



HV320

High Performance Vector Control Inverter

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Modular Design

Multiple Communication Protocol

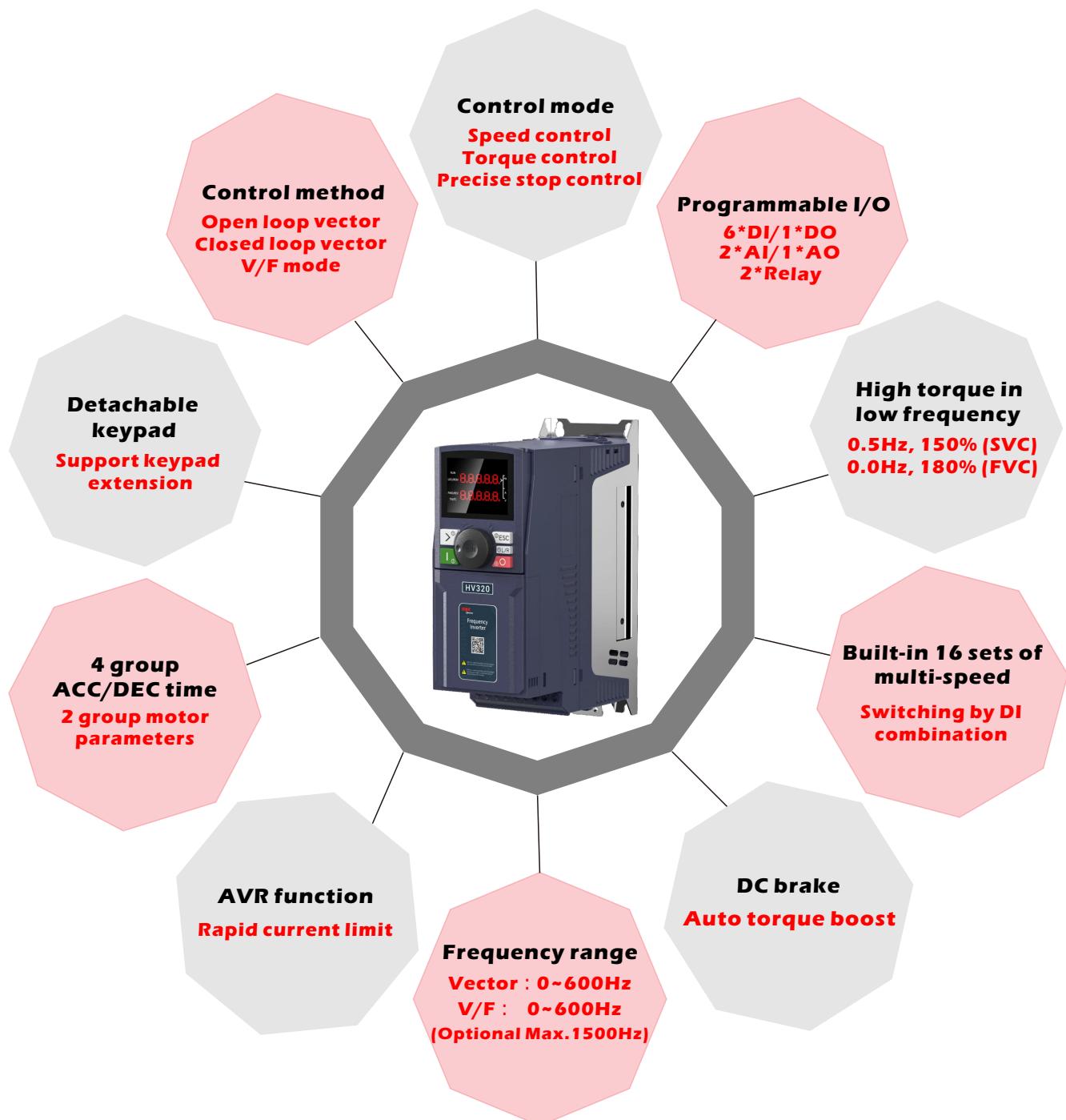
AC Induction Motor and PM Motor Control

**High Performance Closed Loop/
Open Loop Vector Control**



Basic specifications

Voltage	Power	
Single phase AC220V	0.4kw~4.0kw	Based on listening and understanding of customers' requirement, HV320 supports full range of input voltage , complete functions for different countries and applications.
Three phase AC220V	0.4kw~110kw	
Three phase AC380V~480V	0.75kw~800kw	



High performance vector control inverter

Product advantages

Modular design



Modular design makes the installation and stock easier and more flexible. Customer could change PG/Communication cards/Control boards easily.

Multiple communication extension cards



Built-in Modbus RTU, with various communication extention cards.

Built-in 2*STO



Built-in 2 channels STO, To ensure high safety features in applications.

LED/LCD keypad options



Standard 2-line LED keypad;
LCD keypad option which could show more information, copy and paste parameters between different VFD.

Control of multi-types of motors



Open/Closed loop control of Synchronous/Asynchronous motor.

Supports of multiple encoders

HV320-PG-DIF-V2

Supports differential (compatible with 5V power supply) and open collector (compatible with 5V/15V power supply)

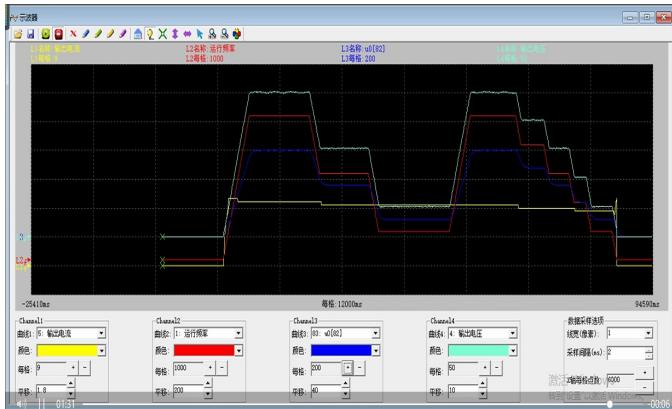
HV320-PG-RB-V2

Support resolver

Supports multiple encoder interfaces such as open collector, differential, resolver, etc.
Convenient for closed-loop vector control.

Product advantages

Commissioning software on PC



Monitor operating status via PC, optimize, modify, back up and copy data parameters.

Constant pressure water supply



HV320 perfectly supports the constant pressure water supply function.

Special Mode

Synchronous motors model-HV320S



Support open&closed loop vector mode Optimized control algorithm with high synchronization control accuracy.

Solar pump model-HV320P



HV320P has a powerful solar pump function.

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Model Definition

HV320 - 7R5 G 3			
1	2	3	4
① HV 320 Series Inverter			③ Code Inverter Type G General Purpose
2	Code Motor R75 0.75kW 7R5 7.5kW 011 11kW 018 18.5kW 110 110kW 400 400kW	④ Code Inverter Type 1 Single phase 220V 2 Three phase 220V 3 Three phase 380V-440V 4 Three phase 460V-480V	
Note: HV320S is Dedicated to PMSM motor. HV320P is Dedicated to solar pump.			

HV320 series inverter specifications

Model	Input current (A)	Output current (A)	Adaptive motor (kW)	Power supply capacity (kVA)
G1 input voltage range: Single-phase AC220V±15%, 50 / 60 Hz				
HV320-R40G1	5.4	2.3	0.4	0.5
HV320-R75G1	8.2	4	0.75	1
HV320-1R5G1	14	7	1.5	2
HV320-2R2G1	23	9.6	2.2	3
HV320-004G1	32	17	4	5
G2 input voltage range: Three-phase AC220V±15%, 50 / 60 Hz				
HV320-R40G2	2.4	2.1	0.4	0.5
HV320-R75G2	4.6	3.8	0.75	1
HV320-1R5G2	9	7.2	1.5	2
HV320-2R2G2	11.4	9	2.2	3
HV320-004G2	16.7	17	4	5
HV320-5R5G2	32	25	5.5	7.5
HV320-7R5G2	41	32	7.5	10
HV320-011G2	59	45	11	15
HV320-015G2	69	60	15	20
HV320-018G2	90	75	18	25
HV320-022G2	112	91	22	30
HV320-030G2	141	112	30	40
HV320-037G2	192	150	37	50
HV320-045G2	225	176	45	60
HV320-055G2	256	210	55	75
HV320-075G2	307	304	75	100
HV320-093G2	385	380	93	125
HV320-110G2	430	426	110	150
HV320-132G2	468	465	132	175
HV320-160G2	590	585	160	220
HV320-200G2	714	725	200	270
HV320-220G2	810	820	220	300
				464

HV320 series inverter specifications

Model	Input current (A)	Output current (A)	Adaptive motor (kW) (HP)	Power supply capacity (kVA)
G3 input voltage range: Three-phase AC 380~440 (-15%~+10%), 50 / 60 Hz				
HV320-R75G3	3.4	2.1	0.75	1
HV320-1R5G3	5	3.8	1.5	2
HV320-2R2G3	5.8	5.1	2.2	3
HV320-004G3	10.5	9	4	5
HV320-5R5G3	14.6	13	5.5	7.5
HV320-7R5G3	20.5	17	7.5	10
HV320-011G3	26	25	11	15
HV320-015G3	35	32	15	20
HV320-018G3	38.5	37	18.5	25
HV320-022G3	46.5	45	22	30
HV320-030G3	62	60	30	40
HV320-037G3	76	75	37	50
HV320-045G3	92	91	45	60
HV320-055G3	113	112	55	75
HV320-075G3	157	150	75	100
HV320-093G3	180	176	93	125
HV320-110G3	214	210	110	150
HV320-132G3	256	253	132	175
HV320-160G3	307	304	160	220
HV320-185G3	350	340	185	245
HV320-200G3	385	377	200	270
HV320-220G3	430	426	220	300
HV320-250G3	468	465	250	340
HV320-280G3	525	520	280	380
HV320-315G3	590	585	315	430
HV320-355G3	665	650	355	480
HV320-400G3	714	725	400	530
HV320-450G3	830	800	450	600
HV320-500G3	900	860	500	670
HV320-560G3	960	950	560	750
HV320-630G3	1140	1140	630	840
HV320-710G3	1315	1300	710	950
HV320-800G3	1525	1500	830	1070
				802

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HV320 series inverter specifications

Model	Input current (A)	Output current (A)	Adaptive motor (kW) (HP)	Power supply capacity (kVA)
G4 input voltage range: Three-phase AC 460~480 (-15%~+10%), 50 / 60 Hz				
HV320-R75G4	3.4	2.1	0.75	1
HV320-1R5G4	5	3.8	1.5	2
HV320-2R2G4	5.8	5.1	2.2	3
HV320-004G4	10.5	9	4	5
HV320-5R5G4	14.6	13	5.5	7.5
HV320-7R5G4	20.5	17	7.5	10
HV320-011G4	26	25	11	15
HV320-015G4	35	32	15	20
HV320-018G4	38.5	37	18.5	25
HV320-022G4	46.5	45	22	30
HV320-030G4	62	60	30	40
HV320-037G4	76	75	37	50
HV320-045G4	92	91	45	60
HV320-055G4	113	112	55	75
HV320-075G4	157	150	75	100
HV320-093G4	180	176	93	125
HV320-110G4	214	210	110	150
HV320-132G4	256	253	132	175
HV320-160G4	307	304	160	220
HV320-185G4	350	340	185	245
HV320-200G4	385	377	200	270
HV320-220G4	430	426	220	300
HV320-250G4	468	465	250	340
HV320-280G4	525	520	280	380
HV320-315G4	590	585	315	430
HV320-355G4	665	650	355	480
HV320-400G4	714	725	400	530
HV320-450G4	830	800	450	600
HV320-500G4	900	860	500	670
HV320-560G4	960	950	560	750
HV320-630G4	1140	1140	630	840
HV320-710G4	1315	1300	710	950
HV320-800G4	1525	1500	800	1070
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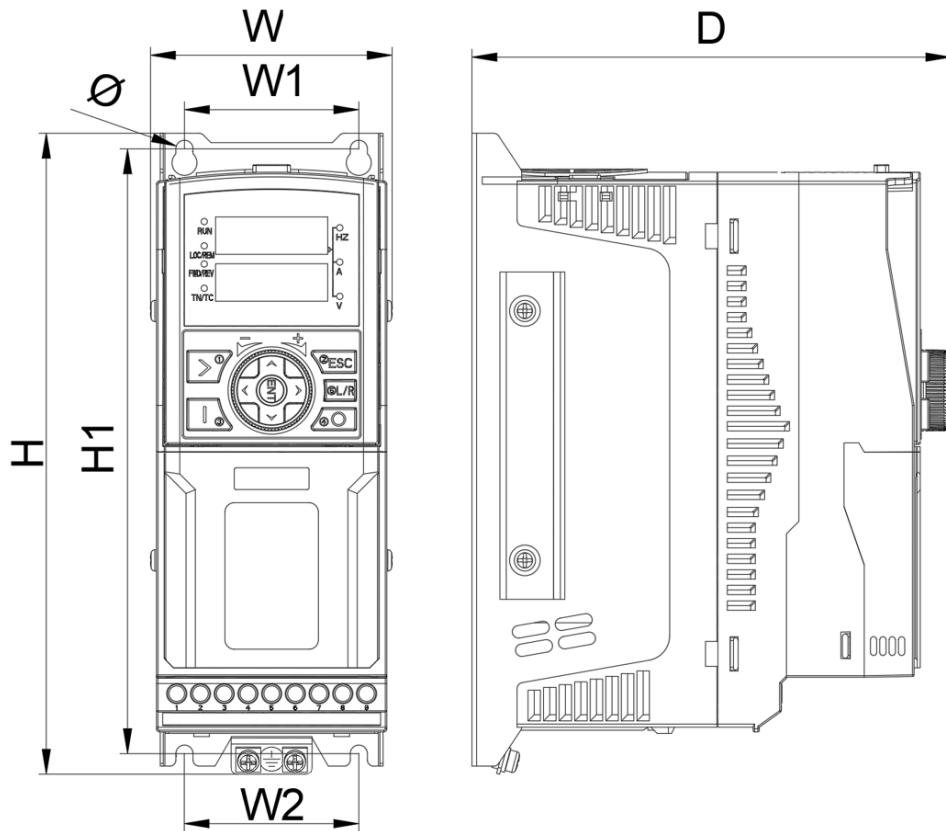
Specifcaiton

Items	Description
Highest frequency	Vector control: 0 ~ 600 Hz; V/F control: 0 ~ 600 Hz (Optional Max.1500Hz)
Carrier frequency	0.5kHz~16kHz The carrier frequency can be automatically adjusted according to the load characteristics
Input frequency resolution	Digital setting: 0.01 Hz; Analog setting: highest frequency * 0.025 %
Control mode	1: Open loop vector control (SVC) 2: Closed loop vector control (FVC); 3: V/F control
Start torque	0.5Hz/150% (SVC) ; 0Hz/180% (FVC)
Speed control range	1 : 100 (SVC) 1 : 1000 (FVC)
Speed stabilization accuracy	±0.5% (SVC) ± 0.02% (FVC)
Torque control accuracy	±5%
Overload capacity	150 % rated current 60s; 180 % rated current 3s
Torque increase	Automatic torque increase; The manual torque is increased by 0.1 % - 30.0 %
V/F curve	Linear; Multipoint type; N - power V/F curve (power 1.2, power 1.4, power 1.6, power 1.8, power 2)
V/F separation	Two methods: full separation and half separation
Basic function	Straight line or S curve acceleration and deceleration mode. Four kinds of acceleration and deceleration times, The acceleration and deceleration time range is 0.0 to 6500.0 S.
	DC braking frequency: 0.00 Hz ~ maximum frequency Braking time: 0.0s ~ 36.0s Brake action current value: 0.0 % - 100.0 %
JOG	Inching frequency range: 0.00 Hz ~ 50.00 Hz. Inching acceleration and deceleration time 0.0s ~ 6500.0 s
Simple PLC, multi-stage speed operation	Up to 16 - speed operation via built-in PLC or control terminal
Built - in PID	Closed-loop control system capable of conveniently realize process control
Automatic voltage regulation (AVR)	When the grid voltage changes, the output voltage can be automatically kept constant
Over voltage and over-loss rate control	Automatically limit the current and voltage during operation to prevent frequent over current and over voltage trips.
Fast current limiting function	Minimize over-current faults and protect the normal operation of the frequency inverter
Torque limitation and control	The " excavator" feature automatically limits the torque during operation to prevent frequent over current trips; Open loop vector mode can realize torque control

High performance vector control inverter

Specifcaiton

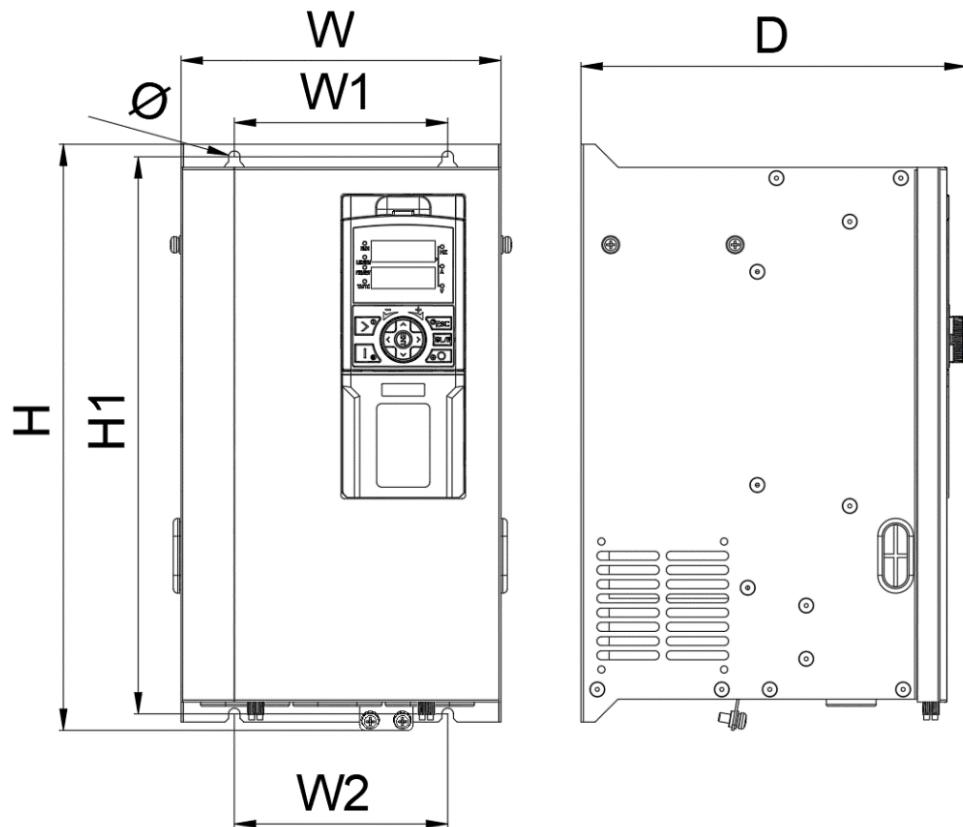
Items	Description
Individualized performance	Virtual IO Five sets of virtual DIDO, which can realize simple logic control
	Motor overheat protection Optional motor overheat expansion card accepts motor temperature sensor input (PT100/PT1000)
	Various types of encoder feedback Support differential, open collector type encoder, support resolver
	STO function Two STO (Safe Torque Off) terminals makes the system safer and more reliable
	Outstanding performance Using high performance current vector control technology to realize asynchronous and synchronous motor control
	No shutdown in case of momentary power outage When the instantaneous power failure occurs, the load feedback energy compensates for the voltage drop and the frequency inverter will continue to operate for a short period of time
	Fast current limiting Avoiding frequent over current faults of the frequency inverter
	Timing control Timing control function: set the time range from 0.0 min to 6500.0 min
	Multi-motor switching Four sets of motor parameters can realize switching of four motors
Running	Communication Built-in RS-485. Optional: PROFIBUS-DP PROFINET; EtherCAT; Modbus TCP; EtherNET/IP; CANlink
	Command source Operation panel setting, control terminal setting, serial communication port setting. Can be switched in various ways
	Frequency source 10 frequency sources: Digital setting, analog voltage setting, analog current setting, pulse setting, serial port setting. Can be switched in a variety of ways
	Auxiliary frequency source 10 auxiliary frequency sources. Flexible auxiliary frequency fine-tuning and frequency synthesis
	Input terminal Standard: 6 digital input terminals (DI1~DI6), HDI5 supports high-speed pulse input up to 100kHz. 2 analog input terminals (AI1~AI2, AI1 only supports 0~10V ;AI2 supports 0~10V/4~20mA Safety function (STO) interface (STO1, STO2)
Environment	Output terminals Standard: 1 digital output terminal (DO1) 2 relay output terminals (TA1-TB1-TC1, TB2-TC2) 1 analog output terminal (AO1), supports 0~10V/0~20mA
	Place of use Dust - free, metal dust, corrosive gases, flammable gases, oil fog, salt fog, water vapor, dripping direct sunlight - free indoor
	Altitude Below 1,000 meters
	Ambient temperature -10 ~ 40 ,(When the ambient temperature is 40 ~50 , please use at a reduced rating)
	Humidity Less than 90 % RH without condensation
	Vibration Less than 5.9m/s2(0.6g)
	Storage temperature -20 ~ +60
	Protection grade IP20

Product dimensions and installation dimensions

A1~A2

Case	Model	Installation Dimensions (mm)			External dimension (mm)			Hole (mm)
		W1	W2	H1	W	H	D	
A1	HV320-R75G3/4	56	56	194	78	206	154	5.5
	HV320-1R5G3/4							
	HV320-2R2G3/4							
	HV320-004G3/4							
	HV320-R40G2							
	HV320-R75G2							
	HV320-1R5G2							
	HV320-2R2G2							
	HV320-R40G1							
	HV320-R75G1							
	HV320-1R5G1							
	HV320-2R2G1							
A2	HV320-5R5G3/4	68	68	219	93	235	154	5
	HV320-7R5G3/4							
	HV320-004G2							
	HV320-004G1							

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Product dimensions and installation dimensions



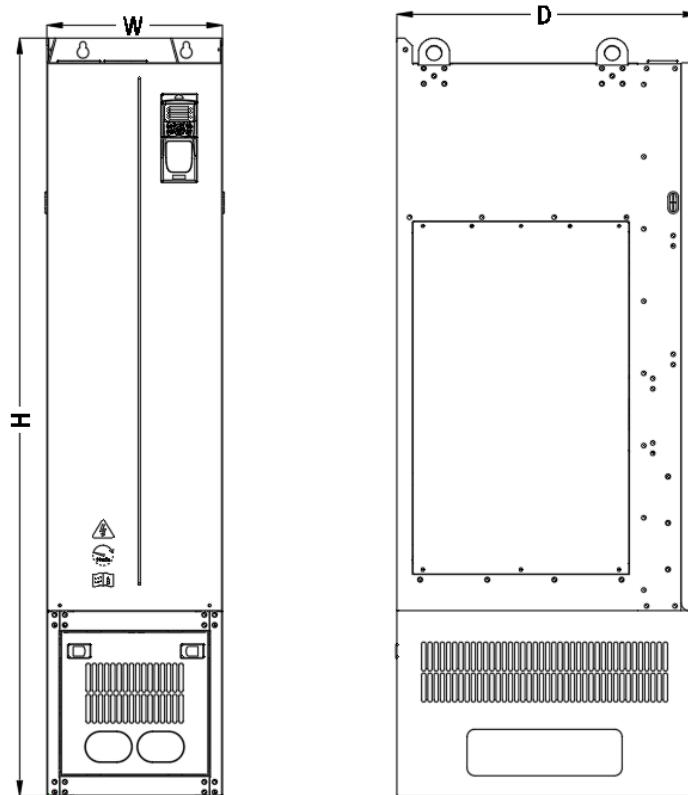
A3~A17

Case	Model	Installation Dimensions (mm)			External dimension (mm)			Hole (mm)
		W1	W2	H1	W	H	D	
A3	HV320-011G3/4	100	100	265	142	283	195	7
	HV320-015G3/4							
	HV320-5R5G2							
	HV320-7R5G2							
A4	HV320-018G3/4	120	120	289	150	305	210	7
	HV320-022G3/4							
	HV320-011G2							
A5	HV320-030G3/4	120	120	314	180	330	217	6.5
	HV320-015G2							
A6	HV320-037G3/4	160	160	407	240	418	248	6.5
	HV320-018G2							
A7	HV320-045G3/4	220	220	484	307	500	255	10
	HV320-055G3/4							
	HV320-075G3/4							
	HV320-022G2							
	HV320-030G2							
	HV320-037G2							

volume	Model	Installation Dimensions (mm)			External dimension (mm)			Hole (mm)
		W1	W2	H1	W	H	D	Φ
A8	HV320-075G3/4	220	220	612	307	650	270	10
	HV320-090G3/4							
	HV320-045G2							
A9	HV320-110G3/4	220	220	639	317	680	320	10
	HV320-055G2							
A10	HV320-132G3/4	300	300	681	425	720	326	12
	HV320-160G3/4							
	HV320-075G2							
A11	HV320-185G3/4	200	130	885	335	946	537	12
	HV320-200G3/4							
	HV320-220G3/4							
	HV320-090G2							
	HV320-110G2							
A12	HV320-250G3/4	200	130	925	340	986	585	13
	HV320-132G2							
A13	HV320-280G3/4	200	130	1085	340	1140	585	13
	HV320-315G3/4							
	HV320-160G2							
A14	HV320-355G3/4	246.5+246.5	246.5+246.5	1025	700	1058	412	13
A15	HV320-400G3/4	300+300	300+300	1235	800	1264	483	16
	HV320-450G3/4							
	HV320-200G2							
	HV320-220G2							
A16	HV320-500G3/4	350+350	350+350	1365	900	1400	510	16
	HV320-560G3/4							
	HV320-630G3/4							
A17	HV320-710G3/4	/	/	/	1200	1800	500	/
	HV320-800G3/4							

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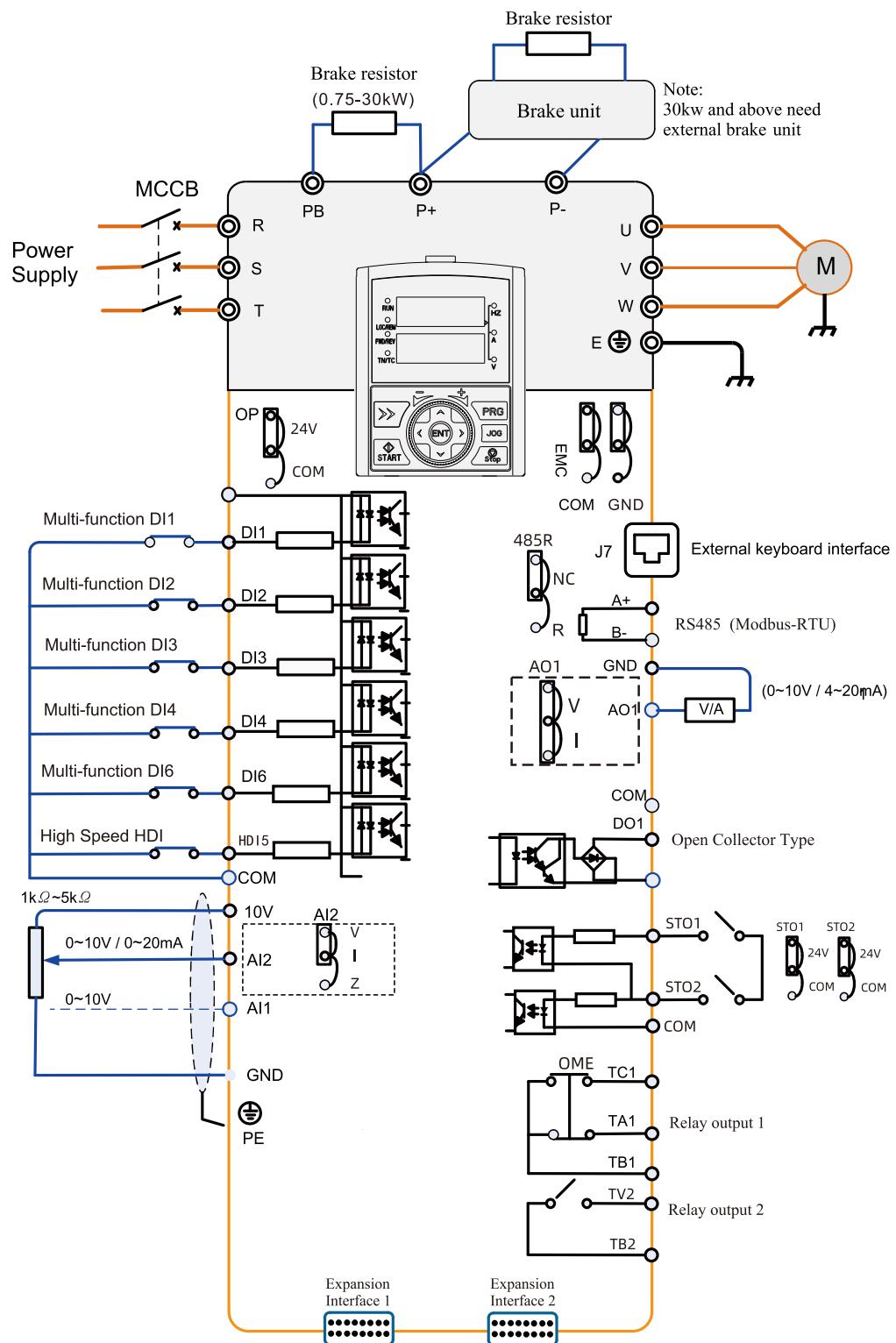
Dimensions with base



A9~A17

Case	External dimension (mm)		
	W	H	D
A9	317	1040	320
A10	425	1065	326
A11	335	1310	537
A12	340	1350	585
A13	340	1470	585
A14	700	1380	412
A15	800	1636	483
A16	900	1756	510
A17	1200	1800	510

Standard wiring diagram of frequency inverter



High performance vector control inverter

Expansion accessories

Picture	Model	Description
A black metal housing with a green printed circuit board (PCB) inside.	PG card HV320-PG-DIF-V2	Supports differential (compatible with 5V power supply) and open collector (compatible with 5V/15V power supply).
A black metal housing with a green printed circuit board (PCB) inside.	HV320-PG-RB-V2	Support resolver
A black metal housing with a green printed circuit board (PCB) inside.	Communication card HV320-ECAT-V2	EtherCAT communication card
A black metal housing with a green printed circuit board (PCB) inside.	HV320-PNET-V2	Profinet communication card
A black metal housing with a green printed circuit board (PCB) inside.	HV320-DP-V2	Profibus-DP communication card
A black metal housing with a green printed circuit board (PCB) inside.	HV320-EIP-V2	Ethernet/IP communication card
A black metal housing with a green printed circuit board (PCB) inside.	HV320-CAN-V2	CANlink communication card
A black metal housing with a green printed circuit board (PCB) inside.	HV320-MTCP-V2	Modbus TCP communication card
A black metal housing with a green printed circuit board (PCB) inside.	HV320-RS485I-V2	RS485 communication card with isolation
A black metal housing with a green printed circuit board (PCB) inside.	I/O card HV320-IO1-V2	1 AO output (AO2); 2 DI inputs (DI7, DI8); 1 High-speed pulse output, 1 Relay output
A black metal housing with a green printed circuit board (PCB) inside.	HV320-IO2-V2	2 DI inputs (DI7, DI8); 2 Relay output
A black keypad with a small LCD screen and several buttons.	Keypad HV320-LCD Keypad-V2	LCD display, support copy function
A black keypad with a small LCD screen and several buttons.	HV320-LED Keypad-V2	LED display, monitoring drive status parameters



HNC ELECTRIC LIMITED is a company dedicated to the development and production of intelligent industrial automation solutions based on national strategic needs.

Supported by its outstanding electrical and electronic technology and strong control technology, it provides control, display, drive and system solutions and other related products and services to customers worldwide.

With 29 years of hard work, we have developed and produced professional CNC systems, industrial robots, servo drives, servo motors, reducers, inverters, PLCs, HMIs, etc.

In more than 80 countries and regions around the world, we have established a comprehensive agent system and after-sales service system. In the future, we will, as always, provide more professional services for global industrial automation.



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Any technique support,please feel to contact our support team**

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