

**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.

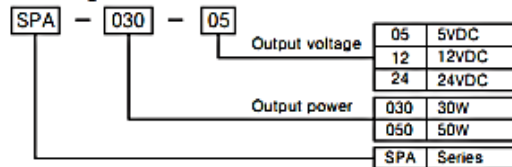
**Warning**

1. 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, Entertainment or Safety device etc.)  
It may cause a fire, human life or assets.
2. 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.
3. Do not connect, check or repair during it is operating.  
It may give electric shock.
4. 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.
5. Please check the connection before operating.  
It may cause a fire or give electric shock, damage to product.
6. Please use it under rated specification.  
It may cause fire or damage to product.
7. 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.
8. 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.
9. Grounding wire should be over than AWG NO. 16 and which is grounded without grounding of other equipment.  
It may give electric shock.

**Caution**

1. 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.
2. Do not touch this product during operation or after stopping.  
It may cause burn due to high surface temperature of this product.
3. Please stop this unit when mechanical trouble occurred.  
It may cause a fire or damage to product.
4. 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.
5. Do not touch the terminal when testing for insulation resistance or dielectric strength.  
It may give electric shock.
6. Do not use it in strong vibration.  
It may cause damage to product.
7. In cleaning the product, do not use water or oil-based detergent.  
It may cause a fire or give electric shock.
8. Please separate as industrial scrapped material when disuse this product.  
\*The specifications and dimensions are changeable without notice anytime.

**Ordering information**

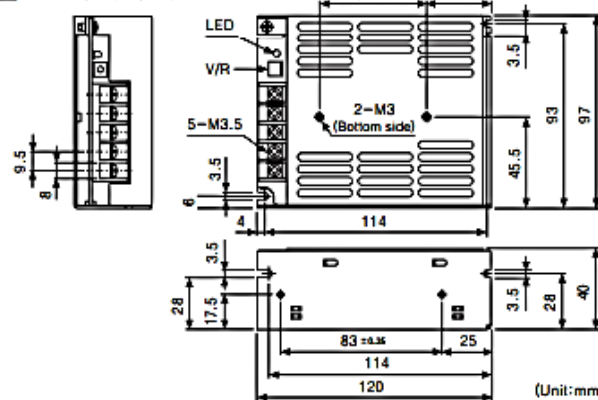


**Specifications**

Model	SPA-030-05	SPA-050-05	SPA-030-12	SPA-050-12	SPA-030-24	SPA-050-24
Input Voltage	100-240VAC(85-264VAC)					
Input Frequency	50/60Hz					
Efficiency (1)	65% Min.		74% Min.		80% Min.	
Current (1)	1.0A Max.	1.4A Max.	1.0A Max.	1.4A Max.	0.8A Max.	1.1A Max.
Output Voltage	5VDC		12VDC		24VDC	
Output Current	6A	10A	2.5A	4.2A	1.5A	2.1A
Output Voltage adjustment range (2)	±5% Max.					
Input adjustment range (2)	±0.5% Max.					
Load adjustment range (2)	±1% Max.					
Ripple (1)	±1% Max.					
Start-up time (1)	180ms Max.	150ms Max.	150ms Max.	150ms Max.	100ms Max.	100ms Max.
Hold time (1)	10ms Min.	10ms Min.	10ms Min.	10ms Min.	20ms Min.	20ms Min.
Inrush current protection (3)	20A Max.					
Output over current protection	110% Min.					
Output short-circuit protection	50ms Max.					
Ambient temperature (Operating)	-10 to +50°C / 25 to 85%RH					
Ambient temperature (Storage)	-25 to +65°C / 25 to 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)					
Insulation resistance	100MΩ min. at 500VDC(Between all inputs and F.G)					
Vibration resistance	0.75mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 2 hours					
Shock resistance	300m/s <sup>2</sup> (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					

- \* (1)100% load for rated input voltage(100VAC).
- \* (2)100% load for rated input voltage(85 to 264VAC).
- \* (3)Rated input voltage(100VAC).

**Dimensions**



**Input · Output terminals and functions**



- ① Output LED indicator
- ② V.ADJ Adjustor
- ③ Output voltage [+]
- ④ Output voltage [-]
- ⑤ F.G terminal
- ⑥ Input voltage [N]
- ⑦ Input voltage [L]

**Recommended wire for each model**

Model	SPA-030-24	SPA-050-24	SPA-050-12	SPA-050-05
Recommended wire	AWG16 ~ 18	AWG14 ~ 17	AWG12 ~ 14	AWG10 ~ 12

**Caution for using**

1. Caution for operating
    - ① This product has not the function for parallel or series operation.
    - ② 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.
    - ③ 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.
    - ④ 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.  
$$\text{Input apparent power[VA]} = \frac{\text{Output active power[W]}}{\text{Power factor} \times \text{Efficiency}}$$
    - ⑤ This product doesn't have circuits for decreasing harmonics or improving power factor.
    - ⑥ This product is provided with a noise filter, but noise is variable according to operating conditions.
  2. Caution for mounting
    - ① Please mount on surface of metal panel closely for the better performance.
    - ② Please mount this product at a well-ventilated place in order to increase the heating efficiency.
  3. Installation environment
    - ① It shall be used indoor
    - ② Altitude max. 2000m
    - ③ Pollution Degree 2
    - ④ Installation Category II
- \* It may cause malfunction if above instructions are not followed.

**Main products**

- COUNTER
- TIMER
- TEMPERATURE CONTROLLER
- PANEL METER
- TACHO/LINE SPEED/PULSE METER
- DISPLAY UNIT
- PROXIMITY SENSOR
- PHOTOELECTRIC SENSOR
- FIBER OPTIC SENSOR
- PRESSURE SENSOR
- ROTARY ENCODER
- SENSOR CONTROLLER
- POWER CONTROLLER
- STEPPING MOTOR & DRIVER & CONTROLLER
- LASER MARKING SYSTEM

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