智光电气
Zhiguang Electric

ZINVERT智能高压变频调速系统产品手册

ZINVERT Intelligent High-voltage Variable Frequency Device Product Brochure



光电气技术有限公司

Guangzhou Zhiguang Electric Technology Co., Ltd.

“ ”

Establishment Time: 2002 Registered Capital: 200 million yuan

1.1企业及产品发展历程

2006年

2007年

7MVA/10MVA

2008年

10MVA

2009年

1000MW

2010年

2011年

10MVA

-

2018年

· 3300V IGBT

2019年

2020年

2021年

2022年

2023年

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二、产品介绍
Product Introduction

2.1 ZINVERT

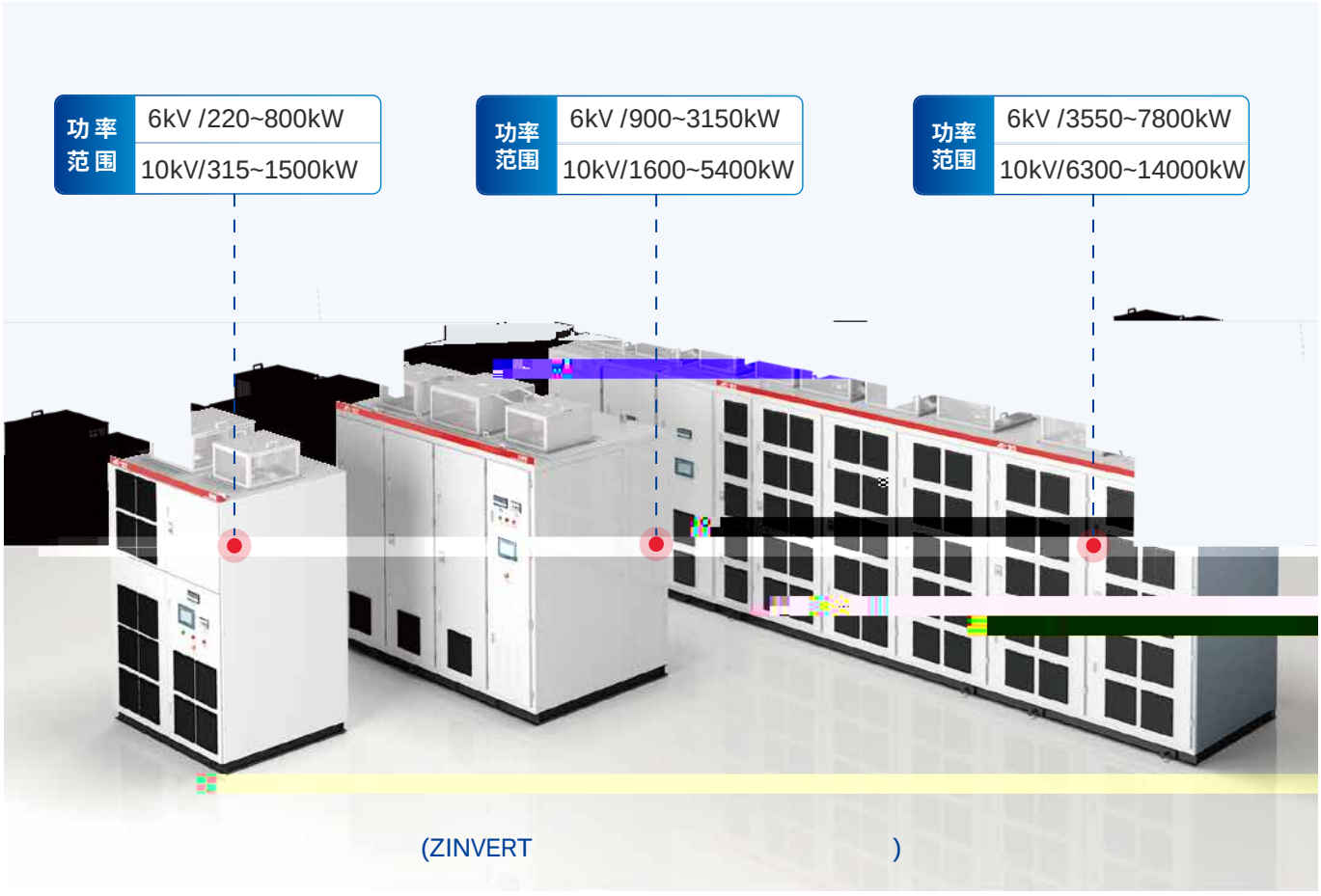
ZINVERT Intelligent High-voltage Variable Frequency Device(HVFD Introduction

ZINVERT 10kV 6kV

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HVFD through the phase shifting transformer on the input 10kV or 6kV voltage after phase shifting step-down, by the power unit rectifier inverter and superposition of each phase after the output, to achieve the real high-high frequency conversion speed control.

- High power density all-in-one cabinet type, chassis type power unit, suitable for single person maintenance operation;
- Advanced speed tracking algorithm, real-time monitoring of unit operation and maintenance, to ensure rapid start-up in full working conditions;
- Optimised system-wide logic control strategy, which ensures fast restart after high voltage loss;
- ; Rigorous thermal analysis design, which not only ensures heat dissipation but also greatly reduces installation space and infrastructure costs.
- H ; Adopting multi-stage H-bridge power unit box cascade to realise the perfect waveform output of high voltage, it can directly drag ordinary asynchronous motor without boosting.
- IEC Without adding any filter, the } /t# an "



(ZINVERT)

2.2 ZINVERT

Superior high and low voltage ride-through technology

65 115 Ue 60s

“ STT ”

Direct starting of rotating loads with proprietary "STT" technology

“ STT ”

“ SCP ”

High-voltage output sudden short-circuit "SCP" protection technology

Separate power supply technology for transformers with high short-circuit insulation impedance

Adaptive acceleration and deceleration adjustment

Unique cooling structure adapts to air-cooled and water-cooled flexible design

Low power sensitivity and high operational stability

The whole machine is self-developed and produced to ensure quality and cost competitiveness.

2.3
Main performance indicators

voltage	2.3kV 3kV 3.3kV 6kV 6.6kV 10kV	
output	overload capacity	130%In 1min/10 min 180%In 130% In 1 min/10 min; 180% In immediate protection;
	voltage	0~Un Carrier phase-shifted superimposed waveform
	frequency	0~50Hz/60Hz
input	THD	<2% rating
	phases frequency	three-phase 50/60 ± 5%Hz
	voltage range	rating /-15%~35% reduced rate
	power factor	>0.96 20% Greater than 20% load
control	Startup frequency	0.1 10Hz
	/ Input/Output Interface	/ 16 1 5
	communication interface	RS232 RS485 RJ45
		opto-isolation
		0.1% ± 2%
		>97% rated >96% 20% >20% rated
		0~10%Un configurable
		0 3000s configurable
		0.1 30s)
	PLC	PID /
display		
		IGBT
	<75dB all	
environment		5000m 1200 1200-5000
	/	-5~+45 20~95%
		10~150HZ 0.5g
		-20~70
cooling method	Forced air, water and evaporative cooling	

2.4

2.4.1



Thermal power generation: induced draft fan, supply fan, dust-absorbing fan, booster fan, compressor, condensate pump, feed water pump, make-up water pump, grey slurry pump, and so on.

Metallurgy: main extractor fan, blast furnace blower, dust removal fan, slurry pump, descaling pump, centrifugal feed pump, elevator, semi-automatic mill, etc.



Municipalities: sewage pumps, clean water pumps, purification pumps, biological crude treatment tower pumps, oxygen delivery blowers, etc.

Papermaking: pulper, grinder, pulveriser, papermaking machine, rewinder, etc.

Petrochemical: induced draft fan, gas compressor, water injection

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▸ 6kV 6kV HVFD Selection Table

NO.	Motor Capacity (kW)	Inverter Model	A Rated output current	Total Length		Height	Total Depth	kg Total Weight	
				Manual	Automatic	(mm)	(mm)	Manual	Automatic
1	220	Zinvert-A6H280/06	30	2400	3000	2810	1384	2370	2670
2	250	Zinvert-A6H315/06	30	2400	3000	2810	1384	2370	2670
3	280	Zinvert-A6H350/06	35	2400	3000	2810	1384	2440	2740
4	315	Zinvert-A6H400/06	50	2400	3000	2810	1384	2524	2824
5	355	Zinvert-A6H450/06	50	2400	3000	2810	1384	2664	2964
6	400	Zinvert-A6H500/06	50	2400	3000	2810	1384	2831	3131
7	450	Zinvert-A6H560/06	60	2400	3000	2810	1384	2911	3211
8	500	Zinvert-A6H630/06	60	2400	3000	2810	1384	3281	3581
9	560	Zinvert-A6H700/06	75	2400	3000	2810	1384	3348	3648
10	630	Zinvert-A6H800/10	105	2400	3000	2810	1384	3445	3745
11	710	Zinvert-A6H900/10	105	2400	3000	2810	1384	3545	3845
12	800	Zinvert-A6H1000/10	105	2400	3000	2810	1384	3765	4065
13	900	Zinvert-A5H1150/06	120	3000	3600	2675	1695	6106	6486
14	1000	Zinvert-A5H1250/06	120	3000	3600	2675	1695	6586	6966
15	1120	Zinvert-A5H1400/06	150	3000	3600	2675	1695	6766	7146
16	1250	Zinvert-A5H1550/06	150	3000	3600	2675	1695	6766	7146
17	1400	Zinvert-A5H1800/06	180	3000	3600	2675	1695	6766	7146
18	1600	Zinvert-A5H2000/06	216.5	3800	4400	2675	1586	5930	6230
19	1800	Zinvert-A5H2250/06	216.5	3800	4400	2675	1586	6430	6730
20	2000	Zinvert-A5H2500/06	250	3800	4400	2675	1586	6684	6984
21	2250	Zinvert-A5H2800/06	270	3900	4500	2710	1600	8105	8114
22	2500	Zinvert-A5H3150/06	300	3900	4500	2710	1600	8650	8704
23	2800	Zinvert-A5H3500/06	400	3900	4500	2710	1600	9023	9323
24	3150	Zinvert-A5H4000/06	400	3900	4500	2710	1600	9660	9960
25	2250	Zinvert-A6H2800/06	270	3900	4500	2710	1600	8105	8114
26	2500	Zinvert-A6H3150/06	300	3900	4500	2710	1600	8650	8704
27	2800	Zinvert-A6H3500/06	400	3900	4500	2710	1600	9023	9323
28	3150	Zinvert-A6H4000/06	400	3900	4500	2710	1600	9660	9960
29	3550	Zinvert-A6H4500/06	480	8000	8600	2910	1586	11614	11914
30		Zinvert-A5H4500/06		8000	8600	2910	1586	11155	11455
31	4000	Zinvert-A6H5000/06	480	8000	8600	2910	1586	12114	12414
32		Zinvert-A5H5000/06		8000	8600	2910	1586	11655	11955
33	4500	Zinvert-A6H5600/06	540	9200	10800	2910	1586	13776	15276
34		Zinvert-A5H5600/06		9200	10800	2910	1586	13317	14817
35	5000	Zinvert-A6H6300/06	600	9400	10800	2910	1586	15438	16938
36		Zinvert-A5H6300/06		9400	10800	2910	1586	14979	16479
37	5600	Zinvert-A6H7000/06	720	9400	11000	2910	1586	15438	16938
38		Zinvert-A5H7000/06		9400	10800	2910	1586	14979	16479
39	6300	Zinvert-A6H8000/06	800	11000	12600	2910	1586	20850	22350
40		Zinvert-A5H8000/06		11000	12600	2910	1586	20250	21750
41	7100	Zinvert-A6H9000/06	900	11000	12600	2910	1586	21650	23150
42	7800	Zinvert-A6H10000/06	1050	13000	14600	2910	1586	23950	25450

▸ 3kV 3kV HVFD Selection Table

NO.	Motor Capacity (kW)	Inverter Model	A Rated output current	Total Length		Height (mm)	Total Depth (mm)	kg Total Weight	
				Manual	Automatic			Manual	Automatic
1	250	Zinvert-A3H315/03	60	2600	3200	2675	1586	2010	2310
2	315	Zinvert-A3H400/03	75	2950	3550	2675	1586	2262	2562
3	355	Zinvert-A3H450/03	105	2950	3550	2675	1586	2502	2802
4	400	Zinvert-A3H500/03	105	2950	3550	2675	1586	2563	2863
5	450	Zinvert-A3H560/03	105	2950	3550	2675	1586	2643	2943
6	500	Zinvert-A3H630/03	120	2950	3550	2675	1586	2713	3013
7	560	Zinvert-A3H700/03	150	2950	3550	2675	1586	2844	3144
8	630	Zinvert-A3H800/03	150	2950	3550	2675	1586	2935	3235
9	710	Zinvert-A3H900/03	180	2950	3550	2675	1586	3035	3335
10	800	Zinvert-A3H1000/03	210	2950	3550	2675	1586	3255	3555
11	900	Zinvert-A3H1150/03	245	2950	3550	2675	1586	3591	3891
12	1000	Zinvert-A3H1250/03	245	2950	3550	2675	1586	3841	4141
13	1120	Zinvert-A4H1400/03	270	4800	5400	2675	1200	4386	4686
14	1250	Zinvert-A4H1550/03	300	4800	5400	2675	1200	4586	4886
15	1400	Zinvert-A4H1800/03	360	4800	5400	2675	1200	4999	5299
16	1600	Zinvert-A4H2000/03	400	4800	5400	2675	1200	5598	5898
17	1800	Zinvert-A4H2250/03	480	6680	7280	2675	1586	6898	7198
18	2000	Zinvert-A4H2500/03	480	6680	7280	2675	1586	7198	7498
19	2250	Zinvert-A4H2800/03	540	7200	7800	2710	1586	7623	7632
20	2500	Zinvert-A4H3150/03	600	7200	7800	2710	1586	8123	8177
21	2800	Zinvert-A4H3500/03	720	7200	7800	2710	1586	8323	8623
22	3150	Zinvert-A4H4000/03	800	7200	7800	2710	1586	8623	8923

▸ Ultra-large capacity HVFD Selection Table

NO.	Transformer Capacity (kVA)	Inverter Model	A Rated unit current output	Unit configuration
1	20000	Zinvert-S4H20000/10F	1150	ZINVU-1150/45F-175D-C1
2	25000	Zinvert-S4H25000/10F	1450	ZINVU-1450/45F-175D-C1
3	30000	Zinvert-S4H30000/10F	1750	ZINVU-1750/45F-175D-C1
4	40000	Zinvert-S4H40000/10F	2300	ZINVU-2300/45F-175D-C1
5	50000	Zinvert-S4H50000/10F	2900	ZINVU-2900/45F-175D-C1
6	60000	Zinvert-S4H60000/10F	3500	ZINVU-3500/45F-175D-C1
7	12000	Zinvert-S2H12000/06F	1150	ZINVU-1150/45F-175D-C1
8	15000	Zinvert-S2H15000/06F	1450	ZINVU-1450/45F-175D-C1
9	18200	Zinvert-S2H18200/06F	1750	ZINVU-1750/45F-175D-C1
10	24000	Zinvert-S2H24000/06F	2300	ZINVU-2300/45F-175D-C1
11	30000	Zinvert-S2H30000/06F	2900	ZINVU-2900/45F-175D-C1
12	36400	Zinvert-S2H36400/06F	3500	ZINVU-3500/45F-175D-C1
13	6000	Zinvert-S1H6000/03F	1150	ZINVU-1150/45F-175D-C1
14	7500	Zinvert-S1H7500/03F	1450	ZINVU-1450/45F-175D-C1
15	9000	Zinvert-S1H9000/03F	1750	ZINVU-1750/45F-175D-C1
16	12000	Zinvert-S1H12000/03F	2300	ZINVU-2300/45F-175D-C1
17	15000	Zinvert-S1H15000/03F	2900	ZINVU-2900/45F-175D-C1
18	18000	Zinvert-S1H18000/03F	3500	ZINVU-3500/45F-175D-C1

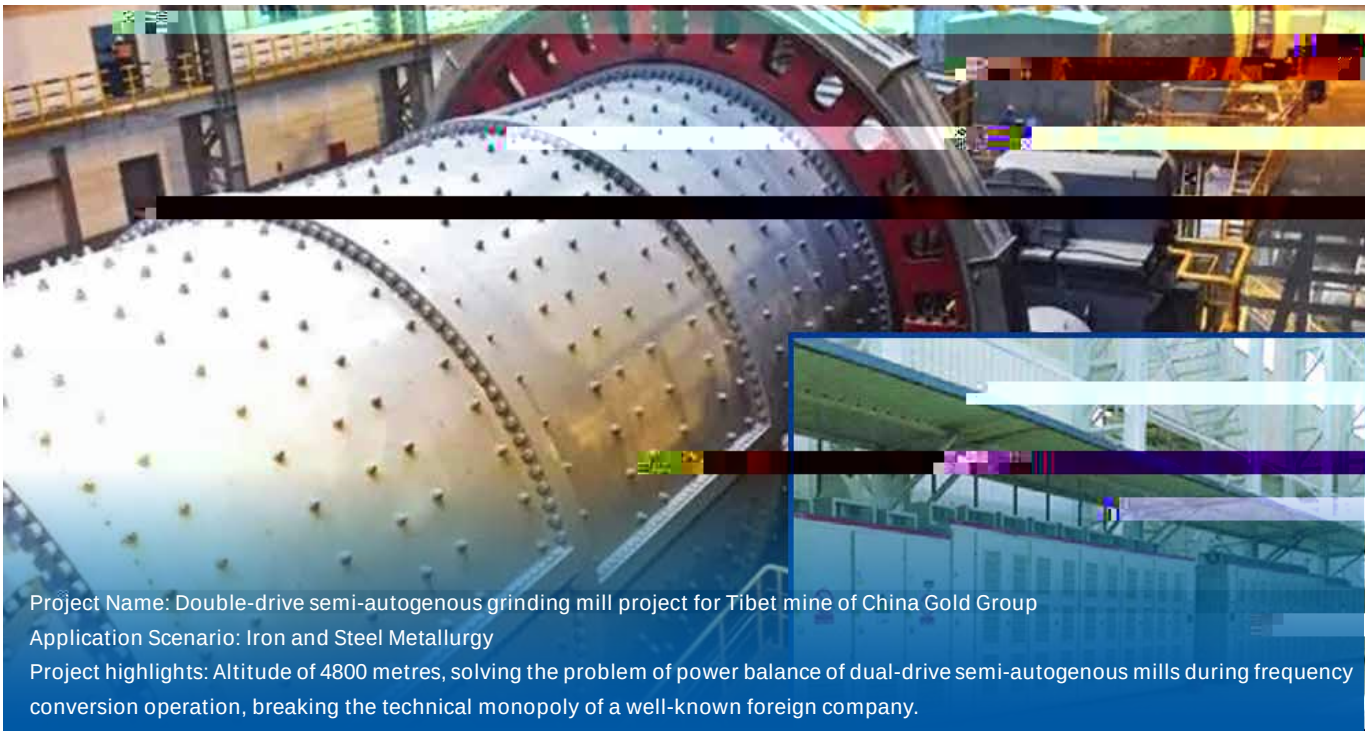
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3.2.1 Special load

NO.	Project Name	Device Model	Motor power	(/) Classification of inverter application loads(Other fan/pump loads)	Industry	Year
1		Zinvert-a	1400			2015
2		Zinvert-a	6300			2016
3		ZINVERT-a	1250			2017
4		ZINVERT-a	1600			2018
5		T 250	1250			2018
6		Zinvert-a	1600			2018
7		ZINVERT-a	5000			2018
8		ZINVERT-A8H6300/10Y	5000			2019
9		Zinvert-a	320			2019
10		Zinvert-a	710			2019
11		Zinvert-a	400			2019
12		ZINVERT-a	4500			2020
13		ZINVERT-S6H6300/06Y	4850			2020
14		Zinvert-a	2600			2020
15		ZINVERT-a	710			2020
16	1#	ZINVERT-A8H1800/10B	3550			2020
17		ZINVERT-	630			2021
18		Zinvert-a	2500			2021
19		ZINVERT-a	710			2022
20		Zinvert-a	3550			2022
21		ZINVERT-S	2100			2023
22		ZINVERT-a	3550			2023

▸

4800



Project Name: Double-drive semi-autogenous grinding mill project for Tibet mine of China Gold Group
Application Scenario: Iron and Steel Metallurgy
Project highlights: Altitude of 4800 metres, solving the problem of power balance of dual-drive semi-autogenous mills during frequency conversion operation, breaking the technical monopoly of a well-known foreign company.

▸ 600MW

6500h 75% 25% 2000

1%



Project name: Datang Group thermal power plant 600MW unit electric feedwater pump frequency conversion transformation project
Application Scenario: Thermal power generation feedwater pump
Project highlights: Under the premise that the unit runs for 6500h and the average load rate is 75%, the comprehensive power saving rate can be up to 25%, and it is expected that the average annual power saving will be over 20 million kWh, and the comprehensive plant power rate will be reduced by nearly 1%.

20000kVA 150 250





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