## Product Overview

**Type**
DIN rail mount type Switching Mode Power Supply (SMPS)

<table>
<thead>
<tr>
<th>Model</th>
<th>SP-0305</th>
<th>SP-0312</th>
<th>SP-0324</th>
</tr>
</thead>
</table>

### Appearances & Dimensions

![Image](W37.5×H75×L65mm)

### Output power
3W

### Input
- **Voltage**: 100-240VAC~ (permissible voltage: 85-264VAC~)
- **Frequency**: 50/60Hz
- **Current consumption**: Max. 0.15A
- **Efficiency**: 67 to 74%
- **Voltage**: 5VDC
- **Current**: 0.6A
- **Voltage adjustment range**: Max. ±5%
- **Ripple**: Max. 5%
- **Voltage fluctuation ratio**: Max. 0.5% (at 85-264VAC 100% load)
- **Over-current protection**: Min. 110%

### Reference
P-8 to 11

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**Type**
General-purpose Switching Mode Power Supply (SMPS)

<table>
<thead>
<tr>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPA-030-05</td>
</tr>
</tbody>
</table>

### Appearances & Dimensions

![Image](W97×H40×L120mm)

### Output power
- 30W
- 50W
- 30W
- 50W
- 30W
- 50W
- 75W
- 100W
- 75W
- 100W
- 75W
- 100W

### Voltage
- 5VDC
- 12VDC
- 24VDC

### Current
- 0.6A
- 1.0A
- 2.5A
- 4.2A
- 1.5A
- 2.1A
- 15A
- 20A
- 6.3A
- 8.5A
- 3.2A
- 4.2A

### Voltage fluctuation ratio
Max. ±5%

### Over-current protection
Min. 110%

### Reference
P-4 to 7

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{\*1: 100% load for rated input voltage (100VAC).  
\*2: Rated input voltage [SPA-030/050 Series: 100-240VAC (85-264VAC)] under 100% of load.  
SPA-100-05 is under 100% of load for [100-120/200-240VAC (100-132/190-264VAC)].  
\*3: Rated input voltage (100VAC).  
\*4: The output voltage adjuster (V.ADJ) should be used within voltage adjustment range.  
\*5: The rated input voltage of SPA-100-05 is 100-120/200-240VAC (100-132/190-264VAC).}
### Product Overview

<table>
<thead>
<tr>
<th>Type</th>
<th>General-purpose Switching Mode Power Supply (SMPS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>SPA-400-24</td>
</tr>
</tbody>
</table>

#### Appearances & Dimensions

![Image of the product](W120×H61×L204.8mm)

#### Output power

- **Voltage**: 200-240VAC~ (permissible voltage: 190-264VAC~)
- **Frequency**: 50/60Hz
- **Efficiency (typical)**: 220VAC~ 85% (after 10min of power ON)
- **Current consumption (typical)**: 220VAC~ Max. 4.6A
- **Leakage current (typical)**: 220VAC~ Max. 1mA

#### Input condition

- **Voltage**: 24VDC~
- **Current**: 16.7A
- **Voltage adjustment range**: 22.8-25.2VDC~
- **Input variation**: Max. ±0.5%
- **Load variation**: Max. ±1%
- **Temperature drift**: 360mV
- **Ripple & Ripple noise**: Max. 290mV
- **Start-up time (typical)**: 220VAC~ 1800-2300ms
- **Hold time (typical)**: 200VAC~ 17ms
- **Inrush current protection (typical)**: 220VAC~ 40A

#### Protection

- **Over-current protection**: 110 to 160% (recovers automatically after the cause for over-current is removed)
- **Over-voltage protection**: 27-33VDC
- **Temp. rising limit**: Yes
- **Remote control**: Yes (output voltage ON for shorting, output voltage OFF for open)

#### Reference

- P-8 to 11

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※1: It is for 100% load.
※2: The output voltage adjuster (V.ADJ) should be used within voltage adjustment range.
Product Overview

**Type**
- DIN rail mount type
- Switching Mode Power Supply (SMPS)

**Model**
- SPB-015-05
- SPB-015-12
- SPB-030-05
- SPB-030-12
- SPB-060-12
- SPB-060-24
- SPB-120-24
- SPB-240-24
- SPB-240-48

**Appearances & Dimensions**
- [Image]

**Output power**
- 15W 15.6W 25W 30W 31.2W 60W 62.4W 96W 120W 240W

**Voltage**
- 100-240VAC~ (permissible voltage: 85-264VAC~/120-370VDC)

**Frequency**
- 50/60Hz

**Efficiency**
- (typical)
  - 100VAC~: 77% 80% 83% 81% 84% 85% 82% 85% 87% 89%
  - 240VAC~: 76% 79% 82% 78% 83% 85% 83% 86% 87% 85% 85% 88% 90% 92% 92%

**Power factor**
- (typical)
  - 100VAC~: 0.35A 0.35A 0.34A 0.56A 0.63A 0.63A 1.24A 1.21A 1.19A 1.49A 1.43A 2.76A 2.71A 2.73A
  - 240VAC~: 0.19A 0.19A 0.19A 0.30A 0.35A 0.35A 0.66A 0.65A 0.64A 0.52A 0.61A 1.14A 1.12A 1.13A

**Output voltage**
- 5VDC 12VDC 24VDC

**Current**
- 3A 1.3A 0.65A 5A 2.5A 1.3A 5A 2.5A 1.3A 8A 5A 2.5A 20A 10A 5A

**Voltage adjustment range**
- Max. ±10% Max. ±10% Max. ±5% Max. ±5% Max. ±5%

**Input variation**
- Max. ±0.5% Max. ±0.5% Max. ±0.5% Max. ±0.5% Max. ±0.5%

**Load variation**
- Max. ±1.5% Max. ±1% Max. ±1% Max. ±1% Max. ±1%

**Ripple & Ripple noise**
- Max. ±1.5% Max. ±1% Max. ±1% Max. ±1% Max. ±1%

**Start-up time**
- (typical)
  - 100VAC~: 500ms 550ms 650ms 520ms 550ms 550ms 1200ms 1200ms 1200ms 1200ms 1200ms 75ms 87ms 75ms
  - 240VAC~: 550ms 550ms 650ms 550ms 550ms 550ms 400ms 550ms 400ms 550ms 400ms 45ms 45ms 45ms

**Hold time**
- (typical)
  - 100VAC~: 24ms 25ms 25ms 15ms 15ms 15ms 14ms 15ms 8ms 8ms 8ms 33ms 33ms 33ms
  - 240VAC~: 24ms 25ms 25ms 15ms 15ms 15ms 15ms 15ms 8ms 8ms 8ms 33ms 33ms 33ms

**Inrush current protection**
- (typical)
  - 7A 7A 7A 7A 6A 13A 14A 10A 9A 16A 10A 8A 8A 8A

**Over-current protection**
- (typical)
  - 105 to 160% 105 to 160% 105 to 160% 105 to 160% 105 to 160% 105 to 160% 105 to 160%

**Over-voltage protection**
- 16.0V ±10% 16.0V ±10% 16.0V ±10% 16.0V ±10% 16.0V ±10% 16.0V ±10%

**Output low-voltage indicator**
- 4.2V ±10% 9.6V ±10% 20.0V ±10% 4.2V ±10% 9.6V ±10% 20.0V ±10% 4.2V ±10% 9.6V ±10% 20.0V ±10% 43.0V ±10% 20.0V ±10% 43.0V ±10%

**Protection Reference**
- P-12 to 15

※1: It is for 100% load.
※2: The output voltage adjuster (V.ADJ) should be used within voltage adjustment range.
※3: It is for the rated input voltage 100-240VAC (85-264VAC), and 100% load.
※4: It is for the rated input voltage 100-240VAC.