

HICONICS

Midea Industrial Technology

HICONICS Medium Voltage AC Drive Comprehensive Manual

HC1000 Series

HC1000S Series

HC1000W Series

HC2000 Series



To become a global leading provider of products in the fields of new energy and energy-saving industrial control

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Declaration:

We warmly welcome and sincerely appreciate any suggestions or error corrections you may have for our manual. Due to factors such as product updates and standard changes, the product features, images or data in the manual are legally binding only after being officially stamped and confirmed by our company.



HICONICS

HICONICS - Leader in Green Energy

HC1000 Series

HC1000W Series

HC1000S Series

HC2000 Series



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HC1000S/HC1000 Series

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HC2000 SERIES

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All-Rounder

HC1000 General Series Medium Voltage AC Drive

Flexible Load · Wide Application

The power input of the HC1000 series medium voltage AC drive complies with IEEE STD 519-2014 and GB/T 14549-1993 standards. There is no need to install an input filter separately, which saves the cost of harmonics governance for users. Moreover, the system has a high power factor and does not require a power factor compensation device, effectively reducing reactive power input and lowering the input capacity. The input of the AC drive is transferred to the secondary side through a phase-shifting transformer and then phase-shifted. After that, multi-pulse diode rectification is adopted to provide isolated power for power cells, eliminating most of the harmonic currents caused by individual power cells.



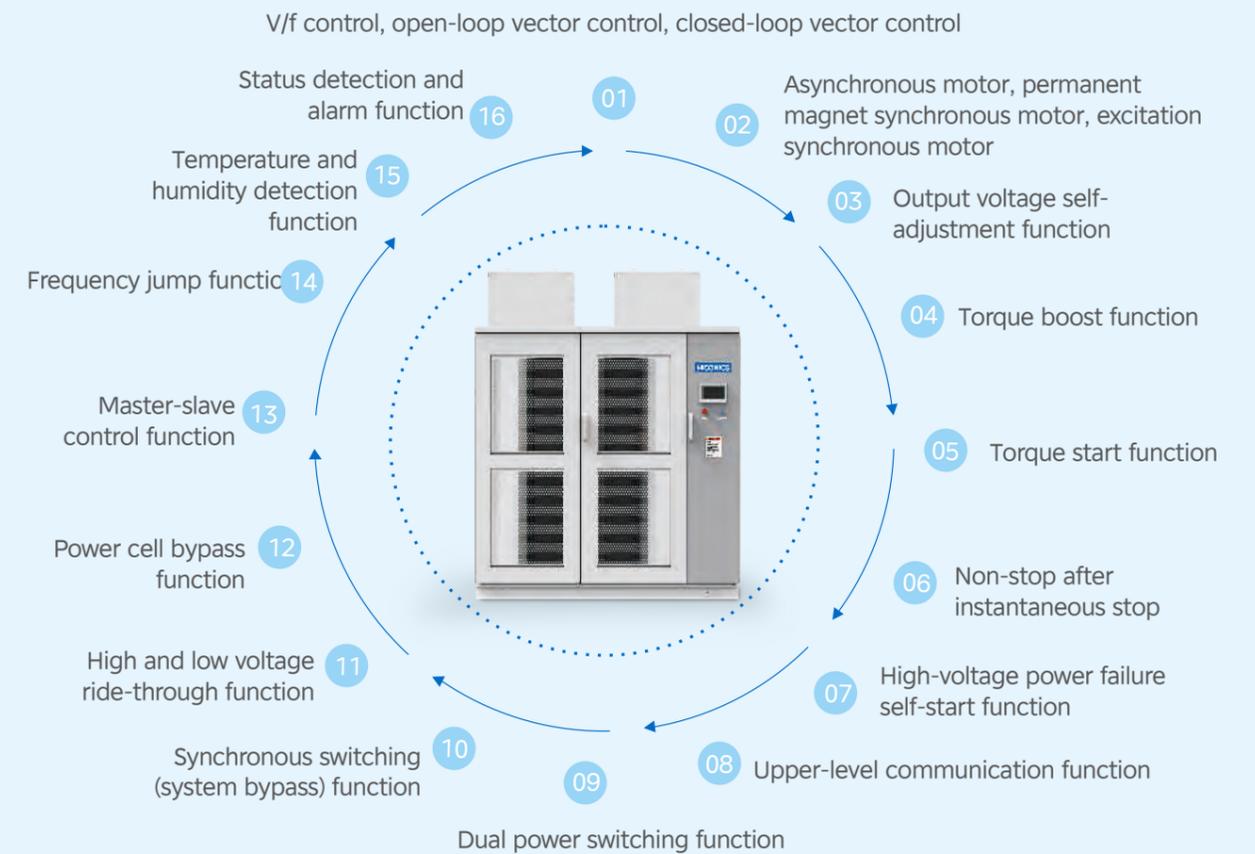
HC1000

98.5%
Inverter efficiency

50%
Reduced common-mode voltage

35%
Reduced VTHD

Full working conditions
No overvoltage operation



HC1000S

Single-sided Maintenance Medium Voltage AC Drive



First single-sided maintenance AC drive in China

Designed specifically for narrow and complex working conditions

Opening a new chapter in industrial drive

The HC1000S series AC drives by HICONICS subvert the maintenance mode of traditional AC drives. They feature a small maintenance space, stable operation, and an easy-to-operate interface. They can easily handle various complex working conditions, making them highly suitable for installation and use in space-constrained areas. The power input of HC1000S complies with IEEE STD 519-2014 and GB/T 14549-1993 standards. There is no need to install an input filter separately, which saves users the cost of harmonic governance. Moreover, the system has a high power factor and does not require a power factor compensation device, effectively reducing reactive power input and lowering the input capacity.

Choose HC1000S

Choose an intelligent and efficient future

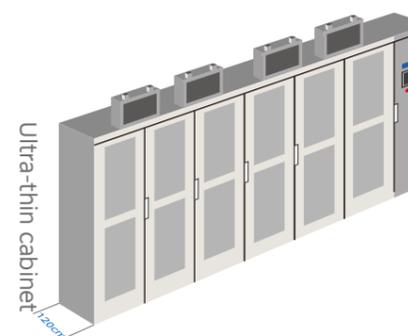


First single-sided maintenance in China

The HC1000S series AC drives completely subvert the traditional double-sided maintenance mode, greatly improving maintenance efficiency and safety, and leading new industry standards.

Flexible adaptation to various working conditions

The design of the HC1000S series AC drives fully considers the requirements of various industrial environments. It can be installed against the wall, enabling you to achieve the optimal layout under any spatial conditions and ensuring the efficient and orderly operation of the production process.



Ultra-thin cabinet design

The internal structure of the AC drive is reasonably arranged, and the components are placed in an orderly manner. The cabinet size is thinner than that of double-sided maintenance cabinets, which brings great convenience to transportation and installation, making it more adaptable to space-constrained environments.



Equipment can be connected to a digital cloud platform

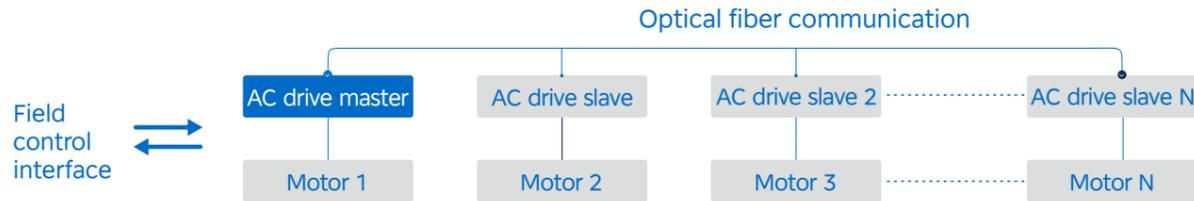
The HC1000S series AC drives can be remotely operated and managed via mobile APP and PC, enabling remote monitoring, inspection management, data analysis, fault diagnosis, abnormal alarms, maintenance management, and equipment repair.

HC1000S / HC1000

Product Advantages

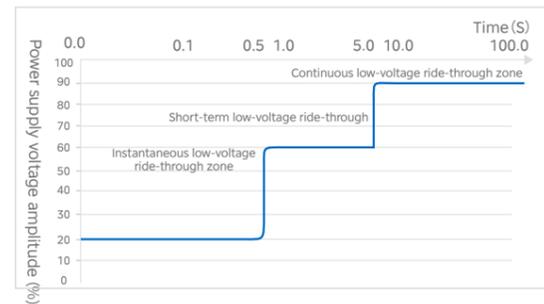
1 Master-slave control function

It has the function of dual-machine or multi-machine linkage, which can ensure that the load is evenly distributed among various motors, enabling the motors to operate efficiently and stably.



2 Low-voltage ride-through

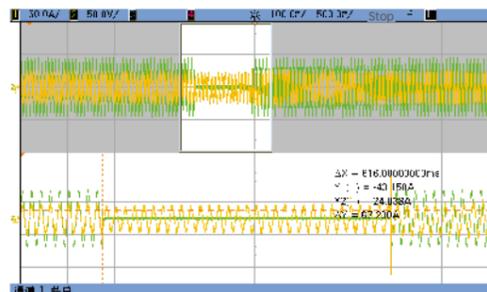
The output voltage has a self-adjusting function. When the input voltage fluctuates (-10%~+10%), the AC drive has the ability to output a rated voltage.



AC drive low-voltage ride-through diagram

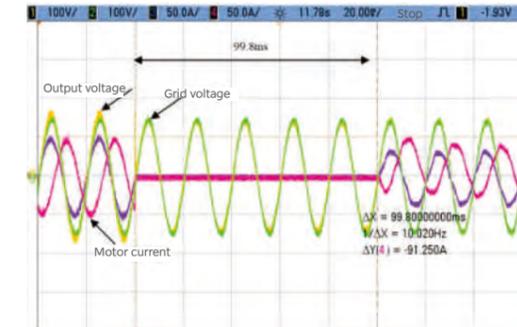
4 Non-stop after instantaneous stop

When the power grid is unstable and causes momentary power outages, the HC1000 can control the motor to decelerate, maintain the stability of the bus capacitor voltage, and keep the system running normally. If the power is not restored within the specified time, and the high-voltage power loss causes the drive to trip, a high-voltage power loss fault will be reported.



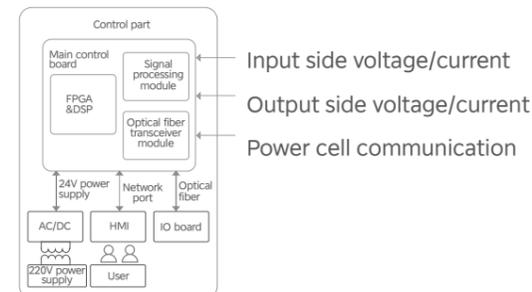
3 Synchronous switching

It realizes soft-start and precise control of multiple motors, ensuring seamless smooth transition of the load between the variable frequency and the power frequency. It can adapt to industrial environments where operating states need to be switched frequently, effectively reducing the impact on the power grid and mechanical equipment.

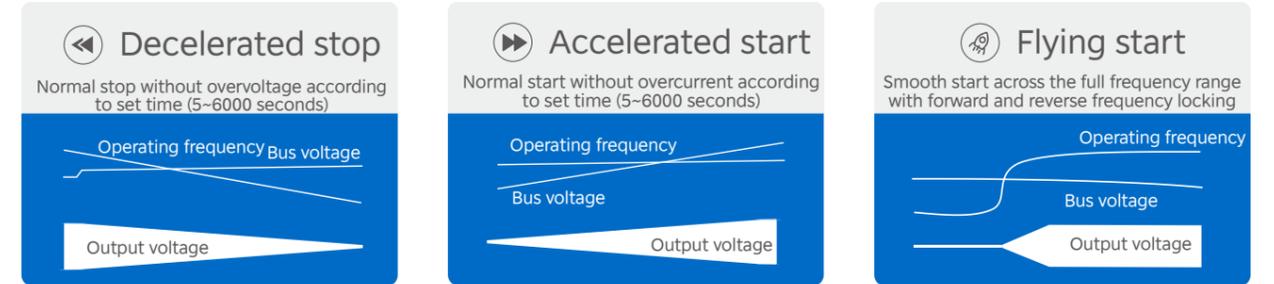


5 FPGA+DSP dual-core control architecture

The logic and algorithms run on separate cores. The DSP controls the algorithms, while the FPGA is responsible for processing external signals such as I/O, buses, and encoders. This makes the program operation more stable, the control accuracy higher, and the event response faster.

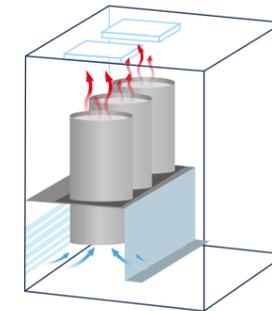


6 Smooth bus voltage control ensures stable acceleration, deceleration, and reliable operation



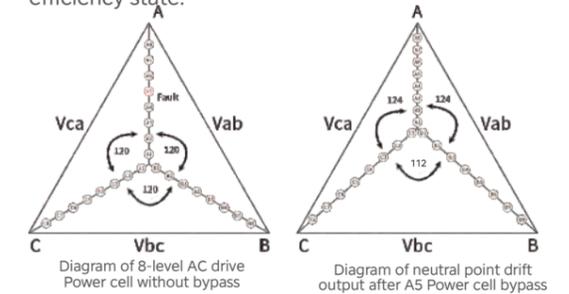
7 Innovative air-cooled heat dissipation

Parallel air path system: **20%** increase in cooling efficiency



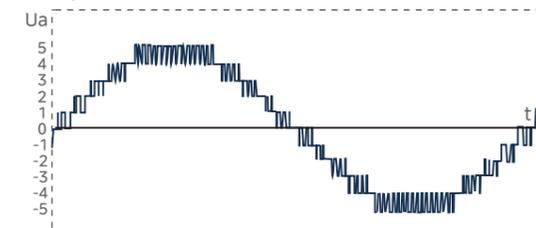
8 Neutral point drift technology

When a Power cell fails and is bypassed, other power units maintain normal voltage output; change the phase of the three-phase output voltage to keep the load running in a high-efficiency state.



9 Adopt Power cell series H-bridge multi-level wave stacking technology

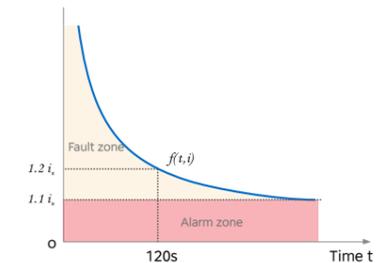
Low output harmonic content, with nearly perfect sine wave



Output phase voltage waveform (taking 5-level as an example)

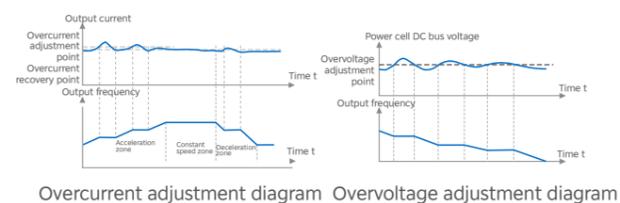
10 Innovative design of motor thermal overload model

Prevent the motor from being damaged by long-term operation under heavy-load overcurrent conditions



11 Stall prevention

Ensure continuous and stable operation of the motor



12 Intelligent self-start

Quickly restore stable operation of the production line

Users can freely choose whether the AC drive reports a major fault when high voltage power loss occurs, and whether the AC drive automatically runs when power is restored.



HC1000S / HC1000

Product Selection

Naming rules

HC **** *_ *** _ *** / ****

HC: HICONICS AC drive

Series number:
1000: General series
2000: Four-quadrant series
4000: IGCT/HV-IGBT General series

Default: General series
S: Single-sided cabinet series;
W: Water-cooled series...

Rated capacity (kVA):
00400: 400kVA, 02250: 2250kVA...

Rated output voltage (V):
060: 6kV, 100: 10kV...

Rated input voltage (V): 060: 6kV, 100: 10kV
(Omitted when consistent with output voltage)...

Technical parameter table

The HC1000S single-sided medium voltage AC drive currently has standard products with voltage levels of 11kV, 10kV, 6.6kV, 6kV, 4.16kV, and 3.3kV. It can also be customized to other voltage-level products according to user requirements.

The HC1000 series general medium voltage AC drives currently have standard products with voltage levels of 10kV and 6kV. They can also be customized to other voltage-level products according to user requirements.

* Please consult our company if it exceeds the scope.

* In case of any changes to the equipment dimensions, no further notice will be given, and the specific dimensions are subject to the technical agreement.



Item	Parameters
Rated capacity of the AC drive	HC1000: 315~14200 kVA※ HC1000S: 210~4650kVA ※
Rated voltage	10kV, 6kV(-10%~+10%)※
Rated frequency	50Hz/60Hz (-10%~+10%)※
Control power supply	380VAC, 30kVA (depending on capacity, subject to electrical drawings)
Rated input power factor	> 0.96
Inversion efficiency	≥98.5%
Output frequency range	0~120Hz※
Instantaneous overcurrent protection	150% (customizable according to user requirements)
Overload capacity	120% load, 60s
Torque limit	10%~150%
Analog input	4 channels 4~20mA
Analog output	4 channels 4~20mA
Upper communication	Isolated RS485 interface, ModBus RTU (ModBus TCP, Profinet, Profibus DP, Ethernet customizable)
Acceleration and deceleration time	5s~6000s (related to load)
On-off input and output	24 inputs 16 outputs (8 outputs can be defined)
Operating temperature	-5~+40°C ※
Storage/transport temperature	-25~+55°C ※
Cooling method	Forced air cooling/water cooling
Ambient humidity	< 95%, no condensation ※
Installation altitude	≤1000m ※
Dust	Non-conductive, non-corrosive, < 6.5mg/dm3 ※
IP rating	IP30/IP41※
Cabinet color	RAL7035+RAL7042/RAL7032 (customizable as needed)
Maintenance method	Front and rear maintenance/front maintenance (single-sided maintenance for HC1000S series medium voltage AC drives)

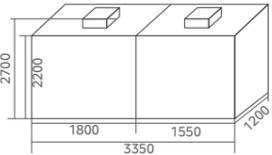
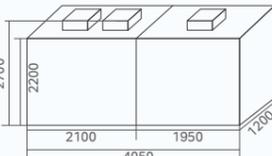
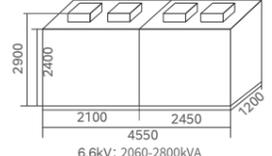
11kV AC drive single-sided cabinet (HC1000S)

Cabinet type	Adapted motor power (kW)	AC drive capacity (kVA)	Model	Power cell model	Weight (kg)	Cabinet dimensions W×D×H (mm)
Split cabinet (9-level)	540	670	HC1000S-110/00670	HPU10/A1M1*A	3639	<p>11kV: 670-1550kVA</p> <p>670-1030kVA: Number of top fans in transformer cabinet is 1 1030kVA: Number of top fans in transformer cabinet is 2</p>
	690	860	HC1000S-110/00860	HPU10/A2M1*A	3839	
	830	1030	HC1000S-110/01030	HPU10/A3M1*A	4089	
	950	1190	HC1000S-110/01190	HPU10/A4M1*A	4239	
	1100	1380	HC1000S-110/01380	HPU10/A5M1*A	4539	
	1240	1550	HC1000S-110/01550	HPU10/A6M1*A	4689	
Split cabinet (9-level)	1390	1740	HC1000S-110/01740	HPU10/B1M1*A	5024	<p>11kV: 1740-2920kVA</p> <p>1740-2580kVA: Number of top fans in Power cell cabinet is 1 2580kVA: Number of top fans in Power cell cabinet is 2</p>
	1640	2040	HC1000S-110/02040	HPU10/B2M1*A	5274	
	1770	2220	HC1000S-110/02220	HPU10/B3M1*A	5445	
	2060	2580	HC1000S-110/02580	HPU10/B4M1*A	5806	
	2340	2920	HC1000S-110/02920	HPU10/B5M1*A	6198	
Split cabinet (9-level)	2750	3430	HC1000S-110/03430	HPU10/C1D1*A	7866	<p>11kV: 3430-4650kVA</p>
	3080	3850	HC1000S-110/03850	HPU10/C2D1*A	8266	
	3510	4390	HC1000S-110/04390	HPU10/C3D1*A	8916	
	3700	4650	HC1000S-110/04650	HPU10/C4D1*A	9166	

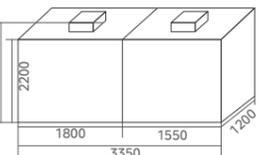
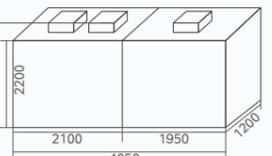
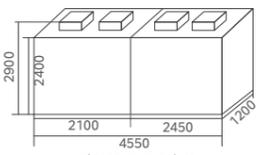
10kV AC drive single-sided cabinet (HC1000S)

Cabinet type	Adapted motor power (kW)	AC drive capacity (kVA)	Model	Power cell model	Weight (kg)	Cabinet dimensions W×D×H (mm)	
Split cabinet (8-level)	315	400	HC1000S-100/00400	HPU10/A1M1*A	3413	<p>10kV: 4000-1400kVA</p> <p>400-900kVA: Number of top fans in transformer cabinet is 1 900kVA: Number of top fans in transformer cabinet is 2</p>	
	355	450	HC1000S-100/00450		3463		
	400	500	HC1000S-100/00500		3513		
	Split cabinet (8-level)	450	560	HC1000S-100/00560	HPU10/A2M1*A		3563
		500	630	HC1000S-100/00630			3663
		560	700	HC1000S-100/00700	3713		
		630	800	HC1000S-100/00800	HPU10/A3M1*A		3813
		710	900	HC1000S-100/00900			3913
		800	1000	HC1000S-100/01000			4013
	Split cabinet (8-level)	900	1150	HC1000S-100/01150	HPU10/A4M1*A		4163
		1000	1250	HC1000S-100/01250			4313
		1120	1400	HC1000S-100/01400	HPU10/A6M1*A		4513
1250		1600	HC1000S-100/01600	4923			
1400		1800	HC1000S-100/01800	5033			
Split cabinet (8-level)		1600	2000	HC1000S-100/02000	HPU10/B3M1*A	5352	
	1800	2250	HC1000S-100/02250	5662			
	2000	2500	HC1000S-100/02500	HPU10/B5M1*A	5986		
	2250	2800	HC1000S-100/02800		6291		
Split cabinet (8-level)	2500	3150	HC1000S-100/03150	HPU10/C1D1*A	7513		
	2800	3500	HC1000S-100/03500		7913		
	3150	4000	HC1000S-100/04000	HPU10/C3D1*A	8413		
	3550	4500	HC1000S-100/04500		8913		

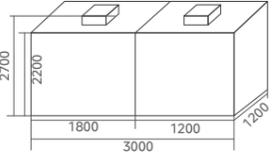
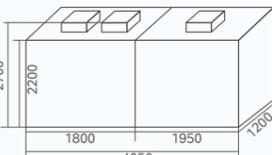
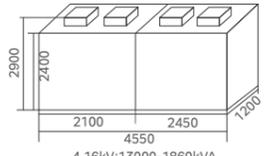
6.6kV AC drive single-sided cabinet (HC1000S)

Cabinet type	Adapted motor power (kW)	AC drive capacity (kVA)	Model	Power cell model	Weight (kg)	Cabinet dimensions W×D×H (mm)
Split cabinet (6-level)	330	410	HC1000S-066/00410	HPU10/A1M1*A	2792	 <p>6.6kV: 410-930kVA</p>
	420	520	HC1000S-066/00520	HPU10/A2M1*A	2892	
	500	620	HC1000S-066/00620	HPU10/A3M1*A	3042	
	570	710	HC1000S-066/00710	HPU10/A4M1*A	3142	
	660	830	HC1000S-066/00830	HPU10/A5M1*A	3192	
	750	930	HC1000S-066/00930	HPU10/A6M1*A	3292	
Split cabinet (6-level)	840	1050	HC1000S-066/01050	HPU10/B1M1*A	3508	 <p>6.6kV: 1050-1870kVA 1050kVA: Number of top fans in transformer cabinet is 1 1050kVA: Number of top fans in transformer cabinet is 2</p>
	980	1230	HC1000S-066/01230	HPU10/B2M1*A	3861	
	1070	1330	HC1000S-066/01330	HPU10/B3M1*A	3915	
	1240	1550	HC1000S-066/01550	HPU10/B4M1*A	4018	
	1400	1750	HC1000S-066/01750	HPU10/B5M1*A	4224	
	1500	1870	HC1000S-066/01870	HPU10/B6M1*A	4425	
Split cabinet (6-level)	1650	2060	HC1000S-066/02060	HPU10/C1D1*A	5280	 <p>6.6kV: 2060-2800kVA</p>
	1850	2310	HC1000S-066/02310	HPU10/C2D1*A	5580	
	2110	2630	HC1000S-066/02630	HPU10/C3D1*A	5940	
	2250	2800	HC1000S-066/02800	HPU10/C4D1*A	5991	

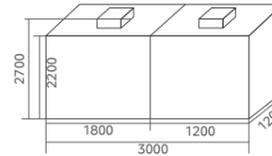
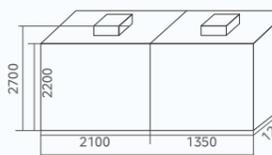
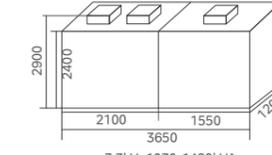
6kV AC drive single-sided cabinet (HC1000S)

Cabinet type	Adapted motor power (kW)	AC drive capacity (kVA)	Model	Power cell model	Weight (kg)	Cabinet dimensions W×D×H (mm)
Split cabinet (5-level)	250	315	HC1000S-060/00315	HPU10/A1M1*A	2667	 <p>6kV: 315-800kVA</p>
	315	400	HC1000S-060/00400-	HPU10/A2M1*A	2767	
	400	500	HC1000S-060/00500	HPU10/A3M1*A	2867	
	450	560	HC1000S-060/00560	HPU10/A4M1*A	2917	
	500	630	HC1000S-060/00630	HPU10/A5M1*A	3067	
	560	700	HC1000S-060/00700	HPU10/A6M1*A	3117	
Split cabinet (5-level)	630	800	HC1000S-060/00800	HPU10/A6M1*A	3217	 <p>6kV: 900-1600kVA Number of top fans in transformer cabinet is 1 1150kVA: Number of top fans in transformer cabinet is 2</p>
	710	900	HC1000S-060/00900	HPU10/B1M1*A	3611	
	800	1000	HC1000S-060/01000	HPU10/B2M1*A	3713	
	900	1150	HC1000S-060/01150	HPU10/B3M1*A	3917	
	1000	1250	HC1000S-060/01250	HPU10/B4M1*A	4019	
	1120	1400	HC1000S-060/01400	HPU10/B5M1*A	4219	
Split cabinet (5-level)	1250	1600	HC1000S-060/01600	HPU10/B5M1*A	4424	 <p>6kV: 1800-2500kVA</p>
	1400	1800	HC1000S-060/01800	HPU10/C1D1*A	4880	
	1600	2000	HC1000S-060/02000	HPU10/C2D1*A	5080	
	1800	2250	HC1000S-060/02250	HPU10/C3D1*A	5280	
	2000	2500	HC1000S-060/02500	HPU10/C4D1*A	5580	

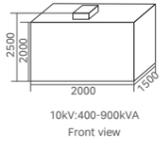
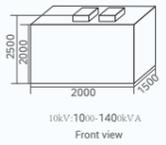
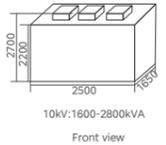
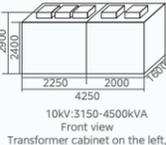
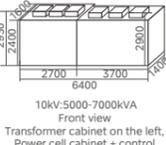
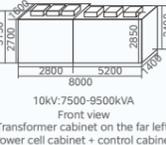
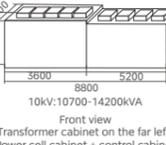
4.16kV AC drive single-sided cabinet (HC1000S)

Cabinet type	Adapted motor power (kW)	AC drive capacity (kVA)	Model	Power cell model	Weight (kg)	Cabinet dimensions W×D×H (mm)
Split cabinet (4-level)	210	260	HC1000S-416/00260	HPU10/A1M1*A	2331	 <p>4.16kV: 260-590kVA</p>
	260	330	HC1000S-416/00330	HPU10/A2M1*A	2411	
	320	390	HC1000S-416/00390	HPU10/A3M1*A	2511	
	360	450	HC1000S-416/00450	HPU10/A4M1*A	2581	
	420	520	HC1000S-416/00520	HPU10/A5M1*A	2611	
	470	590	HC1000S-416/00590	HPU10/A6M1*A	2661	
Split cabinet (4-level)	530	660	HC1000S-416/00660	HPU10/B1M1*A	2952	 <p>4.16kV: 660-1180kVA Number of top fans in transformer cabinet is 1 980kVA: Number of top fans in transformer cabinet is 2</p>
	620	780	HC1000S-416/00780	HPU10/B2M1*A	3084	
	670	840	HC1000S-416/00840	HPU10/B3M1*A	3187	
	780	980	HC1000S-416/00980	HPU10/B4M1*A	3228	
	890	1110	HC1000S-416/01110	HPU10/B5M1*A	3392	
	940	1180	HC1000S-416/01180	HPU10/B6M1*A	3493	
Split cabinet (4-level)	1040	1300	HC1000S-416/01300	HPU10/C1D1*A	4080	 <p>4.16kV: 1300-1860kVA</p>
	1170	1460	HC1000S-416/01460	HPU10/C2D1*A	4280	
	1330	1660	HC1000S-416/01660	HPU10/C3D1*A	4430	
	1490	1860	HC1000S-416/01860	HPU10/C4D1*A	4630	

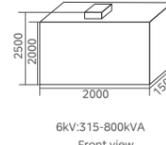
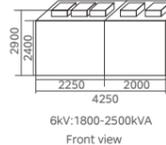
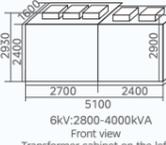
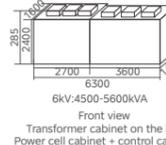
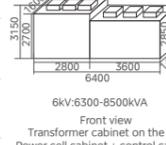
3.3kV AC drive single-sided cabinet (HC1000S)

Cabinet type	Adapted motor power (kW)	AC drive capacity (kVA)	Model	Power cell model	Weight (kg)	Cabinet dimensions W×D×H (mm)
Split cabinet (3-level)	170	210	HC1000S-033/00210	HPU10/A1M1*A	2236	 <p>3.3kV: 210-470kVA</p>
	210	260	HC1000S-033/00260	HPU10/A2M1*A	2286	
	250	310	HC1000S-033/00310	HPU10/A3M1*A	2386	
	290	360	HC1000S-033/00360	HPU10/A4M1*A	2456	
	330	420	HC1000S-033/00420	HPU10/A5M1*A	2486	
	380	470	HC1000S-033/00470	HPU10/A6M1*A	2556	
Split cabinet (3-level)	420	530	HC1000S-033/00530	HPU10/B1M1*A	3114	 <p>3.3kV: 530-940kVA</p>
	490	620	HC1000S-033/00620	HPU10/B2M1*A	3186	
	540	670	HC1000S-033/00670	HPU10/B3M1*A	3228	
	620	780	HC1000S-033/00780	HPU10/B4M1*A	3439	
	700	880	HC1000S-033/00880	HPU10/B5M1*A	3472	
	750	940	HC1000S-033/00940	HPU10/B6M1*A	3543	
Split cabinet (3-level)	830	1030	HC1000S-033/01030	HPU10/C1D1*A	3580	 <p>3.3kV: 1030-1480kVA</p>
	930	1160	HC1000S-033/01160	HPU10/C2D1*A	3730	
	1060	1320	HC1000S-033/01320	HPU10/C3D1*A	3930	
	1180	1480	HC1000S-033/01480	HPU10/C4D1*A	3980	

10kV AC drive (HC1000)

Cabinet type	Adapted motor power (kW)	AC drive capacity (kVA)	Model	Power cell model	Weight (kg)	Cabinet dimensions W×D×H (mm)
Integrated cabinet (8-level)	315	400	HC1000-100/00400	HPU10/A1M1*A	2316	 <p>10kV:400-900kVA Front view</p>
	355	450	HC1000-100/00450		2346	
	400	500	HC1000-100/00500		2383	
	450	560	HC1000-100/00560		2433	
	500	630	HC1000-100/00630		2483	
	560	700	HC1000-100/00700		2593	
	630	800	HC1000-100/00800		2719	
	710	900	HC1000-100/00900		2875	
Integrated cabinet (8-level)	800	1000	HC1000-100/01000	HPU10/A4M1*A	3062	 <p>10kV:1000-1400kVA Front view</p>
	900	1150	HC1000-100/01150	HPU10/A5M1*A	3192	
	1000	1250	HC1000-100/01250		3258	
	1120	1400	HC1000-100/01400	HPU10/A6M1*A	3409	
Integrated cabinet (8-level)	1250	1600	HC1000-100/01600	HPU10/B1M1*A	4390	 <p>10kV:1600-2800kVA Front view</p>
	1400	1800	HC1000-100/01800	HPU10/B2M1*A	4648	
	1600	2000	HC1000-100/02000	HPU10/B3M1*A	4948	
	1800	2250	HC1000-100/02250	HPU10/B4M1*A	5270	
	2000	2500	HC1000-100/02500	HPU10/B5M1*A	5604	
	2250	2800	HC1000-100/02800	HPU10/B6M1*A	5916	
Split cabinet (8-level)	2500	3150	HC1000-100/03150	HPU10/C1D1*A	7678	 <p>10kV:3150-4500kVA Front view Transformer cabinet on the left, Power cell cabinet + control cabinet on the right</p>
	2800	3500	HC1000-100/03500	HPU10/C2D1*A	8188	
	3150	4000	HC1000-100/04000	HPU10/C3D1*A	8958	
	3550	4500	HC1000-100/04500	HPU10/C4D1*A	9308	
Split cabinet (8-level)	4000	5000	HC1000-100/05000	HPU10/D1D1*A	11358	 <p>10kV:5000-7000kVA Front view Transformer cabinet on the left, Power cell cabinet + control cabinet on the right</p>
	4500	5650	HC1000-100/05650	HPU10/D2D1*A	11958	
	5000	6300	HC1000-100/06300	HPU10/D3D1*A	12858	
	5600	7000	HC1000-100/07000	HPU10/D4D1*A	13758	
Split cabinet (8-level)	6300	7500	HC1000-100/07500	HPU10/E1D1*A	15277	 <p>10kV:7500-9500kVA Front view Transformer cabinet on the far left, Power cell cabinet + control cabinet on the right</p>
	7100	8500	HC1000-100/08500	HPU10/E2D1*A	16017	
	8000	9500	HC1000-100/09500	HPU10/E2D1*A	16257	
Split cabinet (8-level)	9000	10700	HC1000-100/10700	HPU10/F1D1*A	19700	 <p>10kV:10700-14200kVA Front view Transformer cabinet on the far left, Power cell cabinet + control cabinet on the right</p>
	10000	11800	HC1000-100/11800	HPU10/F1D1*A	20400	
	11200	13300	HC1000-100/13300	HPU10/F2D1*A	22000	
	11900	14200	HC1000-100/14200	HPU10/F2D1*A	22900	

6kV AC drive (HC1000)

Cabinet type	Adapted motor power (kW)	AC drive capacity (kVA)	Model	Power cell model	Weight (kg)	Cabinet dimensions W×D×H (mm)
Integrated cabinet (5-level)	250	315	HC1000-060/00315	HPU10/A1M1*A	1969	 <p>6kV:315-800kVA Front view</p>
	315	400	HC1000-060/00400	HPU10/A2M1*A	2094	
	400	500	HC1000-060/00500	HPU10/A3M1*A	2154	
	450	560	HC1000-060/00560	HPU10/A4M1*A	2269	
	500	630	HC1000-060/00630		2349	
	560	700	HC1000-060/00700	HPU10/A5M1*A	2424	
	630	800	HC1000-060/00800	HPU10/A6M1*A	2464	
	Integrated cabinet (5-level)	710	900	HC1000-060/00900	HPU10/B1M1*A	
800		1000	HC1000-060/01000	HPU10/B2M1*A	3678	
900		1150	HC1000-060/01150	HPU10/B3M1*A	3758	
1000		1250	HC1000-060/01250		3880	
1120		1400	HC1000-060/01400	HPU10/B4M1*A	4084	
1250		1600	HC1000-060/01600	HPU10/B5M1*A	4396	
Split cabinet (5-level)	1400	1800	HC1000-060/01800	HPU10/C1D1*A	5595	 <p>6kV:1800-2500kVA Front view Transformer cabinet on the left, Power cell cabinet + control cabinet on the right</p>
	1600	2000	HC1000-060/02000	HPU10/C2D1*A	5755	
	1800	2250	HC1000-060/02250	HPU10/C3D1*A	5975	
	2000	2500	HC1000-060/02500	HPU10/C4D1*A	6140	
Split cabinet (5-level)	2250	2800	HC1000-060/02800	HPU10/D1D1*A	8358	 <p>6kV:2800-4000kVA Front view Transformer cabinet on the left, Power cell cabinet + control cabinet on the right</p>
	2500	3200	HC1000-060/00032	HPU10/D2D1*A	8958	
	2800	3500	HC1000-060/03500	HPU10/D3D1*A	9858	
	3150	4000	HC1000-060/04000	HPU10/D4D1*A	10758	
Split cabinet (5-level)	3550	4500	HC1000-060/04500	HPU10/E1D1*A	10985	 <p>6kV:4500-5600kVA Front view Transformer cabinet on the left, Power cell cabinet + control cabinet on the right</p>
	4000	5000	HC1000-060/05000	HPU10/E1D1*A	11285	
	4500	5600	HC1000-060/05600	HPU10/E2D1*A	12245	
Split cabinet (5-level)	5000	6300	HC1000-060/06300	HPU10/F1D1*A	13200	 <p>6kV:6300-8500kVA Front view Transformer cabinet on the left, Power cell cabinet + control cabinet on the right</p>
	5600	7000	HC1000-060/07000	HPU10/F1D1*A	14900	
	6300	7500	HC1000-060/07500	HPU10/F2D1*A	15200	
	7100	8500	HC1000-060/08500	HPU10/F2D1*A	15800	

HC1000W

High-power Water-cooled Medium Voltage AC Drive

The HC1000W series is a water-cooled medium voltage AC drive designed specifically for ultra-high-power loads, capable of achieving a powerful output of up to 27700kW. It integrates long-life components with redundancy and fault tolerance technology, using film capacitors and low voltage ride-through designs to comprehensively enhance reliability, providing a trustworthy high-voltage variable frequency drive solution for equipment in the 5000-27700kW range.

5000-27700kW
power range

100 times
heat exchange efficiency

78000h
ultra-long lifespan



01
Water-cooled air conditioning cabinet

- Strong corrosion resistance
- Easy maintenance
- Remote monitoring
- Early warning protection

02
Transformer cabinet

- Airtight circulation of air in the transformer cabinet
- High efficiency, perfectly solving the heat dissipation problem of the secondary winding

03
Power cell cabinet

- Compact structure
- Strong pressure resistance
- Easy replacement
- Reliable performance
- Extended lifespan

04
Control cabinet

- Control of the AC drive
- Temperature control and protection of the transformer
- Control and protection of the water-cooled cabinet

05
Water-cooled cabinet

- Constant temperature control
- Condensation control
- Leakage protection
- Ion purification
- Automatic water replenishment
- Anti-freeze setting

HC1000W

Functional advantages of each cabinet in the water-cooled series

Core advantages

- 
High protection level
 The transformer cabinet is fully enclosed, and the protection level can reach IP42, providing dust-proof and anti-corrosion functions.
- 
Long service life
 Reduce the junction temperature of power devices and extends the service life.
- 
Strong adaptability
 The AC drive can operate in a closed room and adapt to various complex and harsh environments.
- 
Heat exchange efficiency increased by 100 times
 The heat exchange efficiency of water is 100 times greater than that of air. The airtight circulation in the transformer cabinet has a high usage efficiency, perfectly solving the heat dissipation problem of the secondary winding.
- 
Almost zero maintenance
 The power of the cooling Power cell is low, and the internal loss of the frequency conversion system is small; There is very little maintenance required (the equipment is basically maintenance-free, only requiring regular inspection or cleaning of the water filter screen).

1 Water-cooled air conditioning cabinet + transformer cabinet



Parameter display

Install instruments in the pipeline through which the cold source water flows: Monitor the temperature and flow parameters of the circulating water



Environmental monitoring

Install temperature transmitters at the inlet of the fan and the outlet of the heat exchanger respectively: Monitor the temperature of the transformer's operating environment in real time



Drainage to prevent freeze cracking

Install an air vent at the highest point of the top of the heat exchanger and a drain valve at the lowest point of the bottom: Drain the circulating water completely to prevent freeze cracking



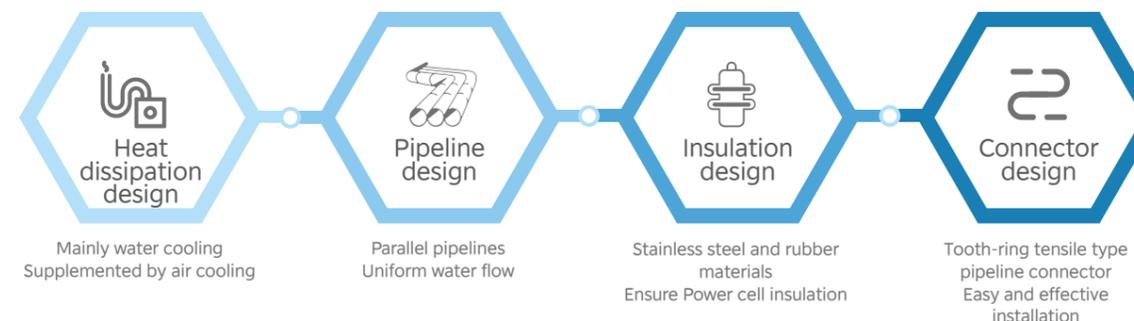
Temperature monitoring

Install PT100 temperature sensors in the winding air ducts of the phase-shifting transformer's primary winding and secondary winding: Monitor the temperature inside the transformer winding air ducts in real time

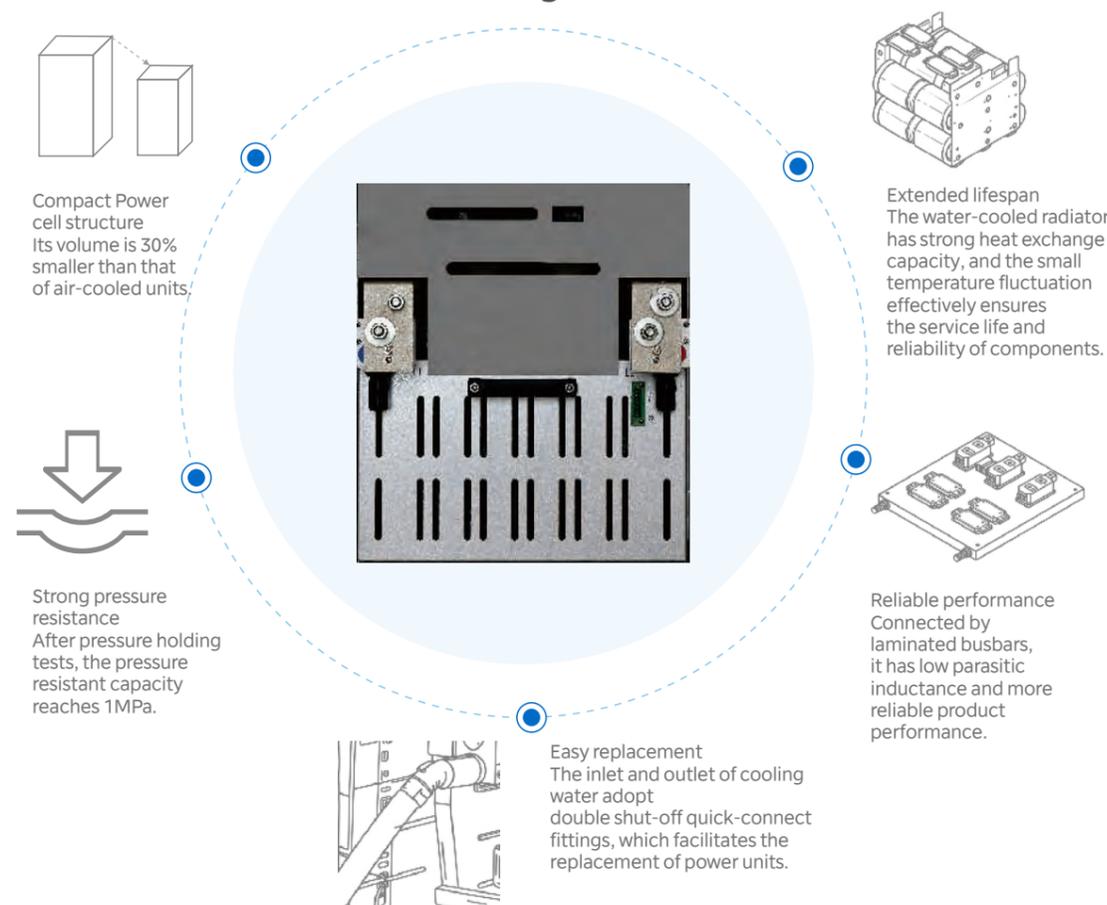
2 Power cell + control room

Adopt centralized control, including:

Control of the AC drive | Temperature control and protection of the transformer | Control and protection of the water-cooled cabinet



Structural advantages of Power cell



2 Water-cooled cabinet



All devices in the pipeline loop are made of stainless steel materials.



The main circulation pump adopts a redundant design and can be replaced and repaired online.



An independent PLC monitoring system enables remote monitoring.



It has comprehensive early warning protection functions for real-time monitoring.

Functions of the water-cooled cabinet



Constant temperature control

Based on the deviation between the actual temperature of the water in the frequency converter group and the set value, PID logic control is carried out on the electric three-way valve to adjust the flow of the cold-source water, thus ensuring a constant water temperature.



Condensation control

The temperature and humidity transmitter can display the ambient temperature, humidity and corresponding dew-point temperature in the cabinet in real time. When the temperature and humidity are higher than or close to the dew-point temperature, the electric heater will be automatically turned on.



Leakage protection

There is a leakage detection device inside the water-cooled cabinet. When there is water leakage in the cabinet, the PLC will generate an alarm signal.



Ion purification

An ion-exchange resin is used to remove trace ions, preventing leakage current in a high voltage environment. The conductivity meter can monitor the quality changes of the circulating water in real time and issue an alarm.



Automatic water replenishment

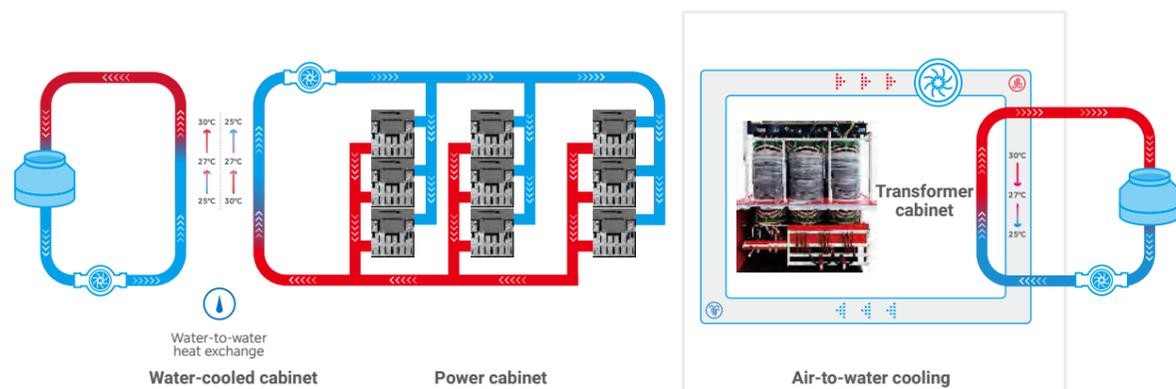
When the water outlet pressure of the frequency converter group is low, the system can automatically open the water-replenishing electromagnetic valve, and the water-replenishing pump starts to supply water. It stops when the water-replenishing pressure is reached.



Anti-freeze setting

The internal circulating water is a mixture of deionized water and ethylene glycol. The concentration of ethylene glycol needs to be determined according to the lowest ambient temperature at the installation site. See the table on the right for details.

Innovative water-cooling heat dissipation design



Ambient temperature	Glycol mass concentration %
0	0
-5	13
-10	22
-15	29.5
-20	36
-25	41.2
-30	45.8
-35	48.7
-40	52.9
-45	55.7
-50	58

Correlation diagram of temperature and concentration

External water circulation system for water-cooled AC drive

Depending on the cooling capacity and on-site environmental conditions, the system can use various secondary heat exchange forms such as water-to-water or water-to-air to release heat into the environment. There are three options for providing external water on-site:

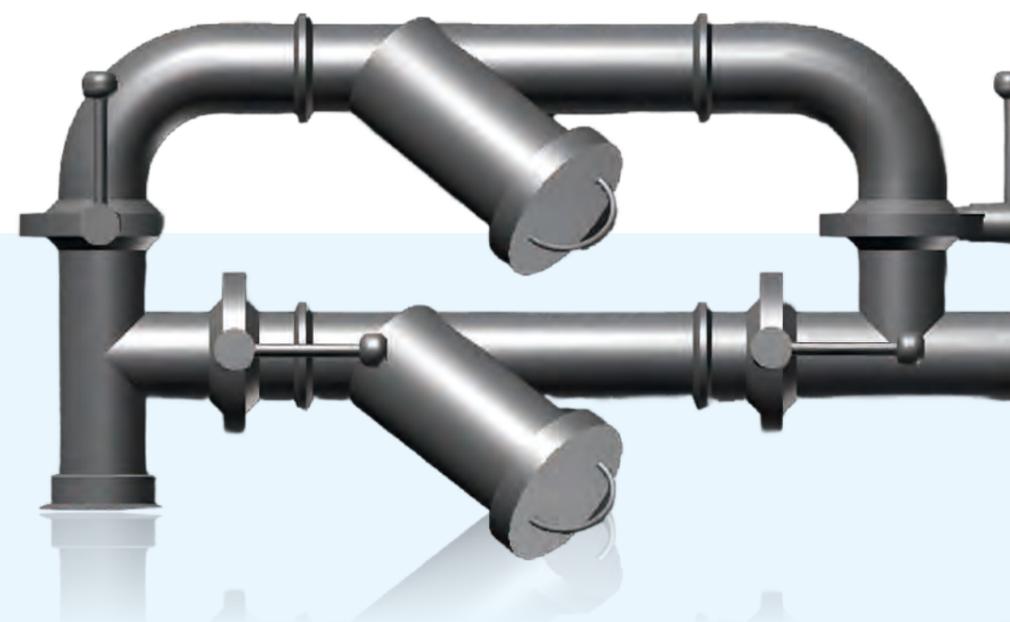
Option 1

On-site supply of external water meeting the requirements

The requirements for the water quality and temperature of external water are shown in the following table:

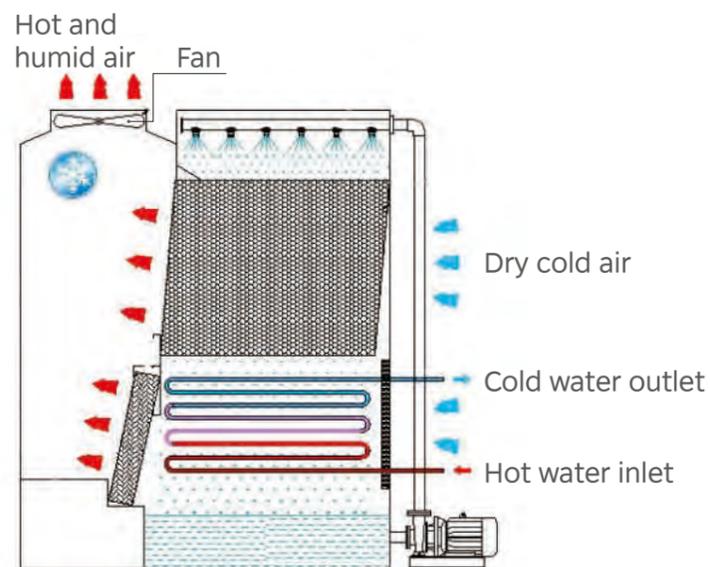
Sr No.	Name	Parameters	Power cell
1	Total dissolved solids	≤ 1000	mg/L
2	PH value	6.5-8.5	
3	Hardness (calculated as CaCO3)	≤ 450	mg/L
4	Chloride	≤ 250	mg/L
5	Sulfate	≤ 250	mg/L
6	Suspended substances	≤ 30	mg/L
7	Water pressure	2.5-6	Bar
8	Solid particle size	≤ 200	μm
9	Water cooling cabinet external water flow		t/h
10	Transformer cabinet external water flow		t/h
11	External water inlet temperature (T1)	5-32	°C
12	External water outlet temperature	T1+5	°C

If the quality of on-site external water is turbid, a filter needs to be added before the external water inlet valve, as shown in the figure below. The filter has a precision of 200μm (80 mesh) and a bypass function. According to the on-site water quality conditions, the filter for the external water pipeline needs to be cleaned regularly.

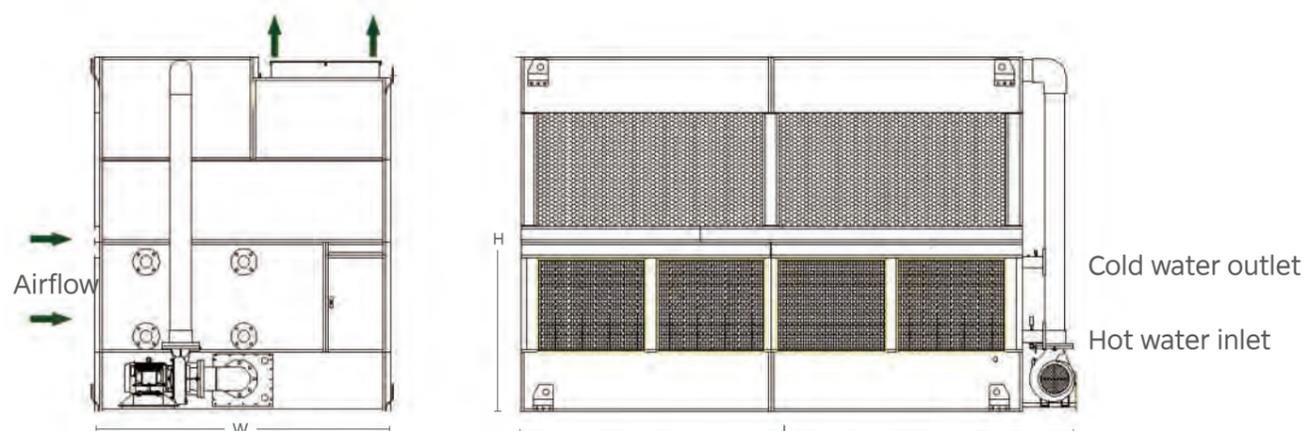


Option 2 Closed cooling tower

System working principle: As illustrated in the figure, the working fluid (pure water) circulates in the coils of the closed cooling tower. The heat of the working fluid is transferred to the water flowing through the coils. Meanwhile, the air outside the Power cell enters through the air inlet grille on the side, perpendicular to the water flow direction. A small portion of the water flowing across the coils evaporates and absorbs heat, and the hot and humid air is expelled into the atmosphere by the ventilation fan at the top of the cooling tower. The remaining water falls into the bottom water pan and is recirculated by the water pump to the water distribution system, passes through the pre-cooling packing, and then flows back to the coils.



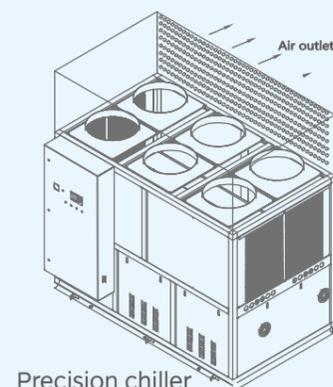
Working principle diagram of closed cooling tower



Appearance diagram of closed cooling tower

Option 3 Precision chiller

System working principle: As shown in the figure, the cooling system mainly consists of a compressor, a condenser, an expansion valve, a plate heat exchanger, a cooling fan, a water tank, an internal water circulation system, and an external water circulation system, etc. On one hand, the cold water in the water tank is pumped by the circulation pump into the external water inlet pipe of the water-cooled cabinet. After heat exchange in the plate heat exchanger inside the water-cooled cabinet, it flows back to the water tank, reducing the water temperature in the water-cooled cabinet. On the other hand, the hot water flowing back to the water tank exchanges heat with the low-temperature refrigerant in the plate heat exchanger of the refrigeration system to lower its temperature, thus maintaining the water temperature in the water tank. The high-temperature refrigerant after heat absorption exchanges heat with the surrounding environment through the cooling fan to cool down.



Precision chiller

Naming rules

HC **** *_ **_ ** / ****

HC: HICONICS AC drive

Series number:
1000: General series
2000: Four-quadrant series
4000: IGCT/HV-IGBT General series

Default: General series
S: Single-sided cabinet series
W: Water-cooled series...

Rated capacity (kVA):
00400: 400kVA, 02250: 2250kVA?

Rated output voltage (V):
060: 6kV, 100: 10kV...

Rated input voltage (V): 060: 6kV, 100: 10kV
(Omitted when consistent with output voltage)...

Item	Parameters
Rated capacity of the AC drive	8500-21000kVA/14000-35000kVA ※
Rated input voltage	Three-phase input 6kV/10kV (-10% ~ +10%) full load operation, (-25% ~ -10%) long-term derated operation allowed
Rated input frequency	50Hz/60Hz (-10%~+10%) ※
Control power supply	380VAC, 30kVA (depending on capacity, subject to electrical drawings)
Rated input power factor	> 0.96
Inversion efficiency	≥98.5%
Output frequency range	0~120Hz ※
Drive quadrant	Two quadrants
Instantaneous overcurrent protection	150% (customizable according to user requirements)
Overload capacity	120% load, 60s
Torque limit	10%~150%
Analog input	4 channels 4~20mA
Analog output	4 channels 4~20mA
Upper communication	Isolated RS485 interface, ModBus RTU (ModBus TCP, Profinet, Profibus DP, Ethernet customizable)
Acceleration and deceleration time	5s~6000s (related to load)
On-off input and output	24 inputs 16 outputs (8 outputs can be defined)
Operating temperature	-5~+40°C
Storage/transport temperature	-25~+55°C※
Cooling method	Water cooling (AFWF)
Ambient humidity	< 95%, no condensation ※
Installation altitude	≤1000m (contact manufacturer for heights above 1000m)
Dust	Non-conductive, non-corrosive, <6.5mg/dm3 ※
IP rating	IP41 ※
Cabinet color	RAL7035+RAL7042/RAL7032 (customizable according to user requirements)
Cable incoming and outgoing method	Bottom incoming and outgoing (contact manufacturer for other methods)
Maintenance method	Front and rear maintenance

*Water-cooled AC drives can be customized according to project requirements. For product size selection and other information, please contact our company for consultation.

HC2000

Four-quadrant Medium Voltage AC Drive

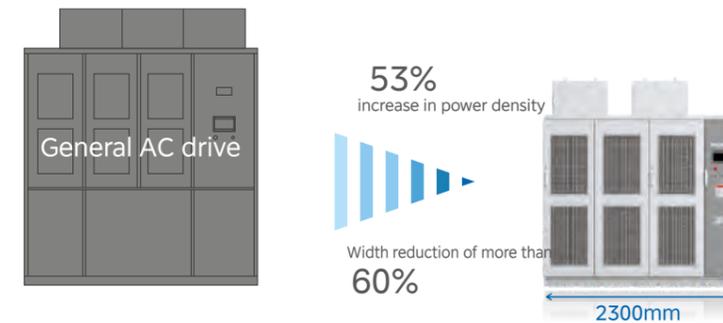


HC2000

Advantages of four-quadrant medium voltage AC drive products

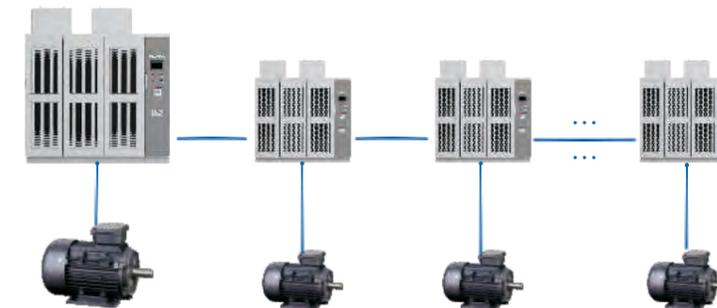
Compact size, high power

The power density is increased by 53%, and the width is reduced by more than 60%



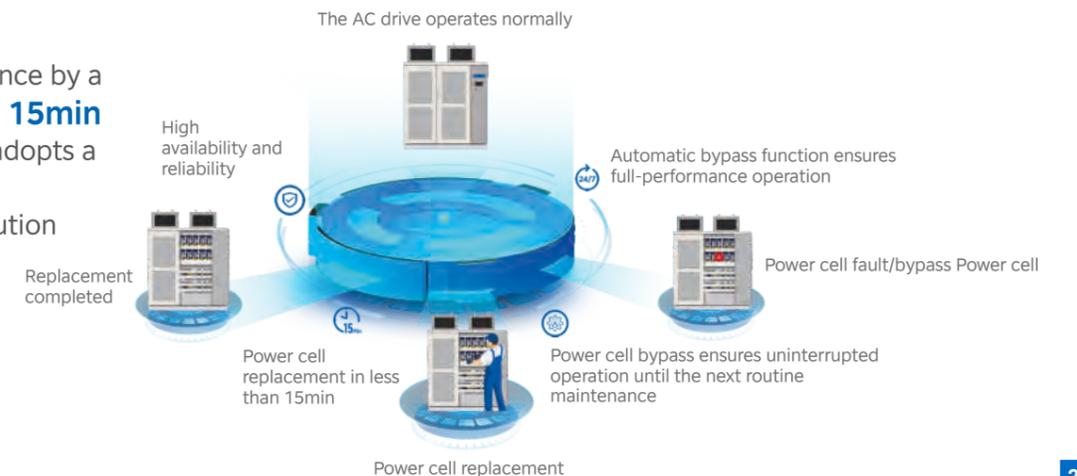
Multi-Power cell interlocking

It has the function of dual-Power cell or multi-Power cell interlocking, which can ensure that the load is evenly distributed to each motor, achieving efficient and stable operation.



High integration, more convenience

Quick maintenance by a single person in **15min**
The Power cell adopts a reactor-free rectification solution



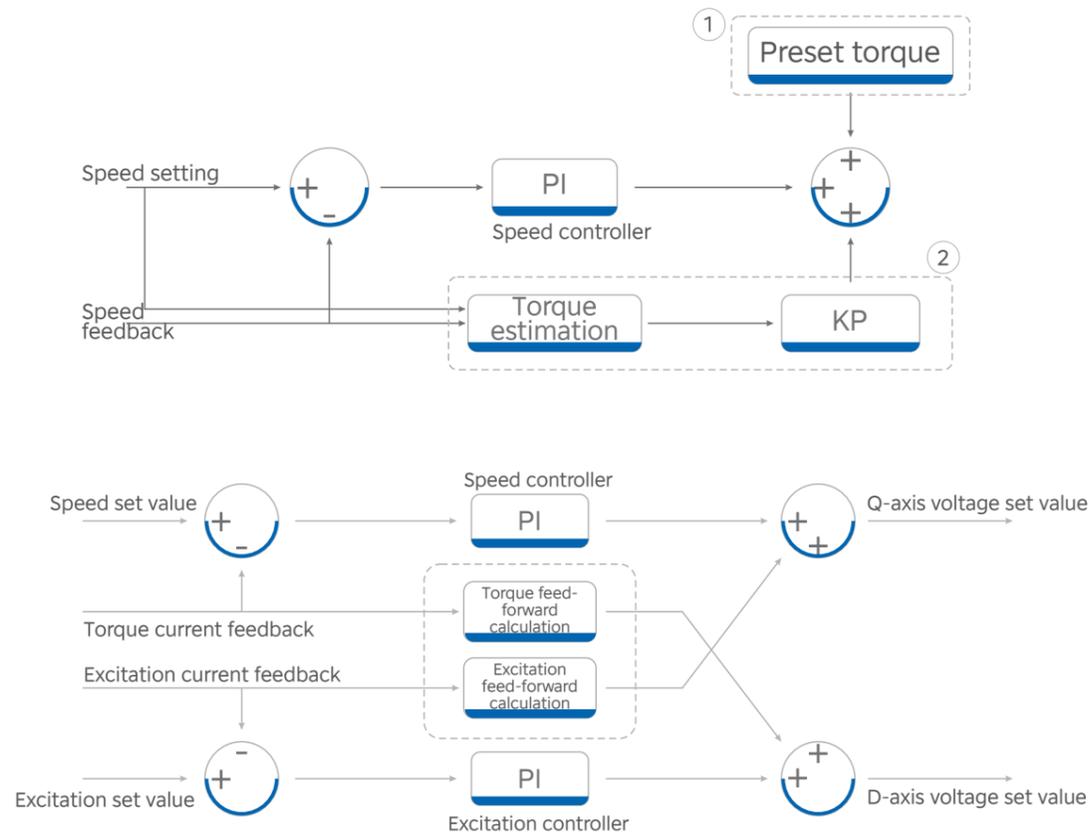
Zero-speed hovering

Zero-speed hovering, relentless pursuit of stability and safety

Torque predictive control

Feed-forward compensation

Zero-speed hovering, also known as brake (braking) failure protection function. The HC2000 medium voltage AC drive continuously monitors the feedback signals from the encoder in real time through its built-in high-precision interface. The zero-speed hovering function is achieved through Torque Predictive Control (TPC) and Feed-Forward Compensation (FFC) technologies.



Extend the service life of mechanical parts



Dual protection



High precision control

Safe and reliable



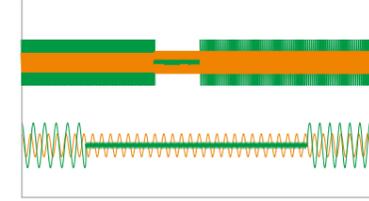
Core advantages

Strong voltage adaptability

Three core control strategies ensure the stable and reliable voltage on the grid side

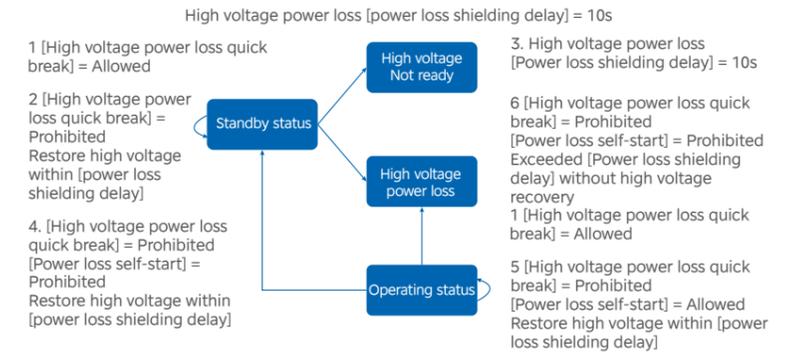
Non-stop after instantaneous stop

Within the time of instantaneous power failure, the AC drive controls the motor to decelerate and run, maintaining the basic stability of the bus capacitor voltage and ensuring the normal operation of the system.



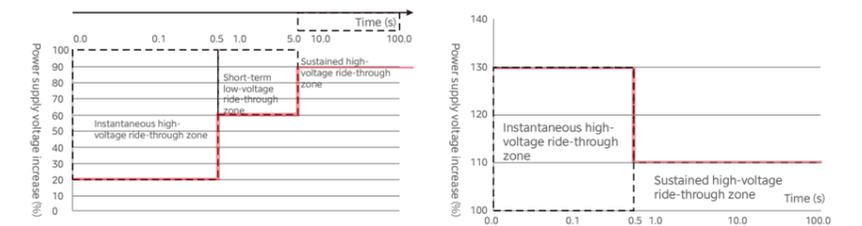
High voltage power loss self-start

By setting parameters such as high voltage power loss quick break, automatic restart on high voltage power loss, and power loss shielding delay, users can choose whether the AC drive reports a major fault when high voltage power loss occurs, and whether the AC drive automatically runs when the power is restored.



Low-voltage ride-through function

It complies with the Technical Specification for High and Low Voltage Ride-Through of Auxiliary AC Drives in Power Plants and Substations (DL/T 1648-2016) in the power industry.



Efficiency improvement

The product's control response speed is improved, and the dynamic response time is shortened.

The interrupt sampling interval is reduced by **70%**

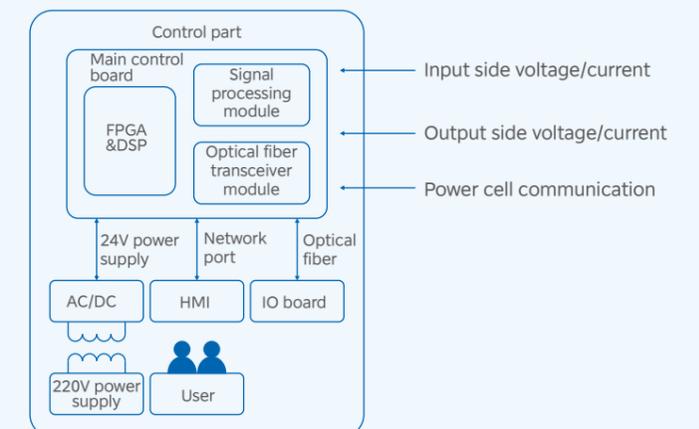
The CPU operation rate is increased by **100%**

The fiber optic communication rate between the main control Power cell and power units is increased by **150%**

The communication speed of the I/O board is increased by **400%**

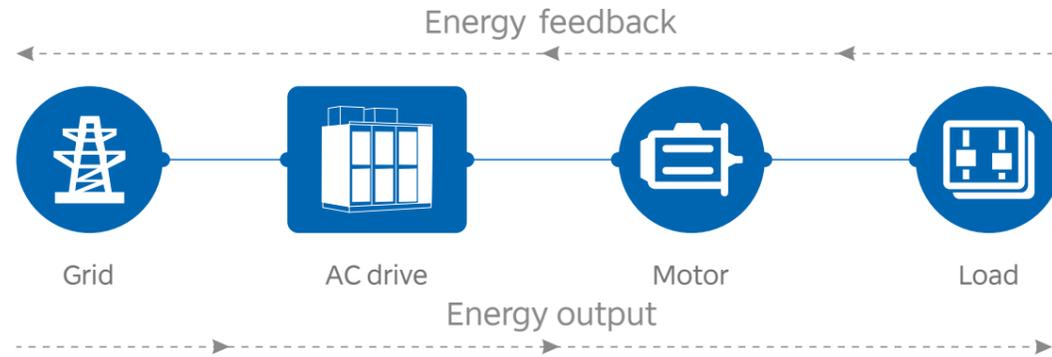
Performance upgrade

The new control architecture of FPGA+DSP comprehensively manages logic processing and master control algorithms, achieving carrier phase-shifting and third-harmonic injection to enhance the load-carrying capacity.



Full-load power feedback

The HC2000 four-quadrant medium voltage AC drive uses a phase-shifting transformer on the input side to form an SLM rectification method. The input and output harmonics meet the requirements of IEEE519-2014 and GB14549. Meanwhile, it realizes full-load power feedback, resulting in significant energy savings.



More stable and reliable

Neutral point drift technology

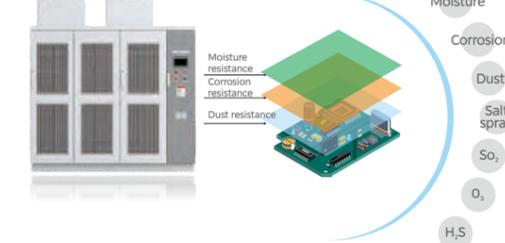
When a Power cell fails and is bypassed, other power units maintain normal voltage output; change the phase of the three-phase output voltage to keep the load running in a high-efficiency state.

Stable and reliable Power cell

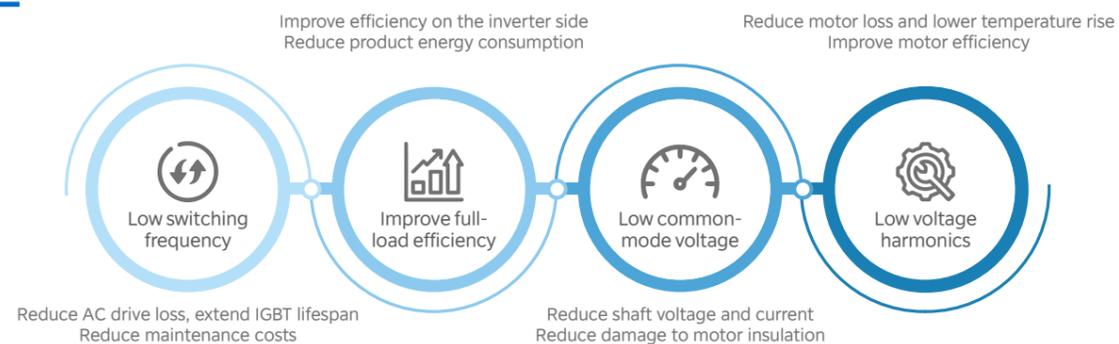
- 1 Low inductance busbar design
- 2 Integrated PCBA design
- 3 Long-life film capacitor
- 4 Multi-point temperature sampling of Power cell
- 5 AC and DC voltage and current detection
- 6 Input current protection

PCBA coating

The PCBA coating technology is adopted to improve the electrical insulation strength, ensuring the stable operation of the system and making it immune to harsh environmental challenges.



More friendly, less damage



Digital cloud platform, zero-distance smart management

365-day real-time monitoring | Timely prevention | Quick resolution | Intelligent energy saving | Data traceability

Quick and convenient fault repair

Maintenance and inspection work orders are fully streamlined online, reducing information communication barriers and improving processing efficiency. Manual and automatic work order reporting is flexible and convenient, and the spare parts application process is efficient and smooth. Quick-response linkage for equipment repair significantly shortens the fault repair time, enabling faster resumption of production.



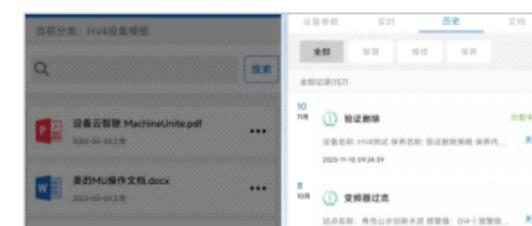
Smart energy saving, industrial upgrading

Combining big data analysis, the platform can accurately analyze energy efficiency status, flexibly adjust management strategies based on user habits and climate characteristics, optimize process curves, achieve energy saving and emission reduction goals, and assist customers in industrial upgrades.



Data traceability, smart management

The fault knowledge base can search for historical faults, and the document knowledge base provides detailed equipment information, establishing a full-life-cycle management system for equipment. Historical data is clear at a glance, and fault handling has a basis, providing precise guidance for equipment maintenance and inspection. Use a large amount of data to optimize control strategies, improving the operation efficiency and service life of equipment.



Centralized management of multiple equipment

Say goodbye to the "information silo phenomenon" of equipment. The digital cloud platform uses the information network as a link to closely connect multiple dispersed equipment, achieving centralized and unified management.



Remote monitoring anytime, anywhere

The digital cloud platform enables real-time monitoring of equipment operation. It automatically analyzes key data and generates various reports, providing intelligent analysis and management decision-making support for enterprises. It breaks the boundaries of management and further improves efficiency.



Real-time alarm information delivery

The graphical interface makes the equipment operation status clear at a glance. The platform automatically monitors key data such as electrical parameters and environmental indicators. Once an anomaly is detected, an immediate alarm is issued to ensure early detection and early handling of equipment faults. Minor faults are addressed proactively, and major faults are responded to promptly, effectively reducing unplanned downtime and ensuring production safety.

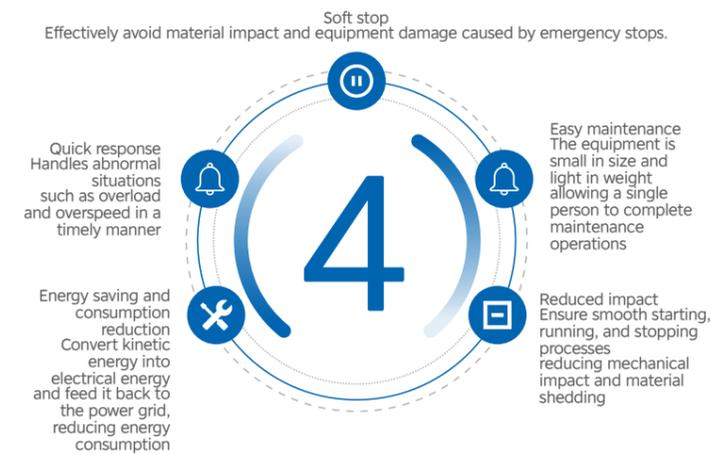


Core applications of HC2000

■ Hoist

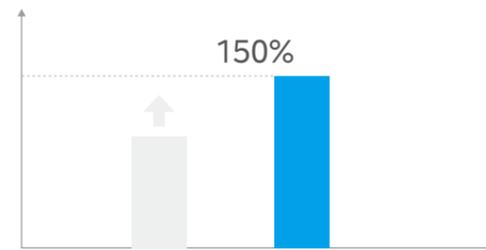
The hoist is a key piece of equipment used for vertical or inclined material lifting in the mining industry. It usually undertakes the vertical transportation of heavy-load materials, requiring high stability, safety, and efficiency. The HC2000 four-quadrant medium voltage AC drive adapts to the control algorithms for hoist applications and supports control modes such as differential machine vector control, permanent-magnet machine vector control, and electro-magnetic motor vector control. Through torque predictive control and feed-forward compensation technologies, it achieves the zero-speed hovering function, extending the service life of mechanical components. The online switching function between encoder open loop and closed loop ensures reliable continuous operation and realizes low-frequency and high-torque output, guaranteeing the stable start and stop of the hoist.

Application advantages of HC2000

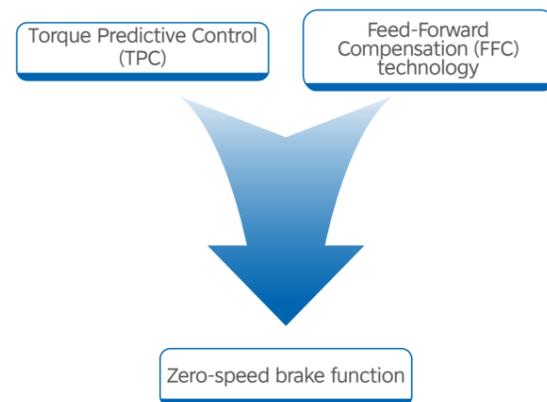


Application advantages of HC2000

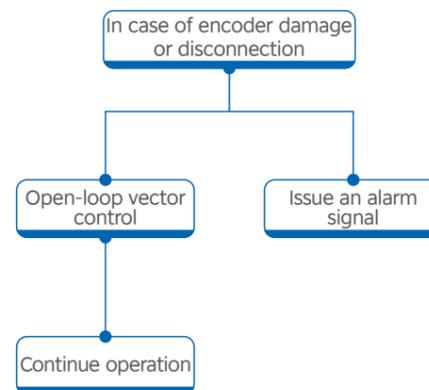
Ensure that the hoist still has sufficient torque output during low-speed operation, preventing problems such as failure to start, rope slippage, and sudden braking.



Zero-speed hovering



Online switching between open and closed loops

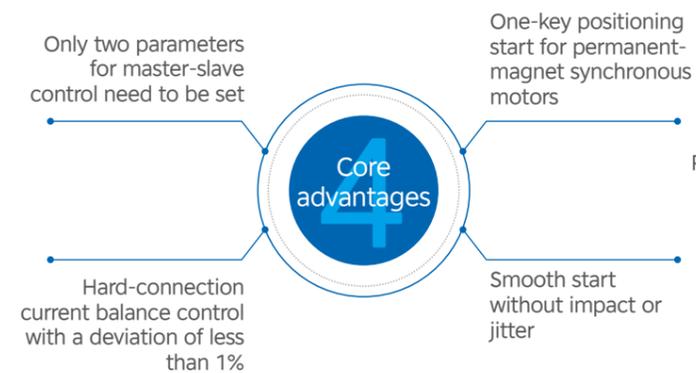


Core applications of HC2000

■ Downward-running belt conveyor

As an important equipment for material transportation in industries such as mining, ports, building materials, and logistics, the downward-running belt conveyor generally features a long conveying distance and a large starting torque. In recent years, with the development of the "carbon peaking and carbon neutrality" policy, there is a clear trend towards the permanent magnetization of motors. The HC2000 four-quadrant medium voltage AC drive is suitable for the drive application of belt conveyors. Its control algorithms support control modes such as differential machine vector control and permanent-magnet machine vector control. The built-in master-slave control function in multi-drive belt applications realizes load balancing control and torque boosting function, meeting the working conditions of heavy-load starting of belt conveyors with materials. It also has full-power energy feedback, meeting the application requirements of downward-running belt conveyors.

Application advantages of HC2000

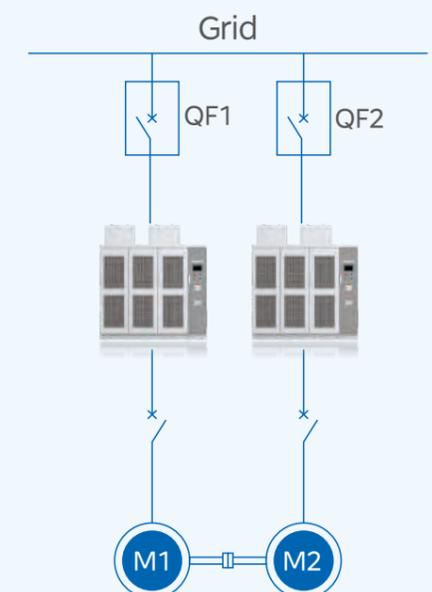


Five core control strategies

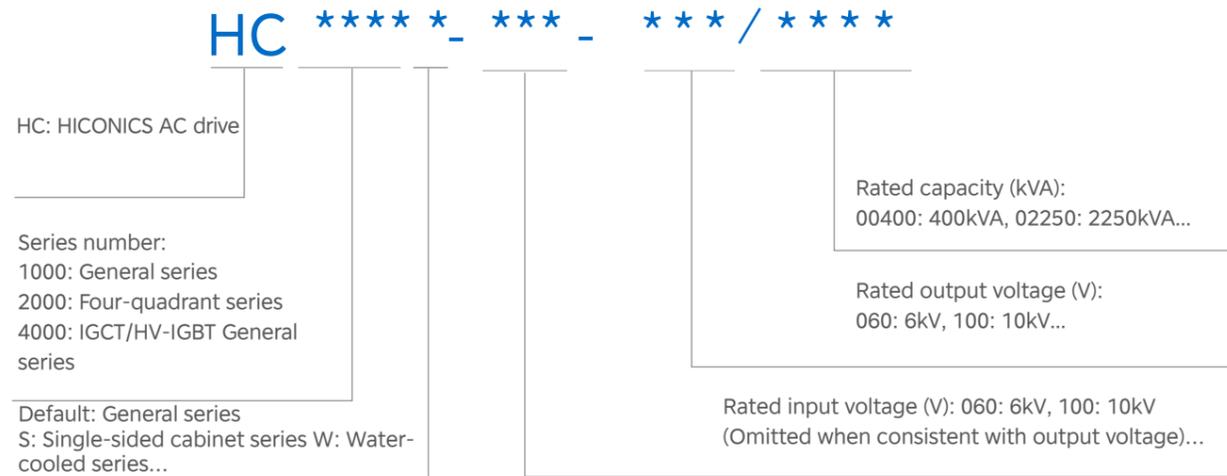


■ Motor test platform

- 1 The motor test bench is mainly used for motor type tests, factory tests, and energy efficiency evaluations. It is mainly composed of a test power supply, a test system, and an operation console, etc.
- 2 The HC2000 four-quadrant medium voltage AC drive has flexible expansion capabilities and supports applications on motor test platforms.
- 3 Support the input of parameters for multiple motors.
- 4 Drive multiple motor types: induction motors, permanent-magnet synchronous motors, and electrically-excited synchronous motors
- 5 Multiple control mode parameters are available: V/F control, open-loop vector control, and closed-loop vector control
- 6 Easy-to-operate background debugging software - HC DriveSight.
- 7 Support multiple communication types



Naming rules



Item	Parameters
Rated capacity of the AC drive	250~7700kVA ※
Rated input voltage	Three-phase input 3.3kV-11kV (-10% ~ +10%) full load operation, (-25% ~ -10%) long-term derated operation allowed
Rated input frequency	50Hz/60Hz (-10%~+10%) ※
Control power supply	380VAC, 30kVA (depending on capacity, subject to electrical drawings)
Rated input power factor	>0.96
Inversion efficiency	≥98.5%
Output frequency range	0~120Hz ※
Drive quadrant	Four quadrants
Instantaneous overcurrent protection	150% (customizable according to user requirements)
Overload capacity	120% load, 60s
Torque limit	10%~150%
Analog input	4 channels 4~20mA
Analog output	4 channels 4~20mA
Upper communication	Isolated RS485 interface, ModBus RTU (ModBus TCP, Profinet, Profibus DP, Ethernet customizable)
Acceleration and deceleration time	5s~6000s (related to load)
On-off input and output	24 inputs 16 outputs (8 outputs can be defined)
Operating temperature	-5~+40°C
Storage/transport temperature	-25~+55°C ※
Cooling method	Forced air cooling
Ambient humidity	<95%, no condensation ※
Installation altitude	≤1000m ※
Dust	Non-conductive, non-corrosive, <6.5mg/dm ³ ※
IP rating	IP41 ※
Cabinet color	RAL7035+RAL7042/RAL7032 (customizable according to user requirements)
Cable incoming and outgoing method	Bottom incoming and outgoing (contact manufacturer for other methods)
Maintenance method	Front and rear maintenance

10kV AC drive (HC2000)

Item	Power (kW) adapted motor	Capacity (kVA) AC drive	HC2000 model
Cabinet 1 (8-level)	315	400	HC2000-100/00400
	355	450	HC2000-100/00450
	400	500	HC2000-100/00500
	450	560	HC2000-100/00560
	500	630	HC2000-100/00630
	560	700	HC2000-100/00700
	630	800	HC2000-100/00800
	710	900	HC2000-100/00900
	800	1000	HC2000-100/01000
	900	1150	HC2000-100/01150
Cabinet 2 (8-level)	1000	1250	HC2000-100/01250
	1120	1400	HC2000-100/01400
	1250	1600	HC2000-100/01600
	1400	1800	HC2000-100/01800
	1600	2000	HC2000-100/02000
	1800	2250	HC2000-100/02250
Cabinet 3 (8-level)	2000	2500	HC2000-100/02500
	2250	2800	HC2000-100/02800
	2500	3150	HC2000-100/03150
	2800	3500	HC2000-100/03500
Cabinet 4 (8-level)	3150	4000	HC2000-100/04000
	3550	4500	HC2000-100/04500
	4000	5000	HC2000-100/05000
Cabinet 4 (8-level)	4500	5650	HC2000-100/05650
	5000	6300	HC2000-100/06300
	5600	7000	HC2000-100/07000

6kV AC drive (HC2000)

Item	Power (kW) adapted motor	Capacity (kVA) AC drive	HC2000 model
Cabinet 1 (5-level)	250	315	HC2000-060/00315
	315	400	HC2000-060/00400
	400	500	HC2000-060/00500
	450	560	HC2000-060/00560
	500	630	HC2000-060/00630
	560	700	HC2000-060/00700
Cabinet 2 (5-level)	630	800	HC2000-060/00800
	710	900	HC2000-060/00900
	800	1000	HC2000-060/01000
	900	1150	HC2000-060/01150
	1000	1250	HC2000-060/01250
Cabinet 3 (5-level)	1120	1400	HC2000-060/01400
	1250	1600	HC2000-060/01600
	1400	1800	HC2000-060/01800
	1600	2000	HC2000-060/02000
Cabinet 4 (5-level)	1800	2250	HC2000-060/02250
	2000	2500	HC2000-060/02500
	2250	2800	HC2000-060/02800
Cabinet 4 (5-level)	2500	3200	HC2000-060/03200
	2800	3500	HC2000-060/03500
	3150	4000	HC2000-060/04000

Reliability assurance

Comprehensive upgrade of hardware and software stability

Optimal structure of main loop

Strong electromagnetic compatibility

Optimization of the main circuit DC bus to reduce stray inductance in the DC bus circuit and improve the electromagnetic compatibility of the Power cell.

Stable operation in harsh environments

Optimization of the creepage distance and electrical clearance of the main circuit to ensure stable operation of the Power cell in harsh environments such as dust, humidity, and salt spray.

Long-life film capacitors

The main circuit electrolytic capacitors use film capacitors to improve capacitor life and reduce system losses.

Power device drive Reliability optimization design

Drive reliability

Optimization of power device drive power supply and isolation to ensure the reliability of power device drive.

Reliable high-Power cell

Optimization of the parallel drive synchronization of high-Power cell power devices to ensure that the drive signal is not affected by the temperature effect of the device, improving the reliability of the high-Power cell.

High-performance control algorithms and software

Strong adaptability to working conditions | Reduce failures

For loads such as fans, pumps, and compressors, the control algorithms are optimized to make the system more adaptable to on-site working conditions. This reduces overvoltage and overcurrent failures in the variable-frequency system caused by sudden changes in load.

Control system reliability assurance

Fast computing speed | High control precision | Clearer interface

A standard shielded chassis and a control system that has passed strict EMC testing and verification improve anti-interference ability and ensure the reliable operation of the system.

The hardware architecture of a multi-core processor enables decoupled control of multiple tasks, improving the system's computing speed and reliability;

A 32-Bit floating-point arithmetic controller offers a high control rate and control precision;

The control technology of multiple buses and Ethernet buses enhances the system's data interaction rate;

The Linux system interactive interface makes operations more flexible and convenient.

Stable choice, energy-saving pioneer

With its excellent environmental adaptability, operational stability, and safety performance, HICONICS' AC drives provide a solid guarantee for the continuous and stable operation of products. Even in various harsh working conditions, they can maintain long-term stable operation.



Environmental Stability - Customized design for diverse complex environments

HICONICS' AC drives can be customized according to the usage scenarios of customers in different fields, and are capable of meeting harsh usage environments such as extreme temperatures, dusty conditions, high altitudes, and high salt spray environments.



High and low temperatures



Dust



High salt spray



High corrosion



High altitude

Stable operation - Easily cope with various harsh working condition changes

Strong grid adaptability

It can easily cope with grid fluctuations, frequency changes, and load variations during product operation, ensuring stable voltage output.



Power cell bypass design, continuous operation in case of faults

When a Power cell fails and cannot continue to operate, the bypass contactor is activated, and a bypass alarm is issued to ensure the continuous operation of the AC drive.



Safety assurance - Intelligent protection, stable drive

HICONICS' AC drives are equipped with two types of alarm functions: minor faults and major faults:

Minor fault alarms: Intervention in advance to eliminate potential risks.

Major fault alarms: Quick response to ensure production safety and minimize losses.

Equipped with a digital cloud platform: It enables remote monitoring, inspection management, data analysis, fault diagnosis, abnormal alarm, maintenance management, equipment repair reporting, etc. through the mobile APP and PC.

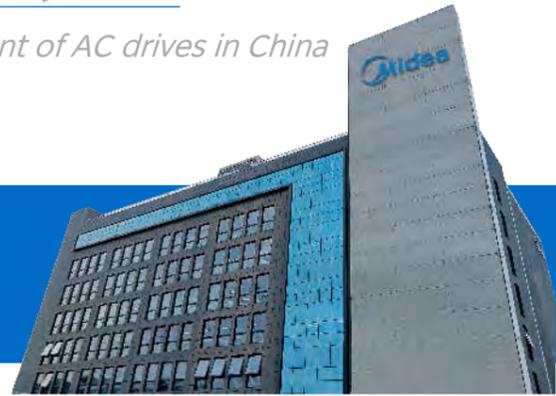


01 Enterprise Profile

Standing at the pinnacle of the industry

Leading the development of AC drives in China

2 million units shipped | Joined Midea Group in 2020 | 5000⁺ service customers | 1000⁺ employees



HICONICS ECO-ENERGY TECHNOLOGY CO., LTD. was established in 2003 and successfully listed in 2010. In 2020, it joined Midea Group, one of the Fortune Global 500 companies, and became the R&D center and production base for medium and low voltage AC drives of Midea Group. As an outstanding representative enterprise under Midea Group Co., Ltd., HICONICS enjoys a good reputation in the industry with its quality and services and leads the development of the industry with innovative technologies, and has grown into a core supplier of full-range AC drives after more than 20 years of deep cultivation.

Full power range product coverage

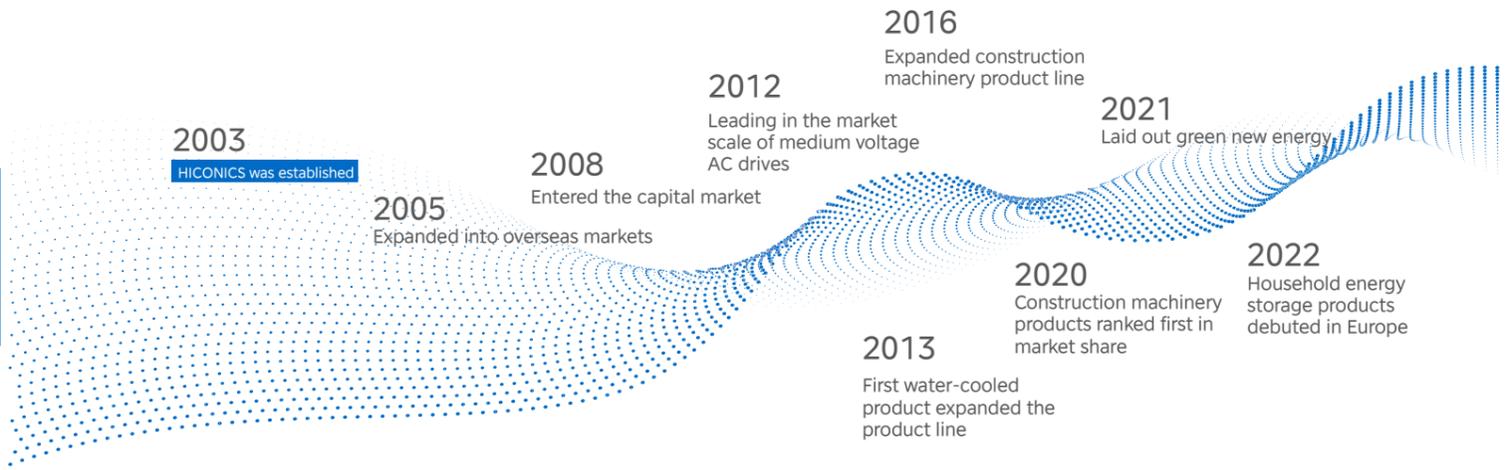
As of now, the shipment volume of HICONICS' medium voltage AC drives has reached over 2 million units. As early as 2013, HICONICS successfully developed the first "water-cooled medium voltage AC drive" in China, filling the domestic gap in water-cooled medium voltage AC drives and breaking the foreign monopoly. With its strong R&D capabilities and quality assurance, HICONICS has successively launched more than a dozen series of medium voltage AC drive products.

Medium voltage products



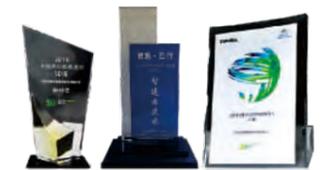
02 Development Course

Transform from a single-category enterprise into a multi-category and multi-industry enterprise



03 Research and Create the Future

Supported by cutting-edge technology research and a rich talent pool, HICONICS took the lead in launching high-performance water-cooled AC drives in the domestic market at the beginning of its establishment, and pioneered the establishment of the industry's first back-to-back test and complete medium voltage AC drive test platform. Meanwhile, with the help of Midea Group's global R&D network and production capabilities, the product delivery efficiency and quality have been further improved, consolidating its leading position in the new energy and industrial control industries.



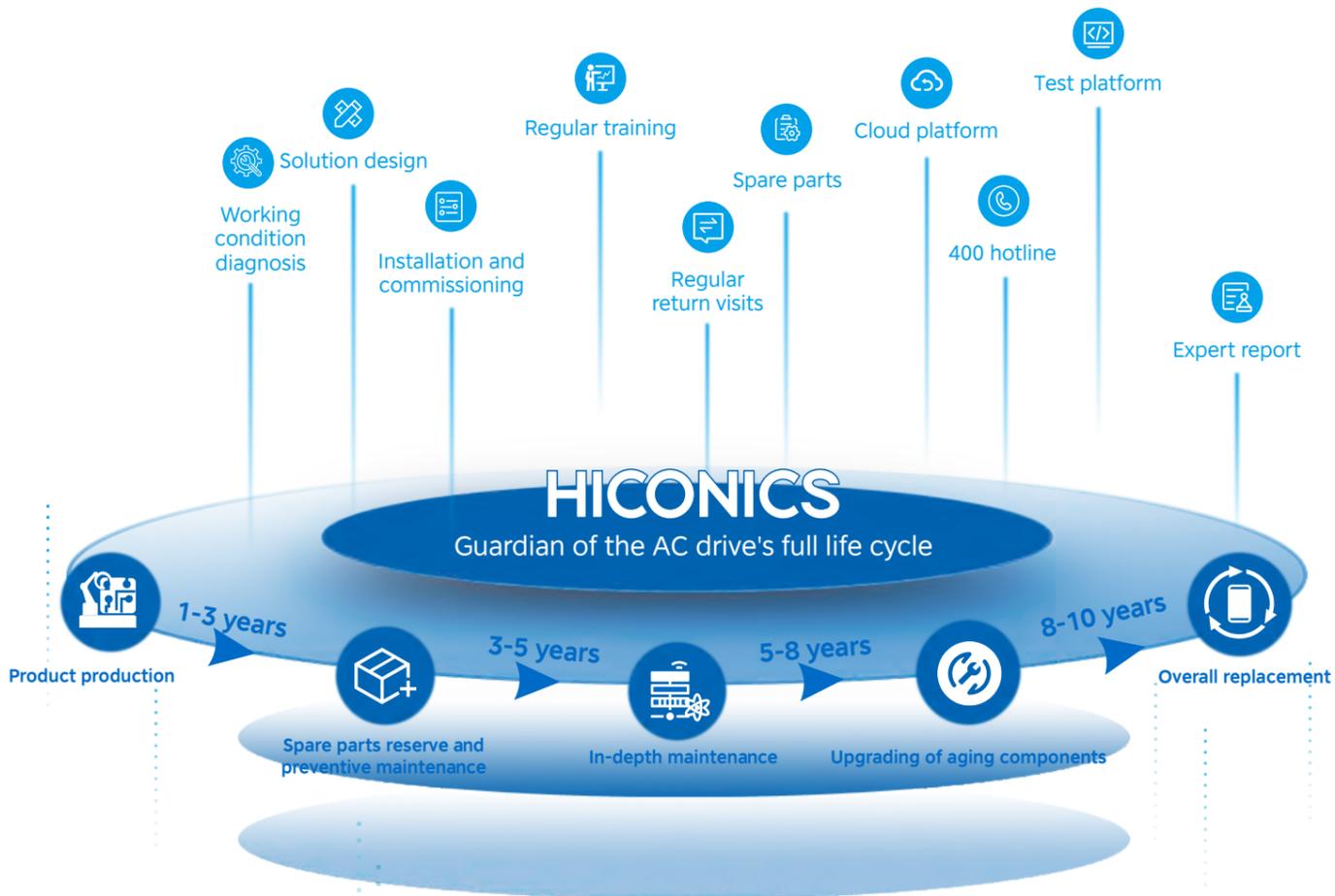
- RMB 200 million annual R&D funding
- 300⁺ R&D personnel, 25% with master's or doctoral degrees
- 200⁺ authorized patents

04 AC Drives

Guardian of full life cycle

HICONICS - dedicated to becoming your trusted full life cycle guardian of equipment

We deeply understand the practical needs of users for stable efficiency improvement. We provide five major types of full life cycle management services for AC drives, including "spare parts reserve", "preventive maintenance", "in-depth maintenance", "upgrading of aging components", and "overall replacement", to meet the personalized needs of customers. From the moment the equipment is sold, we will provide full escort to ensure the efficient operation of the equipment throughout its life cycle and help you reduce costs and increase efficiency!



Full Life Cycle Quality Control

Walk with excellence and jointly create a low-carbon, safe and economical production environment

Software and hardware quality control

Striving for perfection in every detail, all for providing customers with a more excellent user experience

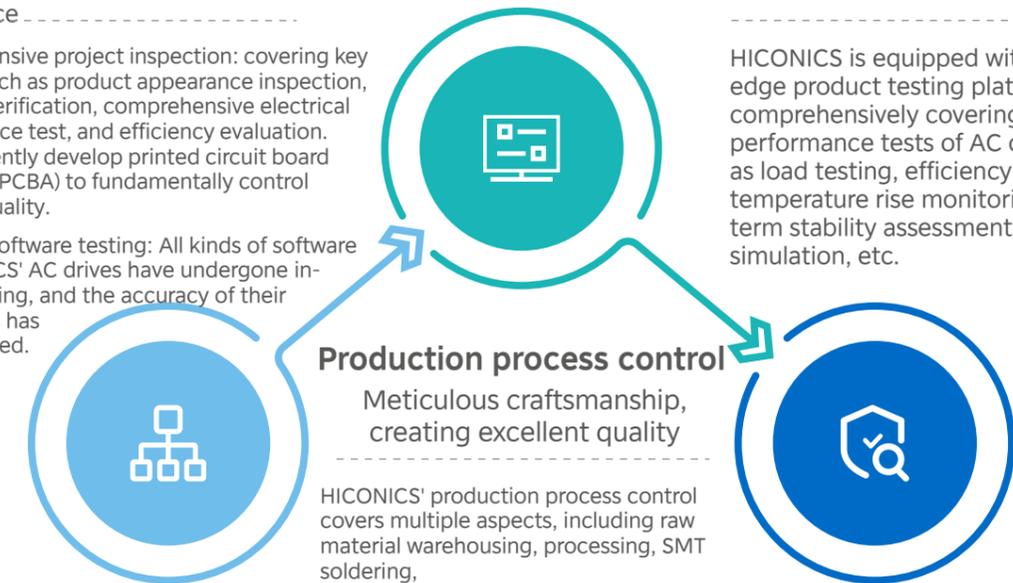
Comprehensive project inspection: covering key aspects such as product appearance inspection, function verification, comprehensive electrical performance test, and efficiency evaluation. Independently develop printed circuit board assembly (PCBA) to fundamentally control product quality.

Rigorous software testing: All kinds of software in HICONICS' AC drives have undergone in-depth testing, and the accuracy of their algorithms has been verified.

Finished product quality control

Strict testing procedures to ensure the long-term reliable operation of AC drives

HICONICS is equipped with a cutting-edge product testing platform, comprehensively covering all key performance tests of AC drives, such as load testing, efficiency evaluation, temperature rise monitoring, long-term stability assessment, aging simulation, etc.



Production process control

Meticulous craftsmanship, creating excellent quality

HICONICS' production process control covers multiple aspects, including raw material warehousing, processing, SMT soldering, pin-in-hole and wave soldering, and finally the complete machine assembly, testing, and packaging. It ensures that every step from the source to the finished product meets high standards.



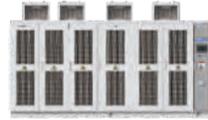
05

Digital Factory



Base in Beijing
Production base for medium voltage AC drives

3600⁺ units/year
Medium voltage AC drives



Automated testing 13 sets of fully automated testing platforms



Digital factory

Comprehensive application of Midea's digital capabilities, including PLM, APS, and MES

Quality system

13 sets of automated testing platforms with high-level professional production testing capabilities

Automated testing

Full value chain quality control system QMS system

Intelligent manufacturing demonstration award

China Automation and Intelligent Manufacturing Service Annual Conference

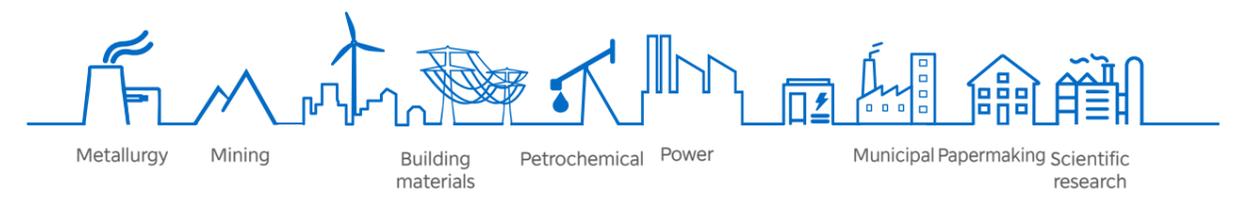
06

Customer Domain

5,000⁺

strategic partners

In product design and development, HICONICS has in-depth insights into the actual needs of the industry. It uses innovative technologies and practical applications to address pain points. From applications in extreme environments, long-term stable operation, energy conservation and consumption reduction, safety protection to intelligent operation and maintenance, it comprehensively customizes medium voltage AC drive products for users. As of now, it has served more than 5,000 customers in total. The application scenarios cover hundreds of industries such as cement, petrochemical, mining, power, light industry, metallurgy, and municipal engineering,



Widely used in major projects



"Artificial Sun" Experiment

Assisting the ITER project in nuclear fusion plasma research

"Marine Deep Water" Test Pool

Assisting China's deep-sea scientific research

"South-to-North Water Diversion" Project

(Eastern Route, Middle Route)
Assisting the national water diversion "artery"