

Autonics 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

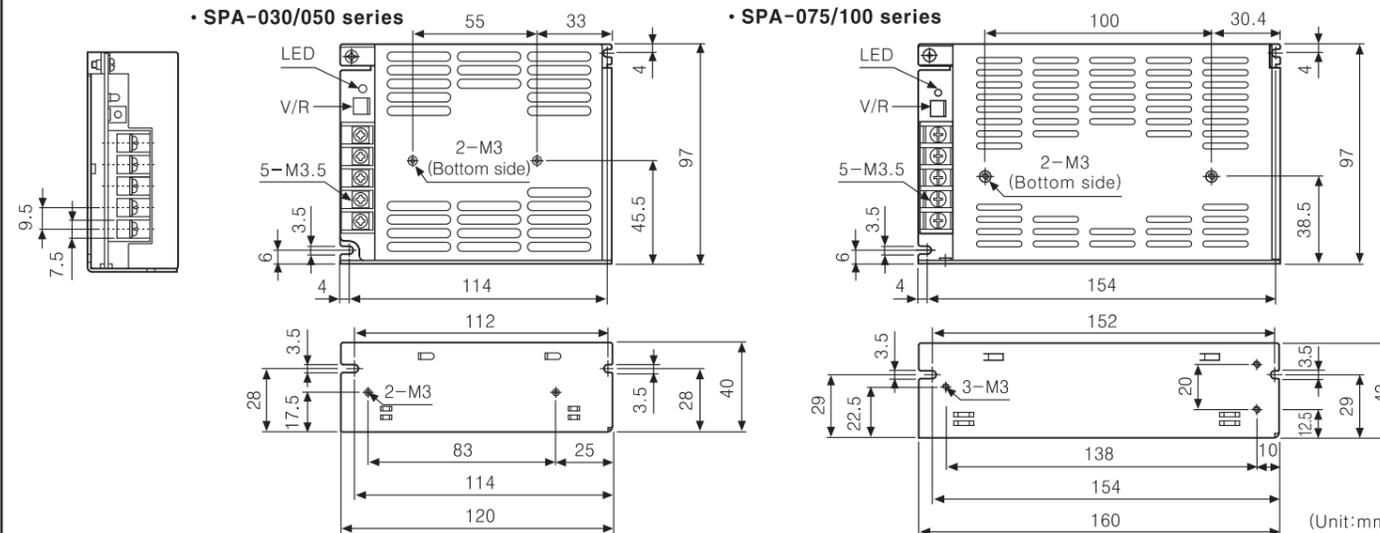
| Recommended wire | AWG19 ~ 21 | AWG16 ~ 18 |
|------------------|--|--|
| Model | SPA-030-05 SPA-030-12 SPA-050-12 SPA-075-12 SPA-030-24 SPA-050-24 SPA-075-24 SPA-100-24 | SPA-050-05 SPA-075-05 SPA-100-05 SPA-100-12 |

Specifications

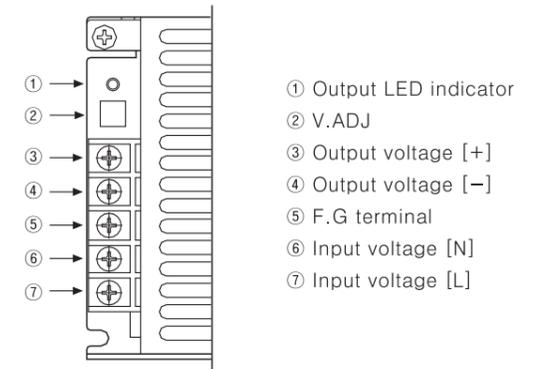
| Model | SPA-030-05 | SPA-050-05 | SPA-030-12 | SPA-050-12 | SPA-030-24 | SPA-050-24 | SPA-075-05 | SPA-100-05 | SPA-075-12 | SPA-100-12 | SPA-075-24 | SPA-100-24 | | |
|------------------------------------|---|------------|-------------------|------------|------------|------------|---|------------|---|------------|---|------------|---|--|
| Input | 100-240VAC(85-264VAC) | | | | | | | | | | | | | |
| Frequency | 50/60Hz | | | | | | | | | | | | | |
| Efficiency (1) | 60% Min. | 67% Min. | 74% Min. | 80% Min. | 70% Min. | 78% Min. | 72% Min. | 78% Min. | 80% Min. | 80% Min. | 80% 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. | 2.5A Max. | | |
| Output | 5VDC | | | | | | | | | | | | | |
| 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. | |
| 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. | |
| 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) | | | | | | | | | | | | | |
| Insulation resistance | 1.5kVAC 50/60Hz for 1min(Between all inputs and F.G) | | | | | | | | | | | | | |
| Vibration resistance | 100MΩ min. at 500VDC(Between all inputs and F.G) | | | | | | | | | | | | | |
| Shock resistance | 0.75mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 2 hours | | | | | | | | | | | | | |
| Output indicator | 300m/s ² (30G) in X, Y, Z directions for 3 times | | | | | | | | | | | | | |
| EMS | Green LED | | | | | | | | | | | | | |
| EMI | Conforms to EN61000-6-2 | | | | | | | | | | | | | |
| Safety | Conforms to EN61000-6-4 | | | | | | | | | | | | | |
| 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



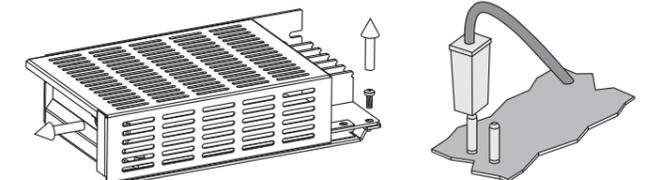
Caution for using

- 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

Autonics Corporation
http://www.autonics.com

Satisfiable Partner For Factory Automation

HEAD QUARTERS:
18, Bansong-ro 513beon-gil, Haeundae-gu, Busan, Korea

OVERSEAS SALES:
#402-404, Buecheon Techno Park, 655, Pyeongcheon-ro, Wonmi-gu, Buecheon, Gyeonggi-do, Korea

TEL: 82-32-610-2730 / FAX: 82-32-329-0728
E-mail: sales@autonics.com

EP-KE-15-0001C