S.M.P.S(Switching Mode Power Supply) with minimized noise and ripple

▣Features

- ●Built-in overcurrent protection, output short circuit protection over heating and overvoltage limit circuit(SPA-075/100)
- ●Standard on safety IEC 60950, IEC 50178
- ●EMS(Electromagnetic susceptibility) EN61000-6-2
- ●EMI(Electromagnetic interference) EN61000-6-4
- ●Output voltage : 5VDC, 12VDC, 24VDC
- ●Output current : 30W, 50W, 75W, 100W

Please read "Caution for your safety" in operation manual before using.

▣Ordering information

SPA — 030 — 24

Output voltage	05 : 5V
	12 : 12V
	24 : 24V
Output power	030 : 30W
	050 : 50W
	075 : 75W
	100 : 100W
	SPA : Series

▣Specifications

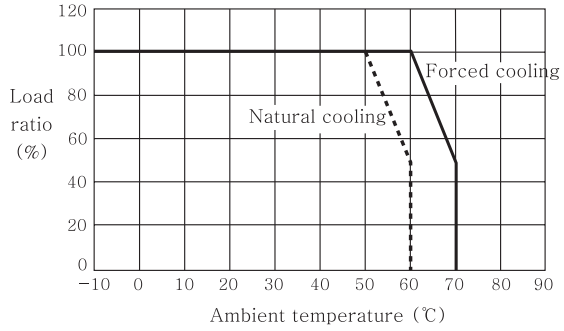
※(★)Model is currently being developed.

Model		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
Capacity		30W	50W	30W	50W	30W	50W	75W	100W	75W	100W	75W	100W
Input	Power supply	100-240VAC(85-264VAC)						100-120/200-240VAC(85-132/170-264VAC)					
	Frequency	50/60Hz											
	Efficiency (1)	60% Min.	67% Min.	74% Min.		80% Min.		72% Min.	70% Min.	78% Min.	70% Min.	78% Min.	80% Min.
	Current consumption(1)	1.2A Max.	1.6A Max.	1.0A Max.	1.4A Max.	0.8A Max.	1.1A Max.	2.7A Max.	3.0A Max.	2.0A Max.	2.5A Max.	2.0A Max.	2.5A Max.
Output	Voltage	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
	Votage fluctuation range	±5% Max.						±5% Max.					
	Input fluctuation ratio(2)	±0.5% Max.						±0.5% Max.					
	Load fluctuation ratio(1)	±2% Max.		±1% Max.				±2% Max.		±1% Max.			
	Ripple	±1% Max.											
	Starting time (1)	200ms Max.		150ms Max.				5000ms Max.		250ms Max.	5000ms Max.	250ms Max.	
	Holding time (1)	10ms Min.						5ms Min.		10ms Min.	5ms Min.	10ms Min.	
Protection	Inrush current protection	30A Max.(100VAC) 40A Max.(200VAC)		20A Max.(100VAC)				45A Max. (100VAC) /50A Max. (240VAC)		35A Max. (100VAC) /40A Max. (240VAC)	45A Max. (100VAC) /50A Max. (240VAC)	35A Max. (100VAC) /40A Max. (240VAC)	
	Output overcurrent protection (3)	110% Min.											
	Output over voltage protection	———						6.5V ±10%		16V ±10%		30V ±10%	
	Over shortcircuit protection	5ms Max.						10ms Max.		5ms Max.	10ms Min.	5ms Max.	
Output indicator		Green LED											
Insulation resistance		Min. 100MΩ (Between all input and output terminals with 500VDC)											
Dielectric strength		For 1 minute at 3.0kVAC 50/60Hz(Between all input and output terminals)											
		1 minute at 1.5kVAC 50/60Hz(Between all input terminals F.G)											
Vibration		0.75mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 2 hours											
Shock		300m/s² in X, Y, Z directions for 3 times											
Electromagnetic susceptibility		EN61000-6-2 Appropriate											
Electromagnetic interference		EN61000-6-4 Appropriate											
Protection		IEC60950, IEC50178 Standard											
Ambient temperature		-10~50℃	-10~40℃			-10~50℃		-10~40℃		-10~50℃	-10~40℃	-10~50℃	
Ambient operating		25 ~ 85%RH											
Srorage temperature and humidity		-25 ~ 65℃ / 25 ~ 90%RH											
Approval		———		CE				———					
Unit weight		Approx. 350g						Approx. 400g					

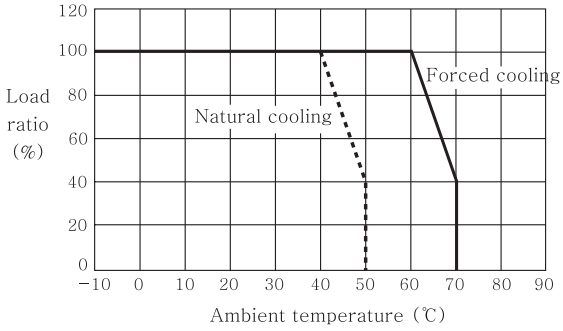
(1)It is when the rated input voltage is 100VAC, 100%.
(2)SPA-030/050 series : It is when the rated input voltage is 100-240VDC, 100%.
SPA-075/100 series : It is when the rated input voltage is 100-120VAC/200-240VDC, 100%.
(3)It is when the rated input voltage is 100VAC.

▣Output feature data for ambient temperature

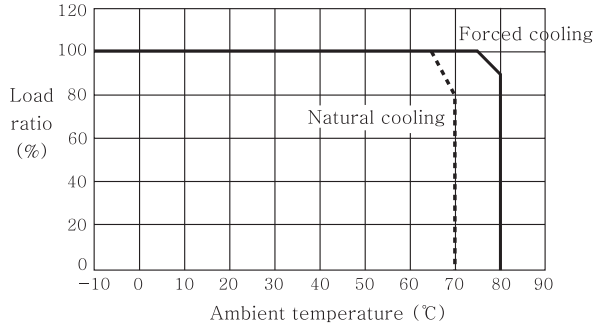
●SPA-030-05



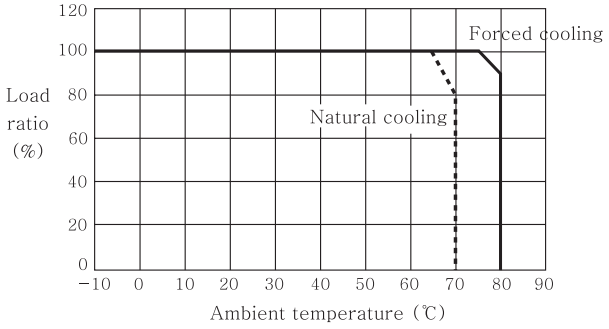
●SPA-050-05



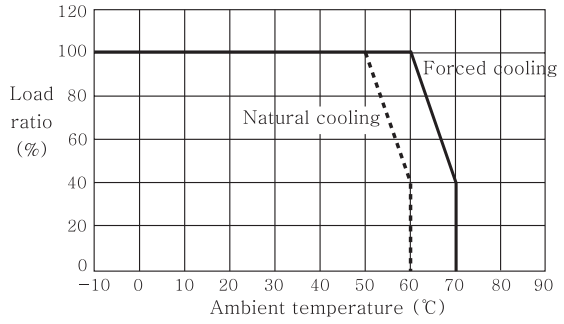
●SPA-030-12 ●SPA-050-12



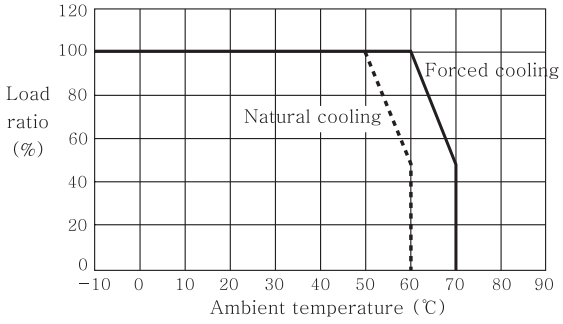
●SPA-030-24 ●SPA-050-24



●SPA-075-12 ●SPA-100-12

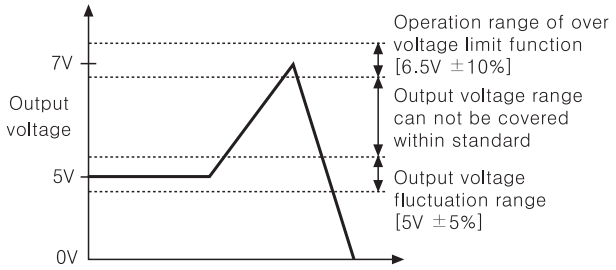


●SPA-075-24 ●SPA-100-24

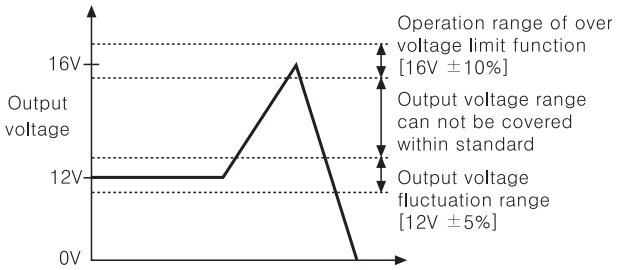


▣Feature data of output overvoltage limit

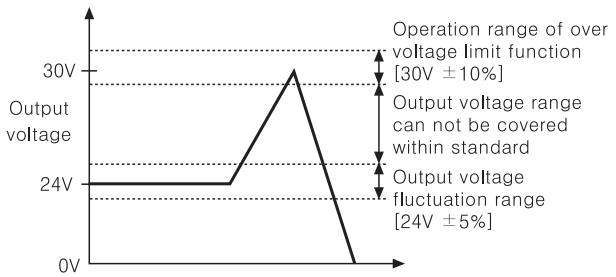
●SPA-075-05 / SPA-100-05



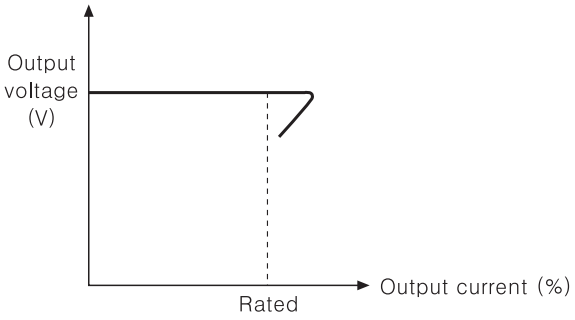
●SPA-075-12 / SPA-100-12



●SPA-075-24 / SPA-100-24

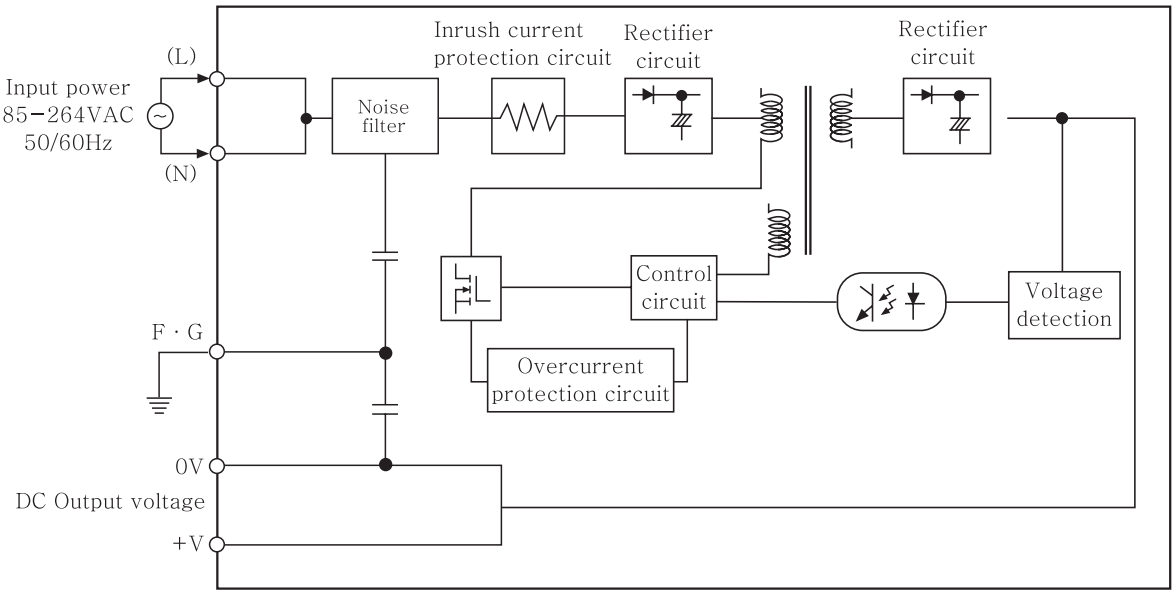


▣Feature data of overcurrent protection



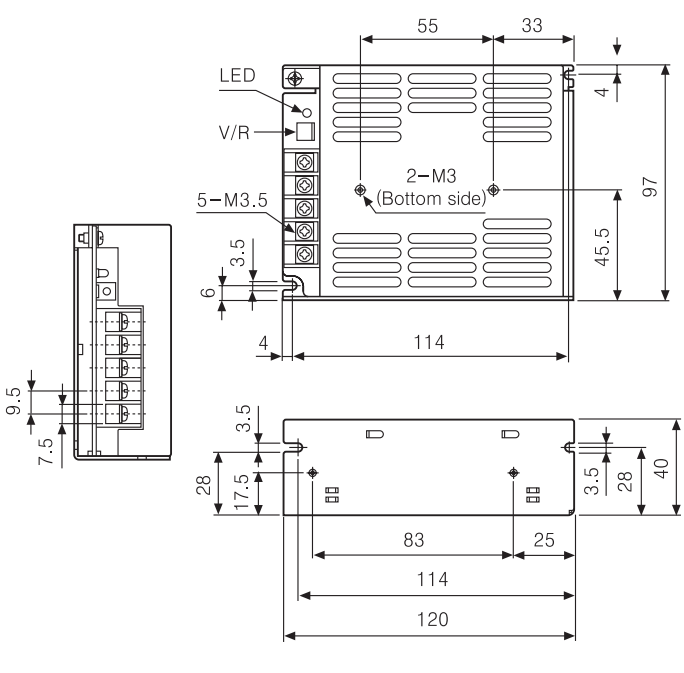
- It is when the rated input voltage is 100VAC, 100%.
- It is able to protect overcurrent by load with built-in overcurrent protection circuit.
  When the over rated current is flowed, the circuit is operated (Output voltage is fallen.) and it is cancelled when the load current is under the rated current.
  (It is returned to the rated output voltage.)

▣Block diagram

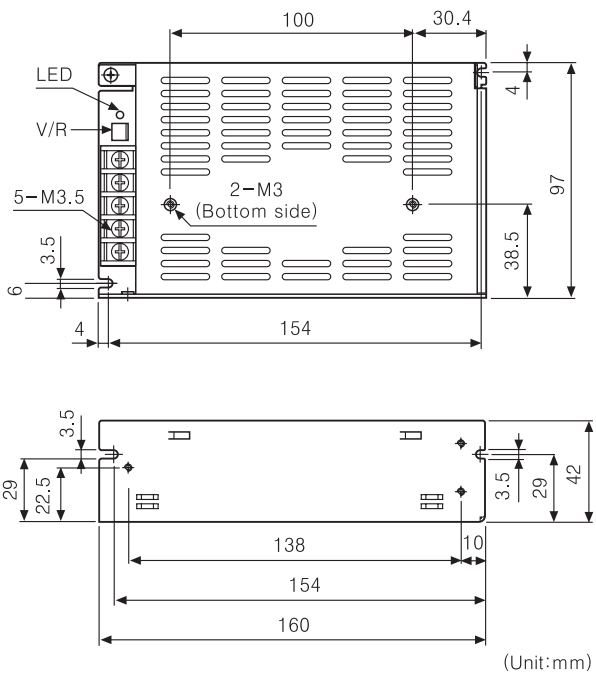


▣Dimensions

●SPA-030/050 Series

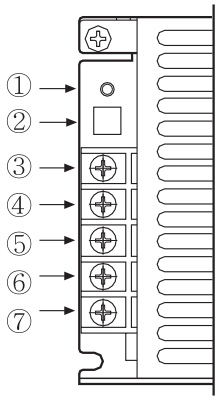


●SPA-075/100 Series



(Unit:mm)

▣Front part identification



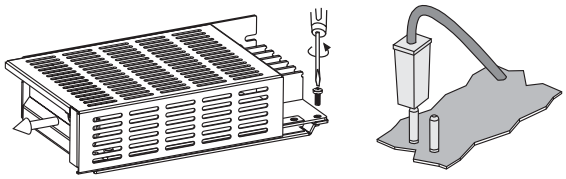
① Output display LED(Green)
② Output voltage adjuster
③ Output power [+] terminal
④ Output power [−] terminal
⑤ [F.G] terminal
⑥ Input power [N] terminal
⑦ Input power [L] terminal

▣Proper Usage

1. Technical information of operation
   ① This product is not available to operate of output voltage as parallel and series.
   ② The output current should be used within the rated range. When it is operated in overcurrent status, the life span of product can be shortened.
   ③ The output voltage should be used within the rated range. When the output overvoltage limit function is operated, the product operated normally with cancellation of input power for few minutes.
   ④ The overvoltage limit function is operated when it is exceeded the rated output voltage range with an output voltage adjustment volume.
   ⑤ This product has over heating protection function. It is operated normally when releasing the load connection for few minutes.
   ⑥ The power factor is within 0.5~0.7 using condenser rectified method. Please use the below formula and check the input power capacity when using a cabinet panel or trans-former.

$$\text{Apparent power[VA]} = \frac{\text{Active Power [W]}}{\text{Power factor} \times \text{Efficiency}}$$

   ⑦This product does not have harmonics suppression and power factor correction circuit.
   Please mount the device for it.
   ⑧ This product has a noise filter, it can be changed with the mounting place and connection.
   ⑨ Please change as a same rated fuse when the inner fuse is broken.
   ⑩The input voltage is 220V for factory default of switching method. When it is switched as 110V, please detach the case as below and select the switch properly.



2. Caution for mounting
   ①Please mount the device on metal panel for the reliability.
   ②Please mount the device in a ventilative place for high radiation of heat.
3. Please use the power line as below specification.

Input power line specification	AWG19 ~ 21	AWG16 ~ 18
Model	SPA-030-05 SPA-030-12 SPA-050-12 SPA-075-12 SPA-030-24 SPA-050-24 SPA-075-24 SPA-100-24	SPA-050-05 SPA-075-05 SPA-100-05 SPA-100-12