

XINJE

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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 openloop 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.



Panel

- LCD 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



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



Motor adaptability

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



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



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



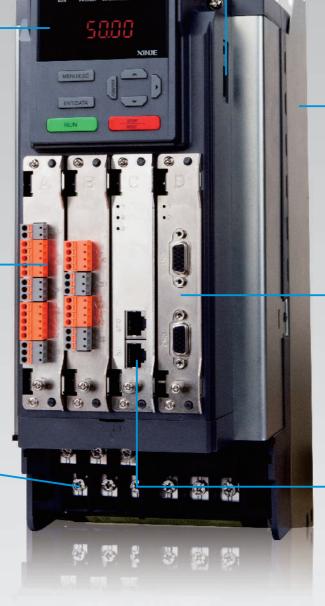
PG card feedback

- Support photoelectric encoder and rotary encoder, suitable for high-precision driving occasions
- PG card supports 0 to 63 arbitrary frequency division multiple
- Support differential, collector and push-pull signal input



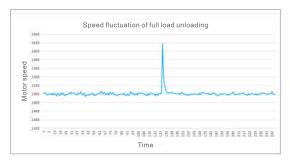
Networking function

- Optional communication card CANopen and EtherCAT, 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

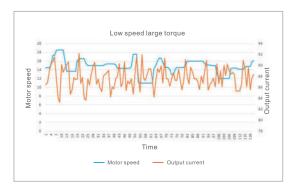


Excellent Product Performance

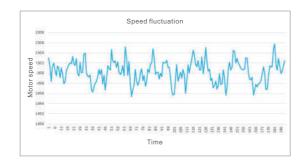
Excellent performance



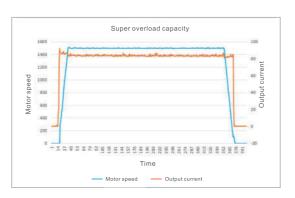
The speed fluctuation of VH6 series frequency converter driving the motor to suddenly reduce to no-load at rated torque and speed, and recovering the speed within 2 seconds.



When the VH6 series frequency converter drives the motor at 0.5Hz, the torque output is as high as 180%, reflecting the strong low-frequency torque performance.

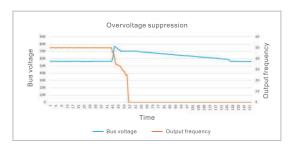


The speed fluctuation of VH6 series frequency converter driving the motor at rated torque and speed is stable at $\pm 0.2\%$.

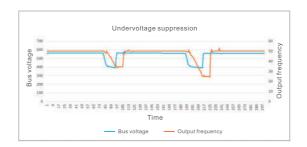


VH6 series frequency converter drives the motor to drive the load. The maximum overload can reach 180% and last for 3 seconds.

Perfect protection mechanism



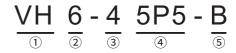
Overvoltage suppression is that when the bus voltage reaches or exceeds the bus overvoltage suppression point, the frequency converter will automatically adjust the operation frequency to suppress the rise of bus voltage, so as to ensure that the frequency converter will not cause overvoltage protection due to high bus voltage.



Undervoltage suppression is that when the bus voltage drops to the bus undervoltage suppression point, the frequency converter will automatically adjust the operation frequency, so as to ensure that the frequency converter will not report undervoltage fault due to low bus voltage in a short time. Once the power supply is restored within the validity period of undervoltage suppression, the frequency converter can continue to operate normally.

Naming Rule

VH6 frequency inverter naming rule



1) Product code

Sign	Name			
VH	General frequency inverter			

3 Input voltage level

Sign	Power supply voltage			
4	380V			

② Product series

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

⑤ Brake unit

Ī	Sign	Brake unit
	В	Built-in brake unit
	Vacant	No

4 Power level

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

5P5	5.5			
011	11			
018	18.5			
055	55			

Technical Parameters

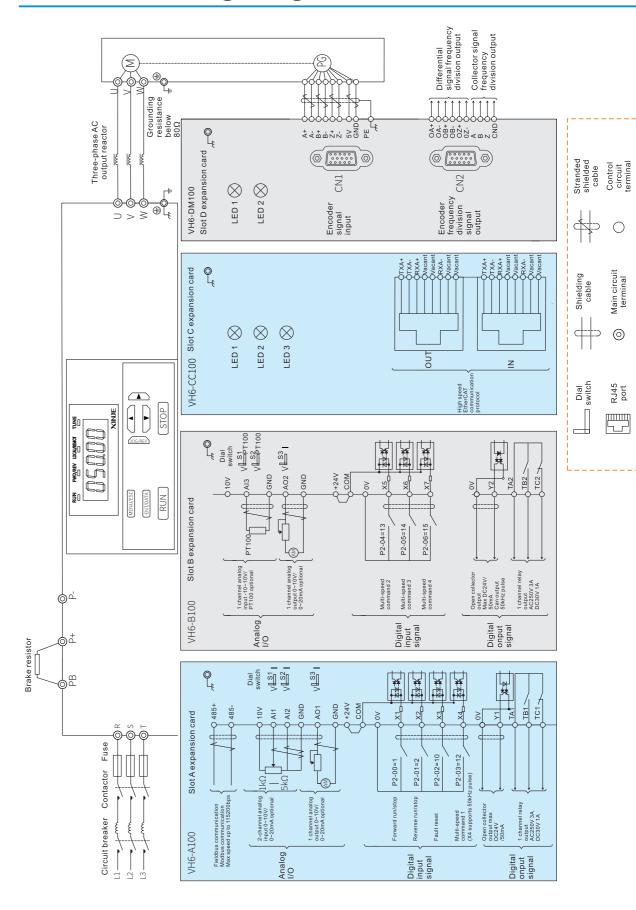
Model	Power supply capacity (KVA)	Input current (A)	Output current (A)	Adaptive motor (kW)
		Three-phase 380V	/ 50/60Hz	
VH6-43P7-B	5.9	11.0	9.0	3.7
VH6-45P5-B	8.9	14.6	13.6	5.5
VH6-47P5-B	11.0	20.5	17.0	7.5
VH6-4011-B	17.0	26.0	25.0	11.0
VH6-4015-B	21.0	35.0	32.0	15.0
VH6-4018-B	24.0	38.5	37.0	18.5
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 frequency inverter —

Technical Specifications

		VH6 high performance						
	Power range	3.7kW~55kW						
Input	Rated voltage, frequency	Three-phase 380V: three-phase 380V, 50/60Hz						
mput	Allowable voltage fluctuation range	Three-phase 380V: 320~440V						
Dutput	Voltage	0~input voltage						
Juipui	Frequency	0~500Hz						
	Control motor type	Asynchronous motor, permanent magnet synchronous motor, variable frequency motor						
	Control mode	Vector control with speed sensor (FVC	C) Vector control without speed sensor (SVC)	V/F control (VVF)				
	Speed precision	±0.2%	±0.5%	±1%				
	Speed fluctuation	±0.2%	±0.3%	±0.5%				
	Speed regulation range	1:2000	1:100	1:50				
Control	Startup torque	0Hz:180%	0.5Hz:150%	1.0Hz:150%				
performance	Torque accuracy	±5% rated torque	±10% rated torque	1				
	Torque response	≤10ms	≤20ms	1				
	Overload ability	150% rated current 60s						
	Frequency precision	Low frequency operation mode: 0.01F	Iz, 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	Digital input channel	Up to 7-channel digital input X, card A 3-channel (X5~X7), X4 can support m	has 4-channel (X1~X4), resolution is less than 2 ax 50kHz high speed pulse input	ms, card B has				
terminal input	Analog input channel	1 channel (AI3).	A has 2-channel (Al1, Al2), resolution is less tha out , Al3 support -10~10V input, can support PT1					
Control	Digital output channel		A has 1 channel (Y1) + 1 channel (TA1TB1TC1), C2).Y2 can support max 50kHz high speed pulse					
terminal output	Analog analog channel	, ,	rd A has 1 channel (AO1), card B has 1 channel (
	Start command given mode			rivon				
	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 Al 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						
Product performance	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 v 3.7kW~55kW models have built-in bra	oltage: 650~750V. ke unit, please connect brake resistor between l	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						
	Multiple bus support	Standard Modbus, can expand EtherCAT, CANopen						
	Multiple encoder support	Differential input encoder, OC input encoder, rotary 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						
Features	Timing control	maintain the continuous operation of the frequency converter in a short time Timing control function: time range 0.1min~6500min						
function	Multi-motor switching		realize the switching control of two motors					
	Motor overheating protection	Al3 supports PT100 sensor signal inp	<u> </u>					
	Flexible and diversified terminal functions	There are 51 kinds of multifunctional t	erminals X, 41 kinds of terminals Y, and 19 kinds	of logic function options				
		·	eneral frequency converter control functions					
	Communication customization parameters		rite the parameters of the frequency converter of					
	Software		to facilitate on-site data acquisition and debugg					
	Keyboard display	and other parameters	t frequency, output voltage, output current, inpu	t and output status				
Display and	Key lock	Realize partial or full locking of keys to	prevent false triggering					
reyboard	Parameter copy	Standard LED display digital potention (parameter upload/download)	meter keyboard, optional LCD English display ke	eyboard				
	Optional accessories	LCD keyboard, communication card (I	EtherCAT, CANopen), encoder PG card (increme	ental pulse, resolver)				
	Place of use		ist, corrosive gas, combustible gas, oil mist, water					
	Altitude	* -	an 1000m, the output current needs to be reduce					
	Ambient temperature		enhance the heat dissipation when ambient tem	nerature is 40°C~50°C\				
Environment	Ambient temperature Ambient humidity	Less than 95%RH, no condensation of	•	poraturo 10 40 0-00 0)				
	Vibration	Less than 5.9m/s2 (0.6g)	i mator diopiete					
	Storage temperature	-40°C~+70°C						
	Protection level	IP20						
	Cooling mode							
		Forced air cooling Wall mounted and embedded						

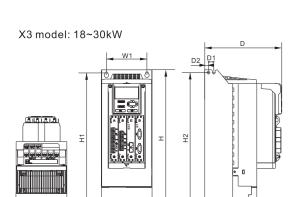
Terminal Wiring Diagram

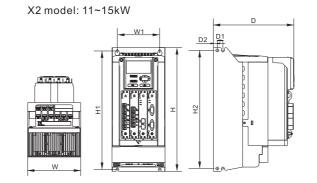


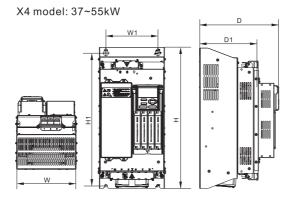
Installation Dimension

(Unit: mm)

X1 model: 3.7~7.5kW _ D1 ALALALA.





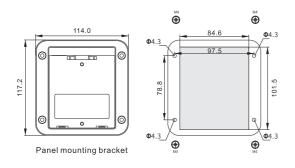


Voltage		Overall installation dimension (width×height×depth)			Mounting	Weight						
level	Driver model	Body code	W	Н	D	W1	H1	H2	D1	D2	screw specification	(Kg)
	VH6-43P7-B											
	VH6-45P5-B	X1	110	305	202	55	290	290	14	/	M5	4
	VH6-47P5-B											
	VH6-4011-B	X2	150	350	228	120	335	334	27	11	M6	5.7
	VH6-4015-B	Λ2	130	330	220	120	333	334	21	''	IVIO	5.7
380V	VH6-4018-B											
	VH6-4022-B	X3	150	417	228	120	402	402	27	11	M6	10
	VH6-4030-B											
	VH6-4037-B											
	VH6-4045-B	X4	235.6	510	287.9	188	490	/	213.9	/	M8	/
	VH6-4055-B											

Panel dimension

(E) (RUN)

Panel mounting bracket drawing



Panel mounting bracket description The gray area is the hollowed out part, the hollowed out area in the middle is 84.6×101.5, and the hollowed out area at the four corners is a circle with a diameter of 4.34. Put M4 screws to fix the

Accessory Description

Standard I/O card VH6-A100



1 channel RS485 communication + 2 channels AI +1 channel AO + 4 channels bipolar input + 1 channel YT + 1 channel YR

Expansion I/O card VH6-B100



1 channel AI + 1 channel AO + 3 channels bipolar input + 1 channel YT + 1 channel YR

CANopen communication card VH6-CN100



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.

EtherCAT communication card



The expansion interface card specially designed for EtherCAT protocol is suitable for Xinje frequency converter. Xinie frequency converter can be connected to EtherCAT network and exist as a slave station through this card.

Simple incremental encoder PG card



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.

LCD panel VH6-PE100

The panel is LED display, which can set parameters, monitor the operation status of the frequency converter and operate the frequency converter.



Upper computer connection cable

JC-EV-15

To connect the frequency inverter and PC, to connect the frequency inverter software and update the firmware.



Panel expansion cable

JC-RD-20

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



Mounting base VH6-DPANEL

Base of VH6 frequency converter operation panel during extension installation.



LCD panel VH-PC100

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.

VH6 frequency inverter

Typical Application Industry

It is applicable to 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.



















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.



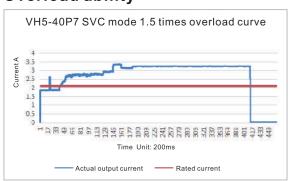
VH5 frequency converter is equipped with one RS485 communication port as standard. In addition, it can be added to EtherCAT and CANopen networks through the special communication expansion card and exist as a slave station.

VH5 frequency inverter —

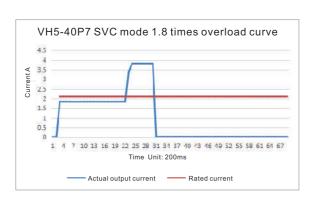
Excellent Product Performance



Overload ability

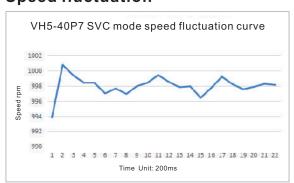


VH5 frequency converter 1.5 times overload time 60 seconds



VH5 frequency converter 1.8 times overload time 1 second

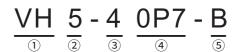
Speed fluctuation



VH5 frequency inverter speed fluctuation ±0.3%

Naming Rule

VH5 frequency inverter naming rule



① Product code Sign Name VH Frequency inverter

Brake unit
Built-in brake unit

Brake unit
 Sign

Vacant

② Product series Sign Name General type open loop vector frequency inverter

Input	4) Powe	
Sign	Power supply voltage	Sign
4	380V	0P7
2	220V	1P5

4 Power level

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

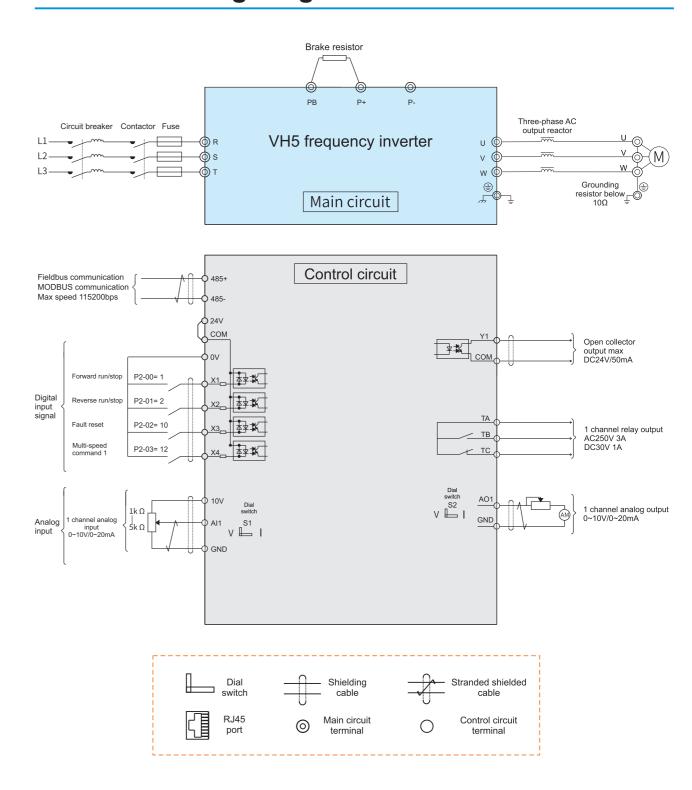
Technical Parameter

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

Technical specifications

	Item name	VH5 general type open loop ved	ctor frequency inverter				
	Power range	0.75kW~5.5kW					
	Rated voltage, frequency	3AC 380V;50/60Hz 3AC 220V;50/6	60Hz 1AC 220V;50/60Hz				
nput	Allowable voltage fluctuation range	±15%					
Output	Voltage	0~input voltage					
Dutput	Frequency	0~300Hz					
	Control motor type	Asynchronous motor					
	Control mode	Vector control without speed sensor (SVC)	V/F control (VVF)				
	Speed precision	±0.5%	±1%				
	Speed fluctuation	±0.3%	±0.5%				
Control	Speed regulation range	1:100	1:50				
performance	Startup torque	0.5Hz:150%	1.0Hz:150%				
	Torque accuracy	±10% rated torque	1				
	Torque response	≤20ms	1				
	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	Digital input channel	Standard: 4 digital X bipolar input terminals					
erminal input	Analog input channel	Standard: 1 analog input terminal AI1, support 0~					
Control	Digital output channel	Standard: 1 multi-functional Y1 output terminal, 1					
erminal output	Analog output channel	Standard: 1 analog output terminal AO1, support	U~1UV or U~20mA				
	Start command given mode	Communication given (Modbus, CANopen, Ether	CAT), operate panel given, terminal given				
Product function	Frequency given mode	Communication given (Modbus, CANopen, Ethera analog Al given, multi-speed given, simple PLC g					
	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 re	esistor				
	Multiple bus support	Standard Modbus, can expand EtherCAT, CANopen					
	Multiple encoder	LCD display, parameter setting, status monitoring					
	support	location, program download, mass storage of parameters					
	Instant stop nonstop	In case of instantaneous power failure, the load for of voltage to maintain the continuous operation of	f the frequency converter in a short time				
	Timing control	Timing control function: time range 0.1min~6500min					
eatures	Multi-motor switching	Two groups of motor parameters can realize the s	witching control of two motors				
unction	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				
	Keyboard display	It can display the set frequency, output frequency output status and other parameters	, output voltage, output current, input and				
Display and	Key lock	Realize partial or full locking of keys to prevent fa	Ise triggering				
eyboard	Parameter copy	Standard LED display digital potentiometer keybo (parameter upload/download)					
	Optional accessories	LCD keyboard, communication card (EtherCAT, C	ANopen)				
	Place of use	Indoor, free from direct sunlight, no dust, corrosiv drip or salt	• /				
	Altitude	Less than 1000m (When it is higher than 1000m, t about 10% of the rated current for each increase of					
Environment	Ambient temperature	-10°C~+40°C (please derate to use or enhance this 40°C~50°C)	e heat dissipation when ambient temperature				
	Ambient humidity	Less than 95%RH, no condensation of water drop	lets				
	Vibration	Less than 5.9m/s2 (0.6g)					
	Storage temperature	-40°C~+70°C					
	Protection level	IP20					
	Cooling mode	Forced air cooling					
Installatio	n mode	Wall mounted and embedded					

Terminal wiring diagram

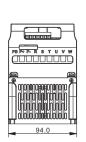


VH5 frequency inverter

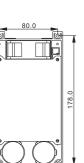
Installation Dimension Drawing

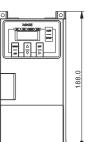
(Unit: mm)

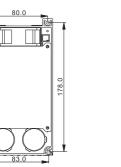
VH5-20P7/21P5/22P2/40P7/41P5/42P2/43P7-B



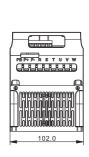


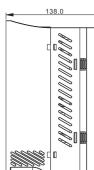


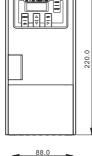


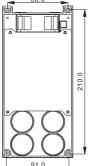




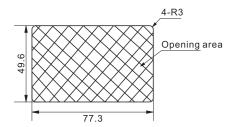








Take out the panel



The panel of VH5 series frequency converter can be taken out, and the user can install the panel in the slot according to the opening size provided on the left.

Accessory Description





VH rectifier braking module

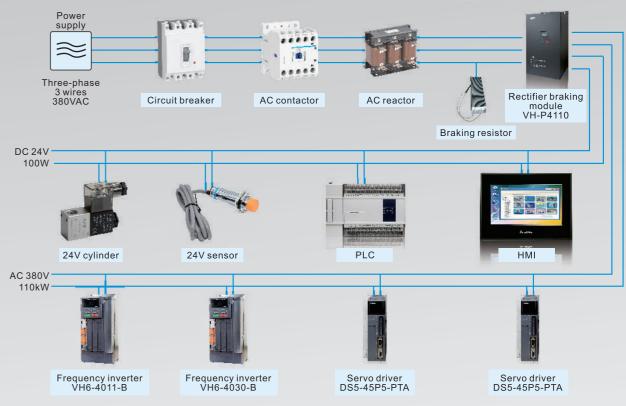
VH series rectifier braking module is mainly used in occasions where DC common bus is required for drive products such as frequency converter or servo.

Two functions of rectifier braking unit composing the common bus:

- Energy conservation and environmental protection, power recovery
- Stable and reliable operation to avoid losses caused by accidental power failure and shutdown



DC common bus system topology



Note: The VH rectifier module inputs AC380V voltage, which can provide electric energy for the following products after rectification: 1.380V frequency converter, servo driver, and the total load power shall not exceed the rated power of the module 2.DC 24V PLC, HMI, cylinder, sensor, stepping driver, the maximum power shall not exceed 100W.

Application device type:

Double twister, slitter, drawing machine, non-woven production line and other types of equipment.

Naming Rule

Naming rules of rectifier braking module

$$\frac{VH}{0} - \frac{P}{2} + \frac{110}{3}$$

1 Product code				
Sign	Name			

1) Product code		② Rectifier braking module			
ĺ	Sign	Name	Sign	Name	
	VH	VH series	Р	Rectifier braking module	

③ Input voltage level Sign Power supply voltage

4 Pow	ver level of rectifier modu
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Sign	Power level (kW)
030	30
055	55
110	110

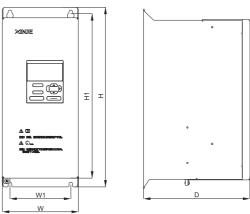
Model and Technical Parameters of Rectifier Braking Module

Model of rectifier braking module		VH-P4110	VH-P4055	VH-P4030		
	Rated power (kW)	110	55	30		
Input	Input current (A)	220	112	68		
прис	Input voltage (ACV)	380V;50Hz/60Hz				
	Power supply capacity (KVA)	180	85	55		
Output	Output current (DCA)	120	100	44		
Output	Output voltage (DCV)	537	530	531		
	Rated continuous braking current (A)	50	40	40		
Braking	Max peak braking current (A)	110	100	50		
Braking	Recommended rated braking resistor (Ω)	11kW / 10Ω	9kW / 13Ω	5kW / 20Ω		
	Min braking resistor	7Ω	10Ω	16Ω		

Installation dimension drawing

(Unit: mm)



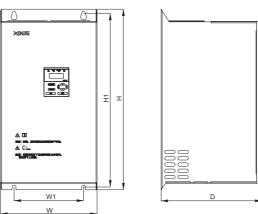








VH-P4110





Model of rectifier braking module	Overall installation dimension (width×height×depth)					
	W	W1	D	Н	H1	
VH-P4030	150	120	210	355	340	
VH-P4055	220	150	260	465	445	
VH-P4110	277.6	200	290	520	500	