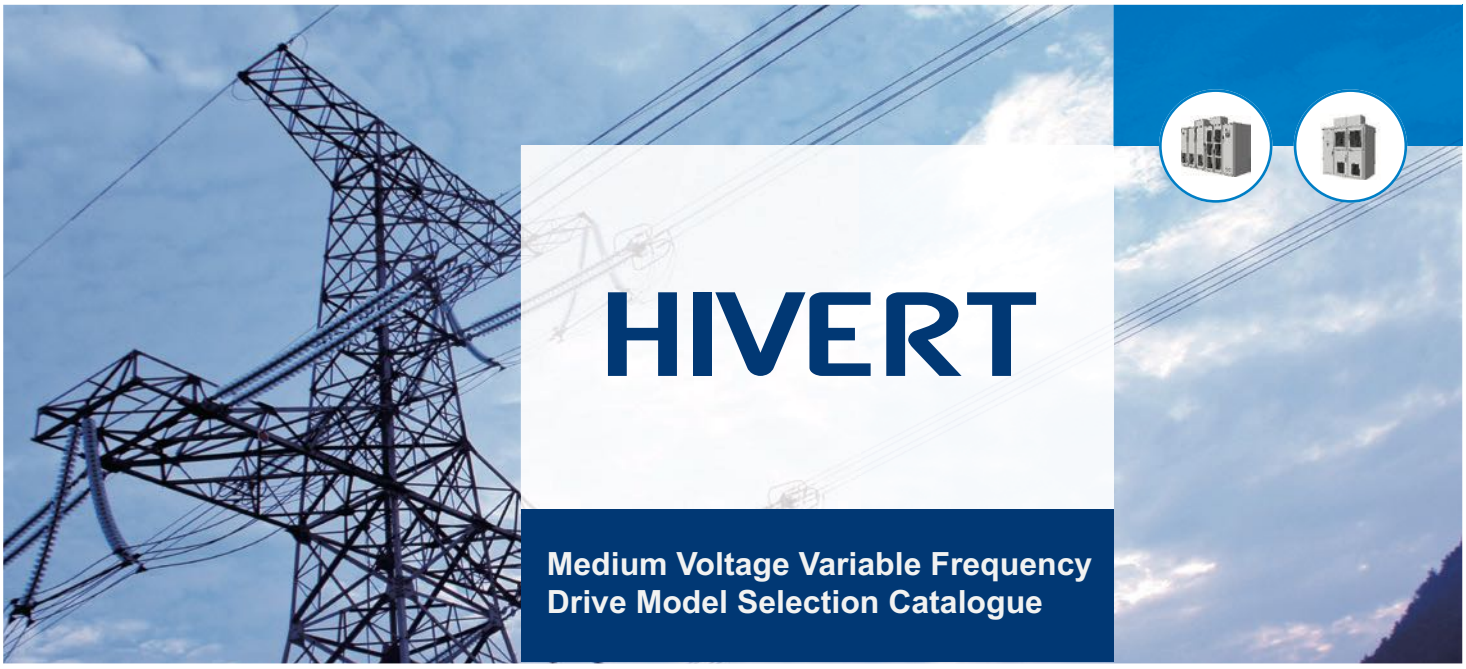

Green Technology
Benifit Mankind

HICONICS

(3.3kV-11kV) 150~20000kW/210~28000kVA



HIVERT

Medium Voltage Variable Frequency Drive Model Selection Catalogue

HICONICS ECO-ENERGY TECHNOLOGY CO.,LTD.

CATALOGUES

01 COMPANY PROFILE

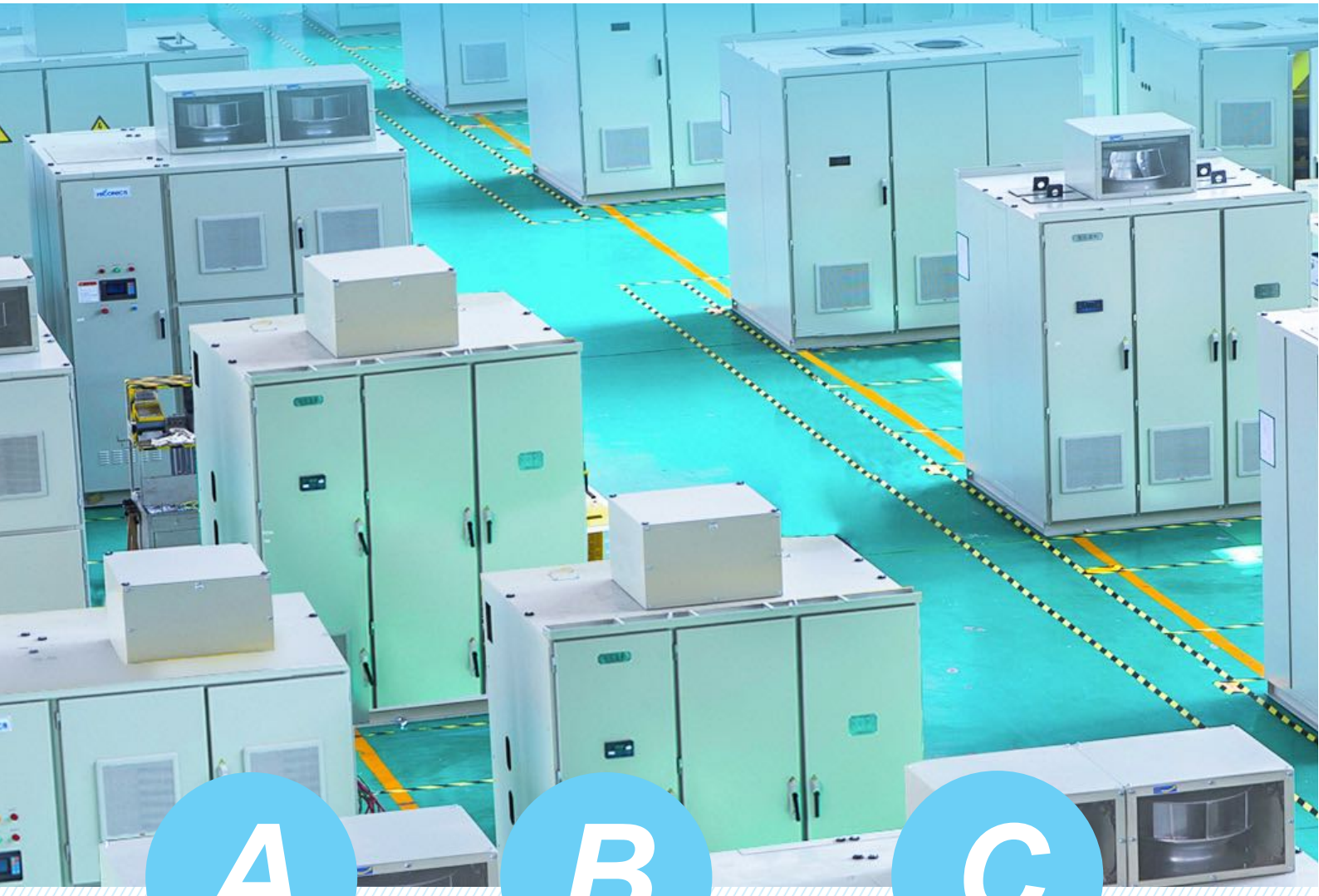
Hiconics eco-energy Technology Co., Ltd., former name "Hiconics Drive Technology Co., Ltd." Founded in 2003, it is affiliated to Zhongguancun Science and Technology Park in Beijing, China, which is a high-tech enterprise, specialized in industrial automation control and new energy equipment. In January of 2010 it was officially listed on the Shenzhen Stock Exchange as "Hiconics eco-energy (Stock code "300048"), with a registered capitalization of USD 174 million and net assets of USD 420 million.

Currently, it has 4 wholly owned subsidiaries, 31 holding subsidiaries, 1 key laboratory and 1 technology center. Existing staff 1800 people, of which the core research and development personnel accounted for 28%, with offices across the country and the consummation post-sale service network, products are sold to six continents over 20 countries and regions around the world. Business areas cover the industrial automation, new energy vehicles, energy conservation, environmental protection and other fields, products are widely used in electric power, metallurgy, mining, cement, petroleum, municipal, elevator, machine tools, plastics, nuclear industry, aerospace, wind tunnel, new energy vehicles, rail transportation, environmental protection, photovoltaic and other industries.

Hiconics always focus on the field of energy-saving and emission reduction, as well as the industrial control, we will devote to provide the highly efficient and perfect VFD’s solution for our global customers, continuously improves the utilization efficiency of energy, and assumes the leader of green energy and drives technology in the world.

For further business cooperation with Hiconics and to become our partner worldwide, please contact Hiconics.

02 PRODUCT STRUCTURE



A COMPACT CABINET

B SEPARATE CABINET

C WATER COOLED CABINET

A

COMPACT CABINET

- 3.3kV/150~590kW
- 4.16kV/180~750kW
- 6kV/315~500kW

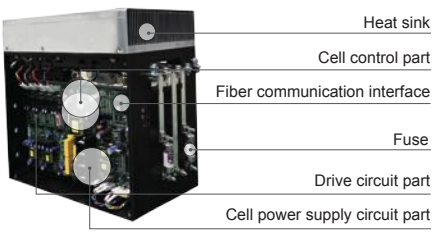
A

Control cabinet

B

Power cell cabinet (Top) Transformer cabinet (bottom)

Power cells



B

SEPARATE CABINET (Double-side Service Zone)

- 3.3kV/1250~2750kW
- 4.16kV/1600~4600kW
- 6kV/630~5000kW
- 6.6kV/2500~5500kW
- 10kV/400~10000kW
- 11kV/470~11000kW

A

Transformer cabinet

Multipulse phase shift transfromer;
Unique aircooling duct design;
High efficiency of cooling

B

Power cell cabinet

Power cell casacaded toplogy;
6kV: 6 cells per phase;
10kV: 9 cells per phase

C

Control cabinet

SEPARATE CABINET (Front-side Service Zone Only)

- 3.3kV/700~1100kW
- 4.16kV/900~1400kW
- 6kV/315~2000kW
- 6.6kV/365~2250kW
- 10kV/400~3200kW
- 11kV/470~3700kW

A

Transformer cabinet

Multipulse phase shift transfromer;
Unique aircooling duct design;
High efficiency of cooling

B

Power cell cabinet

Power cell casacaded toplogy;
6kV: 6 cells per phase;
10kV: 9 cells per phase

C

Control cabinet

C

WATER COOLED CABINET

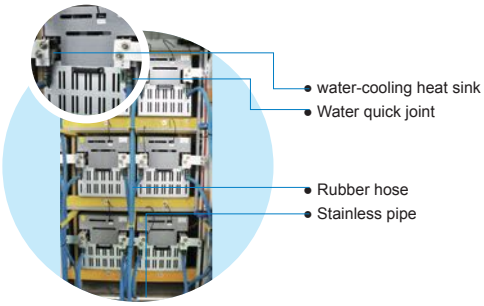
- 3.3kV/3000~5700kW
- 4.16kV/5500~7200kW
- 6kV/2250~12500kW
- 6.6kV/2500~11500kW
- 10kV/12500~20000kW
- 11kV/12500~20000kW

A Fully enclosed air-water heat exchange dry type transformer

Protection level IP42

No maintenance

Fully enclosed air-water heat exchange type, not be affected by temperature and dust



B Power cell cabinet

Cooling water in parallel contribute to even distribution;

Independent dissipation duct for lower temperature, longer service life;

Cooling tap use double closure quick joint, no drainage or linkage during power cell replacement.

Power cell

Heat sink use vacuum welding, pressure up to 12 bar
Laminated design, less inductance, compact dimension
Inlet and outlet use double closure quick joint to avoid leakage

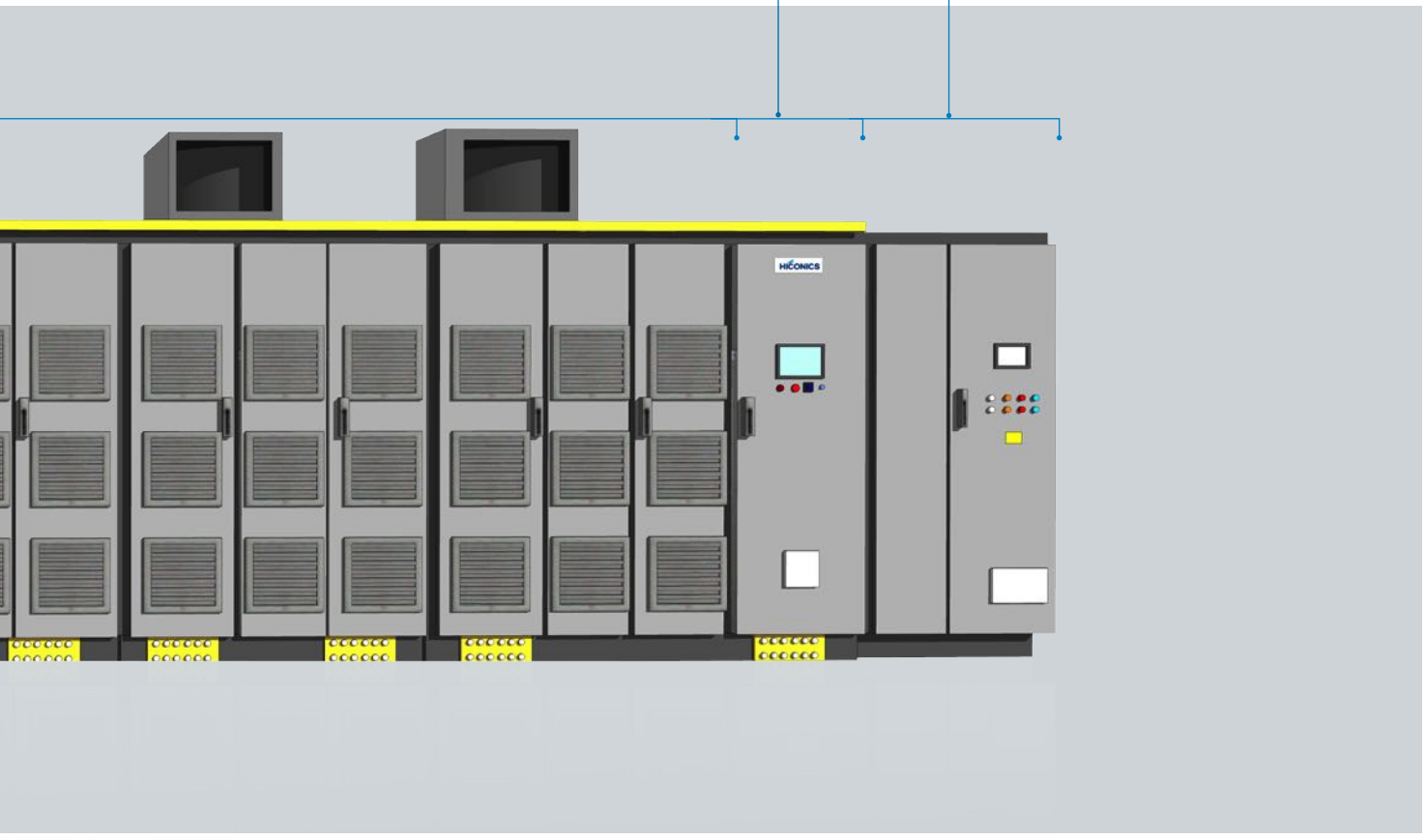
C Control system

Central-station control for easy and quick entrance to:

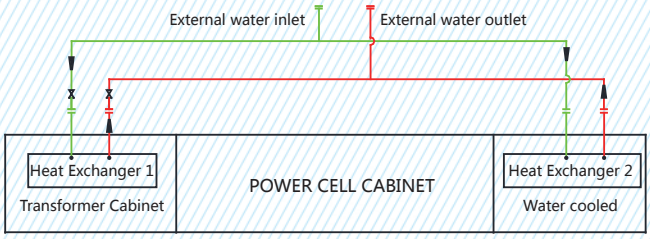
- transformer temperature ;
- water exchanger protection;
- VFD control

D Water cooling exchange system

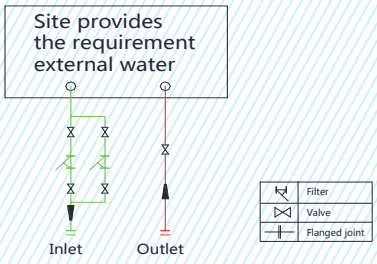
- Stainless for all circulation pipe;
- Independent deionized water device;
- Secondary water cooling with high efficiency;
- Independent PLC monitor system.



Water cooling VFD External Water Circulation System



Scheme 1 Site provides the requirement external water



The external water quality and temperature requirements:

Name	Parameter	Unit
TDS(total dissolved solids)	≤1000	mg/L
PH value	6.5-8.5	
Hardness (caco3)	≤450	mg/L
Chloride	≤250	mg/L
Sulfate	≤250	mg/L
Suspended Material	≤30	mg/L
Water Pressure	2.5-6	Bar
Solid particles size	≤200	μm
Water freezers of external water of water cooling cabinet		t/h
Water freezers of external water of transformer cabinet		t/h
inlet temperature of external water	5-32	℃
outlet temperature of external water	T1+5	℃

Scheme 2 Closed cooling tower

Working fluid (water) circulate in the coil of closed cooling tower, working fluid heat disperse in the water coil when it goes through the water coil. At the same time, the outside the air enter from the side air-inlet grille, it is perpendicular to the water flow direction, when it is flow water coil crosswise, a small part of the water evaporates and absorb heat, the hot humid air is being exhausted from the top of the cooling tower fan into the atmosphere. The rest of the water fall into the bottom of the water dish, recycle it to the water distribution system by the water pump, by pre-cooling packing it pour back into the coil.

Scheme 3 Precision cold water machine

Working principle of the system: the cooling system is mainly composed of compressor, condenser, expansion valve, plate heat exchanger, cooling fan, water tank, water pump, web of circulating pump, etc. On the one hand, cold water in water tank through a external water circulating pump circularly flow into the external water inlet pipe of the water cooling cabinet, flow back to the water tank after heat exchanged in the plate heat exchanger of the water cooling cabinet, to decrease the temperature of cooling water in the water cooling cabinet; on the other hand, the hot water flow back into the water tank, through the refrigeration system of refrigerant heat exchange, the plate heat exchanger exchange with the low temperature hot water, to reduce the temperature, so as to maintain the water tank in the cold water temperature; The high temperature refrigerant to reduce the temperature by cooling fan exchange with the surrounding environment.

03 PRODUCT FEATURES

01 A wide range of product categories

Hiconics with the fourth generation VFD can provide different load types, different current scope of the power cells, which can meet most of the industrial and mining enterprises control requirements.

Classified by Power: 315kw~20000kw

Classified by Cabinet: compact cabinet, separate cabinet, water cooled cabinet, outdoors cabinet, flameproof cabinet

Classified by voltage: 3.3kV, 4.16kV, 6kV, 6.6kV, 10kV, 11kV (2.3kV,13.8kV on customer's request)

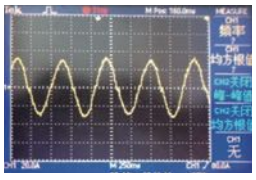
Classified by cooling mode: air forced cooling, water cooling

Classified by Motor: synchronous motor, asynchronous motor

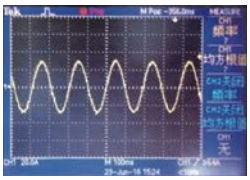
Classified by Performance: standard MV Drive, AFE MV Drive

02 Main controller chips

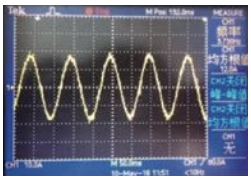
The main controller chip uses TI's TMS320F28335 digital signal processor, the device has the advantages of high precision, low power consumption, high performance, high peripheral integration, data and program storage capacity, and A/D conversion more accurate and fast. TMS320F28335 has 150MHz high-speed processing capability, 32-bit floating-point processing unit, 6 DMA channels, support ADC, McBSP and EMIF. With up to 18 PWM outputs, six of them are TI's more accurate PWM outputs (HRPWM) and 12-bit 16-channel ADCs. Thanks to its floating-point calculation unit, users can quickly write control algorithms without having to spend too much time and effort on decimal operations, with an average performance improvement of 50% over the previous generation DSPs. At the same time, the application of better control algorithm, so that the waveform of the inverter running at low-frequency current and output harmonics have a significant increase.



Current waveform at 2 Hz



Current waveform at 5 Hz



Current waveform at 10 Hz

03 Monitoring HMI

10 inch touch screen

Supporting multi languages

Control system status and monitoring

Powerful data control (data logging, diagnostics, and information)

User-centric convenience (HD display, high data throughput, user-friendly interface)

04 Advanced functions

■ Synchronous transfer function:

Using phase lock loop technology to adjust the output of the drive, make the frequency, phase position and a mplititude match those of the network. Achieve switching motor power from medium voltage drive to the network power (bypass mode) or vice versa (drive mode).

Multi-motor synchronous transfer function allows users to start multiple (up to 4) MV motors sequentially in drive mode and control the last motor speed.

■ Flying start:

Also called “speed start”, when the motor is still rotating, the drive will automatically estimate the motor speed, and output the same voltage waveform with the motor frequency. When start, current is limited within the rated current, this will not cause over current problem.

Used when the drive automatically restarts after power loss, or Motor switch from network running to drive mode running.

■ Instant power loss:

When grid voltage drop or power off for less than 1000ms, VFD can run without stop to support process at site.

■ Torque boost:

Increasing the output voltage when at low frequency, to boost the motor torque when running with low speed. This can solve the big torque load starting problem.

■ Master-slave control:

For multiple VFD system, by fiber communication, VFD analyzes torque and load to balance motors running speed and torque.

■ Double winding motor control:

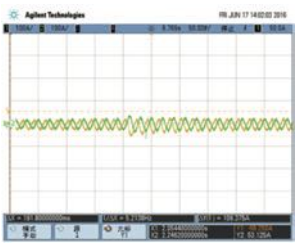
Double winding motor has higher PF and efficiency, smaller loop circuit increase system capacity. VFD driving the double winding motor can realize full speed with half load, half speed with full load, improve system stability.

■ Power cell braking function:

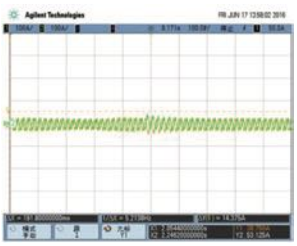
It uses for site need quick braking at lower frequency; the energy will be consumed by heat.

■ Neutral point shift:

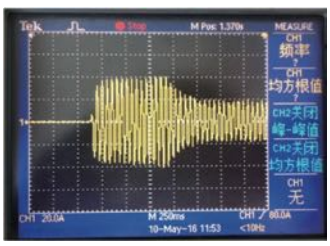
When 1 power cell fault, other power cells can adjust output voltage to keep normal output voltage, by change phase position to maintain continuous running.



Current valid value 15A, switch peak 31A before sync transfer



The motor current waveform during sync transfer



Flying start motor/network waveform

05 Interface logic controller

Interface logic controller uses the Siemens S7-200 smart PLC as the core component, and this PLC is equipped with Siemens dedicated high-speed processor chip – its basic instruction execution time can be up to 0.15μs. 24DI , 16DO , 4AI , 4AO have been selected for use according to the MV drive requirements , so it can guarantee adequate interface and ensure fast processing.

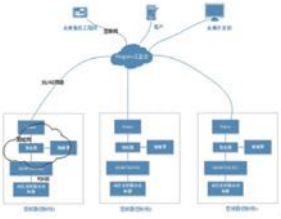
06 Parameters downloading and uploading

System parameters and motor parameters can be successfully downloaded one time, and there is also parameter upload function available -- parameters can be conveniently and quickly uploaded when replacing components.

07 Cloud monitoring

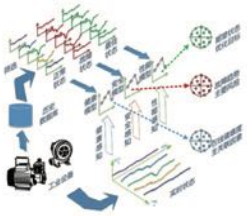
MV drive connected to the server monitoring platform by wireless or wired network, sending real time data to server. Other mobile devices can receive internal data of the server at the same time to monitor real time running condition of the MV drive. By using monitoring the platform or mobile devices, users can analyze parameters, judge problems and diagnose the products fault from remote. At the same time, by using the panoramic camera and voice system, users can instruct technicians from remote to operate on site. Hedonics cloud monitoring application architecture diagram is as follow:

Cloud monitoring platform



Management system structure

Work order management model



Digital analysis model

08 Interface board

The core of the new interface board is S7-200 SMART CPU, the module comes standard with Ethernet interface, support Siemens S7 protocol, TCP/IP protocol, effectively supporting a variety of terminal connections. In addition, the CPU module is integrated with one RS485 interface, able to communicate with the third-party equipment such as the MV drive and touch screen. At the same time, it is equipped with expansion CM01 signal board to realize RS232 / RS485 free communication and support profibus and Ethernet TCP/IP communication protocol.

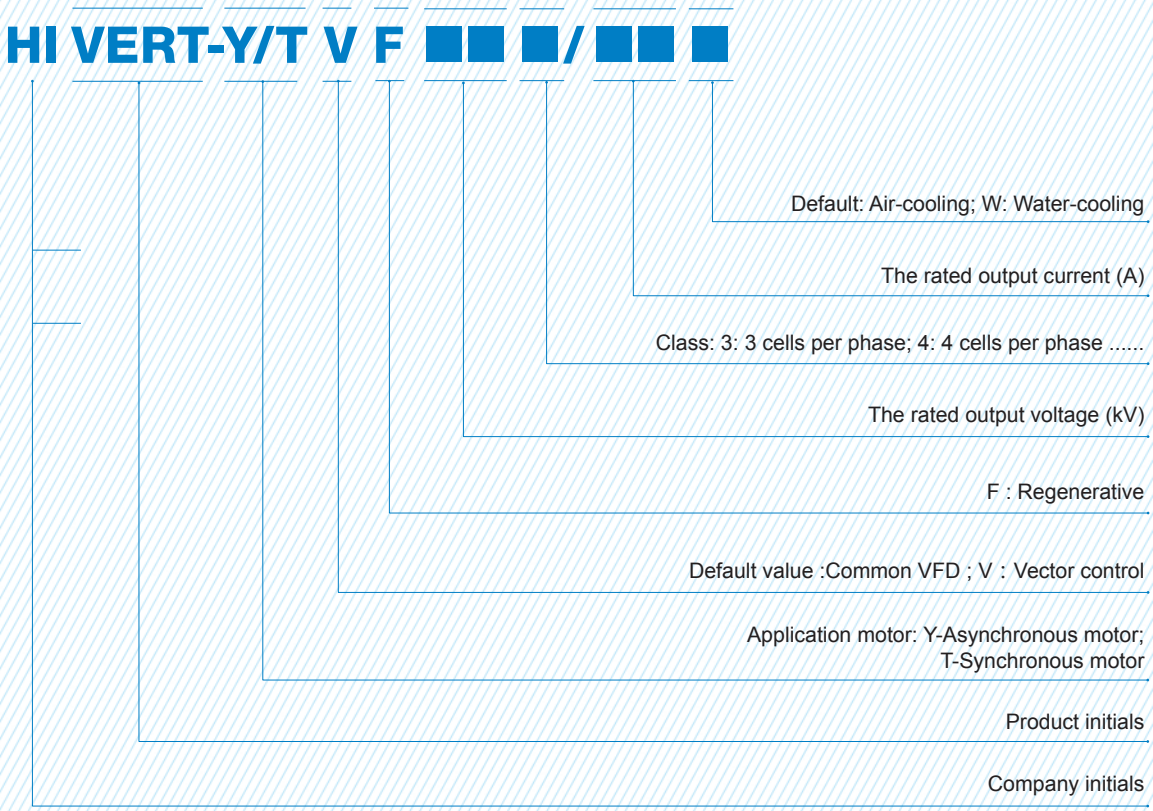
04 PRODUCT SPECIFICATION

VFD rated power	210~28000kVA ※
For motor power	150~20000kW※
Rated voltage	3.3~11kV (-20% ~ +5%) ※
Rated frequency	50Hz/60Hz (-10% ~ 10%) ※
Modulation technique	SVPWM
Control power	380VAC，≤30kVA (depend on power level)
Input power factor	>0.96
Efficiency	>95%，for variable frequency part >98%
Output frequency range	0Hz ~ 80Hz ※
Frequency resolution	0.01Hz/ 0.002Hz
Instantaneous over-current protection	150% protect immediately (customized)
Overload capability	120% ,125s
Current limited protection	10%-150% (1000ms~3s inverse time protection)
Analoginput	Three ways 4 ~ 20mA/2 ~ 10V (excitation feedback 4 ~ 20mA/2 ~ 10V included)
Analog output	Four ways 4 ~ 20mA (two ways fixed, two ways optional)
Host communication	Isolated RS485 interface, ModBus RTU, Profibus DP(optional), Industry Ethernet Protocol (optional)
Acceleration and deceleration time	5s ~ 1600s(related to load)
DI	14 inputs/22 outputs
Environment temperature	-5 ~ +45℃ ※
Storage/transportation temperature	-40 ~ +70℃ ※
Cooling	forced air cooling
Humidity	<95%, no condensation ※
Altitude	≤1500m ，when altitude is higher than 1500m ， each 100 meter increasing needs 1% derating of VFD
Dust	Non-conductive, no causticity，＜6.5mg/ｄｍ３ ※
Protection level	IP30 ※
Cabinet colors	RAL 7032(customized)

※ Please consult with Hiconics for the information beyond the below table.

※ The dimensions are subject to change without notice, take the technique protocol for correct dimensions.

05 MODEL DEFINITION



Model and Selection Notation

HIVERT Standard MV VFD model selection depends on the motor type, load features, and motor current, voltage
In the case of the special load or special motor or special working environment, besides refer to rated power and rated current of the motor, should abide by the following advices:

- If load torque ripple such as compressor, vibrating machine and kneader is large, the practical process and the working condition should be found out firstly, and that the rated current of the selected HIVERT medium voltage VFD is larger than the maximum current under the industrial frequency must be ensured.
- Motor rated current used in submersible pump or submerged oil pump is usually greater than the rated current of the motor; the rated current of HIVERT Standard MV VFD should be larger than motor rated current.
- The rated current of the selected HIVERT Standard MV VFD which is used in the special fans, such as roots fan, should be increased in proportion.
- When one HIVERT Standard MV VFD drives multiple motors at one time, the VFD which has the larger current should be selected according to the total current of the motors.
- For impacting load, such as oil pump, a proper enlarge of the capacity should be taken into account during selection of HIVERT Standard MV VFD.
- When used in the extreme environments, such as high temperature or high altitude (>1500m), HIVERT Standard MV VFD should be derating, and one level higher VFD should be selected.

06 DIMENSION

- Cabinet type that ends with "S" means this cabinet is "front-side service zone only" cabinet; "default" means "double-side service zone" cabinet .
- Cabinet type that ends with "W" means this cabinet is water cooled cabinet.

3.3kV HIVERT-Y/T series

Voltage	Motor power	Output capacity	Model	Weight (kg)	Dimension (W×H×D)	Cabinet type
3.3kV	150kW	210kVA	HIVERT-Y/T 33 3/031	3100	2150×2400×1400	LD1
	180kW	260kVA	HIVERT-Y/T 33 3/040	3500		
	220kW	310kVA	HIVERT-Y/T 33 3/048	3700		
	275kW	390kVA	HIVERT-Y/T 33 3/061	3950		
	350kW	490kVA	HIVERT-Y/T 33 3/077	3800	2150×2400×1600	LD2
	440kW	620kVA	HIVERT-Y/T 33 3/096	4000		
	590kW	830kVA	HIVERT-Y/T 33 3/130	4100		
	700kW	980kVA	HIVERT-Y/T 33 3/154	3660	4050×2300×1200	LD3S
	790kW	1100kVA	HIVERT-Y/T 33 3/173	3780		
	880kW	1230kVA	HIVERT-Y/T 33 3/192	3950		
	1000kW	1400kVA	HIVERT-Y/T 33 3/220	4120		
	1100kW	1540kVA	HIVERT-Y/T 33 3/243	4340		
	1250kW	1800kVA	HIVERT-Y/T 33 3/275	5530	4350×2400×1400	LD4
	1400kW	2000kVA	HIVERT-Y/T 33 3/304	5740		
	1600kW	2250kVA	HIVERT-Y/T 33 3/340	6040		
	1825kW	2560kVA	HIVERT-Y/T 33 3/400	6390		
	2000kW	2800kVA	HIVERT-Y/T 33 3/425	7000	5200×2400×1400	LD5
	2280kW	3200kVA	HIVERT-Y/T 33 3/500	7400		
	2500kW	3500kVA	HIVERT-Y/T 33 3/550	7600		
	2750kW	3850kVA	HIVERT-Y/T 33 3/600	7800		
	3000kW	4200kVA	HIVERT-Y/T 33 3/660W	10500	8050×2400×1600	LDW6
	3500kW	4900kVA	HIVERT-Y/T 33 3/750W	12500		
	3600kW	5050kVA	HIVERT-Y/T 33 3/800W	14500		
	4500kW	6300kVA	HIVERT-Y/T 33 3/960W	21500	8150×2400×1800	LDW7
	5500kW	7700kVA	HIVERT-Y/T 33 3/1200W	*	*	LDW8
	5700kW	8000kVA	HIVERT-Y/T 33 3/1250W	*		

4.16kV HIVERT Y/T series

Voltage	Motor power	Output capacity	Model	Weight (kg)	Dimension (W×H×D)	Cabinet type
4.16kV	180kW	260kVA	HIVERT-Y/T 04 4/031	3200	2150×2400×1400	LJ1
	240kW	340kVA	HIVERT-Y/T 04 4/040	3600		
	280kW	400kVA	HIVERT-Y/T 04 4/048	3800		
	350kW	490kVA	HIVERT-Y/T04 4/061	4000		
	450kW	630kVA	HIVERT-Y/T 04 4/077	3900	2150×2400×1600	LJ2
	550kW	770kVA	HIVERT-Y/T 04 4/096	4100		
	750kW	1050kVA	HIVERT-Y/T 04 4/130	4300		
	900kW	1260kVA	HIVERT-Y/T 04 4/154	4070	4050×2300×1200	LJ3S
	1000kW	1400kVA	HIVERT-Y/T 04 4/173	4230		
	1100kW	1540kVA	HIVERT-Y/T 04 4/192	4450		
	1250kW	1800kVA	HIVERT-Y/T 04 4/220	4660		
	1400kW	2000kVA	HIVERT-Y/T 04 4/243	4865		
	1600kW	2250kVA	HIVERT-Y/T 04 4/275	6400	5050×2400×1400	LJ4
	1800kW	2550kVA	HIVERT-Y/T 04 4/304	6660		
	2000kW	2800kVA	HIVERT-Y/T 04 4/340	6920		
	2300kW	3250kVA	HIVERT-Y/T 04 4/400	7280		
	2500kW	3500kVA	HIVERT-Y/T 04 4/425	8800	6200×2400×1400	LJ5
	2900kW	4100kVA	HIVERT-Y/T 04 4/500	9000		
	3200kW	4500kVA	HIVERT-Y/T 04 4/550	9300		
	3500kW	4900kVA	HIVERT-Y/T 04 4/600	9800		
	3800kW	5350kVA	HIVERT-Y/T 04 4/660	11000	7300×2400×1600	LJ6
	4300kW	6000kVA	HIVERT-Y/T 04 4/750	12500		
	4600kW	6450kVA	HIVERT-Y/T 04 4/800	15000		
	5500kW	7700kVA	HIVERT-Y/T 04 4/960W	*	*	LJW7
	6900kW	9700kVA	HIVERT-Y/T 04 4/1200W	*	*	LJW8
	7200kW	10000kVA	HIVERT-Y/T 04 4/1250W	*		

6kV(6 cells) HIVERT-Y/T series

Voltage	Motor power	Output capacity	Model	Weight (kg)	Dimension (W×H×D)	Cabinet type
6kV (6 cells)	315kW	440kVA	HIVERT-Y/T 06 6/040	4600 4036	3500×1900×1200 2150×2400×1400	LC1S LC1
	400kW	560kVA	HIVERT-Y/T 06 6/048	4900 4236		
	500kW	700kVA	HIVERT-Y/T 06 6/061	5200 4436		
	630kW	880kVA	HIVERT-Y/T 06 6/077	4200 3972	4200×2200×1200 3450×2250×1600	LC2S LC2
	800kW	1150kVA	HIVERT-Y/T 06 6/096	4670 4312		
	1000kW	1400kVA	HIVERT- Y/T 06 6/130	5140 4722		
	1250kW	1800kVA	HIVERT-Y/T 06 6/154	5570 5640	4550×2300×1200 4150×2200×1600	LC3S LC3
	1400kW	2000kVA	HIVERT-Y/T 06 6/173	5820 5940		
	1600kW	2250kVA	HIVERT-Y/T 06 6/192	6130 6230		
	1800kW	2500kVA	HIVERT-Y/T 06 6/220	6430 6585		
	2000kW	2800kVA	HIVERT-Y/T 06 6/243	6780 6930		
	2250kW	3200kVA	HIVERT-Y/T 06 6/275 HIVERT-Y/T 06 6/275W	9220 10410	6000×2400×1400 7870×2400×1400	LC4 LCW4
	2500kW	3500kVA	HIVERT-Y/T 06 6/304 HIVERT-Y/T 06 6/304W	9570 10760		
	2800kW	4000kVA	HIVERT-Y/T 06 6/340 HIVERT-Y/T 06 6/340W	10070 11170		
	3200kW	4500kVA	HIVERT-Y/T 06 6/400 HIVERT-Y/T 06 6/400W	10670 11700		
	3600kW	5000kVA	HIVERT-Y/T 06 6/425 HIVERT-Y/T 06 6/425W	12700 15240	7800×2400×1600/1400 9700×2400×1600	LC5 LCW5
	4000kW	5600kVA	HIVERT-Y/T 06 6/500 HIVERT-Y/T 06 6/500W	13200 15790		
	5000kW	7000kVA	HIVERT-Y/T 06 6/600 HIVERT-Y/T 06 6/600W	14000 17290		
	5600kW	7900kVA	HIVERT-Y/T 06 6/660W	18500	9850×2400×1600	LCW6
	6300kW	8800kVA	HIVERT-Y/T 06 6/750W	20500		
	6600kW	9300kVA	HIVERT-Y/T 06 6/800W	22500		
	8000kW	11200kVA	HIVERT-Y/T 06 6/960W	27500	10450×2400/2800×1800	LCW7
	10000kW	14000kVA	HIVERT-Y/T 06 6/1200W	40000	14400×2400/2800×1800	LCW8
	12500kW	17500kVA	HIVERT-Y/T 06 6/1250W	42000		

6kV(5 cells) HIVERT-Y/T series

Voltage	Motor power	Output capacity	Model	Weight (kg)	Dimension (W×H×D)	Cabinet type
6kV (5 cells)	315kW	440kVA	HIVERT-Y/T 06 5/040	3400 3904	3000×1900×1200 2150×2400×1400	LA1S LA1
	400kW	560kVA	HIVERT-Y/T 06 5/048	3600 4104		
	500kW	700kVA	HIVERT-Y/T 06 5/061	3800 4304	3200×1900×1200 2150×2400×1400	LA1.1.1S LA1
	630kW	880kVA	HIVERT-Y/T 06 5/077	4130 3910	4200×2200×1200 3450×2250×1600	LA2S LA2
	800kW	1150kVA	HIVERT-Y/T 06 5/096	4600 4250		
	1000kW	1400kVA	HIVERT- Y/T 06 5/130	5070 4660		
	1250kW	1800kVA	HIVERT-Y/T 06 5/154	5470 5540	4550×2300×1200 4150×2200×1600	LA3S LA3
	1400kW	2000kVA	HIVERT-Y/T 06 5/173	5720 5840		
	1600kW	2250kVA	HIVERT-Y/T 06 5/192	6030 6130		
	1800kW	2500kVA	HIVERT-Y/T 06 5/220	6330 6485		
	2000kW	2800kVA	HIVERT-Y/T 06 5/243	6680 6830		
	2250kW	3200kVA	HIVERT-Y/T 06 5/275 HIVERT-Y/T 06 5/275W	8420 10110	5400×2400×1400 7500×2400×1400	LA4 LAW4
	2500kW	3500kVA	HIVERT-Y/T 06 5/304 HIVERT-Y/T 06 5/304W	8770 10460		
	2800kW	4000kVA	HIVERT-Y/T 06 5/340 HIVERT-Y/T 06 5/340W	9270 10870		
	3200kW	4500kVA	HIVERT-Y/T 06 5/400 HIVERT-Y/T 06 5/400W	9870 11400		
	3600kW	5000kVA	HIVERT-Y/T 06 5/425 HIVERT-Y/T 06 5/425W	* 15000	7150×2400×1400/1650 9300×2400/2850×1600	LA5 LAW5
	4000kW	5600kVA	HIVERT-Y/T 06 5/500 HIVERT-Y/T 06 5/500W	* 15550		
	5000kW	7000kVA	HIVERT-Y/T 06 5/600 HIVERT-Y/T 06 5/600W	13600 17050		
	5600kW	7900kVA	HIVERT-Y/T 06 5/660W	*	*	LAW6
	6300kW	8800kVA	HIVERT-Y/T 06 5/750W	*		
	6600kW	9300kVA	HIVERT-Y/T 06 5/800W	*		
	8000kW	11200kVA	HIVERT-Y/T 06 5/960W	*	*	LAW7
	10000kW	14000kVA	HIVERT-Y/T 06 5/1200W	*	*	LAW8
	12500kW	17500kVA	HIVERT-Y/T 06 5/1250W	*		

6.6kV HIVERT-Y/T series

Voltage	Motor power	Output capacity	Model	Weight (kg)	Dimension (W×H×D)	Cabinet type
6.6kV	365kW	520kVA	HIVERT-Y/T 66 6/040	4800	3500×1900×1200	LC1S
	440kW	620kVA	HIVERT-Y/T 66 6/048	5100		
	550kW	800kVA	HIVERT-Y/T 66 6/061	5400		
	700kW	1000kVA	HIVERT-Y/T 66 6/077	4300	4200×2200×1200	LC2S
	880kW	1250kVA	HIVERT-Y/T 66 6/096	4800		
	1200kW	1700kVA	HIVERT-Y/T 66 6/130	5300		
	1400kW	2000kVA	HIVERT-Y/T 66 6/154	5920	4550×2300×1200	LC3S
	1600kW	2250kVA	HIVERT-Y/T 66 6/173	6230		
	1800kW	2500kVA	HIVERT-Y/T 66 6/192	6530		
	2000kW	2800kVA	HIVERT-Y/T 66 6/220	6880		
	2250kW	3200kVA	HIVERT-Y/T 66 6/243	7270		
	2500kW	3500kVA	HIVERT-Y/T 66 6/275	9220 10410	6000×2400×1400 7870×2400×1400	LC4 LCW4
	2800kW	3950kVA	HIVERT-Y/T 66 6/304	9570 10760		
	3100kW	4350kVA	HIVERT-Y/T 66 6/340	10070 11700		
	3600kW	5050kVA	HIVERT-Y/T 66 6/400	10670 11700		
	3900kW	5500kVA	HIVERT-Y/T 66 6/425	14700 15240	7800×2400×1400 9700×2400×1600	LC5 LCW5
	4550kW	6400kVA	HIVERT-Y/T 66 6/500	15200 15790		
	5000kW	7000kVA	HIVERT-Y/T 66 6/550	15800 16500		
	5500kW	7700kVA	HIVERT-Y/T 66 6/600	16000 17290		
	6000kW	8400kVA	HIVERT-Y/T 66 6/660W	20500	9850×2400×1600	LCW6
	6900kW	9700kVA	HIVERT-Y/T 66 6/750W	22500		
	7400kW	11000kVA	HIVERT-Y/T 66 6/800W	24500		
	8800kW	12400kVA	HIVERT-Y/T 66 6/960W	29500	10450×2800/2400×1800	LCW7
	11000kW	15400kVA	HIVERT-Y/T 66 6/1200W	42000	14400×2800/2400×1800	LCW8
	11500kW	16100kVA	HIVERT-Y/T 66 6/1250W	44000		

10kV HIVERT-Y/T series

Voltage	Motor power	Output capacity	Model	Weight (kg)	Dimension (W×H×D)	Cabinet type
10kV	400kW	560kVA	HIVERT-Y/T 10 9/031	3730 3800	4300×1900×1200 4000×2050×1400	LB1S LB1
	500kW	700kVA	HIVERT-Y/T 10 9/040	3960 4000		
	6300kW	900kVA	HIVERT-Y/T 10 9/048	4270 4250		
	800kW	1150kVA	HIVERT-Y/T 10 9/061	4630 4500		
	1000kW	1400kVA	HIVERT-Y/T 10 9/077	4700 4770	4800×2200×1200 4300×2250×1600	LB2S LB2
	1250kW	1800kVA	HIVERT-Y/T 10 9/096	5100 5210		
	1400kW	2000kVA	HIVERT-Y/T 10 9/104	5330 5510		
	1600kW	2250kVA	HIVERT-Y/T 10 9/115	5630 5680		
	1800kW	2500kVA	HIVERT-Y/T 10 9/130	5920 5970		
	2000kW	2800kVA	HIVERT-Y/T 10 9/154	8010 6980	5900×2300×1200 4750×2250×1600	LB3S LB3
	2250kW	3200kVA	HIVERT-Y/T 10 9/165	8440 7325		
	2500kW	3500kVA	HIVERT-Y/T 10 9/192	8850 7765		
	2800kW	4000kVA	HIVERT-Y/T 10 9/205	9360 8080		
	3200kW	4500kVA	HIVERT-Y/T 10 9/243	9960 8595		
	3600kW	5050kVA	HIVERT-Y/T 10 9/260	12820	7550×2400×1600/1400	LB4
	4000kW	5600kVA	HIVERT-Y/T 10 9/304	13420		
	4500kW	6300kVA	HIVERT-Y/T 10 9/325	14120		
	5000kW	7000kVA	HIVERT-Y/T 10 9/364	14620		
	5500kW	7700kVA	HIVERT-Y/T 10 9/400	14720		
	6300kW	9000kVA	HIVERT-Y/T 10 9/462	20400	9950×2400×1600/1400	LB5
	7100kW	10000kVA	HIVERT-Y/T 10 9/500	22400		
	8000kW	11200kVA	HIVERT-Y/T 10 9/600	28400	10050×2800/2400×1600/1400	LB5
	10000kW	14000kVA	HIVERT-Y/T 10 9/800	45400	13950×2600/2400×1600/1400	LB6
	12500kW	18000kVA	HIVERT-Y/T 10 9/1000W	48500	15300×2800/2400×1800	LBW7
	16000kW	22500kVA	HIVERT-Y/T 10 9/1250W	*	*	LBW8
	20000kW	28000kVA	HIVERT-Y/T 10 9/1445W	*	*	LBW9

11kV HIVERT-Y/T series

Voltage	Motor power	Output capacity	Model	Weight (kg)	Dimension (W×H×D)	Cabinet type
11kV	470kW	660kVA	HIVERT-Y/T 11 9/031	3930 4000	4300×1900×1200 4000×2050×1400	LB1S LB1
	640kW	900kVA	HIVERT-Y/T 11 9/040	4160 4200		
	730kW	1050kVA	HIVERT-Y/T 11 9/048	4475 4550		
	930kW	1300kVA	HIVERT-Y/T 11 9/061	4830 4700		
	1200kW	1700kVA	HIVERT-Y/T 11 9/077	4900 4970	4800×2200×1200 4300×2250×1600	LB2S LB2
	1450kW	2050kVA	HIVERT-Y/T 11 9/096	5300 5410		
	1550kW	2200kVA	HIVERT-Y/T 11 9/104	5530 5710		
	1750kW	2450kVA	HIVERT-Y/T 11 9/115	5830 5880		
	2000kW	2800kVA	HIVERT-Y/T 11 9/130	6120 6170		
	2400kW	3400kVA	HIVERT-Y/T 11 9/154	8510 7580	6150×2300×1200 4750×2250×1600	LB3S LB3
	2500kW	3500kVA	HIVERT-Y/T 11 9/165	8640 7525		
	2950kW	4150kVA	HIVERT-Y/T 11 9/192	9050 7965		
	3150kW	4400kVA	HIVERT-Y/T 11 9/205	9560 8280		
	3700kW	5200kVA	HIVERT-Y/T 11 9/243	10160 8795		
	4000kW	5600kVA	HIVERT-Y/T 11 9/275	13020	7550×2400×1600/1400	LB4
	4650kW	6500kVA	HIVERT-Y/T 11 9/304	13620		
	5000kW	7000kVA	HIVERT-Y/T 11 9/325	14320		
	5550kW	7770kVA	HIVERT-Y/T 11 9/364	15620		
	6100kW	8600kVA	HIVERT-Y/T 11 9/400	15720		
	7050kW	9900kVA	HIVERT-Y/T 11 9/462	25400	10050×2800/2400×1600/1400	LB5
	7600kW	10700kVA	HIVERT-Y/T 11 9/500	27400		
	9200kW	13000kVA	HIVERT-Y/T 11 9/600	29400		
	11000kW	15400kVA	HIVERT-Y/T 11 9/800W	45400	13950×2600/2400×1600/1400	LB6
	12500kW	18000kVA	HIVERT-Y/T 11 9/1000W	48500	15300×2800/2400×1800	LBW7
	16000kW	22500kVA	HIVERT-Y/T 11 9/1250W	*	*	LBW8
	20000kW	28000kVA	HIVERT-Y/T 11 9/1445W	*	*	LBW9

07 APPLICATION INDUSTRIES AND FIELDS

Petrochemical

- Booster fan
- Induced draft fan
- Pipeline transportation pump
- Water injection pump
- Feed water pump
- Submerged pump
- Oil transfer pump
- Brine pump
- Circulating water pump
- Compressor

Electricity

- Powder exhaust fan
- Booster fan
- Force draft fan
- Induced draft fan
- Condensation pump
- Slurry pump
- Water pumping energy storage pump
- Circulating water pump
- Boiler (feed) pump
- Compressor

Municipal projects

- Aeration fan
- Induced draft fan
- Force draft fan
- Force pump
- Medium water pump
- Sewage pump
- Hot water circulating pump
- Lifting pump
- Cleaning water pump
- Water supply pump

Cement

- Kiln draft fan
- Kiln gas blower
- Separator fan
- Kiln head fan
- High temperature fan
- Cement mill fan
- Dust removal fan
- Circulating fan
- Grate cooler
- Raw material mill fan
- Raw material mill
- Coal mill
- Kiln tail fan
- Rotating kiln transmission
- Compressive force draft fan

Coal mines & minerals

- BFDS
- De-dusting fan
- Main fan
- Axial flow fan
- De-scaling pump
- Mud pump
- Slurry pump
- Clean water pump
- Feeding pump
- Stirring pump
- Agitating pump
- Drainage pump
- Medium pump
- Band conveyor
- Kiln drive

Metallurgy

- Induced draft fan
- Force draft fan
- Secondary de-dusting fan
- Compressing blower
- Blast furnace blower
- Blast de-dusting fan
- Converter de-dusting fan
- Electric furnace de-dusting fan
- Sulfur dioxide blower
- Slag-flushing pump
- Feeding pump
- Water-delivery pump
- Phosphorus removal pump
- Mud pump
- De-scaling pump
- Kneading machine
- Oxygen compressor
- Gas compression pump

Light industry

- Gas blower
- Force pump
- Cleaning pump
- Axial flow pump
- Soft water pump
- Water-delivery pump
- Compressor
- Beating engine
- Shredding machine

Others

- Pump test stand
- Inverter power supply test stand
- Motor test stand
- Wind tunnel test

08 QUALITY & SERVICE

High management efficiency

Supply management, Hiconics is trying to fulfill customer requirements without overstock, and meet expectationto company management.Hiconics stick to 5S spirit, take PDCA circle to improve work, product and service quality;Hiconics organize QCC activity, everybody feel affiliation and cohesiveness;Hiconics login on ERP, OA,CRM systemto integrate orders, purchasing, production and logistics to guarantee smooth and reliable delivery.

Automatical SMT

THT Production

QCC Team

Comprehensive and thorough inspections

Components inspection

The first and the most important step of productioninspection Hiconics equip with professional tools,such as electrical capacitor tester, leakage tester,to test 100% of IGBT, capacitor. With strict test,Hiconics is trying to prevent quality problem.

Aging test for PCB

PCB aging test is classified to be high-low temperature aging test and simulation systemaging test.High-low temperature aging test: PCB will be place in the environment with temperature difference from -20 degree to 80 degree for 73 hours.Simulation system aging test:PCB will be connected as system power on for functional test.

Customer oriented solution and service

01 Customized Solution

Close contact wi th design institute and user, customize solution based on requirement

User trainning 02

Regular training to customerfor operation and manitenance

05 Installation and commissioning

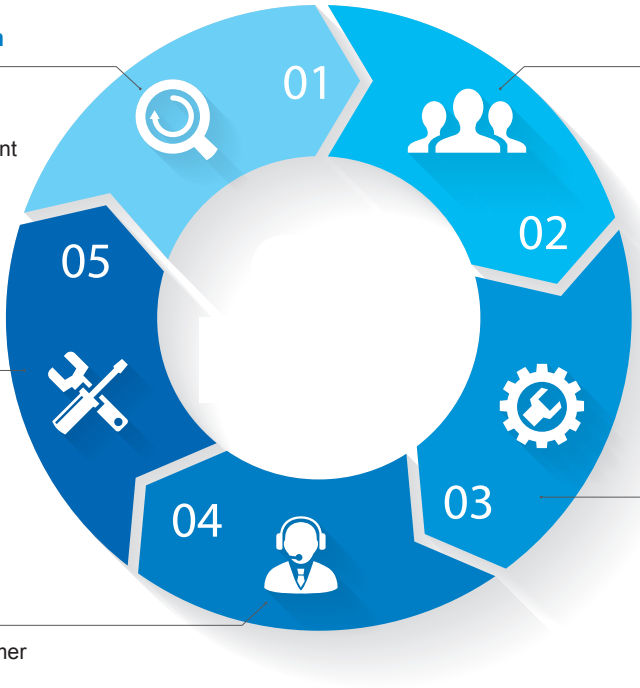
Adjust VFD output, monitor load status, 24 hours test commissioning before run into service

Repare and update 03

Solve the fault with quick response; core PCB free update whole service life

04 Service

Based on and supportcustomer



Power cell aging test

Power cell will run at 1.2 times rated voltage and current condition, 100A 500A power cell aging test equipment, By touch screen control system to monitor and manage all the power cells.

System aging test

System commissioning test platform locate 11 couple motors, by different match to get different voltages from China and international market.Test platform is control by pad and PLC, easy to collect data and storage. High efficiency and serious system test guarantee the device long-term stable running.

09 SYSTEM TEST PLATFORM

General information

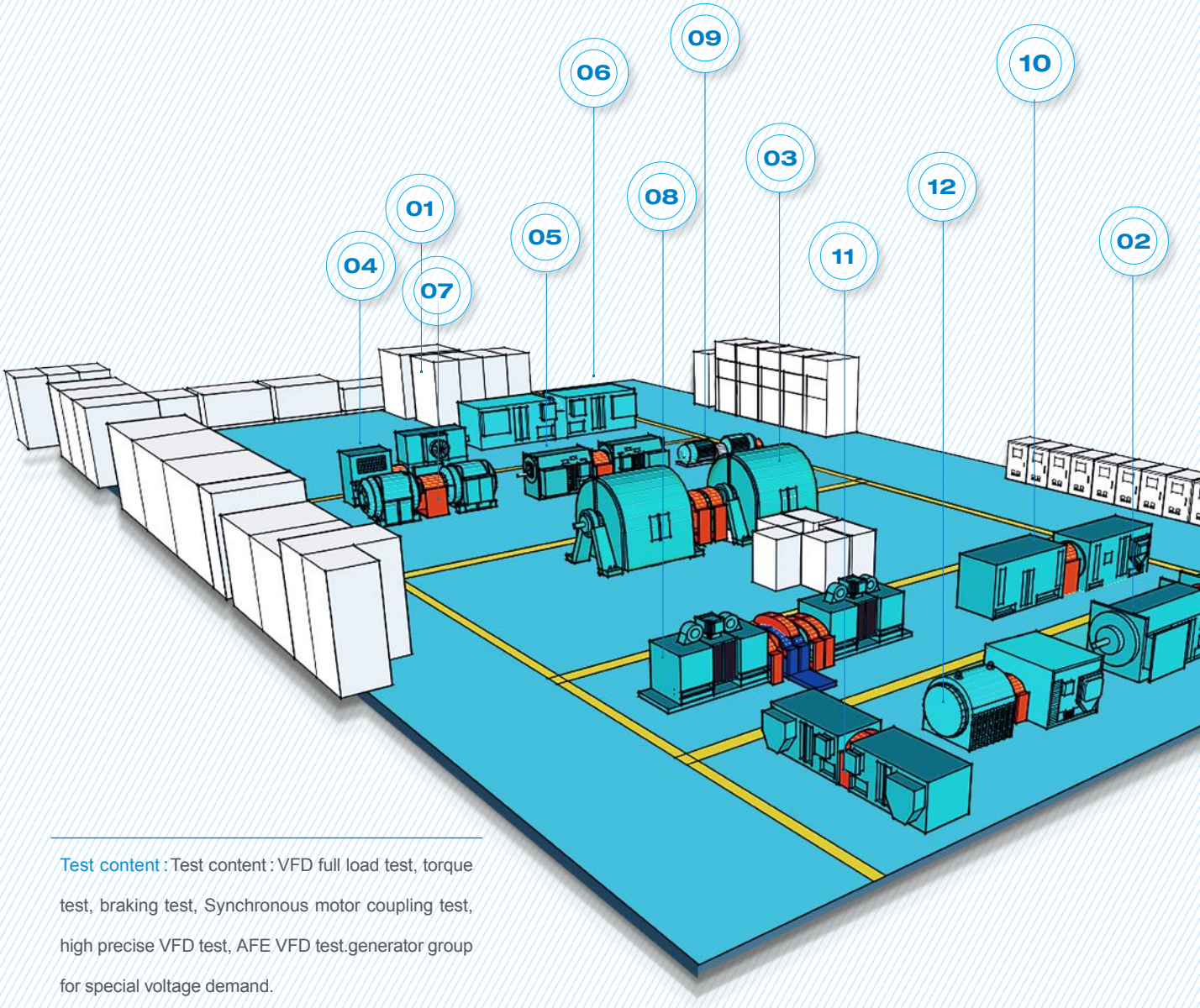
Motor qty: 23

Coupling: 11 pairs

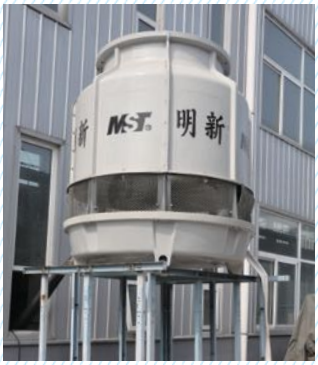
Power rating: 110kW~3200kW

Frequency range: 0~60Hz

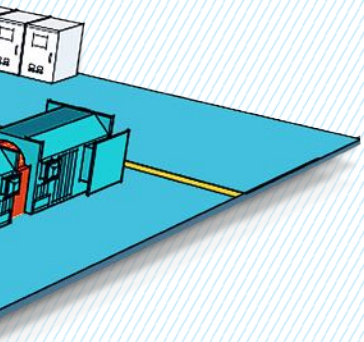
Voltage range: 0~13.8kV



Test content : Test content : VFD full load test, torque test, braking test, Synchronous motor coupling test, high precise VFD test, AFE VFD test.generator group for special voltage demand.



1*external cooling water tower and 2 * water cooling circulation system,s upply cooling Demand forbig power water cooling VFD with MV / LV, Asyn/Synchronous motor vector control and standard VFD test requirement.



01 Sync switch

System composed of 4 reactor with different current, according to VFD, test different power VFD for swtich between rated frequency to variable frequency.

02 Special power group

M13- 800kW/10kV
M16- 800kW/13800V

800kW Sync generator group output 0~60Hz , amplitute 0~13.8kV , simulate strict test condition to VFD,such as different frequency, voltage condition.

03

M1-M2 3200kW/10kV

Torque test and braking system supply start test (for Snyc motor), locked-rotor test, on load test and torque test.

04

M18- 500kW/1140V/660V
M17- 800kW/10kV

Rated frequency 50/60Hz , speed 3000/3600rpm , supply on load and precise VFD test demand.

05

M3-630kW/10kV
M4-630kW/6kV

Motor rated current up to 1706A , able to test on load test , aging test for VFD.

06

M23- 1600kW/1140V/660V
M22- 1600kW/10kV/6kV

Different connection mode, drive by 1 or 2 VFD for master-slave test.

07

M5-400kW/10kV
M6-460kW/6kV

Rated frequency 50Hz , supplyon load test for small power VFD.

08

M11- M12 800kW/10kV

Fulfill braking and torque test.

09

M20-M19 110kW/1140kV

Able to simulate onsite condition to do LV load test on the drives and components burning.

10

M9- M10 1600kW/10kV

11

M14- 500kW/6kV
M15- 500kW/7200V

12

M7-M8 630kW/10kV