

Switching Power Supply Type SPD 5W 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 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 12 05 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.)	EFF. (avg.)
Single Output Models							
SPD05	90~264 VAC	5 WATTS	+ 5 VDC	1000 mA	67%	83%	69%
SPD12	90~264 VAC	5 WATTS	+12 VDC	420 mA	70%	86%	72%
SPD15	90~264 VAC	5 WATTS	+15 VDC	340 mA	70%	87%	72%
SPD24	90~264 VAC	5 WATTS	+24 VDC	210 mA	70%	87%	72%

Output Data

Line regulation	± 1%	Rated continuous loading	5V Model	1.0A @ 5VDC/0.85A @ 5.75VDC
Load regulation	± 2%		12V Model	0.42A @ 12VDC/0.36A @ 13.8VDC
Minimum load	0		15V Model	0.34A @ 15VDC/0.28A @ 17.25VDC
Turn on time (full resistive load)	1000ms max		24V Model	0.21A @ 24VDC/0.17A@28.8VDC
Transient recovery time	2ms	Reverse voltage	5V Model	VDC 7.5
Ripple and noise	50mVpp		12V Model	VDC 18
Output voltage accuracy	± 1%		15V Model	VDC 22
Temperature coefficient	± 0.03%/°C		24V Model	VDC 35
Hold up time Vi= 115VAC	30ms	Capacitor load		7000µF
Vi= 230VAC	130ms	Voltage rise time at full resistive load		150ms max
Voltage fall time (I ₀ nom)	150ms max			

Input Data

Rated input voltage	100 - 240VAC	Power dissipation (Vi : 230VAC, Io nom)	5V Model 2.2W
Voltage range		12V Model 1.9W	
AC	90 - 265VAC	15V Model 2.1W	
DC	120 - 370VDC	24V Model 1.8W	
Rated input current (Vi : 115VAC, Io nom) Typ.	115mA	Frequency range	47- 63Hz
Max.	200mA	Leakage current	
Inrush current		Input-Output	0.25mA 3.5mA
Vi= 115VAC	10A		
Vi= 230VAC	18A		

Controls and Protections

Overload	110 - 135%	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

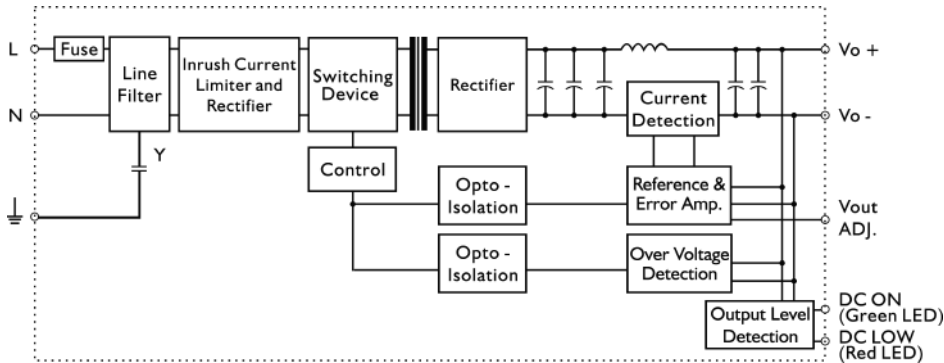
General Data (@ nominal line, full α, 25°C)

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	802000 Hours
Ambient humidity	20 ~ 95%RH	12V Model	805000 Hours
Storage	-25°C to +85°C	15V Model	808000 Hours
Protection degree	IP20	24V Model	812000 Hours
Cooling	Free air convection	Case material	Plastic: PC, UL94-V0
Insulation voltage		Pollution degree	2
Input-Output	3.000VAC/4242VDC min	Altitude	4850m
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 (only 5V, 12V w/o Class 2) 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		

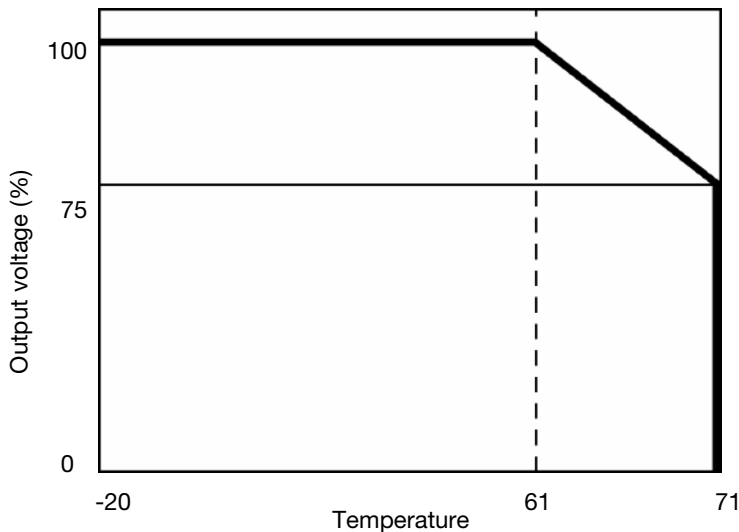
Block Diagrams



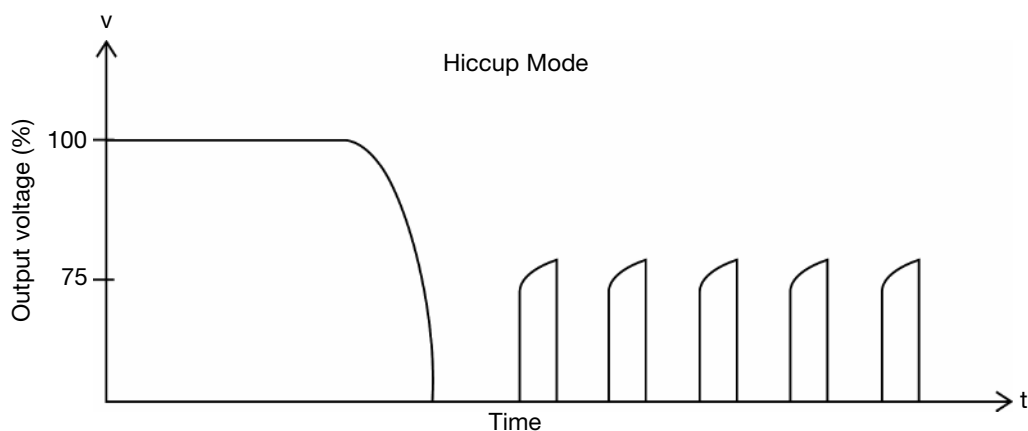
Pin Assignment and Front Controls

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

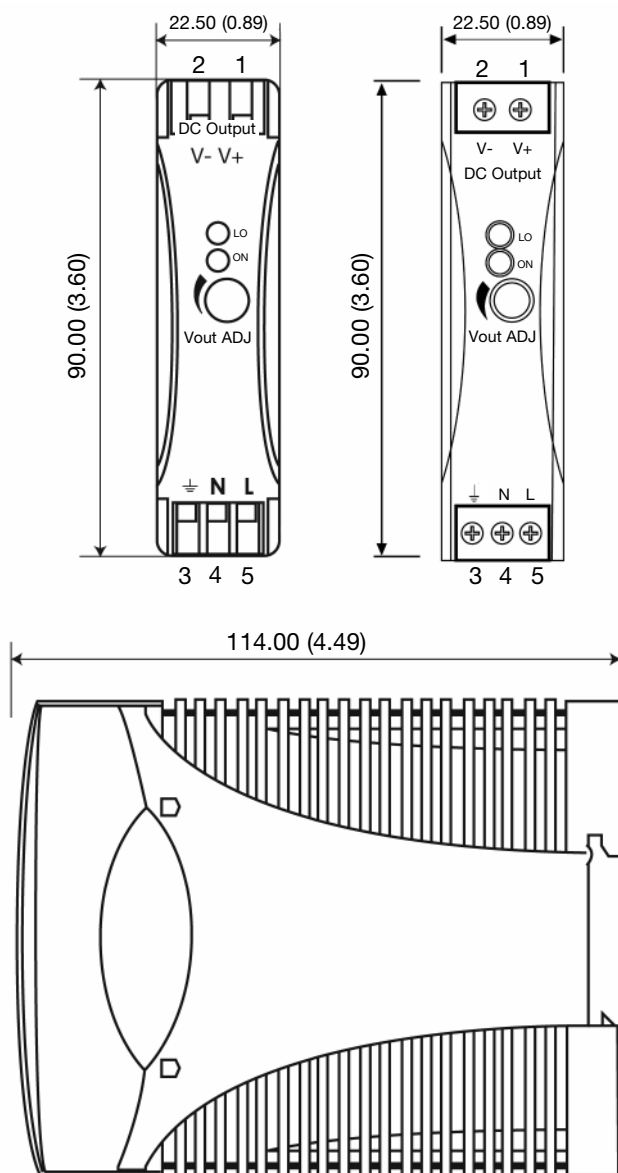
Derating Diagram



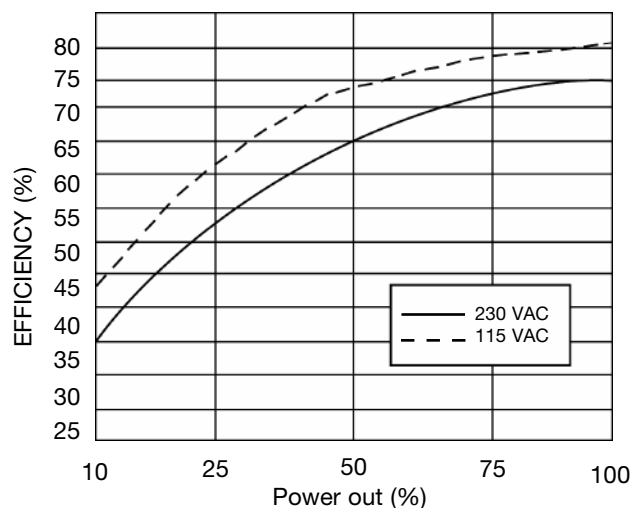
Typ. Current Limited Curve



Mechanical Drawings mm (inches)



Typ. Efficiency Curve



Installation

Ventilation and cooling	Normal convection All sides 25mm free space for cooling is recommended
Connector size range	
Spring terminal	AWG24-14 (0.2~2mm ²) flexible/solid cable, 10mm stripping at cable and recommends use copper conductors only, 60/75°C
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)