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Please pay attention to the following suggestions:

- Make sure the power has been completely cut off for more than 10 minutes when you do the wiring, or else there is risk of electric shock.
Do separating operation on the power line and the inverter output terminal U, V, W.
Inverters and motor should be grounding because of leakage current within itself. It is advised to use ordinary copper wire whose diameter is above, 3.5mm² and grounding resistance is less than 10Ω
All inverters have completely passed the pressure test.
Contactor and absorption of electromagnetic or other resistance-capacitance capacitor absorbing device can not be installed between the inverter and the motor
Please connect inverter to power supply through circuit breaker. In order to protect well in the case of over-current and power off.
Please use shielded twisted wire or cable whose diameter is more than 0.75 mm² when do the wiring on connection between relay and output circuit. Leave one terminal into the space and the other connect to the COM terminal, ensure the wiring line is less than 50m.
Do the separation on the main circuit and control circuit wiring, if necessary cross the intersection with 90°.

Function of jumpers

Table with 4 columns: No., Function, Setting, Default value. Row 1: JP3, CI input signal selection terminal selection(current/voltage), Connect 1-2:V side, voltage signal input 0~10V. Connect 2-3:1 side, current signal input 4~20mA., 4~20mA

4 Parameters Setting(Refer to attached table)

5 Specification

Electric Specification table with columns: Type, VBS-20P7, VBS-21P5, VBS-22P2. Rows include: Output (Matched motor(KW), Rated current(A), Rated voltage(V), Frequency Range, Frequency Resolution(Hz), Over-loading Ability), Input (Rated Voltage/Frequency, AC voltage permit fluctuate range, Frequency fluctuate Range, Power Capacity(KVA)).

Common Characteristics

Table with 2 columns: Environment, Structure, Installation. Rows include: Application environment, Elevation, Ambient Temperature, Humidity, Vibration, Storage Temperature, Protect Configuration, Cooling Manner, Installation.

General Specification

Main Function table with columns: Modulation mode, Frequency precision, Frequency resolution, Start frequency, Torque boost, V/FFF curve, Accelerate/Decelerate curve, DC braking, Power consumption braking, Jog, Internal PI, Multi-step speed running, Textile wobble frequency, Auto voltage regulation (AVR), Auto energy saving mode, Auto current limiting, Fix-length control, Communication function, Command mode, Running function, Digital panel.

Table with 3 columns: Key Lock, Parameter Copy, protect function, Option parts. Describes lock functions and protection features like over voltage protection, under voltage protection, over heat protection, etc.

6 Alarm diagnoses and solutions

The LED lights indicate alarm code automatically when there is a problem in the inverters, at the same time ,the alarm relay takes into action ,leading the inverter to a stop. Note the running motor coasts to a stop when alarm appears . Causes and solutions can be checked out based on the error code, and device built in inverter records the latest 6 errors, more details please refer to the parameters group P6.

Alarm code table with columns: Alarm code, Description, Causes, Solutions. Lists errors E-01 to E-17 with details on what caused them and how to resolve them.

Parameters setting

- Means the parameters can be modified during running
Means the parameters don't be allowed to be modified during running
*: Read only, can't be modified

Basic parameters (Group P0)

Group P0:Basic Parameters table with columns: Code, Name, Range, Unit, Default setting, Note. Lists P0.00 to P0.01.

Large parameter table with columns: Code, Name, Setting, Unit, Default, Note. Contains P0.02 to P0.28.

Frequency setting parameters(Group P1)

Group P1: Frequency setting parameters table with columns: Code, Name, Setting range, Unit, Default setting, Note. Lists P1.00 to P1.16.

Starting & Braking Parameters(Group2)

P2 Group: starting and braking parameters table with columns: Code, Name, Setting Range, Unit, Default setting, Note. Lists P2.00 to P2.06.

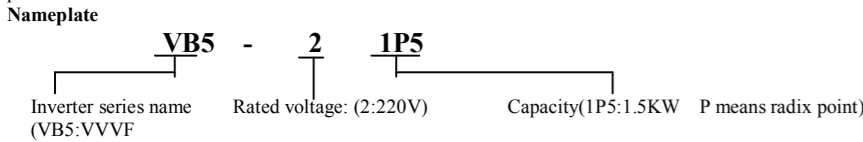
1 Preface

Thanks for using XINJE VBS series AC Inverters. Please read this manual carefully before you do the operations .This manual describes the procedures for operation and maintenance, including the installation ,parameters setting ,malfunction diagnose and maintenance.

- Cut off external power supply before installation and wiring.
Make sure the power supply of main circuit meets the requirement of inverters well, connect the ground terminal to earth.
Do not touch the output terminals and avoid any contact with the shell.
Do not touch the internal circuit and component after turning power off until the indicating light is off of the digital panel on the inverter ,because high voltage may still remain in the inverter.
Avoid dirt and dust into the internal of inverters because the component built in inverters is sensitive to static electricity.

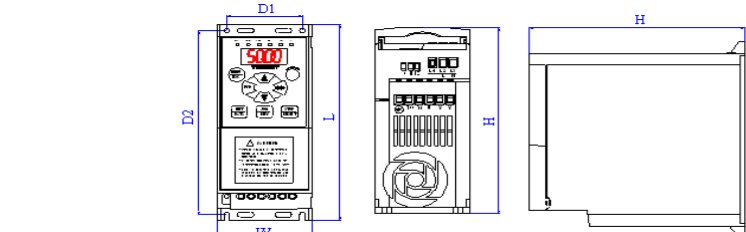
2 Delivery checking

Using the following when products are delivered: Is there any damage during the delivery? Are the delivery products the ones that were ordered?



If there is a problem please contact with Xinje or an authorized distributor.

Dimension (Unit: mm)

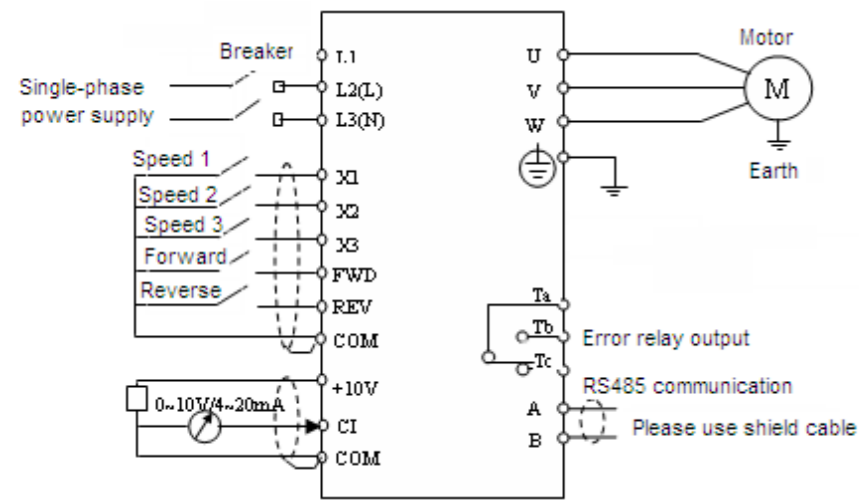


More details please refer to the following diagram:

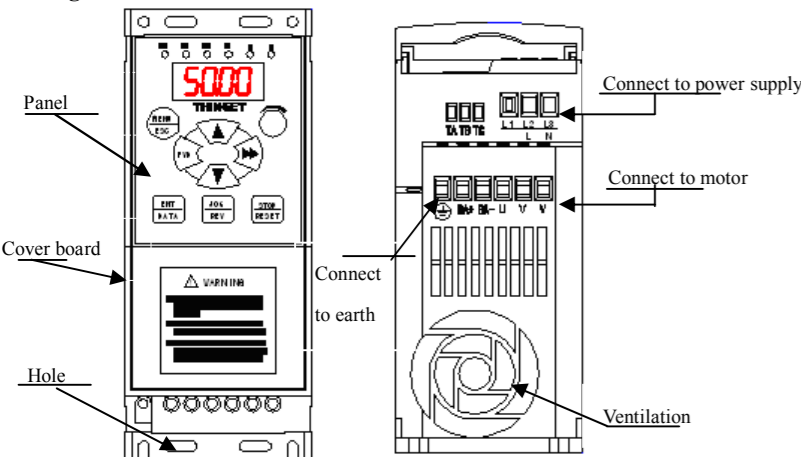
Table with 6 columns: Model, W, D1, L, D2, H. Rows for VBS-20P7, VBS-21P5, VBS-22P2.

3 Wiring

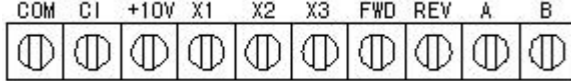
Please pay attention to the main circuit and control circuit when do the wiring on AC inverters and refer to the following diagram(the diagram as below is the standard wiring picture). The control circuit is idle during the operation .by the digital panel. (Note: VBS-2 inverter as a standard single-phase type connect to power supply with L2(L),L3(N)terminals)



Wiring on main circuit



Terminals on control circuit



Terminal table with columns: Terminal, Name, Description. Lists terminals COM, CI, +10V, X1-X3, FWD, REV, A, B.

PF.03～PF.10	Reserve	-	-	-	*
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B—Monitor function parameters

Code	Name	Description	Unit	Default setting	Note
b-00	Output frequency	Present output frequency	0.01Hz		*
b-01	Reference frequency	Present reference frequency	0.01Hz		*
b-02	Output voltage	Valid value of present output voltage	1V		*
b-03	Output current	Valid value of present output current	0.1A		*
b-04	Bus voltage	Present DC bus voltage	1V		*
b-05	Module temperature	IGBT Temperature of heatsink	10C		*
b-06	Motor overload speed	Current speed of motor	1r/min		*
b-07	Operating time	One continues operating time of inverter	1hour		*
b-08	Input/output terminal's status	Digital input/output terminal's status	—		*
b-10	Analog input C1	Value of analog input C1	0.01V		*
b-11	External pulse input	Input value of external pulse range	1ms		*
b-12	Inverter rated current	Inverter rated current	0.1A		*
b-13	Inverter rated voltage	Inverter rated voltage	1V		*
b-14	Display without unit	Display without unit	1		*
b-15	Inverter power class	Inverter power class	-		*
b-16	Display present counter value	Display present counter value	-		*
b-17	Reserve	-	-		*
b-18	Reserve	-	-		*
b-40	Reserve	-	-		*

7 Communication parameter

Name	Address	Function	
Internal parameters setting	GGnnH	GG means parameter group NO., nn means parameters NO.	
Command to inverter (06H)	2000H	0001H:Run command (forward)	
		0002H:Forward running command	
		0003H:Reverse running command	
		0004H:Jog command(forward)	
		0005H: Jog forward running command	
		0006H: Jog reverse running command	
		0007H:Dec to a stop	
		0008H: Emergency stop command	
		0009H: Jog stop command	
		000AH: Fault reset command	
		2001H	Frequency command setting via port
		2100H	Read Inverter's alarm code
Monitoring status (03H)	2101H	Read Inverter's status	
		BIT0:Stop indicates, 0:stop, 1:run	
		BIT1: Under-voltage indication,1:under-voltage,0:normal	
		BIT2: Forward/reverse indicate,1:Reverse,0: forward	
		BIT3: Forward/reverse indicate,1: Jog,0:none	
		BIT4:Close loop control selection,1:close loop,0:none	
		BIT5: wobble mode running flag,1:traverse,0:none	
		BIT6:PLC running flag,1:PLC running,0: none	
		BIT7:Multi-speed running flag of terminals 1: Multi-speed; 0: None	
		BIT8: Common running flag 1:run as normal,0: none.	
		BIT9: Main frequency from communication interface,1:yes; 0:no	
		BIT10: Main frequency from analog input. 1:yes;0: no	
		BIT11: Running command from communication interface 1: yes; 0: no	
		BIT12: Password protection for parameters. 1:yes;0: no	
	2102H	Read inverter's reference frequency	
	2103H	Read inverter's output frequency	
	2104H	Read inverter's output current	
	2105H	Read inverter's bus voltage	
	2106H	Read inverter's output voltage	
	2107H	Read motor's speed	
	2108H	Read module temperature	
	2109H	Read analog input via V1	
	210AH	Read analog input via C1	
	210BH	Read inverter's software version	
	210CH	I/O terminal status	
		Bit0: X1	
		Bit1: X2	
		Bit2: X3	
Bit6: FWD			
Bit7: REV			
Bit9: relay output			
Read data from function code (03H)	GGnnH (GG: Group No. of function code, mn :function code)	Inverter responses to the data,When use Modbus address, the nn must be turned into hex	
Write data to function code (06H)	GGnnH (GG: Group No. of function code, mn :function code)	Data be wrote in the inverter, When use Modbus address, the nn must be turned into hex.	

Take the following as examples:

Read function code P1.02
01H, 03H, 01H, 02H, 00H, 01H, CRC1, CRC2
Read the reference frequency of inverter
01H, 03H, 21H, 02H, 00H, 01H, CRC1, CRC2
Write function code P1.02 with value 1
01H, 06H, 01H, 02H, 00H, 01H, CRC1, CRC2
Running command
01H, 06H, 20H, 00H, 00H, 01H, CRC1, CRC2

Definition of fault code

Fault code	Instruction
01H	Fault function code, Inverter can not find 03H, 06H, 08H.
02H	Fault data address, Inverter can not find data address
03H	Fault data, data over the limit

Note: The parameter address must be in hex format, as the function codes of parameters are in decimal system, so make sure turn them to hex format. For example, the Modbus address of function code P2.11 is 020BH.