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# Switching Power Supply Type SPD 120W 3 phases DIN rail mounting

CARLO GAVAZZI



- Universal AC 3 phases input full range
- Can also be used as single phase 480VAC
- Installation on DIN rail 7.5 or 15mm
- PFC as standard
- High efficiency up to 88%
- Power ready output
- Compact dimensions
- UL, cUL listed and TUV/CE

## Product Description

The Switching power supplies SPD series are specially designed to be used in all automation application where the installation is on a DIN rail and compact dimensions and performance are a must.

## Ordering Key

**SP D 24 120 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>						
SPD12	3ø 340~575 VAC	120 WATTS	+ 12 VDC	10 A	85%	87%
SPD24	3ø 340~575 VAC	120 WATTS	+ 24 VDC	5 A	87%	89%

## Output data

Line regulation	± 1%	Voltage fall time (I <sub>0nom</sub> )	150ms max
Load regulation	± 1%	Rated continuous loading	
Minimum load	0	12V Model	10A @ 12VDC/8.2A @ 14.5VDC
Turn on time (full resistive load)		24V Model	5A @ 24VDC/4.2A @ 28.5VDC
Vi nom, Io nom	150ms	Reverse voltage	
Vi nom, Io nom		12V Model	18VDC
12v model with 7000µF CAP	500ms	24V Model	35VDC
Vi nom, Io nom		Capacitor load	
24v model with 3500µF CAP	500ms	Vi nom Io nom 12V model	7000µF
Transient recovery time	2ms	Vi nom Io nom 24V model	3500µF
Ripple and noise	100mVpp	Voltage rise time	
Output voltage accuracy	± 1%	Vi nom Io nom	150ms
Temperature coefficient	± 0.03%/°C	Vi nom, Io nom	
Hold up time	20ms	12v model with 7000µF CAP	500ms
		Vi nom, Io nom	
		24v model with 3500µF CAP	500ms

## Input data

<b>Rated input voltage</b>	400 - 500VAC	<b>Power dissipation</b>	
<b>Voltage range</b>		<b>12V Model</b>	20W
<b>AC</b>	340 - 575VAC	<b>24V Model</b>	16W
<b>DC</b>	480 - 820VDC	<b>Frequency range</b>	47- 63Hz
<b>Rated input current</b>		<b>Leakage current</b>	
(Vi : 400VAC, Io nom) <b>Typ.</b>	0.36A	<b>Input-Output</b>	0.25mA
<b>Max.</b>	0.5A	<b>Input-FG</b>	3.5mA
<b>Inrush current</b>			
<b>Vi nom, Io nom</b>	10A		

## Controls and Protections

<b>Overload</b>	115-135%	<b>Over voltage protection</b>	<b>VDC</b>	
<b>Input fuse</b>	T2A/600VAC internal <sup>1)</sup>		<b>Min.</b>	<b>Max.</b>
<b>Output short circuit</b>	Hiccup mode	<b>12V Model</b>	14.5	17.4
<b>Power ready output</b>		<b>24V Model</b>	30	33
(only 24V model) <b>On threshold</b>	≥17.6 -19.4VDC	<b>Internal surge voltage protection</b>	Varistor	
<b>Electrical isolation</b>	500VDC	(IEC 61000-4-5)		
<b>Contact rating at 60vdc</b>	0.3A			

<sup>1)</sup> Fuse not replaceable by user

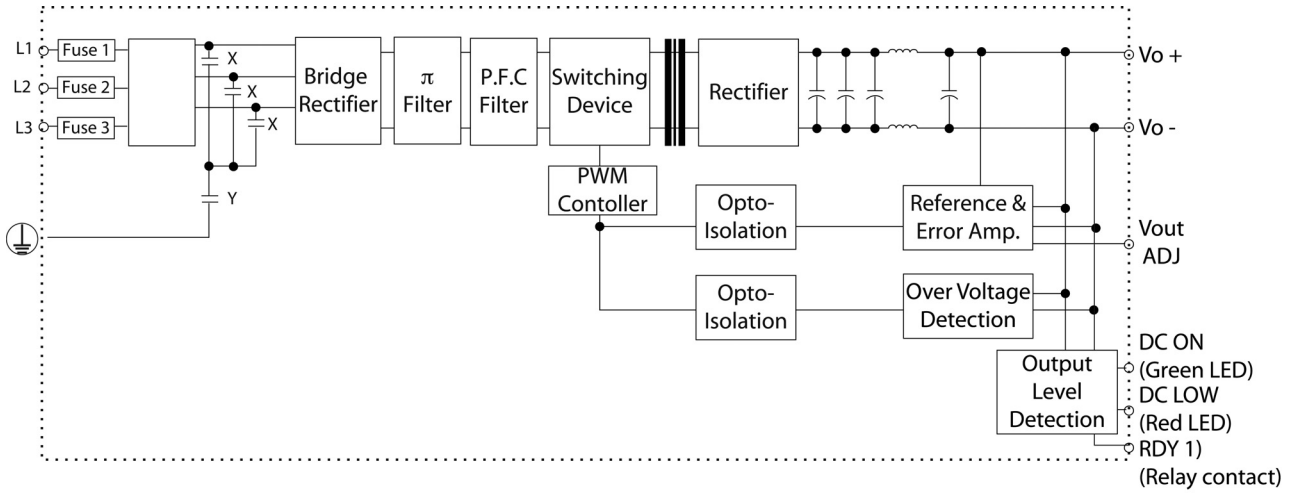
## General data (@ nominal line, full load, 25°C )

<b>Ambient temperature</b>	-35°C to 71°C	<b>MTBF</b> (Bellcore issue 6 @ 40°C, GB)	
<b>Derating (&gt;61°C to +71°C)</b>	2.5%/°C	<b>12V Model</b>	527000 Hours
<b>Ambient humidity</b>	20 ~ 90%RH	<b>24V Model</b>	559000 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 74.3(2.92) x 118.8(4.68)
<b>Cooling</b>	Free air convection	<b>Weight</b>	800g
<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>CCC</b>	GB4943, GB9254, GB17625.1
<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 L- 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)		

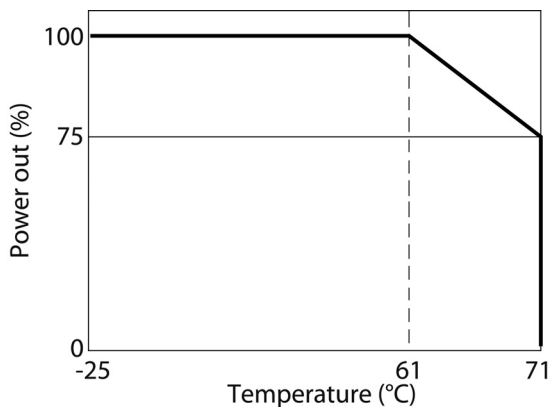
## Block diagrams



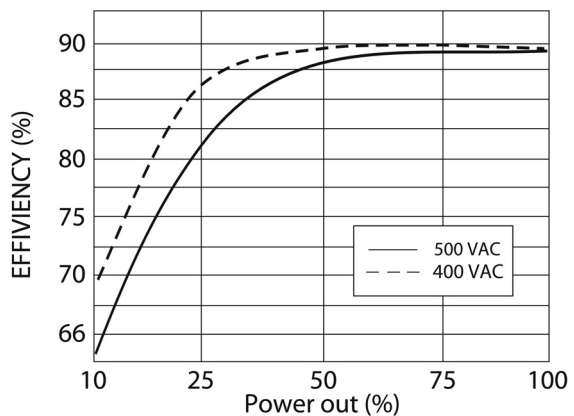
## Pin Assignment and Front Controls

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

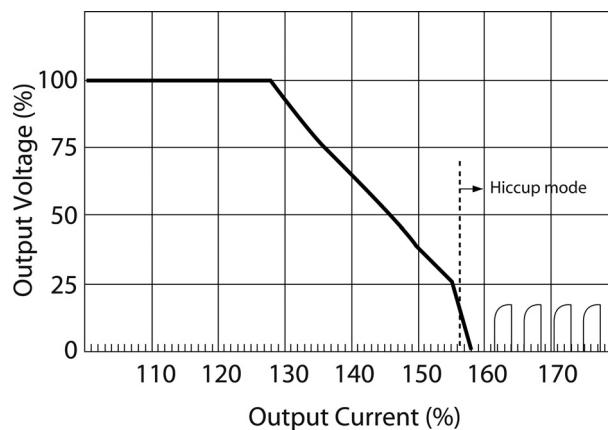
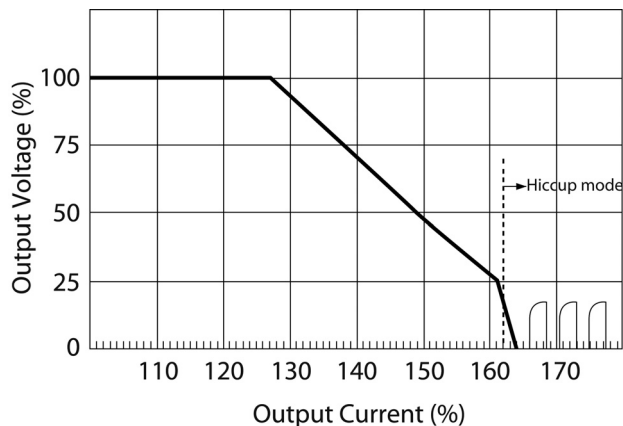
## Derating Diagram



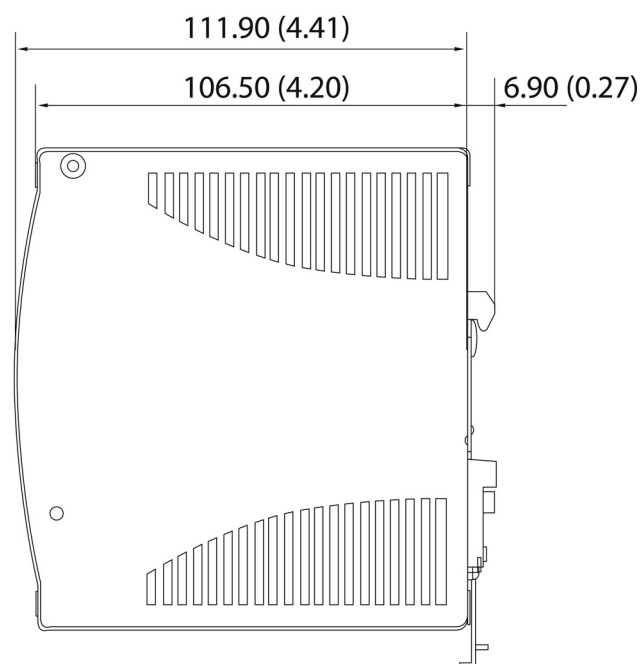
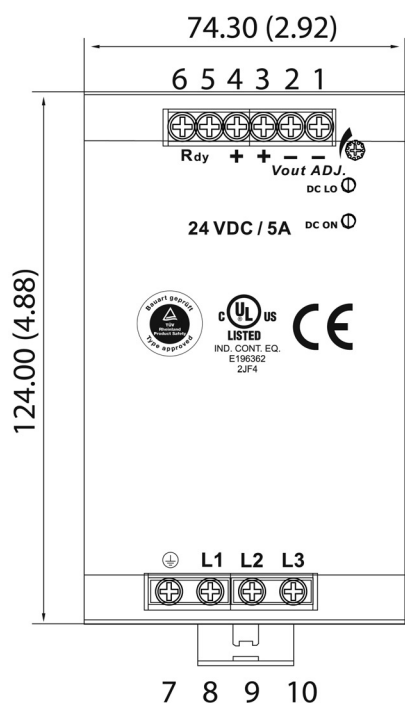
## Typ. Efficiency Curve



## Typ. Current Limited Curve



## Mechanical Drawings mm/inches



## Installation

<b>Ventilation and cooling</b>	Normal convection All sides 25mm free space for cooling is recommended
<b>Screw connections</b>	10-24AWG flexible or solid cable 8mm stripping recommend
<b>Max. torque for screws terminals</b>	
Input terminals	1.008Nm (9.0lb-in)
Output terminals	0.616Nm (5.5lb-in)