

# Switching Power Supply Type SPD 18W DIN rail mounting

CARLO GAVAZZI



- Universal AC input full range
- Installation on DIN rail 7.5 or 15mm
- Short circuit protection
- Overload protection
- High efficiency
- LED indicator for DC power ON
- LED indication for DC low
- Internal input filter
- CE, TUV approved and cULus Listed

## Product Description

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

## Ordering Key

**SP D 24 18 1 B**

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

Input type: 1= single phase

## Approvals



**UL** US C **UL** US C **UL** US  
 Class I, Div 2 UL 1310 UL 60950-1

## Optional Features

Description	Code
Spring connectors	B

## Output performances

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (min.)	EFF. (typ.)
<b>Single Output Models</b>						
SPD05	90~264 VAC	15 WATTS	+ 5 VDC	3000 mA	73%	75%
SPD12	90~264 VAC	18 WATTS	+12 VDC	1500 mA	75%	77%
SPD15	90~264 VAC	18 WATTS	+15 VDC	1200 mA	75%	77%
SPD24	90~264 VAC	18 WATTS	+24 VDC	750 mA	75%	77%

## Output data

Line regulation	± 1%	Rated continuous loading	5V Model	3A @ 5VDC/2.6A @ 5.75VDC
Load regulation	± 2%		12V Model	1.5A @ 12VDC/1.3A @ 13.8VDC
Minimum load	0	15V Model	1.2A @ 15VDC/1.0A @ 17.25VDC	
Turn on time (full resistive load)	1000ms	24V Model	0.75A @ 24VDC/0.6A @ 28.8VDC	
Vi nom, Io nom with 7000µF CAP	1500ms	Reverse voltage	5V Model	VDC 7.5
Transient recovery time	2ms	12V Model	VDC 18	
Ripple and noise	50mVpp	15V Model	VDC 22	
Output voltage accuracy	± 1%	24V Model	VDC 35	
Temperature coefficient	± 0.03%/°C	Capacitor load	7000µF	
Hold up time Vi= 115VAC	20ms	Voltage rise time		
Vi= 230VAC	75ms	Vi nom Io nom	150ms	
Voltage fall time (I <sub>o</sub> nom)	150ms max	Vi nom, Io nom with 7000µF CAP	500ms	

## Input data

<b>Rated input voltage</b>	100 - 240VAC	<b>Power dissipation</b> (Vi : 230VAC, Io nom)	<b>5V Model</b> 5.0W <b>12V Model</b> 4.65W <b>15V Model</b> 4.25W <b>24V Model</b> 4.45W
<b>Voltage range</b>	<b>AC</b> 90 - 264VAC <b>DC</b> 120 - 375VDC	<b>Frequency range</b>	47- 63Hz
<b>Rated input current</b> <b>Vi: 115VAC, Io nom</b>	335-500mA	<b>Leakage current</b>	<b>Input-Output</b> 0.25mA <b>Input-FG</b> 3.5mA
<b>Inrush current</b>	<b>Vi= 115VAC</b> 10A <b>Vi= 230VAC</b> 18A		

## Controls and Protections

<b>Overload</b>	110 – 140%	<b>Output Short Circuit</b>	Hiccup mode
<b>Input Fuse</b> <b>Overvoltage Protection</b>	T2A/250VAC internal <sup>1)</sup> 125 – 145%	<b>Internal surge voltage protection</b> (IEC 61000-4-5)	Varistor

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

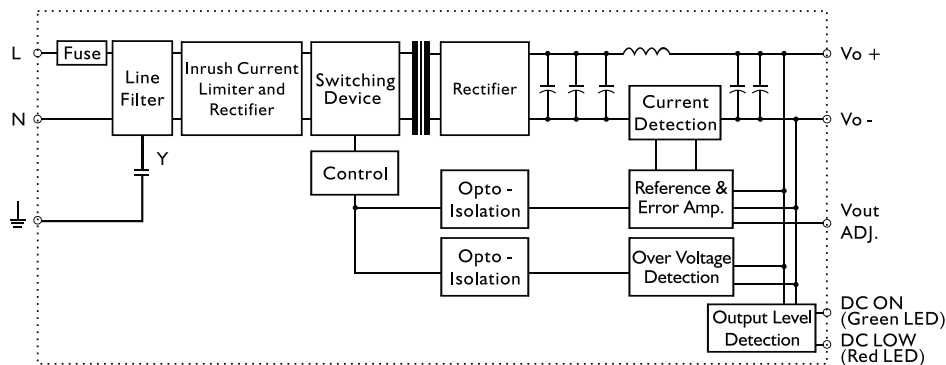
## General data (@ nominal line, full load, 25°C )

<b>Ambient temperature</b>	-20°C to 71°C	<b>MTBF</b> (Bellcore issue 6 @ 40°C, GB)	<b>5V Model</b> 795000 Hours <b>12V Model</b> 797000 Hours <b>15V Model</b> 796000 Hours <b>24V Model</b> 800000 Hours
<b>Derating (&gt;61°C to +71°C)</b>	2.5%/°C	<b>Case material</b>	Plastic: PC, UL94-V0
<b>Ambient humidity</b>	20 ~ 95%RH	<b>Pollution degree</b>	2
<b>Storage</b>	-25°C to +85°C	<b>Altitude</b>	2000m
<b>Protection degree</b>	IP20	<b>Dimensions LxWxD mm(inch)</b>	90(3.60)x22.5(0.89)x114(4.49)
<b>Cooling</b>	Free air convection	<b>Weight</b>	150g
<b>Insulation voltage</b>	<b>Input-Output</b> 3.000VAC/4242VDC min <b>Input-FG</b> 1.500VAC/2121VDC min		
<b>Insulation resistance I/O</b>	100MΩ min (@ 500VDC)		


## 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>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-N 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>Shock resistance</b>	meet IEC 60068-2-27 (15G, 11ms, 3 Axis, 6 faces, 3 times for each face)		
<b>UL / cUL</b>	UL508 listed, UL60950-1, UL1310 Class 2 Power (only 5V, 12V w/o Class 2) Recognized, ISA 12.12.01 (Class 1, Division 2, Groups A, B, C and D)		
<b>TUV</b>	EN 60950-1, CB scheme		
<b>CCC</b>	GB4943, GB9254, GB17625.1		

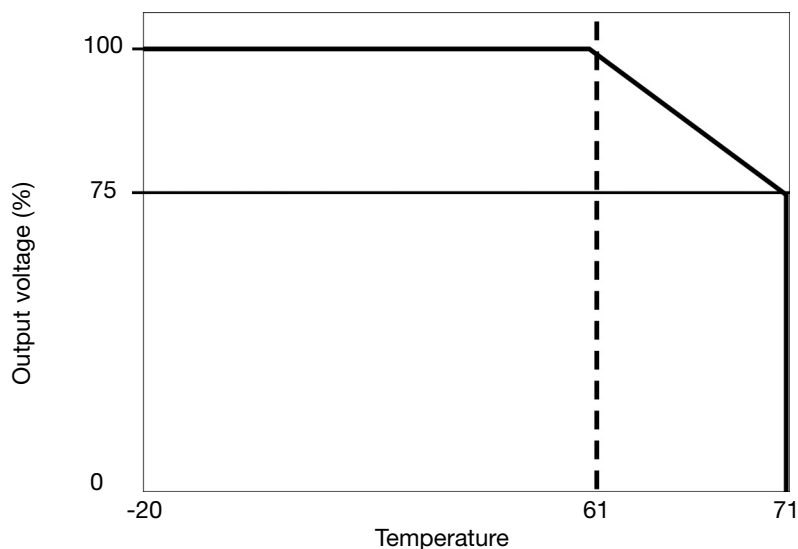
## Block diagrams



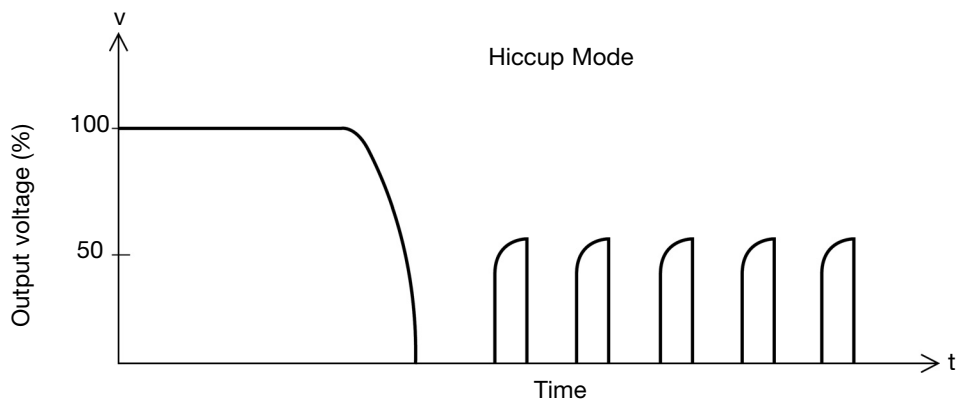
## Pin Assignment and Front Controls

Pin No.	Designation	Description
1	V+	Positive output terminal
2	V-	Negative output terminal
3		Ground this terminal to minimize high-frequency emission
4	N	Input terminals (neutral conductor, no polarity at DC input)
5	L	Input terminals (phase conductor, no polarity at DC input)
	ON	Operation indicator LED
	LO	DC LOW indicator LED
	Vout ADJ.	Trimmer-potentiometer for Vout adjustment

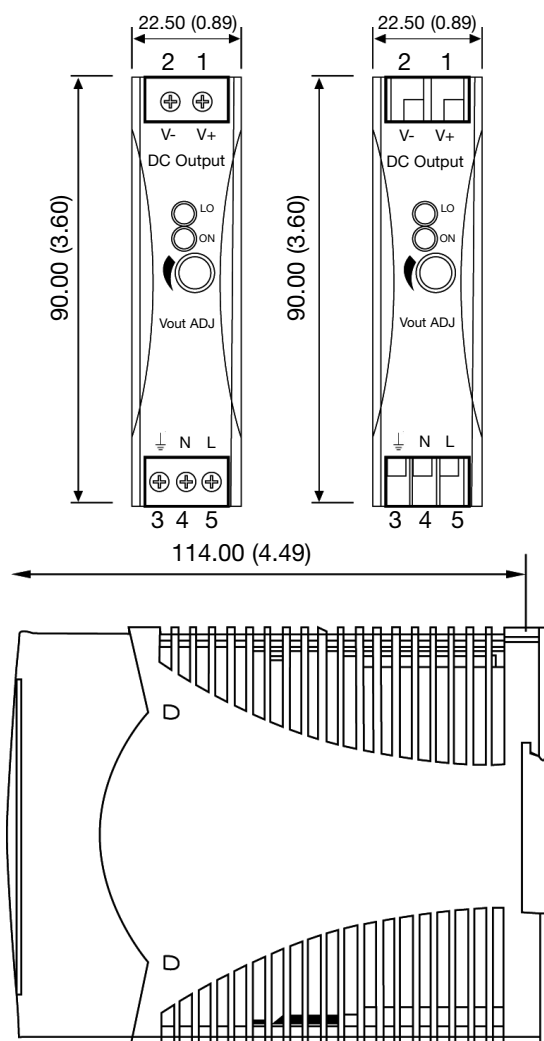
## Derating Diagram



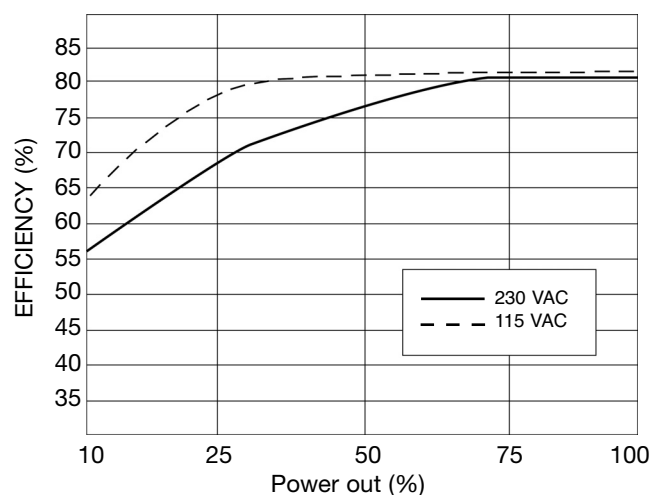
## Typ. Current Limited Curve



## Mechanical Drawings mm (inches)



## Typ. Efficiency Curve



## Installation

<b>Ventilation and cooling</b>	Normal convection All sides 25mm free space for cooling is recommended
<b>Connector size range</b>	AWG24-14 (0.2~2mm <sup>2</sup> ) flexible/solid cable, 10mm stripping at cable and recommends use copper conductors only, 60/75°C
<b>Spring terminal</b>	
<b>Screw terminal</b>	AWG26-12 (0.2~2.5mm <sup>2</sup> ) flexible/solid cable, connector can withstand torque at max 0,56Nm (5 lbs-in). 4~5 mm stripping at cable and recommends use copper conductors only, 60/75°C
<b>Max. torque for terminal</b>	
<b>Input terminals</b>	0.56Nm (5.0lb-in)
<b>Output terminals</b>	0.56Nm (5.0lb-in)
<b>General tolerances mm(in.)</b>	
<b>0.00 (0.00) ÷ 30.00 (1.18)</b>	±0.30 (0.01)
<b>30.00 (1.18) ÷ 120.00 (4.72)</b>	±0.50 (0.02)

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