

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 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 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%
SPD24	90~264 VAC	5 WATTS	+15 VDC	340 mA	70%	87%	72%
SPD48	90~264 VAC	5 WATTS	+24 VDC	210 mA	70%	87%	72%

Output Data

Line regulation	± 1%
Load regulation	± 2%
Minimum load	0
Turn on time (full resistive load)	1000ms max
Transient recovery time	2ms
Ripple and noise	50mVpp
Output voltage accuracy	± 1%
Temperature coefficient	± 0.03%/°C
Hold up time	Vi= 115VAC 30ms Vi= 230VAC 130ms
Voltage fall time (I _{0nom})	150ms max

Rated continuous loading	
5V Model	1.0A @ 5VDC/0.85A @ 5.75VDC
12V Model	0.42A @ 12VDC/0.36A @ 13.8VDC
15V Model	0.34A @ 15VDC/0.28A @ 17.25VDC
24V Model	0.21A @ 24VDC/0.17A @ 28.8VDC
Reverse voltage	
5V Model	VDC 7.5
12V Model	VDC 18
15V Model	VDC 22
24V Model	VDC 35
Capacitor load	7000µF
Voltage rise time at full resistive load	150ms max

Input Data

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

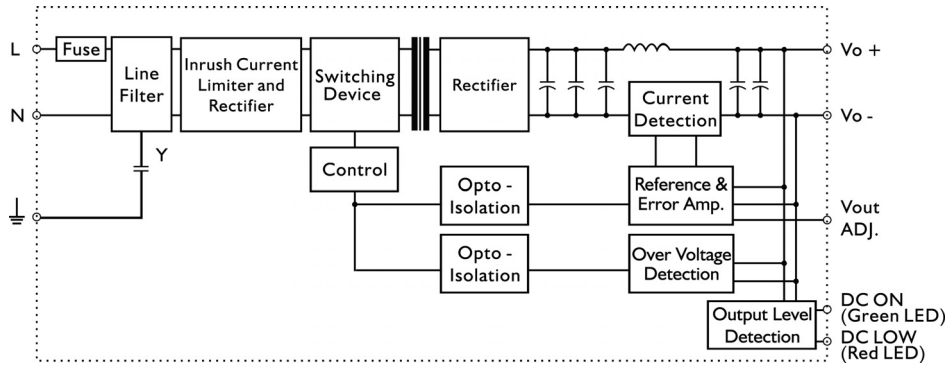
General Data (@ nominal line, full load, 25°C)

Ambient temperature	-20°C to 71°C	MTBF (Bellcore issue 6 @ 40°C, GB)	5V Model 802000 Hours 12V Model 805000 Hours 15V Model 808000 Hours 24V Model 812000 Hours
Derating (>61°C to +71°C)	2.5%/°C	Case material	Plastic: PC, UL94-V0
Ambient humidity	20 ~ 95%RH	Pollution degree	2
Storage	-25°C to +85°C	Altitude	4850m
Protection degree	IP20	Dimensions LxWxD mm(inch)	90(3.60)x22.5(0.89)x114(4.49)
Cooling	Free air convection	Weight	120g
Insulation voltage	Input-Output 3.000VAC/4242VDC min Input-FG 1.500VAC/2121VDC min		
Insulation resistance I/O	100MΩ min (@ 500VDC)		


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		

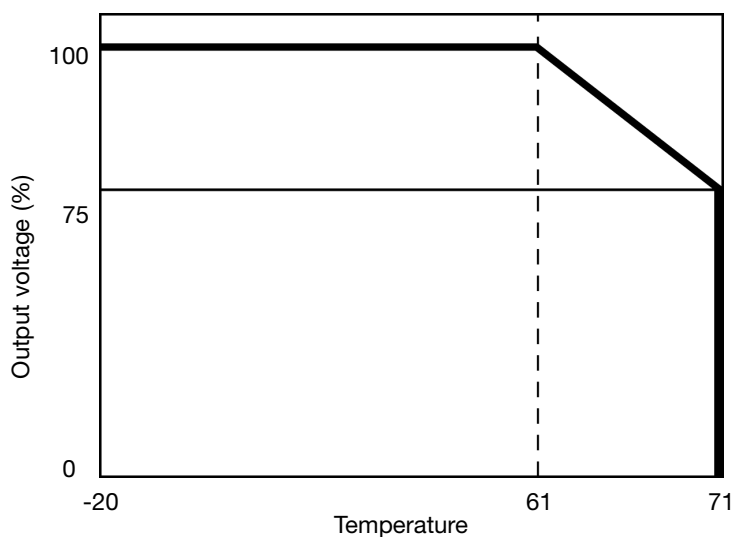
Block Diagrams



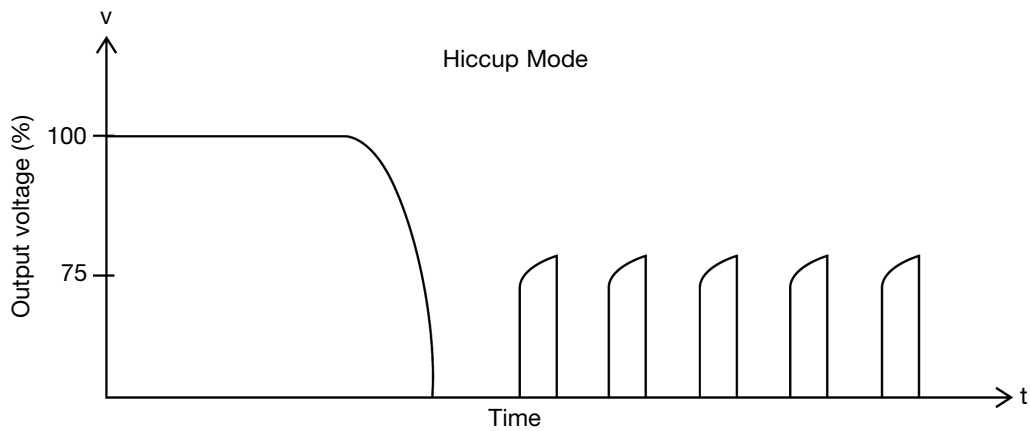
Pin Assignment and Front Controls

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

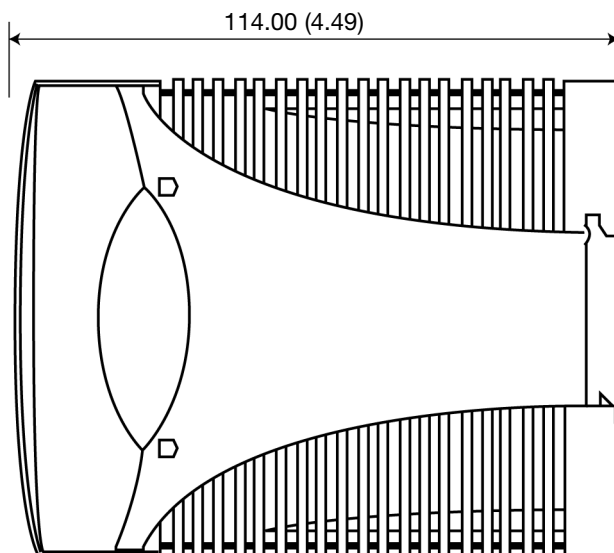
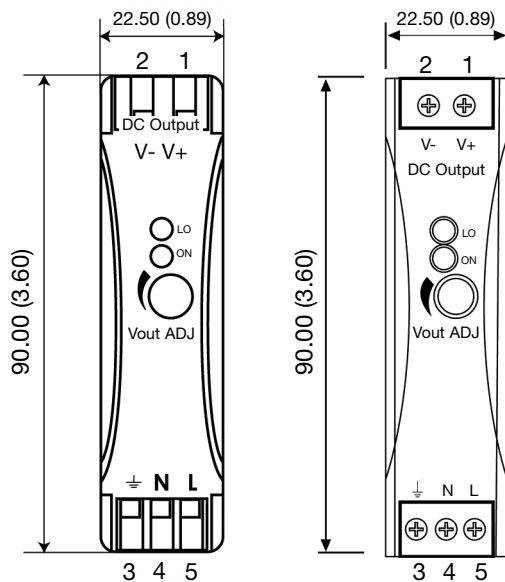
Derating Diagram



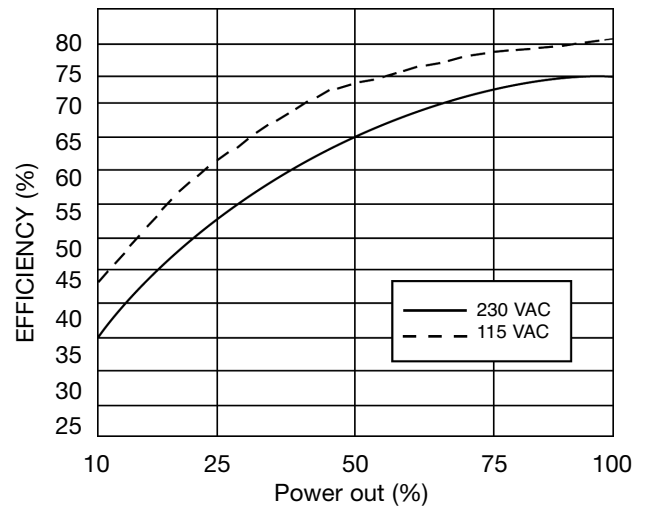
Typ. Current Limited Curve



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)