05

Variable Frequency Drive

VH6 | VH1 | VHL | VH5

VH6 fully functional closed-loop vector inverter

VH6 series is a fully functional closed-loop vector converter developed by Xinje company. The product adopts vector control technology, which realizes the open-loop and closed-loop vector control of asynchronous and synchronous motors, and also strengthens the reliability and environmental adaptability of the product. In addition, the product provides a wealth of expansion cards for customers to choose from to meet customers' diversified needs.

It is suitable for machine tools, air compressors, papermaking, oil fields, municipal engineering, plastic machinery industry, metal processing, textile industry, printing and packaging, ceramic machinery, wood processing, cable processing, sewage treatment, and other fields.

Multifunctional Network Port

- Connect the LCD panel to realize dialogue interaction
- Connect the debugging software, observe the motion waveform and effectively analyze the problem
- The inverter software is easy to upgrade

Panel

- Chinese/English LCD display keyboard and LED keyboard are rich in information and convenient for debugging
- It has multi-functional combination keys, which can realize remote and local switching,emergency shutdown, etc
- The LCD panel contains a parameter storage chip, which is convenient for users to store,upload and download parameters. It is especially suitable for batch supporting customers, which can greatly save debugging time and improve installation efficiency
- Support up to 5m extension cable

Appearance and protection

- The new narrow book body design saves installation space
- EMC and high protection design, stable operation of equipment
- The built-in circuit board has enhanced protection, which can effectively resist the harsh environment such as humidity, corrosion and dust

I/O Expansion Card

- I/O terminals with different functions are designed in different colors, which greatly reduces the probability of user wiring errors
- The terminals are pluggable for easy maintenance and replacement
- Quick wiring of spring terminals, no need to worry about screw slip

PG card feedback

- Support photoelectric encoder and rotary encoder, suitable for high-precision driving occasions
- PG card supports 0 to 255 arbitrary frequency division multiple output
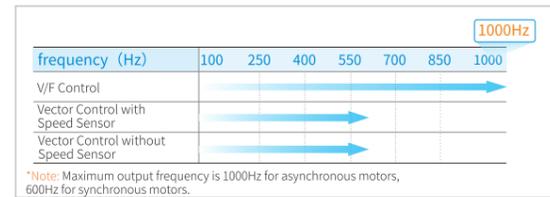- Support differential, collector and push-pull signal input

Motor adaptability

- Support asynchronous motor, synchronous motor
- Support three control modes VF / open loop vector / closed loop vector

Networking function

- Optional communication card CANopen，EtherCAT,Profinet, thernet/IP networking with control products
- Modbus communication is equipped with 32 groups of customer free mapping addresses to realize continuous reading of parameters
- The two-channel network ports are in from the bottom and out from the top, with switch function, and the wiring is clean and concise

Outstanding Product Performance

High-speed Operation

The maximum output frequency of the VH6 series has been increased to 1000Hz, suitable for applications requiring high-speed rotation and maximum control over speed and torque variations. High-frequency output is a primary focus of Xinje's long-term research.

frequency（Hz)	100	250	400	550	700	850	1000	1000Hz
V/F Control								
Vector Control with Speed Sensor								
Vector Control without Speed Sensor								

*Note: Maximum output frequency is 1000Hz for asynchronous motors, 600Hz for synchronous motors.
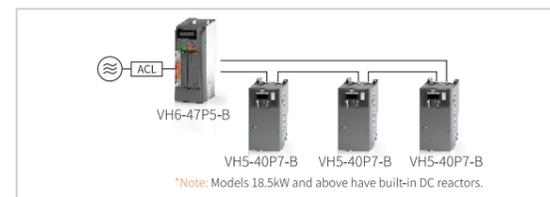
Enhanced Adaptability to Impact Loads

- Achieves the highest level of torque response to sudden, severe load changes.
- Using the motor's current feedback, the motor rotor's speed and position are used to regulate the motor's output current and torque, thereby minimizing changes in the motor's operating speed, which can suppress vibration.

100ms   100ms

Operating Speed

Suppressing Speed and Torque Variations During Tuning

Load Torque
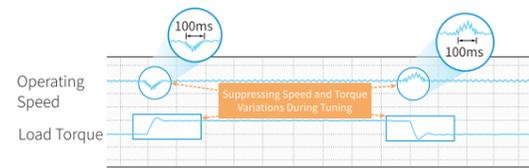
Energy Saving and Environmental Protection

- The DC reactor not only improves the power factor to achieve energy-saving effects but also weakens the initial power-on impact and reduces harmonic interference.
- Using a common DC bus allows multiple inverters to be connected. During deceleration, the regenerative energy is shared and can be consumed by other inverters, thereby achieving energy savings.

ACL

VH6-47P5-B

VH5-40P7-B   VH5-40P7-B   VH5-40P7-B

*Note: Models 18.5kW and above have built-in DC reactors.

Braking Unit Power Range Expanded

The standard configuration power range has been expanded, making the control cabinet structure more compact and cost-saving.

Power Range

Output (kW)	0.75	3.7	15	30	45	55	75	90	110	110kW
Three-phase 380V Series	Stay tuned									
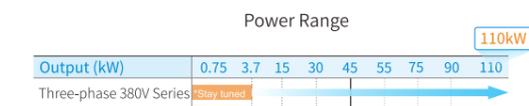
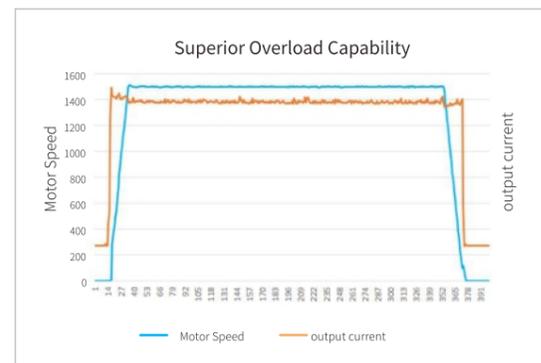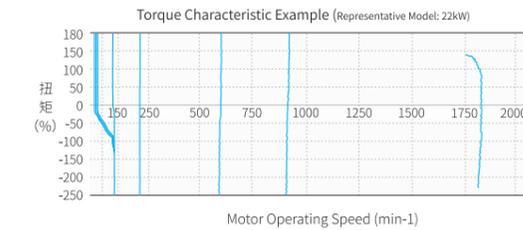## High Speed Regulation Accuracy

Expanded speed control range helps stabilize speed fluctuations and improves the precision of mechanical actions.

Speed Control Range (consistent with technical specifications)

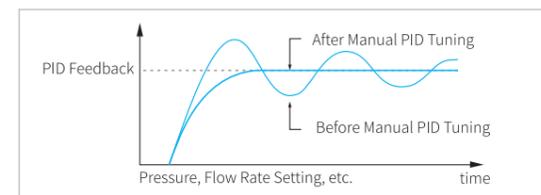| Asynchronous Motor	Control Method	Speed Ratio	Base Speed
	V/F Control	1：50	90rpm~1500rpm
	Vector Control without Speed Sensor	1：100	9rpm~1500rpm
	Vector Control with Speed Sensor	1：2000	3rpm~1500rpm

More Advanced Torque Vector Control

- The VH6 series is equipped with IGBT integrated modules, achieving up to 180% torque output when starting at 0.5Hz, while also supporting 150% heavy-duty output for 1 minute and 180% overload for 3 seconds every 300 seconds.
- Low frequency 0.5Hz — Starting torque 180%.

Torque Characteristic Example (Representative Model: 22kW)

扭
矩
（%)

Motor Operating Speed (min-1)

Superior Overload Capability

Motor Speed / output current
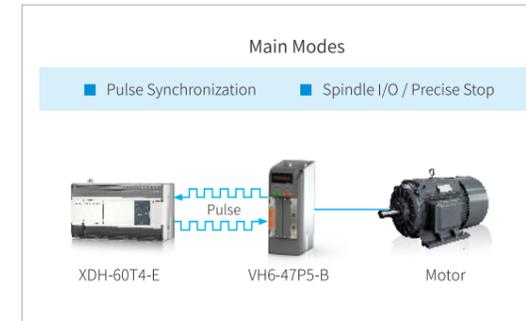
— Motor Speed   — output current

PID Function

Optimization can be achieved through manual adjustment of proportional and integral gains, making the PID set target value consistent with the PID feedback, shortening system startup time, etc.

After Manual PID Tuning

PID Feedback

Before Manual PID Tuning

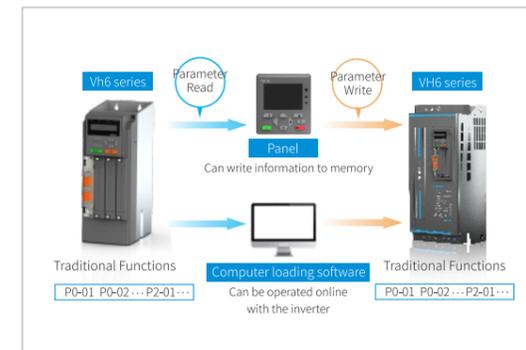Pressure, Flow Rate Setting, etc.   time

Positioning Function (Internal Testing Phase)

High-precision positioning control through pulse input and encoder feedback of pulse commands helps improve the accuracy, production efficiency, energy utilization, and safety of mechanical equipment.

Main Modes

- Pulse Synchronization
- Spindle I/O / Precise Stop

Pulse

XDH-60T4-E   VH6-47P5-B   Motor

Easy Parameter Transfer

Features a compatibility mode, allowing parameters from old models to be directly written into new models.

Vh6 series   Parameter Read   Parameter Write   VH6 series

Panel

Can write information to memory

Traditional Functions   Computer loading software   Traditional Functions

P0-01 P0-02 ⋯ P2-01⋯   Can be operated online with the inverter   P0-01 P0-02 ⋯ P2-01⋯

Optional External Panel

In addition to the standard 7-segment LED 5-digit display operator panel, optional operator panels with LCD screens and knob speed adjustment are also available.

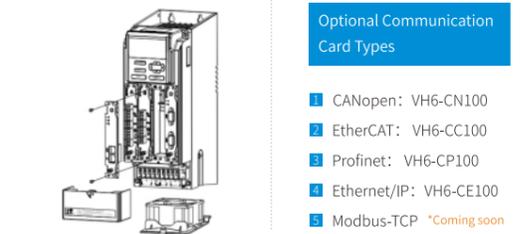| LCD Panel VH6-PC100	Knob Panel VH6-PE200
1 Text Display Equipped with an LCD screen of excellent clarity. Supports Chinese and English display and switching. Monitors inverter operating status.	**1 Indicator Light Display** Newly added current, voltage, and frequency display indicator lights for comprehensive monitoring of inverter operating status.
2 USB Interface Powers the LCD panel using a 5V power supply, e.g., a power bank. The inverter does not need to be powered on to perform operations such as adjusting parameters and downloading parameter sets.	**2 Easy Operation** The panel uses a potentiometer knob for speed adjustment, facilitating inverter debugging.
3 Built-in MCU Storage Chip One-click download and upload of backup parameters, supporting up to 10 sets of parameter backups. Allows parameter adjustments guided by Chinese prompts without the manual.	

Multiple Communication Methods

- Standard built-in isolated 485 communication interface supports Modbus-RTU communication protocol.ncy, energy utilization, and safety of mechanical equipment.
- Supports expansion with various mainstream bus communications.

Optional Communication Card Types

1 CANopen：VH6-CN100
2 EtherCAT：VH6-CC100
3 Profinet：VH6-CP100
4 Ethernet/IP：VH6-CE100
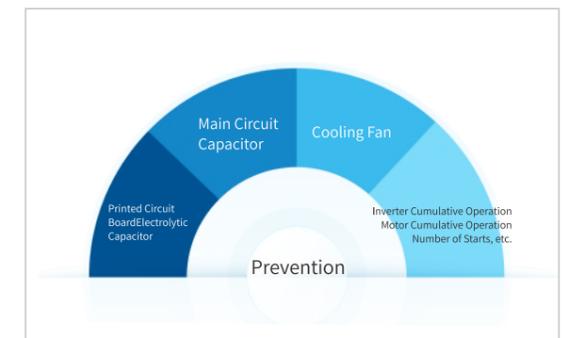5 Modbus-TCP *Coming soon

Convenient and Fast PC Debugging

- Using Xinje USB-to-serial converter and JC-EV-15 to connect the inverter to a PC, debugging through "Xinje Inverter Debugging Software" is more convenient,Improves debugging efficiency, and has file saving functionality.
- As a software accessory for the inverter, it enhances the product's overall capabilities.

Xinje Inverter Debugging Software
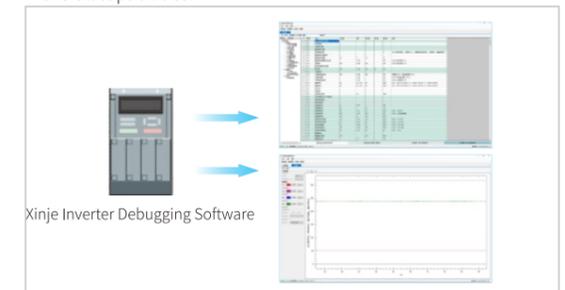
Life Diagnosis and Maintenance Functions

As standard, all inverters have internal temperature monitoring and can detect ambient temperature. Furthermore, the machine's status can be easily confirmed through the operator panel and PC software, allowing for early detection of potential faults, effectively reducing production equipment maintenance time and downtime.

Main Circuit Capacitor   Cooling Fan

Printed Circuit Board Electrolytic Capacitor

Inverter Cumulative Operation Motor Cumulative Operation Number of Starts, etc.

Prevention

Naming Rule

▌VH6 frequency inverter naming rule

$$\text{VH} \; \underline{6} \; \text{-} \; \underline{4} \; \; \underline{5P5} \; \text{-} \; \underline{B}$$
$$\quad ① \quad ② \quad ③ \quad\quad ④ \quad\quad ⑤$$

① Product code

Sign	Name
VH	General frequency inverter

② Product series

Sign	Name
6	Fully functional closed-loop vector converter (asynchronous motor)

④ Power level

Sign	Power level (kW)
0P7	0.75
1P5	1.5
…	…
5P5	5.5
…	…
011	11
018	18.5
055	55
075	75
090	90
110	110

③ Input voltage level

Sign	Power supply voltage
4	380V

⑤ Brake unit

Sign	Brake unit
B	Built-in brake unit
Vacant	No

Technical Parameters

Model	Power supply capacity (KVA)	Input current (A)	Output current (A)	Adaptive motor (kW)
		Three-phase 380V 50/60Hz		
VH6-43P7-B	5.9	11.0	9.0	3.7
VH6-45P5-B	8.9	14.6	13.0	5.5
VH6-47P5-B	11.0	20.5	17.0	7.5
VH6-4011-B	17.0	26.0	25.0	11.0
VH6-4015-B	21.0	35.0	32.0	15.0
VH6-4018-B	24.0	38.5	37.0	18.5
VH6-4022-B	30.0	46.5	45.0	22.0
VH6-4030-B	40.0	62.0	60.0	30.0
VH6-4037-B	63.0	69.0	75.0	37.0
VH6-4045-B	81.0	89.0	90.0	45.0
VH6-4055-B	97.0	106.0	110.0	55.0
VH6-4075-B	127.0	139.0	152.0	75.0
VH6-4090-B	150.0	164.0	176.0	90.0
VH6-4110-B	179.0	196.0	210.0	110.0
VH6-4132	220.0	240.0	253.0	132.0
VH6-4160	263.0	287.0	304.0	160.0
VH6-4185	293.0	343.0	360.0	185.0
VH6-4200	334.0	365.0	377.0	200.0
VH6-4220	375.0	410.0	426.0	220.0
VH6-4250	404.0	441.0	465.0	250.0
VH6-4280	453.0	495.0	520.0	280.0
VH6-4315	517.0	565.0	585.0	315.0
VH6-4355	565.0	617.0	650.0	355.0
VH6-4400	629.0	687.0	725.0	400.0
VH6-4450	716.0	782.0	820.0	450.0

Technical Specifications

Item name	VH6 high performance closed loop vector frequency inverter specification		
Input	Power range	3.7kW~450kW		
	Rated voltage, frequency	Three-phase 380V: three-phase 380V, 50/60Hz		
	Allowable voltage fluctuation range	Three-phase 380V: 320~440V		
Output	Voltage	0~input voltage		
	Frequency	0~1000Hz		
Control performance	Control motor type	Asynchronous motor, permanent magnet synchronous motor, variable frequency motor		
	Control mode	Vector control with speed sensor (FVC)	Vector control without speed sensor (SVC)	V/F control (VF)
	Speed precision	±0.2%	±0.5%	±1%
	Speed fluctuation	±0.2%	±0.3%	±0.5%
	Speed regulation range	1:2000	1:100	1:50
	Startup torque	0Hz:180%	0.5Hz:150%	1.0Hz:150%
	Torque accuracy	±5% rated torque	±10% rated torque	/
	Torque response	≤10ms	≤20ms	/
	Overload ability	150% rated current 60s		
	Frequency precision	Low frequency operation mode: 0.01Hz, high frequency operation mode: 0.1Hz		
	Frequency resolution	Low frequency operation mode: digital setting-- 0.01Hz, analog setting - - max frequency ×0.1% High frequency operation mode: digital setting - - 0.1Hz, analog setting - - max frequency ×0.1%		
Control terminal input	Digital input channel	Up to 7-channel digital input X, card A has 4-channel (X1~X4), resolution is less than 2ms, card B has 3-channel (X5~X7), X4 can support max 50kHz high speed pulse input		
	Analog input channel	Up to 3-channel analog input AI, card A has 2-channel (AI1, AI2), resolution is less than 20mV, card B has 1 channel (AI3). AI1, AI2 support 0~10V or 0~20mA input , AI3 support -10~10V input, can support PT100 input		
Control terminal output	Digital output channel	Up to 4-channel digital output Y, card A has 1 channel (Y1) + 1 channel (TA1TB1TC1), card B has 1 channel (Y2) + 1 channel (TA2TB2TC2).Y2 can support max 50kHz high speed pulse output		
	Analog analog channel	Up to 2-channel analog output AO, card A has 1 channel (AO1), card B has 1 channel (AO2) AO1, AO2 support the output 0~10V or 0~20mA		
Product performance	Start command given mode	Communication given (Modbus、CANopen、EtherCAT、Profinet、Ethernet/IP), operate panel given, terminal given		
	Frequency given mode	Communication given (Modbus, CANopen, EtherCAT), operate panel given, terminal given, analog AI given, multi-speed given, simple PLC given, PID main and auxiliary given		
	Typical function	Frequency main and auxiliary operation, no reverse rotation, torque increase, nine VF curve settings, five section AI curve settings, acceleration and deceleration curve settings, terminal delay and filtering, terminal multi-functional input and output, DC braking, dynamic braking, jog operation, 16-section speed, built-in two-channel PID, speed tracking restart, carrier modulation, fault recording, fault self reset, pre-excitation start, 30 groups of user-defined parameters		
	Important function	Carrier modulation, torque control, motor self-tuning, current limiting control, overvoltage control, undervoltage control, speed tracking, droop control, oscillation suppression, overvoltage overcurrent stall control, automatic voltage regulation (AVR), automatic energy-saving operation, etc		
	Protection function	Power on motor short circuit detection, input and output phase loss protection, overcurrent protection, overvoltage protection, undervoltage protection, overheat protection, overload protection, underload protection, overcurrent overvoltage stall protection, relay pull in protection, terminal protection, instantaneous power failure nonstop, etc		
	Dynamic braking	380V level driver: brake unit braking voltage: 650~750V. 3.7kW~110kW models have built-in brake unit, please connect brake resistor between P+ and PB		
	DC reactor	18.5kw and above models are built-in DC reactors		
	Common DC bus	Share the regenerative energy when the frequency converter decelerates, improve the braking capacity, achieve the purpose of energy saving and save the additional space and cost required by the resistance		
Features function	Multiple bus support	Standard Modbus, can expand EtherCAT、CANopen、Profinet、Ethernet/IP		
	Multiple encoder support	Incremental Encoder/Tamagawa Serial Encoder		
	LCD panel	LCD display, parameter setting, status monitoring, parameter copy, fault analysis and location, program download, mass storage of parameters		
	Instant stop nonstop	In case of instantaneous power failure, the load feedback energy compensates for the reduction of voltage to maintain the continuous operation of the frequency converter in a short time		
	Timing control	Timing control function: time range 0.1min~6500min		
	Multi-motor switching	Two groups of motor parameters can realize the switching control of two motors		
	Motor overheating protection	AI3 supports PT100 sensor signal input		
	Flexible and diversified terminal functions	There are 51 kinds of multifunctional terminals X, 41 kinds of terminals Y, and 19 kinds of logic function options AO, which meet the requirements of general frequency converter control functions		
	Communication customization parameters	It is convenient for users to read and write the parameters of the frequency converter continuously		
	Software	Rich background monitoring functions to facilitate on-site data acquisition and debugging		
Display and keyboard	Keyboard display	It can display the set frequency, output frequency, output voltage, output current, input and output status and other parameters		
	Key lock	Realize partial or full locking of keys to prevent false triggering		
	Parameter copy	Standard LED display digital potentiometer keyboard, optional LCD English display keyboard (parameter upload/download)		
	Optional accessories	LCD keyboard, communication card (EtherCAT, CANopen,Profinet,Ethernet/IP), encoder PG card (incremental pulse, resolver)		
Environment	Place of use	Indoor, free from direct sunlight, no dust, corrosive gas, combustible gas, oil mist, water vapor, drip or salt		
	Altitude	Less than 1000m (When it is higher than 1000m, the output current needs to be reduced by about 10% of the rated current for each increase of 1000m)		
	Ambient temperature	-10℃~+40℃(please derate to use or enhance the heat dissipation when ambient temperature is 40℃~50℃)		
	Ambient humidity	Less than 95%RH, no condensation of water droplets		
	Vibration	Less than 5.9m/s2 (0.6g)		
	Storage temperature	-40℃~+70℃		
	Protection level	IP20		
	Cooling mode	Forced air cooling		
Installation mode		Wall mounted and embedded		

PLC

HMI

Industrial informatization

Servo system

Frequency inverter

Stepping system

Vision system
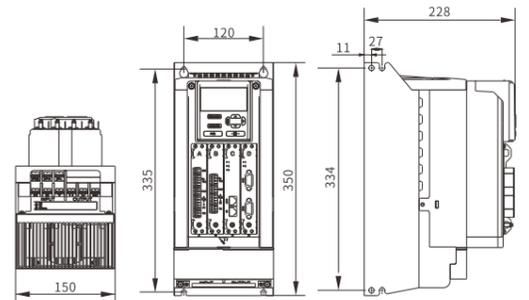
IoT Industrial Controller

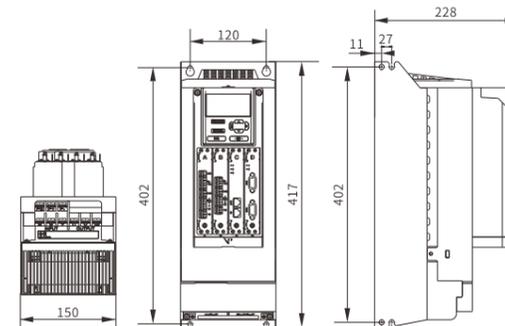# Terminal Wiring Diagram

Installation Dimension (Unit: mm)

X1 model: 3.7~7.5kW
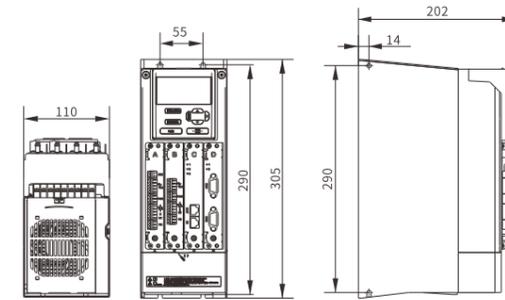
X2 model: 11-15kW

X3 model: 18-30kW

X4 model: 37~55kW
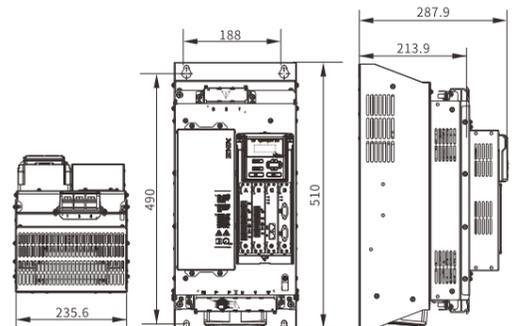
X5 model: 75-110kW
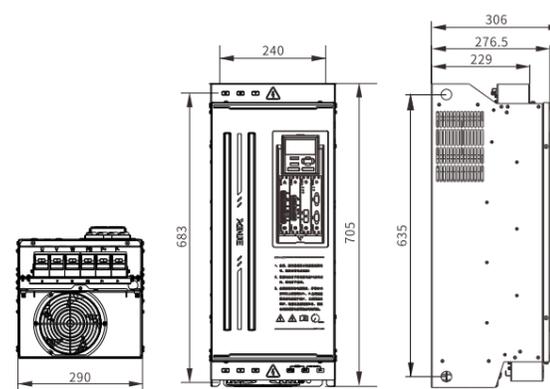
X6 model: 132~160kW
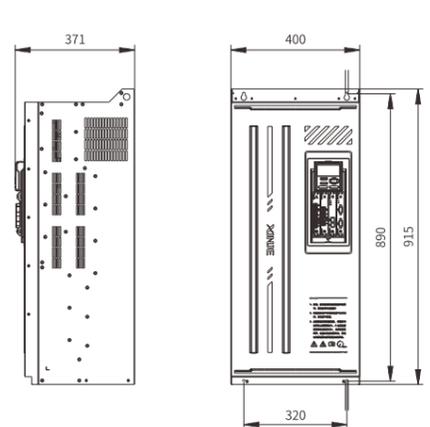
X7 model：185~220kW
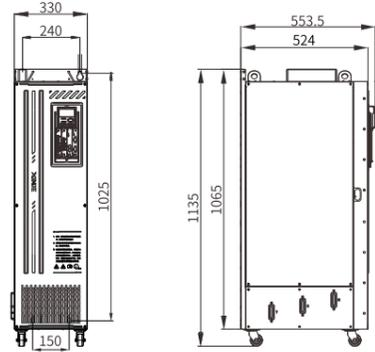
X8 model：250~280kW

X9 model：315~450kW

Panel size

VH6-PE100	VH6-PC100	VH6-PE200

Panel mounting bracket drawing

VH6-PE200 Shipped as Standard	VH6-PE200 Optional Base

The shaded area is the opening area

Panel mounting bracket instructions

Make holes on the outer surface of the required installation position according to the dimensions on the drawing, then remove the panel from the slot on the body and install it on the panel base. Then, install the panel into the hole and gently push it into place to complete the installation.

VH6-PE100/VH6-PC100 Optional Base

Panel mounting bracket instructions

The gray area represents the hollowed out area, with a central hollowed out area of 84.6× 101.5 and a four corner hollowed out area with a diameter of 4.34 circle. M4 screws and nuts are placed to fix the bracket on the door panel.

Voltage level	Driver model	Overall installation dimension (width×height×depth)										Mounting screw specification	Weight (Kg)
		Body code	W	H	D	W1	W2	H1	H2	D1	D2		
380V	VH6-43P7-B	X1	110	305	202	55	/	290	290	14	/	M5	4
	VH6-45P5-B												
	VH6-47P5-B												
	VH6-4011-B	X2	150	350	228	120	/	335	334	27	11	M6	5.7
	VH6-4015-B												
	VH6-4018-B	X3	150	417	228	120	/	402	402	27	11	M6	10
	VH6-4022-B												
	VH6-4030-B												
	VH6-4037-B	X4	235.6	510	287.9	188	/	490	/	213.9	/	M8	25
	VH6-4045-B												
	VH6-4055-B												
	VH6-4075-B	X5	290	705	306	240	/	683	635	276.5	229	M8	45
	VH6-4090-B												
	VH6-4110-B												
	VH6-4132	X6	400	915	371	320	/	890	/	/	/	M8	80
	VH6-4160												
	VH6-4185	X7	300	1135	553.5	240	150	1065	1025	524	/	M12	100
	VH6-4200												
	VH6-4220												
	VH6-4250	X8	330	1310	590	235	250	1240	1162.5	560.5	/	M12	120
	VH6-4280												
	VH6-4315	X9	340	1415	597	240	200	1345	1280	567.5	/	M12	155
	VH6-4355												
	VH6-4400												
	VH6-4450												

Accessory Description

Standard I/O card	Expansion I/O card	CANopen communication card	EtherCAT communication card
VH6-A100	**VH6-B100**	**VH6-CN100**	**VH6-CC100**
1 channel RS485 communication + 2 channels AI +1 channel AO + 4 channels bipolar input + 1 channel YT + 1 channel YR	1 channel AI + 1 channel AO + 3 channels bipolar input + 1 channel YT + 1 channel YR	The expansion interface card specially designed for CANopen protocol is suitable for Xinje frequency converter. Xinje frequency converter can be connected to CANopen network and exist as a slave station through this card.	The expansion interface card specially designed for EtherCAT protocol is suitable for Xinje frequency converter. Xinje frequency converter can be connected to EtherCAT network and exist as a slave station through this card.

Profinet Communication Card	Ethernet/IP Communication Card	Simple incremental encoder PG card	Multi-function Incremental Encoder PG Card
VH6-CP100	**VH6-CE100**	**VH6-DM200**	**VH6-DM100**
This is an expansion interface card specifically designed by Xinje for the Profinet protocol, tailored for Xinje inverters. Through this card, Xinje inverters can be connected to the industrial Ethernet communication standard led by Siemens, enabling efficient and reliable data communication between devices.	This is an expansion interface card specifically designed by Xinje for the Ethernet/IP protocol, tailored for Xinje inverters. Through this card, Xinje inverters can be connected to the Ethernet-based communication protocol, mainly used for communication between industrial automation devices. The specific implementation mechanism of the Ethernet/IP protocol is primarily based on the combination of CIP (Control and Information Protocol), TCP/IP, and Ethernet.	It is used for receiving and detecting motor encoder signal by frequency converter. The frequency converter can control the motor speed and torque more accurately. The types of encoder signals that this PG card can receive are: differential type, NPN collector open circuit, push-pull type. However, this PG card does not support frequency division output function.	This is an upgraded version of VH6-DM200, supporting incremental encoder signals with signal types: differential, NPN open-collector output.Key Upgrade: Receives pulse input signals from the host PC (Pulse+Direction, AB Phase, CW/CCW pulse forms), enabling the inverter to perform position control, while the motor encoder signal can be output externally through the frequency division function.

Simple Tamagawa Protocol Communication-type Encoder PG Card	LCD panel	Knob panel	LCD panel
VH6-DC200	**VH6-PE100**	**VH6-PE200**	**VH6-PC100**
Can adapt to Tamagawa communication protocol absolute encoders, supporting 17-bit/21-bit/23-bit resolution. Does not support pulse input + frequency division output function.	The panel is LED display, which can set parameters, monitor the operation status of the frequency converter and operate the frequency converter.	The panel uses a knob to adjust the speed, which can set parameters, monitor the operation status and facilitate the speed control of the frequency converter.	The panel adopts LCD display, which can set parameters, upload and download parameters, monitor the operation status of the frequency converter, and facilitate the debugging of the frequency converter.

Upper computer connection cable	Panel expansion cable	Mounting base	Expansion card protection cover
JC-EV-15	**JC-RD-30**	**VH6-DPANEL**	**VH6-A100-PC**
To connect the frequency inverter and PC, to connect the frequency inverter software and update the firmware.	The extension cable of the operation panel is a standard network cable, which only provides 2 or 3 meters. Users can also make other lengths of network cables by themselves.	Base of VH6 frequency converter operation panel during extension installation. Model: VH6-DPANEL	It can be used for protection of VH6 converter A/B expansion card.

Optional Mounting Base
VH6-PE200-DPANEL-HC
Optional base for VH6-PE200 knob panel external mounting VH6-PE200-DPANEL-HC

VH1 open-loop vector VFD

The VH1 series is a single-phase 220VAC and three-phase 380VAC open-loop vector frequency converter launched by Xinje Company based on the market demand for small power, small volume, and simple speed regulation. As an economical frequency converter with small volume and large capacity, the VH1 series has significant advantages such as high EMC specification design and high protection. It can be widely used in small automated application machinery represented by woodworking carving, food canning, automated production lines, packaging equipment, logistics conveyor lines, edge banding machines, etc.

Appearance and protection

- Small volume, compact and exquisite design
- Guide rails side by side installation, saving time and effort
- Strengthening the coating to improve product protection, easily facing oil mist, moisture, and corrosion environment

Operate panel

- Adjustable knob design for simpler speed regulation
- Multifunctional indicator light, rich in information and impressions

- The entire series is equipped with built-in RFI filters, effectively reducing EMC external interference and ensuring stable equipment operation
- Standard RS485 communication, building a multi-axis control system
- Full range of modular machines to enhance product stability
- A brand new ARM platform system that supports both asynchronous and synchronous motors
- Supports external LCD panels, enabling one click parameter download and upload
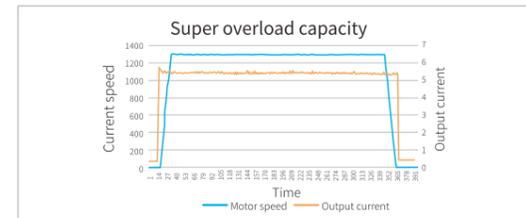
Excellent product performance

■ Integrated and versatile

• Support VF and SVC algorithms.
• Based on a brand new ARM platform, it supports synchronous and asynchronous simultaneously. (2.2KW and above support).
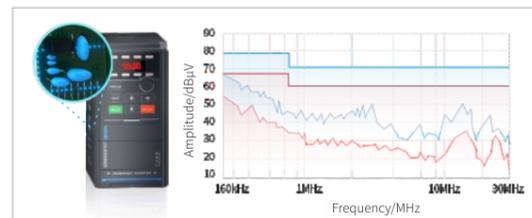
Support multiple algorithms
☑ VF ☑ SVC

Vh1 VFD

Asynchronous motor   Synchronous motor

■ High specification EMC design

The entire series is equipped with built-in RFI filters, effectively reducing EMC external interference and meeting precision control requirements.

Amplitude/dBμV
Frequency/MHz

■ Debugging is easy and fast

• The potentiometer type adjustable knob makes speed regulation easier.
• Support external LCD panel for one click parameter download upload.
• Support upper computer software debugging, making on-site frequency converter debugging and monitoring more convenient and efficient.

Adjustable knob   External LCD panel   Debugging software

■ The air duct is completely isolated from the PCB board

Independent air duct design, smooth heat dissipation, ensuring long-term stable operation of electronic components.

■ Heavy load output

• The VH1 series comes standard with an IGBT integrated module, achieving 150% overload output for 1 minute.
• The VH1 series comes standard with braking function to ensure stable equipment shutdown for a long time.

Super overload capacity

Current speed
Output current
Time
— Motor speed — Output current

■ Compact design

• Optimal power density design to minimize product volume.
• Support seamless parallel installation in the smallest space (ambient temperature below 40°C).
• Support screw installation and rail installation.

50mm 100mm 100mm 50mm
Side by side installation
582mm
Screw installation
Reduce 366mm
216mm
Rail installation

■ Full coverage of PCB board coating

Adopting automatic spraying line equipment with three-proofing paint, different spraying strategies can be designed according to different circuit boards, achieve full coverage of the three-proofing paint coating, without fear of oil and moisture erosion.

Dustproof

■ Obtaining EU CE certification

CE

EU CE certification

Naming rule

| VH1 VFD naming rule

$$\underset{①}{\underline{VH}}\ \underset{②}{\underline{1}} - \underset{③}{\underline{4}}\ \underset{④}{\underline{1P5}} - \underset{⑤}{\underline{B}}$$

① Product code

Symbol	Name
VH	General VFD

② Product series

Symbol	Name
1	Open-loop vector VFD

③ Input voltage level

Symbol	Power supply voltage
4	380V
2	220V

④ Power level

Symbol	Power level (kW)
0P7	0.75
1P5	1.5

⑤ Brake unit

Symbol	Brake unit
B	Built-in brake unit
Vacant	None

Technical parameters

VFD model	Power supply capacity (KVA)	Input current (A)	Output current (A)	Adaptive motor
Single phase 220V 50/60Hz				
VH1-20P4-B	1.0	5.4	2.3	0.4
VH1-20P7-B	1.5	5.6	4.0	0.75
VH1-21P5-B	3.0	9.3	7.0	1.5
VH1-22P2-B	4.5	12.7	9.6	2.2
Three phase 380V 50/60Hz				
VH1-40P4-B	1.0	1.8	1.5	0.4
VH1-40P7-B	1.5	2.3	2.1	0.75
VH1-41P5-B	3.0	4.4	3.8	1.5
VH1-42P2-B/VH1-42P2-B(S)	4.0	5.8	5.1	2.2
VH1-43P7-B	5.9	10.5	9.0	3.7
VH1-45P5-B	8.9	14.6	13.0	5.5
VH1-47P5-B	11.0	20.5	17.0	7.5
VH1-4011-B	17.0	26.0	25.0	11.0
VH1-4015-B	21.0	35.0	32.0	15.0
VH1-4018-B	24.0	38.5	37.0	18.5
VH1-4022-B	30.0	46.5	45.0	22.0
VH1-4030-B	40.0	62.0	60.0	30.0
VH1-4037-B	63.0	69.0	75.0	37.0
VH1-4045	81.0	89.0	90.0	45.0
VH1-4055	97.0	106.0	110.0	55.0
VH1-4075	127.0	139.0	152.0	75.0

PLC
HMI
Industrial informatization
Servo system
Frequency inverter
Stepping system
Vision system
IoT Industrial Controller

Wiring diagram

Labels in diagram:
- Braking resistor — PB, P+
- Circuit breaker, Contactor, Fuses — R, S, T → L1, L2, L3
- Three-phase AC output choke — U, V, W → U, V, W → M
- Grounding resistance below 10Ω
- Control circuit
- Fieldbus communication / Modbus communication / Max baud rate 115200bps — 485+, 485-
- +24V, COM, 0V
- Digital input signal:
  - Forward run/stop P2-00=1 X1
  - Reverse run/stop P2-01=2 X2
  - Fault reset P2-02=10 X3
  - Multi-speed 1 P2-03=12 X4
  - Multi-speed 2 P2-04=13 X5
- Analog input: 2-channel analog input AI1:0-10V/0-20mA, optional AI2:0-10V — 1kΩ, 5kΩ, 10V, AI1, AI2, GND
- Y1, 0V — Open collector output Max DC24V/50mA
- TA, TB — 1 channel relay output AC250V 3A DC30V 1A
- AO, GND — 1 channel analog output 0-10V
- Jumping hat switch, Shielded wire, Stranded shielded wire, Rj45 port, Main circuit terminals, Control circuit terminals

Technical specification

| Item		VH1 open-loop vector VFD
Power range		0.4kW～75kW
Input	Rated voltage, frequency	3AC 380V；50/60Hz 1AC 220V；50/60Hz
	Permissible voltage fluctuation range	±15%
Output	Voltage	0~input voltage
	frequency	0～600Hz
Control performance	Control motor type	Asynchronous motor, synchronous motor
	Control mode	V/F control (VF), vector
	Speed accuracy	±1%
	Speed fluctuations	±0.5%
	Speed regulation range	1：50
	Starting torque	1.0Hz：150%
	Torque accuracy	/
	Torque response	/
	Overload capacity	G-type 150% rated current 60 seconds, P-type 120% rated current 60 seconds
	Frequency accuracy	Low frequency operation mode: 0.01Hz, High frequency operation mode: 0.1Hz
	Frequency resolution	Digital setting -0.01Hz, analog setting - maximum frequency × 0.1%
Control terminal input	Digital input channel	Standard configuration: 5 digital inputs X, supports NPN and PNP inputs
	Analog input channel	Standard configuration: 2 analog inputs AI, AI1 supports 0-10V and 0-20mA, AI2 supports 0-10V
Control terminal output	Digital output channel	Standard configuration: 1 digital output Y and 1 relay output (supports one pair of normally open)
	Analog output channel	Standard configuration: 1 analog output AO, supports 0-10V voltage output
Function	Starting command setting mode	Setting through communication(Modbus), operate panel and terminals
	Frequency setting mode	Setting through communication(Modbus), operate panel, terminals, analog input, multi-speed, simple PLC, PID, main and auxiliary
	Typical functions	Frequency main and auxiliary operation, reverse run prohibition, torque improving, nine V/F curve settings, five segments AI curve settings, acceleration and deceleration curve settings, terminal delay and filtering, terminal multifunctional input and output, DC braking, energy consumption braking, jog operation, 16 multi-speeds, built-in two channels PID , speed tracking restart, carrier modulation, fault recording, fault self reset, preexcitation start, 30 sets of user-defined parameters
	Key functions	Carrier modulation, torque control, motor self-tuning, current limiting control, overvoltage control, undervoltage control, speed tracking, droop control, oscillation suppression, overvoltage overcurrent stall control, automatic voltage regulation (AVR), automatic energy-saving operation, etc
	Protection function	Power on motor short circuit detection, input/output phase loss protection, overcurrent protection, overvoltage protection, undervoltage protection, overheating protection, overload protection, underload protection, overcurrent and overvoltage stall protection, relay excitation protection, terminal protection, instantaneous power failure without stopping, etc
	Energy consumption braking	under 37kW Built in braking unit, suitable braking resistor needs to be selected
Feature	Fieldbus	Modbus
	LCD panel	LCD display, parameter setting, status monitoring, parameter copying, fault analysis, program download, and high-capacity storage of parameters
	Instantly stop without stopping	During an instantaneous power outage, the reduction in voltage is compensated through load feedback energy to maintain the frequency converter's continued operation for a short period of time
	Timing control	Timing control function: Set the time range from 0.1Min to 6500.0Min
	Multi-motor switching	Two sets of motor parameters can achieve switching control between two motors
	Diversified terminal functions	The multifunctional terminals X have 51 types, Y has 41 types, and AO has 19 logical function options, meeting the conventional control function requirements of general VFD
	Communication customization parameters	Convenient for users to continuously read and write VFD parameters
	Software	Rich backend monitoring functions, convenient for on-site data collection and debugging
Display and keyboard	Keyboard display	It can display various parameters such as set frequency, output frequency, output voltage, output current, input/output status, etc
	Key lock	Implement partial or complete locking of buttons to prevent accidental triggering
	Parameter copying	Standard LED digital potentiometer keyboard, optional LCD display keyboard (parameter download)
	Optional accessories	LCD keyboard
Environment	Place of use	Indoor, not exposed to direct sunlight, without dust, corrosive gases, flammable gases, oil mist, water vapor, dripping water or salt, etc
	Altitude	Below 1000 meters. (When the height exceeds 1000 meters, it needs to be used with a reduced rating. For every additional 1000 meters of height, the output current will decrease by about 10% of the rated current.)
	Surrounding temperature	-10℃~+40℃ (ambient temperature between 40℃~50℃, please reduce the rating or enhance heat dissipation)
	Surrounding humidity	Less than 95% RH, no water droplet condensation
	Vibration	Less than 5.9m/s2(0.6g)
	Storage temperature	-40℃～+70℃
	Protection level	IP20
	Cooling method	Forced air cooling
Installation		Wall-mounted and DIN-rail mount (2.2 kW and above), DIN-rail mount (below 2.2 kW). The DIN-rail width is 35 mm.

Dimension (unit: mm)

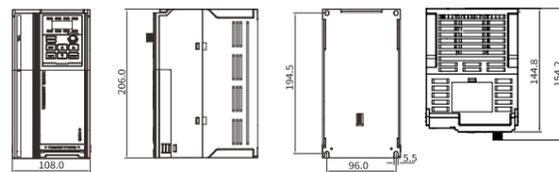**VH1-20P4/20P7/21P5/40P4/40P7/41P5-B**
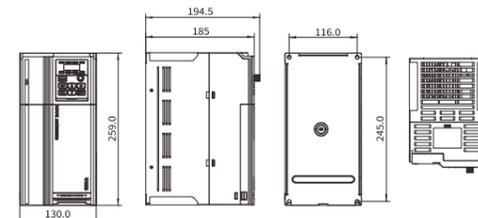**VH1-42P2-B(S)**
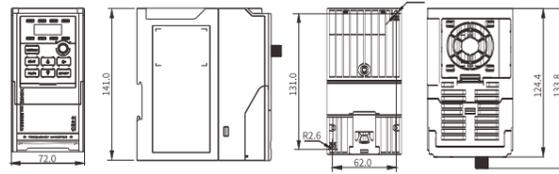
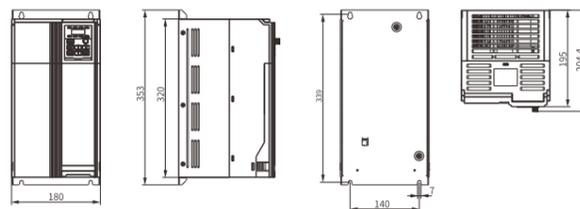*Note: the installation screws are all M4.

VH1-22P2/42P2/43P7-B
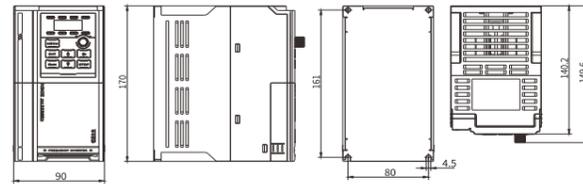
VH1-45P5/47P5-B

VH1-4011/4015-B

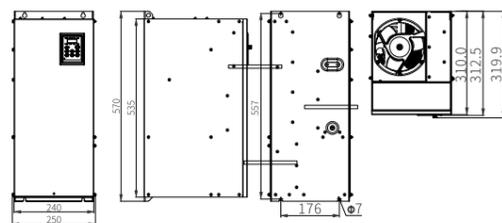*Note: the installation screws are all M5.

VH1-4018/4022-B

VH1-4030/4037-B

*Note: the installation screws are all M6.
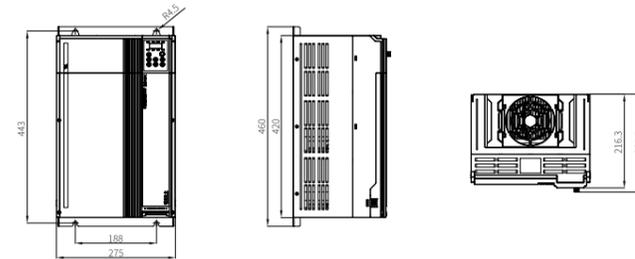
VH1-4045/4055/4075

VH1-PE100
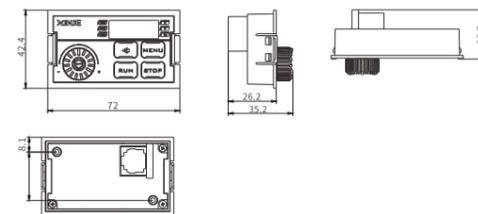
VH1-PE100 installation dimension

① Suggested screw installation size

The shaded area is the open area viewed from the back

*Note: dimensions related to screw installation method (dimension tolerance ±0.3)
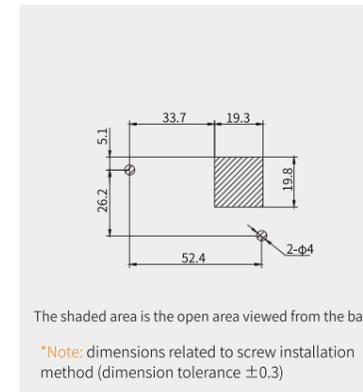
② Suggested buckle installation size

The thickness of the steel plate is 1.2mm

The thickness of the steel plate is 1.2-2mm
*Note: dimensions related to buckle installation method (dimension tolerance ±0.3)
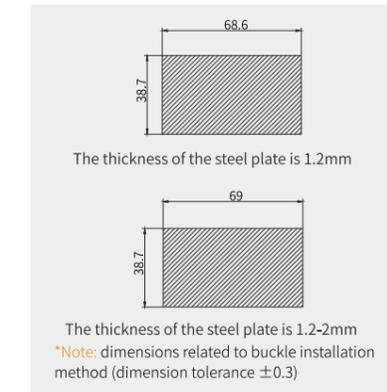
③ Leaf spring installation
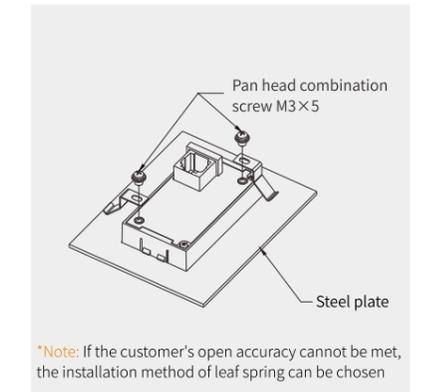
Pan head combination screw M3×5

Steel plate

*Note: If the customer's open accuracy cannot be met, the installation method of leaf spring can be chosen

Driver model		Overall installation dimension (width×height×depth)									Mounting screw specification	Weight (Kg)
	Body code	W	H	D	W1	W2	H1	H2	D1	D2		
VH1-20P4-B	S1	72	141	133.8	62	/	132	/	124.4	/	M4	0.9
VH1-20P7-B												
VH1-21P5-B												
VH1-40P4-B												
VH1-40P7-B												
VH1-41P5-B												
VH1-42P2-B(S)												
VH1-22P2-B	S2	90	170	149.6	80	/	161	/	140.2	/	M4	1.4
VH1-42P2-B												
VH1-43P7-B												
VH1-45P5-B	S3	103	206	154.2	96	/	194.5	/	144.8	/	M5	1.96
VH1-47P5-B												
VH1-4011-B	S4	130	259	194.5	116	/	245	/	185	/	M5	4.42
VH1-4015-B												
VH1-4018-B	S5	130	353	204.4	140	/	320	/	195	/	M6	7.12
VH1-4022-B												
VH1-4030-B	S6	275	460	225.7	188	/	443	420	216.3	/	M8	14.15
VH1-4037-B												
VH1-4045	S7	250	570	319.9	240	176	557	535	312.5	310	M6	27
VH1-4055												
VH1-4075												

Accessory

Knob panel VH1-PE100

The panel adopts a knob for speed regulation, which can set parameters, monitor the VFD operation status, and facilitate VFD debugging.

VHL general open-loop vector converter

VHL series is a general open-loop vector converter developed by Xinje Company. With the book structure design, the volume is greatly reduced compared with the previous generation of products, and at the same time, the appearance value and protection level are significantly improved. The internal coating is strengthened, which conforms to the 3C3 standard. The whole system is equipped with IGBT integrated module, which can achieve 150% heavy load output. It can be widely used in wire drawing machines, air compressors, livestock farms, grinders, wire cutting, edge banding machines and other application machinery.

Operation Panel

- Shuttle keyboard design, easy for customers to adjust speed
- Silicone key design, greatly improved touch feeling
- White LED and blue indicator light, full of sense of technology

Motor terminal UVW

- Support 150% 60s interval 300s overload
- Support asynchronous synchronous motor control
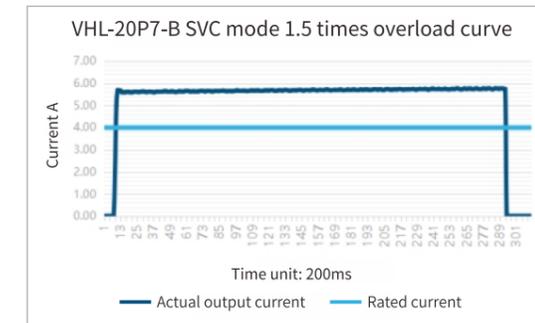
Appearance and protection

- Book structure design, saving installation space
- Independent air duct design can prevent dust from entering the inverter to cause short circuit and other faults, and improve reliability
- Close the body to prevent foreign matters and ensure the long-term stable operation of electronic components
- The coating is strengthened to prevent oil mist and moisture corrosion, meeting 3C3 standard

Control terminals

- Quick wiring of spring terminals, no need to worry about screw slipping

Excellent Product Performance

Overload capacity

VHL-20P7-B SVC mode 1.5 times overload curve

Current A

Time unit: 200ms

— Actual output current   — Rated current

VHL inverter 1.5 times overload time 60s

Debugging is easy and quick

- The flywheel keyboard design makes speed adjustment easier.
- Silicone keyboard design, significantly enhancing the tactile sensation and making it more effortless to use;
- Supports imported LCD liquid crystal panels and enables one-click download of parameters.

Shuttle keyboard design   Silicone keyboard design   Support for imported LCD liquid crystal panels

Book-style structural design

- Book-style structure design, reducing the volume by 30%.
- The installation area has been reduced by 70%.

161.0   188.0
164.6   138.0
55.6   94.0
VHL Series   VH5 Series

The installation area has been reduced by 70% and the volume has decreased by 30%

Stable and reliable

- Strengthen the three-layer anti-corrosion coating to meet the 3C3
- and 3S2 environmental requirements; independent air duct design.

Obtain the EU CE certification

CE

EU CE Certification

Naming Rule

| VHL inverter naming rule

VH L - 2 0P4 - B
① ② ③ ④ ⑤

① Product code

Symbol	Name
VH	General VFD

② Product series

Symbol	Name
L	Book-type open-loop vector converter

③ Input voltage level

Symbol	Power supply voltage
4	380V
2	220V

④ Power level

Symbol	Power level (kW)
0P4	0.4
0P7	0.75

⑤ Brake unit

Symbol	Brake unit
B	Built-in brake unit
Vacant	None

Technical Parameters

VFD model	Power supply capacity (KVA)	Input current (A)	Output current (A)	Adaptive motor
Single phase 220V 50/60Hz				
VHL-20P4-B	1	5.4	2.3	0.4
VHL-20P7-B	1.5	5.6	4	0.7
Three phase 380V 50/60Hz				
VHL-40P4-B	1	1.9	1.5	0.4
VHL-40P7-B	1.5	3.4	2.1	0.7
VHL-41P5-B	3	5.0	3.8	1.5

Wiring diagram
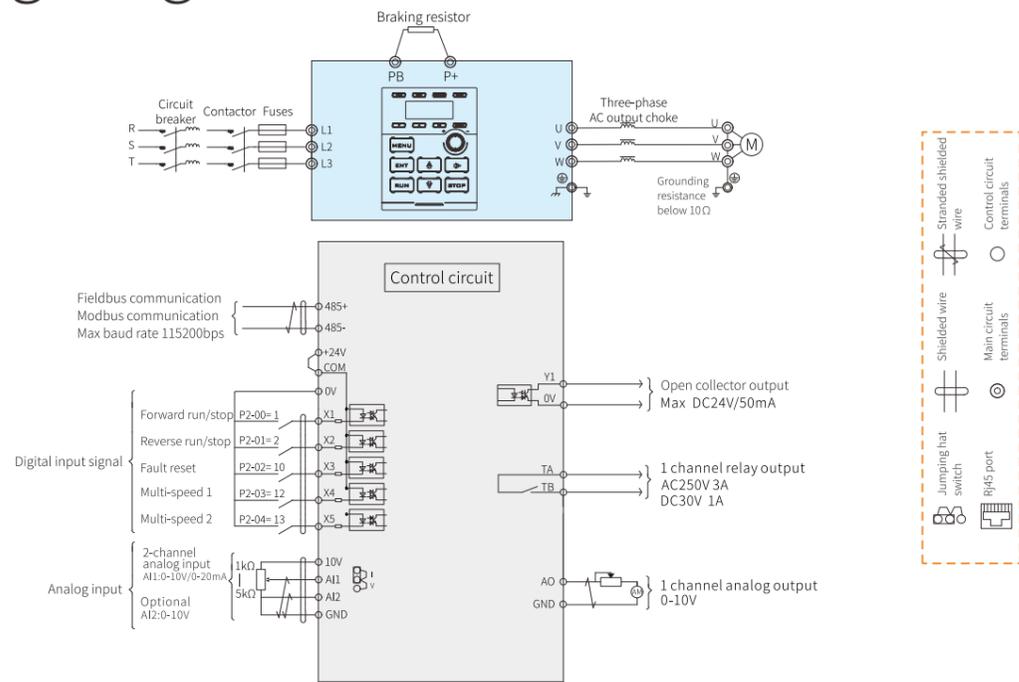
Technical Specification

Item name		VHL general open-loop vector converter	
Input	Power range	0.4kW~5.5kW	
	Rated voltage, frequency	3AC 380V;50/60Hz　　　1AC 220V;50/60Hz	
	Allowable voltage fluctuation range	±15%	
Output	Voltage	0~input voltage	
	Frequency	0~600Hz	
Control performance	Control motor type	Asynchronous motor, synchronous motor	
	Control mode	Vector control without speed sensor (SVC)	V/F control (VF)
	Speed precision	±0.5%	±1%
	Speed fluctuation	±0.3%	±0.5%
	Speed regulation range	1:100	1:50
	Startup torque	0.5Hz:150%	1.0Hz:150%
	Torque accuracy	±10% rated torque	/
	Torque response	≤20ms	/
	Overload ability	150% rated current 60s	
	Frequency precision	0.01Hz	
	Frequency resolution	Digital setting-- 0.01Hz, analog setting - - max frequency ×0.1%	
Control terminal input	Digital input channel	Standard: 5 digital bipolar input X terminal	
	Analog input channel	Standard: 2 analog input AI1/AI2, support 0~10V voltage input or 0~20mA current input	
Control terminal output	Digital output channel	Standard: 1 multi-functional Y1 output terminal, 1 group of TA TB TC relay output terminal	
	Analog analog channel	Standard: 1 analog output terminal AO1, support 0~10V voltage output or 0~20mA current output	
Product performance	Start command given mode	Communication given (Modbus), operate panel given, terminal given	
	Frequency given mode	Communication given (Modbus), operate panel given, terminal given, analog AI given, multi-speed given, simple PLC given, PID main and auxiliary given	
	Typical function	Frequency main and auxiliary operation, no reverse rotation, torque increase, nine VF curve settings, five section AI curve settings, acceleration and deceleration curve settings, terminal delay and filtering, terminal multi-functional input and output, DC braking, energy consumption braking, jog operation, 16-section speed, built-in two-channel PID, speed tracking restart, carrier modulation, fault recording, fault self reset, pre-excitation start, 30 groups of user-defined parameters	
	Important function	Carrier modulation, torque control, motor self-tuning, current limiting control, overvoltage control, undervoltage control, speed tracking, droop control, oscillation suppression, overvoltage overcurrent stall control, automatic voltage regulation (AVR), automatic energy-saving operation, etc	
	Protection function	Power on motor short circuit detection, input and output phase loss protection, overcurrent protection, overvoltage protection, undervoltage protection, overheat protection, overload protection, underload protection, overcurrent overvoltage stall protection, relay pull in protection, terminal protection, instantaneous power failure nonstop, etc	
	Dynamic braking	Built-in brake unit, please select suitable brake resistor	
Features function	Multiple bus support	Standard Modbus	
	Multiple encoder support	LCD display, parameter setting, status monitoring, parameter copy, fault analysis and location, program download, mass storage of parameters	
	Instant stop nonstop	In case of instantaneous power failure, the load feedback energy compensates for the reduction of voltage to maintain the continuous operation of the frequency converter in a short time	
	Timing control	Timing control function: time range 0.1min~6500min	
	Multi-motor switching	Two groups of motor parameters can realize the switching control of two motors	
	Flexible and diversified terminal functions	There are 51 kinds of multifunctional terminals X, 41 kinds of terminals Y, and 19 kinds of logic function options AO, which meet the requirements of general frequency converter control functions	
	Communication customization parameters	It is convenient for users to read and write the parameters of the frequency converter continuously	
	Software	Rich background monitoring functions to facilitate on-site data acquisition and debugging	
Display and keyboard	Keyboard display	It can display the set frequency, output frequency, output voltage, output current, input and output status and other parameters	
	Key lock	Realize partial or full locking of keys to prevent false triggering	
	Parameter copy	Standard LED display digital potentiometer keyboard, optional LCD English display keyboard (parameter upload/download)	
	Optional accessories	LCD keyboard	
Environment	Place of use	Indoor, free from direct sunlight, no dust, corrosive gas, combustible gas, oil mist, water vapor, drip or salt	
	Altitude	Less than 1000m (When it is higher than 1000m, the output current needs to be reduced by about 10% of the rated current for each increase of 1000m)	
	Ambient temperature	-10°C~+40°C (please derate to use or enhance the heat dissipation when ambient temperature is 40°C~50°C)	
	Ambient humidity	Less than 95%RH, no condensation of water droplets	
	Vibration	Less than 5.9m/s2 (0.6g)	
	Storage temperature	-40°C~+70°C	
	Protection level	IP20	
	Cooling mode	Forced air cooling	
Installation mode		Wall mounted and embedded	

Installation Dimension Drawing （unit: mm）

VHL-20P4/20P7/40P4/40P7/41P5-B
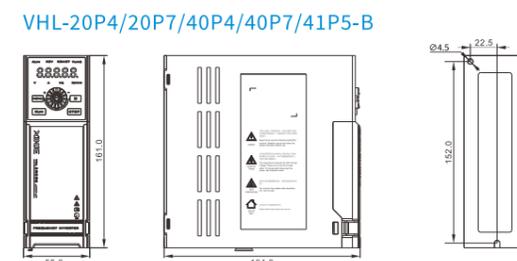
VH5 general type open loop vector frequency inverter

VH5 series is a general-purpose open-loop vector frequency converter developed by Xinje company. It has the remarkable characteristics of small volume, better cost performance and high reliability. At the same time, VH5 series can be combined with communication expansion card to realize EtherCAT, CANopen and other high-speed bus networking.

VH5 can be widely used in automatic production lines, textile, woodworking, engraving machines, logistics equipment, food filling, food packaging and other miniaturized mechanical equipment.

Operate panel

Communication expansion card

The communication expansion card supports EtherCAT, CANopen.

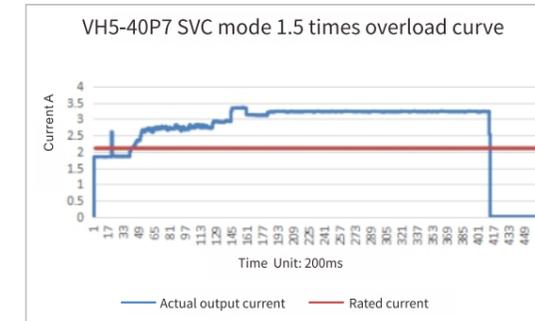**Power supply terminal RST**

Control terminal
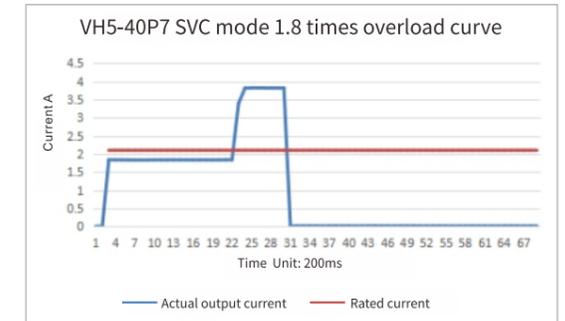
Motor terminal UVW

EMC grounding terminal

VH5 frequency converter is equipped with one RS485 communication port as standard. In addition,it can be added to EtherCAT and CANopen networks through the special communication expansion card and exist as a slave station.

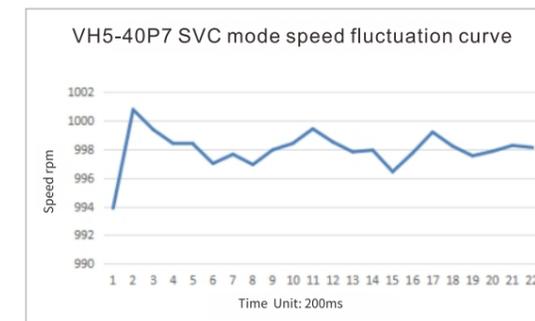# Excellent Product Performance

Overload ability

VH5-40P7 SVC mode 1.5 times overload curve

Current A — Time Unit: 200ms
— Actual output current   — Rated current

VH5 frequency converter 1.5 times overload time 60 seconds

VH5-40P7 SVC mode 1.8 times overload curve

Current A — Time Unit: 200ms
— Actual output current   — Rated current

VH5 frequency converter 1.8 times overload time 1 second

Speed fluctuation

VH5-40P7 SVC mode speed fluctuation curve

Speed rpm — Time Unit: 200ms

VH5 frequency inverter speed fluctuation ±0.3%

Built-in Braking Transistor

Further expands the standard configuration power range, helping to make the control cabinet structure more compact and save costs.

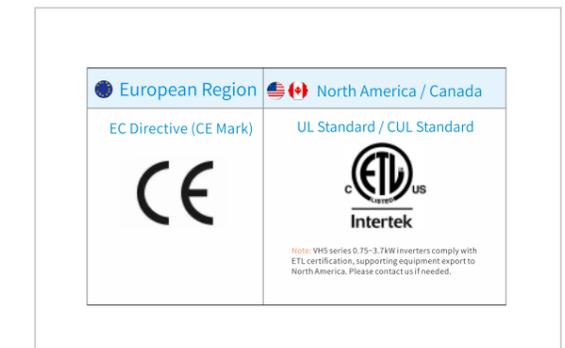| Item	Output (kW)	0.75	1.5	2.2	3.7	5.5
VH5	Single-phase 220V					
	Three-phase 220V					
	Three-phase 380V					

2.2kW   5.5kW

Rich Network Functions

• Standard built-in 485 communication interface supports Modbus communication protocol.
• Supports expansion with various mainstream bus communications.

Optional Communication Card Types

1 CANopen：VH5-CN100
2 EtherCAT：VH5-CC100
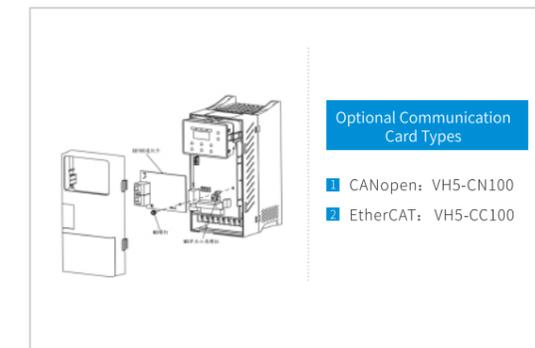
Globally Applicable

Complies with various standard certifications and meets overseas safety standards.

European Region	North America / Canada
EC Directive (CE Mark)	UL Standard / CUL Standard
CE	ETL Intertek

Note: VH5 series 0.75~3.7kW inverters comply with ETL certification, supporting equipment export to North America. Please contact us if needed.

PLC
HMI
Industrial information
Servo system
Frequency inverter
Stepping system
Vision system
IoT Industrial Controller

Naming Rule

VH5 frequency inverter naming rule

$$VH \quad 5 \quad - \quad 4 \quad 0P7 \quad - \quad B$$

① ② ③ ④ ⑤

① Product code

Sign	Name
VH	Frequency inverter

② Product series

Sign	Name
5	General type open loop vector frequency inverter

③ Input voltage level

Sign	Power supply voltage
4	380V
2	220V

④ Power level

Sign	Power level (kW)
0P7	0.75
1P5	1.5
...	...
5P5	5.5

⑤ Brake unit

Sign	Brake unit
B	Built-in brake unit
Vacant	No

Technical Parameter

Model	Power supply capacity (KVA)	Input current (A)	Output current (A)	Adaptive motor (kW)
Single phase 220V 50/60Hz			
VH5-20P7-B	1.5	5.6	4.7	0.75
VH5-21P5-B	3.0	9.3	7.5	1.5
VH5-22P2-B	4.5	12.7	10.0	2.2
Three-phase 380V 50/60Hz			
VH5-40P7-B	1.5	3.4	2.1	0.75
VH5-41P5-B	3.0	5.0	3.8	1.5
VH5-42P2-B	4.0	5.8	5.1	2.2
VH5-43P7-B	5.9	10.5	9.0	3.7
VH5-45P5-B	8.9	14.6	13.0	5.5

Terminal Wiring Diagram
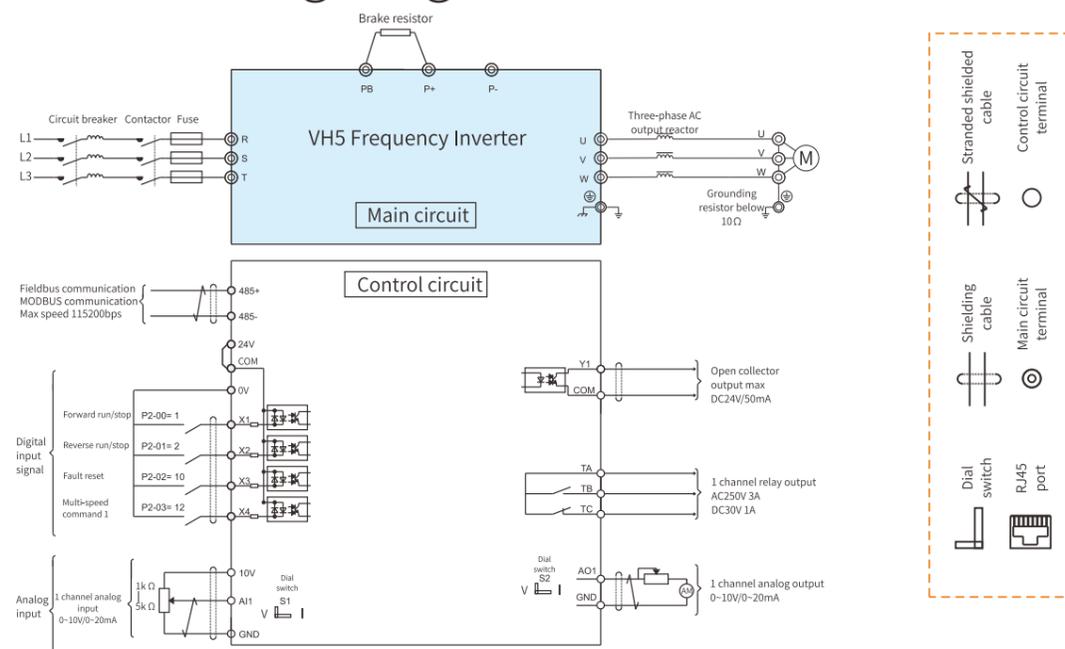
Technical Specifications

Item name		VH5 general type open loop vector frequency inverter		
Power range		0.75kW~5.5kW		
Input	Rated voltage, frequency	3AC 380V;50/60Hz	3AC 220V;50/60Hz	1AC 220V;50/60Hz
	Allowable voltage fluctuation range	±15%		
Output	Voltage	0~input voltage		
	Frequency	0~600Hz		
Control performance	Control motor type	Asynchronous motor		
	Control mode	Vector control without speed sensor (SVC)	V/F control (VF)	
	Speed precision	±0.5%	±1%	
	Speed fluctuation	±0.3%	±0.5%	
	Speed regulation range	1:100	1:50	
	Startup torque	0.5Hz:150%	1.0Hz:150%	
	Torque accuracy	±10% rated torque	/	
	Torque response	≤20ms	/	
	Overload ability	150% rated current 60s, 180% rated current 10s, 200% rated current 2s		
	Frequency precision	0.01Hz		
	Frequency resolution	Digital setting--0.01Hz, analog setting--max frequency ×0.1%		
Control terminal input	Digital input channel	Standard: 4 digital X bipolar input terminals		
	Analog input channel	Standard: 1 analog input terminal AI1, support 0~10V or 0~20mA		
Control terminal output	Digital output channel	Standard: 1 multi-functional Y1 output terminal, 1 group TA TB TC relay output terminal		
	Analog output channel	Standard: 1 analog output terminal AO1, support 0~10V or 0~20mA		
Product function	Start command given mode	Communication given (Modbus, CANopen, EtherCAT), operate panel given, terminal given		
	Frequency given mode	Communication given (Modbus, CANopen, EtherCAT), operate panel given, terminal given, analog AI given, multi-speed given, simple PLC given, PID main and auxiliary given		
	Typical function	Frequency main and auxiliary operation, no reverse rotation, torque increase, nine VF curve settings, five section AI curve settings, acceleration and deceleration curve settings , terminal delay and filtering, terminal multi-functional input and output, DC braking, dynamic braking , jog operation, 16-section speed, built-in two-channel PID, speed tracking restart, carrier modulation, fault recording, fault self reset, pre-excitation start, 30 groups of user-defined parameters		
	Important function	Carrier modulation, torque control, motor self-tuning, current limiting control, overvoltage control, undervoltage control, speed tracking, droop control, oscillation suppression, overvoltage overcurrent stall control, automatic voltage regulation (AVR), automatic energy-saving operation, etc		
	Protection function	Power on motor short circuit detection, input and output phase loss protection, overcurrent protection, overvoltage protection, undervoltage protection, overheat protection, overload protection, underload protection, overcurrent overvoltage stall protection, relay pull in protection, terminal protection, instantaneous power failure nonstop, etc		
	Dynamic braking	Built-in brake unit, please select suitable brake resistor		
Features function	Multiple bus support	Standard Modbus, can expand EtherCAT, CANopen		
	Multiple encoder support	LCD display, parameter setting, status monitoring, parameter copy, fault analysis and location, program download, mass storage of parameters		
	Instant stop nonstop	In case of instantaneous power failure, the load feedback energy compensates for the reduction of voltage to maintain the continuous operation of the frequency converter in a short time		
	Timing control	Timing control function: time range 0.1min~6500min		
	Multi-motor switching	Two groups of motor parameters can realize the switching control of two motors		
	Flexible and diversified terminal functions	There are 51 kinds of multifunctional terminals X, 41 kinds of terminals Y, and 19 kinds of logic function options AO, which meet the requirements of general frequency converter control functions		
	Communication customization parameters	It is convenient for users to read and write the parameters of the frequency converter continuously		
	Software	Rich background monitoring functions to facilitate on-site data acquisition and debugging		
Display and keyboard	Keyboard display	It can display the set frequency, output frequency, output voltage, output current, input and output status and other parameters		
	Key lock	Realize partial or full locking of keys to prevent false triggering		
	Parameter copy	Standard LED display digital potentiometer keyboard, optional LCD English display keyboard (parameter upload/download)		
	Optional accessories	LCD keyboard, communication card (EtherCAT, CANopen)		
Environment	Place of use	Indoor, free from direct sunlight, no dust, corrosive gas, combustible gas, oil mist, water vapor, drip or salt		
	Altitude	Less than 1000m (When it is higher than 1000m, the output current needs to be reduced by about 10% of the rated current for each increase of 1000m)		
	Ambient temperature	-10℃+40℃ (please derate to use or enhance the heat dissipation when ambient temperature is 40℃~50℃)		
	Ambient humidity	Less than 95%RH, no condensation of water droplets		
	Vibration	Less than 5.9m/s2 (0.6g)		
	Storage temperature	-40℃~+70℃		
	Protection level	IP20		
	Cooling mode	Forced air cooling		
Installation mode		Wall mounted and embedded		

Installation Dimension (Unit: mm)

**VH5-20P7/21P5/22P2/40P7/41P5/42P2/43P7-B**   **VH5-45P5-B**

94,0   188,0   102,0   220,0

138,0   80,0   178,0   83,0   138,0   88,0   210,0   91,0

Panel extension

4-R3
Opening area
49,6
77,3

58±0.3
83.4±0.3

• Not use the panel mounting base,
  the opening size of the extended panel

• Use the panel mounting base,
  the opening size of the extended panel
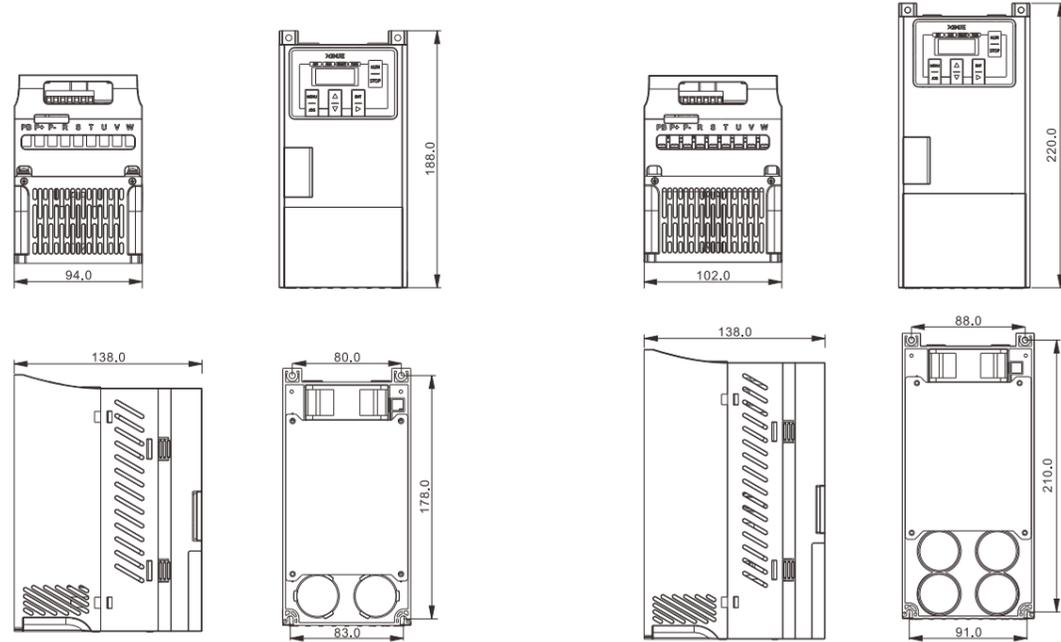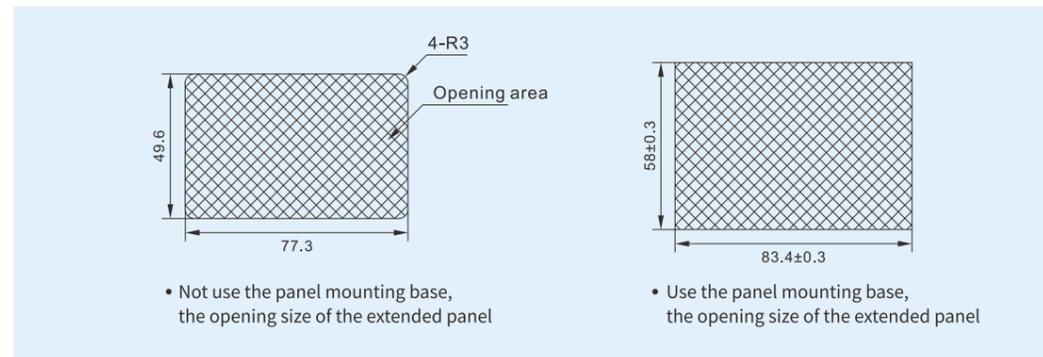
VH5 series VFD operate panel can be extended, users can install the VFD panel in the hole slot according to the two opening sizes provided above.

CANopen communication card VH5-CN100	EtherCAT communication card VH5-CC100	LED operate panel VH5-PE100	Mounting base VH5-DPANEL
The expansion interface card specially designed for CANopen protocol is suitable for Xinje frequency converter. Xinje frequency converter can be connected to CANopen network and exist as a slave station through this card.	The expansion interface card specially designed for EtherCAT protocol is suitable for Xinje frequency converter. Xinje frequency converter can be connected to EtherCAT network and exist as a slave station through this card.	The panel is a single-row LED display, which can set parameters, monitor the operation status and operate the converter.	VH5 series VFD extension panel installation base. Model: VH5-DPANEL

HSV6 Series Ring Spinning Machine Specific Inverter

This is a specialized product developed by Xinje for the application characteristics of the textile industry. Through a through-wall structural design, it reduces the secondary pollution of the inverter, thereby improving the temperature and air flow inside the electrical cabinet. The product adopts vector control technology and provides expansion cards for customer selection, maximizing the customer's product competitiveness.
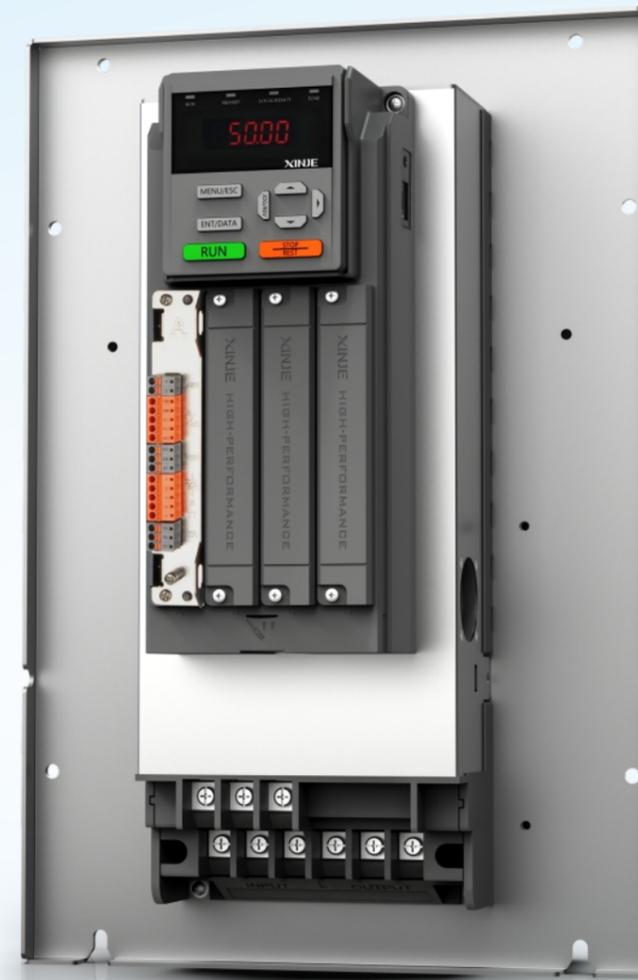
Excellent Product Performance

■ Enlarged Heat Sink

The use of heat pipe process heat sinks and phase-change material thermal grease provides stronger heat dissipation and ensures long-term stable operation under temperature. The increase in heat dissipation area helps improve heat port flow, thereby increasing heat dissipation and allowing it to easily handle fanless situations.

■ Capacitor Capacity Doubled

• To meet the textile dust and lint protection requirement, the inverter's fan has been removed.
• To meet the high-temperature environment application requirement in textiles, capacitor temperature resistance is rated for 125°C for 3000 hours.
• To meet the heat dissipation requirement in textiles, the inverter's reactor has been removed, and the capacitor capacity is suitable for stable shutdown in common bus power failure scenarios.

■ Triple-protection Enhanced

Based on the IP20 protection rating, triple-protection is enhanced. All components are temperature resistant to 125°C, allowing it to easily handle high-temperature and humid conditions in the textile industry.
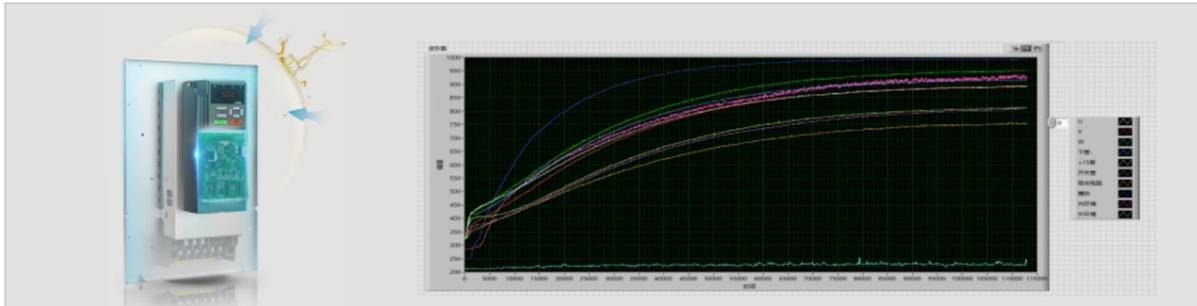
■ Common Bus System

• The adoption of common bus technology can reduce the number and cost of equipment while also lowering maintenance costs.
• The inverter integrates a power failure ride-through function. In the event of an unexpected system power outage, the inverter can use feedback energy to operate without stopping for an effective period, while ensuring the equipment shuts down steadily, thereby improving the production efficiency of textile equipment.
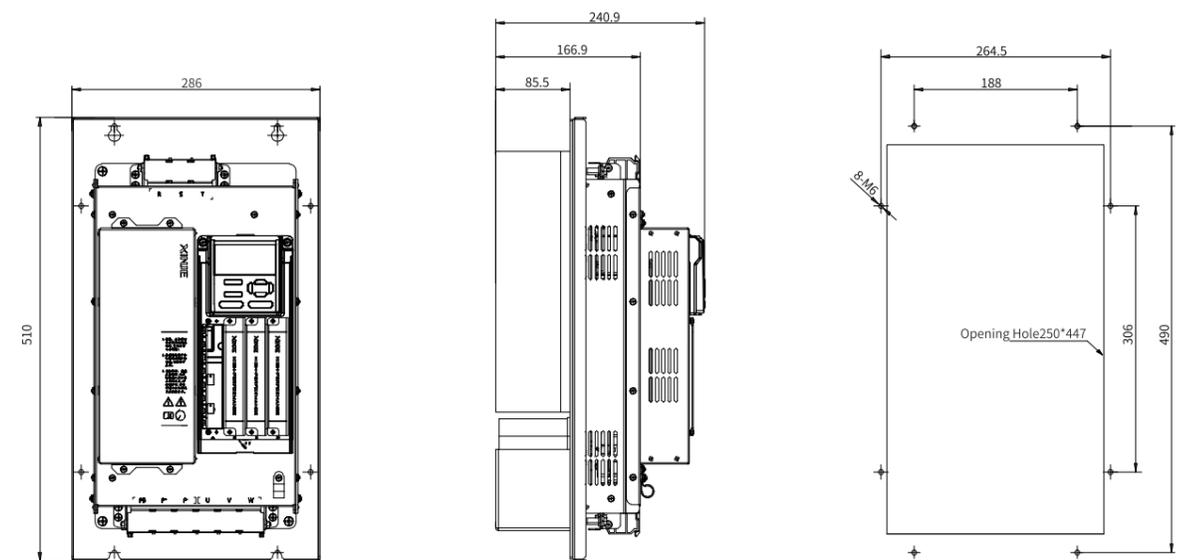
Function of non-stop operation during momentary power interruption
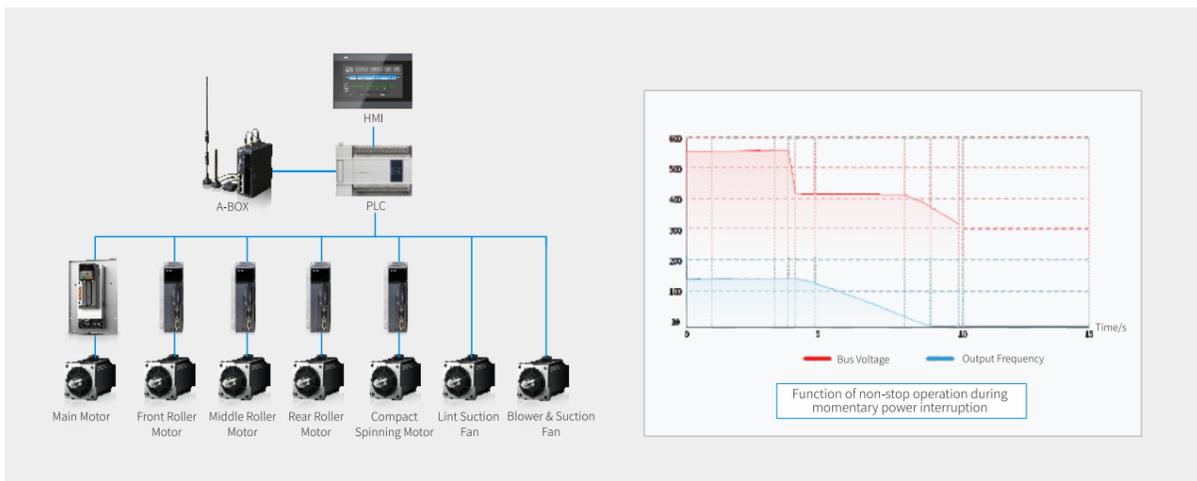
Installation Dimensions (unit : mm)

HSV6-4018/4022-B
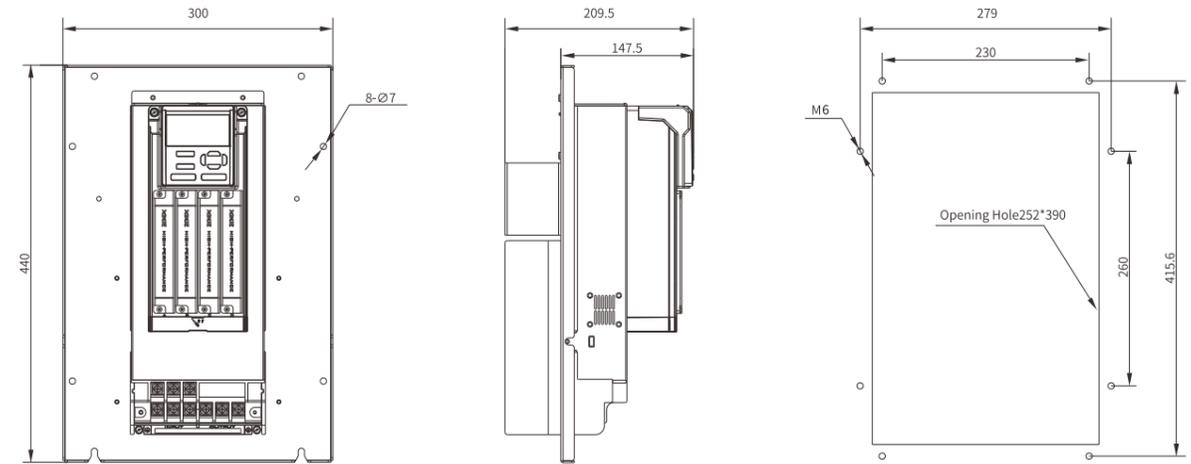
Drive Model	Mounting Hole Pattern（mm）				Overall Dimensions (Width/Height/Depth)				Mounting Screw Specification	Weight)
	A1	B1	A2	B2	W	H	D	D1		
HSV6-4018-B	230	415.6	279	260	300	440	209.5	147.5	M6	11
HSV6-4022-B	230	415.6	279	260	300	440	209.5	147.5	M6	11

HSV6-4055-B

Drive Model	Mounting Hole Pattern (mm)				Overall Dimensions (Width/Height/Depth)					Mounting Screw Specification	Weight
	A1	B1	A2	B2	W	H	D	D1	D2		
HSV6-4055-B	188	490	264.5	306	286	510	240.9	166.9	85.5	M6	19.08

Panel Dimensions (unit : mm)

89.0

79.6
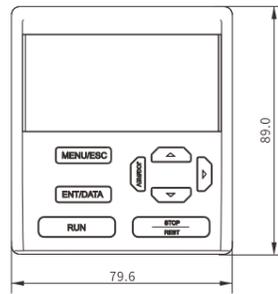
Panel Mounting Bracket Drawing (unit : mm)

114.0

117.2

Panel Mounting Bracket

M4 screws   M4 screws

Ø4.3   Ø4.3

84.6

97.5

78.8

101.5

Ø4.3   Ø4.3
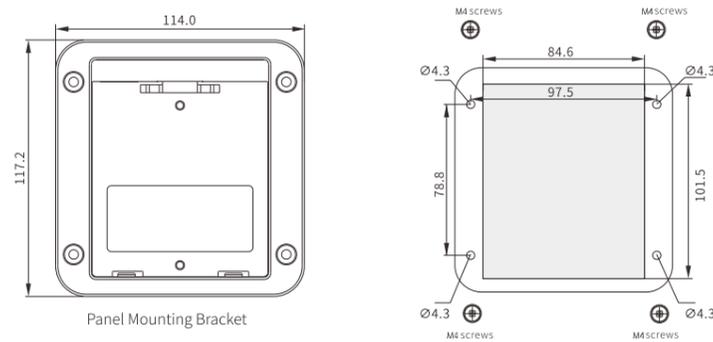
M4 screws   M4 screws

Panel Mounting Bracket Instruction

The gray areas are the cut-out sections. The central cut-out measures 84.6 × 101.5 mm, and the four corner cut-outs are circular with a diameter of 4.34 mm. M4 screws and nuts are inserted into these cut-outs to secure the bracket to the door panel.

06
Stepper System

Fieldbus Stepper | RS485Integrated Drive & Control Stepper

Pulse-type Stepper | Stepper Motor