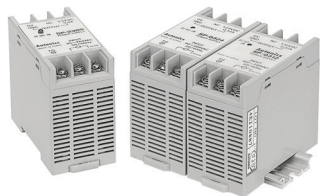


Autonics

SWITCHING MODE POWER SUPPLY

SP SERIES

INSTRUCTION MANUAL



Thank you for choosing our Autonics product.

Please read the following safety considerations before use.

Safety Consideration

※ Please observe all 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.

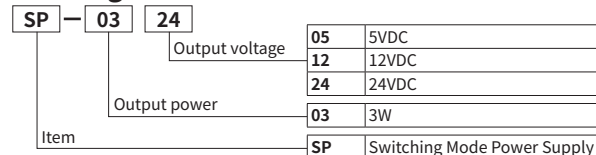
⚠ Warning

- 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 this instruction may result in personal injury, economic loss or fire.
- Do not use the unit in the place where flammable/explosive/corrosive gas, humidity, direct sunlight, radiant heat, vibration, impact, or salinity may be present.**
Failure to follow this instruction may result in explosion or fire.
- Install on the device panel or DIN rail, and ground to the F.G. terminal separately.**
Failure to follow this instruction may result in fire or electric shock.
- Do not connect, repair, or inspect the unit while connected to a power source.**
Failure to follow this instruction may result in fire or electric shock.
- Check 'Wiring Diagram' before wiring.**
Failure to follow this instruction may result in fire.
- Do not disassemble or modify the unit.**
Failure to follow this instruction may result in fire or electric shock.

⚠ Caution

- When connecting the F.G. terminal, use AWG 14 (2.1mm²) cable or over and tighten the terminal screw with a tightening torque of 0.7 to 0.9N.m.**
Failure to follow this instruction may result in fire or malfunction due to contact failure.
- Use the unit within the rated specifications.**
Failure to follow this instruction may result in fire, product damage or shortening the life cycle of the product.
- Use dry cloth to clean the unit, and do not use water or organic solvent.**
Failure to follow this instruction may result in fire or electric shock.
- Keep the product away from metal chip, dust, and wire residue which flow into the unit.**
Failure to follow this instruction may result in fire or product damage.
- Do not touch the product during operation or for a certain period of time after stopping.**
Failure to follow this instruction may result in burns.
- Upon occurrence of an error, disconnect the power source.**
Failure to follow this instruction may result in fire or product damage.

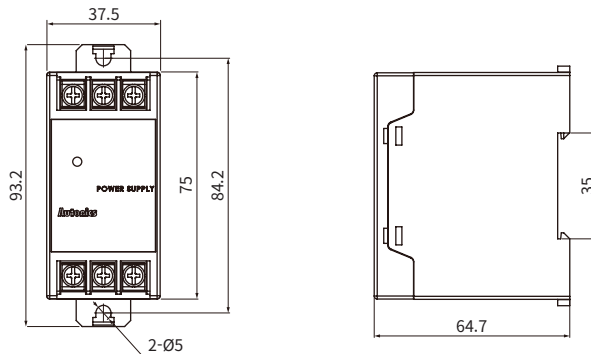
Ordering Information



※ 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).

Dimensions

(unit: mm)



Specifications

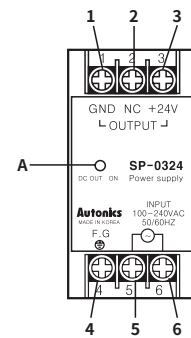
Model	SP-0305	SP-0312	SP-0324	
Output power	3W			
Input	Voltage	100-240VAC~ (permissible voltage: 85-264VAC~)		
	Frequency	50/60Hz		
	Efficiency	67 to 74%		
	Current consumption	Max. 0.15A		
Output	Voltage	5VDC==	12VDC==	24VDC==
	Current	0.6A	0.25A	0.13A
	Allowable voltage range	Max. ±5%		
	Ripple	Max. 5%		
	Voltage fluctuation ratio	Max. 0.5% (at 85-264VAC~ 100% load)		
Over-current protection	Min. 110%			
Series / Parallel operation	Not available			
Indicator	Output indicator: Red LED			
Insulation resistance	Over 100MΩ (at 500VDC megger)			
Dielectric strength	2,000VAC 50/60Hz for 1 minute			
Vibration	Mechanical	0.75mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 2 hours		
	Malfunction	0.5mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 10 minutes		
Shock	Mechanical	300m/s ² (approx. 30G) in each X, Y, Z direction for 3 times		
	Malfunction	100m/s ² (approx. 10G) in each X, Y, Z direction for 3 times		
Environ-ment	Ambient temp.	-10 to 50°C, storage: -20 to 70°C		
	Ambient humi.	35 to 85%RH		
Specification of Input cable	AWG 22 to 16			
Tightening torque	0.7 to 0.9N·m			
Unit weight	Approx. 100g			

※ Environment resistance is rated at no freezing of condensation.

Cautions during Use

- Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.
 - Do not connect the output voltage neither in serial nor in parallel.
 - Since there is no harmonic suppression or power factor correction circuit, install the circuit separately if necessary.
 - Since using the condenser input method, power factor is in the range of 0.4 to 0.6. When using distribution board or transformer, check the capacity of the input voltage.
- $$\text{Input apparent power[VA]} = \frac{\text{Output active power[W]}}{\text{Power factor} \times \text{Efficiency}}$$
- Even though a noise filter is installed inside the product, the product can be affected by noise depending on the installation location or wiring.
 - If the internal fuse is damaged, please contact our A/S center.
 - To ensure the reliability of the product, install the product on the panel or metal surface vertically to the ground.
 - Install the unit in the well ventilated place.
 - Do not use near the equipment which generates strong magnetic force or high frequency noise.
 - This unit may be used in the following environments.
 - Indoors (in the environment condition rated in 'Specifications')
 - Altitude max. 2,000m
 - Pollution degree 2
 - Installation category II

Wiring Diagram/Unit Description



• Wiring Diagram

- GND
- N-C terminal
- +V
- F.G. (Field Ground) terminal
- Input power terminal

• Unit Description

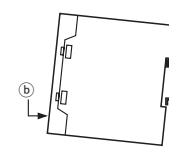
- A. Output indicator (red)

Installation

⊙ Mounting on DIN rail and removing

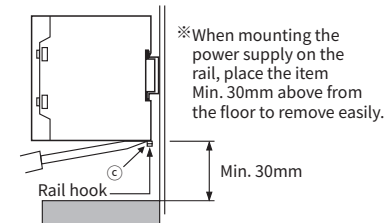
• To mount the power supply on DIN rail

First put the power supply on the part ③ of the rail and then press it for the direction ②.



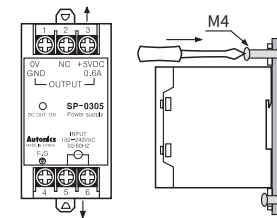
• To remove the power supply from DIN rail

Firstly put a screw driver into the part ① and push it downward.



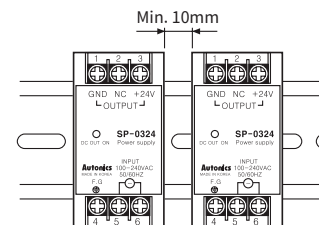
⊙ Mounting on Panel

• When there is no DIN rail



If there is no rail, it is able to mount by screwing a bolt at the hook on the body as following figure.

⊙ Installation interval



When installing multiple SMPSSs, please keep space at least 10mm between SMPSSs for heat radiation.