

ALPHA6000V Series Close Loop Vector Control AC Drive



Feature

ALPHA6000V series AC drive is a highly effective product under close loop vector control. It truly realizes the decoupling of AC motor and control manner of DC motor, due to the adoption of the world's leading technology of current vector control and torque control.

ALPHA6000V series AC drive takes advantage of PG vector control mode (close loop vector control). Thus, it offers more distinguished control performance to meet much higher requirements in industries.

Technical Characteristics

- Wide input voltage fluctuation range reaches $\pm 20\%$.
- Built-in RS485 communication is in favor of MODBUS-RTU protocol.
- Flexible frequency mix-given function is provided.
- Multiple programmable I/O terminals.
- Support a range of extension cards including I/O, PG, communication card, and more.
- Four control modes: V/F control, Non-PG vector control, With-PG vector control (Close-loop vector control) and V/F separation control.

V/F Control

V/F control mode provides superior vector control performance. It is insensitive to motor parameters.

Start Torque	0.5Hz/ 150% rated torque
Speed Range	1:100
Steady-State Precision	$\pm 0.5\%$

It can control the motor to run stably with 150% rated torque at 0.5Hz.

Non-PG Vector Control (Open Loop Vector Control)

Independent current loop control guarantees the real torque control. It supports the immediate switching between torque control mode and speed control mode.

Start Torque	0.5Hz/ 180% rated torque
Speed Range	1:200
Steady-State Precision	$\pm 0.5\%$
Torque Precision	$\pm 5\%$

Torque Response	< 20ms
It can control the motor to run smoothly with 150% rated torque at 0.5Hz.	

With-PG Vector Control (CloseLoopVector Control)	
Independent current loop control ensures the real torque control. It supports the immediate switching between torque control mode and speed control mode.	
Start Torque	0.1Hz/ 180% rated torque
Speed Range	1:1000
Steady-State Precision	±0.05%
Torque Precision	±5%
Torque Response	< 10ms

- Outstanding Control Performance

- 1) 0.1s acceleration-deceleration under rated torque
- 2) No sudden change or oscillation occurs in current phase, while motor rotation reverses at zero speed.
- 3) Mains voltage is under stable control. Rapid and dependable brake is available at deceleration even without dynamic brake.

- Trip-Free Running

- 1) State-of-the-art technology of current and voltage control allows the AC drive to run stably without trip when alternatively accelerated and decelerated in 0.1s command.
- 2) With strong load capacity, the AC drive can continue working for 20s with 180% rated load, and 1min with 150% rated load.
- 3) The AC drive runs stably with large torque at low frequency under vector control mode.

- Unique treatment to instantaneous power-failure

- Extraordinary torque tracking function

Without special hardware detection circuit or function code setup, the AC drive can still recognize motor speed, rotation, and phase angle in 0~60Hz within 0.2s. Smooth tracking start of freely rotating motor is provided.

Industry Applications

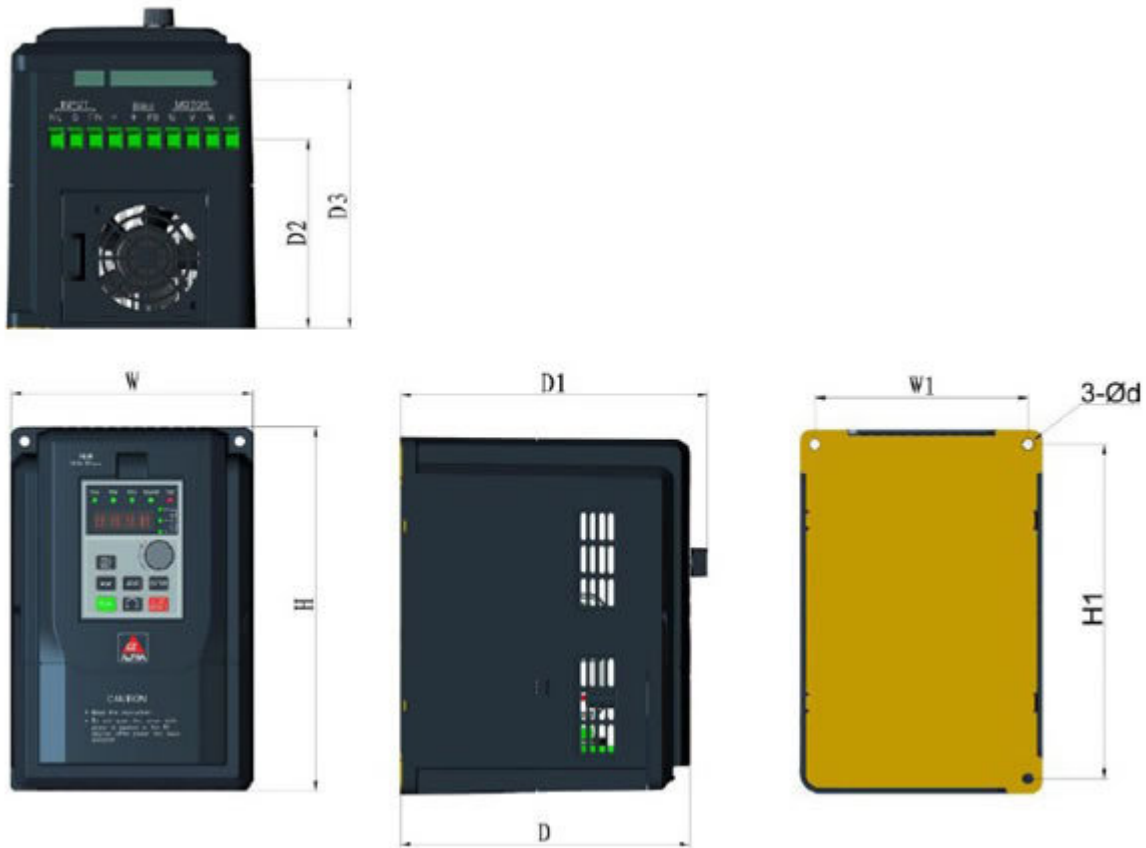
The close loop vector control AC drive can be applied in the crane, film winding machine, coating machine, CNC machine tool, knitter, jacquard machine, hoisting equipment, rolling mill, paper making line, textile machine, chemical fiber, synchronous linkage, and more.

Selection Guide

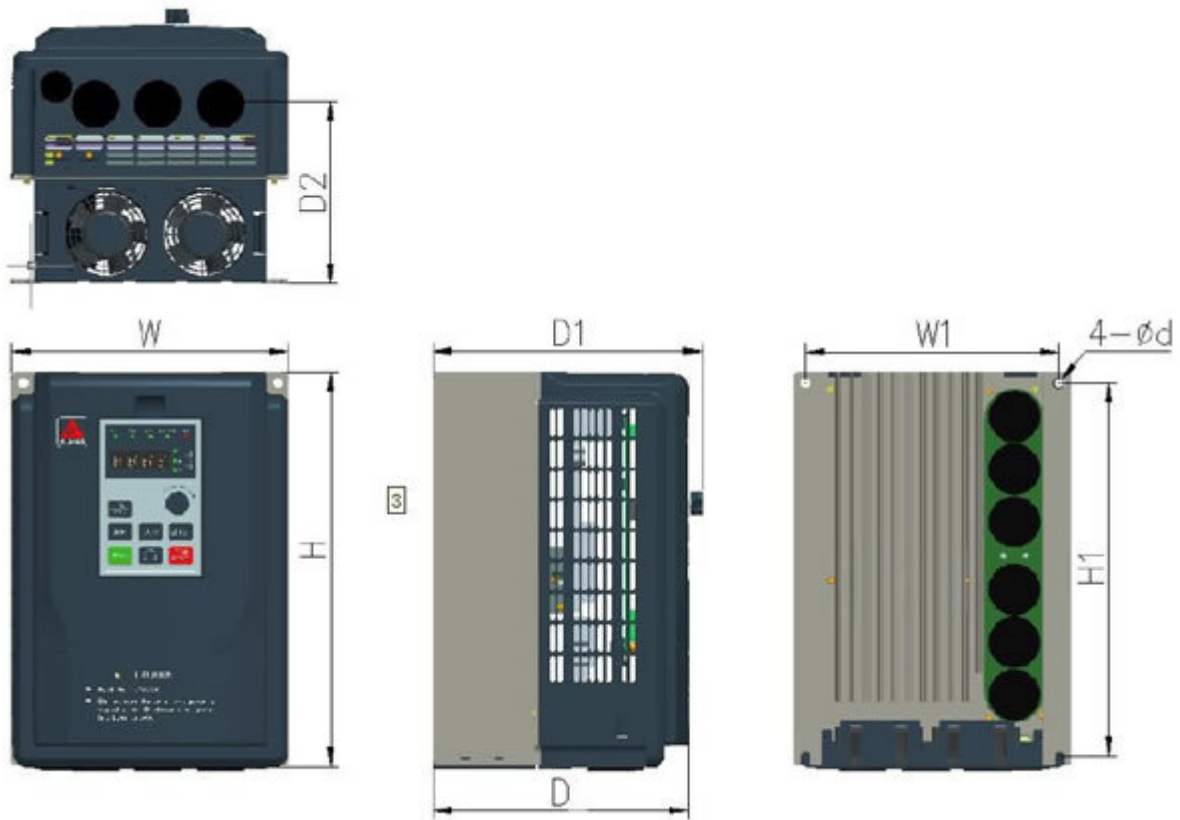
ALPHA6000V Model Selection

Voltage Classes	Model	Motor Power (kW)	Rated Output Current (A)
380V Three Phases	6000V-3R75GB	0.75	2.5
	6000V-31R5GB	1.5	4
	6000V-32R2GB	2.2	6
	6000V-3004GB	4	9
	6000V-35R5GB	5.5	13
	6000V-37R5GB	7.5	17
	6000V-3011GB	11	25
	6000V-3015GB	15	32
	6000V-3018G	18.5	37
	6000V-3022G	22	45
	6000V-3030G	30	60
	6000V-3037G	37	75
	6000V-3045G	45	90
	6000V-3055G	55	110
	6000V-3075G	75	152
	6000V-3093G	93	176
	6000V-3110G	110	210
	6000V-3132G	132	253
	6000V-3160G	160	304
	6000V-3185G	185	342
	6000V-3200G	200	380
	6000V-3220G	220	426
	6000V-3250G	250	480
6000V-3280G	280	520	
6000V-3315G	315	600	
6000V-3355G	355	680	
6000V-3400G	400	750	
6000V-3500G	500	900	

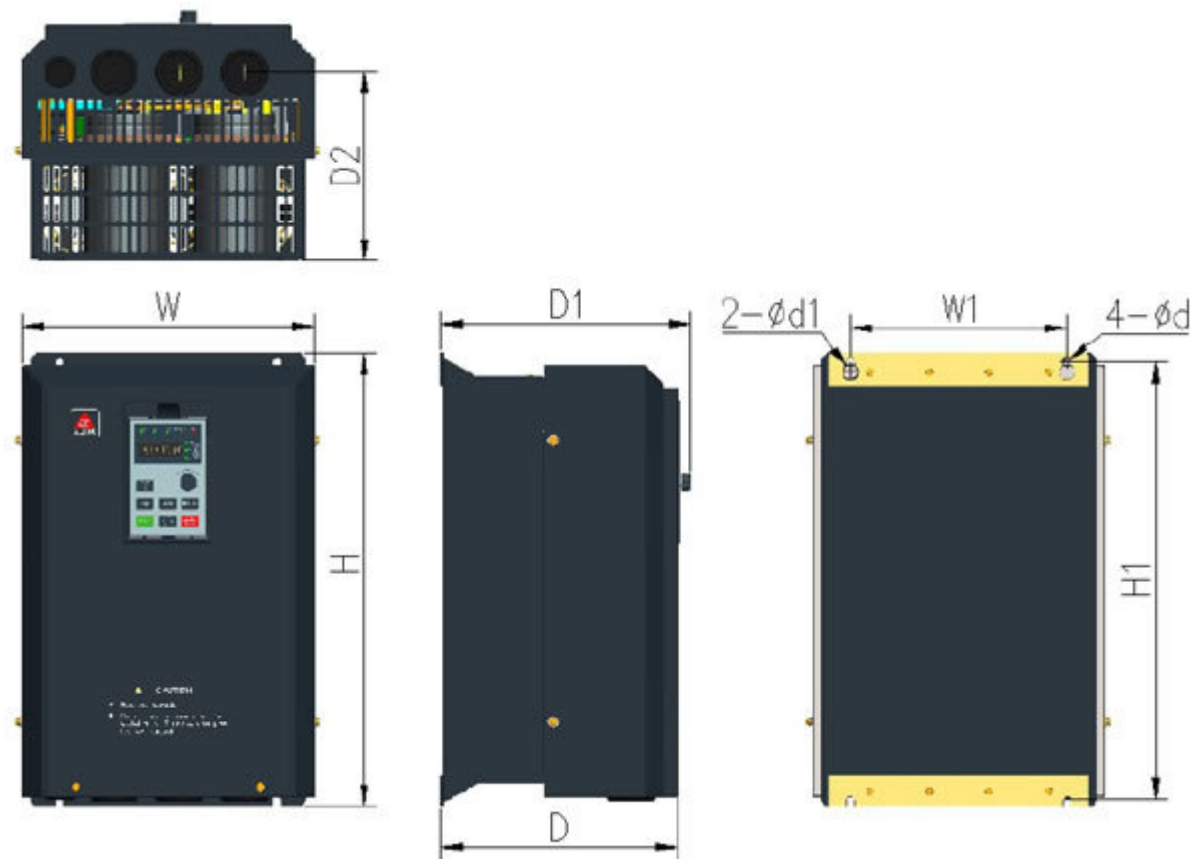
Overall Dimension of ALPHA6000V Series Close Loop Vector Control AC Drive



Specifications	H	H1	W	W1	D	D1	D2	D3	d
6000V-3R75GB	180	169	115	105	150	158	85	120	4.5
6000V-31R5GB									
6000V-32R2GB									
6000V-3004GB	195	173	130	108	157	167	100	130	5.5

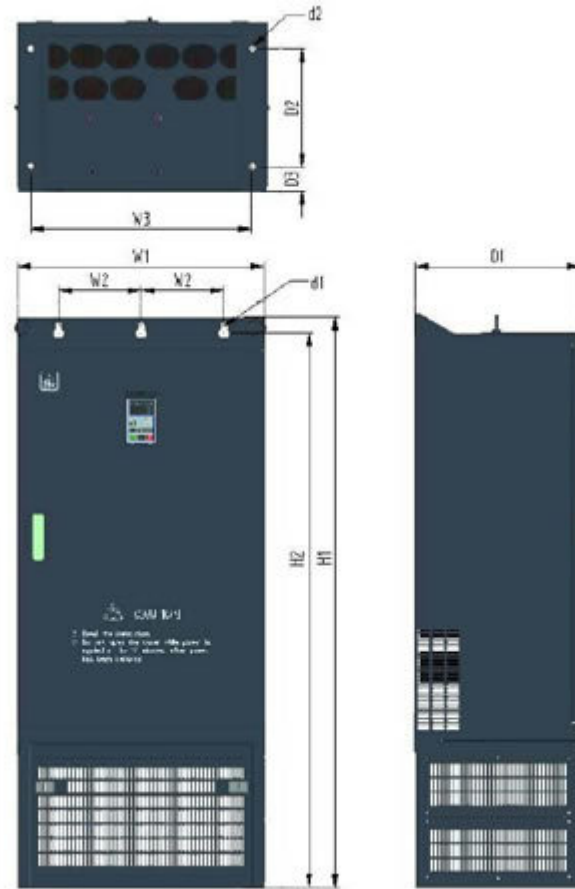


Specifications	H	H1	W	W1	D	D1	D2	d
6000V-35R5GB	270	255	190	175	176	186	122	7
6000V-37R5GB								



Specifications	H	H1	W	W1	D	D1	D2	d	d 1
6000V-3011GB	373	360	235	200	176	188	125	7	12
6000V-3015GB									
6000V-3018G	420	405	270	200	218	230	175	7	14
6000V-3022G									
6000V-3030G	503	488	311	200	230	242	180	7	14
6000V-3037G									
6000V-3045G	590	570	351	200	254	266	192	10	20
6000V-3055G									
6000V-3075G	698	672	400	280	260	272	186	12	22
6000V-3093G									
6000V-3110G	850	823	505	420	280	292	212	12	22
6000V-3132G									

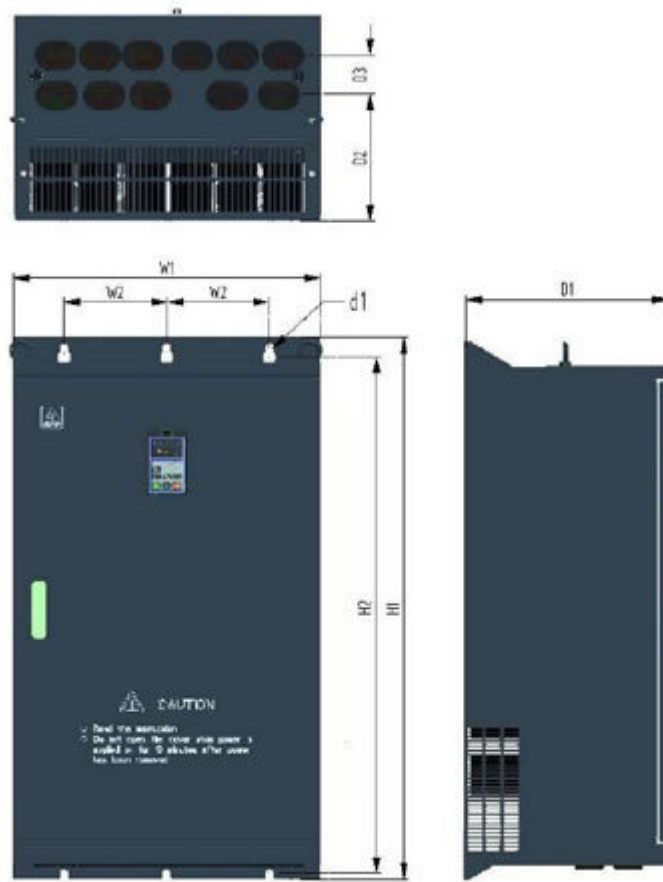
Installation Size of 380V 160-355kW Three-Phase Standard Model with



Base

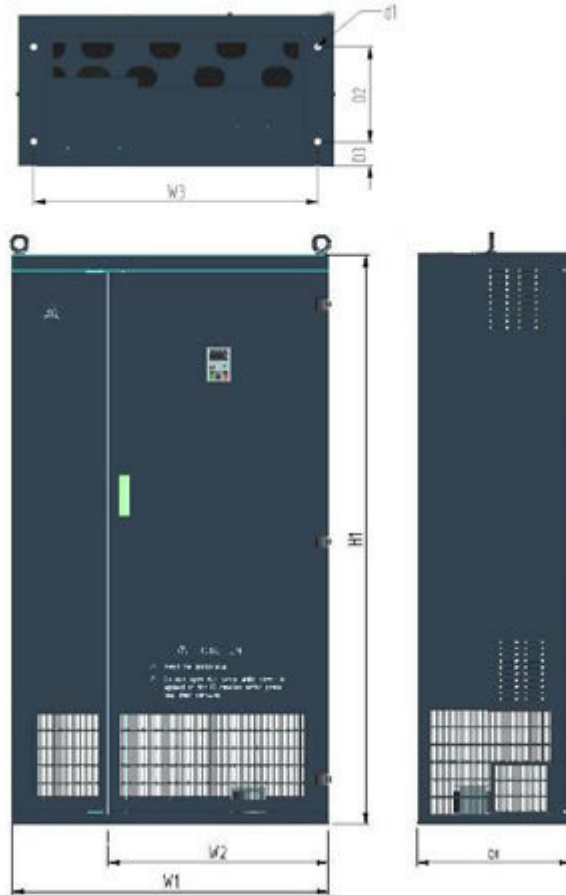
Specifications	W1	W2	W3	H1	H2	D1	D2	D3	d 1	d 2
6000V-3160G	600	200	530	1380	1360	400	280	60	3-φ 14	4-φ 14
6000V-3185G										
6000V-3200G										
6000V-3220G										
6000V-3250G	800	300	730	1535	1515	410	288	60	3-φ 14	4-φ 14
6000V-3280G										
6000V-3315G										
6000V-3355G										

Installation Size of 380V 160-355kW Three-Phase Standard Model with Wall Mount



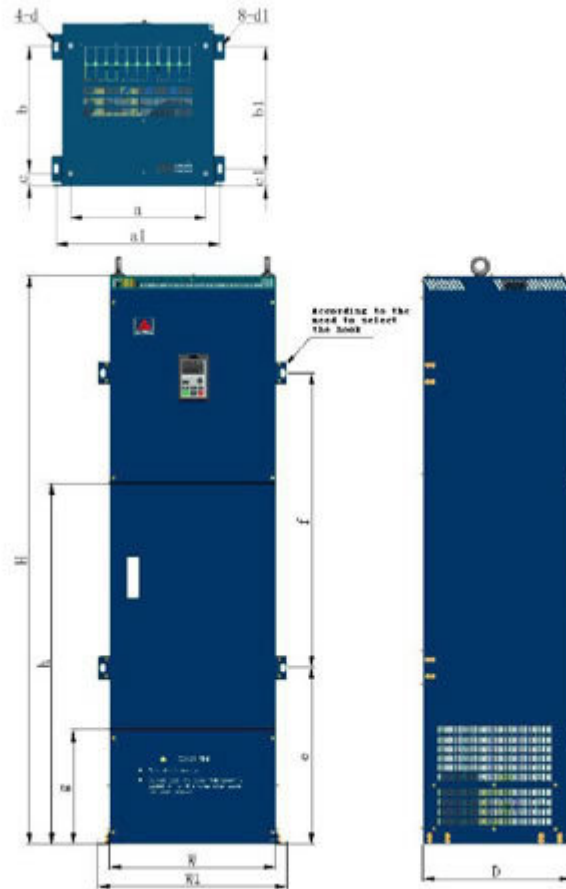
Specifications	W1	W2	H1	H2	D1	D2	D3	d 1
6000V-3160G	600	200	1026	1360	400	245	77	6-φ 14
6000V-3185G								
6000V-3200G								
6000V-3220G								
6000V-3250G	800	300	1180	1515	410	250	88	6-φ 14
6000V-3280G								
6000V-3315G								
6000V-3355G								

Installation Size of 380V 400-500kW Three-Phase Standard Model

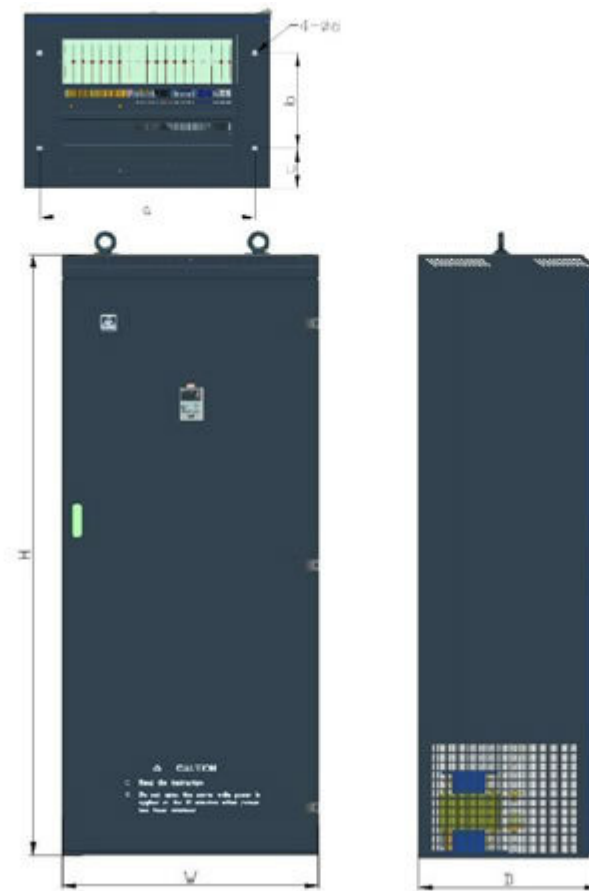


Specifications	W1	W2	W3	H1	D1	D2	D3	d 1
6000V-3400G	1000	700	900	1800	480	300	80	4-φ 22
6000V-3500G								

Installation Size of 380V 160-500kW Three-Phase Narrow-Body Model



Specifications	W	W1	D	H	a	b	c	d
6000V-3160G	450	514	400	1600	400	315	30	15
6000V-3185G								
6000V-3200G								
6000V-3220G								
6000V-3250G	450	514	400	1800	400	315	30	15
6000V-3280G								
6000V-3315G								
6000V-3355G								



Specifications	W	D	H	a	b	c	d
6000V-3400G	800	550	2000	700	300	125	18
6000V-3500G							