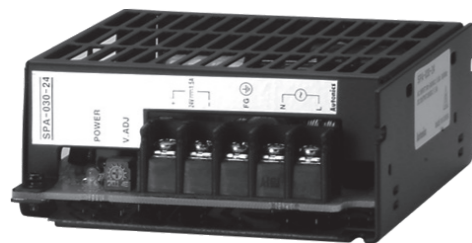


**Autonics**

**SWITCHING MODE POWER SUPPLY  
SPA SERIES**

**INSTRUCTION MANUAL**



Thank you for choosing our Autonics product.  
Please read the following safety considerations before use.

**■ Safety Considerations**

※ Please observe a safety considerations for safe and proper product operation to avoid hazards

※ ⚠ symbol represents caution due to special circumstances in which hazards may occur

**⚠ Warning** Failure to follow these instructions may result in serious injury or death.

**⚠ Caution** Failure to follow these instructions may result in personal injury or product damage.

**⚠ Warning**

**1. Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss.** (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.)  
Failure to follow these instructions may result in personal injury, economic loss or fire

**2. Do not use the unit in the place where flammable/explosive/corrosive gas, high humidity, direct sunlight, radiant heat, vibration, impact, or salinity may be present.**  
Failure to follow these instructions may result in explosion or fire

**3. Install on the device panel, and ground to the F.G. terminal separately.**  
Failure to follow these instructions may result in fire or electric shock

**4. Do not connect, repair, or inspect the unit while connected to a power source.**  
Failure to follow these instructions may result in fire or electric shock

**5. Check 'Wiring Diagram' before wiring.**  
Failure to follow these instructions may result in fire

**6. Do not disassemble or modify the unit.**  
Failure to follow these instructions may result in fire or electric shock

**⚠ Caution**

**1. When connecting the F.G. terminal, use AWG 14 (2.1mm<sup>2</sup>) cable or over and tighten the terminal screw with a tightening torque of 0.7 to 0.9N·m.**  
Failure to follow these instructions may result in fire or malfunction due to contact failure

**2. Use the unit within the rated specifications.**  
Failure to follow these instructions may result in fire, product damage or shortening the life cycle of the product

**3. Use dry cloth to clean the unit, and do not use water or organic solvent.**  
Failure to follow these instructions may result in electric shock or fire

**4. Keep the product away from metal chip, dust, and wire residue which flow into the unit.**  
Failure to follow these instructions may result in fire or product damage

**5. Do not touch the product during operation or for a certain period of time after stopping.**  
Failure to follow these instructions may result in burns

**6. Upon occurrence of an error, disconnect the power source.**  
Failure to follow these instructions may result in fire or product damage

**■ Ordering Information**

SPA	030	05	Output voltage	05	5VDC
		12		12	12VDC
		24		24	24VDC
	030		Output power	030	30W
	050			050	50W
	075			075	75W
	100			100	100W
			tem	SPA	Switching mode power supply

※ The above specifications are subject to change and some models may be discontinued without notice.  
※ Be sure to follow cautions written in the instruction manual and the technical descriptions (catalog, homepage).

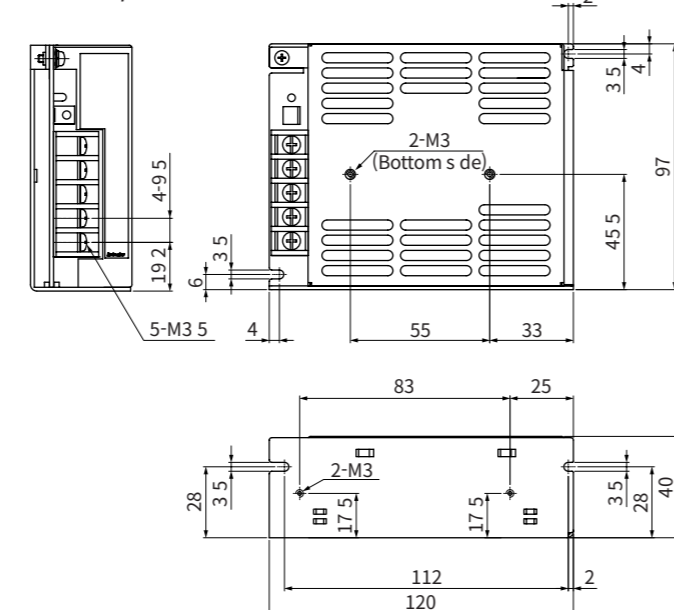
**■ Specifications**

Mode	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		
Output power	30W	50W	30W	50W	30W	50W	75W	100W	75W	100W	75W	100W		
Input	Vo tage <sup>*1,2</sup>	100 240VAC~ (permissible voltage 85 264VAC~)						100 120/200 240VAC~ (permissible voltage 85 132/170 264VAC~) switching type						
	Frequency	50/60Hz												
	Efficiency <sup>*3</sup>	M n 60%	M n 67%	M n 74%	M n 80%			M n 70%	M n 78%	M n 72%	M n 78%	M n 80%		
	Current consumption <sup>*3</sup>	Max 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		
Output	Vo tage	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	
	Vo tage adjustment range <sup>*4</sup>	±5%												
	Input fluctuation <sup>*5</sup>	Max ±0.5%												
	Load fluctuation <sup>*3</sup>	Max ±2%			Max ±1%			Max ±2%			Max ±1%			
	Response <sup>*3</sup>	Max ±1%												
	Start-up time <sup>*3</sup>	Max 200ms				Max 150ms				Max 250ms				
	Hold time <sup>*3</sup>	M n 10ms				M n 5ms				M n 10ms				
Protection	Inrush current protection	Max 30A (100VAC~) /Max 40A (200VAC~)		Max 20A (100VAC~)		Max 45A (100VAC~) /Max 50A (240VAC~)		Max 35A (100VAC~) /Max 40A (240VAC~)		Max 45A (100VAC~) /Max 50A (240VAC~)		Max 35A (100VAC~) /Max 40A (240VAC~)		
	Over current protection <sup>*6</sup>	M n 110%						M n 105%		M n 110%				
	Over voltage protection <sup>*4</sup>	6.5V ±10%						16V ±10%		30V ±10%				
	Output short circuit protection	Max 5ms						Max 10ms		Max 5ms		M n 10ms		Max 5ms
Indicator	Output indicator Green LED													
Insulation resistance	Over 100MΩ (at 500VDC megger between all inputs and F.G.)													
Dielectric strength	3000VAC 50/60Hz for 1min (between all inputs and outputs)													
	1500VAC 50/60Hz for 1min (between all inputs and F.G.)													
Vibration	0.75mm amplitude at frequency of 10 to 55Hz in each X, Y, Z direction for 2 hours													
Shock	300m/s <sup>2</sup> (approx 30G) in each X, Y, Z direction for 3 times													
EMS	Conforms to EN61000-6-2													
EM	Conforms to EN61000-6-4													
Safety standards	EN60950, EN50178													
Environment	Ambient temperature	10 to 50°C			10 to 40°C			10 to 50°C						
	Storage temperature	25 to 65°C												
	Ambient humidity	25 to 85%RH, storage 25 to 90%RH												
Tightening torque	0.7 to 0.9N·m													
Approval	CE						CE							
Unit weight	Approx 350g						Approx 400g							

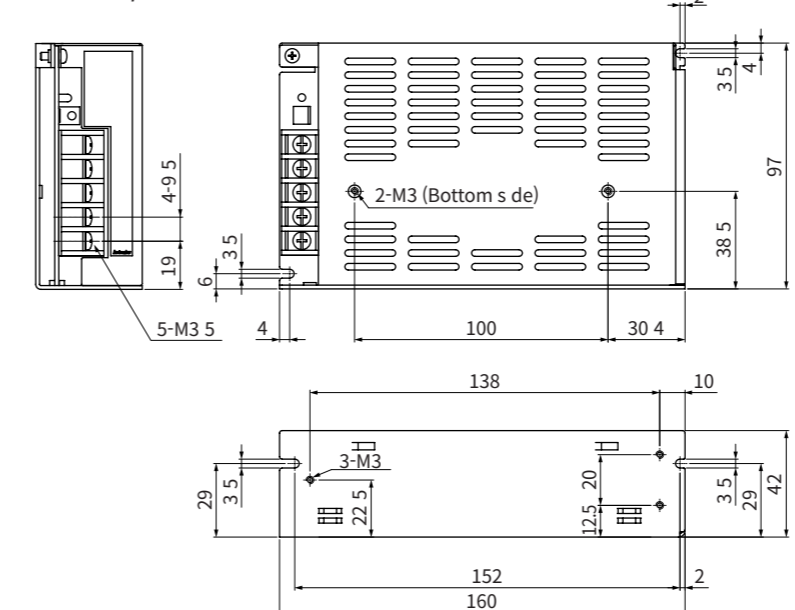
※1 The rated input voltage of SPA-100-05 is 100-120/200-240VAC(100-132/190-264VAC)  
 ※2 Since there is no separate input overvoltage protection for the voltage over the rated input voltage range, supplying overvoltage may result in product damage  
 ※3 100% load for rated input voltage(100VAC)  
 ※4 Use the output voltage adjustment voltage within the voltage variation range if the voltage exceeds the output voltage range, overvoltage protection function is activated and the output is cut off  
 ※5 Rated input voltage: SPA-030/050 Series 100-240VAC(85-264VAC)  
 SPA-075/100 Series 100-120/200-240(85-132/170-264VAC) at 100VAC.  
 SPA-100-05 is under 100% of load for [100-120/200-240VAC(100-132/190-264VAC)]  
 ※6 Rated input voltage(100VAC) ※Environment resistance is rated at no freezing or condensation

**■ Dimensions**

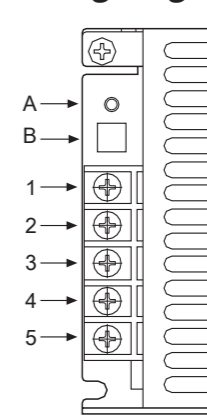
**● SPA 030/050 Series**



**● SPA 075/100 Series**



**■ Wiring Diagram/Unit Description**



- Wiring Diagram**
- 1 Output voltage (+) terminal
  - 2 Output voltage (-) terminal
  - 3 Frame ground [F.G.] terminal
  - 4 Input power [N] terminal
  - 5 Input power [L] terminal

- Unit Description**
- A Output indicator (green)
  - B Output voltage adjuster (V ADJ)

**■ Specification of Input Cable**

Specification of input cable	AWG21 to 19	AWG18 to 16
Mode	SPA-030-05, SPA-030-12 SPA-030-24, SPA-050-12 SPA-050-24, SPA-075-12 SPA-075-24, SPA-100-24	SPA-050-05, SPA-075-05 SPA-100-05, SPA-100-12

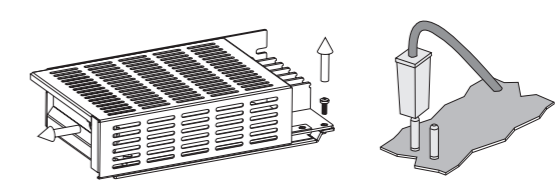
**■ Over-Heating Protection**

The overheat protection function cuts off the output voltage, when the temperature in an element increases due to overheating  
 This product has the overheat protection function with the fuse  
 When the overheat protection function is activated and the product does not work properly, please resupply power

**■ Cautions during Use**

- 1 Follow instructions in Cautions during Use  
Otherwise, it may cause unexpected accidents
- 2 Do not connect the output voltage neither in series nor in parallel
- 3 Since there is no harmonic suppression or power factor correction circuit, install the circuit separately if necessary
- 4 Since using the condenser input method, power factor is in the range of 0.4 to 0.6  
When using distributor on board or transformer, check the capacity of the input voltage  

$$\text{Input apparent power [VA]} = \frac{\text{Output active power [W]}}{\text{Power factor} \times \text{Efficiency}}$$
- 5 Even though a noise filter is installed inside the product, the product can be affected by noise depending on the installation location or wiring
- 6 If the internal fuse is damaged, please contact our A/S center
- 7 In case of mode switching the user switching method for the input voltage selection, factory default is set to 220V  
When switching over to 110V, remove the case of the product as below and select the voltage with the jumper switch within the range of the input voltage



- 8 To ensure the reliability of the product, install the product on the panel or metal surface
- 9 Install the unit in the well-ventilated place
- 10 Do not use near the equipment which generates strong magnetic force or high frequency noise
- 11 This unit may be used in the following environments
  - ① Indoors (in the environment condition on rated specifications)
  - ② Altitude max 2,000m
  - ③ Pollution degree 2
  - ④ Installation category