



SUNYE ELECTRIC CO., LTD

**CM53XH SERIES**

HIGH PERFORMANCE VECTOR INVERTER

Propagandist Manual

**SUNYE ELECTRIC CO., LTD**

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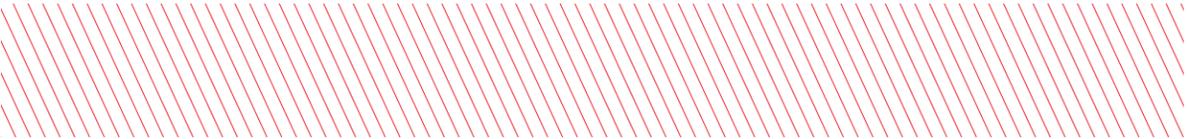


Implementation of total quality management, continuous quality improvement, the pursuit of zero defects!

## >> COMPANY PROFILE

Shenzhen SUNYE Electric Co., Ltd. (SUNYE for short), founded in 2002, is a high-tech business integrating the R&D, manufacturing and distribution of industrial automation products and products in the new energy field. Based on independent R&D and with “Focus on Challenges and Directions Customers Pay Attention to; Provide Customers with Integrated Solutions and Service Rapidly, and Create Maximum Value for Customers Sustainably” as mission, SUNYE actively explores customer demands, improve customers’ core competitiveness and aspires to become a world-class supplier in the industrial automation and new energy fields.

SUNYE is a high-tech enterprise and double-soft enterprise, with proprietary intellectual property rights. Its products have passed the tests and certifications of national authorities, its many software copyrights have been registered and a dozen of intellectual property right certificates have been issued.



SUNYE invests a huge sum in the R&D of new technology and new product and launches a number of new products in the market every year. More than ten patents or software copyrights have been approved by related authorities. SUNYE has mastered high-performance vector converter technology, servo technology, permanent magnet synchronous motors and other core platform technologies. The low-voltage frequency converter, medium-voltage frequency converter and servo drive have been widely used in lifting, machine tools, metal products, electric wire and cable, plastic, printing packaging, textile chemical, building material, metallurgy, coal mining, municipal administration, automobile and other industries. With Shenzhen SUNYE Electric Co., Ltd. as center and Changsha SUNYE Electric Co., Ltd. as a pivot, SUNYE supports all offices around China to provide quality service for customers.



SUNYE will be in the concept of “Innovation, Strength, Technology”, the enterprise spirit of “Unity & Diligence, Hard Work & Struggle” and the quality policy of “Comprehensive Quality Management, Continuous Quality Improvement, Pursuit of Zero Defect” and provide excellent products for customers.

# >> CM53XH series

CM53XH SERIES HIGH PERFORMANCE VECTOR INVERTER // // // //



**ECONOMICAL**

**RELIABLE**

**STABLE**

## Introduction:

CM53XH series of inverter is a technology upgraded product launched through market research, it's based on CM530 and CM510 series which have been widely applied in the market. The new series are excellent in performance, reliable and stable, easy to operate. It will bring you better user experience.

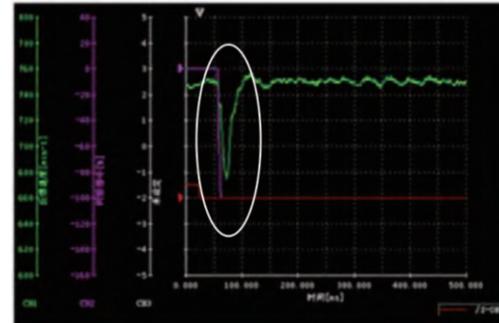
## Range:

Single phase 220V (3S) 0.4~5.5KW  
Three phase 220V (3T) 0.4~220KW  
Three phase 380V (4T)0.75~630KW



### ◆ High-precision in steady speed, Wide-range in speed regulation

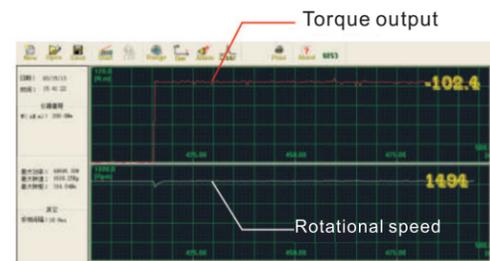
Steady speed precision:  $\pm 0.5\%$ (SVC)  
 Speed-regulation range: 1:100(SVC)  
 Torque response:  $< 20\text{ms}$ (SVC)  
 Heavy load overload ability:  
 110% steadily run with rated  
 Rated load 150% in 1min,  
 Rated load 180% in 6s.



SVC: 0.103%

### ◆ High-start Torque Function

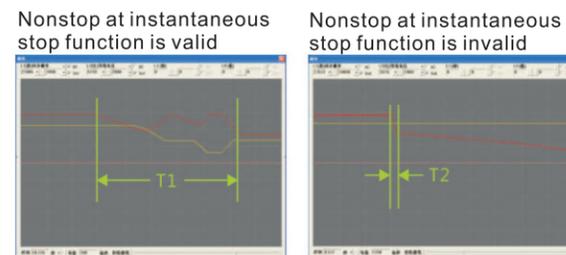
Rotational and Torque Test on full load.  
 Motor output rated torque 102.4 Nm with full load.  
 SVC Control the speed fluctuation measured 0.2%.  
 SVC Control the speed precision measured 0.4%.



Remark: torque output and rotational speed illustration

### ◆ Nonstop at instantaneous stop function

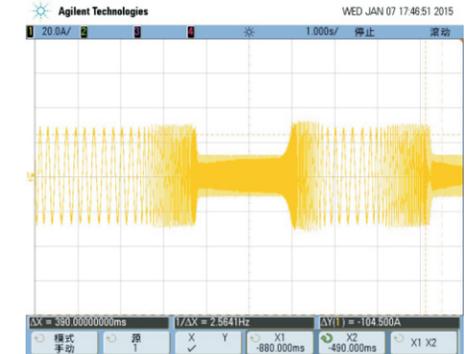
The inverter can't stop when it's power shutdown suddenly. In the condition of shutdown or slow down the voltage suddenly, the inverter will slow output-speed and offset voltage by load feedback energy to keep running in the short time.



Remark: the comparison diagram of Nonstop at instantaneous stop function

### ◆ Excellent over-current suppression performance

It typically applied to machine tool, agitator, ball grinder, centrifuge, conveyor belt and other load mutation occasion.



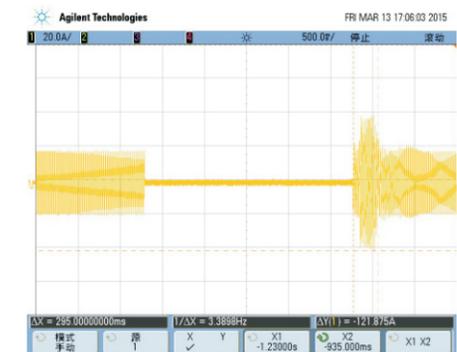
### ◆ Rapid limiting technology

Minimize the inverter to alarm over-current rate.



### ◆ Leading rotational tracking performance in the industry's

To recognize the rotational tracking boot with identify-direction in 0.3S. it typically applied to draught fan, punch and other rotational tracking occasion.



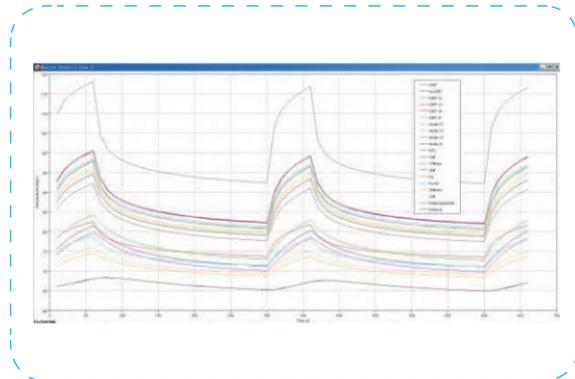
◆ **Thermal reliability of inverter**

Adopt high-effective and precise thermal simulation platform software to guarantee the thermal reliable of inverter. Thermal design is a scientific simulation test, high accuracy, high efficiency, good stability, especially in the condition of limit test, the thermal simulation test can replace the actual load simulation, it is equivalent to another scientific thermal calibration.

◆ **Temperature Rise Test**

1. Temperature rise test was adopted the strict validation test of cycle overload specifications, which have met the Max-load conditions run reliably for a long time.

2. Circulation overload: Under the ambient temperature 40℃, 1.5 times the rated current runs one minute, then 1 times of the rated current runs four minutes, and then 1.5 times of the rated current runs one minutes, such a continuous cycle operation have five minutes, until the system have to achieve thermal equilibrium state, within the scope of the machine in thermal design safety. Inverter run safety and stability in which above the limit overload one minutes of rated current 1 times.



◆ **More Comprehensive Protection**

Add the instance of power to ground short circuit protection detection function.

◆ **Anti-paint Auto-spraying Process**

Which have unique anti-corrosion automatic paint equipments making three proofing paint coating thickness uniformity and guarantees batch consistency according to the different circuit board design of spraying strategy.



Remark: Anti-paint Auto-spraying

◆ **To ensure the product safety, all meet the standards of Withstand Voltage Safe Test before delivering.**



◆ **Long-life Design**

The temperature rise of key components and PCB were monitored comprehensively, optimizing configuration, design Long-life and big redundancy design of waste heat.

# PRODUCTS HIGHLIGHTS



- Structure Compact
- Aesthetic Innovation
- Installation Mode Diversification
- No-key Keyboard Operation Condition Monitoring
- Pluggable Fan Interface



◆ It brings a pleasant experience to you with innovative and aesthetic design.



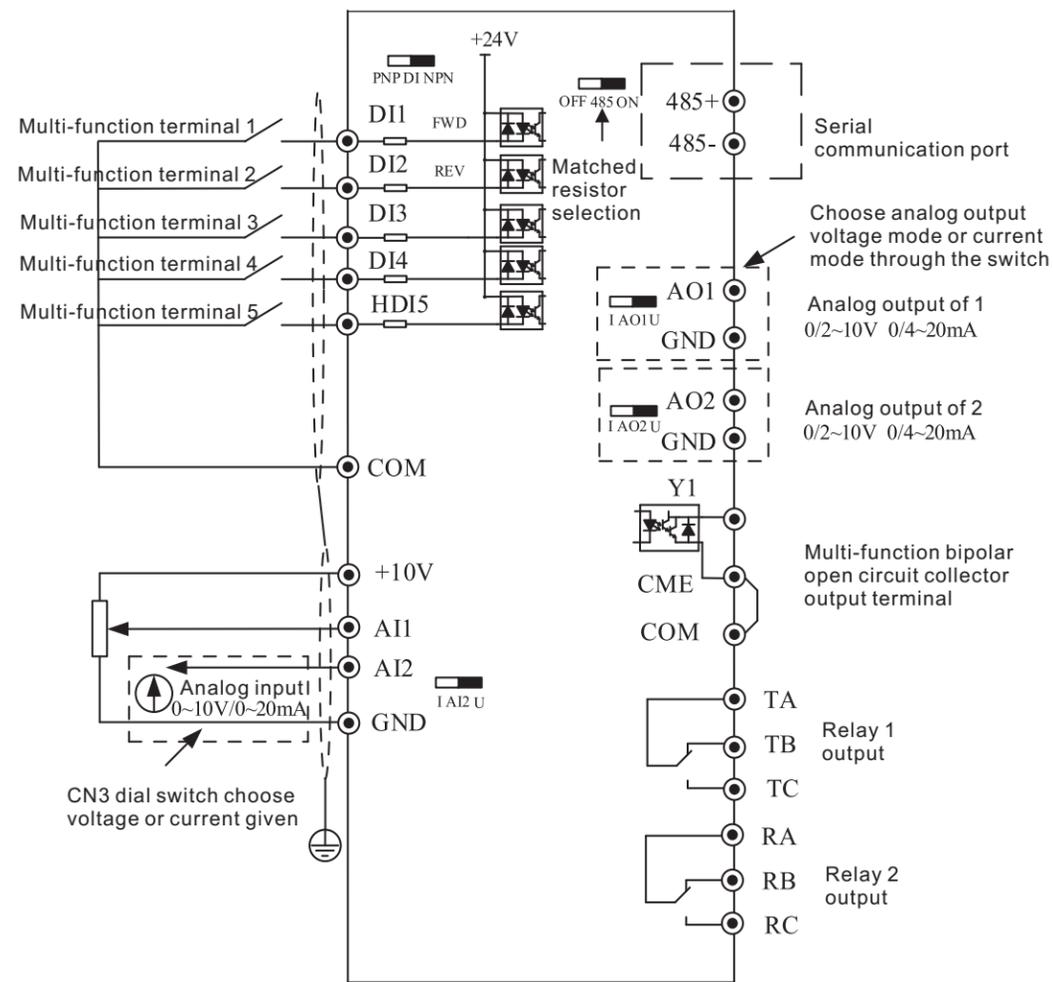
◆ Convenient pluggable fan interface



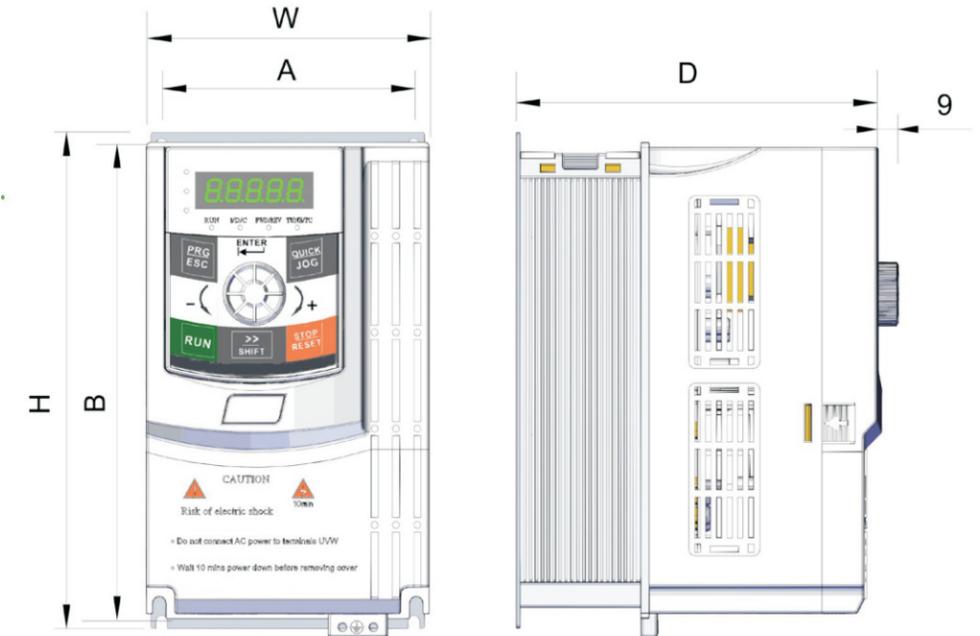
◆ The no-key keyboard operation condition monitoring, which is innovative and will give you great convenience and the keyboard gusset plate is optional.



## Control Circuit Wiring



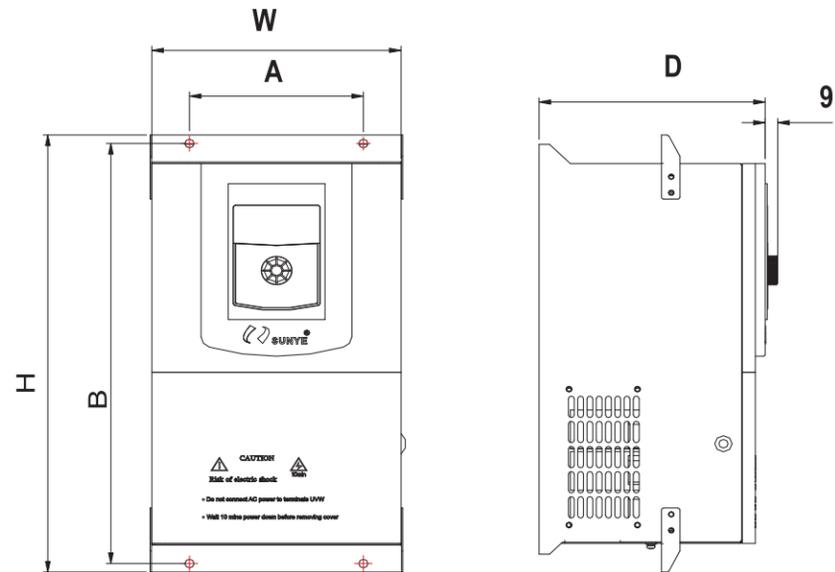
## Installation Dimension of Plastic mode under 7.5KW



## Installation Dimension Table of Plastic mode under 7.5KW

Model	Mounting Hole		Physical Dimension			Diameter of mounting hole
	A(mm)	B(mm)	H(mm)	W(mm)	D(mm)	
CM53XH-3SR4G	78	162	172.5	96	141	φ 4.5
CM53XH-3SR75G						
CM53XH-3S1R5G	100	199	206	119	154	φ 5
CM53XH-3S2R2GB						
CM53XH-4TR75GB	78	162	172.5	96	141	φ 4.5
CM53XH-4T1R5GB/2R2PB						
CM53XH-4T2R2GB/4R0PB	100	199	206	119	154	φ 5
CM53XH-4T4R0GB/5R5PB						
CM53XH-4T5R5GB/7R5PB	120	260	268	139	155.5	φ 6
CM53XH-4T7R5GB/9R0PB						

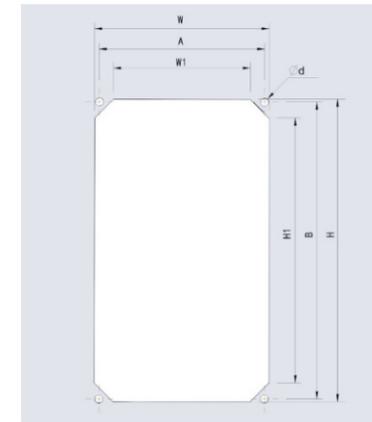
## Installation Dimension of Metal Mode between 11~37KW



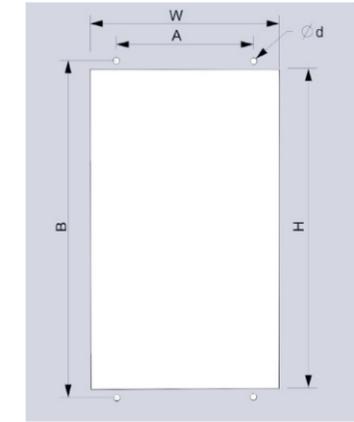
## Installation Dimension Table of Metal Mode between 11~37KW

Model	Mounting Hole		Physical Dimension			Diameter of mounting hole
	A(mm)	B(mm)	H(mm)	W(mm)	D(mm)	
CM53XH- 4T9R0GB/011PB	150	314	324	188	188	φ 6
CM53XH- 4T011GB/015PB						
CM53XH- 4T015GB/018PB						
CM53XH- 4T018G/022P	165	372	383	215	200	φ 6
CM53XH- 4T022G/030P						
CM53XH- 4T030G/037P	200	436	449	260	209	φ 7
CM53XH- 4T037G/045P						

## Wall-mounted Installation Dimension Diagram of Plastic Structure



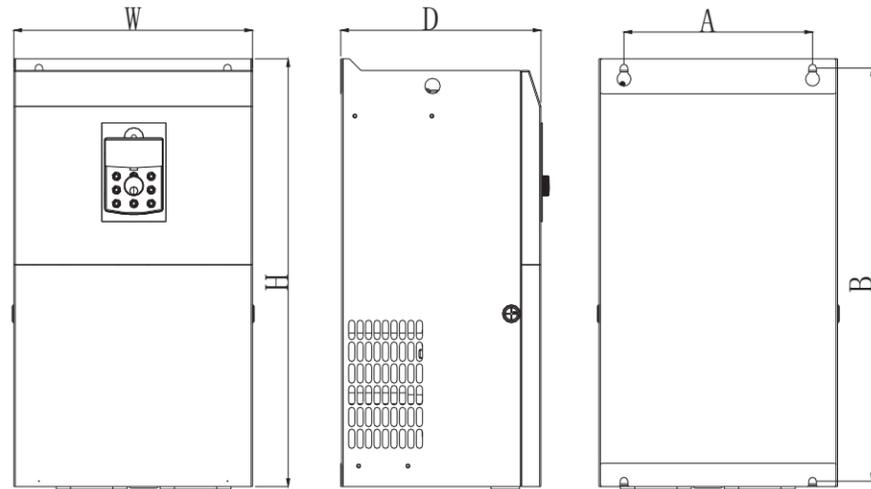
## Wall-mounted Installation Dimension Diagram of Metal Structure



## Wall-mounted Mode Installation Dimension Table of Inverter under 22KW

Model	Mounting Hole		Wall-mounted hole dimension				Diameter of mounting hole
	A(mm)	B(mm)	H(mm)	H1(mm)	W(mm)	W1(mm)	
CM53XH- 3SR4GB	88	157	160	140	93	73	φ 4.5
CM53XH- 3SR75GB							
CM53XH- 3S1R5GB							
CM53XH- 3S2R2GB	108	185	192	168	116	92	φ 4.5
CM53XH- 4TR75GB	88	157	160	140	93	73	φ 4.5
CM53XH- 4T1R5GB/2R2PB							
CM53XH- 4T2R2GB/4R0PB	108	185	192	168	116	92	φ 4.5
CM53XH- 4T4R0GB/5R5PB							
CM53XH- 4T5R5GB/7R5PB	128	239	245	221	136	112	φ 5.5
CM53XH- 4T7R5GB/9R0PB							
CM53XH- 4T9R0GB/011PB	140	341	311	/	191	/	φ 8
CM53XH- 4T011GB/015PB							
CM53XH- 4T015GB/018PB							
CM53XH- 4T018GB/022PB							
CM53XH- 4T022GB/030PB							
CM53XH- 4T030GB/037PB	150	392	415	/	219	/	φ 8

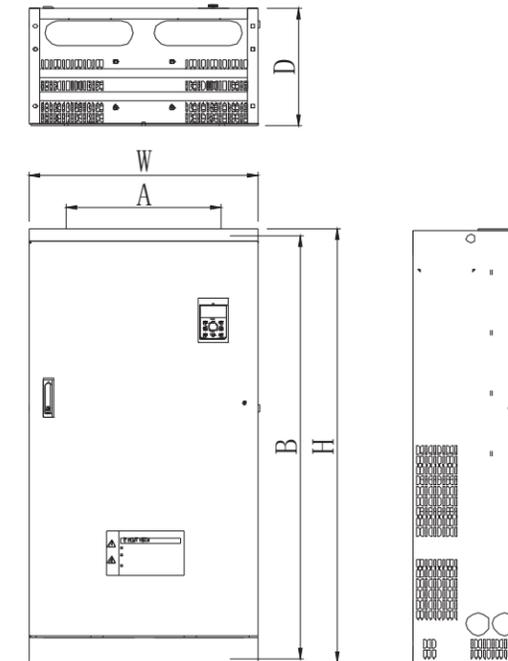
## ■ Appearance and Install Dimension of Inverter between 45KW~132KW



## ■ Appearance and Install Dimension Table of Inverter between 45KW~132KW

Model	Mounting Hole		Physical Dimension			Diameter of mounting hole
	A(mm)	B(mm)	H(mm)	W(mm)	D(mm)	
CM53XH- 4T045G/055P	245	531	550	310	260	φ 10
CM53XH- 4T055G/075P						
CM53XH- 4T075G/093P						
CM53XH- 4T093G/110P	280	561	580	350	267	φ 10
CM53XH- 4T110G/132P						
CM53XH- 4T132G/160P	320	695	715	430	295	φ 10

## ■ Appearance and Install Dimension of Inverter above 160KW



## ■ Appearance and Install Dimension Table of Inverter above 160KW

Model	Mounting Hole		Physical Dimension			Diameter of mounting hole (mm)
	A(mm)	B(mm)	H(mm)	W(mm)	D(mm)	
CM53XH - 4T160G/185P	360	972	1000	470	318	φ 12
CM53XH - 4T185G/200P						
CM53XH - 4T200G/220P						
CM53XH - 4T220G/250P	380	1060	1088	520	338	φ 12
CM53XH - 4T250G/280P						
CM53XH - 4T280G/315P						
CM53XH - 4T315G/355P	440	1190	1220	650	330	φ 12
CM53XH - 4T355G/400P						
CM53XH - 4T400G/450P						
CM53X -B4T450G/500P	500	1255	1290	740	420	φ 14
CM53X -B4T500G/550P						
CM53X -B4T550G/630P						
CM53X -B4T630G	-	-	1800	1060	500	-Vertical type
	-	-	1800	1060	500	-Vertical type

Group Category	Parameter Name	Group Category	Parameter Name
F0 Group	Basic Function	L4 Group Master-slave Control Parameters	L4-00 Master-slave control selection
F1 Group	Start/Stop Control		L4-01 Master-slave control
F2 Group	V/F Control Parameters		L4-02 Master sending frequency selection
F3 Group	Vector Control Parameters		L4-03 Command source selection of slave followed the master
F4 Group	Motor 1 Parameters		L4-04 Slave received frequency coefficient
F5 Group	Input Terminals		L4-05 Slave received torque coefficient
F6 Group	Output Terminals		L4-06 Slave received torque offset
F7 Group	Auxiliary Functions and Keypad Display		L4-07 Frequency offset threshold
F8 Group	Communication Parameters		L4-08 Master-slave communication offline detection time
F9 Group	Fault and Protection	L5 Group Braking Function Parameters	L5-00 Braking control selection
FA Group	PID Function		L5-01 Braking loosen frequency
FB Group	Swing Frequency, Fixed Length and Count		L5-02 Braking loosen frequency holding time
FC Group	Multi-Reference and Simple PLC Function		L5-03 Braking period current threshold
FD Group	Torque Control		L5-04 Braking actuation frequency
FE Group	AI Curve Setting		L5-05 Braking actuation delay time
H0 Group	Motor 2 Parameters Setting	L5-06 Braking actuation frequency holding time	
H1 Group	Motor 2 Parameters	L6 Group Sleep Wake-up Function Parameters	L6-00 Sleep selection
H2 Group	Motor 2 V/F Control Parameters		L6-01 Sleep frequency
H3 Group	Motor 2 Vector Control Parameters		L6-02 Sleep delay time
L0 Group	System Parameters		L6-03 Wake-up deviation
L1 Group	User-defined Parameters	L6-04 Wake-up delay time	
L2 Group	Optimization Parameters	U0 Group	Error Recording Parameters
L3 Group	AI/AO Correction	U1 Group	Application Monitoring Parameters

Model	Input Voltage	Content and Application
CM53XH	Single Phase 220V 0.4~5.5KW Three Phase 220V 0.4~200KW Three Phase 380V 0.75~630KW	The new generation of compact vector control inverter, which can be used in drive torque motor, asynchronous motor. It is widely used in the industry of NC machine, cable, paper making, hoisting, lifting, fan, water pump, oil chemical industry, air compressor, textile machinery, ceramic machinery, stone machinery and other industries.
CM53XHS	Single Phase 220V 0.4~5.5KW Three Phase 220V 0.4~200KW Three Phase 380V 0.75~630KW	The new generation of compact vector control inverter, which can be used in drive synchronous motor. It is widely used in the industry of air compressor, cable, textile, hoisting and other industries.
CM530	Single Phase 220V 0.4~5.5KW Three Phase 380V 0.75~630KW Three Phase 220V 0.4~200KW	The generation asynchronous motor vector control inverter, which can be used in drive torque motor and asynchronous motor. It's widely used in fan, water pump, petrochemical industry, air compressor, extrusion machine, CNC machine, lifting machinery, textile machinery, plastics machinery, woodworking machinery, ceramic machinery, stone machinery, and other industries.
CM580	Single Phase 220V 0.4~5.5KW Three Phase 380V 0.75~630KW	The high-performance modular magnetic flux vector control inverter, which supports the closed-loop vector control and can reach 0HZ 150% of the rated load capacity. It's widely used in the spindle servo motor, printing and packing industry, EPS industry and intelligent wire saw machine, etc.
CM510	Single Phase 220V 0.4~1.5KW Three Phase 380V 0.75~2.2KW	The miniature magnetic flux vector control inverter with portability and low cost, it's widely used in packaging, mechanical and other industries.
CM500	Single Phase 220V 0.4~1.5KW	The miniature magnetic flux vector control inverter with portability and low cost, it's widely used in packaging, textile, knitting machine and other industries.
CM300	Three Phase 380V 1.5KW	The infrared bridge cutting electric control integration machine is mainly used in stone machinery industry and can drive synchronous motor and asynchronous motor simultaneously.
BR530	Three Phase 380V 11~630KW	The general consumption braking unit, which used in the occasion of braking energy with inverter.
CM100/CM200		The circular knitting machine controller, mainly used in the textile industry.

SUNYE company always aims for high standards and high starting-point, which has perfect organization, adequate human resources and improvement rules and regulations. we comply with modernize enterprise system to manage the company by using the scientific method.

