%~100.00%	1.00%
PA-22	PID minimum deviation between two outputs	0.00%~100.00%	1.00%
PA-23	PID initial value	0.0%~100.0%	0.0%
PA-24	PID initial value holding time	0.00s~600.00s	0.00s
PA-25	PID operation mode (whether to operate when stop)	0: Not operation when stop 1: Operation when stop	0
PA-26	PID integral attribute	Ones bit: integral separation 0: invalid 1: valid Tens bit: whether to stop integration after output to limit value 0: continue to integral 1: Stop integral	00
PA-27	PID feedback lost detection value	0.0%: not judge the feedback lost 0.1%~100.0%	0.0%
PA-28	PID feedback lost detection time	0.0s~30.0s	0.0s

Group PB: Multi-speed and simple PLC operation parameters			
Parameter	Name	Setting range	Default value
PB-00	Multi-segment frequency 0	-100.0%~+100.0%	0.0%
PB-01	Multi-segment frequency 1	-100.0%~+100.0%	0.0%
PB-02	Multi-segment frequency 2	-100.0%~+100.0%	0.0%
PB-03	Multi-segment frequency 3	-100.0%~+100.0%	0.0%
PB-04	Multi-segment frequency 4	-100.0%~+100.0%	0.0%
PB-05	Multi-segment frequency 5	-100.0%~+100.0%	0.0%
PB-06	Multi-segment frequency 6	-100.0%~+100.0%	0.0%
PB-07	Multi-segment frequency 7	-100.0%~+100.0%	0.0%
PB-08	Multi-segment frequency 8	-100.0%~+100.0%	0.0%
PB-09	Multi-segment frequency 9	-100.0%~+100.0%	0.0%
PB-10	Multi-segment frequency 10	-100.0%~+100.0%	0.0%
PB-11	Multi-segment frequency 11	-100.0%~+100.0%	0.0%
PB-12	Multi-segment frequency 12	-100.0%~+100.0%	0.0%
PB-13	Multi-segment frequency 13	-100.0%~+100.0%	0.0%
PB-14	Multi-segment frequency 14	-100.0%~+100.0%	0.0%
PB-15	Multi-segment frequency 15	-100.0%~+100.0%	0.0%
PB-16	Multi-segment 0 command setting mode	0: PB-00 setting 1: AI 5: PID setting 6: Preset frequency P0-10	0
PB-17	Simple PLC segment 0 operation time	0.0~6500.0s(h)	0.0s(h)
PB-18	Simple PLC segment 0 acc/dec	0~3	0

Group PB: Multi-speed and simple PLC operation parameters			
Parameter	Name	Setting range	Default value
	time		
PB-19	Simple PLC segment 1 operation time	0.0~6500.0s(h)	0.0s(h)
PB-20	Simple PLC segment 1 acc/dec time	0~3	0
PB-21	Simple PLC segment 2 operation time	0.0~6500.0s(h)	0.0s(h)
PB-22	Simple PLC segment 2 acc/dec time	0~3	0
PB-23	Simple PLC segment 3 operation time	0.0~6500.0s(h)	0.0s(h)
PB-24	Simple PLC segment 3 acc/dec time	0~3	0
PB-25	Simple PLC segment 4 operation time	0.0~6500.0s(h)	0.0s(h)
PB-26	Simple PLC segment 4 acc/dec time	0~3	0
PB-27	Simple PLC segment 5 operation time	0.0~6500.0s(h)	0.0s(h)
PB-28	Simple PLC segment 5 acc/dec time	0~3	0
PB-29	Simple PLC segment 6 operation time	0.0~6500.0s(h)	0.0s(h)
PB-30	Simple PLC segment 6 acc/dec time	0~3	0
PB-31	Simple PLC segment 7 operation time	0.0~6500.0s(h)	0.0s(h)
PB-32	Simple PLC segment 7 acc/dec time	0~3	0
PB-33	Simple PLC segment 8 operation time	0.0~6500.0s(h)	0.0s(h)
PB-34	Simple PLC segment 8 acc/dec time	0~3	0
PB-35	Simple PLC segment 9 operation time	0.0~6500.0s(h)	0.0s(h)
PB-36	Simple PLC segment 9 acc/dec time	0~3	0
PB-37	Simple PLC segment 10 operation time	0.0~6500.0s(h)	0.0s(h)
PB-38	Simple PLC segment 10 acc/dec time	0~3	0
PB-39	Simple PLC segment 11 operation time	0.0~6500.0s(h)	0.0s(h)
PB-40	Simple PLC segment 11 acc/dec time	0~3	0
PB-41	Simple PLC segment 12 operation time	0.0~6500.0s(h)	0.0s(h)
PB-42	Simple PLC segment 12 acc/dec time	0~3	0
PB-43	Simple PLC segment 13 operation time	0.0~6500.0s(h)	0.0s(h)
PB-44	Simple PLC segment 13 acc/dec time	0~3	0
PB-45	Simple PLC segment 14 operation time	0.0~6500.0s(h)	0.0s(h)
PB-46	Simple PLC segment 14 acc/dec time	0~3	0
PB-47	Simple PLC segment 15 operation time	0.0~6500.0s(h)	0.0s(h)
PB-48	Simple PLC segment 15 acc/dec time	0~3	0
PB-49	Simple PLC operation mode	0: Stop at the end of a single run 1: Keep the final value at the end of a single run 2: Cycle all the time	0
PB-50	Simple PLC operation time unit	0: second 1: hour	0
PB-51	Simple PLC power-off memory selection	Ones bit: power-off memory 0: not memory 1: memory Tens bit: stop memory 0: not memory 1: memory	00

Group PC: Auxiliary operation parameters			
Parameter	Name	Setting range	Default value
PC-00	Jog operating frequency	0.00Hz~P0-13	2.00Hz
PC-01	Jog acceleration time	0.0s~6500.0s	20.0s
PC-02	Jog deceleration time	0.0s~6500.0s	20.0s
PC-03	Acceleration time 2	0.1s~6500.0s	Model setting
PC-04	Deceleration time 2	0.1s~6500.0s	Model setting
PC-05	Acceleration time 3	0.1s~6500.0s	Model

Group PC: Auxiliary operation parameters			
Parameter	Name	Setting range	Default value
			setting
PC-06	Deceleration time 3	0.1s~6500.0s	Model setting
PC-07	Acceleration time 4	0.1s~6500.0s	Model setting
PC-08	Deceleration time 4	0.1s~6500.0s	Model setting
PC-09	The unit of acc/dec time	0: 1s 1: 0.1s 2: 0.01s	1
PC-10	The base frequency of acc/dec time	0: Max output frequency 1: Setting frequency 2: 100Hz	0
PC-11	Switching frequency point between acceleration time 1 and acceleration time 2	0.00Hz~max output frequency	0.00Hz
PC-12	Switching frequency point between deceleration time 1 and deceleration time 2	0.00Hz~ max output frequency	0.00Hz
PC-13	Jump frequency 1	0.00Hz~ max output frequency	0.00Hz
PC-14	Jump frequency 2	0.00Hz~ max output frequency	0.00Hz
PC-15	Jump frequency range	0.00Hz~ max output frequency	0.00Hz
PC-16	Whether the jump frequency is effective during acceleration and deceleration	0: invalid 1: valid (in vector condition)	0
PC-17	Frequency reaching detection range	0.0%~100.0%	0.0%
PC-18	Frequency detection value (FDT1 voltage level)	0.00Hz~max output frequency	50.00Hz
PC-19	Frequency detection hysteresis value (FDT1 voltage level)	0.0%~100.0% (max output frequency)	5.0%
PC-20	Frequency detection value (FDT2 voltage level)	0.00Hz~ max output frequency	50.00Hz
PC-21	Frequency detection hysteresis value (FDT2 voltage level)	0.0%~100.0%	5.0%
PC-22	Any arrival frequency detection value 1	0.00Hz~ max output frequency	50.00Hz
PC-23	Any arrival frequency detection width 1	0.0%~100.0% (max output frequency)	0.0%
PC-24	Any arrival frequency detection value 2	0.00Hz~ max output frequency	50.00Hz
PC-25	Any arrival frequency detection width 2	0.0%~100.0% (max output frequency)	0.0%
PC-26	Timing function selection	0: invalid 1: valid	0
PC-28	Setting operation time	0.0~6500.0Min	0.0Min
PC-29	Present operation reached time	0.0~6500.0Min	0.0Min
PC-30	Setting power on reached time	0 ~ 65000h	0
PC-32	Setting operation reached time	0 ~ 65000h	0
PC-34	Any reaching current 1	0.0%~300.0% (motor rated current)	100.0%
PC-35	Any width of reaching current 1	0.0%~300.0% (motor rated current)	0.0%
PC-36	Any reaching current 2	0.0%~300.0% (motor rated current)	100.0%
PC-37	Any width of reaching current 2	0.0%~300.0% (motor rated current)	0.0%
PC-38	Zero current detection level	0.0%~300.0% (motor rated current)	5.0%
PC-39	Zero current detection delay time	0.01s~600.00s	0.10s
PC-40	Software overcurrent point	0: 0.0% (not detect) 1: 0.1%~300.0% (motor rated current)	200.0%
PC-41	Software overcurrent detection delay time	0.00s~600.00s	0.00s
PC-42	AI input voltage lower limit	0.00V~PC-43	3.10V
PC-43	AI input voltage upper limit	PC-42~10.50V	6.80V
PC-44	Overvoltage point setting	200V model: 200~400V 380V model: 540~810V	200V: 400V 380V: 810V
PC-45	Undervoltage point setting	200V model: 200~400V 380V model: 200~537V	200V: 200V 380V: 350V
PC-46	Operation action with frequency lower than the lower limit frequency	0: run at lower limit frequency 1: stop 2: run at zero speed	0
PC-47	Module temperature reached	0°C~100°C	75
PC-48	Cooling fan control	0: The fan runs during operation 1: The fan is running all the time	0
PC-49	Droop control	0.00Hz~10.00Hz	0.00Hz

Group PC: Auxiliary operation parameters			
Parameter	Name	Setting range	Default value
PC-50	Terminal jog run priority	0: invalid 1: valid	0
PC-51	SVC optimization selection	1: Optimization mode 1 2: Optimization mode 2	2
PC-52	Dead area compensation mode	0: No compensation 1: Compensation mode 1	1
PC-54	Modulation mode	0: Asynchronous Modulation 1: Synchronous modulation	0
PC-55	DPWM switching upper limit frequency	5.00Hz~max output frequency	12.00Hz
PC-56	Random PWM depth	0: Random PWM invalid 1~10: PWM carrier frequency random depth	0
PC-57	Wake up frequency	PC-59~P0-13	0.00Hz
PC-58	Wake up delay time	0.0s~6500.0s	0.0s
PC-59	Dormancy frequency	0.00Hz~PC-57	0.00Hz
PC-60	Dormancy delay time	0.0s~6500.0s	0.0s
PC-61	Wave by wave current limiting enable	0: Not enable 1: Enable	1
PC-62	Current detection compensation	98~200	98
PC-65	Bus voltage reached value	Unit: 0.1V	500.0
PC-66	The bus voltage reached hysteresis value	Unit: 0.1V	50.0
PC-67	Carrier frequency	0.5K~16.0K	Model setting
PC-68	The carrier frequency is adjusted with temperature	0: invalid 1: valid	1
PC-72	External linear speed given source	0:Not use external linear speed 1: AI1 2: AI2 4: Pulse X4 5: Communication	0
PC-73	Maximum allowable update deviation of main frequency	0.00%～10.00%	0.10%
PC-74	Allowed update interval of main frequency	0.00s~200.00s	3.00s
PC-75	Differential time of external linear speed change	0.00s~50.00s	1.00s
PC-76	External linear speed change	0.00Hz~50.00Hz	1.00Hz

Group PF: Torque control			
Parameter	Name	Setting range	Default value
PF-00	Torque control	0: Speed control 1: Torque control	0
PF-01	Drive torque upper limit source	0: Digital setting 1: AI1 2: AI2 4: PULSE 5: Communication setting 6: Min(AI1, AI2) 7: Max(AI1, AI2) (Full scale for options 1-7, corresponding to PF-02 digital setting)	0
PF-02	Drive torque upper limit	-200.0%~200.0%	150.0%
PF-03	Torque control forward direction max frequency source	0: Digital setting 1: AI1 2: AI2 4: PULSE 5: Communication setting 6: Min(AI1, AI2) 7: Max(AI1, AI2) (Full scale for options 1-7, corresponding to PF-02 digital setting)	0
PF-04	Torque control forward direction max frequency	0.00Hz~max output frequency	50.00Hz
PF-05	Torque control reverse direction max frequency source	0: Digital setting 1: AI1 2: AI2 4: PULSE 5: Communication setting 6: Min(AI1, AI2) 7: Max(AI1, AI2) (Full scale for options 1-7, corresponding to PF-02 digital setting)	0
PF-06	Torque control reverse direction max frequency	0.00Hz~max output frequency	50.00Hz
PF-07	Torque acceleration time	0.00s~650.00s	0.00s
PF-08	Torque deceleration time	0.00s~650.00s	0.00s

Group A0: textile			
Parameter	Name	Setting range	Default value
A0-00	Setting length	0m~65535m	1000m
A0-01	Actual length	0m~65535m	0m
A0-02	Pulse number per meter	0.1~6553.5	100.0
A0-03	Setting count value	1~65535	1000
A0-04	Specified count value	1~65535	1000
A0-05	Swing frequency setting mode	0: relative to center frequency 1: relative to the maximum frequency	0
A0-06	Swing frequency range	0.0%~100.0%	0.0%
A0-07	Jump frequency amplitude	0.0%~50.0%	0.0%
A0-08	Swing frequency period	0.1s~3600.0s	10.0s
A0-09	Triangular wave rise time of swing frequency	0.1%~100.0%	50.0%

Group A2: Second motor parameters			
Parameter	Name	Setting range	Default value
A2-00	Motor type selection	0: Common asynchronous motor	0
A2-01	Motor rated power	0.1KW~650.0KW	Model setting
A2-02	Motor rated voltage	1V~1200V	Model setting
A2-03	Motor rated current	0.01A~655.35A (VFD power ≤ 55kW) 0.1A~6553.5A (VFD power >55kW)	Model setting
A2-04	Motor rated frequency	0.01Hz~max output frequency	Model setting
A2-05	Motor rated speed	1rpm~65535rpm	Model setting
A2-06	Asynchronous motor stator resistance	0.001Ω ~ 65.535Ω (VFD power ≤55kW) 0.0001Ω ~ 6.5535Ω (VFD power >55kW)	Tuning parameter
A2-07	Asynchronous motor rotor resistance	0.001Ω ~ 65.535Ω (VFD power ≤55kW) 0.0001Ω ~ 6.5535Ω (VFD power >55kW)	Tuning parameter
A2-08	Leakage inductance of induction motor	0.01mH ~ 655.35mH(VFD power ≤55kW) 0.001mH ~ 65.535mH (VFD power >55kW)	Tuning parameter
A2-09	Mutual inductance of induction motor	0.01mH ~ 655.35mH (VFD power ≤55kW) 0.001mH ~ 65.535mH (VFD power >55kW)	Tuning parameter
A2-10	No load current of asynchronous motor	0.01A ~ P1-03 (VFD power ≤55kW) 0.1A ~ P1-03 (VFD power >55kW)	Tuning parameter
A2-35	Motor 2 parameter self-learning	0: No operation 1: Static self learning 1 2: Motor rotation self-learning 3: Static self learning 2	0
A2-36	Motor 2 control mode	0: VF control 1: No speed sensor vector control (SVC)	0
A2-37	Motor 2 acc/dec time selection	0: Same to first motor 1: Acceleration and deceleration time 1 2: Acceleration and deceleration time 2 3: Acceleration and deceleration time 3 4: Acceleration and deceleration time 4	0
A2-38	Motor 2 torque boost	0.0%: Automatic torque boost 0.1%~30.0%	Model setting
A2-40	Motor 2 oscillation suppression gain	0~100	Model setting
A2-41	Speed loop proportion gain 1	1~100	30
A2-42	Speed loop integral time 1	0.01s~10.00s	0.50
A2-43	Speed loop proportion gain 2	1~100	20
A2-44	Speed loop integral time 2	0.01s~10.00s	1.00
A2-45	Switching frequency 1	0.00~A2-46	5.00
A2-46	Switching frequency 2	A2-45~max output frequency (P0-13)	10.00
A2-47	Speed loop integral property	Ones bit: integral separation 0: invalid 1: valid	0
A2-48	Slip gain of vector control	50%~200%	100%
A2-49	SVC speed feedback filter time	0.000s~0.100s	0.015

Group A2: Second motor parameters			
Parameter	Name	Setting range	Default value
A2-51	Torque upper limit source under speed control mode	0: Parameter setting (A2-52) 1: AI1 2: AI2 4: PULSE setting 5: Communication setting 6: Min(AI1,AI2) 7: Max(AI1,AI2)	0
A2-52	Torque upper limit digital setting under speed control mode	0.0%~200.0%	150.0%
A2-55	Excitation regulation proportional gain	0 ~ 60000	2000
A2-56	Excitation regulation integral gain	0 ~ 60000	1300
A2-57	Torque regulated proportional gain	0 ~ 60000	2000
A2-58	Torque regulated integral gain	0 ~ 60000	1300

Group AD: AIAO correction			
Parameter	Name	Setting range	Default value
AD-00	AI1 measured voltage 1	0.500V~4.000V	Factory calibration
AD-01	AI1 display voltage 1	0.500V~4.000V	Factory calibration
AD-02	AI1 measured voltage 2	6.000V~9.999V	Factory calibration
AD-03	AI1 display voltage 2	6.000V~9.999V	Factory calibration
AD-04	AI2 measured voltage 1	0.500V~4.000V	Factory calibration
AD-05	AI2 display voltage 1	0.500V~4.000V	Factory calibration
AD-06	AI2 measured voltage 2	6.000V~9.999V	Factory calibration
AD-07	AI2 display voltage 2	6.000V~9.999V	Factory calibration
AD-12	AO1 target voltage 1	0.500V~4.000V	Factory calibration
AD-13	AO1 measured voltage 1	0.500V~4.000V	Factory calibration
AD-14	AO1 target voltage 2	6.000V~9.999V	Factory calibration
AD-15	AO1 measured voltage 2	6.000V~9.999V	Factory calibration

Group U0: Monitor parameters			
Parameter	Name	Min unit	Display range
U0-00	Operation frequency (Hz)	0.01Hz	0.00~600.00Hz
U0-01	Setting frequency (Hz)	0.01Hz	0.00~600.00Hz
U0-02	Bus voltage (V)	0.1V	0.0~1024.0
U0-03	Output current (A)	0.01A	0.0~655.35A
U0-04	Output voltage (V)	1V	0V~1140V
U0-05	Output torque (%) Percentage output value of motor rated torque	0.1%	-200.0%~200.0%
U0-06	Output power (kW)	0.1kW	0~32767
U0-07	X input state	1	0x0000~0x7FFF
U0-08	Y output state	1	0x0000~0x03FF
U0-09	AI1 voltage(V) / current(mA)	0.01V/0.01mA	0.00V ~10.57V/ 0.00mA~20.00mA
U0-10	AI2 voltage(V) / current(mA)	0.01V/0.01mA	0.00V ~10.57V/ 0.00mA~20.00mA
U0-12	PULSE input frequency	0.01kHz	0.00kHz ~ 50.00kHz
U0-13	PULSE input frequency (Hz)	1Hz	0 ~ 65535Hz
U0-14	PID setting	1	0 ~ 65535
U0-15	PID feedback	1	0 ~ 65535
U0-16	Load speed display	Depend on P8-22	0~65535
U0-17	Feedback speed (Hz)	Depend on P8-22	-600.00~600.00
U0-20	PLC stage	1	0~15
U0-21	Count value	1	0~65535
U0-22	Length value	1	0~65535
U0-23	Main frequency A display	0.01Hz	0.01~P0-13
U0-24	Auxiliary frequency B display	0.01Hz	0.01~P0-13
U0-25	Communication setting	0.01%	-100.00% ~ 100.00%
U0-26	AI1 voltage/current before calibration	0.001V/0.001mA	0.000V~10.570V/ 0.000mA~20.000 mA
U0-27	AI2 voltage/current before calibration	0.001V/0.001mA	0.000V~10.570V/ 0.000mA~20.000 mA

Group U0: Monitor parameters				
Parameter	Name	Min unit		Display range
U0-29	Remaining running time	0.1 min		0.0~6500.0 min
U0-30	Present power on time	1 min		0~65000 min
U0-31	Present operation time	0.1min		0.0~6500.0 min
U0-33	Present fault	1		0~56
U0-34	Fault information	1		-
U0-35	Target torque (%)	0.1%		-200.0%~200.0%
U0-36	Torque upper limit	0.01%		-200.00%~200.00 %
U0-41	Power factor angle	0.1°		-
U0-42	Setting frequency (%)	0.01%		-100.00%~100.00 %
U0-43	Operation frequency (%)	0.01%		-100.00%~100.00 %
U0-44	VF separate target voltage	1V		0V ~motor rated voltage
U0-45	VF separate output voltage	1V		0V~motor rated voltage
U0-47	Motor serial number	0: Motor 1 1: Motor 2		-
U0-48	Check any memory address value	1		-
U0-70	Communication feedback motor speed 1	0.1Hz		-
U0-71	Communication feedback motor speed 2	1RPM		0~motor rated speed
U0-72	Communication card dedicated current display	-		-
U0-73	Communication card error status	-		-
U0-74	Output torque	0.01%		-200.00% ~ 200.00%
U0-75	Fault code	-		0~56
U0-76	Operation status word	Bit0:	0: Stop 1: Operation	0x0000~0xFFFF
		Bit1:	Normal operation (Not jog, tuning)	
		Bit2:	Jog operation	
		Bit3:	Tuning operation	
		Bit4:	Jog during operation	
		Bit5~ Bit6:	Running state 00: Constant speed 01: Accelerate 10: Decelerate	
		Bit7:	PLC operation	
		Bit8:	PID operation	
		Bit9:	Torque control	
		Bit10:	Set frequency direction	
		Bit11:	Current frequency operation direction	
		Bit12:	Reverse flag 0:Forward 1:Reverse	
		Bit13:	Final frequency setting reverse 0:Forward 1:Reverse	

Note:
Specific parameter setting, please refer to 'VH1 Series Frequency User Manual'.

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