SHENZHEN K-EASY AUTOMATION CO.,LIMITED

Wisdom Lingyu, baishixia community, Fuyong street,
Bao 'an District, Shenzhen

Tel: +86-0755-27850411 Wechat/Whats App:+ 86-19924552818

sales@keasyautomation.com

http://www.keasyautomation.com

Version: A01

SP600 SERIES

Off Grid Pump Solar

COMPANY INTRODUCTION

Shenzhen K-Easy Automation Co.,Limited is a professional manufacturer, specialize in R&D And production of AC drives. We have built up a comprehensive product family. Frequency inverters' power covers the range from 0.4 to 630kW, and voltage range is between 220V and 480V. More than inverters are running smoothly 300, 000 units at different industrial sites.

Why Us

- We believe “quality is life ”,so we will test all products before shipment,All Module of our VFD will be used quality is life with Infenion only, With years of persistence, the total failure ratio of Our frequency inverters has been controlled below 1%. We never lose a customer because of the quality problem;
- With Strong R&D and Engineer Team, makes our after-service very easy, For all doubts and requesting for technologies supporting, We can offer detailed Solution without delay, so for us,“Not Only Products, But also solutions”;
- All our products will be offered with 24 months Warranty Period instead of 18 months.

Join us, enjoy the business.

Name Rules

SP600 - 2S - 0.75G

① ② ③

Serial number	Description	Meaning
①	SP600 series	Series Name
②	Voltage level	2S: Single-phase 220V Range:-15%~20% 4T: Three-phase 380V Range:-15%~20%
③	Adaptable motor power(KW)	0.4KW~7.5KW

QUALITY SERVICE

- Our VFD has been used in Shenzhen and Guangzhou Metrol Since Year 2014.
- Problem Rate Less Than 1%..
- Support OEM Service
- Strong Engineer Team
- 24 Months Warranty Time
- Very Good After Sales-Service, Best Solutions Can be always offered within 2 hours

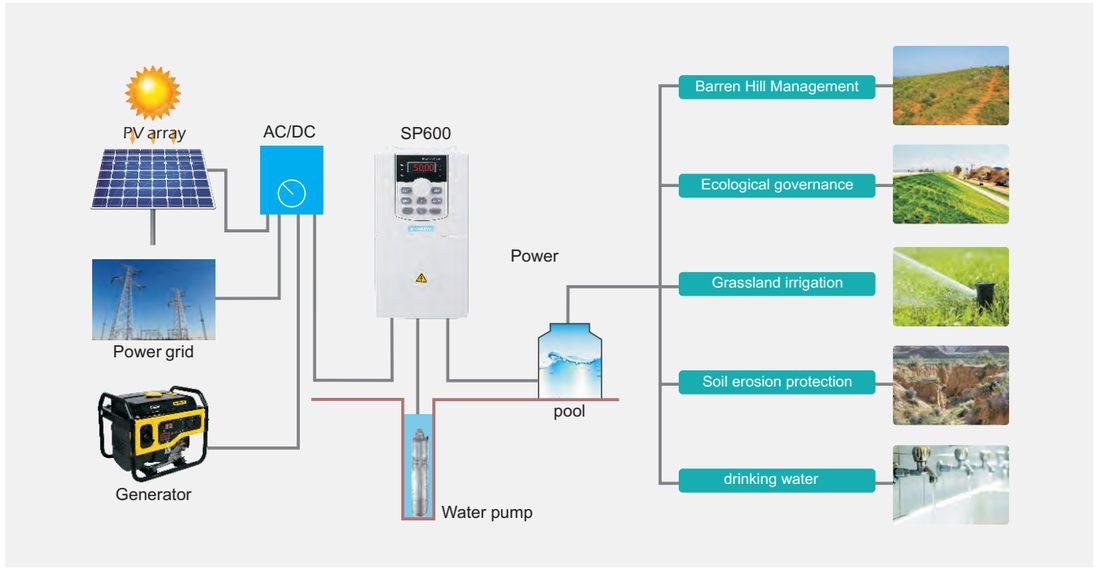
SP600 Series

SP600 series controller is a newly developed controller specialized for PV pump, it is mainly used for water supply in remote areas where without power supply or supply is unstable. PV pump controller can drive all kinds of water pumps by changing direct current which to be issued by PV module into alternating current. Systems continuously pump in good weather. For systems without batteries and other energy storage devices, it is recommended that the water should pump to the cistern for coming use.

SP600 PV Pump Controller adds MPPT algorithm to ensure the system run at the MPPT of solar modules in real-time.

SP600: Power Rate	3 phase input 3 phase output	380V (+-20%) 0.4KW~7.5KW

SOLAR PUMPING SYSTEM DIAGRAM



FEATURES AND FUNCTIONS

- SP600 PV Pump Controller continuously monitors the performance of the system and can detect a variety of anomalies;
- SP600 PV Pump Controller automatically detects the ambient temperature. When the temperature is too high, the controller will reduce the output power to maintain running as far as possible; When the controller temperature is cooled to a safe level, return to full power output;
- SP600 PV Pump Controller integrate improved MPPT algorithm, variable step size in real time tracking the MPP. Compared to a conventional constant-voltage control (CVT) method, it is more precise in tracking, response speed is much quicker, and overcomes the shortage of conventional disturbances tracking method near the MPP wide fluctuated running;
- When SP600 PV Pump Controller fails, the panel LED will display fault types, automaticlly reset regular failure, and enter into sleep and wake status according to the degree of light to ensure the controller run automatically the whole day.

SPECIFICATION

Input & Output

Input voltage	1AC 220~240V(± 15%) 3AC 220~240V(± 15%) 3AC 380~460V(± 15%)
Input frequency	50Hz/60Hz ±5%
Output voltage	0~input voltage, deviation <±3%
Output frequency	0~600Hz

Control Characteristics

Control mode	V/F control Sensor-less vector control Torque control
Speed accuracy	±0,5% (V/F) ±0,2% (SVC)
Speed fluctuation	±0,3% (SVC)
torque response	< 10ms (SVC)
Starting torque	0,5Hz: 150% (V/F) 0,25Hz: 180% (SVC)
Overload capability	150% Rated current -60s 180% Rated current -10s 200% Rated current -1s
Simple PLC Multi-step speed	16 speed External digital signal control Internal clock
PID function	Standard build-in
Communication	Modbus

Featured functions

Featured functions	Input &Output delay Flexible parameters display AVR (Automatic Voltage Regulation) Timing control, fixed length control, etc. Simple PLC, 16-steps speed control Torque control build-in S curve acceleration/deceleration Multi-functional programmable keypad V/F separated control

Environment Limitation

Installation location	Without direct sunlight,free from dust,corrosive gases, oil mist, flammable gases, water vapor, water drop and salt,etc.
Altitude	0~2000m Derated 1% for every 1000m when the altitude is above 1000meters
Ambient temperature	-10°C~50°C (Output derated while the temperature is higher than 40°C)
Storage temperature	-20°C~+70°C
Relative Humidity	5-95% no condensation

DRIVE DESIGN & FEATURES

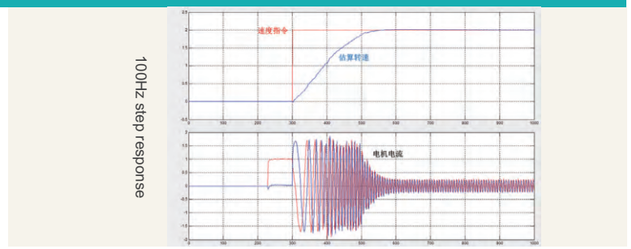
High speed accuracy and wide speed range

✧ **High speed accuracy and wide speed range:**

Steady speed accuracy: ±0.5% (SVC), ±0.02% (VC);
Speed range: 1:200 (SVC), 1:1000 (VC),

✧ **Heavy load overload capability:**

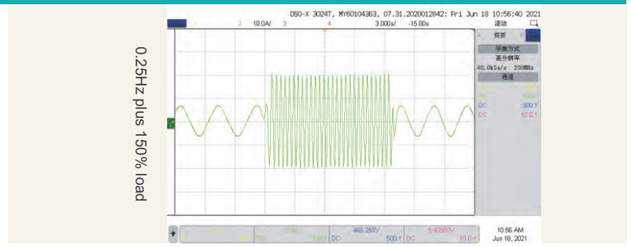
110% rated current for long-term stable operation;
150% rated current for 1 minute;
180% rated current 10s.



High torque in low speed, fast response

✧ **High torque in low speed, fast response Load capacity in low speed:**

VF: 180%@0.50Hz ;
SVC: 180%@0.25Hz ;
VC: 200%@0.00Hz.



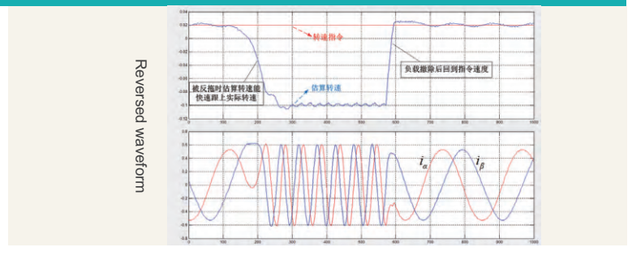
Rapid response to impact loads

✧ When it meets with sudden load change, inverter can quickly restore the speed, reduce the speed fluctuation, and ensure the production stability and high quality finished products.

Optimized SVC algorithm, stable operation in power generation

✧ At present, most of the inverters can not work stably under the SVC control mode (especially in the case of being reversed).

✧ SP600 can run very well, and it achives great convenience in some special applications (such as tension control in rewinding and winding) .



ADVANCED DESIGN

◆ EMC Filter

C3 Level Filter Build-In Standardly
Better EMC Performance

◆ IGBT Selection

Selection Of Large Margin
Current>2 Times of VFD Current

◆ Overload Capacity

120% long time running without trip.
150% for 60 seconds
180% for 10 seconds

◆ Voltage Range

Compatible with ±15% input voltage
fluctuation, output voltage s table.

◆ S Curve

S Curve Acceleration/Deceleration
Better Start /Stop Performance

◆ Flying Start Function

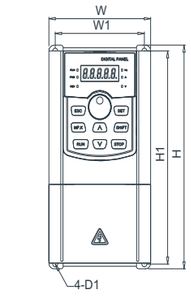
Restart The Running Motor Smoothly
No Current Surge
High Accuracy

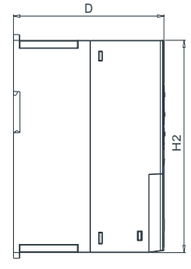
◆ Protection

Overcurrent、Overvoltage、PID feedback failure、Overheat、Undervoltage、The main contactor is abnormal、Motor overload、Fast protection、Unbalanced output、Frequency conversion overload、System abnormal、Motor detection abnormalOutput phase loss、Input phase loss、Short circuit protection of control board power supply.

OUTLINE AND INSTALLING DIMENSION

Model	External and installation dimensions (mm)						Pore size	Weight (kg)
	W1	H1	H	H2	W	D		
2S/T-0.4G	67.5	160	170	----	84.5	129	Φ4.5	1.0
2S/T-0.7G								
2S/T-1.5G								
2S/T-2.2G								
2S/T-3.7G	85	185	194	----	97	143.5	Φ5.5	1.4
4T-3.7G								
4T-5.5G								
2T-5.5G	106	233	245	----	124	171.2	Φ5.5	2.5
4T-7.5G								
4T-11G								
4T-15G	147	298	310	----	165	186.3	Φ6	4
4T-18.5G								
4T-22G								





COOPERATION BRAND

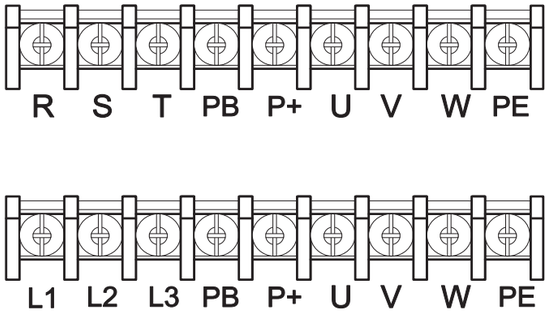
World-class components inside, stronger “bones”, healthier “body”.

AVAGO TECHNOLOGIES · TEXAS INSTRUMENTS · TDK · infineon · FE · VISHAY

TECHNICAL DATA

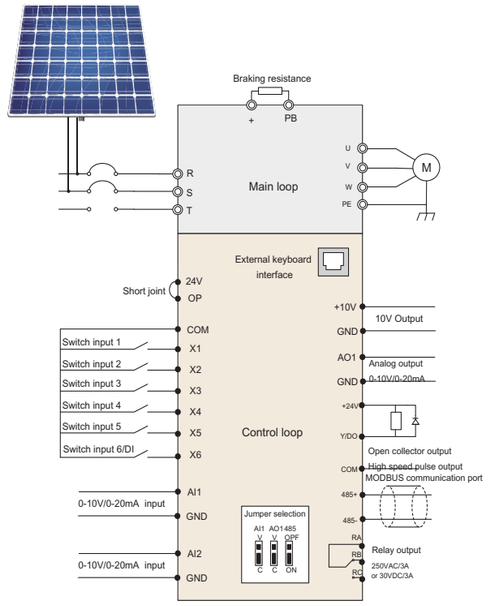
Model	Rated Output Current(A)	Maximum DC Input Current(A)	DC Input Voltage Range(V)	Recommended Solar Power (KW)	Recommended Solar Open Circuit Voltage(VOC)	Pump Power(kW)
SP600I-2S: DC input 70-450V DC, AC input single phase 220V (-15%~20%) AC; Output single phase 220VAC						
SP600I-2S-0.4B	4.2	10.6	70-450	0.6	360-430	0.4
SP600I-2S-0.7B	7.5	10.6	70-450	1.0	360-430	0.75
SP600I-2S-1.5B	10.5	10.6	70-450	2.0	360-430	1.5
SP600I-2S-2.2B	17	21.1	70-450	2.9	360-430	2.2
SP600-1S : DC input 70-450V, AC input single phase 110-220V; Output three phase 110VAC						
SP600-1S-1.5B	7.5	10.6	70-450	0.6	170-300	0.4
SP600-1S-2.2B	9.5	10.6	70-450	1.0	170-300	0.75
SP600-2S : DC input 70-450V, AC input single phase 220V (-15%~20%); Output three phase 220VAC						
SP600-2S-0.4B	2.5	10.6	70-450	0.6	360-430	0.4
SP600-2S-0.7B	4.2	10.6	70-450	1.0	360-430	0.75
SP600-2S-1.5B	7.5	10.6	70-450	2.0	360-430	1.5
SP600-2S-2.2B	9.5	10.6	70-450	2.9	360-430	2.2
4T : DC input 230-800V, AC input three phase 380V (-15%~30%); Output three phase 380VAC						
SP600-4T-0.7B	2.5	10.6	230-800	1.0	600-750	0.75
SP600-4T-1.5B	4.2	10.6	230-800	2.0	600-750	1.5
SP600-4T-2.2B	5.5	10.6	230-800	2.9	600-750	2.2
SP600-4T-4.0B	9.5	10.6	230-800	5.2	600-750	4.0
SP600-4T-5.5B	13	21.1	230-800	7.2	600-750	5.5
SP600-4T-7.5B	17	21.1	230-800	9.8	600-750	7.5
SP600-4T-011B	25	31.7	230-800	14.3	600-750	11
SP600-4T-015B	32	42.2	230-800	19.5	600-750	15
SP600-4T-018B	37	52.8	230-800	24.1	600-750	18.5
SP600-4T-022B	45	63.4	230-800	28.6	600-750	22
SP600-4T-030B	60	95.0	230-800	39.0	600-750	30
SP600-4T-037	75	116.2	230-800	48.1	600-750	37
SP600-4T-045	91	137.2	230-800	58.5	600-750	45
SP600-4T-055	112	169.0	230-800	71.5	600-750	55
SP600-4T-075	150	232.3	230-800	97.5	600-750	75
SP600-4T-090	176	274.6	230-800	117.0	600-750	90
SP600-4T-110	210	337.9	230-800	143.0	600-750	110
SP600-4T-132	253	401.3	230-800	171.6	600-750	132
SP600-4T-160	304	485.8	230-800	208.0	600-750	160
SP600-4T-185	350	559.7	230-800	240.5	600-750	185
SP600-4T-200	377	612.5	230-800	260.0	600-750	200

TERMINAL INSTRUCTIONS



Terminal marks	Name	Description
R/L1、S/L2、T/L3	4T/2T series power input terminals	AC input three-phase power connection point Single-phase 220V AC power connection point
P+、PB	Brake resistors are connected to terminals	Connecting brake resistance
U、V、W	Product output terminal	Connected three-phase motor
PE	Ground terminal	Ground terminal

PRODUCTS WIRE DIAGRAM



DESCRIPTION OF CONTROL LOOP TERMINALS