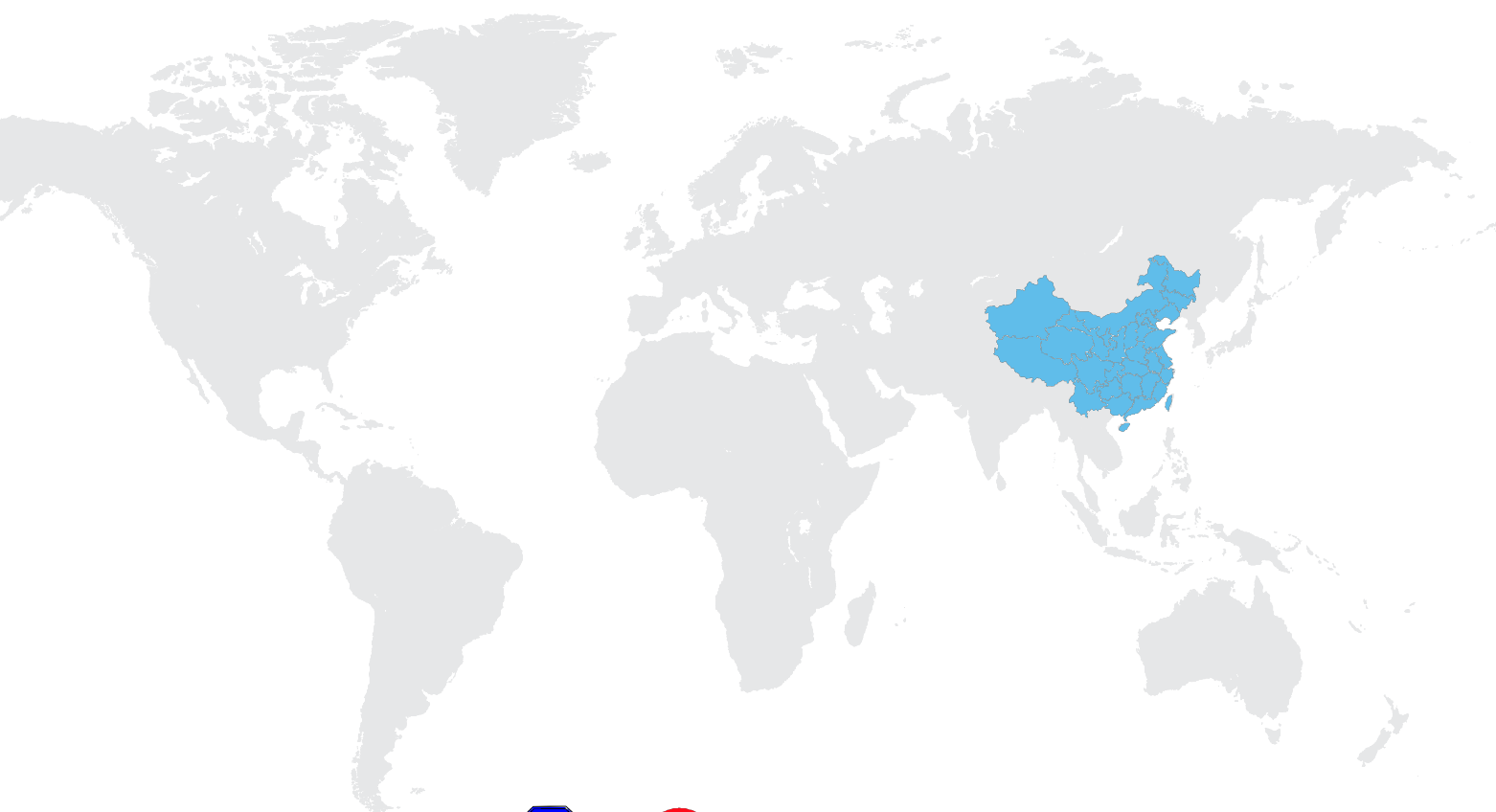


AC drive the world



AB&B Drive

High performance vector inverter



Your trusted provider of energy and industrial control solutions



## Company Profile

The enjoying convenient transportation. We are a professional manufacturer of frequency inverters, integrating R&D, production and sales together. We have a modern plant area of more than 35,000 square meters, with international manufacturing and testing equipment, intelligent laboratory. We also own excellent teams who focus on product development & design, quality control & inspection and company running.

Our products are certificated by ISO9000, C E & SGS etc. The main products include solar pumping variable frequency drives, elevator drives, universal inverters and related products, which are widely used in steel, building materials, textile, printing and machine tool industries, etc.

Besides, we are making great efforts to develop new products to meet different requirements. If you have any new ideas for the products, please contact us. We are glad to work together with you and finally bring you the satisfied products.

With decades of experience in the frequency conversion industry, our products are selling well around China. Furthermore, we have created partnerships with thousands of customers worldwide such as Southeast Asia, Middle East, Europe, the US and other areas.

Adhering to the business principle of mutual benefits, we have had a reliable reputation among our customers because of our professional services, quality products and competitive prices. We warmly welcome customers from at home and abroad to cooperate with us for common success.



- Environmental temperature adaptability is strong;
- Anti-interference, professional lightning protection scheme;
- Reliable and stable operation, preservative treatment;
- Avoid tripping operation, power module is reliable controlled and protected.



- Special frequency converter for vacuator, no energy feedback or energy consumption braking;
- Higher power saving effect, harmonic wave and reactive current is little;
- It can provide outdoor digital control cabinet, constant temperature control box can do high and low temperature long-term reliable work at outdoors;
- The rich and flexible monitoring function, have recorded data and save by storage medium or wireless transmission.



- Through national testing and identification:
- Multiple voltage levels products 200/400/690/1140V;
- Operating voltage is wide, low voltage fluctuation can work continuously, the adaptability to environment is very strong;
- Support power off automatic restart function.



- Abundant winch transformation experience, provide different types of winch renovation program;
- The vector technology platform can provide excellent control performance for the winch;
- Multiple protection functions, which can ensure the system be more secure and reliable;
- Intelligent fault diagnosis, reduce the workload of maintenance and repairing.



- It adopts DSP and CPLD digital control technology and high-performance IGBT technology, reliability is higher, the usage is lower;
- Superior load characteristics, synchronous tracking, sinusoidal output, online switch;
- LCD human-computer interface, perfect protection function, easy to use;
- High performance dynamic characteristics, switching time is <3ms.



- Reduce the end breakage rate, improve production efficiency;
- tailor-made external radiator, easy to clean cotton fibres;
- Unique swing frequency function, suitable for yarn winding equipment;
- Rich indication signal: full yarn indication, wire breaking indication, offline indication, etc.



- Support 1000Kbps high speed communication;
- Successful drive spindle 180 thousand turn operation;
- Spindle closed loop control: frequency converter has directional servo characteristics;
- Spindle open loop control: variety of vector control methods can adapt to all kinds of machine tools.



- High performance vector control/torque control technology can achieve constant line speed, constant tension control;
- It applies to splitting machine, coating machine, paper machine, printing machine, combination machine, dyejigger, etc.
- No speed encoder feedback scheme: can be widely used to replace torque motor.



- Central air-conditioning/cold storage: It achieves the most accurate control, energy saving rate is high, with low noise;
- Constant pressure water supply: It is built in multi water supply expansion card, multi time period constant pressure water supply timing round robin, and solves the overcurrent and water hammer problems in the switching process;
- Sewage disposal: The main and auxiliary driving centrifugal equipment, built in torque matching adaptive, acceleration and deceleration is speedy. It applies under harsh Environment;
- Multi type fan drive: according to fan design, energy saving rate is high, noise optimization; and built in speed automatic tracking function. The maximum power is 800KW.



- Excellent torque control, reliable brake control timing;
- Professional crane control function: speed monitoring, torque monitoring, torque verification, power optimization, location processing, intelligent deceleration and other functions.
- Widely applicable: port, boats and ships, oceanering, diggings, building, metallurgy, factory and other industries lifting equipment.



- Simple and convenient operation, install connection line is less;
- Smooth running curve, reduce the breakage rate of plate, start smoothing, reduce mechanical damage, reduce the cost of maintenance;
- Setting off line in the interior and with constant tension control, frequency main and auxiliary operation function, safe shutdown function and alarm prompt function.

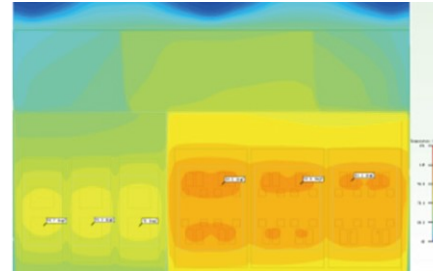


- Built in craftwork arithmetic of the rotary cutting machine, rolling mill machine, barking machine;
- Wide voltage range, It is particularly suitable for poor rural power grid conditions;
- High-accuracy rapid rotary cutting, increase yield under the premise of ensuring uniform thickness veneer;
- Stable and reliable work, let customers to enjoy high quality power.



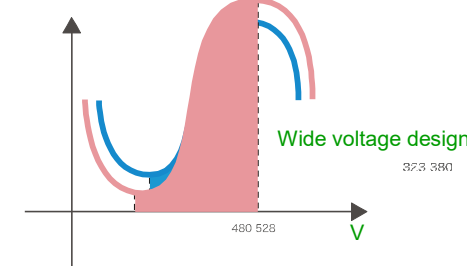
## Reliable Thermal Design

- It adopts efficient and accurate thermal simulation platform software, ensure the thermal reliability of the machine.3300 series frequency inverter must be tested by thermal simulation, only within the scope of thermal simulation safety design requirements, can make a sample machine and develop. Thermal design is after scientific simulation test, it has high accuracy, fast efficiency, good stability and other advantages. Especially in the limit test, thermal simulation can replace actual load test simulation, have one more scientific thermal test.



## In Line With International Standards Wide Voltage Input Range

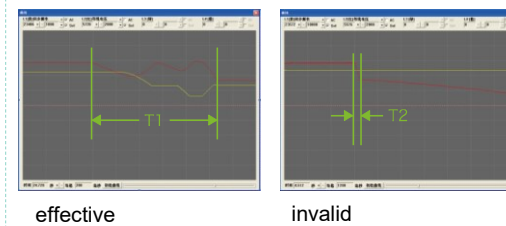
- Rated voltage: Three phase, 380V~480V 50HZ/60HZ
- Allowable voltage fluctuation range: 323~528V 50HZ/60HZ



## Instant Stop Function

- This function means that the frequency inverter will not stop when instantaneous power failure. When interrupt power-supply or the voltage decrease suddenly, the inverter reduce output speed, through the load feedback energy, compensate the voltage decrease. So that it can keep operation of frequency converter within a short time.

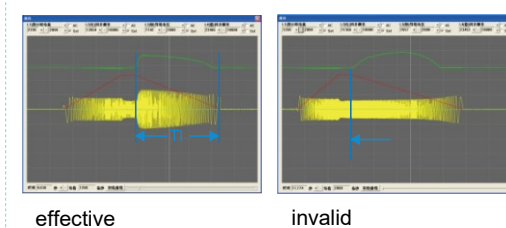
The instant stop function



## Over Excitation Function

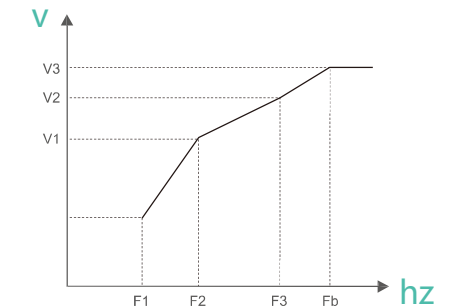
- Don't need to increase peripheral braking resistor and annex parts, achieve rapid braking effect, improve the usability of the products;
- It can restrain the voltage of generatrix rising in the deceleration process, avoid it piont out the overvoltage fault frequently. And it can also achieve fast braking at the same time, meet quick stop during the power cut.

Overexcitation braking function



## Achieve Working Under V/f Complete Separation And Semi Separation, It Satisfy The Application Requirements Of Frequency Conv rsion And Varying Voltage.

- Through automatic voltage compensation under heavy load, achieve constant output voltage, meet the application requirements of power supply industry.



## Fan And Water Pump Energy Saving Application

- It has excellent output waveform of motor side, it can satisfy multi-split, applicate in long distance; meet the application of transformation.

## Terminal Function Flexible Diversification, Use More Freely

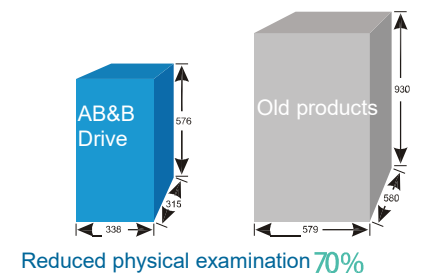
- Multifunctional terminal DI has 51 kinds, DO has 41 kinds, AO has 16 kinds logical function selection, meet the requirements of the conventional control function;
- AI terminal can select as multi functional terminal DI;
- AI1~AI2 can set up 4 point line and 5 kinds of curve correspondence, support factory and high precision customer site calibration.
- Practical built-in 5 group fictitious DI and DO function, reduce external DI/DO wiring;
- DI5 high speed pulse input terminal and FM high speed pulse output terminal support max 100kHz pulse specification.

## Built-in Self-adaption PID Functional Module

- Built-in two groups of PID parameter group, according to deviation, DI terminal, automatic switching frequency condition;
- Preset and feedback source select variously, with rich type and it is practical;
- PID feedback loss detection function, it is convenient for user fault diagnosis;
- It is aimed at specific industry one group PID factory value parameter, it can satisfy the requirements of equipment operation, it is applied to printing package, wire drawing machine, cable and other situation, the debugging process is simplified, and it is convenient for maintenance of equipment.

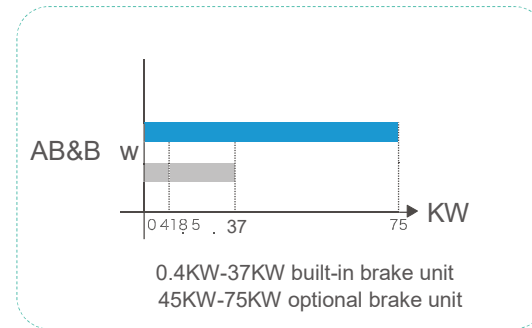
## Optimized Structure Design, Leading Technology Platform

- Small volume, compared with the last generation of the same power products,
- greatly saving installation space, it is convenient for electric control device layout;
- Full series, maximum installation area reduce 60%, volume reduce 70%;
- Select new generation IGBT module design, junction temperature is high, power density is large.



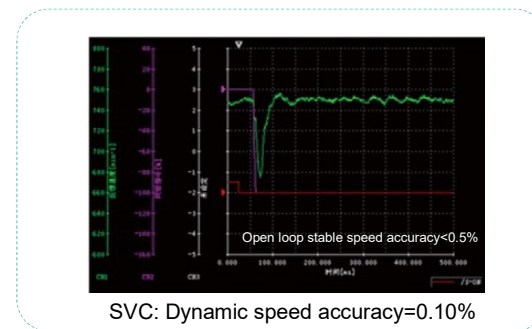
## Perfect Braking Circuit Scheme

- 45KW(G)~75KW(G) select built-in braking unit;
- Strong braking ability: braking ability can be 1.1~1.4 times of rated power of inverter within short time;
- Brake protection is more comprehensive, intelligentized; It has short circuit protection with braking resistance  
Braking circuit over current protection  
Braking tube overload protection  
Brake tube through test etc.



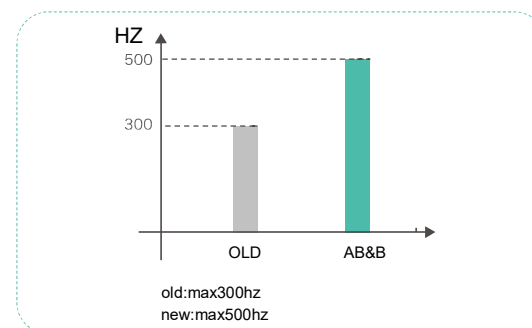
## High Speed Stability, Wide Speed Range

- Steady speed precision:  $\pm 0.5(\text{SVC}), \pm 0.02\%(\text{FVC})$
- Speed range: 1:200(SVC), 1:1000(FVC)
- Torque response:  $< 20\text{ms}(\text{SVC}), < 5\text{ms}(\text{FVC})$
- Heavy load and overload capacity: 110% rated stable operation, 150% rated load is 1min, 180% rated load is 3s.



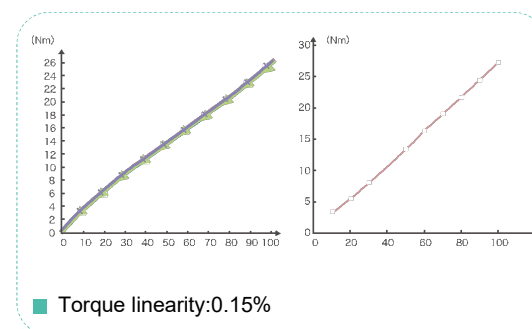
## High Speed Output Under Vector Control

- Maximum output frequency under vector control is 500Hz, it can achieve 10 times weak magnetic speed regulation range, high precision speed output.



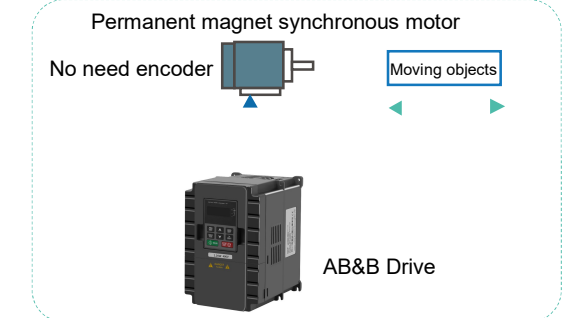
## Low Speed And High Torque, Torque Pulsation Is Small

- Under close loop vector control mode, the deviation of torque line degree of linearity is within 3%. Torque output steadily, low frequency torque is large, it can achieve ultra-low speed 0.01Hz stable load operation, torque mode and speed mode can make a convenient switch.



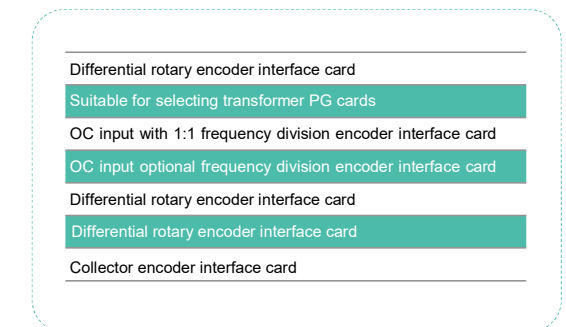
## Multiple Motor Drive

- 3300 series inverter, aiming at the control of asynchronous motor;
- 3300 series inverter can realize synchronous motor control without encoder, let the synchronous motor control popular.



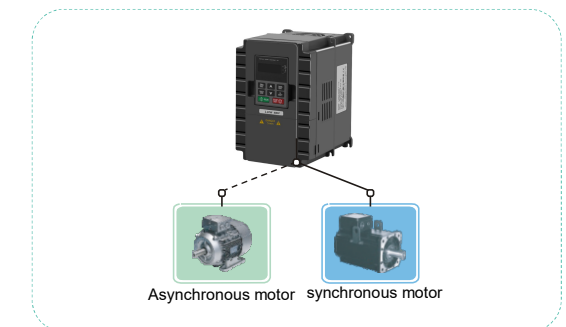
## Support Multiple PG Cards

- It adopts closed loop vector control with sensors, can improve the speed regulation performance of frequency inverter. But it needs install encoder, send the signal back to inverter through PG card;
- 3300 series support collector signal, differential signal, spin variable signal, and other encoder interface, it is convenient for realize close loop vector control.

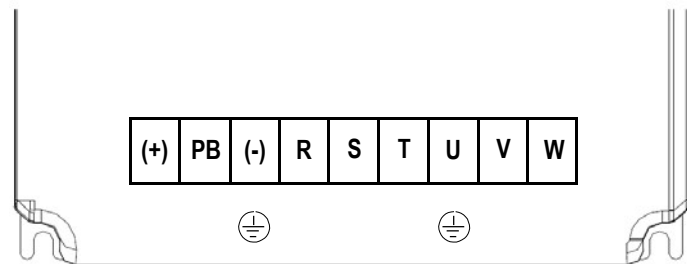



## High Accuracy Of Auto Tuning Motor Parameters

- It can identify the parameter of asynchronous induction motor and permasyn motor, realize high-performance vector control;
- It can realize under load condition, parameter of electric machine for long distance power cable can be accurate set.
- It can automatic distinguish the direction of signal for encoder under encoder condition, simplify the debugging process.



## ■ Main Circuit Terminals(AC 380V)



Terminal	Name	Description
R, S, T	Three-phase power supply input terminals	Connect to the three-phase AC power supply
(+), (-)	Positive and negative terminals of DC bus	Common DC bus input point Connect the external braking unit to the AC drive of 37 kW and above.
(+), PB	Connecting terminals of braking resistor	Connect to the braking resistor for the AC drive of 30 kW and below.
U, V, W	AC drive output terminals	Connect to a three-phase motor.
	Grounding terminal	Must be grounded.

## ■ Terminal Arrangement of Control Circuit

T/C	T/B	T/A	DI1	DI2	DI3	DI4	DI5	DI6	DI7	COM	DA	DB
P/C	P/B	P/A	+10V	AI1	AI2	GND	AO1	FM	+24V	OP	COM	DO1

## ■ Description of Control Circuit Terminals

Type	Terminal	Name	Function Description
Power supply	+10V-GND	External +10 V power supply	Provide +10 V power supply to external unit. Generally, it provides power supply to external potentiometer with resistance range of 1–5 kΩ. Maximum output current: 10 mA
	+24V-COM	External +24 V power supplyApplying to Overvoltage Category II circuit	Provide +24 V power supply to external unit. Generally, it provides power supply to DI/DO terminals and external sensors. Maximum output current: 200 mA
	OP	Input terminal of external power supply	Connect to +24 V by default. When DI1-DI5 need to be driven by external signal, OP needs to be connected to external power supply and be disconnected from +24 V.
Analog input	AI1-GND	Analog input 1	Input voltage range: 0–10 VDC Impedance: 22 kΩ
	AI2-GND	Analog input 2	Input range: 0–10 VDC/4–20 mA, decided by jumper J8 on the control board Impedance: 22 kΩ (voltage input), 500 Ω (current input)
Digital input	DI1	Digital input 1	Optical coupling isolation, compatible with dual polarity input Impedance: 2.4 kΩ Voltage range for level input: 9–30 V Besides features of DI1–DI7, it can be used for high-speed pulse input. Maximum input frequency: 100 kHz
	DI2	Digital input 2	
	DI3	Digital input 3	
	DI4	Digital input 4	
	DI6	Digital input 6	
	DI7	Digital input 7	
Analog output	AO1-GND	Analog output 1	Voltage or current output is decided by jumper J5. Output voltage range: 0–10 V Output current range: 0–20 mA
	DO1-CME	Digital output 1	Optical coupling isolation, dual polarity open collector output Output voltage range: 0–24 V Output current range: 0–50 mA Note that CME and COM are internally insulated, but they are shorted by jumper externally. In this case DO1 is driven by +24 V by default. If you want to drive DO1 by external power supply, remove the jumper.
Digital output	FM- COM	High-speed pulse output	It is limited by P5-00 (FM terminal output mode selection). As high-speed pulse output, the maximum frequency hits 100 kHz. As open-collector output, its specification is the same as that of DO1
Relay output	T/A-T/B	NC terminal	Contact driving capacity: 250 VAC, 3 A, COSφ = 0.4
	T/A-T/C	NO terminal	30 VDC, 1 A Applying to Overvoltage Category II circuit
	P/A-P/B	NC terminal	Contact driving capacity: 250 VAC, 3 A, COSφ = 0.4
	P/A-P/C	NO terminal	30 VDC, 1 A Applying to Overvoltage Category II circuit



Technical Specifications

Project		Specifications
Basic Function	Maximal frequency	Vector control:0.00~500.00Hz V/F control:0.00~500.00Hz
	Carrier frequency	0.8kHz~12kHz can according to load characteristics, self-adjust carrier frequency
	Input frequency resolution	Digital setting:0.01Hz Simulation setting: maximal frequency*0.025%
	Control method	Open loop vector control(SVC), Close loop vector control(FVC) V/F control
	Pull-in torque	Type G machine:0.5Hz/150%(SVC), 0Hz/180%(FVC)
	Speed range	1:200(SVC) 1:1000(FVC)
	Steady speed precision	±0.5%(SVC) ±0.02%(FVC)
	Torque control precision	±5%(SVC) (over 10Hz) ±3%(FVC)
	Overload capacity	Type G machine: 150% rated current 60s(Note:450kw: 130% rated current 60s)
	Torque elevating	Automatic torque lifting: manual torque promotion 0.1%~30.0%
	V/F curve	Five ways: linear pattern;multi point type; square V/F; totally V/F separate; incomplete V/F separate
	V/F separate	Two ways: complete separation, semi separation
	Acceleration and deceleration curve	Straight line or S-curve acceleration and deceleration mode. Four acceleration and deceleration time range 0.0s~6500.0s
	DC injection braking	DC braking frequency:0.00Hz~maximun-frequency Braking time:0.0s~36.0s Brake action current:0.0s~6500.0s
Personalized Function	Simple PLC, multi speed operation	Through the built-in PLC or control terminal to realize up to 16 speed operation
	Built in PID	It can realize process control closed loop control system
	Automatic Voltage Regulation(AVR)	When the power grid voltage changes, it can automatically maintain output voltage constant
	Overvoltage and overcurrent, stall control	Volitional check the current and voltage during the running time, prevent overvoltage and overcurrent continually
	Fast current limiting function	Maximum reduced over current fault, protect the normal operation of the inverter
	Torque limit and control	" Navyy" character, volitional check the torque during running time, prevent it over current trip continually; close loop mode can realize torque control
	Excellent performance	With the technology of high performance current vector, realize asynchronous and synchronous motor control
	Instantaneous power failure, can be continue running	When instantaneous power failure, it can through loading, give back reduction of energy compensation voltage, maintain the frequency converter to continue running within a short time
	Fast current limiting	Avoid the inverter appearing overcurrent fault continually
	Fictitious IO	Five group fictitious DI/DO, it can realize simple logic control
	Timing control	Timing control function: Set time range 0.0min~6500.0min
	Multi motor switch	Two sets of motor parameters, can realize two motor switch control
	Multi thread bus support	Support four kinds of field bus: Modbus,PROFIBUS-DP, CANlink,CANopen
	Motor overheat protection	Select IO card 1: read analogue input AI3 can accept motor temperature sensor input (PT100, PT1000)
	Multi encoder support	Support differential,open collector,UUV, rotary transformer
	User programmable	Match user programmable, it can realize two development, programming mode compatible the PLC of Inovance
	Strong background software	Support the inverter parameter operation and oscilloscope function. Through oscilloscope can keep watch on the internal state graph of the inverter



Technical Specifications

Project		Specifications
Running	Command source	Operation panel, control terminal, serial communication port given. It can be changed in various ways
	Frequency source	10 kinds of frequency source: digital setting, analog voltage given, analog current setting,pulse given, serial port setting. It can be switched in a variety of ways
	Auxiliary frequency source	10 kinds of auxiliary frequency source, it can realize auxiliary frequency trimming, frequency synthesis nimbly
	Input terminal	<b>Standard:</b> 5 kinds of digital input terminal, one of them support max 100kHz high speed pulse input; 2 kinds of analog quantity input terminal, one support 0~10V voltage input; One terminal support 0~10V voltage input or 0~20mA current input; <b>The expansion capacity:</b> 5 digital output terminal One analog quantity input terminal, support -10V~10V voltage input,and it also support PT100/PT1000
	Output terminal	<b>Standard:</b> One high speed pulse output terminal (It can be selected open collector ), support 0~1000kHz square wave signal output; One digital output terminal; One relay output terminal; One analog output terminal, support 0~20mA current output or 0~10V voltage output; <b>The expansion capacity:</b> One digital output terminal; One relay output terminal; One analog output terminal,support 0~20mA current output or 0~10V voltage output;
Display and keyboard operation	LED display	Display parameters
	LCD display	It can select MDKE7, operate according to prompt in Chinese/English
	Parameter copy	It can realize fast replication of parameters through LCD operation panel options
	Key lock and functions selection	It can realize the key partially or fully locked, define the range of action for partial keys, prevent misuse
	Defencive function	Short circuit detection of electric motor, input / output phase loss protection, overcurrent protection, overvoltage protection, undervoltage protection,overheat protection, overload protection etc. Braking circuit protection function: brake tube overload, Brake tube straight in, brake resistance protection function
	Optional accessories	LCD operation panel, braking subassembly, I/O card 1, I/O card 2, user programmable card, RS485 communication card, Profibus-DP communication card, CANlink communication card, CANopen communication card, differential input PG card, UVW differential input PG card, rotary transformer PG card, OC input PG card
Environment	Applicable place	Indoor;no direct sunlight;no dust,corrosive gases, inflammable gas, oil mist, vapour,dripping or salinity etc.
	Height above sea level	Under 1000m
	Ambient temperature	-10℃~ +40℃(ambient temperature is 40℃~50℃,pls derating )
	Humidity	Less than 95%RH, no condensation of water droplets
	Vibration	Less than 5.9m/s2 (0.6g)
	Storage temperature	-20℃~ +60℃