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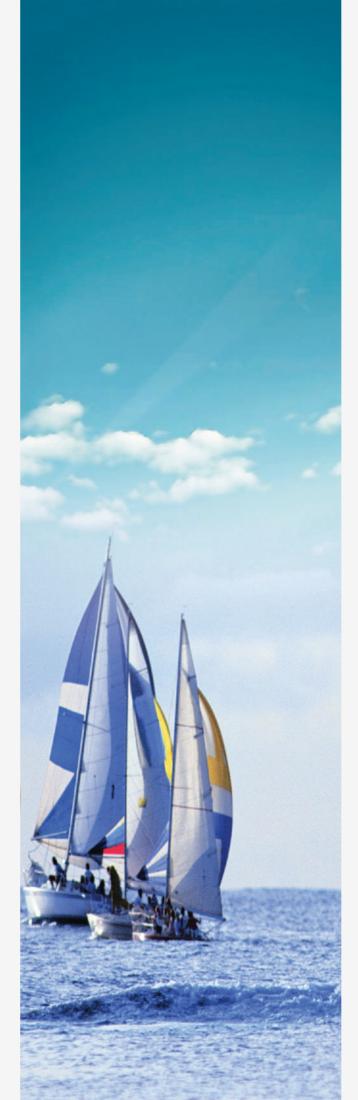


COMPANY PROFILE

SINOVO, established in 2006, is committed to be globally leading provider for products and service of industrial automation and new energy. We are specialized in the products of AC Drive, Electric vehicle motor controller, Solar Inverter, Servo and soft starter, etc, which are widely used in machine tools,textiles, packaging, printing, plastics, paper making, pharmaceuticals, oil field, chemicals, elevator, crane, cables, ceramics, building automation, Fans & Water pumps, vehicles, rail traction and other fileds.

SINOVO has set up more than 30 offices domestically and internationally including 200 employees, and one-third of them are R&D professionals. With 10 years of developing and marketing a consolidated sales and after-sales service network has been established nation widely which can provide customers with solutions, technological training and specialized support and now we are ready to bring our professional products and service to the international market.

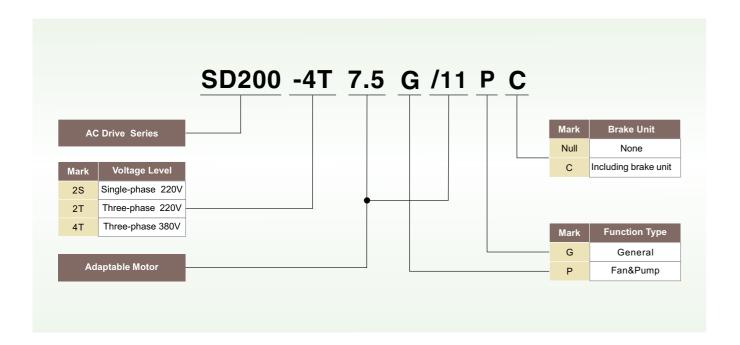
SINOVO has received more than 10 fiscal incentives and policy support in energy saving and environment protection, technology development and advanced manufacturing from Shenzhen Municipal Government and also Baoan administrative District over the years by the virtue of leading capacity of independent innovation, and also registered more than thirty invention patents, utility model patents, appearance patents, and Software copyright patents inSIPO(State Intellectual Property Office). We've passed ISO9001: 2008 quality management system certification, CE certification, awarded the National Innovation Fund, Shenzhen High-tech research subsidies, product Innovation Award and so on. "Innovation" is the soul we strive for, "Customer first, honesty and integrity, hand in hand advance together, win-win cooperation" is the business philosophy we stick in, we are destined to improve ourselves, to serve customers, to contribute society, to build a better earth with our technology strength.



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Naming Rules



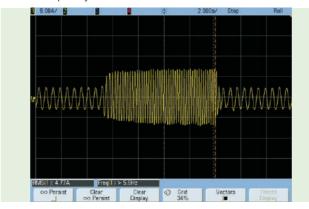
Nameplate



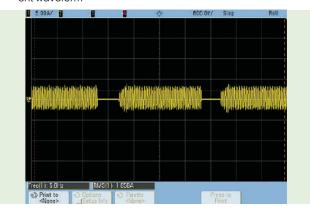
Product Features

Features and Functions

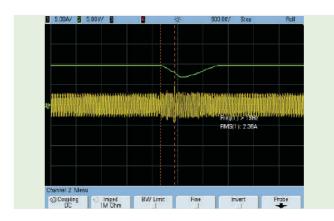
Low frequency and large torque output, VF control mode, under low frequency of 1 Hz 150% load current waveform



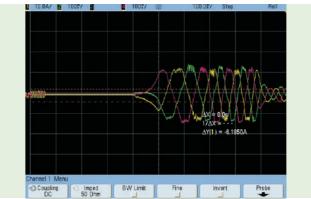
Open-loop vector control mode, under 0.5 Hz 150% load current waveform

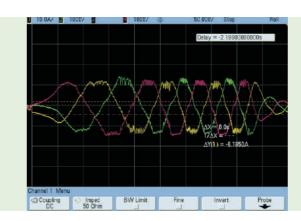


Load feedback energy compensates the voltage reduction so that the AC drive can continue to run in a short time in case of power interruption. When the power input normal, it return to normal operation.



Fast and effective hardware current limiting technology, when the current of each phase is greater than the limit value during detecting, the logic circuit in the 5uS forced to close the PWM output to complete the wave limit control. The following figure is the motor rotor under high speed rotation start-up and threephase current hardware current-limiting waveform



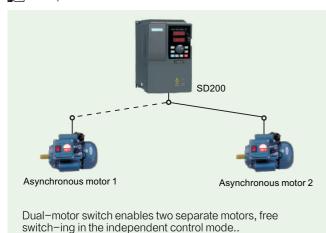


In the following figure, the hardware limits of the motor three-phase. current is forced to flow through the inner limit point.

Product Features

Features and Functions

Multiple motor switch



Motor overheating protection



Virtual IO function

SD200 series AC drive possess virtual input/output terminal function. The virtual input/output control is achieved by RS485 communication setting. The function code F05.11 will shift the physical digital input DI terminals to virtual input terminals, its function corresponding to physical terminals function setting.

For example: Enable virtual terminal DI2 as external fault alarm function, set as follows:

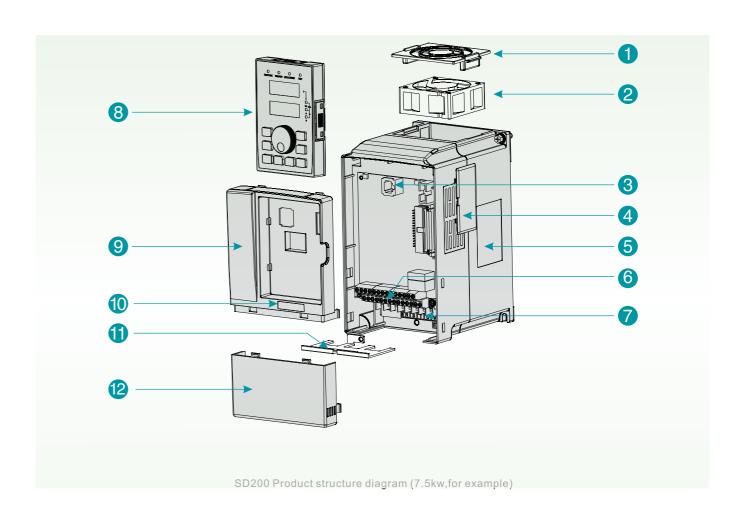
F05.11=1, F05.02=9, 3009H=0x0002 (Rs485 communication setting)

Digital output terminal DO1, relay output T1, T2 possess flexible output characteristic, after setting corresponding parameter enable validity can be adjusted by communication function freely.

For example: Enable relay T1 action, set as follows: F06.03=23, 300AH=0x0004 (RS485communication setting)

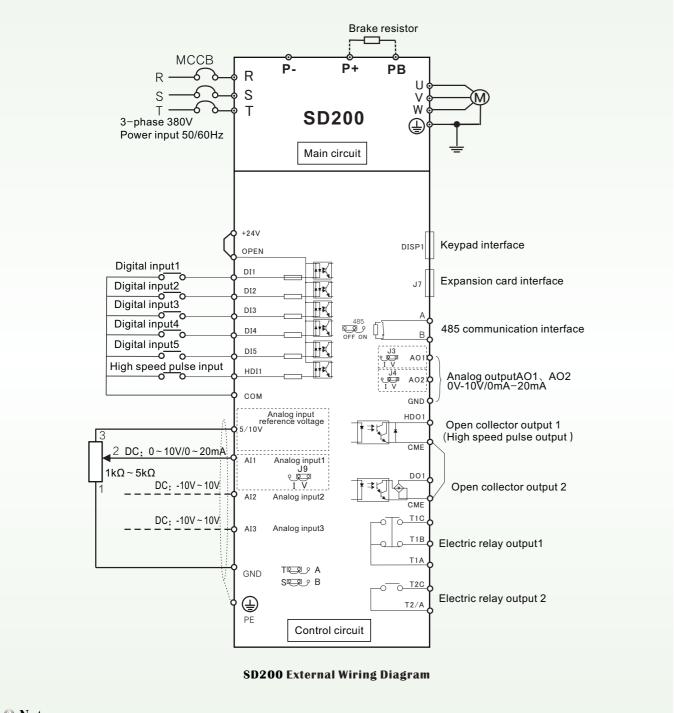
- Flexible and practical analog input / output ports
- ► Al1 ~ Al3 3 standard virtual analog, Al 2 and Al 3can set 3 points curve and flexible to use
- ▶ Al 1~Al 3 with factory calibration or user-site calibration of linear curves and the accuracy achieves 20mV.
- ► AO1 and AO2 with factory calibration and user-site calibration of linear curves zero drift and gain and the accuracy achieves 20mV.
- ▶ Extension AI5 is isolate input port, it can be used as PT100, PT1000 or 0 +10v input port.

SD200 Structure Diagram



NO.	Name	Description			
1	Fan cover	Protection fan.			
2	Cooling fan	See SD200 user manual 8.1 "Definition of Related Terms."			
3	Keypad interface	It is used to connect the Keypad.			
4	Vents-cover	Optional. with the vents-cover installed, the protection level will increase and the AC drive internal temperature will increase as well so please derating use the AC drive.			
5	Nameplate	See SD200 user manual 2.4"Nameplate"			
6	Control terminal	See SD200 user manual 3.3"Standard Wiring"			
7	Main circuit terminal	See SD200 user manual 3.3"Standard Wiring"			
8	Keypad	See Sd200 user manual Chapter4 "Operation, Display and Application Examples."			
9	Cabinet-cover	Protect the internal components.			
10	Series label	See SD200 user manual 2.3 "Naming rules"			
11	Apron	Convenience input and output wiring			
12	Lower cover	Protect the internal components			

Basic Wiring Diagram



O Note:

- 1.SD200 series under 22kw is with standard onboard brake unit and the whole series applies standard RS485 communication
- 2. This figure is suitable for the machine power level under SD200-4T-18.5G, other power levels please refer to the user manual.

 3. The figure "O" is Control circuit terminal "®" is main circuit terminal.

Technical Specification

	Item	Specification
	Max. output frequency	0~600Hz
	Carrier frequency	2.0kHz~10kHz, The carrier frequency is automatically adjusted on the load features.
	Input frequency resolution	Digital setting: 0.01Hz Analog setting: Max. frequency × 0.025%
	Control mode	0: V/F control; 1: Vector mode 0 control 0
	Speed range	1: 50 1Hz/150% Rated torque
p	Overload capability	Type G: 150%Rate current 60/s; Type P: 110%Rate current 60/s
Basic	Torque boost	Auto Torque boost Manual Torque boost 0.1%~20.0%
C	V/F curve	Four modes: Line, Multi-point, Square V/F curve, V/F separation
co.	ACC/DEC curve	Line or S-curve Acc/Dec mode: four kinds of Acc/Dec time. Range of Acc/Dec time: 0.0~6000.0s
Specification	DC brake	DC brake frequency: 0.00Hz~Max. frequency Brake time: 0.0s~100.0s Brake current: 0.0~150.0%
Ca	Jog control	Jog frequency range: 0.00Hz~F00.03Maximum frequency
Ti o	Simple PLC Multi-speed running	16-speed operating through built-in PLC or control terminal
3	Onboard PID	It realizes process-controlled closed loop control system easily
	Automatic voltage regulation (AVR)	Jog frequency range:0.00Hz~Maximum frequency
	Over voltage stall control	The current and voltage are limited automatically during the running process so as to avoid frequent tripping due to overvoltage/overcurrent.
	Rapid current limit	Rapid software and hardware current limiting technology
	Non stop Function	Load feedback energy compensates the voltage reduction so that the AC drive can continue to run in a short time in case of power interruption.
=	Speed tracking start	Identify the speed of rapidly rotating motor to realize a smooth start without any rush.
7 =	Rapid current limiting	Rapid software and hardware current limiting technology helps to avoid frequent over-current fault.
	Virtual IO	Four sets of virtual Do and five sets of virtual DI enable easy logic control
i a	Timing Control	Timing control function: Set the time range: 0.0Min \sim 6500.0Min
Individualized Function	Multi-motor switch	Two independent motor parameters enable two motors switching control
ž	Bus Support	Two independent MODBUS communication, Profibus-DP
	Motor overheating protection	Optional IO expansion card 1, analog input T_Motor (Al5)analog input Al3 acceptable the input of motor temperature sensor (PT100、PT1000)
	Command source	Given the control panel, control terminal, serial communication port given. It can be switched by a variety of ways.
	Frequency source	12 frequency sources: digital setting.analog voltage setting,analog current setting,pulse setting and serial port. It can be switched by a variety of ways.
	Auxiliary frequency source	12 auxiliary frequency source. Flexible implementation of auxiliary frequency tuning, frequency synthesis.
Running	Input terminal	Standard: Six digital input terminals, one of which support to 50kHz high-speed pulse input Three analog input terminals, two of which supports -10V ~ 10V voltage input One support 0 ~ 10V voltage input or 0 ~ 20mA current input Expansion capability: Two digital inputs One analog input terminal, support -10V ~ 10V voltage input, and supports PT100 / Pt1000
TC. **	Output terminal	Standard: One high-speed pulse output terminal (optional open collector type), support of 0 ~ 50kHz square wave signal outpu One digital output terminal Two relay output terminals Two relay output terminals Two relay output terminals, support 0 ~ 20mA current output or 0 ~ 10V voltage output Expansion capability: One digital output terminal, one relay output terminal One analog output terminal, support 0 ~ 20mA current output or 0~10V voltage output.



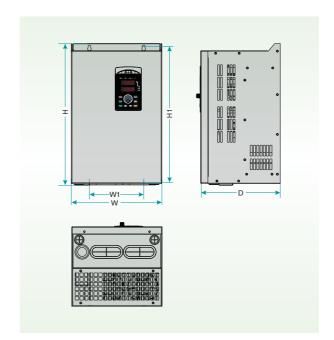
Technical Specification

	Item	Specification
	LED display	Display each parameter of function code group
Oper ar Dis	Key lock and selection function	Achieve some or all of the keys locked and define the scope of partial keys to prevent misuse.
ratio nd play	Protection function	Powered motor short circuit test; Input/output phase failure protection; Over current protection; voltage protection; Under voltage protection; Over heat protection; Overload protection; braking resistor fault protection.
	Optional parts	Brake unit, Simple IO expansion card, Multi-functional IO expansion card
_	Installation location	Indoor, free from direct sunlight, dust, corrosive gas, combustible gas, oil smoke, vapour, drip or salt
E	Altitude	Less than 1000m (derated when use of 1000m~3000m)
viron	Ambient temperature	$-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$ (derated when use in ambient temperature of $40^{\circ}\text{C} \sim 50^{\circ}\text{C}$)
Ĭ	Humidity	Less than 95%RH, without condensation
ment	Vibration	Less than 5.9m/s² (0.6g)
_	Storage temperature	−20°C~+60°C

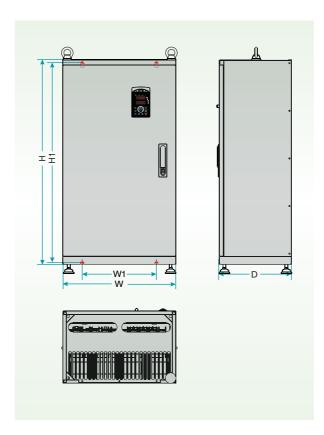
Technical Data

Model Number	Power capacity (KVA)	Input current (A)	Output current (A)	Adaptable Motor(KW)	Model Number	Power capacity (KVA)	Input current (A)	Output current (A)	Adaptable Motor(KW)
SD200-2S: 0.7KW-2.2KW					Single-phase220V 5	0/60Hz			
SD200-2S-0.7G	1.5	8.2	4.7	0.75	SD200-2S-2.2G	4.0	23.0	10.0	2.2
SD200-2S-1.5G	3.0	14.0	7.5	1.5					
			SD200-2	T: 0.7KW-2.2KW	Three-phase220V 5	0/60Hz			
SD200-2T-0.7G	1.5	5.5	4.7	0.75	SD200-2T-2.2G	4.0	12.0	10.0	2.2
SD200-2T-1.5G	3.0	7.7	7.5	1.5					
			SD200-4	T: 0.7KW-500KW	Three-phase380V 5	0/60Hz			
SD200-4T-0.7G	1.5	3.4	2.3	0.75	SD200-4T-90G	134	180	176	90
SD200-4T-1.5G	3.0	5.0	3.7	1.5	SD200-4T-110G	160	214	210	110
SD200-4T-2.2G	4.0	5.8	5.1	2.2	SD200-4T-132G	192	256	253	132
SD200-4T-4.0G	5.9	10.5	8.5	4.0	SD200-4T-160G	231	307	304	160
SD200-4T-5.5G	8.9	14.6	13	5.5	SD200-4T-185G	255	333	330	185
SD200-4T-7.5G	11	20.5	17	7.5	SD200-4T-200G	287	380	377	200
SD200-4T-11G	17	26	25	11	SD200-4T-220G	311	429	426	220
SD200-4T-15G	21	35	32	15	SD200-4T-250G	355	470	465	250
SD200-4T-18.5G	24	38.5	37	18.5	SD200-4T-280G	396	525	520	280
SD200-4T-22G	30	46.5	45	22	SD200-4T-315G	439	605	600	315
SD200-4T-30G	40	62.5	60	30	SD200-4T-350G	479	665	660	355
SD200-4T-37G	57	76	75	37	SD200-4T-400G	530	730	725	400
SD200-4T-45G	69	92	91	45	SD200-4T-450G	600	825	820	450
SD200-4T-55G	85	113	112	55	SD200-4T-500G	660	910	900	500
SD200-4T-75G	114	157	150	75					

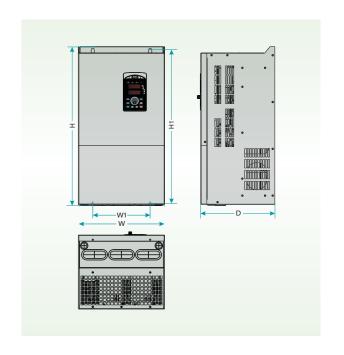
SD200 Outline Diagram



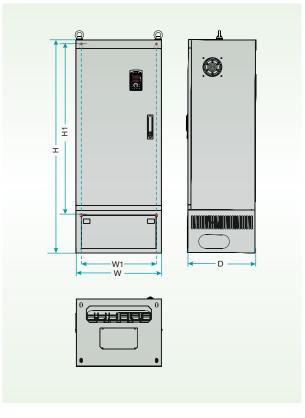
SD200(11KW-45KW)outline and installing dimension



SD200(132KW-185KW)outline and installing dimension



SD200(55KW-110KW) outline and installing dimension



SD200(200KW-500KW)outline and installing dimension



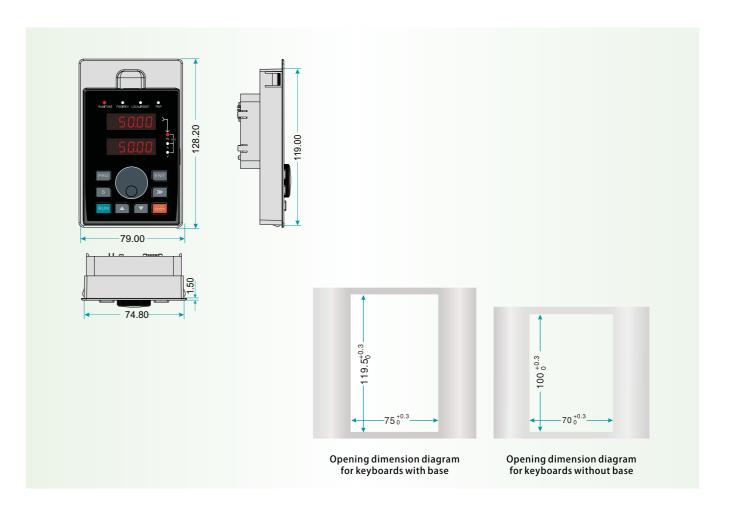
Installation Size

Model Number	H(mm)	W(mm)	D(mm)	H1(mm)	W1(mm)	Bore(mm)	G.W(kg)		
SD200-2S :0.7KW-2.2KW Sigle-phase 220V									
SD200-2S-0.7G	190	110	150	178	98	Ф5	2.4		
SD200-2S-1.5G	190	110	150	178	98	Ф5	2.4		
SD200-2S-2.2G	190	110	150	178	98	Ф5	2.4		
SD200-2T:0.7KW-2.2KW Three-phase 220V									
SD200-2T-0.7G	190	110	150	178	98	Ф5	2.4		
SD200-2T-1.5G	190	110	150	178	98	Ф5	2.4		
SD200-2T-2.2G	190	110	150	178	98	Ф5	2.4		
		SD200-4T:0.	7KW-500KW	Three-phase 38	80V				
SD200-4T0.7G	190	110	150	178	98	Ф5	2.4		
SD200-4T-1.5G	190	110	150	178	98	Ф5	2.4		
SD200-4T-2.2G	190	110	150	178	98	Ф5	2.4		
SD200-4T-4.0G	210	130	160	198	118	Ф5	3.5		
SD200-4T-5.5G	250	155	176	236	141	Ф5	4.5		
SD200-4T-7.5G	250	155	176	236	141	Ф5	4.5		
SD200-4T-11G	285	170	162	270	135	Ф6	5.1		
SD200-4T-15G	332	220	214	318	140	Φ	9.3		
SD200-4T-18.5G	332	220	214	318	140	Ф7	9.3		
SD200-4T-22G	387	250	220	373	150	Ф7	14		
SD200-4T-30G	387	250	220	373	150	Ф7	19		
SD200-4T-37G	440	270	252	426	180	Ф7	25		
SD200-4T-45G	440	270	252	426	180	Ф7	25		
SD200-4T-55G	550	300	258	534	200	Ф9	48		
SD200-4T-75G	650	370	282	625	250	Ф9	52		
SD200-4T-90G	650	370	282	625	250	Ф9	55		
SD200-4T-110G	650	370	282	625	250	Ф9	90		
SD200-4T-132G	880	485	310	860	320	Ф13	99		
SD200-4T-160G	880	485	310	860	320	Ф13	99		
SD200-4T-185G	880	485	310	860	320	Ф13	99		
SD200-4T-200G	1250	500	400	1000	440	Ф13	167		
SD200-4T-220G	1250	500	400	1000	440	Ф13	167		
SD200-4T-250G	1250	500	400	1000	440	Ф13	167		
SD200-4T-280G	1350	650	400	1105	513	Ф13	206		
SD200-4T-315G	1350	650	400	1105	513	Ф13	206		
SD200-4T-350G	1350	650	400	1105	513	Ф13	206		
SD200-4T-400G	1810	850	405	1410	513	Ф13	415		
SD200-4T-450G	1810	850	405	1410	513	Ф13	415		
SD200-4T-500G	1810	850	405	1410	513	Ф13	415		

Note:

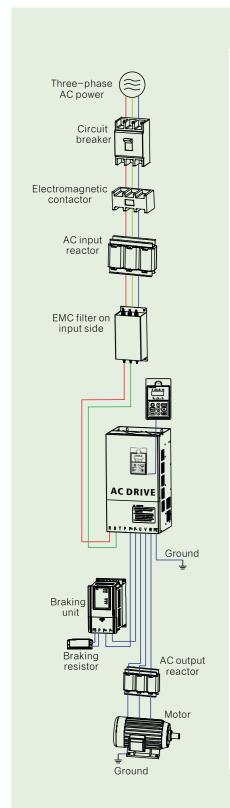
Above dimensions is only for reference. Instructions are subject to change without notice. For more information, please contact SINOVO.

Keypad/Accessory



Name	Туре	Function	Remark	
Built-in braking unit	Models followed by letter "C"	Models power under 22KW are installed with the built-in braking unit as standard configuration.	For 30KW model power, the braking unit is optional	
External braking unit	SDBUN	37KW and above need to be configured with an external braking unit.	Multiple braking units are connected in parallel for the models above 90KW.	
Multi-function I/O sDIO sDIO		Increase 3 digital inputs, 2 digital outputs, two relay outputs, one analog voltage input T_Motor.	It applies to all models.	
Standard communication	SDRS485	One RS - 485 communication, one CAN communication.	It applies to all models.	
expansion card	SDCAN		it applies to all models.	
Profibus-DP communication card	SDDP	Profibus-DP communication, DB 9 port	It applies to all models.	

Peripheral Equipment



Name	Mounting Location	Function Description
МССВ	Power receiving side	◆ Interrupt the power supply when over- current occurs on downstream devices
Contactor	Between MCCB and AC drive input side	♦ Start and stop the AC drive. Do not start and stop the AC drive frequently by switching the contactor on and off (less than twice per minute) noruse it to directly start the inverter.
AC input reactor	AC drive input side	 ◆ Improve the power factor of the input side. ◆ Eliminate the higher harmonics of the input side effectively and prevent other devices from being damaged due to distortion of the voltage waveform. ◆ Eliminate the input current unbalancedue to that between the power phases.
EMC Input filter	AC driver input side	 ◆ Reduce the external conduction and radiation interference of the inverter. ◆ Decrease the conduction interference flowing from the power end to the inverterand improve the anti interference capacity of the AC drive.
DC reactor	SD200 series AC drive under 30G configured with DC reactor as standard	 ◆ Improve the power factor of the input side. ◆ Improve the efficiency and thermal stability of the AC drive. ◆ Eliminate the impact of higher harmonics of AC drive input side and reduce the external conduction and radiation interference
AC output reactor	Between AC drive output side and the motor, close to the inverter	◆ The output side of the AC drive generally has much higher harmonics. When the motor is far from the AC drive, there is much distributed capacitance in the circuit and certain harmonics may cause resonance in the circuit, bringing about the following two impacts: a) Degrade the motor insulation performance and damage the motor in the long run. b) Generate large leakage current and cause frequent AC drive protection trips. ◆ If the distance between the inverter and the motor is greater than 100 m, install an AC output reactor.

Braking Unit Recommendation

election of Braking Resistance Power

The motor and load's regenerative energy is almost completely consumed on the braking resistor when braking. According to the formula:

Theoretically braking resistance of power and braking power is consistent, but considering the derating 70%. According to the formula:

U*U/R=Pb

U----Braking voltage at stable braking system. System selections differs in braking voltages, The AC380Vsystem usually selectsDC700V braking

Pb----Braking power

0.7*Pr=Pb*D

Pr---Resistor power

D----Braking frequency (The reproduction process accounts for the proportion of the entireworking process)

Elevator---20%~30%

Open and draw volume---20%~30%

Centrifuge---50%~60%

Accidental braking load---5% Commonly take 10%

SD200 series AC Drive braking unit selection table

AC Drive Capacity	Brakir	ıg Unit	Braking resistance			
(KW)	Specification	Q.T.Y unit	Recommended Resistance	Recommended Power	Q.T.Y unit	
0.4		1	≥300Ω	150W	1	
0.75		1	≥300Ω	150W	1	
1.5		1	≥220Ω	150W	1	
2.2		1	≥200Ω	250W	1	
4.0		1	≥130Ω	300W	1	
5.5	Built-in as standard	1	≥90Ω	400W	1	
7.5		1	≥65Ω	500W	1	
11		1	≥40Ω	800W	1	
15		1	≥32Ω	1000W	1	
18.5		1	≥25Ω	1300W	1	
22		1	≥22Ω	1500W	1	
30		1	≥16Ω	2500W	1	
37	Built-in	1	≥16Ω	3700W	1	
45	Optional	1	≥16Ω	4500W	1	
55		1	≥8Ω	5500W	1	
75		2	≥8Ω	3700W	2	
90		2	≥8Ω	4500W	2	
110		2	≥8Ω	5500W	2	
132	EHBU70	3	≥8Ω	3700W	3	
160	EHBU/O	3	≥8Ω	5500W	3	
185		4	≥8Ω	4500W	4	
200		4	≥8Ω	5500W	4	
220		4	≥8Ω	5500W	4	