

Switching Power Supply Type SPD 30W DIN rail mounting

CARLO GAVAZZI



- Universal AC input full range
- Installation on DIN rail 7.5 or 15mm
- Short circuit protection
- Overload protection
- Class 2 output
- High efficiency
- LED indicator for DC power ON
- Power Ok output
- 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 30 1 B

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

Input type: 1= single phase

Approvals



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.)
Single Output Models						
SPD05	85~264 VAC	30 WATTS	+ 5 VDC	6000 mA	77%	79%
SPD12	85~264 VAC	30 WATTS	+12 VDC	2500 mA	82%	84%
SPD24	85~264 VAC	30 WATTS	+24 VDC	1250 mA	83%	86%
SPD48	85~264 VAC	30 WATTS	+48 VDC	625 mA	83%	86%

Output Data

Line regulation	± 0.5%
Load regulation	± 0.5%
Minimum load	0
Turn on time (full resistive load)	
Vi nom, Io nom	1000ms
Vi nom, Io nom with 3500µF CAP	2000ms
Transient recovery time	2ms
Ripple and noise	50mVpp
Output voltage accuracy	± 1%
Temperature coefficient	± 0.03%/°C
Hold up time Vi= 115VAC	20ms
Vi= 230VAC	30ms
Voltage fall time (Io nom)	150ms max

Rated continuous loading	
5V Model	6A @ 5VDC/5.4A @ 5.5VDC
12V Model	2.5A @ 12VDC/2.1A @ 14VDC
24V Model	1.25A @ 24VDC/1.05A @ 28VDC
48V Model	0.625A @ 48VDC/0.54A @ 55VDC
Reverse voltage	
5V Model	7.5VDC
12V Model	18VDC
24V Model	35VDC
48V Model	63VDC
Capacitor load	3500µF
Voltage rise time	
Vi nom Io nom	150ms
Vi nom, Io nom with 3500µF CAP	500ms

Input Data

Rated input voltage		100 - 240VAC		Power dissipation		
Voltage range				(Vi : 230VAC, Io nom)	5V Model	8.5W
	AC	85 - 264VAC			12V Model	5.6W
	DC	90 - 375VDC			24V Model	5.5W
Rated input current					48V Model	4.9W
(Vi : 115VAC, Io nom)	Typ.	560mA		Frequency range		47- 63Hz
	Max.	800mA		Leakage current		
Inrush current					Input-Output	0.25mA
	Vi= 115VAC	20A			Input-FG	3.5mA
	Vi= 230VAC	40A				

Controls and Protections

Overload		110 – 140%		Over voltage protection		VDC	
Input fuse		T2A/250VAC internal ¹⁾				Min.	Max.
Output short circuit		Fold forward		5V Model		6	6.8
Power ready output				12V Model		15	16.5
(only SPD 24)				24V Model		30	33
On threshold		≥19.2-19.4VDC		48V Model		60	66
Off threshold		≤19.1-19.3VDC		Internal surge voltage protection		Varistor	
				(IEC 61000-4-5)			

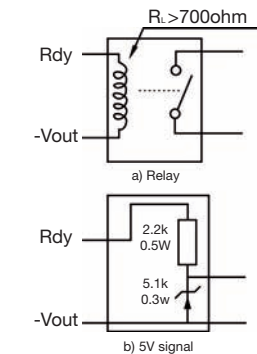
General Data (@ nominal line, full load, 25°C)

Ambient temperature	-40°C to 71°C	MTBF (Bellcore issue 6 @ 40°C, GB)	5V Model	551000 Hours
Derating (>61°C to +71°C)	2.5%/°C		12V Model	582000 Hours
Ambient humidity	20 ~ 90%RH		24V Model	588000 Hours
Storage	-40°C to +85°C		48V Model	609000 Hours
Protection degree	IP20		Case material	Plastic: PC, UL94-V0
Cooling	Free air convection	Dimensions LxWxD mm(inch)	90(3.6) x 40.5(1.59) x 114(4.49)	
Pollution degree	2	Weight	270g	

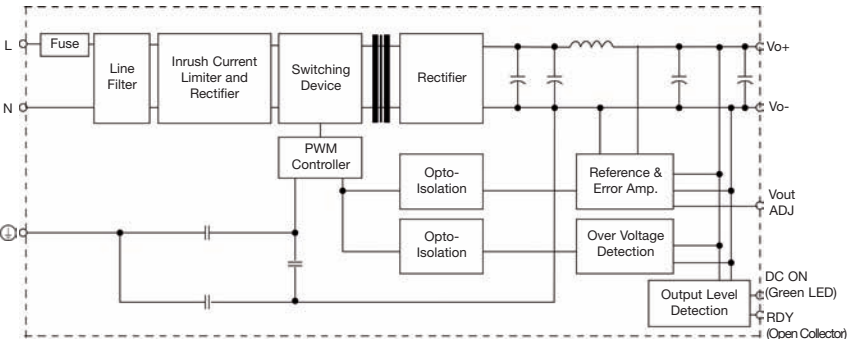
Norms and Standards

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, 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 EN 61558-1, EN 61558-2-17 (meet EN 60204)		
CCC	GB4943, GB9254, GB17625.1		

Rdy connection



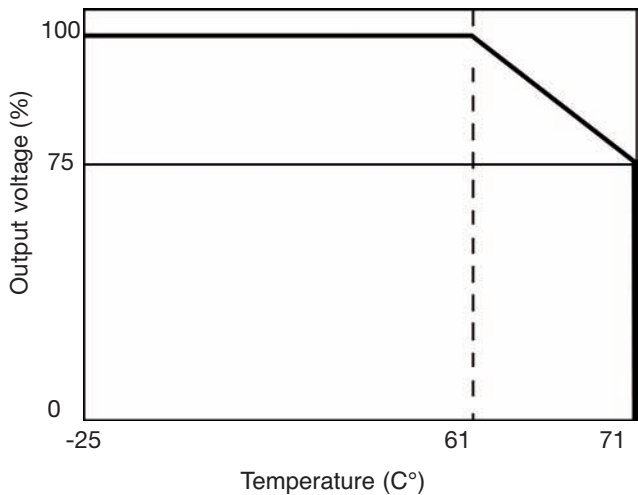
Block Diagrams



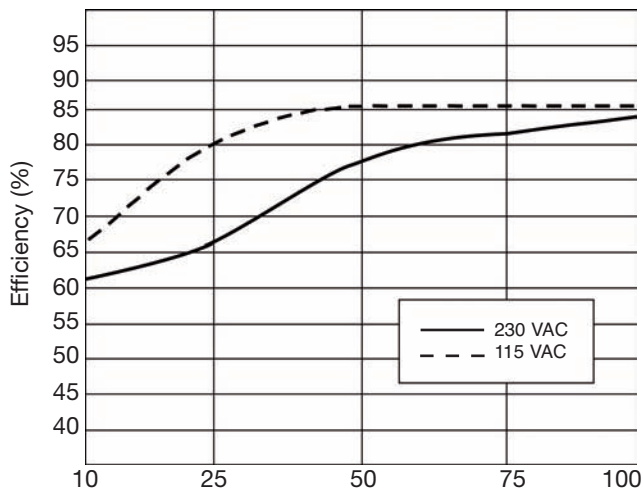
Pin Assignement and Front Controls

Pin No.	Designation	Description
1	RDY	DC OK output for relay (not connect except 24V model)
2	+	Positive output terminal
3	+	Positive output terminal
4	-	Negative output terminal
5	-	Negative output terminal
		Ground this terminal to minimize high-frequency emissions
	N	Input terminals (neutral conductor, no polarity at DC input)
	L	Input terminals (phase conductor, no polarity at DC input)
	Vout ADJ	Trimmer-potentiometer for Vout adjustment
	DC ON	Operation indicator LED

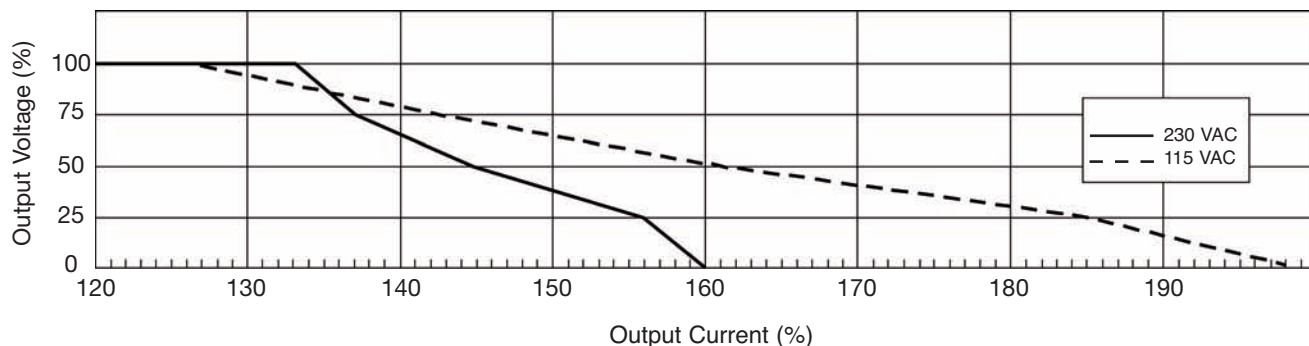
Derating Diagram



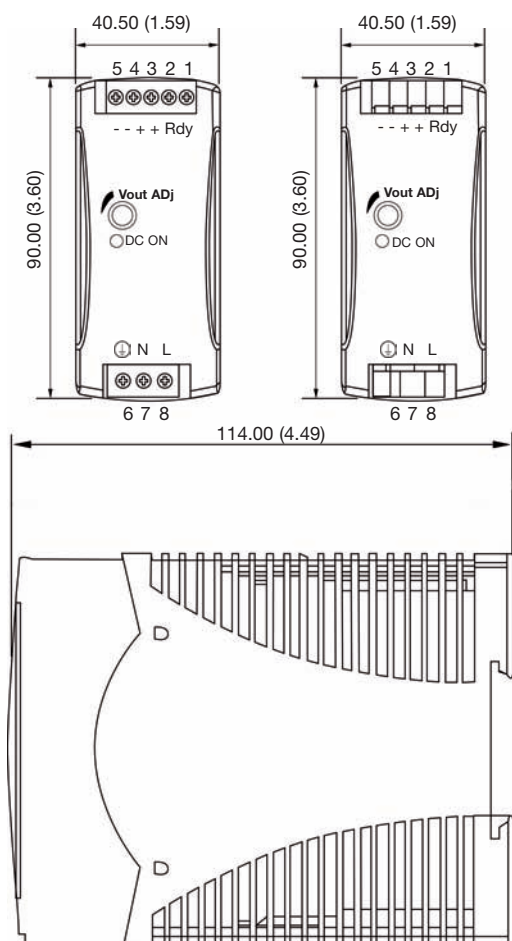
Typ. Efficiency Curve



Typ. Current Limited Curve



Mechanical Drawings mm (inches)



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)