



CM800 SERIES

High Performance Vector Control VFD

Innovation

Strength

Technology

COMPANY / PROFILE

— Standing at the forefront of the industry
— Leading the rapid development of China's inverter technology

48000 ² Total area	10800 ² Production lines & workshops	500 million yuan Annual output value
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Founded in 2002, Changsha Sunye Electric Co., Ltd. is a national high-tech enterprise integrating the R&D, production, and sales of inverters, industrial all-in-one machines, servo drives, and new energy products. The company purchased 30 acres of land in the Changsha National High-Tech Development Zone to build its own industrial park, with a total construction area of approximately 48,000 square meters and an average annual output value of 500 million yuan. The company uses the Changsha Sunye Industrial Park as its R&D and production base, and utilizes its various offices as a hub to provide high-quality, integrated services to customers worldwide.

Honors

Sunye Electric products have passed the testing and certification of global authoritative organizations and obtained multiple software copyright and intellectual property certificates such as IOS9001, CE, and RoHS.



First recognized as a high-tech enterprise in 2015



Provincial-level enterprise technology center in 2022



National-level "Little Giant" Enterprise



ISO9001 quality system certification



CE certification



Over 100 patents

CM800 Series

High Performance Vector Control VFD

The CM800 Series is a newly developed compact inverter with a small size and large functionality, featuring fast torque response, high speed stability, a wide speed control range, and high protective performance. It can be widely applied in various automated machinery and equipment scenarios, including glass, food packaging, pharmaceutical centrifuges, automated production lines, logistics equipment, ceramic equipment, spindle of machine tool, and textile machinery.



▶ Elegant Design, Easy To Use

Volume Reduced by 35%



The power density of CM800 has been significantly improved, with the volume reduced by 35% compared to the previous generation of products, making CM800 flexible for installation in various confined spaces.



Dual Keyboard Display



Both local and remote keyboards display simultaneously and are automatically recognized.



Humanized design of the control panel



High adaptability

Default parameters meet mainstream usage scenarios

Complete control panel functions

Function parameter modification, operation status monitoring, operation control (start, stop)

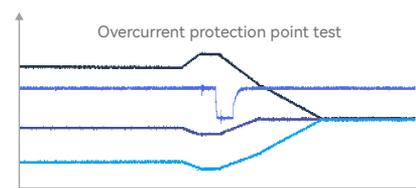
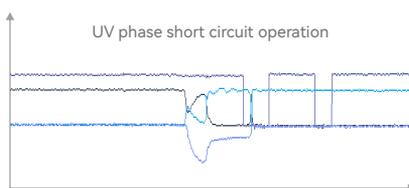
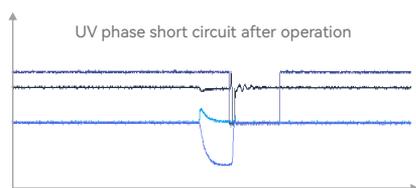


▶ All-Round Protection

Rapid Response Intelligent Protection

Short-circuit protection is immediately activated, and after the fault is cleared, the inverter resumes normal operation without any component damage.

Upper and Lower Bridge Arms **Vce<1050V** | Response Time **<10us**

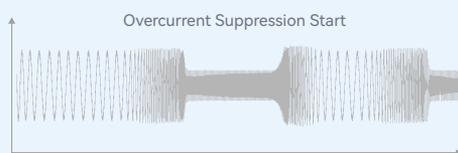


Repeated protection

Even in the face of frequent overload, overcurrent, and other extreme challenges, the CM800 protection mechanism ensures stable operation without component damage.

Excellent Overcurrent Suppression Capability

When a sudden heavy load occurs, it can achieve excavator function, reducing the impact of large current surges on the inverter and motor, while achieving maximum fault-free operation.



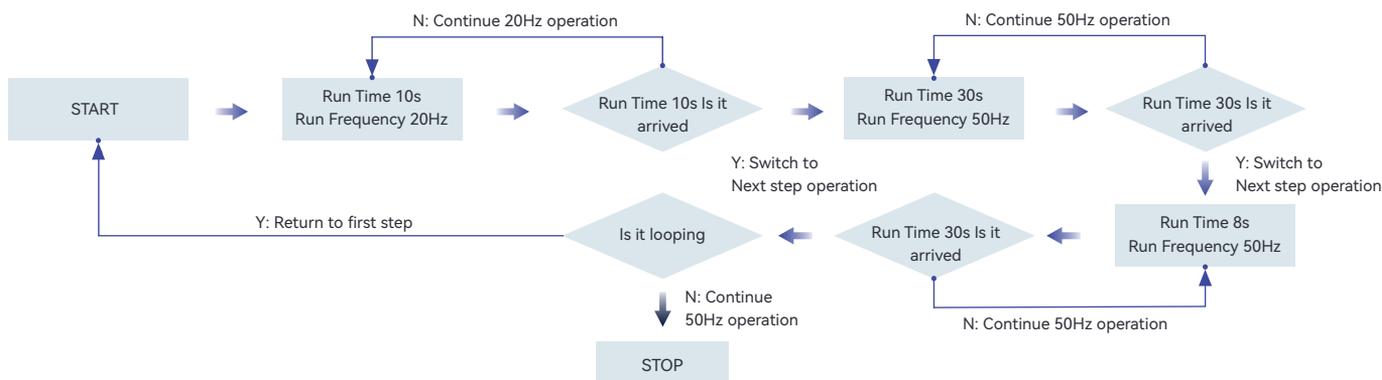
Software Speed Tracking

Smooth and Impact-free Start, can automatically identify the direction of rotation.



▶ Built-In Simple PLC Function

Can complete up to 16 segments of timed and fixed-speed cyclic operation.



Reliable hardware and software

Optimized low-frequency overload software design

Deeply exploring and efficiently utilizing the potential overload capability of IGBTs, through intelligent control strategies, significantly enhancing the overall operational stability and reliability of the product. Extend the service life of equipment and enhance its adaptability under complex operating conditions.

Long-life and high-redundancy design

Comprehensive monitoring of temperature rise in key components and PCB boards. Optimized configuration, long design life, and high-redundancy thermal design.

Comprehensive protection functions

Equipped with power-on motor short-circuit protection, input and output phase loss protection, overcurrent protection, overvoltage protection, undervoltage protection, overheat protection, and overload protection.

Test system guarantee

100% Dielectric Withstand Test

100% factory withstand voltage safety test, fully ensuring product safety.

Overall temperature rise testing

Adopt strict cyclic overload specifications for verification and testing to ensure reliable long-term operation under extreme load conditions.

ICT and FCT dual test coverage exceeds 95%

From components to overall functionality, comprehensive verification ensures every detail is precise and error-free, creating unparalleled excellence to provide a solid backing for your industrial applications.

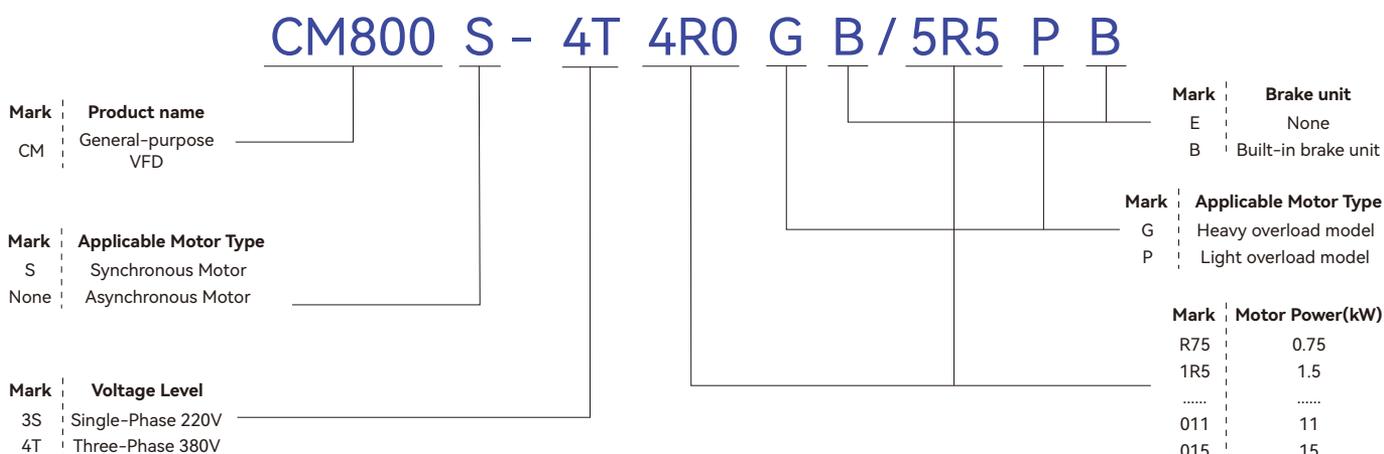
Full power aging test

Simulating high load, long-term operation, and other extreme conditions to ensure the product remains stable and durable in actual use.

Cyclic overload test

Cyclic overload: At an ambient temperature of 40°C, operate at 1.5 times the rated current for 1 minute, followed by 1 times the rated current for 4 minutes, then 1.5times the rated current for 1 minute, repeating this cycle continuously, with each cycle lasting 5 minutes, until the system reaches thermal equilibrium, ensuring the entire unit remains within the thermal design safety range. Even under overload conditions exceeding 1 times the limit, it can still operate safely and stably.

Product Selection



CM800 Inverter Model And Technical Data

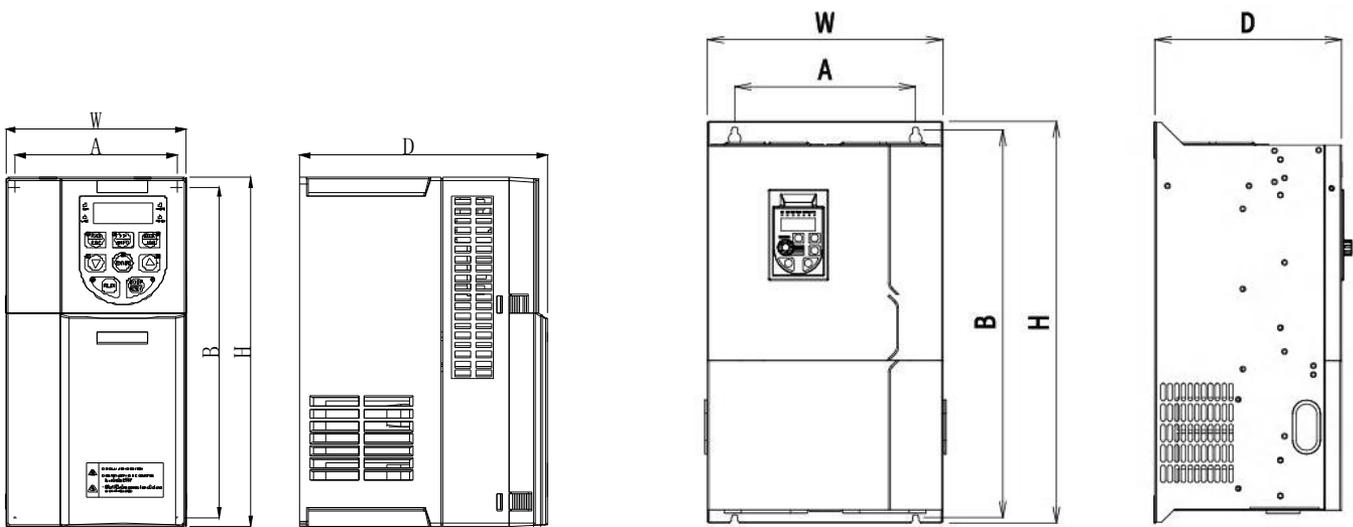
Inverter Model	Input Voltage (V)	Input Current (A)	Output Current (A)	Motor Rating (kW)
CM800-3SR4GB	Single-phase 220V Range: -15%~+20%	5.4	2.3	0.4
CM800-3SR75GB		8.2	4.0	0.75
CM800-3S1R5GB		14.0	7.0	1.5
CM800-3S2R2GB		23.0	9.6	2.2
CM800-3S4R0GB		32.0	17.0	4.0
CM800-4TR75GB/1R5PB	Three-phase 380V Range -15%~+20%	3.4/5.0	2.1/3.8	0.75
CM800-4T1R5GB/2R2PB		5.0/5.8	3.8/5.1	1.5/2.2
CM800-4T2R2GB/4R0PB		5.8/10.5	5.1/9.0	2.2/4.0
CM800-4T4R0GB/5R5PB		10.5/14.6	9.0/13.0	4.0/5.5
CM800-4T5R5GB/7R5PB		14.6/20.5	13.0/17.0	5.5/7.5
CM800-4T7R5GB/9R0PB		20.5/22.0	17.0/20.0	7.5/9.0
CM800-4T9R0GB/011PB		22.0/26.0	20.0/25.0	9.0/11.0
CM800-4T011GB/015PB		26.0/35.0	25.0/32.0	11.0/15.0
CM800-4T015GB/018PB		35.0/38.5	32.0/37.0	15.0/18.5
CM800-4T018GB/022PB		38.5/46.5	37.0/45.0	18.5/22.0
CM800-4T022GB/030PB		46.5/62.0	45.0/60.0	22.0/30.0
CM800-4T030GB/037PB		62.0/76.0	60.0/75.0	30.0/37.0
CM800-4T037G(B)/045P(B)		76.0/92.0	75.0/90.0	37.0/45.0
CM800-4T045G(B)/055P(B)		92.0/113.0	90.0/110.0	45.0/55.0
CM800-4T055G(B)/075P(B)		113.0/157.0	110.0/152.0	55.0/75.0
CM800-4T075G(B)/093P(B)		157.0/180.0	152.0/176.0	75.0/93.0
CM800-4T093G(B)/110P(B)		180.0/214.0	176.0/210.0	93.0/110.0
CM800-4T110G(B)/132P(B)		214.0/256.0	210.0/253.0	110.0/132.0
CM800-4T132G(B)/160P(B)		256.0/307.0	253.0/304.0	132.0/160.0
CM800-4T160G/185P		307.0/345.0	304.0/340.0	160.0/185.0
CM800-4T185G/200P		345.0/385.0	340.0/380.0	185.0/200.0
CM800-4T200G/220P		385.0/430.0	380.0/426.0	200.0/220.0
CM800-4T220G/250P		430.0/468.0	426.0/465.0	220.0/250.0
CM800-4T250G/280P		468.0/525.0	465.0/520.0	250.0/280.0
CM800-4T280G/315P	525.0/590.0	520.0/585.0	280.0/315.0	
CM800-4T315G/355P	590.0/665.0	585.0/650.0	315.0/355.0	
CM800-4T355G/400P	665.0/785.0	650.0/725.0	355.0/400.0	
CM800-4T400G/450P	785.0/883.0	725.0/820.0	400.0/450.0	

▶ Technical Specifications

Project		Specification
Main Control Performance	Maximum Frequency	Vector control: 0~600Hz VF control: 0~1200Hz
	Carrier Frequency	0.5kHz~16kHz; can be automatically adjusted according to load characteristics.
	Input Frequency Resolution	Digital setting: 0.01Hz Analog setting: maximum frequency × 0.1
	Control Method	Open-loop vector control (SVC), V/F control
	Starting Torque	G series: 0.5Hz/180% (SVC)
	Speed Range	1:200 (SVC)
	Speed Stability (Speed Control Accuracy)	Open-loop vector control: ≤ ±0.5% (rated synchronous speed)
	Speed Control Stability	Open-loop vector control: ≤ ±0.3% (rated synchronous speed)
	Torque Response	≤ 40ms (SVC)
	Overload Capacity	150% rated current for 60 seconds; 180% rated current for 5 seconds
	Torque Boost	Automatic torque boost; manual torque boost 0.1%~30.0%
	V/F Curve	Three methods: linear; multi-point; square V/F curve
	Acceleration/Deceleration Curve	Linear or S-curve acceleration/deceleration; four acceleration/deceleration times; acceleration/deceleration time range 0.0s~3000.0s
	DC Braking	DC braking frequency: 0.0Hz~maximum frequency, braking time: 0.0~36.0 seconds, braking action current value: 0.0%~100.0%
	Jog Control	Jogging frequency range: 0.00Hz~50.00Hz; Jogging acceleration and deceleration time 0.0s~3000.0s
	Simple PLC, Multi-Speed Operation	Up to 16-speed operation can be achieved through built-in PLC or control terminals
	Built-in PID	Can conveniently implement process control closed-loop control systems
Automatic Voltage Regulation (AVR)	When the grid voltage changes, it can automatically maintain a constant output voltage	
Torque Limiting and Control	"Excavator" characteristic, automatically limits torque during operation to prevent frequent overcurrent tripping; Closed-loop vector mode can achieve torque control	
Customized Functions	Power-On Peripheral Safety Self-Check	Can perform safety checks on peripheral devices upon power-up, such as grounding and short-circuit testing
	Common DC Bus Function	Can achieve the function of multiple inverters sharing a common DC bus
	JOG Key	Programmable keys: Forward/Reverse operation and Jog operation function selection
	Textile Swing Frequency Control	Multiple triangular wave frequency control functions
	Rapid Current Limiting Function	Built-in fast current limiting algorithm, reducing the probability of overcurrent alarms and enhancing the overall interference resistance of the machine
	Timed Control	Timed control function: Settable time range 0h~65535h
	Standardized Keyboard Extension Cable	Customers can extend the keyboard using standard network cables.
Operation	Operation Command Channel	Three channels: Operation panel setting, control terminal setting, and serial communication port setting. Can be switched through multiple methods
	Frequency Source	There are 10 frequency sources: digital setting, analog voltage setting, analog current setting, pulse setting, serial port setting. Switching can be done in multiple ways
	Auxiliary Frequency Source	10 auxiliary frequency sources. Flexible implementation of auxiliary frequency fine-tuning, frequency synthesis
	Terminal Configuration	Standard configuration includes 5 digital input terminals, 5 DI digital input terminals, 1 Y terminal (single-polarity output), 1 AI analog input terminal, 1 AO analog output terminal, 1 relay output terminal; one 485 interface; AI1 can be used as a DI terminal, compatible with active PNP or NPN input methods.
Display and Keyboard Operation	LED Display	Display parameters
	LCD Display	External LCD keyboards are optional for 9kW and below, local LCD keyboards are optional for 11kW and above.
Protection and Optional Accessories	Protection Function	Power-on motor short circuit detection, input and output phase loss protection, overcurrent protection, overvoltage protection, undervoltage protection, overheat protection, overload protection, etc.
	Optional Accessories	LCD operation panel, braking components, etc.

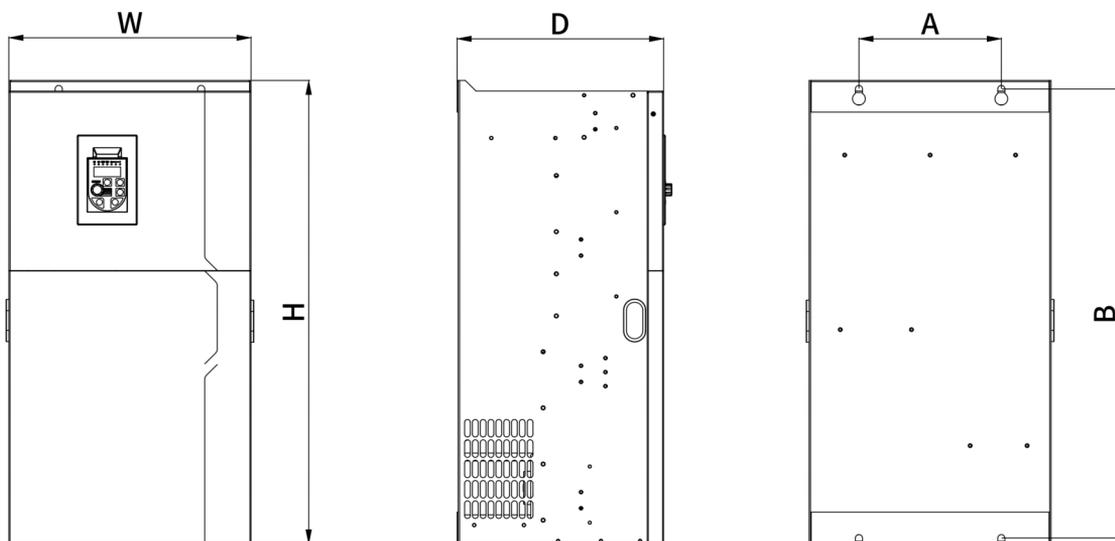
Project		Specification
Environment	Place of Use	Indoor, not exposed to direct sunlight, free from dust, corrosive gases, flammable gases, oil mist, water vapor, dripping water or salt, etc.
	Altitude	Below 1000 meters
	Ambient Temperature	-10°C to +50°C (For environmental temperatures between 40°C to 50°C, please use at reduced capacity)
	Humidity	Less than 95% RH, no condensation
	Vibration	Less than 5.9 m/s ² (0.6g)
	Storage Temperature	-20°C to +60°C
	Pollution Degree	2
Product Standards	Product Safety Standards	IEC61800-5-1:2007
	Product EMC Standards	IEC61800-3:2005

CM800 Inverter Dimensions And Installation Hole Positions (mm)

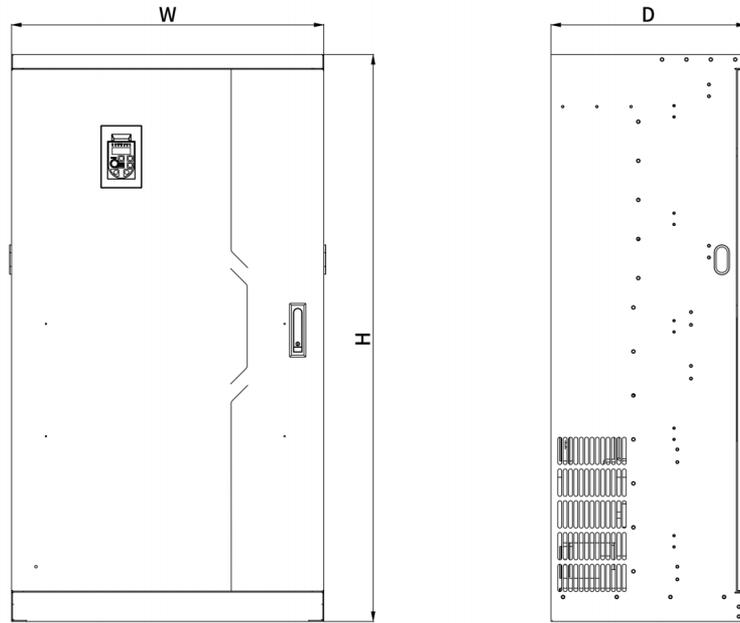


22 kW and Below VFD Plastic External and Installation Dimensions Diagram

30~45 kW VFD Sheet Metal Chassis and Installation Dimensions Diagram



380V(4T) 55 ~ 315kW VFD External and Installation Dimensions Diagram



380V(4T) 355 ~ 400kW VFD External and Installation Dimensions Diagram

Driver Model	Installation Holes		Wall Mounting Hole Dimensions			Installation Hole Diameter (mm)
	A(mm)	B(mm)	H(mm)	W(mm)	D(mm)	
CM800-3SR4GB	65	158	167	75	121	Φ4.5
CM800-3SR75GB						
CM800-3S1R5GB						
CM800-3S2R2GB	82	168	178	93	143.5	Φ5
CM800-3S4R0GB	96	201	212	107	147	Φ5.5
CM800-4TR75GB/1R5PB	65	158	167	75	121	Φ4.5
CM800-4T1R5GB/2R2PB						
CM800-4T2R2GB/4R0PB						
CM800-4T4R0GB/5R5PB	82	168	178	93	143.5	Φ5
CM800-4T5R5GB/7R5PB	96	201	212	107	147	Φ5.5
CM800-4T7R5GB/9R0PB						
CM800-4T9R0GB/011PB						
CM800-4T011GB/015PB	130	260.5	270	150	183	Φ6
CM800-4T015GB/018PB						
CM800-4T018GB/022PB						
CM800-4T022GB/030PB	166	312	324	189	191	Φ6
CM800-4T030GB/037PB						
CM800-4T037G(B)/045P(B)						
CM800-4T045G(B)/055P(B)	200	426	449	260	207	Φ7
CM800-4T055G(B)/075P(B)						
CM800-4T075G(B)/093P(B)						
CM800-4T093G(B)/110P(B)	180	480	500	256	268	Φ10
CM800-4T055G(B)/075P(B)						
CM800-4T075G(B)/093P(B)						
CM800-4T093G(B)/110P(B)	180	540	560	290	268	Φ10
CM800-4T110G(B)/132P(B)						
CM800-4T132G(B)/160P(B)						
CM800-4T160G/185P	165*2	740	760	390	320	Φ10
CM800-4T185G/200P						
CM800-4T200G/220P						
CM800-4T220G/250P	180*2	820	850	470	350	Φ12
CM800-4T250G/280P						
CM800-4T280G/315P						
CM800-4T315G/355P	200*2	950	980	580	360	Φ12
CM800-4T355G/400P						
CM800-4T400G/450P						
CM800-4T400G/450P	240*2	1130	1160	640	420	-(Vertical)

External Keyboard with Tray Installation Dimensions (mm)

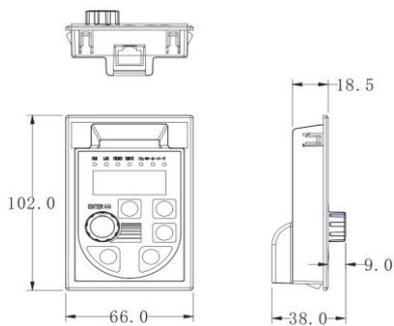


Figure 3. External Keyboard with Tray Installation Dimensions

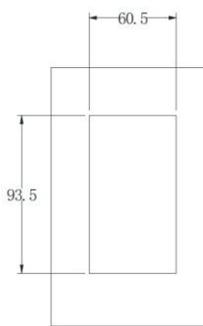


Figure 4. External Keyboard with Tray Installation Cutout Dimensions

CM800 Inverter Optional Accessories

For detailed functions and usage instructions of optional accessories, refer to the relevant accessory manuals. If you require any of the following optional accessories, please specify when placing your order.

Name	Model	Function	Remarks
External LED Operation Panel	CM800-LED	External LED display and operation keyboard	RJ45 Interface
Extension Cable	CM-CAB	Standard 8-core network cable, can connect to CM800-LED	Available in 1 meter, 3 meters, 5 meters, 10 meters 4 specifications

For additional function module expansions (such as I/O cards, PG cards, communication bus cards, etc.), please select the CM530H-PLUS series inverter and specify the required function module card when ordering.

Wiring Method

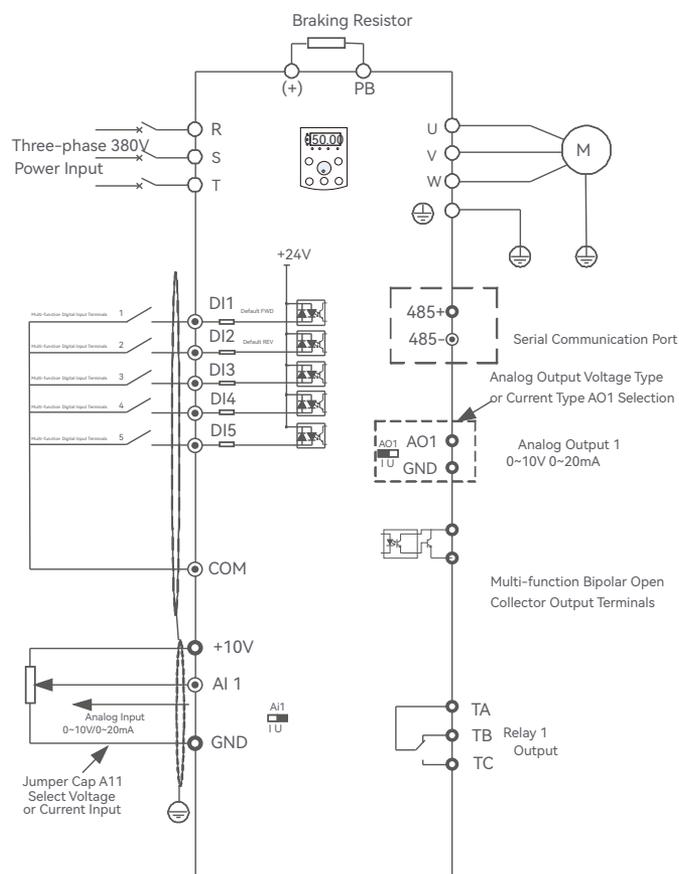


Fig. 5. Three-phase (380V) Inverter 9.0kW

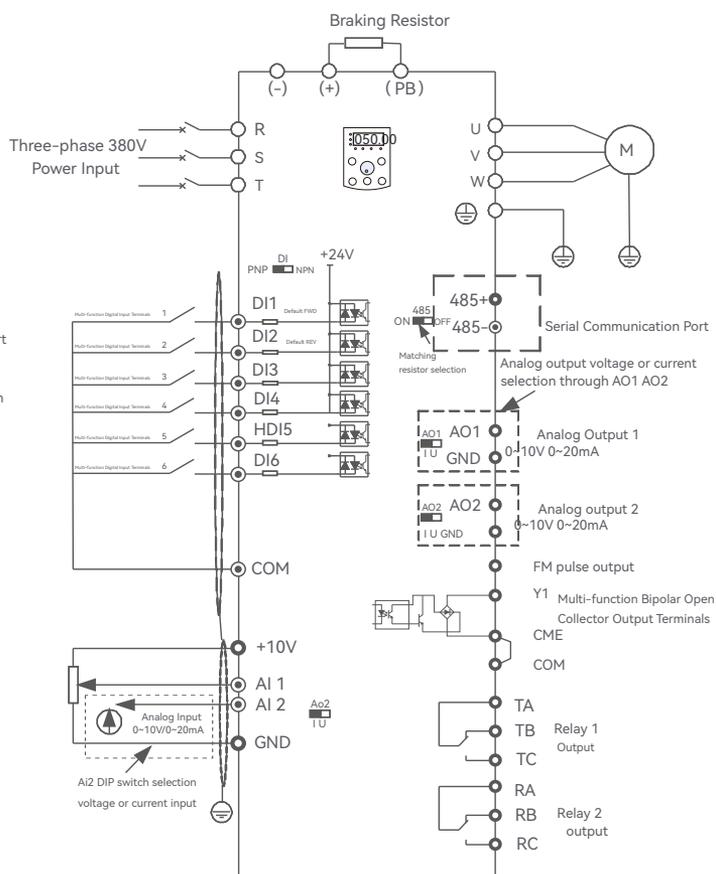


Figure 6. Three-phase Inverter (380V) 11kW and above (General Type)

▶ Typical Case

Woodworking Industry Applications

Woodworking machinery refers to a type of machine tool used in the wood processing industry to process wood semi-finished products into wooden products. The load for this projects is a continuous edge banding machine. By using the CM800 series inverter, the production efficiency, edge banding quality, and energy consumption have been significantly improved.

Usage advantages:

- ◆ Fast material cutting speed, high efficiency;
- ◆ Soft limit protection for X/Y/Z axes, fault protection, etc.;
- ◆ Achieve rapid start-stop and quick tool change functions;
- ◆ Convenient operation parameter debugging, flexible changes, short debugging time;
- ◆ Increase the deceleration speed, significantly reducing the stopping time;
- ◆ Reduce equipment failure rate, help customers reduce production costs, and enhance product competitiveness;
- ◆ Improves the processing accuracy of woodworking machinery and the quality of wood veneer. Significantly enhancing production efficiency and the degree of automation of the entire machine.



Typical Case of Musical Fountain

The musical fountain equipment converts the received music rhythm and intensity into control signals, which are then transmitted to the industrial computer. The industrial computer controls each inverter through the bus. The upper computer is connected to dozens of frequency converters using the DM512 dedicated protocol for musical fountains. By controlling the frequency converter, the motor speed varies with the speed change. The pitch, rhythm and intensity of the music cause changes in the pressure of the pump, and water is sprayed to different heights, achieving a spectacular effect.

Usage advantages:

- ◆ Sensorless flux vector control, with high control accuracy and fast response speed;
- ◆ Complete with phase loss protection, undervoltage protection, overload protection, and various intelligent protections;
- ◆ New speed tracking function, achieving speed tracking within 0-80Hz in just 0.5 seconds, with more flexible SVC torque control;
- ◆ Superior weak magnetic performance.



Industrial Washing Machine Application Case

An industrial washing machine is an electrical device used for large-scale laundry cleaning in hotels, inns, laundries, or factories. With the rapid development of automation and the continuous improvement of industry process requirements, the demands on inverters for industrial washing machines are also increasing. The inverter must meet the requirements of industrial washing machines for high starting torque, multi-speed operation, wide voltage range, automatic slip compensation, and fast and powerful communication methods. In addition, the inverter must be stable in performance and capable of adapting to various complex high-temperature and high-humidity environments. In summary, the CM800 series inverter, has become the top choice. There are already multiple successful cases, and after a period of customer use verification, its superior performance and high reliability have received numerous praise from customers.

Usage advantages:

- ◆ High starting torque, normal start-up under full load;
- ◆ No stalling or over current during acceleration and deceleration;
- ◆ High torque at low frequency to meet the 7Hz washing process;
- ◆ Equipped with a protective cover, strong environmental adaptability.
- ◆ Stable speed at high, medium, and low speeds throughout the operation;
- ◆ Wide speed control range;
- ◆ Simple parameter settings, default V/F can meet production requirements;



Logistics Industry

To improve sorting efficiency and the level of operational automation, a large logistics company decided to upgrade and transform multiple sorting centers introducing advanced intelligent logistics equipment among them, the telescopic machine, as a crucial component of the sorting system, has its performance and stability directly related to the smoothness and efficiency of the entire logistics process, therefore, the logistics company chose the highly reliable and adaptable CM800 inverter to drive the telescopic system in its sorting center.

Usage advantages:

Power Matching: The CM800 motor power range is 0.4 kW ~75 kW, meeting application requirements and ensuring the telescopic system operates efficiently during start-up, acceleration, stable operation, and braking.

Environmental Adaptability: Sorting centers are typically open sites with significant temperature fluctuations, with a maximum of 50°C. The CM800, with its excellent self-cooling design, can operate stably in high-temperature environments, effectively avoiding performance degradation or failures due to Overheating
Electromagnetic Compatibility: The CM800 has passed rigorous electromagnetic compatibility tests (C3) and will not interfere with PLCs.

High stability and Low Failure Rate: The CM800 uses advanced control algorithms and high-quality components, significantly reducing maintenance costs and greatly improving the overall operational efficiency of the sorting center

Diverse Control Functions: Supports terminal start-up, analog input/frequency setting via keyboard, RS485 communication, and parameter upload/download functions, facilitating flexible adjustment and monitoring according to user needs, enhancing operational convenience.



Your Trusted Partner In Intelligent Automation Solutions



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