

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%	Rated continuous loading	5V Model	6A @ 5VDC/5.4A @ 5.5VDC
Load regulation	± 0.5%		12V Model	2.5A @ 12VDC/2.1A @ 14VDC
Minimum load	0	24V Model	1.25A @ 24VDC/1.05A @ 28VDC	Reverse voltage
Turn on time (full resistive load)		48V Model	0.625A @ 48VDC/0.54A @ 55VDC	
Vi nom, lo nom	1000ms	Capacitor load	5V Model	7.5VDC
Vi nom, lo nom with 3500µF CAP	2000ms		12V Model	18VDC
Transient recovery time	2ms	24V Model	35VDC	Voltage rise time
Ripple and noise	50mVpp	48V Model	63VDC	
Output voltage accuracy	± 1%	Capacitor load	3500µF	Vi nom, lo nom with 3500µF CAP
Temperature coefficient	± 0.03%/°C	Voltage rise time		
Hold up time Vi= 115VAC	20ms	Vi nom lo nom	150ms	
	Vi= 230VAC	Vi nom, lo nom with 3500µF CAP	500ms	
Voltage fall time (I ₀ nom)	150ms max			

Input Data

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

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 (only SPD 24)	On threshold	12V Model	15	16.5
	Off threshold	24V Model	30	33
	≥19.2-19.4VDC	48V Model	60	66
	≤19.1-19.3VDC	Internal surge voltage protection (IEC 61000-4-5)	Varistor	

¹⁾ Fuse not replaceable by user

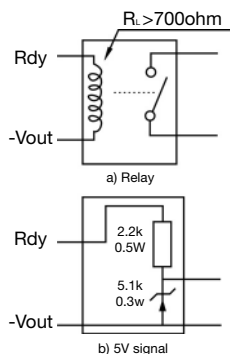
General Data (@ nominal line, full load, 25°C)

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	

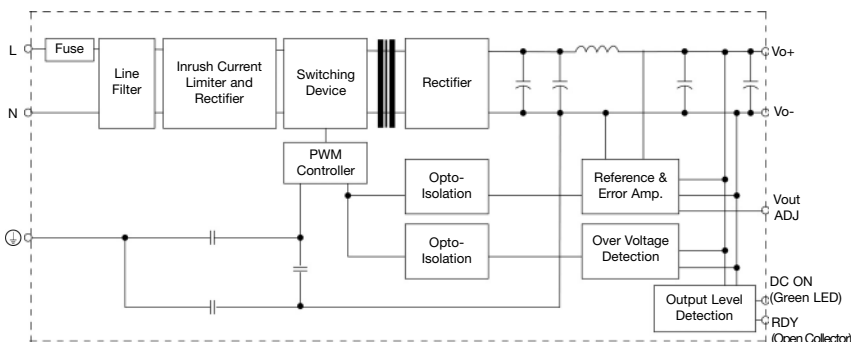
Norms and Standards

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



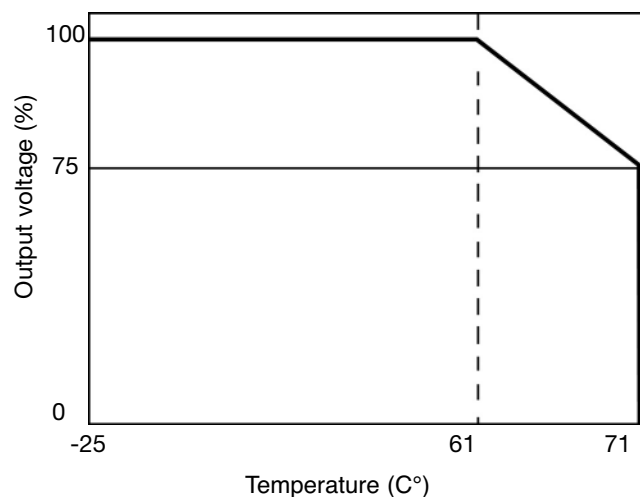
Block Diagrams



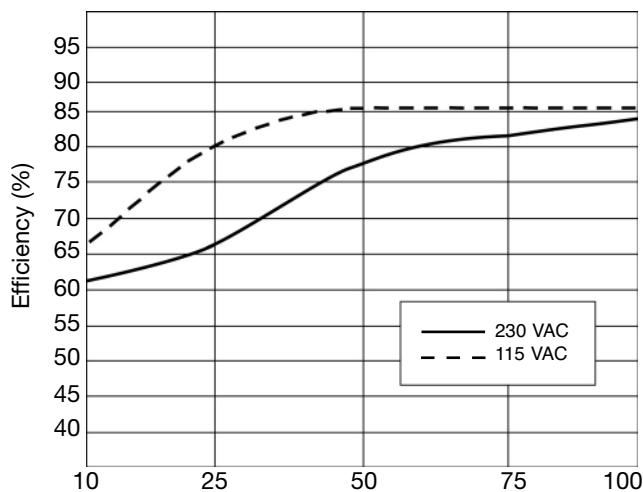
Pin Assignment and Front Controls

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

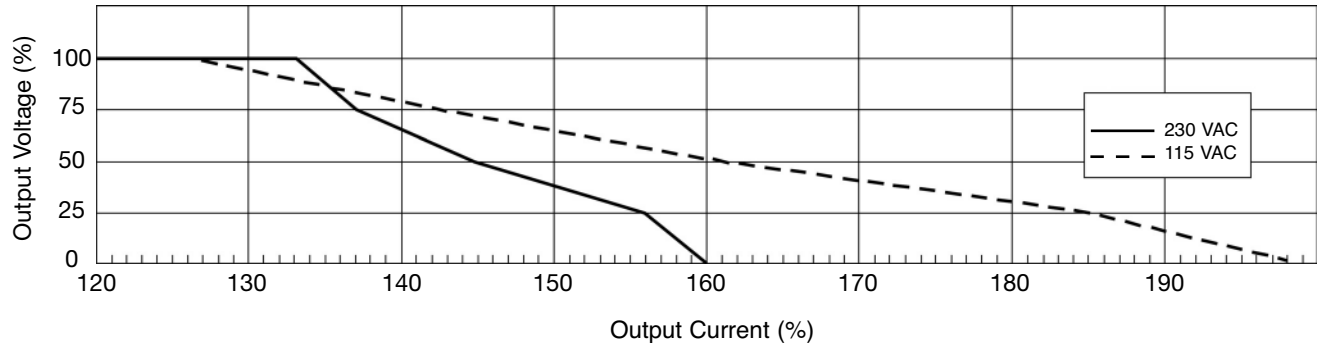
Derating Diagram



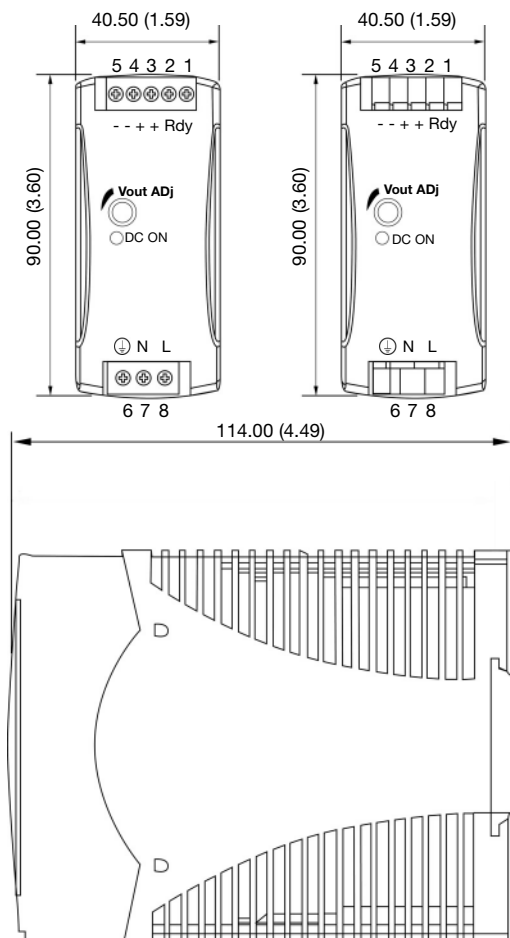
Typ. Efficiency Curve



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)