### **DIN Rail Mount Type Switching Mode Power Supply**

#### Features

Z

- Compact size, high quality, cost-effective
- Universal input power
- Enables to drive various controllers
- Built-in output short over current protection circuit
- DIN rail mounting and mountable without the rail

Please read "Safety Considerations" in the instruction manual before using.
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Ordering Information

SENSORS

CONTROLLERS

MOTION DEVICES

SOFTWARE

(J) Temperature Controllers

(K) SSRs

(L) Power Controllers

(M) Counters

(N) Timers

(O) Digital Panel Meters

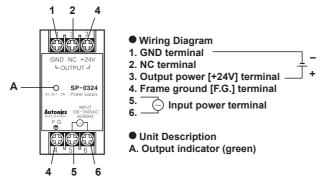
SP – (	03 24		
		05	5VDC
	Output voltage	12	12VDC
		24	24VDC
	Output power	03	3W
Item		SP	Switching Mode Power Supply

#### Specifications

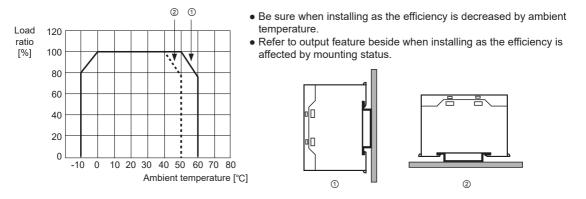
Model		SP-0305	SP-0312	SP-0324	(P) Indicators	
Outpu	ut power	3W				
_	Voltage	100-240VAC~ (permissible voltage: 85-264VAC)				
Input condition	Frequency	50/60Hz				
	Efficiency	67 to 74%				
0	Current consumption Max. 0.15A					
Output characteristics	Voltage	5VDC	12VDC	24VDC===	(S)	
	Current	0.6A	0.25A	0.13A	Sensor Controllers	
	Allowable voltage range	Max. ±5%				
o Jara	Ripple	Max. 5%				
с,	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 100M $\Omega$ (at 500VDC megger)				
Dielectric strength 2,000VAC 50/60Hz for 1 minute						
Vibration		0.75mm amplitude at frequency of 10 to 55Hz (for 1 min) 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				
Enviro -ment	on Ambient temperature	-10 to 50°C, storage: -20 to 70°C				
	t Ambient humidity	35 to 85%RH				
Unit weight Approx. 100g						

 $\times$ Environment resistance is rated at no freezing of condensation.

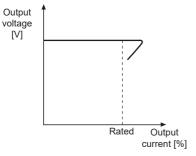
#### Wiring Diagram/Unit Description



#### Output Derating Curve by Ambient Temperature

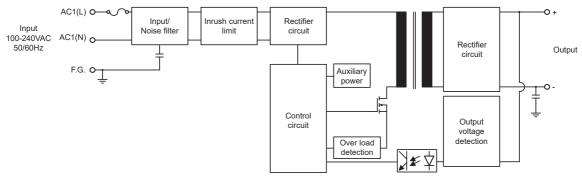


#### Feature Data of Over-Current Protection



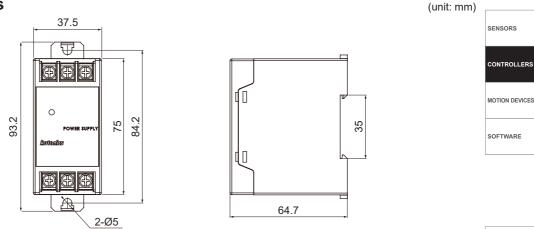
• It is able to protect overcurrent by load with built in over-current protection circuit. When the over rated current is flowed, the circuit is operated (output voltage is fallen) and it is released when the load current is under the rated current (it is returned to the rated output voltage).

#### Block Diagram



## **DIN Rail Mount Type Switching Mode Power Supply**

#### Dimensions



#### Installation

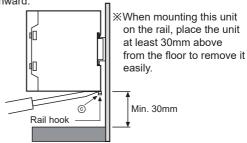
#### © DIN rail mounting

#### • Mounting to DIN rail

Put the unit on the part (a) of the rail before press it to the direction (b)

# a

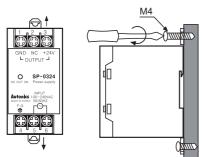
#### • Removing from DIN rail Put a screw driver into the part © before push it downward.



#### **O** Panel mounting

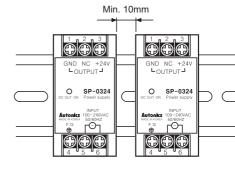
#### When there is no DIN rail

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



#### O Spacing

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



(K) SSRs (L) Power Controllers (M) Counters (N) Timers

(J) Temperature Controllers

(O) Digital Panel Meters

(P) Indicators

(Q) Converters

(R) Digital Display Units

(S) Sensor Controllers

(T) lode P

(U) Recorders

(V) HMIs

(W) Panel PC

(X) Field Network Devices

#### Proper Usage

#### ▲ 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 serial 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 distribution board or transformer, check the capacity of the input voltage.

Input apparent power[VA] = Output active power[W] Powerfactor×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. To ensure the reliability of the product, install the product on the panel or metal surface vertically to the ground.
- 8. Install the unit in the well ventilated place.
- 9. Do not use near the equipment which generates strong magnetic force or high frequency noise.
- 10. This unit may be used in the following environments.
  - ① Indoors (in the environment condition rated in 'Specifications')
  - 2 Altitude max. 2,000m
  - ③ Pollution degree 2
  - ④ Installation category II