



CM680 SERIES

HIGH-PERFORMANCE
UNIVERSAL INVERTER

 BOOK-TYPE DESIGN

 MULTI-DRIVE & VERSATILE

 GREEN&HIGH-EFFICIENCY

 EASE OF USE AND RELIABILITY



CHANGSHA SUNYE ELECTRIC CO.,LTD.

COMPANY PROFILE

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

48000²
Total area

10800²
Production lines
& workshops

500 million yuan
Annual output value



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



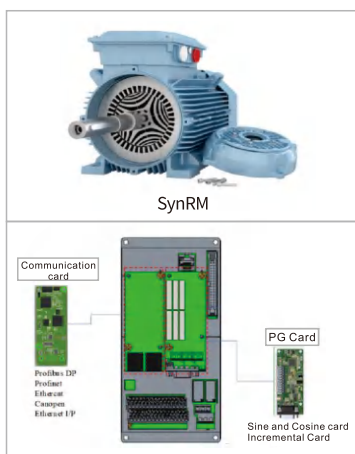
CE certification



Over 100 patents

Book-Type Design

Narrow body design across the entire series:
Easy to install and effectively saves panel space.
Independent air duct design:
Prevents dust from entering the inverter's interior, improving reliability.



Multi-Drive & Versatile

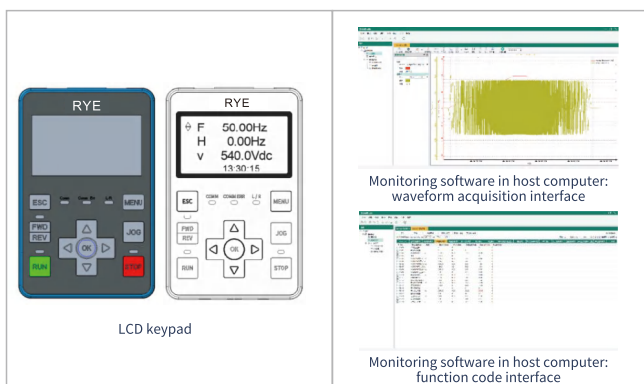
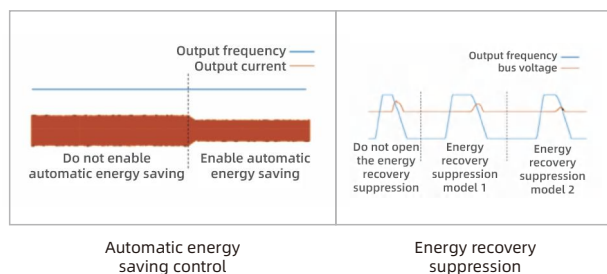
Adapt multiple motor types:
Built-in various high-performance control algorithms for asynchronous motors, permanent magnet synchronous motors and synchronous reluctance motors, meet customers' diverse motor drive needs.

Adapt multiple expansion cards:
Encoder : ABZ encoder card.
Communication bus card: Profibus DP, CANopen, EtherCAT, Profinet, Ethernet IP.
IO expansion card: Analog signal IO, digital IO.

Green & High-Efficiency

Automatic energy saving control:
The energy-saving algorithm outputs the optimal current to reduce system losses, and the no-load current can be reduced by 30%.

Recovery energy suppression:
Shorten deceleration time while ensuring safety, improve system operation efficiency.



Ease Of Use And Reliability

Standard-configuration LCD keypad:
Supports Chinese and English language selection, parameter menu management, support one-click upload/download of parameters.

Host computer debugging software:
Supports parameter reading and writing, real-time monitoring running status, multi-channel oscilloscope function, etc.
Supports STO safe torque off function.

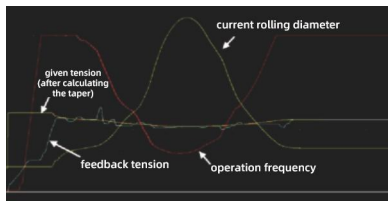
Ultra-Fast Operational

Ultra-low-speed operation:

Supports open-loop zero-speed hovering of asynchronous motors and synchronous motors, meet the application needs of the lifting industry.

Ultra-high-speed operation:

The maximum output frequency in high-speed mode for applications such as machine tool electric spindles is 2000Hz, which meets the requirements of high-speed magnetic levitation centrifuges.



The given tension value is automatically adjusted according to the roll diameter to prevent the material from wrinkling or deforming.



Tension control can be applied to various rewinder industries.

Tension Control

Diverse tension control solutions:

Supports speed and torque control modes with or without rocker feedback, achieve constant tension.

Built-in roll diameter calculation, tension dynamic compensation, tension taper calculation, PID self-adaptation and automatic roll changing, etc, maintain stable tension to improve product quality and production safety.

Position Control

Built-in position control algorithm:

Include homing and point-to-point two mode, achieve positioning function.

High-precision positioning function:

Supports communication, a pulse signal and terminal, etc, to achieve target position setting.



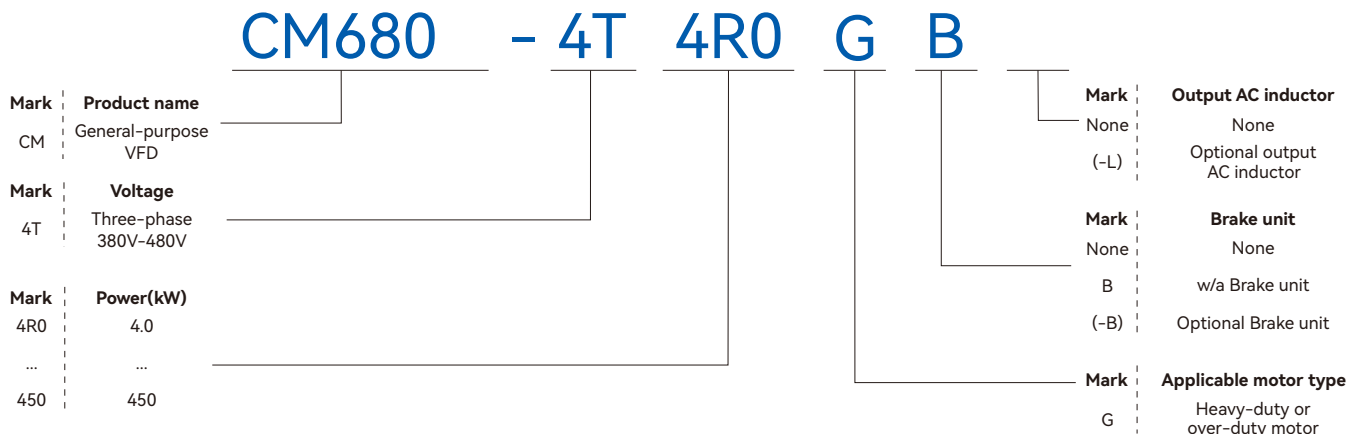
Synchronous Reluctance Motor Control

Supports synchronous reluctance motor control:
SVC and VVC two control modes.

Advantages of synchronous reluctance motors:

High reliability, no demagnetization risk, low cost, high efficiency(IE4), wide speed regulation range.

CM680 Series Naming Rules



*Nameplate identification and product model

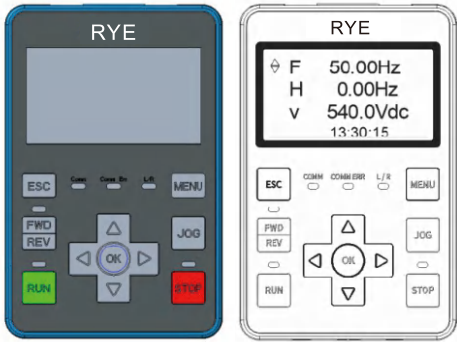
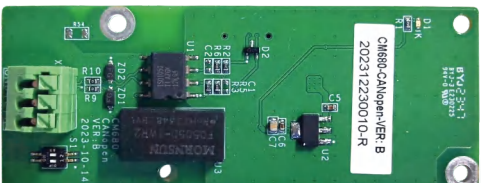
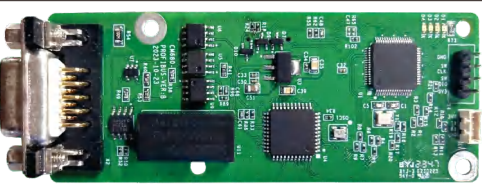
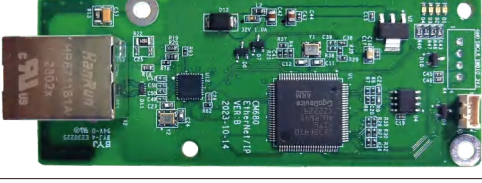
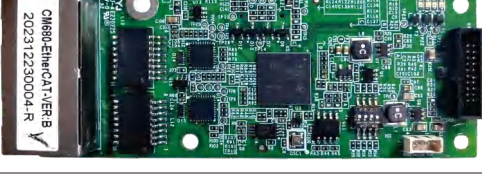
Description:

- 1.Three-phase 380V~480V,C2~C5 are not supported optional DC reactor; C6 and above are standard DC reactor.
- 2.Three-phase 380V~480V,C2~C4 are standard brake unit; C5~C7 are optional brake unit.
- 3.(-L) is an optional output AC reactor.C9 to C11 can be optionally equipped with a reactor base.

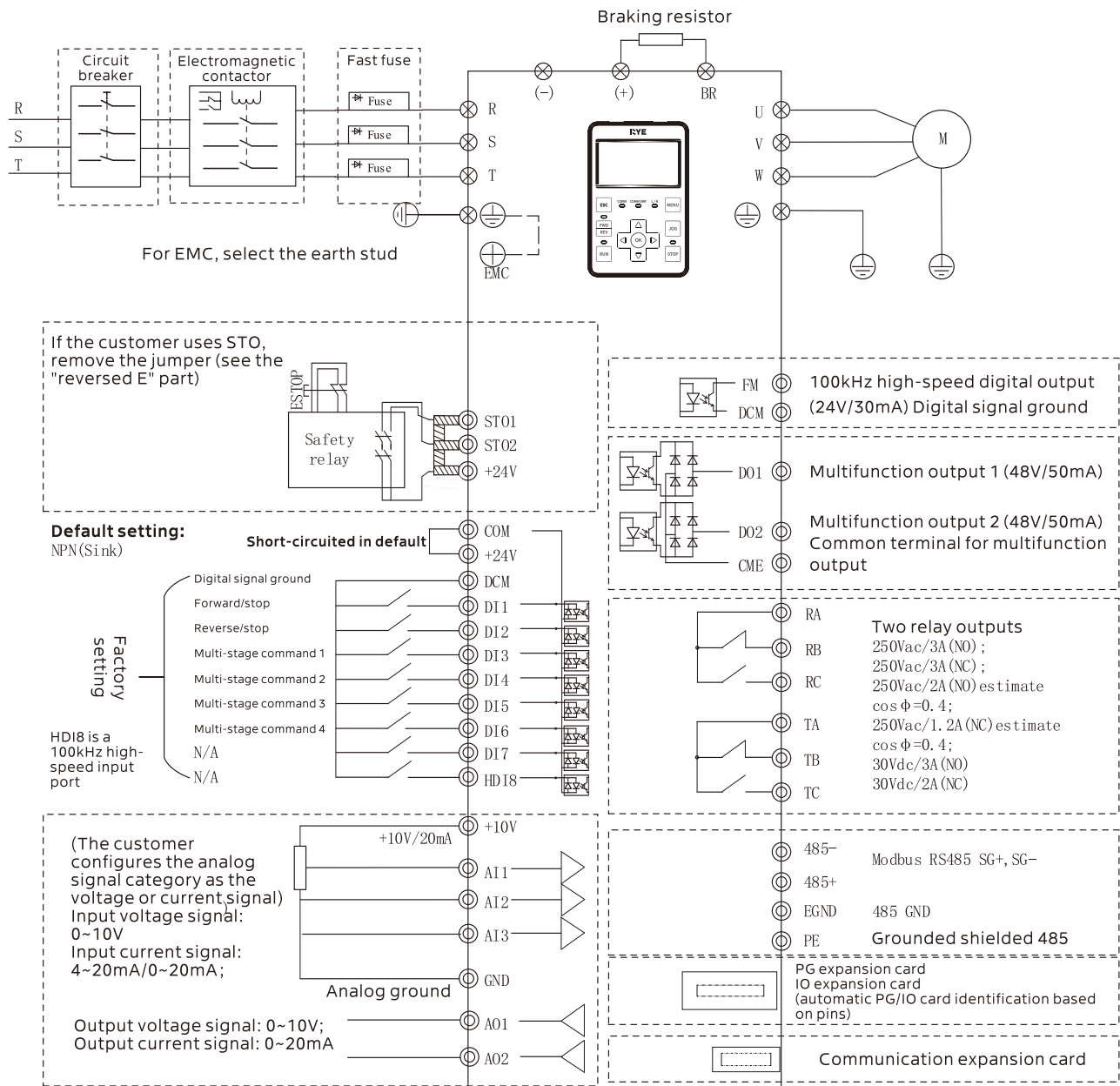
Models And Technical Parameters Of CM680 VFDs

Identification	VFD Model	Input Voltage (V)	Input Current (A)	Output Current (A)	Applicable Motor(kW)
C2	CM680-4T4R0GB	Three-phase 380V~480V Range: -15%~+10%	11.4	9.0	4.0
	CM680-4T5R5GB		16.7	13.0	5.5
	CM680-4T7R5GB		21.0	17.0	7.5
C3	CM680-4T011GB		32.0	25.0	11.0
	CM680-4T015GB		41.0	32.0	15.0
C4	CM680-4T018GB		47.0	37.0	18.5
	CM680-4T022GB		56.0	45.0	22.0
	CM680-4T030GB		72.0	60.0	30.0
C5	CM680-4T037G(B)		88.0	75.0	37.0
	CM680-4T045G(B)		110.0	90.0	45.0
C6	CM680-4T055G(B)		106.0	110.0	55.0
	CM680-4T075G(B)		139.0	152.0	75.0
	CM680-4T093G(B)		165.0	176.0	93.0
C7	CM680-4T110G(B)		190.0	210.0	110.0
	CM680-4T132G(B)		230.0	253.0	132.0
C8	CM680-4T160G		276.0	304.0	160.0
	CM680-4T185G		314.0	340.0	185.0
C9	CM680-4T200G		346.0	380.0	200.0
	CM680-4T220G		380.0	426.0	220.0
	CM680-4T250G		435.0	465.0	250.0
C10	CM680-4T280G		478.0	520.0	280.0
	CM680-4T315G		534.0	585.0	315.0
	CM680-4T355G		598.0	650.0	355.0
C11	CM680-4T400G		672.0	725.0	400.0
	CM680-4T450G		742.0	820.0	450.0

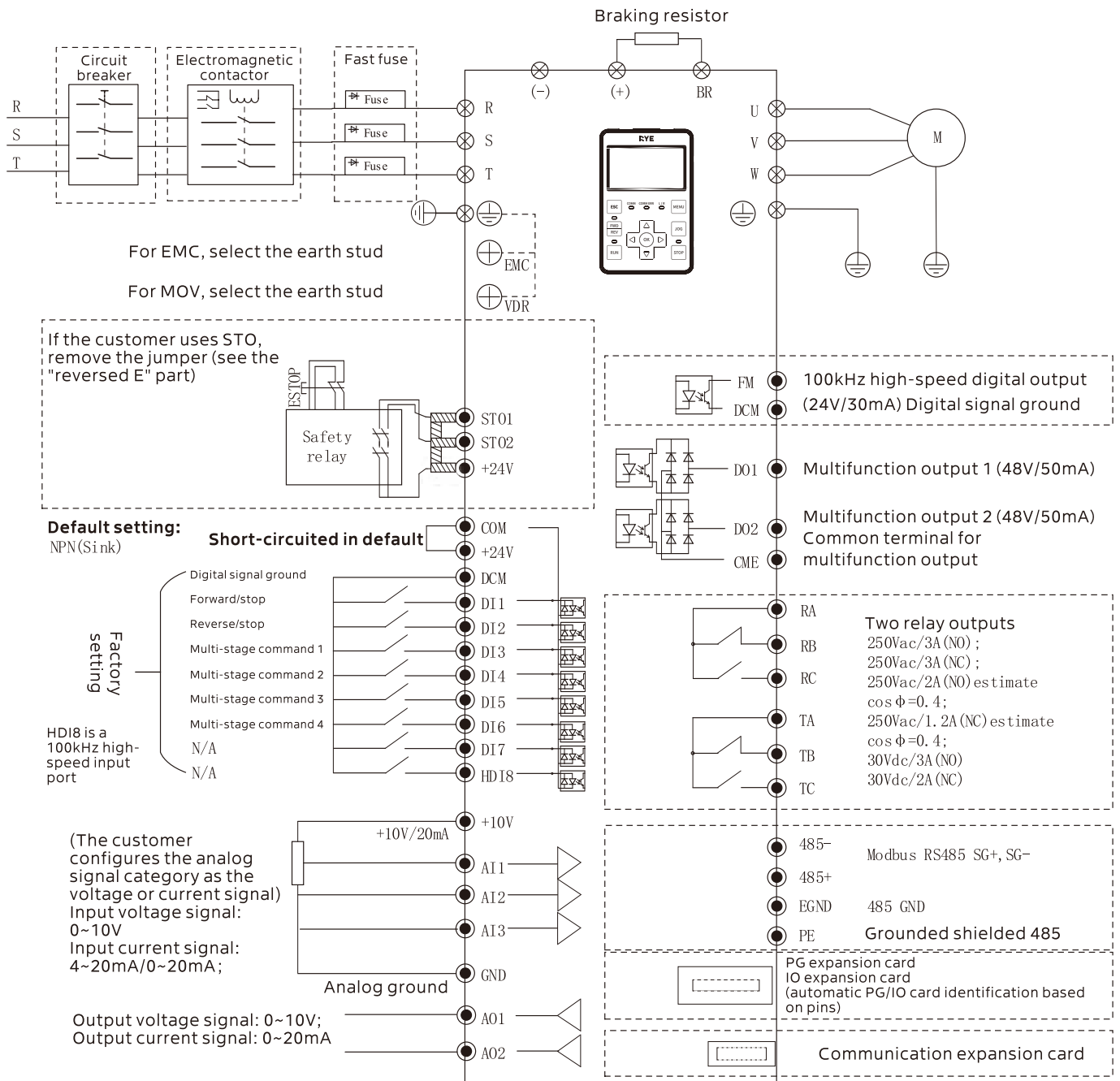
Project		Specification
Main Control Functions	Power Range	4.0kW~450kW
	Voltage Level	Three-phase 380V~480V
	Maximum Output Frequency	599.00Hz
	Carrier Frequency	7.5kW and below: 2kHz~15kHz 11kW~93kW: 2kHz~10kHz 110kW~450kW: 2kHz~6kHz Automatic carrier frequency adjustment can be done according to the load characteristics
	Input Frequency Resolution	Digital setting: 0.01Hz; Analog setting: maximum frequency × 0.025%
	Control Mode	Asynchronous motors: V/F, VVC, SVC, and FVC Permanent magnet motors: SVC, VVC, and FVC
	Starting Torque	SVC: 150% FVC: 180%
	Speed Regulationrange	SVC: 1:200 FVC: 1:1000
	Speed Stability Accuracy	SVC: ≤±0.5% FVC: ≤±0.02%
	Torque Response	Torque step response <20ms
	Torque Accuracy	SVC: ±10% FVC: ±5%
	Overload Capacity	150% of rated current(60s)
	Torque Boost	Automatic and manual torque boost modes are included
	V/F Curve	Multi-point V/F curve; liner V/F curve; square V/F curve
	Acceleration And Deceleration Curve	Linear or S-shaped acceleration/deceleration modes; Four groups of acceleration/deceleration time; Acceleration/deceleration time range: 0.00s~600.00s or 0.0s~6000.0s
	DC Braking	Start DC braking and shutdown DC braking are included (0.0s~60.0s)
	Jog Control	Jog frequency range: 0.00Hz~599.00Hz; Jog acceleration/deceleration time range: 0.00s~600.00s or 0.0s~6000.0s
	Tension Control	Four control modes are included: tension closed-loop speed mode, linear speed closed-loop speed mode, tension closed-loop torque mode, and tension open-loop torque mode
	Multi-Speed Running	Up to 16-speed running can be realized through terminals
	Built-In PID	Can easily realize closed-loop process control
Personalized Function	Peripheral Safety Self-Test	A safety test is performed on the peripherals to timely identify any problems, such as a grounding problem or a short-circuit, and improve the reliability of the system
	Common DC Bus Bar Function	A common DC bus can be shared by multiple VFDs
	JOG Key	JOG running
	Fast Current Limiting Function	A quick current limiting algorithm is embedded to reduce the probability that an overcurrent fault happens to the VFD
	Motor Parameter Identification	Automatic motor parameter identification
	Standardized Panel Extension Cable	A constant voltage output can be maintained in case of grid voltage variations
	Communication Buses	Profnet/IP, CANopen, Profibus-DP, EtherCAT, Ethernet
	Expansion Function	I/O expansion card; Multiple bus communication expansion cards; PG cards(incremental sin/cos encoder cards)
	STO	Safe torque off in case of emergency
Operation	Frequency Sources	Multiple frequency setting sources: operation panel setting, analog setting, control terminal setting, communication setting, etc.
	Auxiliary Frequency Sources	Multiple auxiliary frequency sources : operation panel setting, analog setting, control terminal setting, communication setting, etc.; auxiliary frequency fine tuning and synthesis can be flexibly realized
	Universal Terminals	Eight DI terminals (one high-speed terminal), three DO terminals (one high-speed terminal), and two relay output terminals, Three AI terminals (one supporting PT100), two AO terminals, two STO terminals, and one RS485 terminal
	Automatic Acceleration/Deceleration	Automatic acceleration/deceleration time adjustment based on the load torque
Display And Panel Operation	LCD Display	Standard: LED keyboard; Optional: LCD keyboard (Chinese/English)
	LCD Parameter Copying	Quick parameter copying can be accomplished on the LCD panel
Protections And Options	Protection Function	Motor short-circuit detection,input/output phase loss protection, overcurrent protection, overvoltage protection, undervoltage protection, overtemperature protection, overload protection, etc.
	Options	Brake assembly
Environment	Place	Indoor, free from direct sunlight, dust,corrosive gas, flammable gas, oil mist, water vapour,dripping water or salt, etc.
	Altitude	No derating is required for use below 1000m. For altitudes above 1000m, derating is 1% or 5 degree centigrade for every 100m increase. The maximum operating altitude is 2000m. Please contact the manufacturer if the altitude exceeds 2000m.
	Ambient Temperature	-10°C~50°C (C261EC61800-5-1: 2017When the ambient temperature is above 40°C, the derating rate is reduced by 2% for every 1°C increase)
	Humidity	<95%(RH), No condensation
	Vibration	<5.9m/s ² (0.6g)
	Storage Temperature	-20°C ~ +60°C
	Pollution Degree	2
	Protection Degree	IP20

Type	Name	Model	
Keyboard	External LCD operation panel	CM680-LCD	
Encoder Card	ABZ encoder card	EMH-PG1	
	Rotary encoder card	EMH-PG2	
Communication Bus Card	CANopen	EMH-OP	
	PROFIBUS-DP	EMH-DP	
	PROFINET	EMH-PN	
	EtherNet/IP	EMH-EN	
	EtherCAT	EMH-EC	

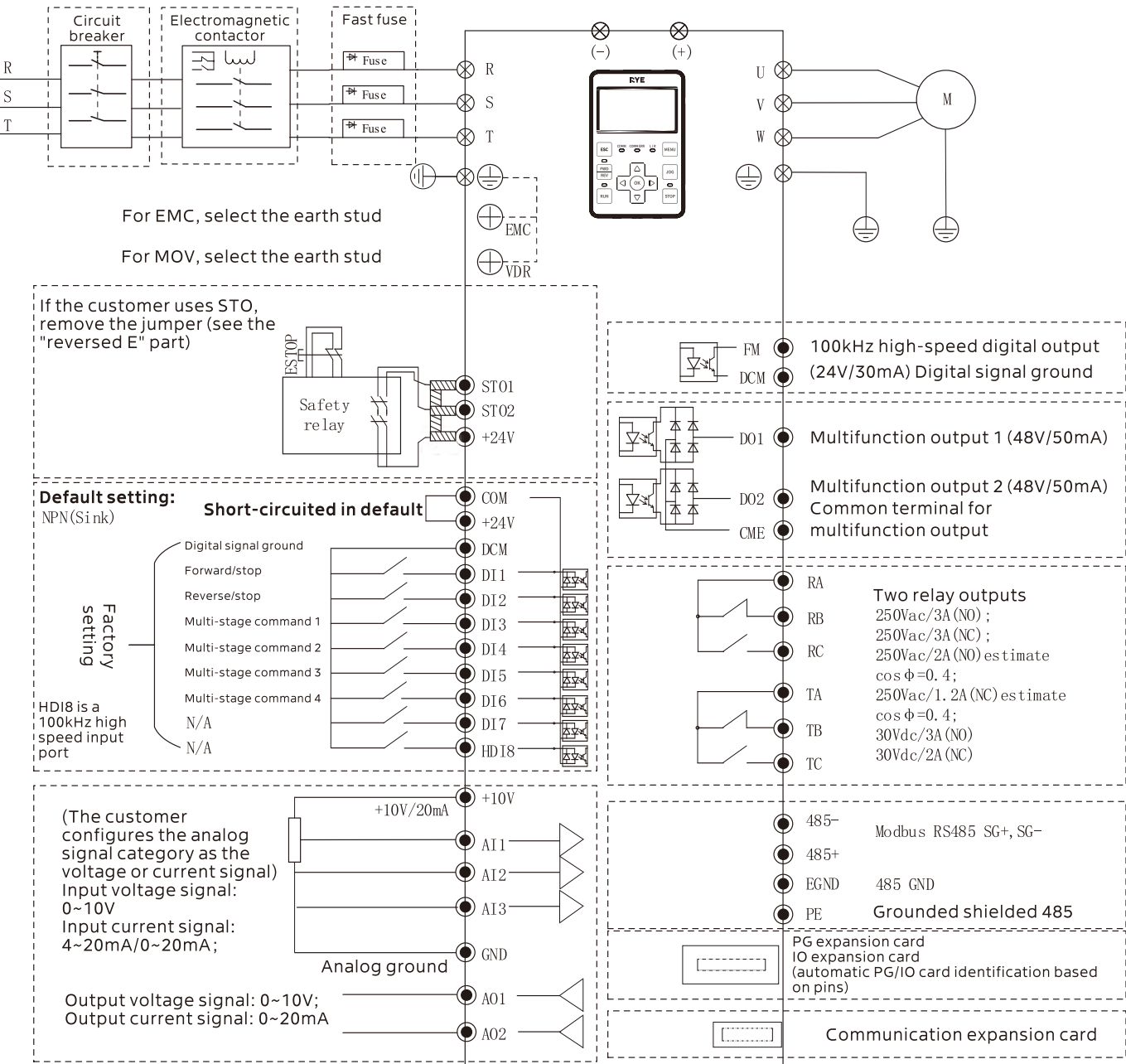
4.0kW~7.5kW Three-phase VFDs

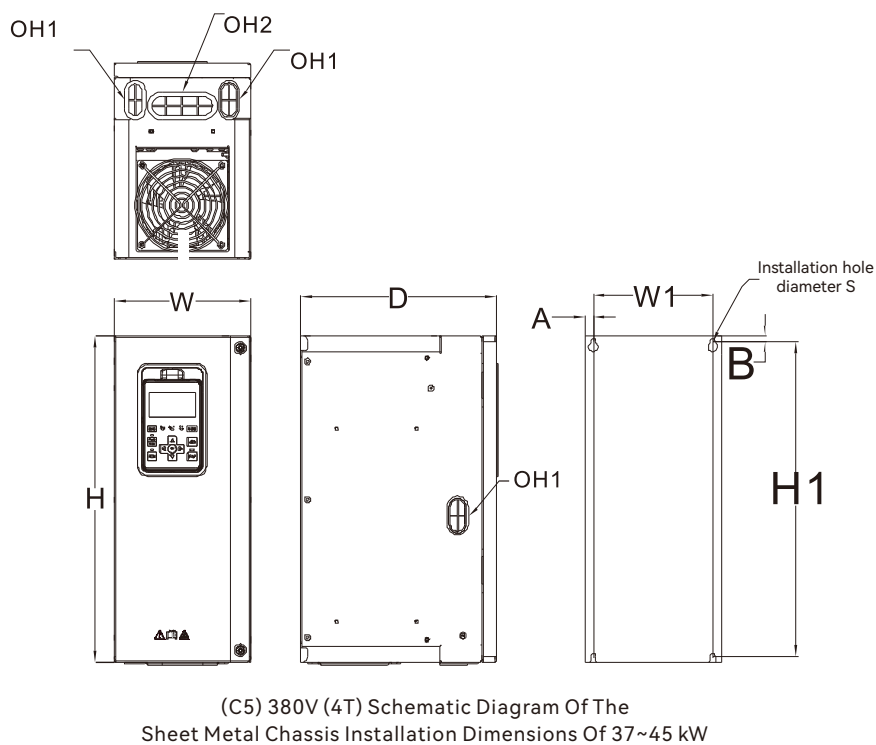
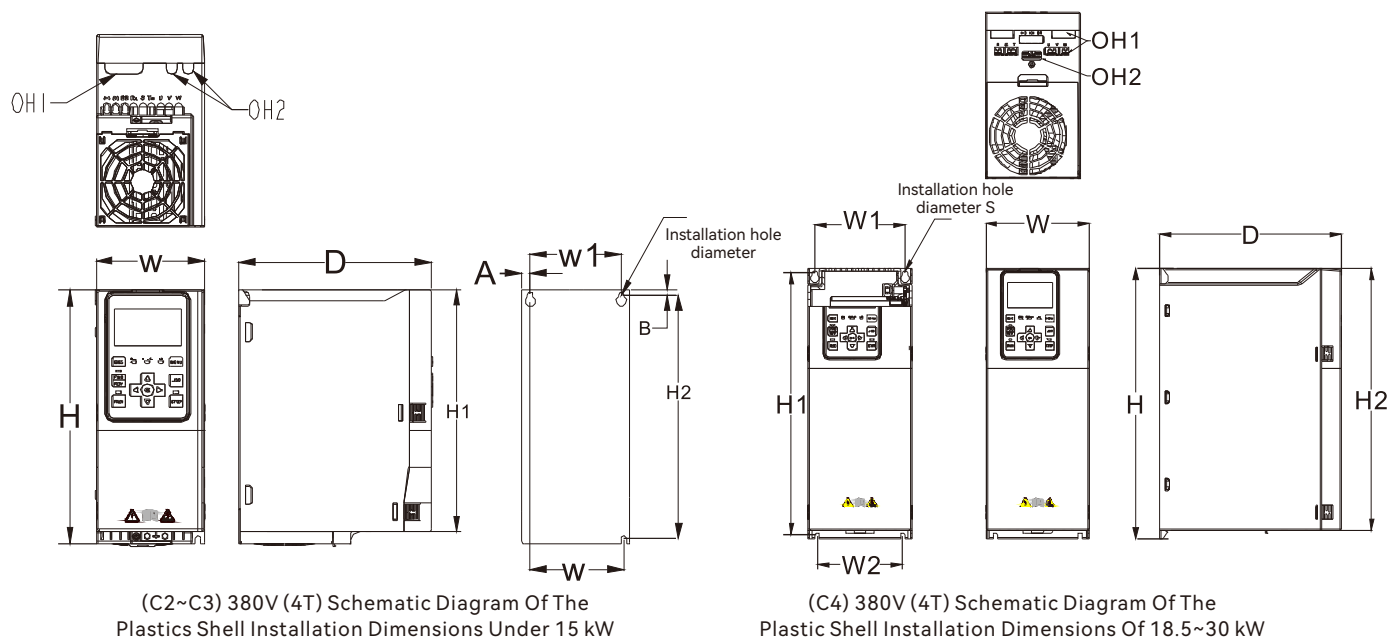


11kW~132kW Three-phase VFDs



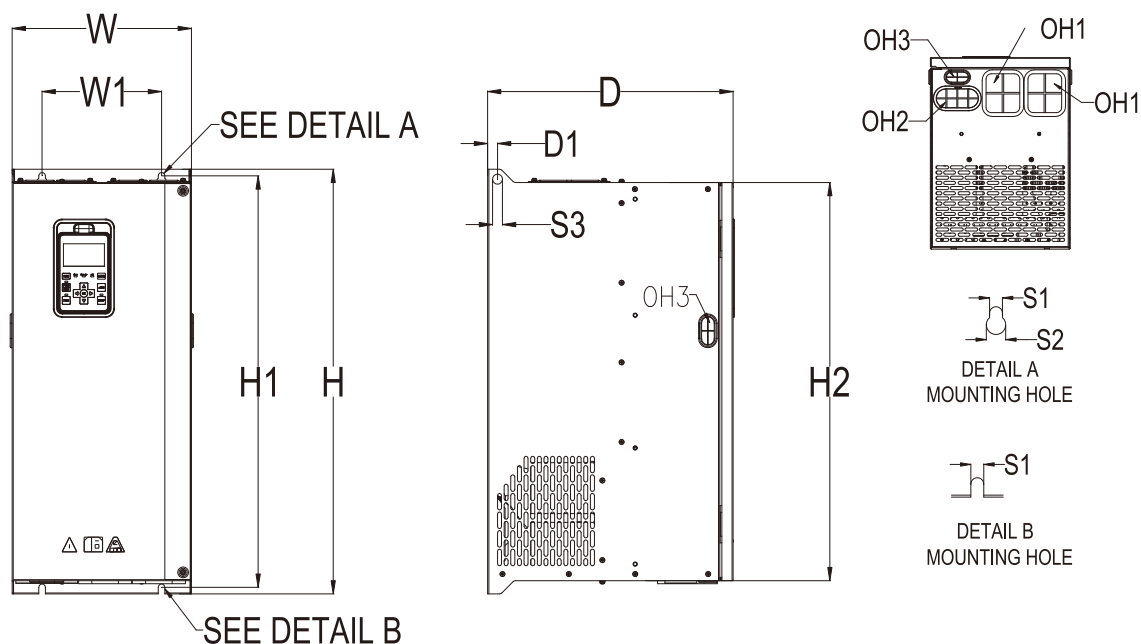
160kW~450kW Three-phase VFDs





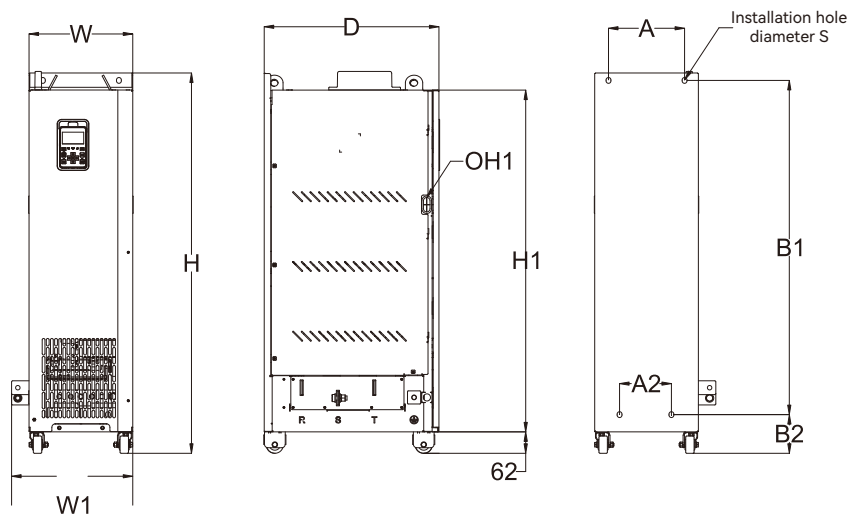
The External Dimensions And Installation Hole Position Dimensions Of CM680(C2~C5)(mm)

Structure	W	W1	W2	H	H1	H2	D	B	Installation Hole Diameter	OH1 (Wiring Hole)	OH2 (Wiring Hole)	Net Weight
C2	100	84	86	235	224	225	178	5	5	35*10	10*10	2kg
C3	118	100	102	320	307	308	200	6	6	35*10	10*10	3.5kg
C4	140	122	115	365	354	354	245	5.5	6	36*12	30*12	6kg
C5	180	158	×	430	416	×	260	7.5	7	46*23	85*30	13kg



(C6~C8)380V(4T)Schematic Diagram Of The Installation Dimensions Of 55~185kW

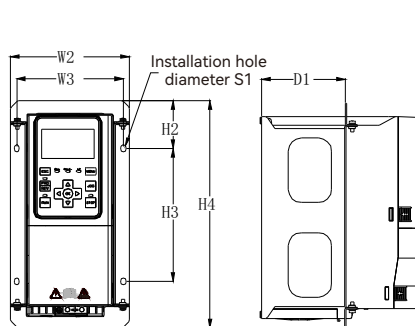
Structure	W	W1	H	H1	H2	D	D1	Installation Hole Diameter S1	S2	S3	OH1	OH2	OH3	Net Weight
C6	250	170	593	573	553	362	15	9	14	15	70*80	Φ30	46*23	47.5kg
C7	270	180	640	620	600	370	15	10	15	15	70*80	85*38	46*23	49.5kg
C8	290	190	780	764	730	425	17.5	9	14	15	70*80	85*38	46*23	80.5kg



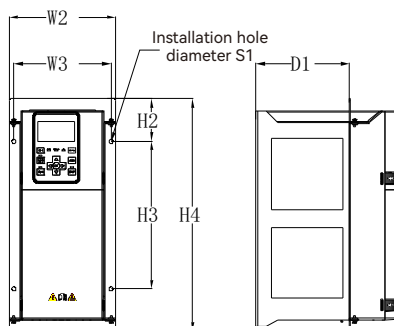
(C9~C11) 380V (4T) Schematic Diagram Of The Installation Dimensions Of 200~450kW

Structure	W	H	W1	D	H1	A1	B1	B2	A2	OH1	Installation Hole Diameter S	Net Weight
C9	300	1101	350	506	990	220	968	112	150	46*23	14*17	121.5kg
C10	340	1248	390	545	1135	246	1111	115	147	46*23	17*20	167.5kg
C11	340	1389	400	545	1286	246	1262	115	180	46*23	17*20	207.5kg

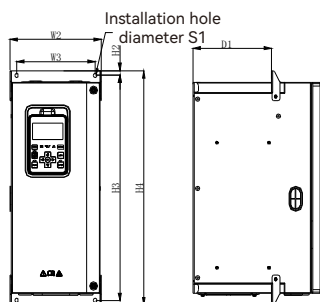
C2-C8 Through-Wall Installation Dimensions



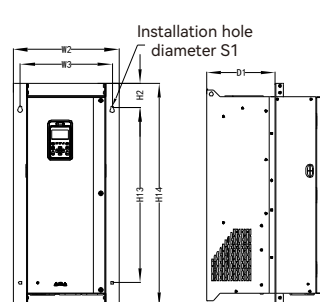
(C2~C3) The dimensions of the wall-penetrating installation holes for CM680 VFDs under 15kW



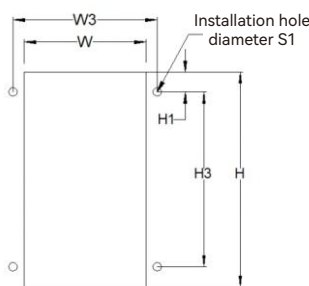
(C4) The dimensions of the wall-penetrating installation holes for CM680 VFDs 18.5~30kW



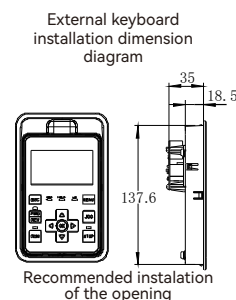
(C5) The dimensions of the wall-penetrating installation holes for CM680 VFDs 37~45kW



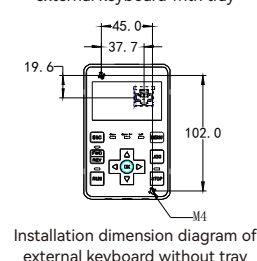
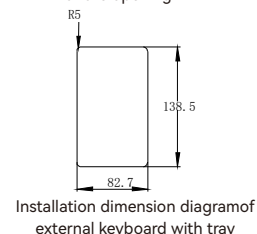
(C6-C8) The dimensions of the wall-penetrating installation holes for CM680 VFDs 55~185kW



Wall-penetrating installation diagram



Recommended installation of the opening



The Dimensions Of The Wall-Penetrating Installation Holes For CM680 VFDs Under 185kW

Model	Installation Hole Position			The Through-Wall Opening Size		Installation Hole Diameter S1(mm)
	W3(mm)	H1(mm)	H3(mm)	H(mm)	W(mm)	
CM680-4T4R0GB	124	41.5	155	241	108	φ5
CM680-4T5R5GB						
CM680-4T7R5GB						
CM680-4T011GB	142	43.5	240	327	126	φ6
CM680-4T015GB						
CM680-4T018GB						
CM680-4T022GB	165	53.5	250	368	148	φ7
CM680-4T030GB						
CM680-4T037GB						
CM680-4T037G	160	11	458	440	185	φ7
CM680-4T045GB						
CM680-4T045G						
CM680-4T055GB	287	22	553	597	254	φ10
CM680-4T055G						
CM680-4T075GB						
CM680-4T075G	300	72	500	644	274	φ10
CM680-4T093GB						
CM680-4T093G						
CM680-4T110GB	330	67	650	784	294	φ10
CM680-4T110G						
CM680-4T132GB						
CM680-4T132G	330	67	650	784	294	φ10
CM680-4T160G						
CM680-4T185G						

Your Trusted Partner In Intelligent Automation Solutions



CHANGSHA SUNYE ELECTRIC CO.,LTD.

HotLine: 0731-89932666

400-0755-731

E-mail: sales@cssunye.com

info@cssunye.com

WhatsApp: +86152 7327 6875 / +86138 6879 5229

Address: No.669, Xincheng Road, Yuelu District, Changsha City, China.

Website: www.cssunye.com

