

VARISPEED

PRODUCT BROCHURE

ELECTRONIC MOTOR CONTROL SOLUTIONS

ALPHA
DRIVE

HV320



WATER



OIL & GAS



INDUSTRY



MINING



MARINE



HVAC



AGRICULTURE

a member of the **Hudaco** group



- **MODULAR DERSiGN:** For easy on-site repair and maintenance
- Industry-leading and trustworthy drive performance and functional control.
- Unique current vector control algorithm to efficiently drive asynchronous/ synchronous motors to achieve high-precision, high-torque, and high-performance control.
- Exquisite design, reliable hardware structure, detachable keyboard, dual display, independent air duct, powerful functions, rich macro parameters.

VOLTAGE	POWER
Single Phase 220V Input to Three Phase 220V Output	0.75kW - 2.2kW
Three Phase 380V to 480V	0.75kW - 630kW

1

2

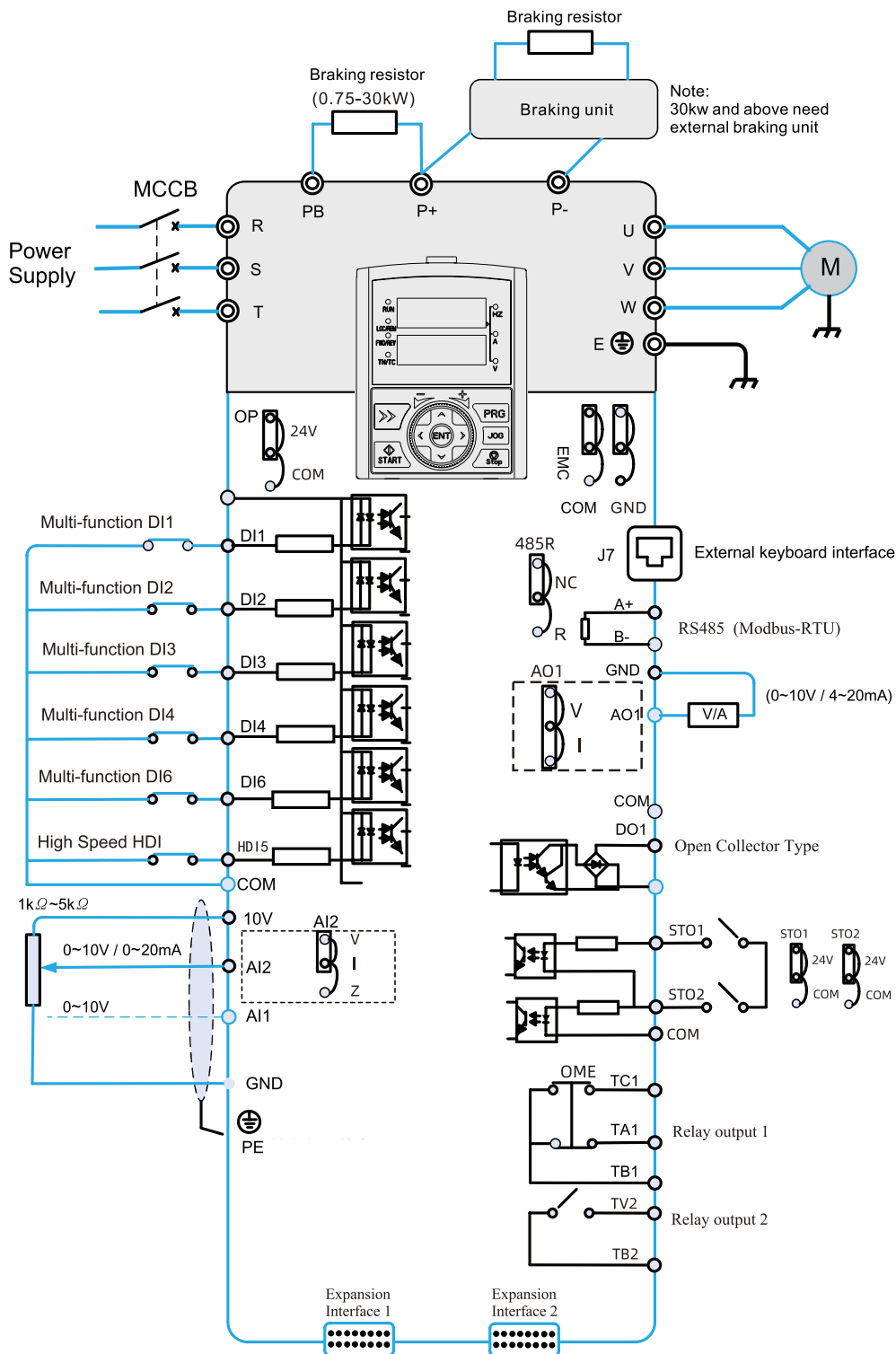
4

3

4

Exceptional inverters offering real value, designed to global standards

BASIC WIRING DIAGRAM



COMMUNICATION CARD OPTIONS

Easy to integrate into any fieldbus network, the HV320 comes standard with a built-in **Modbus RTU** with various other communication extension cards:

- ProfiNet
- EtherCat
- ProfiBus
- CanOpen
- Ethernet/IP
- Ethernet TCP/IP

EXTENSION CARDS

- Digital Inoput / Output
- Analogue Inout / Output
- Relay Output

PG CARDS

- Open Collector Output
- Resoler Output
- Differential Output

Alpha Drive HV320 Inverter



PARAMETERS

MODEL	INPUT CURRENT	OUTPUT CURRENT	ADAPTIVE MOTOR		POWER SUPPLY CAPACITY
	(A)	(A)	(KW)	(HP)	(KVA)
G1 INPUT VOLTAGE RANGE: SINGLE-PHASE AC220V±15%, 50 / 60 HZ					
HV320-R40G1	5.4	2.3	0.4	0.5	1.4
HV320-R75G1	8.2	4	0.75	1	2.2
HV320-1R5G1	14	7	1.5	2	3.7
HV320-2R5G1	23	9.6	2.2	3	6
HV320-004G1	32	17	4	5	10
G3 INPUT VOLTAGE RANGE: THREE-PHASE AC 380~440 (-15%~+10%), 50 / 60 HZ					
HV320-R75G3	3.4	2.1	0.75	1	1.5
HV320-1R5G3	5	3.8	1.5	2	3
HV320-2R2G3	5.8	5.1	2.2	3	4
HV320-004G3	10.5	9	4	5	5.9
HV320-5R5G3	14.6	13	5.5	7.5	8.9
HV320-7R5G3	20.5	17	7.5	10	11
HV320-011G3	26	25	11	15	14
HV320-015G3	35	32	15	20	19
HV320-018G3	38.5	37	18.5	25	21
HV320-022G3	46.5	45	22	30	24
HV320-030G3	62	60	30	40	33
HV320-037G3	76	75	37	50	40
HV320-045G3	92	91	45	60	48
HV320-055G3	113	112	55	75	59
HV320-075G3	157	150	75	100	82
HV320-093G3	180	176	93	125	95
HV320-110G3	214	210	110	150	112
HV320-132G3	256	253	132	175	134
HV320-160G3	307	304	160	220	161
HV320-185G3	350	340	185	245	184
HV320-200G3	385	377	200	270	202
HV320-220G3	430	426	220	300	226
HV320-250G3	468	465	250	340	246
HV320-280G3	525	520	280	380	276
HV320-315G3	590	585	315	430	310
HV320-355G3	665	650	355	480	345
HV320-400G3	714	725	400	530	413
HV320-450G3	830	800	450	600	464
HV320-500G3	900	860	500	670	500
HV320-560G3	960	950	560	750	526
HV320-630G3	1140	1140	630	840	600
HV320-710G3	1315	1300	710	950	692
HV320-800G3	1525	1500	830	1070	802

ELECTRONIC MOTOR CONTROL SOLUTIONS

Exceptional inverters offering real value, designed to global standards

SPECIFICATIONS

ITEM	DESCRIPTION	
BASIC FUNCTION	Highest Frequency	Vector control: 0 ~ 600 Hz; V/F control: 0 ~ 600 Hz (Optional Max.1500Hz)
	Carrier Frequency	0.5kHz ~ 6kHz 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 Stabilisation 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
	Acceleration and Deceleration curve	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 Brake	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 ~ 6500.0s.
	Simple PLC, Multi-stage Speed Operation	Up to 16-speed operation via built-in PLC or control terminal.
	Built-in PID	Up to 16-speed operation via built-in PLC or control terminal.
	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.
INDIVIDUALISED PERFORMANCE	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.
	Virtual IO	Virtual IO Five sets of virtual DIDO, which can realise 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 resolvers.
	STO Function	Two STO (Safe Torque Off) terminals make the system safer and more reliable.
	Outstanding Performance	Using high performance current vector control technology to realise 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.

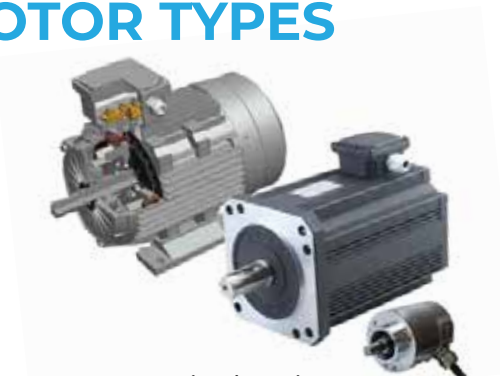
Alpha Drive HV10 & HV100



SPECIFICATIONS

INDIVIDUALISED PERFORMANCE	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 realise switching of four motors.
	Communication	Built-in RS-485. Optional: PROFIBUS-DP, PROFINET, EtherCAT, Modbus TCP, EtherNET/IP, CANlink.
RUNNING	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).
	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.
ENVIRONMENT	Place of Use	Dust-free, metal dust, corrosive gases, flammable gases, oil fog, salt fog, water vapour, dripping, direct sunlight-free indoor.
	Altitude	Below 1,000 metres.
	Ambient Temperature	-10°C 40°C, (when the ambient temperature is 40°C~50°C, please use at a reduced rating).
	Humidity	Less than 90% RH without condensation.
	Vibration	Less than 5.9m/s ² (0.6g).
	Storage Temperature	-20°C - +60°C.
	Protection Grade	IP20.

CONTROL OF MULTIPLE MOTOR TYPES



- Supports AC induction and AC permanent magnet motors.
- Both of the above have closed and open loop options.

LED AND LCD KEYPAD OPTIONS



- Standard 2-line LED keypad
- LCD 10-line LCD keypad
- LCD keypad has copy and paste function between VSDs.

ELECTRONIC MOTOR CONTROL SOLUTIONS

**Exceptional drives offering
real value, designed to
global standards**

YOU MIGHT ALSO BE INTERESTED IN:

- Alpha HV200A-G3/G6 400 to 690V VSD
- Alpha HV320 Flux Vector Control
- Alpha HV610 Crane VSD
- Alpha HVM1000 Medium Voltage Variable Speed Drives
- Alpha HMS1000 Medium Voltage Soft Starters
- Active Harmonic Filters
- Static VAR Generators
- Braking Resistors
- Encoders
- Surge Protection

**Ask your local Sales Representative
for details.**

THE VARISPEED QUALITY ASSURANCE

We refuse to cut corners when it comes to quality; and support our customers throughout the entire lifecycle with superb products and tailored services.

At the core of Varispeed's competitiveness is an all-encompassing commitment to high standards and sophisticated quality controls. With many years of expertise in the field, and in-house coverage of all areas, we are able to offer comprehensive service that truly deserves the name "Total Customer Support". Automating with us is simply the smarter way to automate.



VERSATILE



REPUTABLE



RELIABLE



EFFECTIVE



VALUE-DRIVEN



COMPETENT



CERTIFIED

Certified service & repair centres with industry-leading warranties.



AVAILABLE

24/7/365 expert service & technical support.



WATER



OIL & GAS



INDUSTRY



MINING



MARINE



HVAC



AGRICULTURE

JHB +27 (0) 11 312 5252 KZN +27 (0) 31 701 8760 CPT +27 (0) 21 948 6100
EMAIL enquiries@varispeed.co.za WEB www.varispeed.co.za

a member of the **Hudaco** group