

SS2 Series

Compact Design
Vector Control Inverter



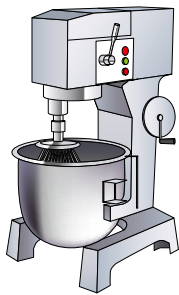
Product Range

Model		KW (HP)	0.4 (0.5)	0.75 (1)	1.5 (2)	2.2 (3)	3.7 (5)	5.5 (7.5)	
SS2	SS2021	1-phase 220V							
	SS2023	3-phase 220V							
	SS2043	3-phase 440V							

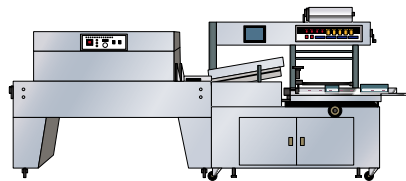
Main Features

- * Built-in shuttle knob to adjust output frequency and set parameters easily
- * Built-in RS-485 communication interface
- * Support MODBUS and Shihlin communication protocol
- * Built-in proportion linkage control function to support multi inverters connection
- * Maximum 650Hz frequency output
- * Support DIN rail mount
- * The resolution of frequency setting: digital 0.01Hz ; analog 1/1000
- * The accuracy of output frequency: 0.01%
- * Multi-function input/output terminals
- * Support 2 analog setting types: 0-10V and 4-20mA

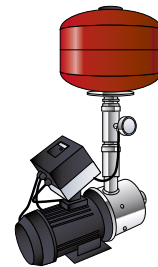
Application



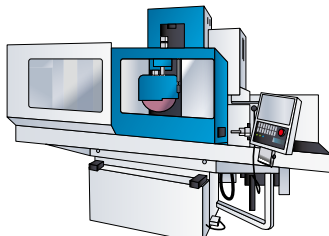
Mixer Machine



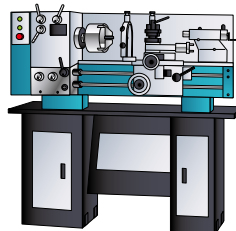
Packing Machine



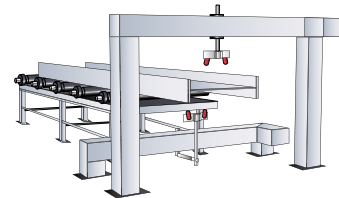
Constant pressure Water supply



Grinding Machine



Desktop type lathe



Painting Machine

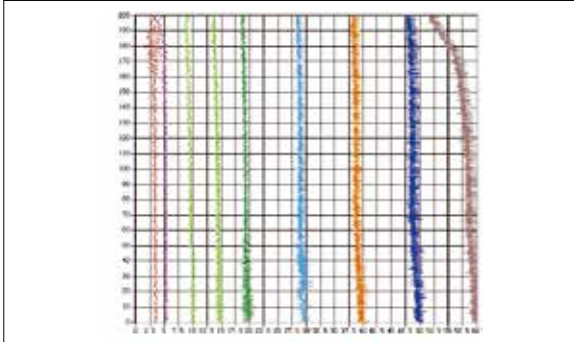


Compact Design Vector Control Inverter

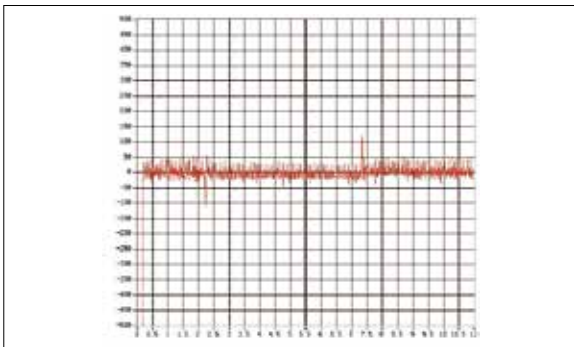
Product Features

General flux vector control technique

- General flux vector control technique
- A 32-bit RISC CPU for high-speed computation.
- Starting torque, 150%3Hz



- Speed accuracy is within 1% (0%~100% loading changes)

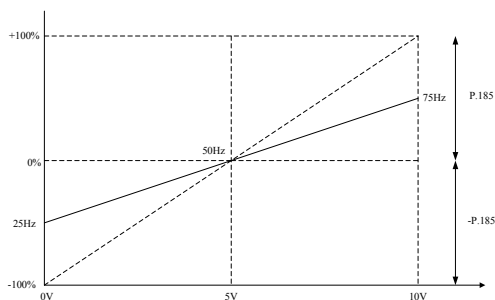


- Motor parameter auto-tuning function
- Stalling protection level reaches to 250%.

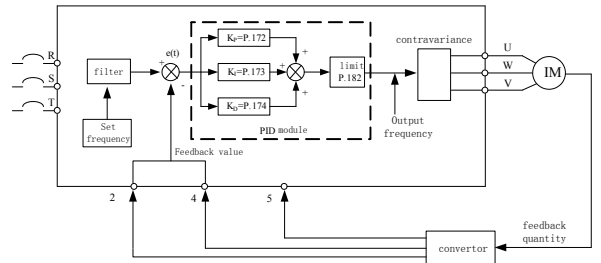
High performance and function

- The maximum output frequency up to 650Hz
- Soft-PWM functions for eliminating motor noises and preventing the temperature of inverter module too high.
- Built-in energy-saving control function, the inverter will control the output voltage automatically in order to reduce the output power losses when the inverter is running.
- Cooling fan operation method is selectable.

Built-in proportion linkage function

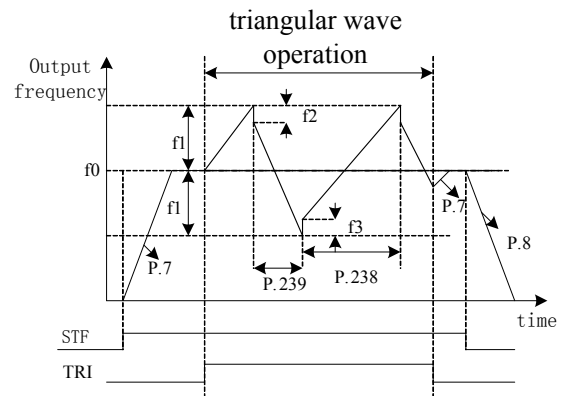


PID feedback control function



Triangular wave function (traverse)

- This is suitable for operations that need traversing and winding movements such as textile operations.



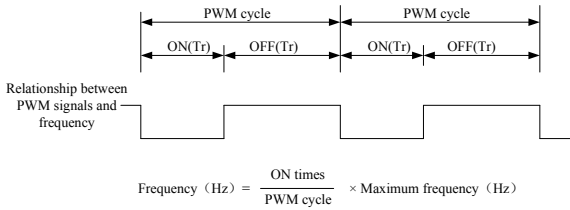
- f0 : Setting value of frequency
- f1 : Generated amplitude for setting frequency ($f0 \times P.235$)
- f2 : Compensation from acceleration to deceleration ($f1 \times P.236$)
- f3 : Compensation from deceleration to acceleration ($f1 \times P.237$)

Built-in frequency and parameter setting knob



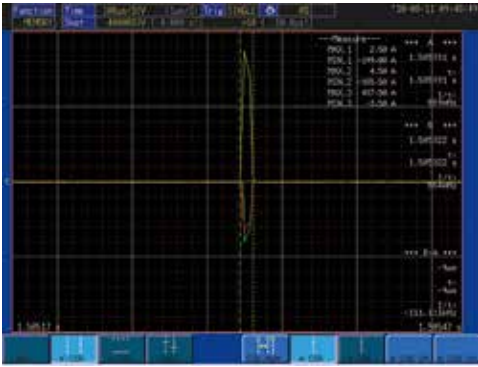
PWM control function

- The operating frequency can be controlled with the PWM signals output from PLC.
- The terminal M2 can be set as PWM signal input.

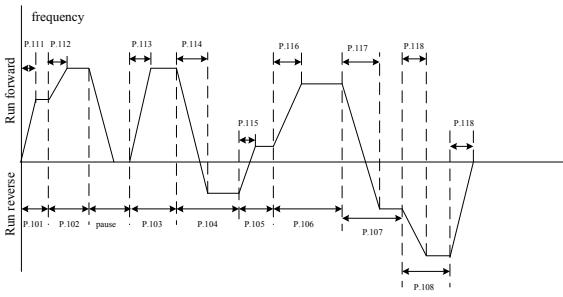


Hardware protection design

- Output short circuit protection.
- Under circumstances of damaged motor insulation or erroneous wiring, to protect the output



Programmed operation mode with manually operated



Easy to install design

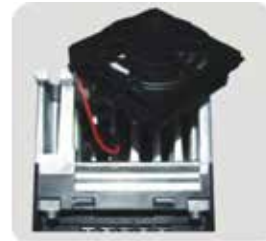
- Din rail design-Multiple inverters can be mounted side-by-side in the panel.



- Built-in standard RJ45 port for RS485 communication.
- Screwless terminal blocks designed

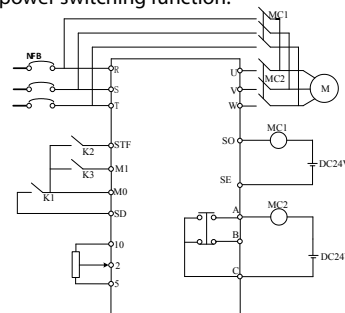


- The cooling fan is removable and easy to clean.



Equipped with grid power frequency switching mechanism

- It provides automatic switch between the grid power and frequency conversion.
- If the motor is running at rated frequency, using grid power frequency has a much better efficiency.
- In order to prevent the motor from stopping for a long time during the maintenance of inverter, it is recommended inverter to have grid power switching function.



Electric Specifications

220V Series Single-Phase

Model SS2-021-□□□K		0.4K	0.75K	1.5K	2.2K
Applicable Motor Capacity	HP	0.5	1	2	3
	kW	0.4	0.75	1.5	2.2
Output	Rated output capacity kVA (Note)	0.95	1.5	2.5	4.2
	Rated output current A (Note)	2.7	4.5	8	11
	Overload current rating	150% 60 seconds; 200% 1 second (inverse time characteristics)			
	Maximum output voltage	3 Phase 200~240V AC			
Power Supply	Rated power voltage	Single phase 200~240V 50Hz / 60Hz			
	Power voltage permissible fluctuation	Single phase 170~264V 50Hz / 60Hz			
	Power frequency permissible fluctuation	±5%			
	Power source capacity kVA	1.5	2.5	3.5	6.4
Cooling Method	Self-cooling	Forced air cooling			
Weight (kg)	1.1	1.2	1.6	1.7	


220V Series Three-Phase

Model SS2-023-□□□K		0.4	0.75	1.5	2.2	3.7
Applicable Motor Capacity	HP	0.5	1	2	3	5
	kW	0.4	0.75	1.5	2.2	3.7
Output	Rated output capacity kVA (Note)	1.2	2	3.2	4.2	6.7
	Rated output current A (Note)	3	5	8	11	17.5
	Overload current rating	150% 60 seconds; 200% 1 second (reverse time characteristics)				
	Maximum output voltage	3 Phase 200~240V AC				
Power Supply	Rated power voltage	3 Phase 200~240V 50Hz / 60Hz				
	Power voltage permissible fluctuation	3 Phase 170~264V 50Hz / 60Hz				
	Power frequency permissible fluctuation	±5%				
	Power source capacity kVA	1.5	2.5	4.5	6.4	10
Cooling Method	Self-cooling	Forced air cooling				
Weight (kg)	1.1	1.2	1.2	1.6	1.7	

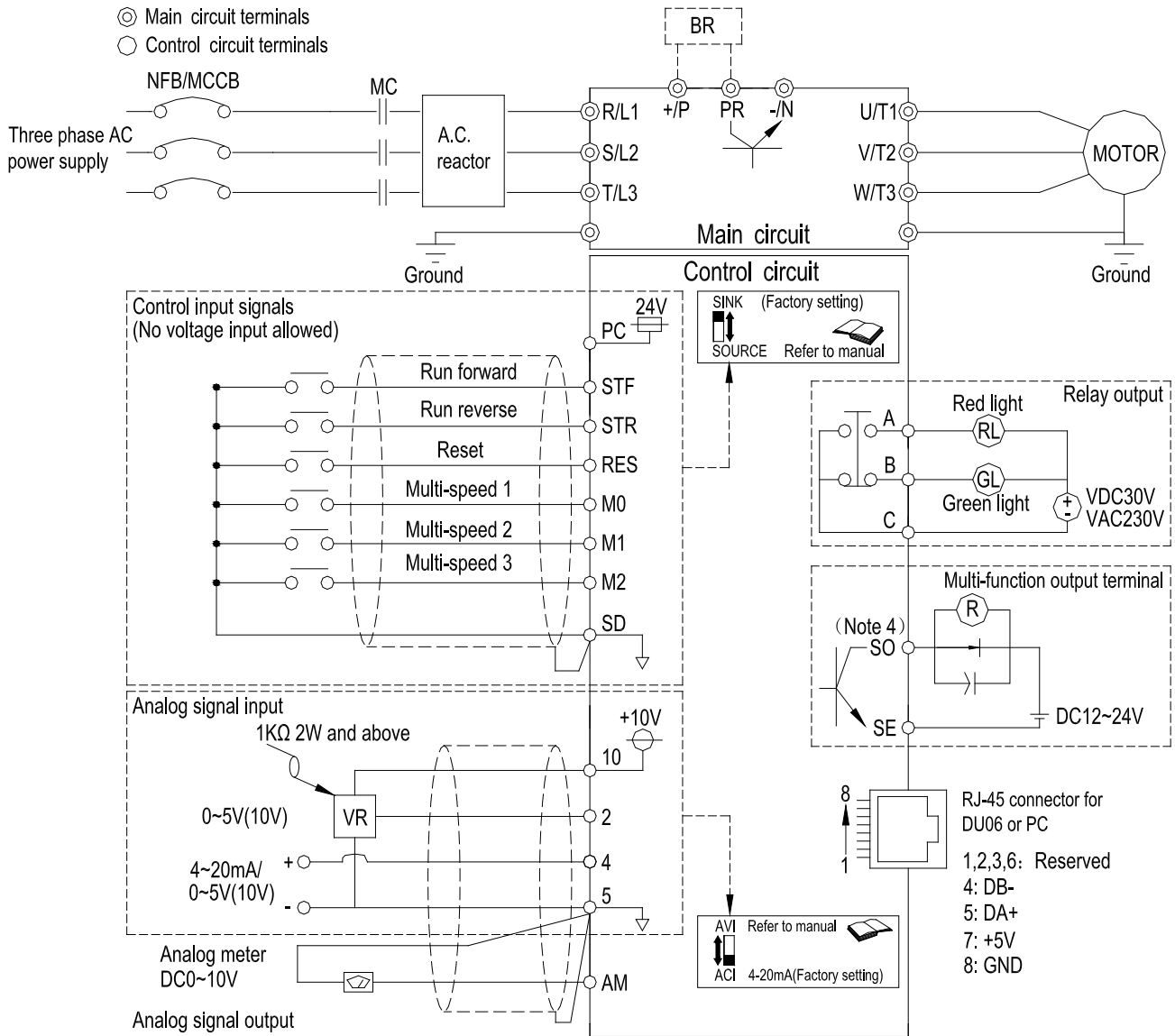
440V Series Three-Phase

Model SS2-043-□□□K		0.4	0.75	1.5	2.2	3.7	5.5
Applicable Motor Capacity	HP	0.5	1	2	3	5	7.5
	kW	0.4	0.75	1.5	2.2	3.7	5.5
Output	Rated output capacity kVA (Note)	1	2	3	4.6	6.9	9.2
	Rated output current A (Note)	1.5	2.6	4.2	6	9	12
	Overload current rating	150% 60 Seconds; 200% 1 Second					
	(reverse time characteristics)	Three-phase 380~480V					
Power Supply	Rated power voltage	3 Phase 380~480V 50Hz / 60Hz					
	Power voltage permissible fluctuation	323~528V 50Hz / 60Hz					
	Power frequency permissible fluctuation	±5%					
	Power source capacity kVA	1.5	2.5	4.5	6.9	10.4	13.8
Cooling Method	Self-cooling	Forcing air cooling					
Weight (kg)	1.1	1.1	1.2	1.6	1.7	1.7	

Common Specifications

Control Method		SVPWM control, V/F control, general flux vector control.		
Output Frequency Range		0.1~650Hz (The starting frequency setting range between 0 and 60Hz).		
Frequency Resolution	Digital setting	If the frequency value is set below 100Hz, the resolution will be 0.01Hz. If the frequency value is set above 100Hz, the resolution will be 0.1Hz.		
	Analog setting	When setting the signal DC 0~5V, the resolution will be 1/500; When setting the signal DC 0~10V or 4~20mA, the resolution will be 1/1000.		
Output Frequency Accuracy	Digital setting	Maximum target frequency $\pm 0.01\%$.		
	Analog setting	Maximum target frequency $\pm 0.5\%$.		
Voltage / Frequency output Characteristics		Base voltage (P.19), base frequency (P.3) can be arbitrarily set. Constant torque model and applicable load model can be selected (P.14).		
Start Torque		150% 3Hz, 200% 5Hz: when using the general flux vector control.		
Torque Boost		The torque boost setting range between 0 and 30% (P.0), auto boost, slip compensation.		
Acceleration / Deceleration Curve Characteristics		The resolution (0.01s/0.1s) of acceleration/deceleration time (P.7, P.8) is switched by P.21. The setting range has 0~360s or 0~3600s for selection. And different acceleration/deceleration curve model can be selected by P.29.		
DC Braking		The DC braking action frequency range between 0 and 120Hz (P.10); the DC braking time is 0~60 Seconds (P.11); and the DC braking voltage is 0~30% (P.12). Linear braking and idling braking selection (P.71).		
Stalling Protection		The stalling protection level can be set between 0 and 250% (P.22).		
Target Frequency Setting		Operation panel setting, DC 0~5V signal setting, DC 0~10V signal setting, DC 4~20mA signal setting, two voltage input or one voltage and one current input can be selected; Multi-speed stage levels setting, communication setting.		
PID Control		Please refer to P.170~P.183 in Chapter 5.		
Multifunction Control Terminals		Motor starting (STF, STR), the second function (RT), '16-speed operation' (RL, RM, RH, REX), external thermal relay (OH), reset (RES), etc. (can be set by the user (P.80~P.84, P.86))		
Multiple Output Terminals	Multi-function output terminals	SO, SE	p.40 Inverter running (RUN), output frequency detection (FU), Up to frequency (SU), overload detection (OL), zero current detection (OMD), alarm (ALARM), Section detection (PO1), Periodical detection (PO2), and Pause detection (PO3), Inverter output (BP), Commercial power-supply output (GP).	
	Multi-function output relay	A, B, C		p.85
	Analog output	AM, 5		Multi-function DC (0~10V) Output: output frequency, output current (P.54).
Operation Panel	Running status monitoring		Output frequency monitoring, output current monitoring, and output voltage monitoring.	
	HELP mode		Alarm history monitoring.	
	LED indication lamp(6)		Run indication lamp, frequency monitoring indication lamp, voltage monitoring indication lamp, current monitoring indication lamp, mode switching indication lamp, and PU control indication lamp.	
Communication Function	RS485	Internal RS485 communication, RJ-45 connector.		
Protection Mechanism / Alarm function		Output short circuit protection, Over-current protection, (+/P)-(-/N) over-voltage protection, under-voltage protection, motor over heat protection (P.9), IGBT module over-heat protection, braking transistor abnormality protection, communication abnormality protection, etc.		
Environmental Condition	Ambient temperature		-10 ~ +50°C (non-freezing), installation side by side -10 ~ +40°C.	
	Ambient humidity		Below 90%Rh (non-condensing)	
	Storage temperature		-20 ~ +65°C	
	Operating environment		Indoor, no corrosive gas, no flammable gas, no flammable dust	
	Altitude and vibration		Altitude below 1000 meters, Vibration below 5.9m/s ² (0.6G).	
	Grade of protection		IP20	
	The degree of environmental pollution		2	
Class of protection		Class I		
Certification				

Wiring Diagram

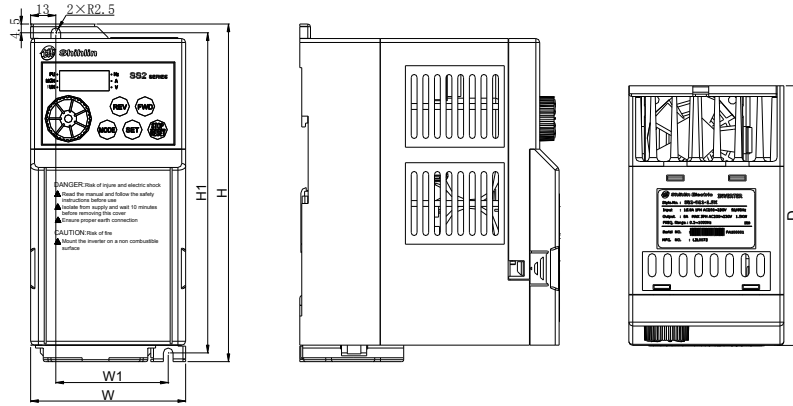


NOTE

1. In the above figure, the thickness of wire of the main circuit and the control circuit wiring or the ground wiring should be noted.
2. For the usage of the external thermal relay, please refer to P.80~P.84, P.86.
3. Make sure not to short circuit the PC and SD.
4. The SO terminal can select to FM or 10X function, please refer to P.64, P.74.

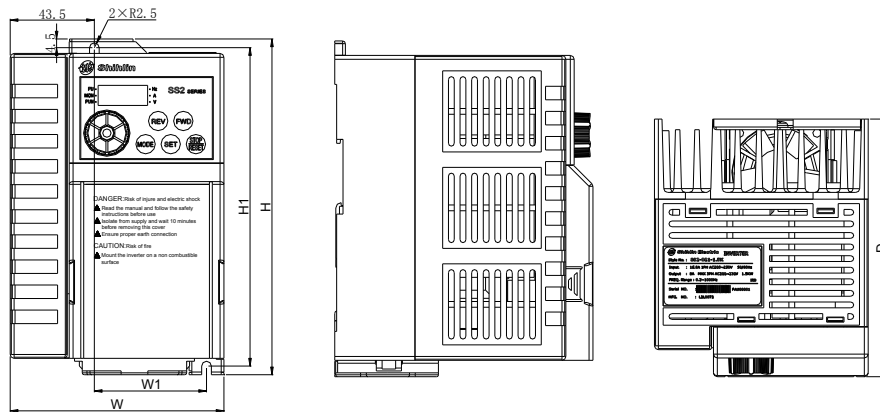
Dimensions

Frame A



Model	H(mm)	H1(mm)	W(mm)	W1(mm)	D(mm)
SS2-021-0.4K	174	165	80	58	134
SS2-021-0.75K					
SS2-023-0.4K					
SS2-023-0.75K					
SS2-023-1.5K					
SS2-043-0.4K					
SS2-043-0.75K					
SS2-043-1.5K					

Frame B



Model	H(mm)	H1(mm)	W(mm)	W1(mm)	D(mm)
SS2-021-1.5K	174	165	110.5	58	134
SS2-021-2.2K					
SS2-023-2.2K					
SS2-023-3.7K					
SS2-043-2.2K					
SS2-043-3.7K					
SS2-043-5.5K					