



SWITCHING POWER SUPPLY SPA SERIES

M A N U A L



Thank you very much for selecting Autonics products.
For your safety, please read the following before using.

Caution for your safety

*Please keep "Caution for your safety" to avoid accidents or damages as using it correctly.

*The meaning of 'Warning' and 'Caution' is as follows:

Warning In case a serious injury or dead may be occurred.

Caution In case a little injury or a damage of this unit may be occurred.

*The meaning of the mark on the product and manual is as follows:
▲ is a caution mark for danger in special condition.

Warning

- Please use it with double safety devices when it is used at the equipments which may cause damages to human life or assets (Ex: Nuclear power control, Medical equipment, Vehicle, Train, Air plane, Combustion apparatus, Enter-tainment or Safety device etc.)**
It may cause a fire, human life or assets.
- Do not disassemble and modify this unit. When it requires, please contact us.**
It may cause a fire or give electric shock, damage to product.
- Do not connect, check or repair during it is operating.**
It may give electric shock.
- AC input voltage must be used within rated value and its input voltage wire should be recommended wire.**
It may cause a fire or give electric shock, damage to product.
- For the product of voltage switching type, please change the input voltage range on a jumper switch.**
It may cause a fire or give electric shock, damage to product.
- Please check the connection before operating.**
It may cause a fire or give electric shock, damage to product.
- Please use it under rated specification.**
It may cause fire or damage to product.
- Do not insert fingers or other conductor into open part on this product.**
It may cause a fire or give electric shock, damage to product.
- Do not use this unit outdoors or the place where there are flammable, corrosive gas, water, vibration etc.**
It may cause a fire or give electric shock.
- Grounding wire should be over than AWG NO. 16 and which is grounded without grounding of other equipment.**
It may give electric shock.

Caution

- Do not put obstacle object for well ventilation around this product.**
It may cause damage to this product or malfunction of peripheral equipment by heating.
- Do not touch this product during operation or after stopping.**
It may cause burn due to high surface temperature of this product.
- Please stop this unit when mechanical trouble occurred.**
It may cause a fire or damage to product.
- The mounting torque of screw bolt on the terminal block is within 0.74 to 0.90N · m.**
It may cause a fire or damage to product.
- Do not touch the terminal when testing for insulation resistance or dielectric strength.**
It may give electric shock.
- Do not use it in strong vibration.**
It may cause damage to product.
- In cleaning the product, do not use water or oil-based detergent.**
It may cause a fire or give electric shock.
- Please separate as industrial scrapped material when disuse this product.**

The above specifications are subject to change and some models may be discontinued without notice.

Ordering information

SPA	-	030	-	05	
				Output voltage	05 5VDC 12 12VDC 24 24VDC
				Output power	030 30W 050 50W 075 75W 100 100W
				SPA	Series

Recommended wire for each model

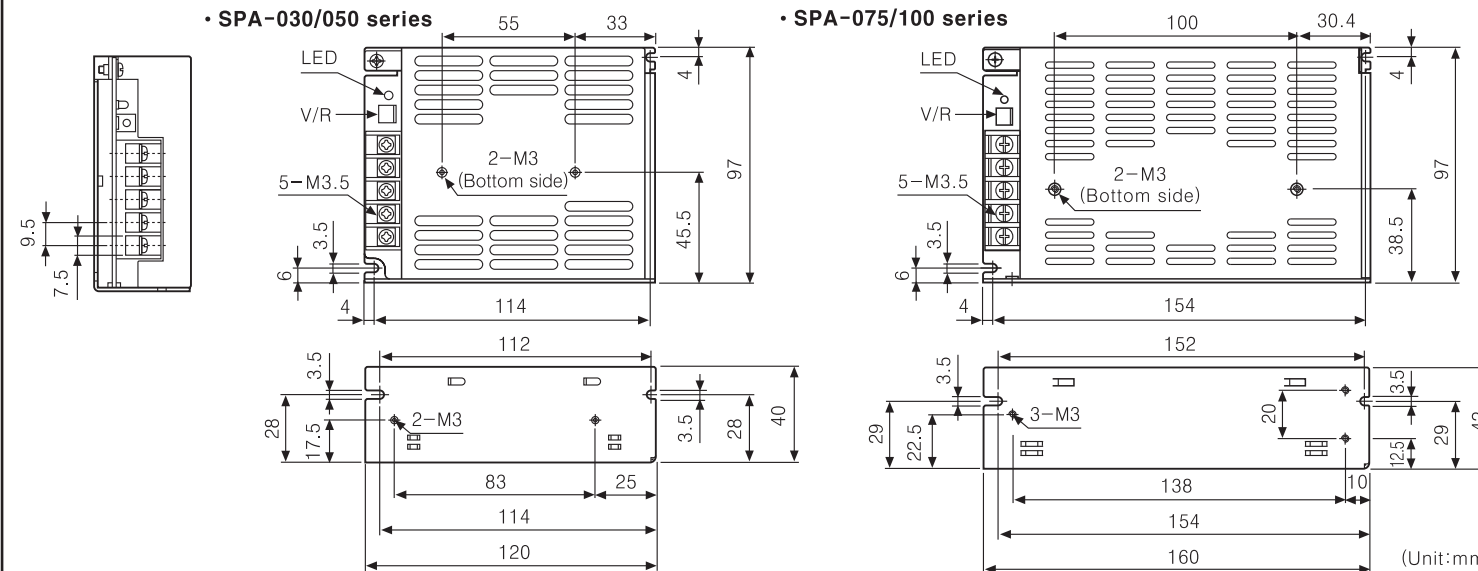
Recommended wire	AWG19 ~ 21	AWG16 ~ 18
Model	SPA-030-05 SPA-030-12 SPA-050-12 SPA-075-12 SPA-030-24 SPA-050-24 SPA-075-24 SPA-100-24	SPA-050-05 SPA-075-05 SPA-100-05 SPA-100-12

Specifications

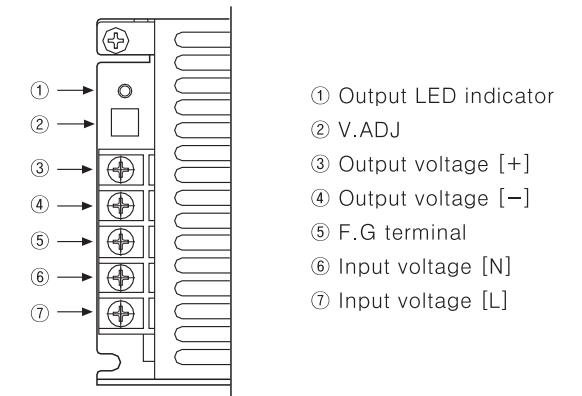
Model	SPA-030-05	SPA-050-05	SPA-030-12	SPA-050-12	SPA-030-24	SPA-050-24	SPA-075-05	SPA-100-05	SPA-075-12	SPA-100-12	SPA-075-24	SPA-100-24
Input	Voltage (5) 100-240VAC(85-264VAC) 100-120/200-240VAC(85-132/170-264VAC) Switching type											
	Frequency 50/60Hz											
	Efficiency (1) 60% Min. 67% Min. 74% Min. 80% Min. 70% Min. 78% Min. 72% Min. 78% Min. 80% Min.											
	Power current (1) 1.2A Max. 1.6A Max. 1.0A Max. 1.4A Max. 0.8A Max. 1.1A Max. 3.0A Max. 2.0A Max. 3.0A Max. 2.0A Max. 2.5A Max.											
Output	Voltage 5VDC 12VDC 24VDC 5VDC 12VDC 24VDC											
	Current 6A 10A 2.5A 4.2A 1.5A 2.1A 15A 20A 6.3A 8.5A 3.2A 4.2A											
	Voltage adjustment range (4) ±5%											
	Input fluctuation (2) ±0.5% Max.											
	Load fluctuation (1) ±2% Max. ±1% Max. ±2% Max. ±1% Max.											
	Ripple (1) ±1% Max.											
	Start-up time (1) 200ms Max. 150ms Max. 250ms Max.											
	Hold time (1) 10ms Min. 5ms Min. 10ms Min. 5ms Min. 10ms Min.											
Protection function	Inrush current protection 30A Max. (100VAC)/40A Max. (240VAC) 20A Max. (100VAC) 45A Max. (100VAC)/50A Max. (240VAC) 35A Max. (100VAC)/40A Max. (240VAC) 45A Max. (100VAC)/50A Max. (240VAC) 35A Max. (100VAC)/40A Max. (240VAC)											
	Output over current protection (3) 110% Min. 105% Min. 110% Min.											
	Controlling over-voltage output 6.5V ±10% 16V ±10% 30V ±10%											
	Output short-circuit protection 5ms Max. 10ms Max. 5ms Max. 10ms Max. 5ms Max.											
Others	Ambient temperature -10~50°C -10~40°C -10~50°C											
	Ambient operating 25 ~ 85%RH											
	Storage temperature/operating -25 ~ 65°C / 25 ~ 90%RH											
	Dielectric strength 3.0kVAC 50/60Hz for 1min(Between all inputs and outputs) 1.5kVAC 50/60Hz for 1min(Between all inputs and F.G) 100MΩ min. at 500VDC(Between all inputs and F.G)											
	Insulation resistance 0.75mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 2 hours											
	Shock resistance 300m/s ² (30G) in X, Y, Z directions for 3 times											
	Output indicator Green LED											
	EMS Conforms to EN61000-6-2											
	EMI Conforms to EN61000-6-4											
	Safety Conforms to IEC60950, IEC50178											
	Weight Approx. 350g						Approx. 400g					

- * (1) 100% load for rated input voltage(100VAC).
 * (2) Rated input voltage [SPA-030/050 Series : 100-240VAC(85-264VAC)] at 100VAC.
 [SPA-075/100 Series : 100-120/200-240(85-132/170-264VAC)]
 SPA-100-05 is under 100% of load for [100-120/200-240VAC(100-132/190-264VAC)].
 * (3) Rated input voltage(100VAC).
 * (4) Vary voltage by output voltage adjuster, it is changed over voltage variation range(±5%).
 * (5) The rated input volatge of SPA-100-05 is 100-120/200-240VAC(100-132/190-264VAC).

Dimensions



Input · Output terminals and functions



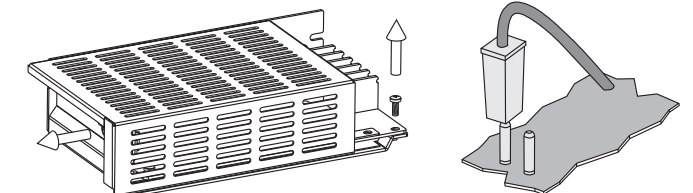
Caution for using

- Caution for operating**
 - This product has not the function for parallel or series operation.
 - The output current must be used within rated.
If over current is applied to product, over current protection is operating. But, Life time of product is shorter than normal.
 - The output must be under rated voltage. When cutting off the input voltage for several minutes by control function of over-voltage, it prevents the damage of product and external equipment.
 - For the products, which have the control function for over-voltage, if making the adj. volume to over voltage, the function starts to work.
 - This product has the function of over-heating protection. The over-heating protection operates when the product has over-heating condition. The product will normally operate if the load shall be removed for a few minutes.
 - This product is using a rectification with capacitor and the range of power factor is 0.5 to 0.7. Therefore, please get input power capacity from below when using a distribution box or a transformer.

$$\text{Input apparent power[VA]} = \frac{\text{Output active power[W]}}{\text{Power factor} \times \text{Efficiency}}$$

- This product doesn't have circuits for decreasing harmonics or improving power factor.
- This product is provided with a noise filter, but noise is variable according to operating conditions.
- Replace only with same rated of fuse.

* **The factory default of voltage switching type is 220V.**
For changing the voltage to 110V, select another jumper switch after detaching a case as below.



- Caution for mounting**
 - Please mount on surface of metal panel closely for the better performance.
 - Please mount this product at a well-ventilated place in order to increase the heating efficiency.
- Installation environment**
 - It shall be used indoor
 - Altitude max. 2000m
 - Pollution Degree 2
 - Installation Category II

* **It may cause malfunction if above instructions are not followed.**

Major products

- Photoelectric sensors
- Fiber optic sensors
- Door sensors
- Door side sensors
- Area sensors
- Proximity sensors
- Pressure sensors
- Rotary encoders
- Connectors/Sockets
- Switching mode power supplies
- Control switches/Lamps/Buzzers
- I/O Terminal Blocks & Cables
- Stepper motors/drivers/motion controllers
- Graphic/Logic panels
- Field network devices
- Laser marking system(Fiber, CO₂, Nd:YAG)
- Laser welding/soldering system
- Temperature controllers
- Temperature/Humidity transducers
- Tachometer/Pulse(Rate)meters
- SSR/Power controllers
- Sensor controllers
- Display units
- Panel meters
- Counters
- Timers

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