RiDING日鼎

VD100 INVERTER

USER GUIDE

目录

Chapter 1 Product Introduction

1.1 Product Specification

Input/output features

Input voltage range: 380/220V±15%

Input frequency range: 47~63Hz

Output voltage rang: 0~rated input voltage

Output frequency range: 0~630Hz

Peripheral interface features

Programmable digital input: 5 switch signal inputs

Programmable analog input: AI: 0~10V or 0~20mA input

Relay output: 1 way output

Analog output: 1 way output, 0~10VTechnical function features

Control mode: V/F control

Overload capacity: 150% rated current 60s; 180% rated current 10s; 200% rated current 1s

Speed ratio: 1:50

Carrier frequency: 2.0~16.0 kHz

Performance features

Frequency setting mode: digital setting, analog setting, serial communication setting, multi-velocity and simple PLC setting. Settings can be combined and modes can be switched.

PID control function

Simple PLC and multi-velocity control function: 16-gear velocity control

Swing frequency control function

Time control function

Frequency agility function

S curve function

QUICK/JOG function: users can customize function with this multi-function key

Automatic voltage adjustment function: maintain steady voltage output automatically when the grid voltage alters. Provide with multiple fault protection function in circumstances like overcurrent, overvoltage, undervoltage, overtemperature, phase loss and overload.

1.2 Nameplate Introduction

Here take three-phase 380V2.2KW inverter as an example to illustrate the nameplate, as shown in figure 1-1.

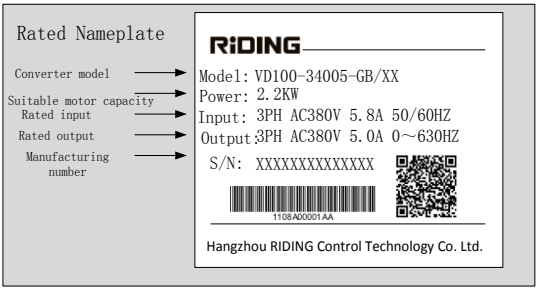


Figure 1-1: Diagram of VD100 VD100 Inverter

1.3 Models

Model codes indicate product information of the inverter. Users can find the model codes on the nameplate of the inverter. Here take VD100-34005-GB/XX for instance. See below:

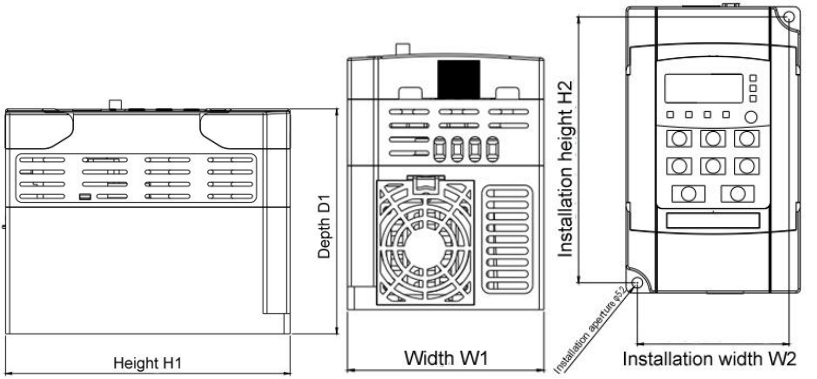
Table 1-1: Model Specification

Field	Content
VD100	Product series No.: VD denotes series of *RIDING* inverter. 100 denotes MINI type inverter; 200 denotes general type inverter
34005	Product capacity and voltage level: Bit1: 3: three-phase power supply; 2: single-phase power supply Bit2: 4: 380V; 2: 220V Bit3~5: 005: 5A rated current; 007: 7A rated current
GB	Model and accessories: G: general model B: with braking unit, N denotes no braking unit
/XX	Hardware version

Chapter 2 Installation Instructions

2.1 Exterior Overview and Mounting Dimensions

2.1.1 Product Exterior Overview



Overall machine size **Overall installation size**

Figure 2-1: Contour Dimensions and Mounting Dimensions

2.1.2 Mounting Dimensions

Table 2-1: VD100 Mounting Dimensions of Inverter (mm)

Power Segment	W1	W2	H1	H2	D1	Holes
0.75~2.2KW	85	74	140	130	111	$\phi 5$

2.2 Mechanical Installation Instructions

2.2.1 Interval for Installing

Multi-series inverters are suitable for wall-mounting, as figure 2-2 shows (minimum size of A and B is 100mm).

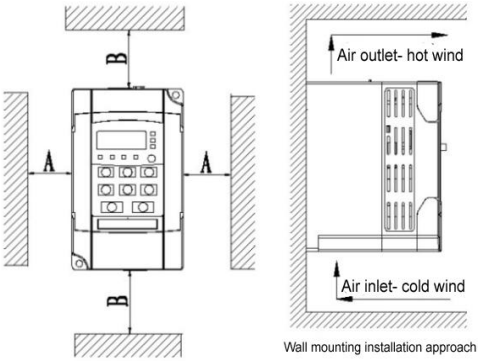
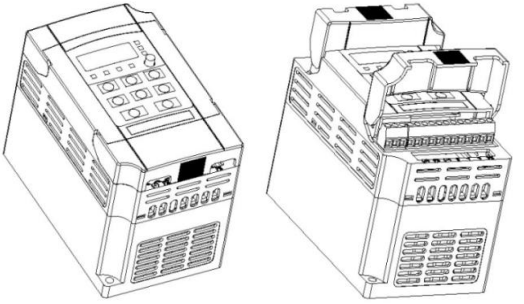


Figure 2-2: Installation Diagram

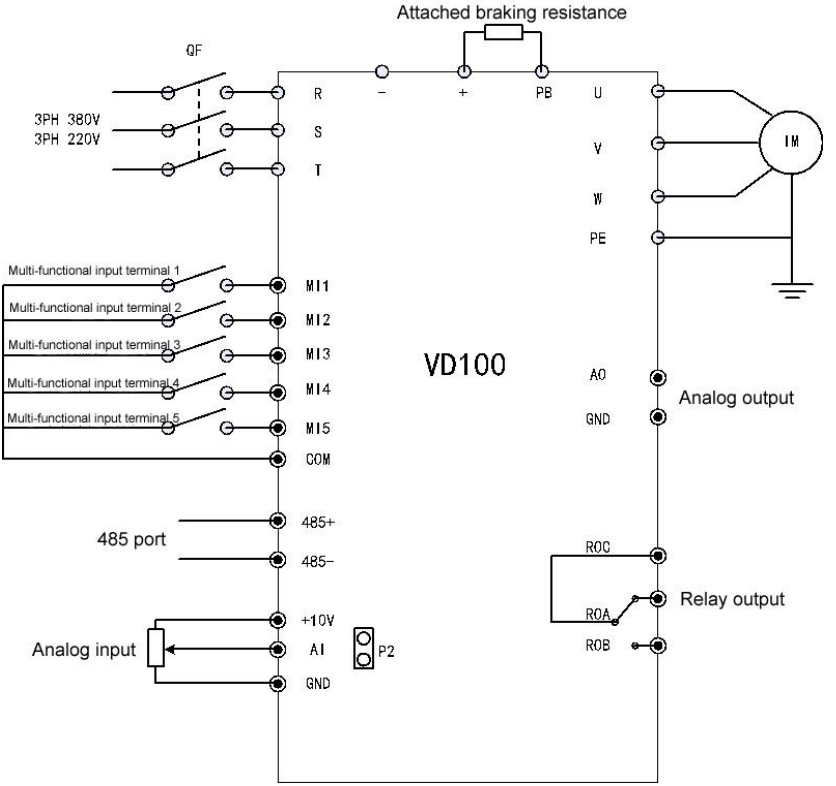
2.2.2 Uninstall Instruction



Unfold the shell in the shade with flow marks to connect wires. Fold the shell after wiring.

2.3 Standard Wiring

2.3.1 VD100 Wiring Diagram

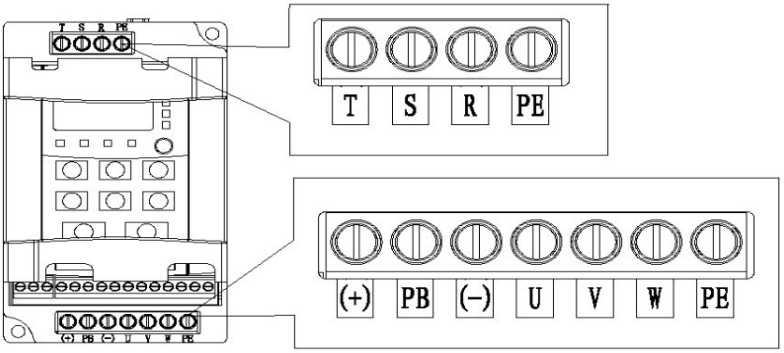


Note:

AI input type is 0~20mA current input when P2 is shorted;

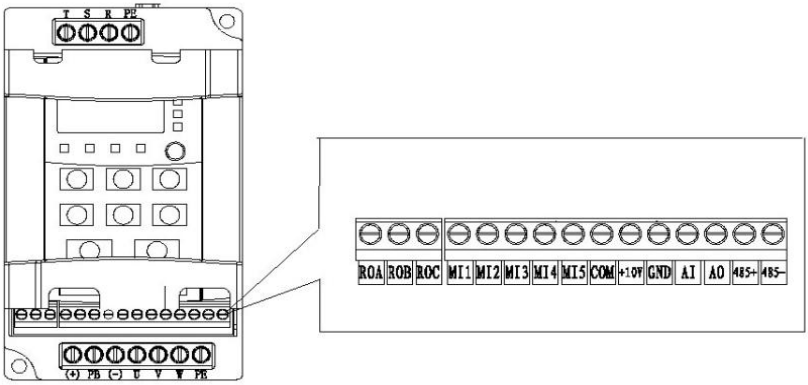
AI input type is 1~10V voltage input when P2 is disconnected.

2.3.2 Major Loop Terminal Wiring



Terminal Sign	Name	Function
R	Power input of major loop	Three-phase alternating input terminal, connected with power grid. RST is three-phase input wire, PE is the earthing terminal.
S		
T		
PE		
(+)	Braking resistance terminal 2 Co-current bus line input terminal 1	
PB	Braking terminal 1	PB, (+) attached braking resistance terminal.
(-)	Co-current bus line input terminal 2	
U	Inverter output	Three-phase alternating output terminal, usually connected to motor.
V		
W		
PE	Protect earthing terminal in safety	Every machine MUST be earthing.

2.3.3 Control Terminal Wiring



Category	Terminal Name	Specification
Power	+10V-GND	Provide outward +10V power with largest output current of 10mA Generally functions as outward working power of potentiometer. Range of potentiometer resistance is 1KΩ~5KΩ
Digital input	MI1-COM	Multi-functional input terminal: 1. Optocoupler 2. Input resistance: 10KΩ
	MI2-COM	
	MI3-COM	
	MI4-COM	
	MI5-COM	
Analog input	AI-GND	1. Input voltage range: 0V~10V 2. Input resistance: 30KΩ
Relay output	ROA-ROC	ROA is normally closed output, ROB is normally open output, ROC is the common terminal
	ROB-ROC	
Analog output	AO-GND	Output voltage range: 0V~10V
Communication terminal	485+	485 communication terminal, support standard 485 communication terminal interface with twisted cable or shield cable. t
	485-	

Chapter 3 Keyboard Operation Procedure

3.1 Operation Panel

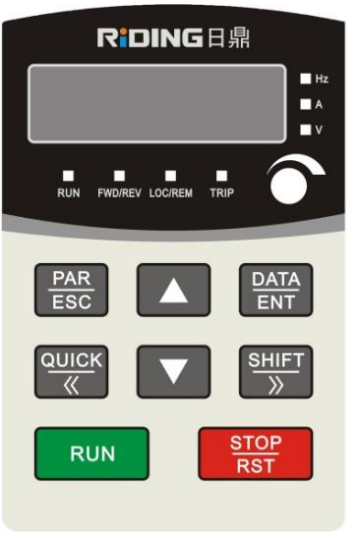


Figure 3-1: Panel Diagram

3.1.1 Function Specification of Keys

Table 3-1: Panel keys specification

Key	Name	Function
PAR ESC	Parameter/escape key	Enter or secede first-level menu
QUICK	Display status /shift to left	Function of the key is set according to function code P6.10 1: Forward jog 2: Reversal jog 3: Reversal rotate 4. Forward/ Reversal rotation switch 5:Up/Down clear 6: Free stop 7: Command source switch
DATA ENT	Enter key	Enter the menu level by level Confirm the set parameters
▲	Increase	Increase data or function code

	Decrease	Decrease data or function code
	Shift key	Under the display interface of stopping and running status, user can press the key, shift rightward round to select display parameters; it also enables to select modified bit of parameters when modifying parameters.
	Run	Start running under keyboard operation mode.
	Stop	User can press the key to stop all operation during running status. All control modes can be reset with this key under alarm status.
	Analog knob	Own panel: analog input A|0 Attached panel: analog input A|1

3.1.2 Display Of LED Signal Light and Digital Tube

Table 3-2: Specification of Panel Signal Lights

LED signal light	Content
RUN	Operation signal light: Light-off denotes that inverter is stopped; Light-on denotes that inverter is running.
FWD/REV	Forward/ Reversal: Light-off indicates forward rotation status; Light-on indicates reversal rotation status.
LOC/REM	Control mode: Light-off denotes keyboard controlling status; Light-on denotes terminal controlling status; Light-flashing indicates communication controlling status.
Hz	Unit of frequency
A	Unit of current
V	Unit of voltage
TRIP	Alarm signal indicator: Light-off indicates inverter is running regularly; Light-on denotes that inverter is faulted.
5 display LED	Parameter displayed: can display monitoring data like set frequency, output frequency and alarm codes.

Chapter 4 Function Parameters

4.1 Parameter Table

Table 4-1: Parameter Table

Function Code	Name	Setting Range	Default
P0: Fundamental Parameters Group			
P0-00	Preset frequency	0.00Hz~maximum(P0-02)	50.00Hz
P0-01	Command source selection	0: command channel of operation panel 1: command channel of terminal 2: command channel of serial port communication	0
P0-02	Maximum frequency	50.00~630.00Hz	50.00Hz
P0-03	Upper frequency value limit	Lower frequency limit (P0-04)~maximum frequency (P0-02)	50.00Hz
P0-04	Lower frequency value limit	0.00Hz~upper frequency limit (P0-03)	0.00Hz
P0-05	Selection of dominant frequency source A	0: digital setting (adjust with *UP* and *DOWN*) 1: panel potentiometer 2: attached potentiometer 3: commanded AI of analog path 4: multi-segment commanded 5: PLC 6: PID 7: Communication setting	0
P0-06	Selection of auxiliary frequency source B	0: digital setting (adjust with *UP* and *DOWN*) 1: panel potentiometer 2: attached potentiometer 3: commanded AI of analog path 4: multi-segment commanded 5: PLC 6: PID 7: communication setting	0
P0-07	Stacking auxiliary frequency source *B* Selection range	0: relative to maximum frequency 1: relative to frequency source *A*	0
P0-08	Frequency source stacking selection	0: dominant 1: dominant+ auxiliary 2: dominant ←→ auxiliary 3: dominant ←→dominant+ auxiliary 4: auxiliary ←→dominant+ auxiliary 5: dominant ←→dominant-auxiliary 6: auxiliary ←→dominant-auxiliary	0
P0-09	Operation direction	0: same direction 1: opposite direction	0

P0-10	Reversal control	0: inversely rotation permitted 1: inversely rotation prohibited	0
P0-11	Acceleration time 1	0.1s~3600.0s	10.0s
P0-12	Deceleration time 1	0.1s~3600.0s	10.0s
P0-13	V/F curve setting	0: line V/F curve 1: multipoint V/F curve 2: square V/F curve	0
P0-14	Torque lifting	0.0%~30.0%	2%
P0-15	Torque lifting halted	0.00Hz~maximum frequency (P0-02)	50.00Hz
P0-16	Multipoint V/F frequency point f1	0.00Hz~P0-18	0.00Hz
P0-17	Multipoint V/F voltage point v1	0.0%~100%	0.0%
P0-18	Multipoint V/F frequency point f2	P0-16~P0-20	0.00Hz
P0-19	Multipoint V/F voltage point v2	0.0%~100%	0.0%
P0-20	Multipoint V/F frequency point f3	P0-18~maximum frequency (P0-02)	0.00Hz
P0-21	Multipoint V/F voltage point v3	0.0%~100%	0.0%
P0-22	Spare		
P0-23	Memory selection of digital setting frequency	0: no memory 1: power-off memory 2: halting memory 3: power-off and halting memory	0
P0-24	Spare		
P0-25	Starting frequency	0.00Hz~maximum frequency (P0-02)	2.00Hz
P0-26	Retention time of starting frequency	0.0s~500.0s	0.0s
P0-27	Braking current of direct current when started	0%~100%	0%
P0-28	Braking time of direct current when started	0.0s~500.0s	0.0s
P0-29	Stop frequency	0.00Hz~100.00Hz	1.00Hz
P0-30	Stop mode	0: decelerated stop 1: free stop	0
P0-31	Start frequency of direct current braking when stopped	0.00Hz~maximum frequency (P0-02)	0.00Hz

P0-32	Wait time of direct current braking when stopped	0.0s~500.0s	0.0s
P0-33	Braking current of direct current when stopped	0%~100%	0%
P0-34	Braking time of direct current when stopped	0.0s~500.0s	0.0s
P0-35	Forward/reversal rotation dead time	0.0s~3600.0s	0.0s
P0-36	Forward/reversal rotation switch mode	0: zero frequency switch 1: starting frequency switch 2: stop frequency switch	0
P0-37	Accelerate/decelerate mode	0: accelerate/decelerate in straight line 1: accelerate/decelerate in s curve	0
P0-38	S starting segment level	0%~100%	0%
P0-39	S arriving segment level	0%~100%	0%
P0-40	Power-on operation control	0: invalid command of power-on terminal 1: valid command of power-on terminal	1
P0-89	Motor code	0~100	0
P0-90	Parameter Packet Settings		
P1: Superior Function Parameters Group			
P1-00	Acceleration time 2	0.0s~3600.0s	5.0s
P1-01	Deceleration time 2	0.0s～3600.0s	5.0s
P1-02	Acceleration time 3	0.0s~3600.0s	10.0s
P1-03	Deceleration time 3	0.0s~3600.0s	10.0s
P1-04	Acceleration time 4	0.0s~3600.0s	20.0s
P1-05	Deceleration time 4	0.0s~3600.0s	20.0s
P1-06	Jogging-run frequency	0.00Hz~maximum frequency (P0-02)	5.00Hz
P1-07	Jog acceleration time	0.0s~3600.0s	5.0s
P1-08	Jog deceleration time	0.0s~3600.0s	5.0s
P1-09	Leap frequency 1	0.00Hz~maximum frequency (P0-02)	0.00Hz
P1-10	Range of leap frequency 1	0.00Hz~50.00Hz	0.00Hz
P1-11	Leap frequency 2	0.00Hz~maximum frequency (P0-02)	0.00Hz
P1-12	Range of leap frequency 2	0.00Hz~50.00Hz	0.00Hz
P1-13	Leap frequency 3	0.00Hz~maximum frequency (P0-02)	0.00Hz
P1-14	Range of leap frequency 3	0.00Hz~50.00Hz	0.00Hz
P1-15	Processing mode of leap frequency	0: do not process during acceleration/ deceleration 1: process during acceleration/ deceleration	0
P1-16	Wake-up frequency	P1-18~maximum frequency (P0-02)	0.00Hz

P1-17	Delay time of wake-up	0.0s~6500.0s	0.0s
P1-18	Sleep frequency	0.00Hz~P1-16	0.00Hz
P1-19	Delay time of sleep	0.0s~6500.0s	0.00s
P1-20	Set mode of swing frequency	0: around central frequency 1: around maximum frequency	0
P1-21	Range of swing frequency	0.0%~100.0%	0.0%
P1-22	Range of Snap-through frequency	0.0%~50.0%	0%
P1-23	Swing up time	0.1s~6000.0s	0.1s
P1-24	Swing down time	0.1s~6000.0s	0.1s
P1-25	Set length	0.0m~6000.0m	0.0m
P1-26	Current length	0.0m~6000.0m	0.0m
P1-27	Pulse per meter	0.1~6000.0	0.1
P1-28	Set the count value	1~60000	0
P1-29	Specify the count value	1~60000	0
P1-30	Set running duration	0h~6000.0h	0.0h
P1-31	Detection value of frequency	0.00Hz~630.00Hz	50.00Hz
P1-32	Lagged detection value of frequency	0.0~100.0%	5.0%
P1-33	Frequency reach detected extent	0.0~100.0%	2.0%
P1-34	Choice with frequency lower than limit value	0: run with lower limit frequency 1: delay stop	0
P1-35	Delayed stop time with frequency lower than limit value	0.0s~6000.0s	0.0s
P1-36	Enabling control of AVR	0: disable 1: enable 2: disable during speed down	0
P1-37	Jogging enabling during operation	0: disable 1: enable	0
P1-38	Operation enabling with phase-loss input	0: disable 1: enable	1
P1-39	Delay of stop frequency	0.0s~100.0s	0.0s
P1-40	Restart permission after power failure	0: prohibited 1: permitted	0
P1-41	Latency time of power failure restart	0.0s~3600.0s	0.0s
P1-42	Delay of restart	0.0s~60.0s	0.0s
P2: Input/output Terminal Parameters Group			

P2-00	DI1 terminal function selection	0: no function 1: forward operation 2: reversal operation 3:trilinear operation control 4: forward jogging 5: reversal jogging 6: terminal UP 7: terminal DOWN 8: free stop 9: reset faults (RESET) 10: operation paused 11: spare 12: external input faulted (normally open) 13: multi-velocity terminal 1 14: multi-velocity terminal 2 15: multi-velocity terminal 3 16: multi-velocity terminal 16 17: terminal selection of acceleration/deceleration 18: UP/DOWN setting reset 19: spare 20: acceleration/deceleration prohibited 21: PID paused 22: PLC status reset 23: swing frequency paused 24: counter input 25: counter reset 26: length counter input 27: length counter reset 28: spare 29: switch frequency source to AI 30: spare 31: switch keyboard command source 32: switch terminal command source 33: spare 34: switch frequency source 35: lock operation frequency 36: select dominant frequency source 37: select auxiliary frequency source 38: spare	1
P2-01	DI2 terminal function selection		2
P2-02	DI3 terminal function selection		3
P2-03	DI4 terminal function selection		4
P2-04	DI5 terminal function selection		5
P2-05	Spare		
P2-06	DI filtering time	1~22000	5
P2-07	Terminal command mode	0: bilinear 1 1: bilinear 2 2: trilinear 1 3: trilinear 2	0
P2-08	Terminal UP/DOWN velocity	0.01Hz/s~100.00Hz/s	1.00Hz/s

P2-09	Spare		
P2-10	Spare		
P2-11	Spare		
P2-12	Spare		
P2-13	Spare		
P2-14	Spare		
P2-15	AI minimum input	0.00V~P2-17	0.00V
P2-16	Corresponding set of AI minimum input	-100.0%~100.0%	0.0%
P2-17	AI maximum input	P2-15~10.00V	10.00V
P2-18	Corresponding set of AI maximum input	-100.0%~100.0%	100.0%
P2-19	Filtering time of AI input	0.000s~1.000s	0.010s
P2-20	Spare		
P2-21	Spare		
P2-22	Spare		
P2-23	Spare		
P2-24	Spare		
P2-25	Spare		
P2-26	Spare		
P2-27	Spare		
P2-28	Spare		
P2-29	Spare		
P2-30	Spare		
P2-31	Spare		
P2-32	Spare		
P2-33	Spare		
P2-34	Valid status selection of DI input	0~255	0
P2-35	RELAY output selection	0: no output 1: inverter is operating 2: faults output 3: Frequency detected level FDT reached 4: frequency reached 5: upper frequency limit reached 6: lower frequency limit reached 7: during zero speed operation 8: overload pre-alarm of motor 9: overload pre-alarm of inverter 10: set count value reached 11: specified count value reached 12: length reached 13: PLC operating 14: PLC segment finished 15: PLC finished loop	5

		16: PLC paused 17: operation time reached 18: communication control 19: terminal control 20: spare 21: zero current detected 22: signal released 23: DO output of software overcurrent 24: spare	
P2-36	Spare		1
P2-37	Spare		2
P2-38	Spare		0
P2-39	Spare		
P2-40	Valid status selection of DO output	0~15	0
P2-41	Delay time of RELAY output	0.0s~3600.0s	0.0s
P2-42	Spare		
P2-43	Spare		
P2-44	Spare		
P2-45	AO output selection	0: operational frequency 1: set frequency 2: output current 3: output voltage 4: AI 5: length value 6: count value 7: communication control output	0
P2-46	AO output lower limit	0.0%~P2-48	0.0%
P2-47	Corresponding voltage value of AO output lower limit	0.00V~P2-49	0.00V
P2-48	AO output upper limit	P2-46~100.0%	100.0%
P2-49	Corresponding voltage value of AO output upper limit	P2-47~10.00V	10.00V
P2-50	Spare		
P2-51	Spare		
P2-52	Spare		
P2-53	Spare		
P2-54	Spare		
P3: Inverter and Motor Parameters Group			
P3-00	Rated current of inverter	Manufacture's parameter	Depends on model
P3-01	Rated voltage of inverter	Manufacture's parameter	Depends

			on model
P3-02	Maximum voltage output of inverter	0%~100%	100%
P3-03	Current stall level during acceleration	20%~220%	150%
P3-04	Current stall level during operation	20%~220%	150%
P3-05	Overload alarm enabling	0~1	1
P3-06	Overload coefficient	0.20~10.00	1.00
P3-07	Stall point of bus line voltage	100%~200%	120%
P3-08	Enabling control of voltage stall	0=disable 1=enable	0
P3-09	Rated current of motor	0.1A~6553.5A	Motor nameplate
P3-10	Rated voltage of motor	0V~480V	Motor nameplate
P3-11	Rated frequency of motor		Motor nameplate
P3-12	No-load current		0.0A
P3-13	Stator resistance	0.001Ω~65.535Ω	3.50Ω
P3-14	Rotation speed ratio of motor	0.01~100.00	28.50
P4: Simple PLC Operation Parameters Group			
P4-00	Operation mode of PLC	0: stop the machine after single operation 1: retain final value after single operation 2: continuous loop	0
P4-01	Power failure memory selection of PLC	0: do not memorize in power failure 1: memorize in power failure	0
P4-02	Simple restart selection of PLC	0: start operation from 0^{th} segment 1: start operation from last interrupted frequency	0
P4-03	Time unit of PLC operation	0: s (second) 1: min (minute)	0
P4-04	Multi-velocity 0	-100.0%~100.0%	0.0%
P4-05	Multi-velocity 1	-100.0%~100.0%	0.0%
P4-06	Multi-velocity 2	-100.0%~100.0%	0.0%
P4-07	Multi-velocity 3	-100.0%~100.0%	0.0%
P4-08	Multi-velocity 4	-100.0%~100.0%	0.0%

P4-09	Multi-velocity 5	-100.0%~100.0%	0.0%
P4-10	Multi-velocity 6	-100.0%~100.0%	0.0%
P4-11	Multi-velocity 7	-100.0%~100.0%	0.0%
P4-12	Multi-velocity 8	-100.0%~100.0%	0.0%
P4-13	Multi-velocity 9	-100.0%~100.0%	0.0%
P4-14	Multi-velocity 10	-100.0%~100.0%	0.0%
P4-15	Multi-velocity 11	-100.0%~100.0%	0.0%
P4-16	Multi-velocity 12	-100.0%~100.0%	0.0%
P4-17	Multi-velocity 13	-100.0%~100.0%	0.0%
P4-18	Multi-velocity 14	-100.0%~100.0%	0.0%
P4-19	Multi-velocity 15	-100.0%~100.0%	0.0%
P4-20	0th PLC operation time	0.0s(h)~6000.0s(h)	0.0s(h)
P4-21	1st PLC operation time	0.0s(h)~6000.0s(h)	0.0s(h)
P4-22	2nd PLC operation time	0.0s(h)~6000.0s(h)	0.0s(h)
P4-23	3rd PLC operation time	0.0s(h)~6000.0s(h)	0.0s(h)
P4-24	4th PLC operation time	0.0s(h)~6000.0s(h)	0.0s(h)
P4-25	5th PLC operation time	0.0s(h)~6000.0s(h)	0.0s(h)
P4-26	6th PLC operation time	0.0s(h)~6000.0s(h)	0.0s(h)
P4-27	7th PLC operation time	0.0s(h)~6000.0s(h)	0.0s(h)
P4-28	8th PLC operation time	0.0s(h)~6000.0s(h)	0.0s(h)
P4-29	9th PLC operation time	0.0s(h)~6000.0s(h)	0.0s(h)
P4-30	10th PLC operation time	0.0s(h)~6000.0s(h)	0.0s(h)
P4-31	11th PLC operation time	0.0s(h)~6000.0s(h)	0.0s(h)
P4-32	12th PLC operation time	0.0s(h)~6000.0s(h)	0.0s(h)
P4-33	13th PLC operation time	0.0s(h)~6000.0s(h)	0.0s(h)
P4-34	14th PLC operation time	0.0s(h)~6000.0s(h)	0.0s(h)
P4-35	15th PLC operation time	0.0s(h)~6000.0s(h)	0.0s(h)
P4-36	Acceleration/deceleration n time selection of 0^{th}-7^{th} simple PLC	0~65535	0
P4-37	Acceleration/deceleration n time selection of 8^{th}-15^{th} simple PLC	0~65535	0
P5: process PID parameters group			
P5-00	Commanded source of PID	0: P0501 1: AI 2: multi-velocity	0
P5-01	Preset value of PID	-100.0%~100.0%	0.0%
P5-02	Feedback source of PID	0: AI	0
P5-03	Applied direction of PID	0: positive application 1: negative application	0
P5-04	Proportional gain P	0.00~10.00	1.00
P5-05	Integration time I	0.00s~10.00s	1.00s

P5-06	Differentiation time D	0.000s~1.000s	0.000s
P5-07	Sampling period of PID	0.00s~100.00s	0.00s
P5-08	Deviation limit	0%~100%	0%
P5-09	Upper limit of integration	0%~110%	100%
P5-10	Upper bound of PID output	-100.0%~100.0%	100.0%
P5-11	Lower bound of PID output	-100.0%~100.0%	0.0%
P6: communication and panel parameters group			
P6-00	Localhost	0~254, 0 is the broadcast address	1
P6-01	Baud rate	1: 600BPS 2: 1200BPS 3: 2400BPS 4: 4800BPS 5: 9600BPS 6: 19200BPS 7: 38400BPS	5
P6-02	Data format	0: no calibration 1: even-parity check 2: odd check	0
P6-03	Data frame type	0: ASCII 1: RTU CRC with lowest 8 bit in the front 2: RTU CRC with highest 8 bit in the front	1
P6-04	Response delayed	0ms~200ms	2ms
P6-05	Spare		
P6-06	LED displayed content 1 during operation	BIT0: operational frequency BIT1: set frequency BIT2: bus line voltage BIT3: output voltage BIT4: output current BIT5: rotation speed of operation BIT6: line velocity BIT7: output power BIT8: commanded value of PID BIT9: feedback value of PID BIT10: input terminal status BIT11: output terminal status BIT12: temperature of radiator BIT13: spare BIT14: length value BIT15: PLC and current gear of multi-velocity	65535
P6-07	LED displayed content 2	BIT0: analog AI value	255

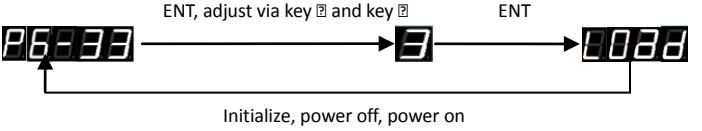
	during operation	BIT1: spare BIT2: spare BIT3: spare BIT4: overload percentage of motor BIT5: overload percentage of inverter BIT6~15: retain	
P6-08	LED display content selection when machine stopped	BIT0: set frequency BIT1: bus line voltage BIT2: input terminal status BIT3: output terminal status BIT4: give value of PID BIT5: feedback value of PID BIT6: AI value of analog BIT7: Spare BIT8: Spare BIT9: Spare BIT10: PLC and current segments of multi-speed BIT11: Spare BIT12: length value BIT13: temperature of radiator	16383
P6-09	Alter display priority of operation frequency	0: do not take priority 1: take priority	0
P6-10	Function selection of *QUICK* KEY	0: check the last status 1: forward rotating jogging 2: reversal rotating jogging 3: reversal rotation 4: forward/ reversal switch 5: clear *Up/Down* 6: free stop 7: switch command source	0
P6-11	Command source switch settings of *QUICK* key	0: keyboard control→ terminal control → communication control 1: keyboard control←→terminal control 2:keyboard control ←→communication control	0
P6-12	Function of *STOP/RES* key	0: *STOP/RES* key is able to stop machine only under keyboard control mode 1: *STOP/RES* key is able to stop machine under all control modes	0
P6-13	Recent fourth abnormal record	Unchangeable	
P6-14	Recent third abnormal	Unchangeable	

	record		
P6-15	Recent second abnormal record	Unchangeable	
P6-16	Recent first abnormal record	Unchangeable	
P6-17	Frequency of last faults	Unchangeable	
P6-18	Current of last faults	Unchangeable	
P6-19	Direct voltage of last faults	Unchangeable	
P6-20	DI status of last faults	Unchangeable	
P6-21	DO status of last faults	Unchangeable	
P6-22	Permitted auto-reset frequency of faults	0~99	3
P6-23	Reset intervals of faults	0.1s~60.0s	2.0s
P6-24	Zero clearing auto-reset time of faults	0.1h~999.9h	1.0h
P6-25	Cumulative running time	Unchangeable	
P6-26	Cumulative running time (h)	Unchangeable	
P6-27	Cumulative running frequency (0~9999)	Unchangeable	
P6-28	Cumulative running frequency (10k times)	Unchangeable	
P6-29	Batch No.	Unchangeable	
P6-30	Software version	Unchangeable	
P6-31	Inverter model	Unchangeable	
P6-32	User's password	Unchangeable	
P6-33	Parameter operation management	0: do not protect any parameter 1: protect all parameters except P000 2: protect all parameters 3: reset to factory defaults 4: initialize the faults record	0
P7: protection parameters group			
P7-00	Current calibration of inverter	0%~200%	100%
P7-01	Zero current detected level of inverter	0%~220%	5%
P7-02	Overcurrent point of inverter	0%~500%	220%
P7-03	Standard point of bus line voltage	90%~110%	100%
P7-04	Overvoltage point of bus line voltage	100%~150%	130%
P7-05	Undervoltage point selection	30%~120%	50%

P7-06	Radiator fan control	0: operate with power-on 1: operate with drive 2: operate when temperature reach 45 °C 3: do not operate	1
P7-07	Spare		
P7-08	Superheat temperature	60 °C~115 °C	80 °C
P7-09	AI set value 1	0.50 V~3.00V	2.00V
P7-10	AI actual value 1	0.50 V~3.00V	2.00V
P7-11	AI set value 2	3.00V~10.00V	4.00V
P7-12	AI actual value 2	3.00V~10.00V	4.00V
P7-13	Spare		
P7-14	Spare		
P7-15	Spare		
P7-16	Spare		
P7-17	Spare		
P7-18	Spare		
P7-19	Spare		
P7-20	Spare		
P7-21	Carrier frequency	2.0kHz~16.0kHz	4.0KHZ
P7-22	Dead time	2.0uS~12.0uS	3.0us
P7-23	Dead-time compensation mode selection	0: no compensation 1: compensation	1
P7-24	Manufacture's password	Retain	
P7-25	Drainage voltage	100%~200%	120%
P7-26	Drainage function enabling	0: disable 1: enable	1

4.2 Parameter Initialization

Inverter will reset all parameters to factory defaults after following operations:



Chapter 5 Monitoring Mode Introduction

Monitoring mode can display the input and output of inverter.

Codes displayed on inverter panel include:

LD-00	Operation frequency	Display current operation frequency of inverter, unit: Hz
LD-01	Set frequency	Display current set frequency of inverter, unit: Hz
LD-02	Bus line voltage	Display current direct current bus line voltage
LD-03	Output voltage	Display current output voltage value of inverter
LD-04	Output current	Display valid value of current output current of inverter
LD-05	Rotation speed	Display current rotation speed of inverter
LD-06	Line speed	Display current line speed of inverter
LD-07	Output power	Display output power of inverter
LD-08	Commanded value of	Display commanded value of PID with a range of
LD-09	Feedback value of PID	Display feedback value of PID with a range of 100%-100%
LD-10	Input terminal status	Display current status of input terminal of inverter, convert the displayed decimal figures into binary figures and put on 1 when input terminal is ON.
LD-11	Output terminal status	Display current status of output terminal of inverter, convert the displayed decimal figures into binary figures and put on 1 when output terminal is ON.
LD-12	Radiator temperature	Display current temperature of radiator of inverter
LD-13	Spare	
LD-14	Length value	Display current length value of inverter
LD-15	PLC and current gear of	Display PLC and current gear of multi-velocity
LD-16	Analog AI value	Display current analog AI input of inverter
LD-17	Spare	
LD-18	Spare	
LD-19	Spare	
LD-20	Overload percentage of	Display overload percentage of motor
LD-21	Overload percentage of	Display overload percentage of inverter

Chapter 6 Faults Detection and Troubleshooting

Inverter VD100 offers multiple alarm information and protection functions. Once the abnormal situation emerged, protection is enabled, inverter cease input, faulted relay conduct jogging operations and fault code will show up on inverter display panel. Users can conduct self-inspect following the instructions in this section to figure out failure causes and solutions. If fail to do troubleshooting, please seek for technical support which is accessible via the inverter agent or contact with our company directly.

6.1 Faults Detection and Troubleshooting

Fault	Display	Cause	Solution
Acceleration overcurrent	UP-OC(hardware current detected overcurrent) UPOC1(module) UP=OC(software current detected overcurrent)	1. earthing or short-circuit exist in output circuit of inverter 2. inadequate acceleration time 3. lift the torque manually or the V/F curve is improper 4. voltage is too low 5. give a start command to the rotating motor 6. sudden load change during acceleration 7. this model of inverter is too small to bear the load	1. rule out external faults 2. augment the acceleration time 3. adjust manual lifting torque or V/F curve 4. adjust the voltage to normal levels 5. select speed-tracking start mode or start after the motor is stopped completely 6. remove the sudden load change 7. adopt a inverter with larger power scale
Deceleration overcurrent	dn-OC(hardware current detected overcurrent) dnOC1(module) dn=OC((software current detected overcurrent)	1. earthing or short-circuit exist in output circuit of inverter 2. inadequate deceleration time 3. voltage is too low 4. sudden load change during deceleration 5. no added braking component or braking resistance	1. rule out external faults 2. augment the deceleration time 3. adjust the voltage to normal levels 4. remove the sudden load change 5. add braking component and resistance
Constant speed overcurrent	rn-OC(hardware current detected overcurrent) rnOC1(module) rn=OC((software current detected overcurrent)	1. check if short-circuit or leakage current exist in output circuit of inverter 2. check if load change suddenly during operation 3. load is too large and the this model of inverter is too small to bear the load	1. rule out external faults 2. remove the sudden load change 3. adopt a inverter with larger power scale or lessen the load
Stop overcurrent	OC(hardware current	1. check if short-circuit or	1. check if short-circuit or leakage

	detected overcurrent) OC1(module) =OC((software current detected overcurrent)	leakage current exist in output circuit of inverter 2. module damaged	current exist in output circuit of inverter 2. seek for technical advice
Acceleration overvoltage	UP-OU UP=OU	1. input voltage is too high 2. external forces exist during motor operation 3. inadequate acceleration time 4. no added braking component or braking resistance	1. adjust the voltage to normal levels 2. remove the external force or add braking resistance 3. augment the acceleration time 4. add braking component and resistance
Deceleration overvoltage	dn-OU dn=OU	1. input voltage is too high 2. external forces exist during motor operation 3. inadequate deceleration time 4. there is no added braking component or braking resistance	1. adjust the voltage to normal levels 2. remove the external force or add braking resistance 3. augment the deceleration time 4. add braking component and resistance
Constant speed overvoltage	rn-OU rn=OU	1. input voltage is too high 2. external forces exist during motor operation	1. adjust the voltage to normal levels 2. remove the external force or add braking resistance
Stop overvoltage	OU(hardware overvoltage) =OU(software overvoltage)	1. input voltage is too high 2. external forces exist during motor operation	1. adjust the voltage to normal levels 2. remove the external force or add braking resistance
Undervoltage faults	UP-LU dn-LU rn-LU LU	1. instantaneous power failure 2. output voltage of the inverter exceeds beyond the required range 3. bus line voltage is abnormal 4. rectifier bridge and snubber resistance is abnormal 5. drive board is abnormal 6. control board is abnormal	1. reset the fault 2. adjust the voltage to normal levels 3. seek for technical support 4. seek for technical support 5. seek for technical support 6. seek for technical support
Motor overload	OL1	1. check whether motor protection parameter P3-06 has been properly set 2. check if load is too large or motor is blocked 3. this model of motor is too small	1. set the parameters properly 2. lessen the load and examine the motor and machine 3. adopt inverter with larger power scale

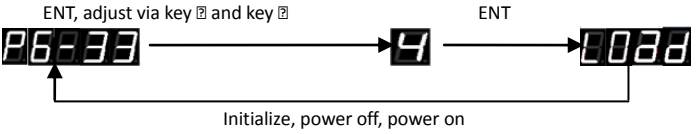
Inverter overload	OL2		
Input phase-loss	-LPh(stop) rnLPh(run)	1. three-phase input power is abnormal 2. driver board is abnormal 3. 3. main-board is abnormal	1. check and rule out problems of peripheral circuit 2. seek for technical support 3. seek for technical support
Module overheat	OH	1. environment temperature is overheat 2. air duct blocked 3: fan damaged 4. thermistor of the module damaged 5. inverter module damaged	1. cool down the environment temperature 2: clear the air duct 3. replace the fans 4: seek for technical support and replace the thermistor 5: seek for technical support and replace the inverter module
External device faulted	-Eln	1. input external faults signal via multi-function terminal DI	1. check and remove external faults
Current sensor faulted	EH	1. current detecting circuit component damaged	1. seek for technical advice

6.2 Alarm Record Query

Please refer to P6-13~P6-21 for alarm record query. Alarm content and operation status of inverter in latest alarm is supported in query.

6.3 Alarm Record Initialization

For alarm record clear-up of the inverter, alarm detected record (alarm record) can be monitored via P6-13`P6-21 and alarm record initialization can be realized with proper parameter settings which is specified in P6-33. Please conduct the operations below:



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