

Switching Power Supply Type SPD 10W 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
- Power Ok output
- Internal input filter
- CE, TUV approved and cULus Listed

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 10 1 B

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

Input type: 1= single phase

Approvals



Optional Features

Description	Code
Spring connectors	B

Output Performances

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (min.)	EFF. (typ.)
Single Output Models						
SPD05	90~264 VAC	10 WATTS	+ 5 VDC	2000 mA	71%	73%
SPD12	90~264 VAC	10 WATTS	+12 VDC	840 mA	73%	75%
SPD15	90~264 VAC	10 WATTS	+15 VDC	670 mA	74%	76%
SPD24	90~264 VAC	10 WATTS	+24 VDC	420 mA	74%	76%

Output Data

Line regulation	± 1%	Rated continuous loading	5V Model	2A @ 5VDC/1.7A @ 5.75VDC
Load regulation	± 2%		12V Model	0.84A@12VDC/0.72A@13.8VDC
Minimum load	0		15V Model	0.67A @ 15VDC/0.58A @ 17.25VDC
Turn on time (full resistive load)	1000ms		24V Model	0.42A @ 24VDC/0.34A @ 28.8VDC
Vi nom, Io nom with 3500µF	1500ms	Reverse voltage	5V Model	7.5VDC
Transient recovery time	2ms		12V Model	18VDC
Ripple and noise	50mVpp		15V Model	22VDC
Output voltage accuracy	+ 1%		24V Model	35VDC
Temperature coefficient	± 0.03%/°C	Capacitor load		3500µF
Hold up time Vi= 115VAC	25ms	Voltage rise time at		500ms
Vi= 230VAC	100ms	(full resistive load)		
Voltage fall time (IOnom)	150ms max	Vi nom, Io nom with 3500µF		150ms

Input Data

Rated input voltage	100 - 240VAC	Power dissipation (Vi : 230VAC, Io nom)	5V Model 4.0W
Voltage range		12V Model 3.4W	
AC	90 - 264VAC	15V Model 3.3W	
DC	120 - 375VDC	24V Model 2.8W	
Rated input current (Vi : 115VAC, Io nom)	Typ. 200mA	Frequency range	47- 63Hz
	Max. 300mA	Leakage current	
Inrush current		Input-Output	0.25mA
Vi= 115VAC	10A	Input-FG	3.5mA
Vi= 230VAC	18A		

Controls and Protections

Overload	110 - 145%	Over voltage protection	125-145%
Input fuse	T2A/250VAC internal ¹⁾	Internal surge voltage protection (IEC 61000-4-5)	Varistor
Output short circuit	Hiccup mode		

¹⁾ Fuse not replaceable by user

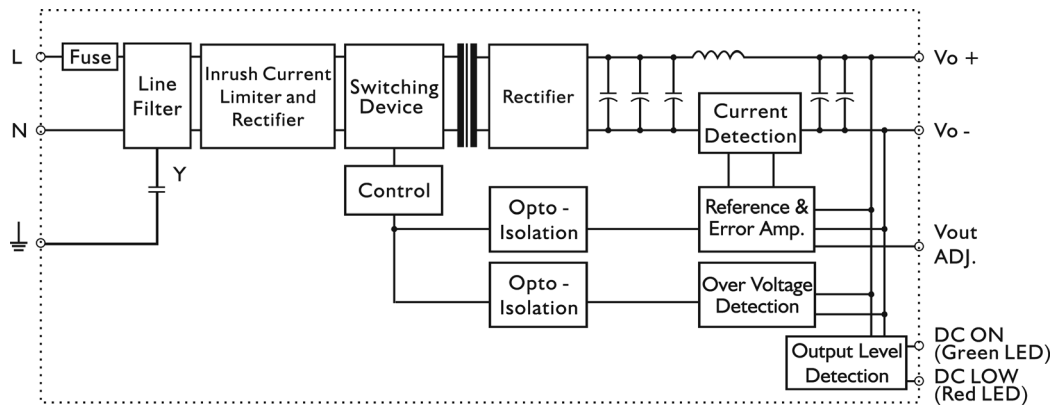
General Data (@ nominal line, full load, 25°C)

Ambient temperature	-20°C to 71°C	MTBF (Bellcore issue 6 @ 40°C, GB)	
Derating (>61°C to +71°C)	2.5%/°C	5V Model	801000 Hours
Ambient humidity	20 ~ 95%RH	12V Model	803000 Hours
Storage	-25°C to +85°C	15V Model	805000 Hours
Protection degree	IP20	24V Model	808000 Hours
Cooling	Free air convection	Case material	Plastic: PC, UL94-V0
Insulation voltage		Pollution degree	2
Input-Output	3.000VAC/4242VDC min	Altitude	2000m
Input-FG	1.500VAC/2121VDC min	Dimensions LxWxD mm(inch)	90(3.60)x22.5(0.89)x114(4.49)
Insulation resistance I/O	100MΩ min (@ 500VDC)	Weight	120g

Norms and Standards

Vibration resistance	meet IEC 60068-2-6 (Mounting by rail: 10-500Hz, 2G, along X, Y, Z each Axis, 60 min for each Axis)	CE	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
Shock resistance	meet IEC 60068-2-27 (15G, 11ms, 3 Axis, 6 faces, 3 times for each face)		
UL / cUL	UL508 listed, UL60950-1, UL1310 Class 2 Power Recognized, ISA 12.12.01 (Class 1, Division 2, Groups A, B, C and D)		
TUV	EN 60950-1, CB scheme		
CCC	GB4943, GB9254, GB17625.1		

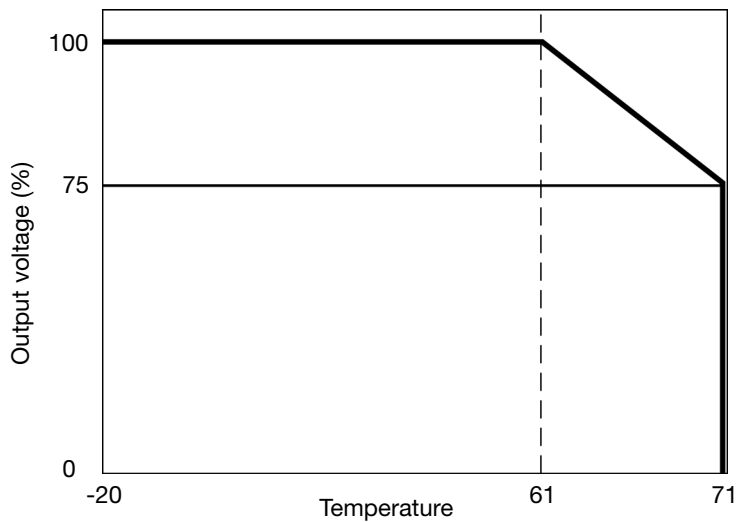
Block Diagrams



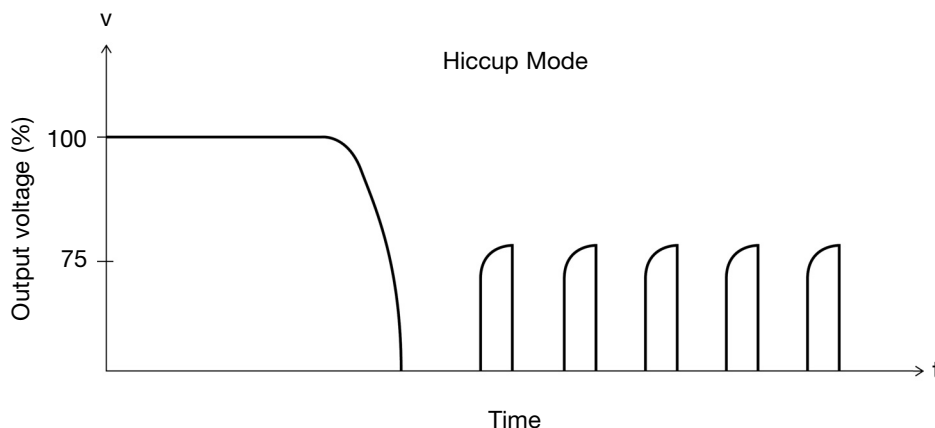
Pin Assignement and Front Controls

Pin No.	Designation	Description
1	V+	Positive output terminal
2	V-	Negative output terminal
3		Ground terminal to minimise High frequency emissions
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

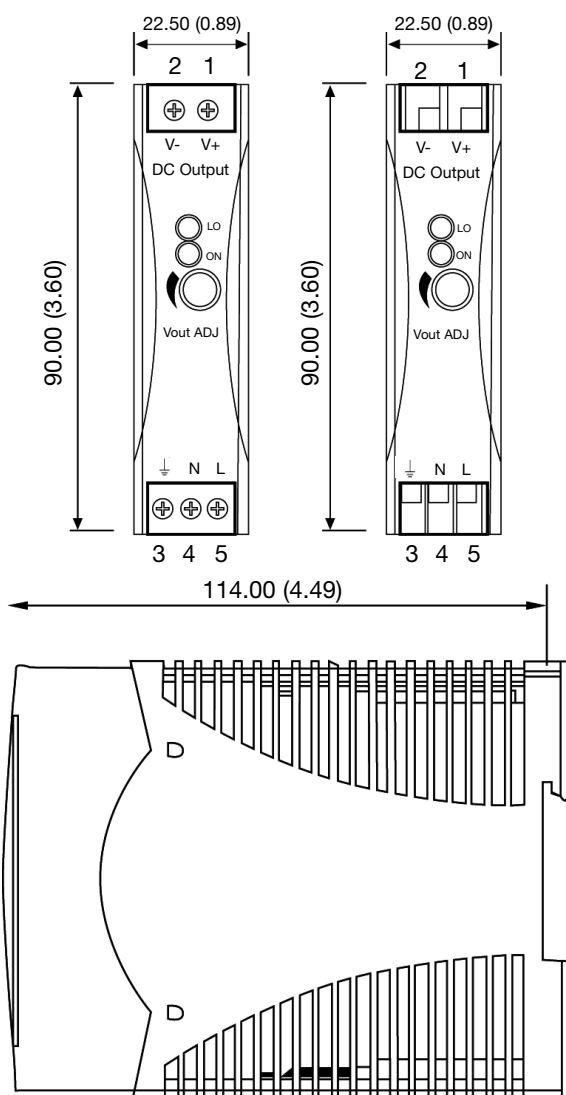
Derating Diagram



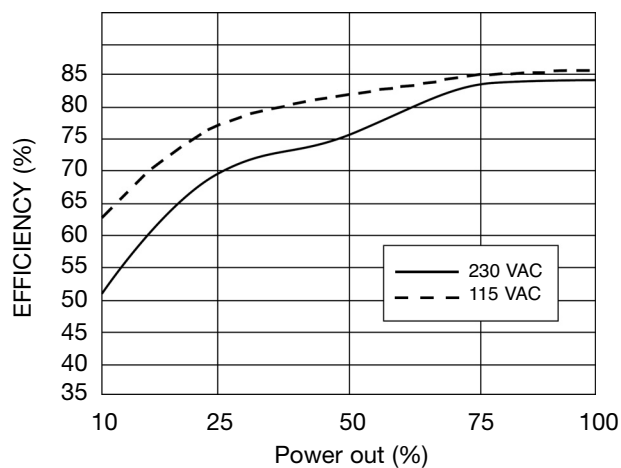
Typ. Current Limited Curve



Mechanical Drawings mm (inches)



Typ. Efficiency Curve



Installation

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