ANDELI

Базовый преобразователь частоты

200G Series Inverter



By Industry

Packaging Machinery
Food Machinery
Textile Machinery
Cutting Machine
Roots Blower
Pump
Fan
Etc.



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Product Overview

200G Series has the following general functions:

1) Various voltage levels: it supports three voltage levels — single phase 220V, three phase 220V, and three phase 380V.
2) Rich control methods: in addition to the speed sensor vector control, sensorless vector control, V/F control, it also supports V/F separation control.
3) Optional field bus: it supports two kinds of bus — Modbus–RTU and CANlink.
4) Rich types of encoders: it supports differential encoder, open collector encoder, rotary transformer, etc..
5) Brand new sensorless vector control algorithm
The new SVC (sensorless vector control) brings better low–speed stability, stronger low–frequency load capacity, and the support for SVC torque control.
6) Strong background software: the background software can achieve the frequency converter parameters of the upload, download, real–time oscilloscope and other functions.



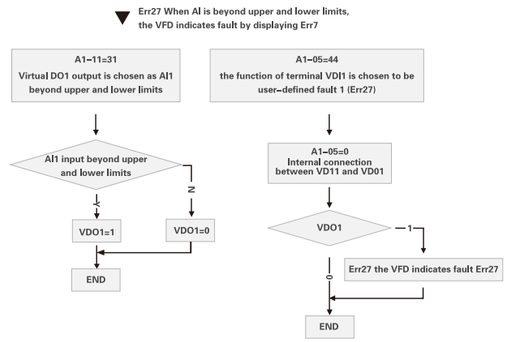
Power rate range: 0.75kW~400kW

Functional Features

Function	Description
Restore user parameters	This function supports the customer to save or restore the parameters of its own settings
Display of customized parameters	Functional parameters to be displayed for user customization
Display of revised parameters	The user can view the modified function parameters
Fault processing options	According to the needs, the user can determine the operating mode of the frequency converter after a specific fault occurs: free stop, deceleration, stop, and continue to run. It is also possible to choose the frequency of the continuing operation.
PID parameter switching	There are two sets of PID parameters, which can be switched by terminal switch or according to the deviation.
PID feedback on loss detection	Setting the PID feedback on loss detection value to realize the protection of the PID during the running.
DIDO positive and negative logic	User–set positive and negative logic of DIDO
DIDO response delay	The user sets the DIDO response delay time.
Run timing	Support timing maximum 6500 minutes for runnning.
Wireless remote control	The extended wireless module is used to set and control the remote parameters.
DIDO response delay	The user sets the DIDO response delay time.
Run timing	Support timing maximum 6500 minutes for runnning.
Wireless remote control	The extended wireless module is used to set and control the remote parameters.

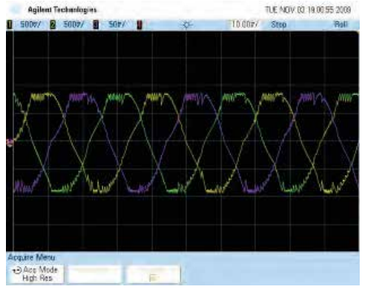
Virtual IO function

5 groups of virtual DIDO can be set. The status of terminal DI can be given directly by functional code or bound to corresponding Virtual DO function.



Fast current limiting function

Fast current limiting function can avoid frequent overcurrent alarm of the VFD. When the current exceeds the current protection point, the fast current limiting function can quickly limit the current to the current protection point, so as to protect the device and avoid overcurrent alarm caused by sudden load or interference.

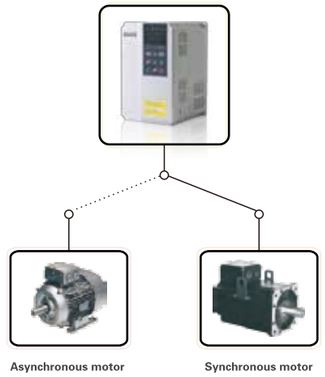


Nonstop at instant outage

This function means that the VFD will not stop at the time of power outage. In case of instantaneous power failure or sudden voltage drop, the VFD reduces output speed and compensates the voltage reduction by feedback energy, so as to maintain the inverter running in a short time.

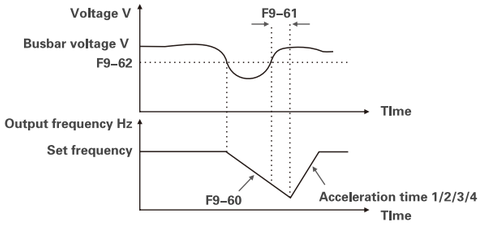
Multi motor switching

With 4 sets of motor parameters, the switching control among 4 motors or between synchronous motor and asynchronous motor can be realized.



Flexible and practical analog input / output port

Each analog input (A11A13) is set respectively for 4 points of the curve, more flexibly in use.
AI1–AI3 can be corrected by factory before delivery or calibrated by user of the linear curve, and the accuracy after calibration is up to 20mV.
AO can be corrected by factory before delivery or calibrated by user of the linear curve, and the accuracy after calibration is up to 20mV.
A11–A13 can be used as a DI.
A13 is an isolated input port, which can be used as a PT00, PT1000 or + 10V input port.



Technical specifications

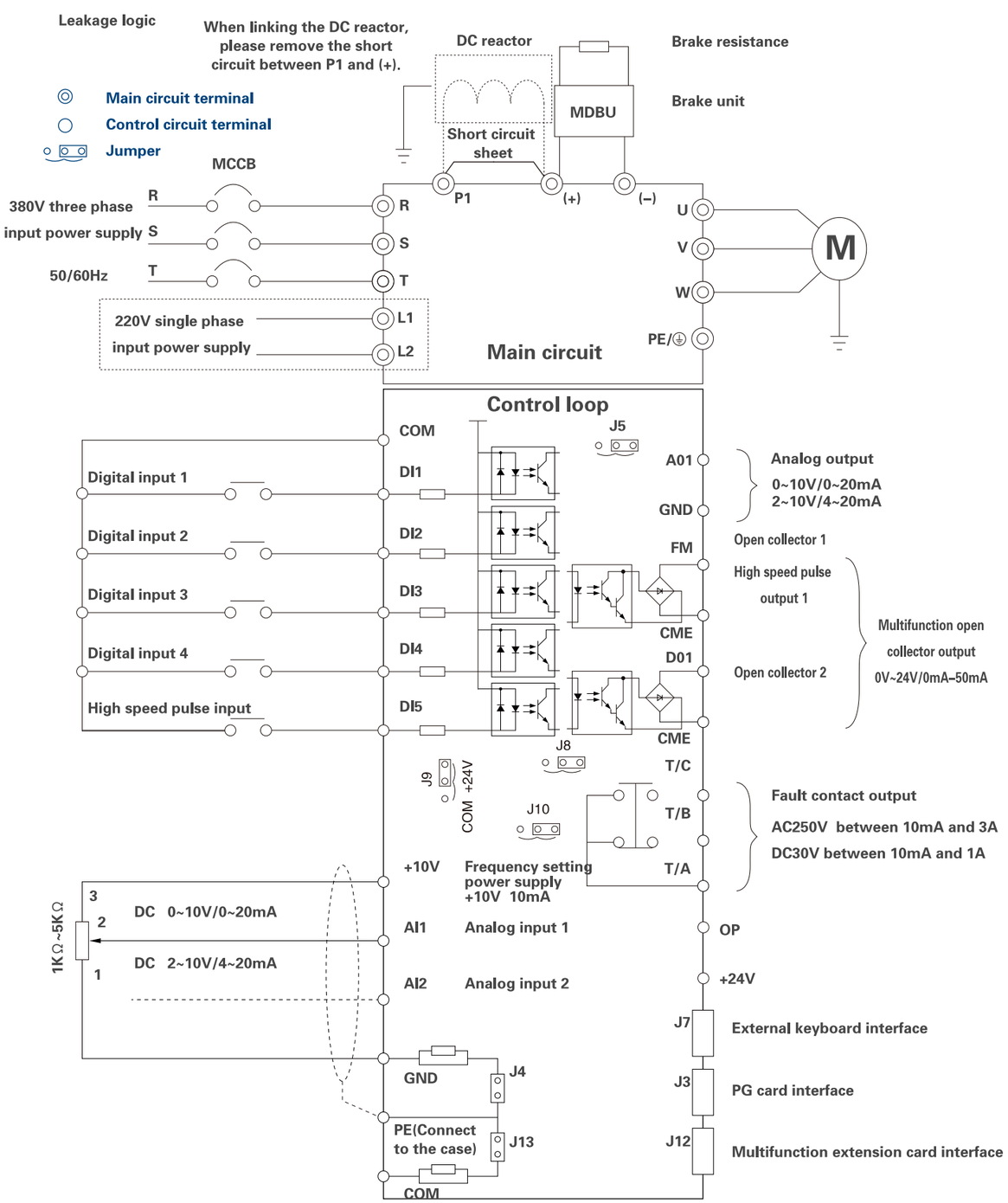
Item	Specifications	
Maximum frequency	Vector control：0–300Hz	
	V/F control：0–3200Hz	
Carrier wave frequency	0.5kHz – 16kHz	
	The carrier frequency can be automatically adjusted according to the load characteristics	
Input frequency resolution	Digital setting：0.01Hz	
	Analog setting: maximum frequency × 0.025%	
Control mode	Open loop vector control (SVC)	
	Closed loop vector control (FVC)	
Starting Torque	Type G machine：0.5Hz／150%（SVC）；0Hz／180%（FVC）	
	Type P machine：0.5Hz／100%	
Speed adjusting range	1:100(SVC)	1:1000(FVC)
Accuracy of speed stability	±0.5%（FVC	±0.02%（FVC）
Accuracy of torque control	±5%（FVC）	
Overload capability	Type G machine: 150% the rated current ,60s; 180% the rated current, 3s.	
	Type P machine: 120% the rated current, 60s; 150% the rated current, 3s.	
Torque lifting	Automatic torque lifting; Manual torque lifting 0.1% – 30.0%	
V/F curve	Three types: straight line type; multipoint type; N sub square V/F curve	
V/F Separation	Two types: full separation, semi separation	
Acceleration and deceleration curve	Straight line mode or acceleration and deceleration S curve mode. Four kinds of acceleration and deceleration time.	
	Acceleration and deceleration time range 0.0–6500.0s	
DC brake	DC braking frequency: 0.00Hz –maximum frequency	
	Braking time: 0.0s–36.0s brake action	
	Current value: 0.0%100.0%	
Point dynamic brake	Point moving frequency range：0.00Hz–50.00Hz	
	Point motion acceleration and deceleration time :0.00s–6500.0s	
Simple PLC, multi speed	Up to 16 segments of speed operation through built–in PLC or control terminal	
Build–in PID	A closed loop control system for convenient realization of process control	
Automatic voltage regulation	When the voltage of the power grid is changed, the output voltage can still be kept	
Control of over–voltage, overflow and stall.	Automatic limit of current and voltage during operation to prevent tripping off for frequent overflowing or over voltage.	
Fast current limiting function	Minimize overcurrent failure and protect the normal operation of the frequency converter.	
Torque limit and control	Excavator characteristics are to limit the torque automatically during the operation and prevent frequent overcurrent tripping, and the closed loop vector mode can realize torque control.	

	Item	Specifications
Operations	Command source	It can monitor the internal state of the inverter, control the terminal and the serial communication port. It can be switched in a variety of ways.
	Frequency source	10 frequency sources: a given number, a given analog voltage, a given pulse, a given serial port. It can be switched in a variety of ways.
	Auxiliary frequency source	10 kinds of auxiliary frequency sources. It can flexibly realize the auxiliary frequency tuning and frequency synthesis.
	Input terminal	Standard：]
		5 digital input terminals, 1 of which supports high speed pulse input up to
		2 analog input terminals, 1 of which only supports 0–10V voltage input.
		1 support 0–10V voltage input or 4–20mA current input
		[Expansion capacity:]
		5 digital input terminals
		1 analog input terminals support 0–10V voltage input.
	Output terminal	[Standard：]
		1 high speed pulse output terminals (optional open collector type)
		Support output of square wave signal of 0–100kHz
		1 digital output terminal
		1 relay output terminal
		1 analog output terminal that supports current output of 0–20m or voltage output of 0–10V.
		[Expansion capacity:]
		1 digital output terminal
		1 relay output terminal
		1 analog output terminal that supports current output of 0–20m or voltage
Using environment	Places of use	Indoor, free from sunlight, no dust, corrosive gases, flammable gases, oil mist, water vapor, drip or salt, etc.
	Altitude	Lower than 1000 meters.
	Ambient temperature	– 10 ° C – + 40° C (Derated if used at the ambient temperature of 40° C – 50° C)
	Humidity	Less than 95%RH, without water condensing.
	Vibration	Less than 5.9m/s2 (0.6g)
	Storage temperature	–20° C—+60° C

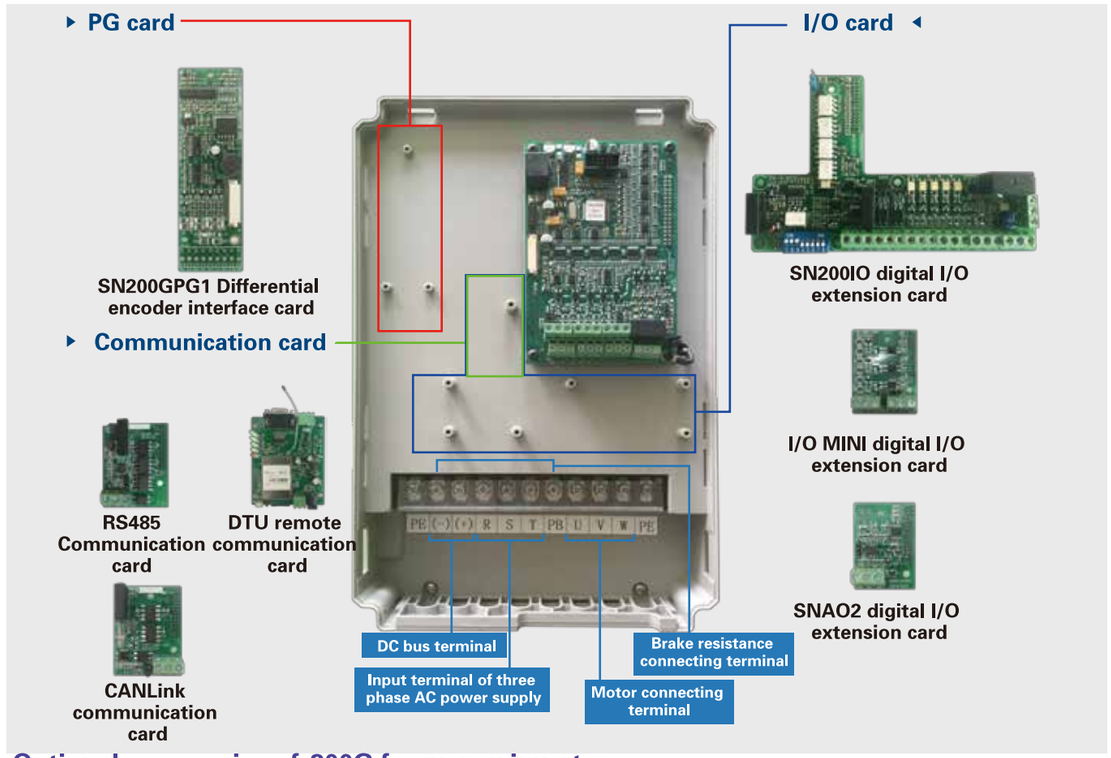




Product wiring diagram



Extension components



Optional accessories of 200G frequency inverter

Item	Model	Function	Mark
External brake unit	SNBU	External brake unit of 18.5kW and above	Multi parallel connection is adopted above 75KW
Multi function extension card	SN200GPC1	Five digital inputs can be added,one analog voltage input AI3 for isolated analog PT100, PT1000, one relay output, one digital output, one analog output, with RS485/CAN	Suitable for 3.7KW and above models
I/O extension card	SN200GIO1	Three digital inputs can be added	Suitable for the full range of models
MODBUS communication card	SN485TX1	RS 485 communication adapter with isolation	Suitable for the full range of models
CANLink communication card	SN200GCAN1	Differential rotary encoder interface card, adaptable to 5V power supply	Suitable for the full range of models
Differential encoder interface card	SN200GPG1	Suitable for rotary encoder interface card, adaptable to 5V power supply	Suitable for the full range of models
Rotary transformer interface card	SN200GPG2	It is suitable for rotary encoder, excitation frequency 10Hz, interface DB9.	Suitable for the full range of models
Open collector encoder interface card	SN200GPG3	Open collector encoder interface card with 1:1 frequency output, 15V power adapter	Suitable for the full range of models
External LCD operation panel	SNKE	External LCD display and operation keyboard	Suitable for SN general series
Extended cable	SNCAB	Outer elongation line	Standard 3 meters
Remote communication card	SNDTU	3G / 4G wireless remote control module	Suitable for 3.7KW and above models
Output relay extension card	/	Expandable multifunction relay output	/
Water supply card	/	Constant pressure water supply control of multichannel water pump	/
Injection card	/	Special control card for injection molding machine	/

Terminal descriptions

1） Main Circuit terminal description for single–phase frequency inverter

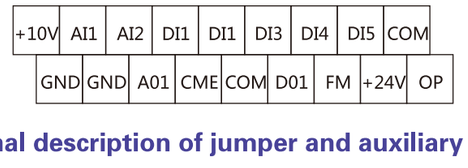
Terminal marking	Name	Description
L1, L2	Input terminal of single–phase power	Contact poin of single–phase 220V AC power
(+), (–)	Positive/negative terminals of DC bus	Input point of DC bus
(+), PB	Connection terminal of brake resistance	Connect brake resistance
U, V, W	Output terminal of convertor	Connect three–phase motor
PE\⏚	Earthing terminal	Earthing terminal

2）Main Circuit terminal description for three–phase frequency inverter

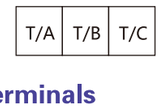
Terminal marking	Name	Description
R、S、T	Input terminal of three–phase power	Connection point of AC input three–phase power
(+), (–)	Positive/negative terminals of DC bus	Input point of DC bus and brake unit
(+), PB	Connection terminal of brake resistance	Connect brake resistance
P1, (+)	Connection terminal of external DC reactor	Connection point of external DC reactor
U, V, W	Output terminal of convertor	Connect three–phase motor
PE\⏚	Earthing terminal	Earthing terminal

Control terminals and connecting wiring

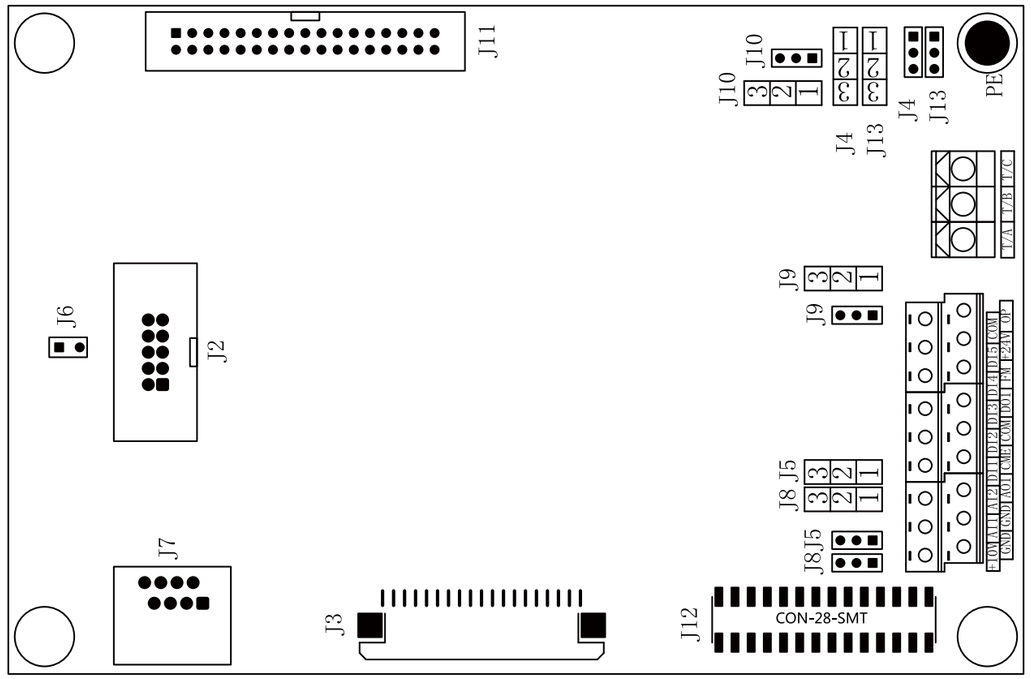
The terminal layout of the control loop is shown as the below diagram:
(Note: there is no short contact between 200G converter CME and COM, OP and + 24, and the user selects CME and OP connection mode respectively through J10 and J).



Control circuit terminal layout

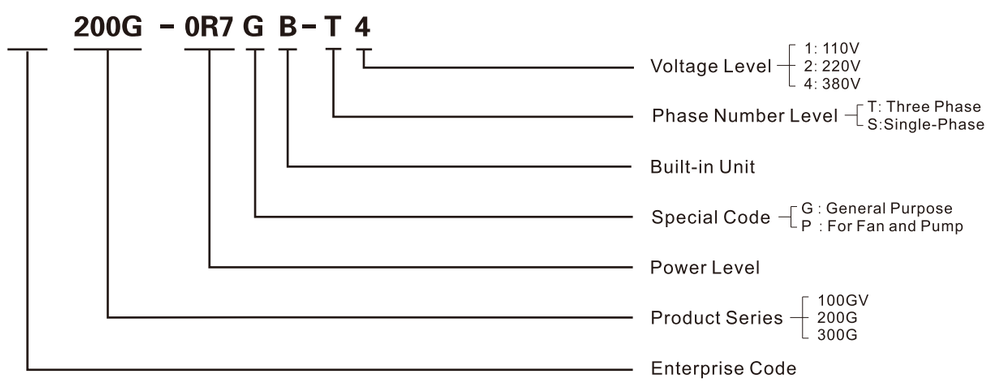


Functional description of jumper and auxiliary terminals

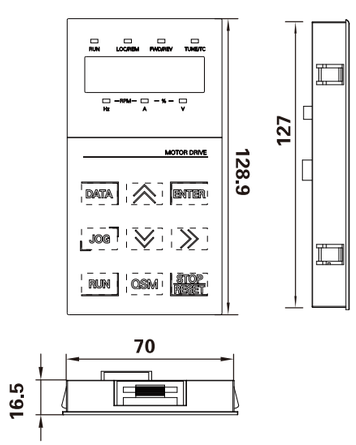


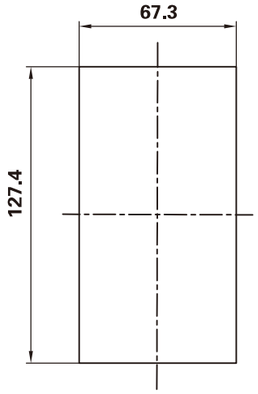
Jumper marking		Name	Description
Auxiliary terminal	J12	Multi–function expansion card port	28–core terminal, connect with optional cards (I/O expansion card,PLC card, various bus cards, etc)
JUMPER	J4	Select jumper to connect PE and GND	Select if PE connects with GND. In the occasion with interference, connect PE with GND to enhance anti–interference. No connection by default. (As shown in Figure 3–6, short circuit of 1–2 is connection between PE and GND, short circuit of 2–3 is no connection between PE and GND)
	J3	PG card port	Optional: OC, differentiation, rotary transformer, etc
	J7	External keyboard port	External keyboard
	J13	Select jumper to connect PE and GND	Select if PE connects with GND. In the occasion with interference,connect PE with GND to enhance anti–interference. No connection by default. (As shown in Figure 3–6, short circuit of 1–2 is connection between PE and GND, short circuit of 2–3 is no connection between PE and GND)
	J5	AO1 analog output selection	Decide output type of analog output terminal AO1 is voltage or current output. Voltage output by default. (As shown in Figure 3–6, short circuit of 1–2 is voltage output, short circuit of 2–3 is current output) Output voltage range: 0V–10V Output current range: 0mA –20mA
	J8	AI2 analog input selection	Decide input type of analog input terminal AO1 is voltage or current input. Voltage input by default. (As shown in Figure 3–6, short circuit of 1–2 is voltage input, short circuit of 2–3 is current input) Input voltage range: DC 0V–10V Input current range: 0mA –20mA
	J9	Connection selection of OP terminal	OP terminal connects +24V or COM through J9 jumper. +24V connection by default. (As shown in Figure 3–6, short circuit of 1–2 is OP and +24V connection, short circuit of 2–3 is OP and COM connection) If using external signal to drive DI1~DI5, OP needs to connect with external power, and pull out J9 jumper
	J10	Select jumper to connect CME and COM	Select if CME connects with COM. No connection by default. (As shown in Figure 3–6, short circuit of 1–2 is connection between CME and COM, short circuit of 2–3 is no connection between CME and COM)

Model Descriptions

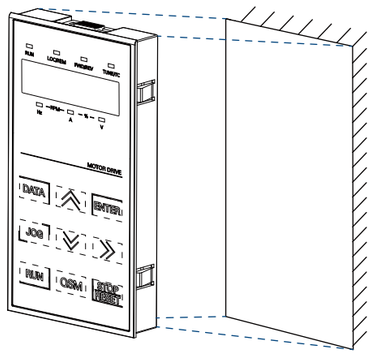


Terminal descriptions





Display plate opening diagram

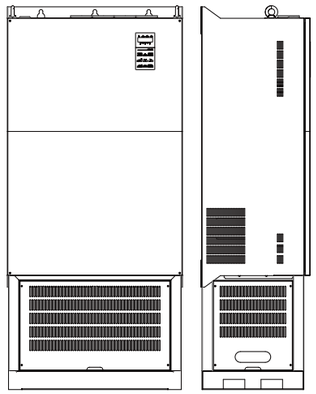


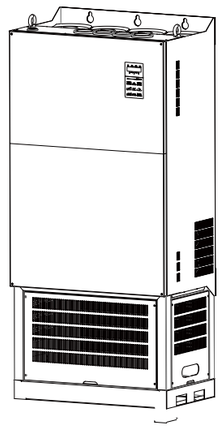
Panel installation diagram

Reactor

The reactor can change the power factor, avoid the damage to the rectifier bridge caused by large capacity transformer inputting too big current. It can avoid the damage to the rectifier circuit caused by the sudden change of the voltage of the power grid or the harmonic produced by the phase control load.

Frequency inverter model	DC reactor	Output reactor
SN200G–7R5G/011P–4	—	OCL2–7R5–4
SN200G–011G/015P–4	—	OCL2–011–4
SN200G–015G/018P–4	—	OCL2–015–4
SN200G–018G/022P–4	—	OCL2–018–4
SN200G–022G/030P–4	—	OCL2–022–4
SN200G–030G/037P–4	—	OCL2–030–4
SN200G–037G/045P–4	DCL2–037–4	OCL2–037–4
SN200G–045G/055P–4	DCL2–045–4	OCL2–045–4
SN200G–055G/075P–4	DCL2–055–4	OCL2–055–4
SN200G–075G/090P–4	DCL2–075–4	OCL2–075–4
SN200G–090G/110P–4	DCL2–090–4	OCL2–090–4
SN200G–110G/132P–4	DCL2–110–4	OCL2–110–4
SN200G–132G/160P–4	DCL2–132–4	OCL2–132–4
SN200G–160G/185P–4	DCL2–160–4	OCL2–160–4
SN200G–185G/200P–4	DCL2–200–4	OCL2–200–4
SN200G–200G/220P–4	DCL2–200–4	OCL2–200–4
SN200G–220G/250P–4	DCL2–250–4	OCL2–250–4
SN200G–250G/280P–4	DCL2–250–4	OCL2–250–4
SN200G–280G/315P–4	DCL2–280–4	OCL2–280–4
SN200G–315G/350P–4	DCL2–315–4	OCL2–315–4
SN200G–350G/400P–4	DCL2–350–4	OCL2–350–4
SN200G–400G–4	DCL2–400–4	OCL2–400–4
SN200G–500G–4	DCL2–500–4	OCL2–500–4





ANDELI

High–performance Vector Inverter



200G Series Inverter

Super expansion capability. It can extend three lines of relay input, two analog inputs, and up to nine sets of digital outputs.

A variety of communication protocol supports, Canlink, Modbus and etc.

High–end Configuration, top branded components:
Infineon / Fuji IGBT
Cornell Dubilier / Jianghai Capacitor
American TI IC
KOHSHIN / LEM Sensor
German Epcos Capacitor

32 bit DSP master chip supplied by American TI.

SVC support. High performance of closed loop vector control.

Excellent Heat Dissipation