

S900 Series Inverter

Multi function mini type(IM)

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COMPANY
PROFILE

Savch Electric Co., Ltd was set up in Quanzhou, Fujian province in 2001 and established a research and development center in Shanghai. It is one of the first few companies to develop and produce motor drives in China. In 2005, it became China's top ten inverter brands. The company relies on a strong R & D team and world-class power electronics production and quality control system (OEM for top international brand) to provide customers with high-performance servo drives, inverters, computer controllers and other industrial control products.

The company focuses on the frontier technology fields of "industrial intelligence, energy saving, green energy" , and adheres to the core goal of "creating value for customers" , and establishes a technical R&D team that highly conforms to customer industry characteristics and highly integrated mechatronics and provide more efficient and resource-efficient system solutions for various industries customers. For the pass years, the company has established a global equal and close cooperation agent system, and customer service system with user satisfaction as an indicator, widely used in ceramics, packaging, textile, dyeing and finishing, engineering upgrading, lifting, road, CNC machine tools, glass, mining, petroleum, shipbuilding, military and even farming and animal husbandry and other equipment fields.

PRODUCT INTRODUCTION

Instruction



Function description

Upper frequency limitation /lower frequency limitation setting

- ▶ To avoid wrong operations of field operator, and receives damages such as overheat or mechanic abrasion etc caused by motor low or high frequency.

Electronic thermal relay selection

- ▶ Set electronic thermal relay to prevent auto- cooling motor overheat on low rotation speed, and limit the output frequency of AC motor drive.

No tipping operation

- ▶ Current limitation (stall prevention), available to achieve no tipping operation.

Frequency setting knob

- ▶ Standard configured frequency setting knob, available to adjust frequency easily.

Intelligent wobble frequency

- ▶ Available to be applied in textile and chemical fiber industries etc, where the occasions require traverse or winding.

Fan control

- ▶ Constant running, one minute free running after stop, runs with inverter, stop action selection.

Auto energy saving

- ▶ Achieve energy saving with fan or pump running.

Auto program running

- ▶ Available to substitute some traditional control circuits, such as relay, switch and timer etc.

Auto torque increasing

- ▶ Available to achieve 150% of rated torque when start torque is 5Hz and achieve powerful operation.

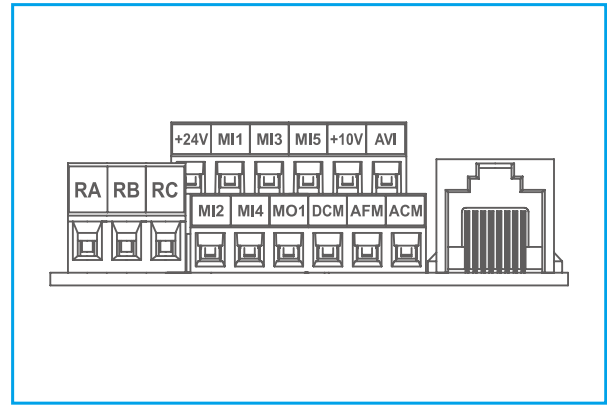
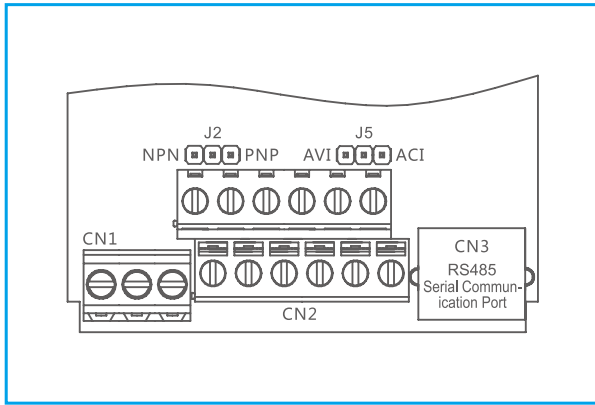
Slip compensation control

- ▶ Available to achieve stable running when load varies.

Full protection

- ▶ Perfect detection protection function (Lv, oc, ov, oH, oL, oL2), could achieve protect inverter and equipment accurately and rapidly. External fault (EF), communication error (cE), high temperature or circuit fault is detected by inverter after powered on (CF3.1), high or low DC bus voltage is detected by inverter after powered on (CF3.2 / CF3.3), over voltage /over current protection on circuit fault (HPF.1 /HPF.3), wobble frequency setting error (Errb), grounding short circuit fault (GFF).

Control Terminal



Characteristic

Available to be installed parallelly (40°C)



Simple and Easy Maintenance

- The dismantlable cooling fan could be maintained easily, and the fan could be installed and dismantled conveniently through pulling out the power supply plug and loosening the fix screws.

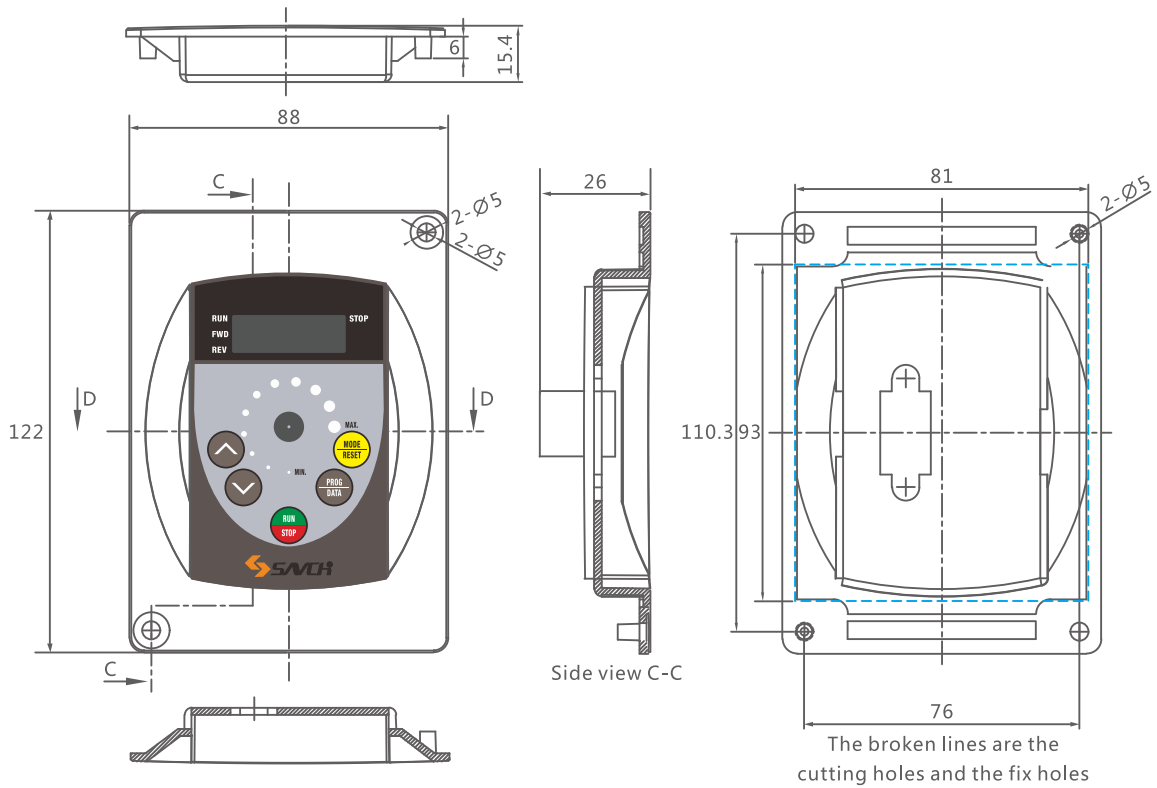


Model description

S	900	–	4T	1.5	G
SAVCH	Product series		2T : 220V Single 4T : 440V Three phase	0.2 : 0.2kW 0.4 : 0.4kW 0.75 : 0.75kW 1.5 : 1.5kW 2.2 : 2.2kW 3.7 : 3.7kW	G : Constant torque (General use)

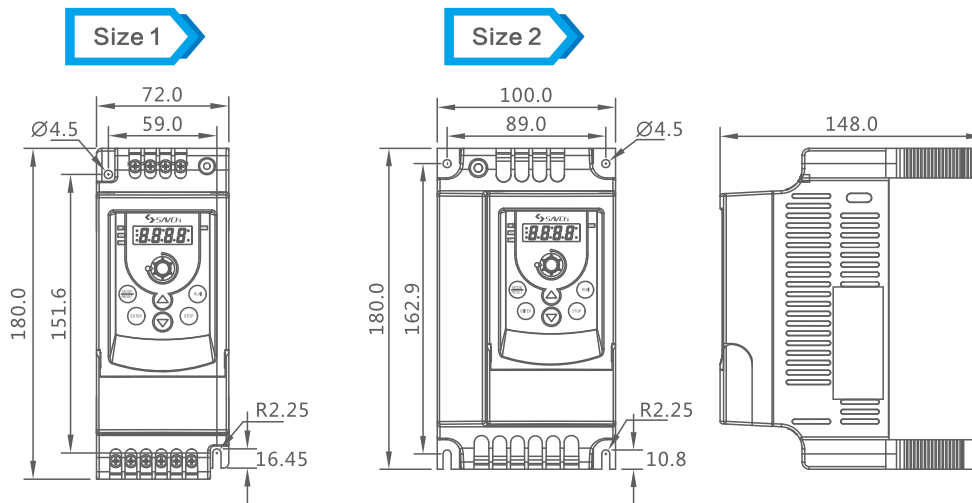
Operation keypad

Dimension (Unit: mm)



External Dimensions

External Dimensions of inverter (Unit: mm)



Inverter Size (Unit: mm)

Type	W	H	D	W1	H1
S900-2S0.2G~0.75G/4T0.4G~1.5G	72.0	180.0	148.0	59.0	151.6
S900-2S1.5G~2.2G/4T2.2G~3.7G	100.0	180.0	148.0	89.0	162.9

Product Specification

Common specification

Item		Specifications	
Controlling Characteristics	Control mode	Adopting SVPWM or SPWM modulating techniques	
	Output frequency range	0.1 ~ 400.00Hz	
	Frequency setting analyzing degree	0.1Hz	
	Output frequency analyzing degree	0.1Hz	
	PWM carrier frequency	Available to modulate from 2 to 12kHz.	
	Torque increase	Auto torque-increase and auto slip compensation, at 5Hz the starting torque can reach 150% of rated torque.	
	Jump frequency	3 points can be set from 0.1 to 400Hz	
	Acceleration/deceleration time	0.1 to 600 seconds. (2 steps of accel/decel time can be set separately.)	
	Stall prevention level	Available to be set the motor load features through 50~200%of drive rated current	
	DC braking	Available to be operated from 0.1 to 60.0Hz from STOP, braking current 0 to 100% of the rated current. Starting time 0 to 60.0 sec. Stopping time 0 to 60.0 sec.	
	V/f curve	V/f curve available to be set	
Operation Characteristics	Frequency setting signal	Digital operation panel	Set by UP and DOWN keys
		External signal	Potentiometer 5kΩ, DC0 to 10V, DC4 to 20mA, multi-function input choosing 3 to 5 (7 velocities: jog-on, up/down command), serial communication (RS485)
	Running operating signal	Digital operation panel	Available to be operated by [RUN], [STOP] keys.
		External terminals	2 wire style (Fwd/Stop, Rev/Stop, Run/Stop and Fwd/Rev)/ 3 wire operation, JOG running, Serial Communication Port(RS485)
	Custom Input Terminal	Switching of 7 step pre-set available speed; Switching of First/Second acceleration/deceleration time; prohibiting acceleration/deceleration and external interrupt input; Jog running UP/DOWN frequency terminal setting; Count terminals	
	Custom Output Terminal	During running, frequency arrival output, non-zero count agreement output, over torque output, external interrupt reference, low voltage detection, operation mode reference, fault output and external fault interruption.	
	Analog signal output	Corresponding to output current, output frequency 1(before slip ratio compensation), output frequency 2(after slip ratio compensation), output voltage, consumed power, DC bus voltage	
Built-in Function		Setting max/min output frequency; momentary power off restarting; fault restarting; setting of S curve acceleration/deceleration time; auto-voltage stabilizing output modulation; digital frequency output signal; fault records; parameters locking; reset to factory setting; inhibiting reverse run; over current stalling prevention, over voltage stalling prevention, electronic thermal relay.	
Protection Function		Over current; over voltage, low voltage; external fault interruption input; motor over load; over load of the drive and drive overheating	
Digital operation panel		Consisting of 6 functional keys, 7 step LED in 4 digits; 4 status LED indicators. Available to set frequency, display actual output frequency, output current, self-determined unit parameter overview of users, modify settings and for parameter locking, fault displaying. Available to perform running, stop, reset, fwd/rev run	
Environment	Operational Environment temperature	-10°C to +50°C (+40°C parallel installation, no condensation, no freezing)	
	Storing temperature	-20°C to +60°C	
	Operational Environment dampness	Below 90%RH without moister	
	Installation height	Lower than 1000m, without corrosive gas, fluid and dust.	
	Vibration	Under 20Hz 9.80665m/s ² (1g), 20 to 50Hz 5.88 m/s ² (0.6g)	
	Protection level	IP20	

Standard Specifications

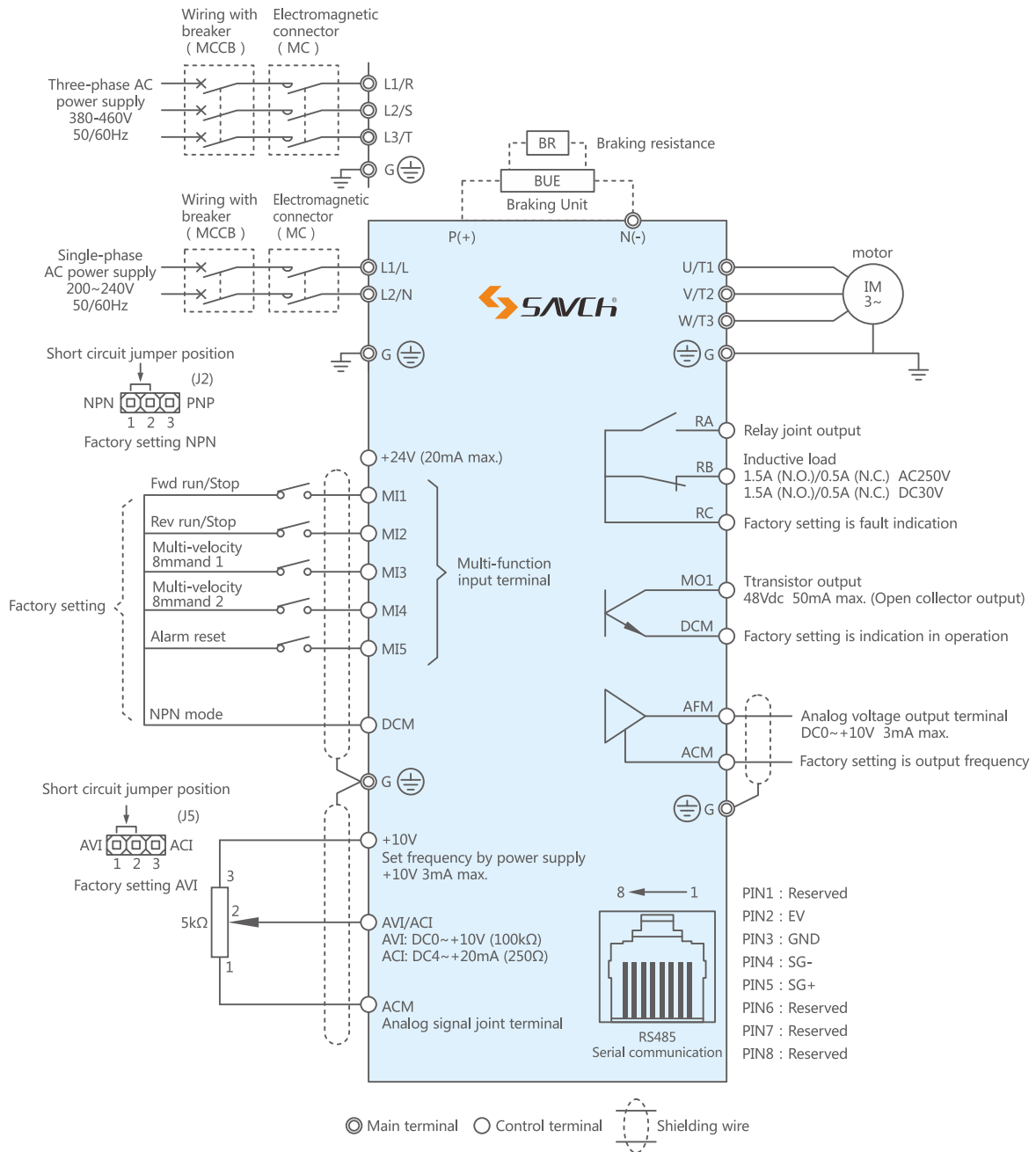
► 220V single phase series

Item		Specifications				
Model number(S900-2S***G)		0.2	0.4	0.75	1.5	2.2
Output	Max applicable motor output power(kW)	0.2	0.4	0.75	1.5	2.2
	Max applicable motor output power(HP)	0.25	0.5	1	2	3
	Output rated capacity(kVA)	0.6	1.0	1.9	2.5	4.2
	Output rated current (A)	1.6	2.5	4.2	7.5	11
	Output frequency range	0.1 to 400Hz				
	Over load capacity	150% of rated output current and run for 60sec.				
	Max output voltage	Correspond to input power supply				
Input	Phase number. Voltage. Frequency	Single phase. 200 to 240V. 50/60Hz				
	Allowable variation range for Voltage. Frequency	Voltage: $\pm 10\%$, Frequency: $\pm 5\%$				
	Power capacity needed (kVA)	1.1	1.5	2.2	3.9	6.0
	Input current (A)	4.9	6.5	10	17.5	27
Cooling System		Natural cooling			Fan cooling	

► 440V Three phase Series

Item		Specifications				
Model number(S900-4T***G)		0.4	0.75	1.5	2.2	3.7
Output	Max applicable motor output power(kW)	0.4	0.75	1.5	2.2	3.7
	Max applicable motor output power(HP)	0.5	1	2	3	5
	Output rated capacity(kVA)	1.2	2.3	3.2	4.2	6.3
	Output rated current (A)	1.5	2.5	4.2	5.5	8.2
	Output frequency range	0.1 to 400Hz				
	Over load capacity	150% of rated output current and run for 60sec.				
	Max output voltage	Correspond to input power supply				
Input	Phase number. Voltage. Frequency	Three phase. 380 to 460V. 50/60Hz				
	Allowable variation range for Voltage. Frequency	Voltage: $\pm 10\%$, Frequency: $\pm 5\%$				
	Power capacity needed (kVA)	1.3	2.3	4.0	4.8	6.0
	Input current (A)	1.9	3.5	6.0	7.2	9.0
Cooling System		Natural cooling			Fan cooling	

Basic wiring diagram










Notes:

- 1.NPN and PNP mode: Set as NPN mode in factory, short circuit jumper is connected to 1st and 2nd pin in J2 PIN, the common terminal of external terminal input signal is DCM. When short circuit jumper is connected to 2nd and 3rd pin of J2 PIN, it is PNP mode, the common terminal of external terminal input signal is +24V.
- 2.AVI/ACI terminal application: (DC0~+10V) and (DC4~20mA) analog quantity input share the same AVI/ACI terminal. Set as AVI analog voltage input in factory, short circuit jumper is connected to 1st and 2nd pin in J5 PIN. When ACI analog current input should be used, please connect short circuit jumper to 2nd and 3rd pin of J5 PIN.

Note:

RS485 may damage the terminal of connector side. So the terminal configuration has to be confirmed before connection. The used signal wire can be cut if necessarily.

Application

Industry	Examples
 <p data-bbox="277 515 488 545">Food Processing</p>	<p data-bbox="647 411 1214 472">Dumpling making machine, food processing mixer, noodle machine;</p>
 <p data-bbox="253 758 512 789">Carpentry Machinery</p>	<p data-bbox="647 638 1225 735">Wood processing planner, woodcarving/ wood processing machine, simple wood-cutting machine, paint spraying machine;</p>
 <p data-bbox="236 1002 529 1032">Paper/textile machinery</p>	<p data-bbox="647 881 1206 978">Circular loom, flat knitting machine, ribbon Loom, decorating machine, industrial sewing machines, knitting machine;</p>
 <p data-bbox="248 1246 517 1276">Fan/ Pump Equipment</p>	<p data-bbox="647 1116 1350 1213">Air conditioning system, wastewater processing/ constant pressure water supply system, water spraying/irrigation pump, compressor;</p>
 <p data-bbox="180 1489 587 1519">Conveyer and Delivering Machinery</p>	<p data-bbox="647 1381 1353 1442">Belt conveyer, automatic door, pull coil type iron door, mini lift, crown block X-Y axle;</p>
 <p data-bbox="169 1733 598 1763">Machine Tool / Metal Processing Machine</p>	<p data-bbox="647 1612 1358 1673">Grinding machine, drilling machine, mini milling machine, mechanical arm of injection molding machine (squeeze);</p>
 <p data-bbox="339 1977 429 2007">Others</p>	<p data-bbox="647 1856 1350 1931">Industrial washing machine, grinder, running machine, feeding machine, ironer, car washer, packing machine.</p>

COOPERATIVE CLIENT



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☒ **Qualification** _____
Received **ISO9001** and **CE** recognition
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