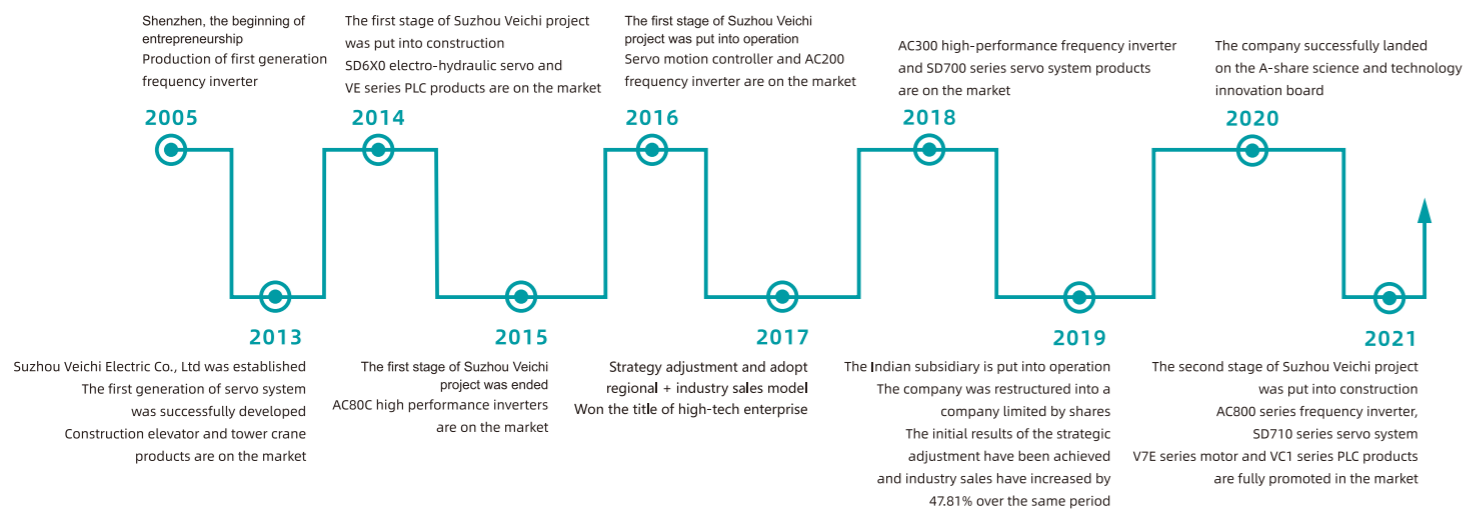


ACH100 Series MV Inverter



About us



VEICHI Electric, a high-tech enterprise engaged in the R&D, production and sales of industrial automation products, has always focused on the fields of electric drive and industrial control since its establishment. It has been listed as the "Jiangsu Provincial Enterprise Technology Center", "Jiangsu Private Technology Enterprise", "Jiangsu Provincial Specialized and New Giant Enterprise", "Jiangsu Provincial Engineering Technology Research Center", "Suzhou Gazelle Enterprise" and "Competitive Brand in Motion Control Field". After years of independent R&D and innovation, VEICHI has developed a series of independent intellectual property rights. By the end of December 28, 2021, a total of 124 patents have been granted, including 28 invention patents.

VEICHI has R&D and production bases in Suzhou and Shenzhen, and has established a wholly-owned subsidiary in India. At present, the company's business covers many countries and regions, providing global customers with competitive, safe and reliable products and services.

We supply a wide range of products, including inverters from 0.4kW to 1,200kW, servo systems from 50W to 200kW, motion controllers, PLCs and HMIs, to diverse customers in lifting and mining equipment, rail transportation, machine tools, compressors, plastics, solar water pumping, building materials, robots or manipulators, printing and packaging, textile and chemical fiber, metallurgy, municipal, petroleum, chemical and other industries.

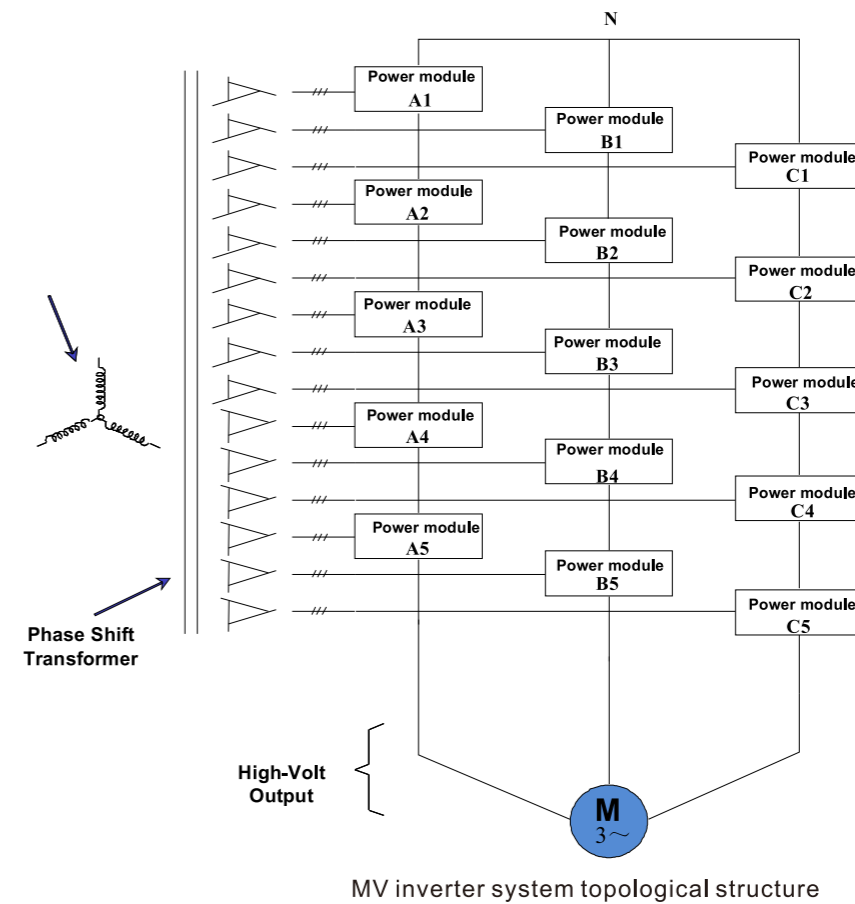
VEICHI has established 19 service outlets in China, and developed 139 channel dealers, covering 31 provinces and Hong Kong, Macao and Taiwan regions across the country, forming a wide-ranging and efficient distribution and service network to provide customers with high-quality products and efficient Service.

VEICHI will continue to adhere to the business philosophy of "Guided by market demand, Driven by technological innovation", to expand and strengthen the core businesses of inverters, servo systems and motion controllers, and intelligent IoT, and always insist on providing customers with best products and services. VEICHI will spare no effort to make contributions to promote the development of electric drive and industrial control.

Products Introduction

Product Principle

ACH100 MV Inverter have 3KV,6KV, 10KV Series products, output voltage range: 0~10000V. The power unit is AC-DC-AC PWM voltage-source Inverter structure, and the main configuration is extensible. Meet a wide range of industrial applications, and provide high quality power source for high voltage motors. Grid side meet GB / T14549 standards requirements, High reliability.



10KV Inverter configure 8 cascade (each phase 4 module). 6KV Inverter configure 6 cascade (each phase 3 module). 3KV Inverter configure 4 cascade (each phase 2 module).

Naming rules

ACH100 - XX - XXXX - F

- ①
- ②
- ③
- ④

① Product series	③ Rated capacity (KVA)
② Rated voltage level (KV)	④ Fan cooling

Structure features

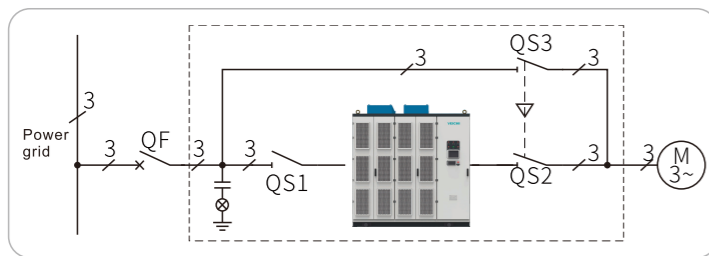
Cooling system

Adopt the industry's high-quality brand fan, with large airflow, long life and high stability. It guarantees the heat dissipation demand of MV Inverter and improves the overall reliability of the product.



Integrated design

The integrated design of MV Inverter and bypass cabinet enhances the overall power density of the unit, reduces the product area covered, and simplifies on-site installation and construction.



Transformer cabinet

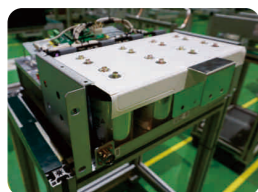
The input side uses a phase shifting transformer to form a multi-pulse rectification method, which reduces harmonic pollution on the grid side and improves the grid-side power factor.

The transformer adopts H-class insulation, the high-voltage winding adopts pancake winding, and the core adopts high-quality high permeability cold-rolled electrical steel strip, with strong short-circuit performance and high reliability.



Composite busbar

Optimizing the connection between capacitor and IGBT with extremely low inductance reduces the IGBT device turn-off overvoltage and improves the IGBT voltage safety margin.



Power unit cabinet

The number of system power units and the number of cascades can be flexibly configured according to site requirements and system design needs. Fiber optic communication is used between the power unit and the control system to realize the control of IGBT and module information feedback.

The power unit directly outputs 0~10KV to the motor.

The power unit adopts the AC/DC/AC three-phase rectifier/two-phase output form, the rectifier side is diode three-phase full-bridge rectifier, which rectifies the three-phase AC output from the phase shifting transformer into DC and filters it through capacitor, the inverter adopts H-bridge single-phase inverter of IGBT module, and gets sinusoidal single-phase AC output through SPWM control of IGBT.



Power unit

Double H-bridge circuit structure, compact structure design. Adopt safety film non-polarity capacitor, long life and excellent performance.

Low inductance busbar reduces IGBT turn-off overvoltage. key components such as IGBT and rectifier bridge are imported brands.



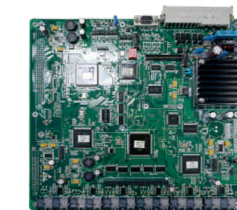
Control system

The control system is fully fiber optic ring network communication, strong anti-electromagnetic interference.

Powerful dual DSP + dual FPGA master control, abundant control resources.

Provide multiple communication interfaces such as RS485, CAN, Profibus-DP bus, Ethernet, etc.

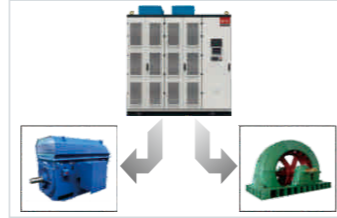
Provide abundant digital and analog interfaces to realize remote control of Inverter.



Technical advantages

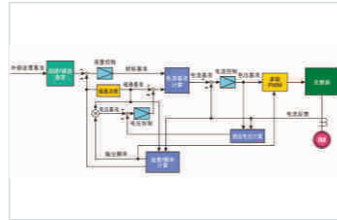
Compatible with asynchronous and synchronous motor

The Inverter has no requirement for motor type and can easily switch between asynchronous motors and synchronous motors through function code setting, realizing one machine for multiple uses.



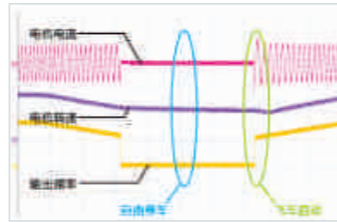
Low-speed high-torque vector control

With large starting torque output and low frequency high torque capability, it can meet the user with load starting and low frequency high torque operation. High control accuracy and fast torque response.



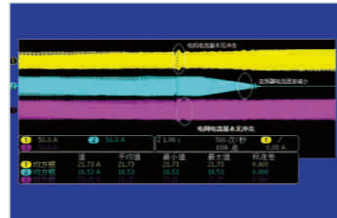
Motor fly start technology

In the event of a transient loss of power on the main grid or a voltage dip on the grid, with the motor and load side safe, this technology can quickly restore the motor to operating condition and reduce the impact on production. The technology is suitable for environments with large fluctuations in the user's grid.



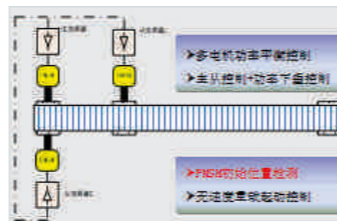
Soft start technology

Due to the use of VVVF technology, the stator current is below the rated current during the motor starting process, and shock-free switching from variable frequency to industrial frequency is achieved. It is used for motor starting in weak grid environment and big power motor starting.



Multi-Machine Collaboration Technology

One inverter is the master and the other inverter is the slave. The two inverters establish stable high-speed communication through i-oh optical fiber to achieve cooperative work and meet the requirements of speed and torque balance in applications such as belt machines and roller mills.



Remote control

By adding a remote operation and maintenance module, it realizes remote monitoring of inverter operation, fault analysis and statistics to improve the efficiency of inverter fault handling and reduce the losses caused to users by inverter faults.



Technical specifications

Items	ACH100 Series Fan Cooling MV Inverter
Rated output	
Capacity	220KW~10000KW
Voltage	3000V, 6000V, 10000V (Customizable)
Frequency	0~50Hz/60Hz, MAX 120Hz (120~700Hz customizable). Frequency accuracy: 0.01Hz
Input power	
Main circuit power	10000V 50Hz / 6000V 50Hz (Customizable)
Control power	Three phase four wire 380V 50Hz
Allow power fluctuations	Voltage: $\pm 10\%$, frequency: $\pm 2\%$
Control mode	
Main circuit control mode	H-bridge power unit cascade MV Inverter
Control mode	Open loop / Close loop Vector control, Voltage type Vector control or V/F control
Speed ratio	40:1 (Voltage type Vector control), 100:1 (Open loop VC), 1000:1 (Close loop VC)
Speed accuracy	$\pm 0.5\%$ (Open loop VC), $\pm 0.1\%$ (Close loop VC)
Encoder type	DC 15V OC Incremental type (Standard configuration), DC 5V absolute (Optional)
ACC/DEC time	1~3000s
Overload capacity	120% 60s
Current limit protection	150%
Inverter efficiency	>96% (Include input transformer)
Application functions	Automatic frequency hopping at the resonance point, with speed re-entry function, automatic frequency conversion switching (optional), simultaneous grid connection function (optional)
Protection functions	Over load, OC, Phase loss, three phase unbalance, Fan abnormal
Communication functions	Modbus (standard configuration), Profibus-DP (Optional)
Ground resistance	$\leq 4\text{ohm}$
Cabinet structure	
Cabinet structure	Combined steel plates
Cabinet protection level	IP30
Seismic capacity	Seismic design according to level 7
Cooling method	Forced air cooling
Cabinet color	RAL7035 (Customizable)
Environment	
Operation temperature	-10°C~40°C (Storage temperature -25°C~70°C)
Relative humidity	$\leq 95\%$ (20°C No condensation)
Altitude	$\leq 1500\text{m}$
Installation	Indoor. Atmosphere without corrosive gases, dust, ignition, detonation gas in general environment.

ACH100 series 6KV Inverter dimensions

Model	Motor power (KW)	Current (A)	Cabinet dimension (Not include fan) (mm)			Weight (kg)
			Length	Width	Height	
ACH100-06-0315F	315	45	2500	1600	2400	3000
ACH100-06-0450F	450	85	2500	1600	2400	3200
ACH100-06-0500F	500		2500	1600	2400	3400
ACH100-06-0560F	560		2500	1600	2400	3600
ACH100-06-0630F	630		2500	1600	2400	3800
ACH100-06-0710F	710		2500	1600	2400	4000
ACH100-06-0800F	800	130	2500	1600	2400	4200
ACH100-06-1000F	1000		2500	1600	2400	4400
ACH100-06-1200F	1200		2500	1600	2400	4600
ACH100-06-1250F	1250	180	2500	1600	2400	4800
ACH100-06-1400F	1400		2500	1600	2400	5000
ACH100-06-1600F	1600		4100	1600	2300	2000+4600
ACH100-06-1800F	1800	225	4100	1600	2300	2000+4800
ACH100-06-2000F	2000		4100	1600	2300	2000+5000
ACH100-06-2250F	2250	270	4100	1600	2300	2000+5200
ACH100-06-2500F	2500		4700	1600	2300	2200+5400
ACH100-06-2600F	2600	330	4700	1600	2300	2200+5600
ACH100-06-2700F	2700		4700	1600	2300	2200+5800
ACH100-06-2800F	2800		4700	1600	2300	2200+6000
ACH100-06-3000F	3000		6150	1600	2700	2400+8000
ACH100-06-3200F	3200		6150	1600	2700	2400+8200
ACH100-06-3500F	3500	460	6150	1600	2700	2400+8400
ACH100-06-3800F	3800		6150	1600	2700	2400+8700
ACH100-06-4000F	4000		6150	1600	2700	2400+9000
ACH100-06-4200F	4200		6150	1600	2700	2400+9300
ACH100-06-4400F	4400	520	6150	1600	2700	2400+9600
ACH100-06-4800F	4800		6150	1600	2700	2400+10000

Note: Over 6KV/5000KW inverter can be customized.

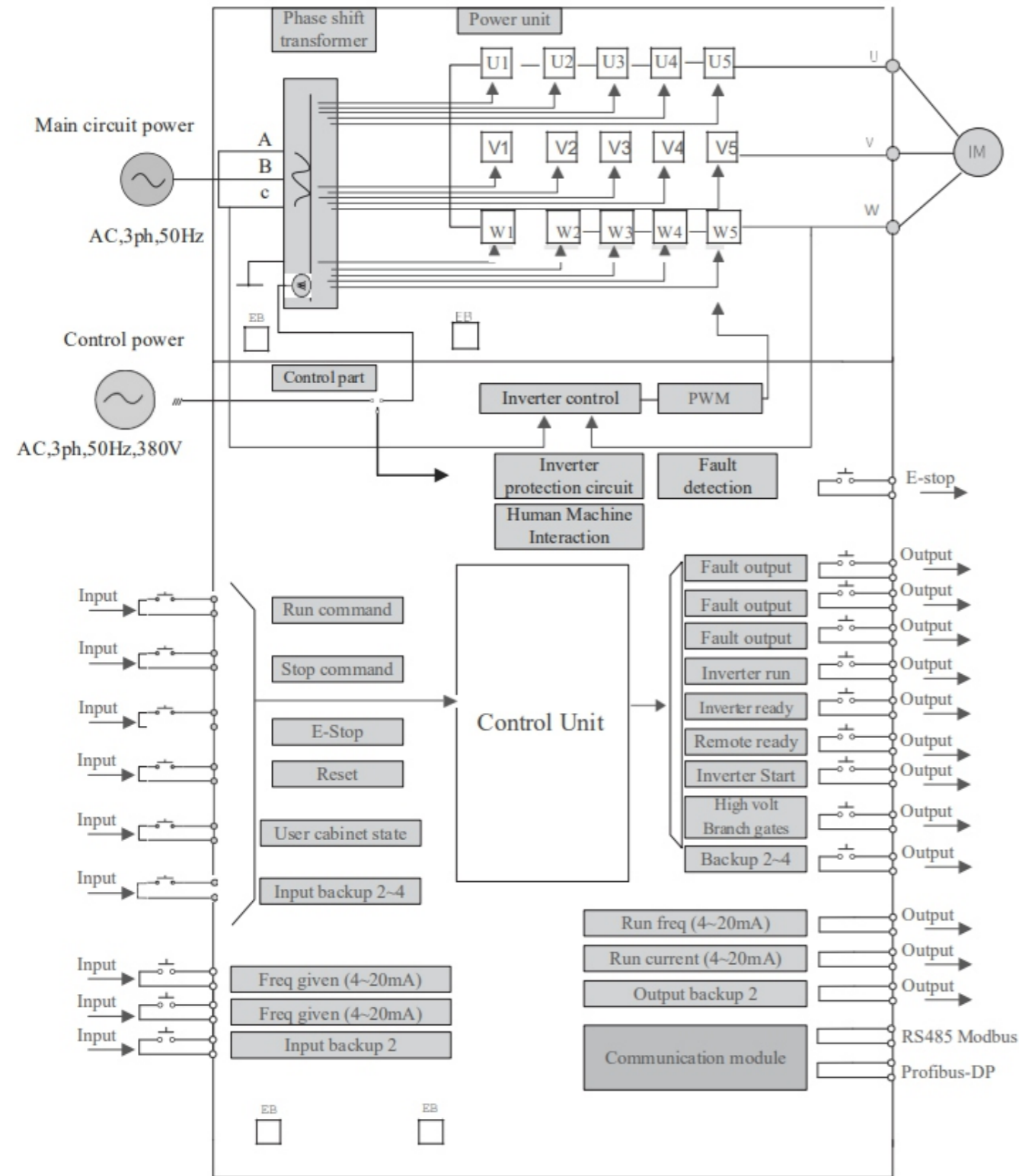
ACH100 series 10KV Inverter dimensions

Model	Motor power (KW)	Current (A)	Cabinet dimension (Not include fan) (mm)			Weight (kg)
			Length	Width	Height	
ACH100-10-0400F	400	45	2500	1600	2400	3800
ACH100-10-0560F	560		2500	1600	2400	4000
ACH100-10-0630F	630	85	2500	1600	2400	4200
ACH100-10-0710F	710		2500	1600	2400	4400
ACH100-10-0800F	800		2500	1600	2400	4600
ACH100-10-1000F	1000		2500	1600	2400	4800
ACH100-10-1120F	1120		2500	1600	2400	5000
ACH100-10-1250F	1250	130	3800	1600	2400	1900+4500
ACH100-10-1400F	1400		3800	1600	2400	1900+4800
ACH100-10-1600F	1600		3800	1600	2400	1900+5000
ACH100-10-1800F	1800	180	3800	1600	2400	1900+5200
ACH100-10-2000F	2000		3800	1600	2400	1900+5400
ACH100-10-2240F	2240		3800	1600	2400	1900+5700
ACH100-10-2500F	2500		3800	1600	2400	1900+6000
ACH100-10-2600F	2600	225	4700	1600	2300	2200+6500
ACH100-10-2700F	2700		4700	1600	2300	2200+6800
ACH100-10-2800F	2800		4700	1600	2300	2200+7000
ACH100-10-3000F	3000	270	4700	1600	2300	2200+7200
ACH100-10-3200F	3200		4700	1600	2300	2200+7500
ACH100-10-3500F	3500		4700	1600	2300	2200+7800
ACH100-10-3800F	3800		6100	1600	2400	2500+8200
ACH100-10-4000F	4000		6100	1600	2400	2500+8400
ACH100-10-4200F	4200	330	6100	1600	2400	2500+8700
ACH100-10-4400F	4400		6100	1600	2400	2500+9000
ACH100-10-4800F	4800		7800	1600	2700	3200+10800
ACH100-10-5500F	5500	400	7800	1600	2700	3200+11200
ACH100-10-5800F	5800		7800	1600	2700	3200+11600
ACH100-10-6300F	6300	460	7800	1600	2700	3200+12000
ACH100-10-6500F	6500		7800	1600	2700	3200+12500
ACH100-10-7800F	7800		7800	1600	2700	3200+13000
ACH100-10-8000F	8000	520	7800	1600	2700	3200+14000

Over 10KV/8000KW inverter can be customized.

Note: The 3KV inverter is realized by flexible configuration of power unit cascade, which can be customized.

External Interface



Applications



Electric power industry

Boiler feed water pump, blower, induced draft fan, primary fan, secondary fan, condensate pump, etc.



Petrochemical industry

Large oil pump, water injection pump, boiler feed water pump, brine pump, gas compressor, etc.



Mining industry

Drain pump, ventilation fan, etc.



Metallurgical Industry

Blast furnace blower, induced draft fan, dust removal fan, feed water pump, etc.



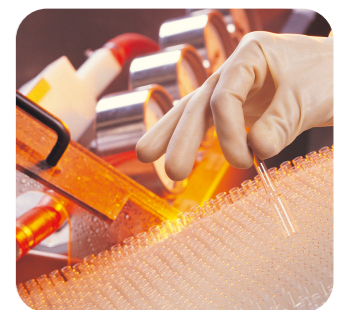
Cement & Ceramic industry

Grinder, suction fan, induced draft fan, blower, cooling fan, kiln air supply fan, etc.



Municipal industry

Tap water pump



Other industry

Paper, pharmaceutical, sewage treatment, etc