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# Switching Power Supply Type SPD 240W 3 phases DIN rail mounting

CARLO GAVAZZI



- Universal AC 3 phases input full range
- Installation on DIN rail 7.5 or 15mm
- PFC as standard
- High efficiency up to 90%
- Power ready output
- Parallel connection feature
- Compact dimensions
- UL, cUL listed and TUV/CE

## Product Description

The Switching power application where the supplies SPD series are specially designed to be used in all automation and performance are a must.

## Ordering Key

**SP D 24 240 3**

Model \_\_\_\_\_  
 Mounting (D= Din rail) \_\_\_\_\_  
 Output voltage \_\_\_\_\_  
 Output power \_\_\_\_\_  
 Input Type \_\_\_\_\_

Input type: 3 = three phase (or single phase 400/500VAC<sup>3)</sup>)

## Approvals



## Output Performances

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (min.)	EFF. (typ.)
<b>Single Output Models</b>						
<b>SPD24</b>	3 $\phi$ 340~575 VAC	240 WATTS	+24 VDC	10 A	85%	90%
<b>SPD48</b>	3 $\phi$ 340~575 VAC	240 WATTS	+48 VDC	5 A	89%	91%

1) When powered with three phases input; with biphasic input value is in the brackets.

2) When S/P switch is set to parallel, it is not possible to trim output voltage.

## Output Data

Line regulation	$\pm 1\%$	Rated continuous loading	24V Model	10A @ 24VDC/8.2A @ 28.5VDC
Load regulation			48V Model	5A @ 48VDC/4.2A @ 56VDC
Single mode	$\pm 1\%$	Reverse voltage	12V Model	35VDC
Parallel mode	$\pm 5\%$		24V Model	63VDC
Minimum load	0A	Capacitor load	Vi nom lo nom 24V model	7000 $\mu$ F
Turn on time (full resistive load)	1000ms		Voltage rise time	Vi nom lo nom
VI nom, lo nom	1500ms	Vi nom, lo nom		12V model with 7000 $\mu$ F CAP
VI nom, lo nom 12V model with 7000 $\mu$ F CAP	2ms			
Transient recovery time	100mVpp			
Ripple and noise	$\pm 1\%$			
Output voltage accuracy	$\pm 0.03\%/^{\circ}\text{C}$			
Temperature coefficient	20ms			
Hold up time Vi	150ms max			
Voltage fall time (I <sub>n</sub> ,nom)				

## Input Data

<b>Rated input voltage</b>	400 - 500VAC		<b>Inrush current time</b>	4 ~ 6 ms	
<b>Voltage range</b>			<small>Vi nom, Io nom</small>		
<b>AC</b>	340 - 575VAC		<b>Power dissipation</b>		
<b>DC</b>	480 - 820VDC		<b>12V Model</b>	20W	
<b>Input current</b>	<b>Typ.</b>	0.65A / 0.55A	<b>24V Model</b>	16W	
<small>(Vi: 400VAC / 500VAC, Io nom)</small>			<b>Frequency range</b>	47-63Hz	
<b>Rated input current</b>	<b>Max.</b>	0.85A	<b>Leakage current</b>		
<small>(Vi: 340VAC, Io nom)</small>			<b>Input-Output</b>	0.25mA	
<b>Inrush current</b>	<b>Typ.</b>	20A	<b>Input-FG</b>	3.5mA	
<small>Vi nom, Io nom</small>	<b>Max.</b>	25A			

## Controls and Protections

<b>Input fuse</b>	2A/600VAC internal/Phase	<b>Over voltage protection</b>	<b>VDC</b>	
<b>Output short circuit</b>	Hiccup mode		<b>Min.</b>	<b>Max.</b>
<b>Power ready output</b>		<b>24V Model</b>	30	33
<small>(only 24V model)</small> <b>on threshold</b>	≥17.6-19.4VDC	<b>48V Model</b>	60	68
<b>Electrical isolation</b>	500VDC	<b>Internal surge voltage protection</b>	Varistor	
<b>Contact rating at 60VDC</b>	0.3A	<small>(IEC 61000-4-5)</small>		
<small>1) Fuse not replaceable by user</small>				

## General Data (@ nominal line, full load, 25°C)

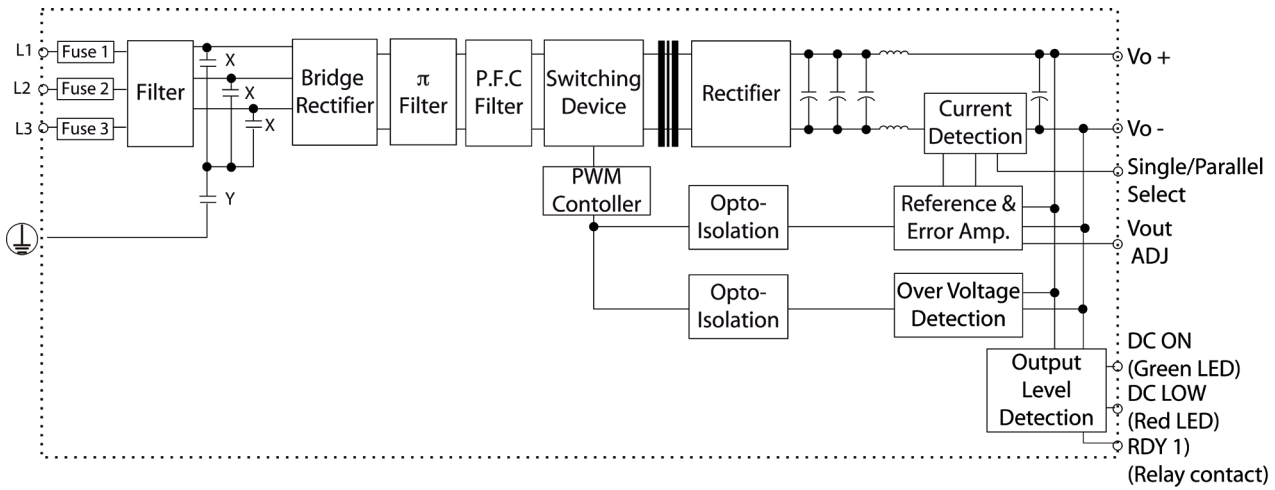
<b>Ambient temperature</b>	-40°C to +71°C	<b>MTB</b> (Bellcore issue 6 @ 40°C, GB)	
<b>Derating (&gt;61°C to +71°C)</b>	2.5%/C	<b>24V Model</b>	488000 Hours
<b>Ambient humidity</b>	20 ~ 90% RH	<b>48V Model</b>	519000 Hours
<b>Storage</b>	-25°C to +85°C	<b>Case material</b>	Metal
<b>Protection degree</b>	IP20	<b>Dimensions LxWxD mm(inch)</b>	124 (4.88) x 89 (3.5) x 118.8 (4.68)
<b>Cooling</b>	Free air convection	<b>Weight</b>	1100 g
<b>Pollution degree</b>	2		

## Norms and Standards

<b>Vibration resistance</b>	meet IEC 60068-2-6 (Mounting by rail: 10-500Hz, 2G, along X, Y, Z each Axis, 60 min for each Axis)	<b>CQC</b>	GB4943.1-2011, GB9254-2008, GB17625.1-2012
<b>Shock resistance</b>	meet IEC 60068-2-27 (15G, 11ms, 3 Axis, 6 faces, 3 times for each face)	<b>CE</b>	EN 61000-6-3, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 55024, EN 61000-4-2 Level 4, EN 61000-4-3 Level 3, EN 61000-4-4 Level 4, EN 61000-4-5 Level 3, L/N-FG Level 4, EN 61000-4-6 Level 3, EN 61000-4-8 Level 4, EN 61000-4-11, ENV 50204 Level 2, EN 61204-3
<b>UL/cUL</b>	UL508 listed, UL60950-1, Recognized, ISA 12.12.01 (Class 1, Division 2, Groups A, B, C and D)		
<b>TUV</b>	EN 60950-1, CB scheme EN 61558-1, EN 61558-2- 17 (meet EN 60204)		



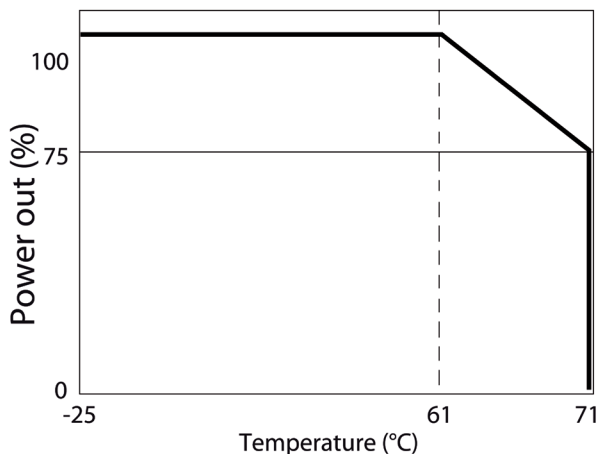
## Block Diagram



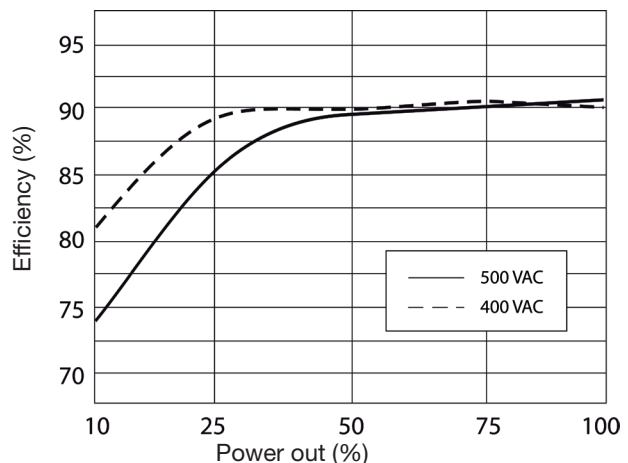
## Pin Assignment and Front Controls

Pin No.	Designation	Description
1, 2	V-	Negative output terminal
3, 4	V+	Positive output terminal
5	L3	Input terminals
6	L2	Input terminals
7	L1	Input terminals
8	⊥	Ground this terminal to minimize high-frequency emissions
9	RDY	A normal open relay contact for DC ON level control
10	RDY	(Never connect except 24V model)
	DC ON	Operation indicator LED
	DC LO	DC LOW voltage indicator LED
	Vout ADJ	Trimmer-potentiometer for Vout adjustment
	S/P	Single / Parallel select switch

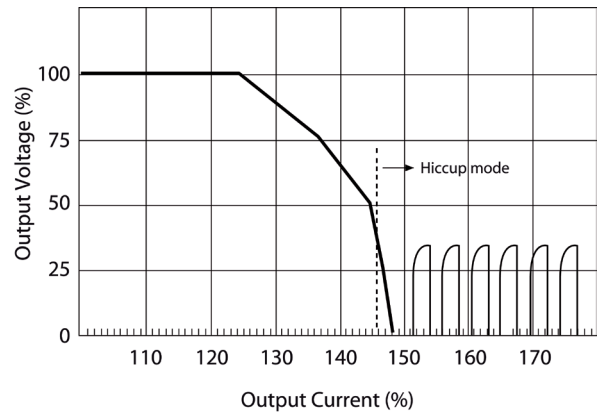
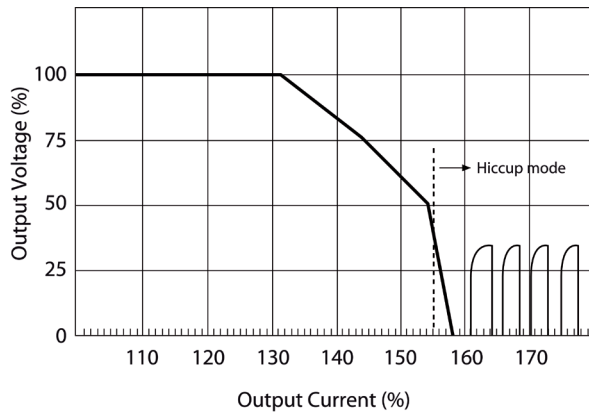
## Derating Diagram



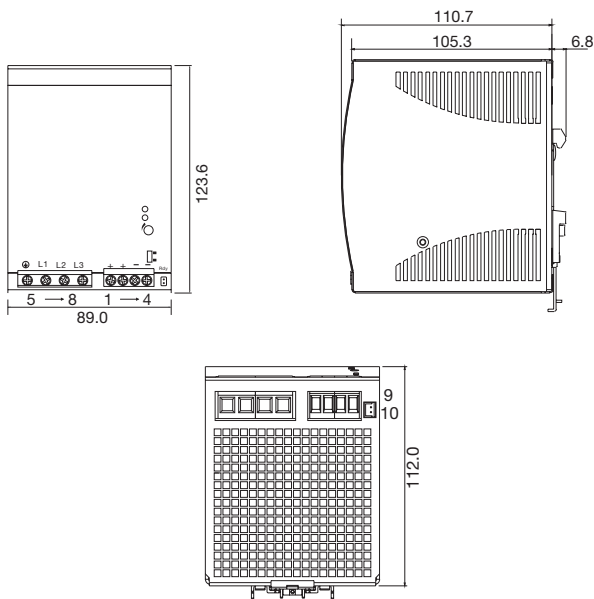
## Typ. Efficiency Curve



## Typ. Current Limited Curve



## Mechanical Drawings mm (inches)



## Installation

### Ventilation and cooling

Normal convection All sides  
 25mm free space for  
 cooling is recommended.

### Screw connections

10-24AWG flexible or solid  
 cable 8mm stripping  
 recommend.

### Max. torque for screws terminals Input terminal Output terminal

1.008Nm (9.0lb-in)  
 0.616Nm (5.5lb-in)