

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



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	
Load regulation	± 0.5%	5V Model	6A @ 5VDC/5.4A @ 5.5VDC
Minimum load	0	12V Model	2.5A @ 12VDC/2.1A @ 14VDC
Turn on time (full resistive load)		24V Model	1.25A @ 24VDC/1.05A @ 28VDC
Vi nom, Io nom	1000ms	48V Model	0.625A @ 48VDC/0.54A @ 55VDC
Vi nom, Io nom with 3500µF CAP	2000ms	Reverse voltage	
Transient recovery time	2ms	5V Model	7.5VDC
Ripple and noise	50mVpp	12V Model	18VDC
Output voltage accuracy	± 1%	24V Model	35VDC
Temperature coefficient	± 0.03%/°C	48V Model	63VDC
Hold up time Vi= 115VAC	20ms	Capacitor load	3500µF
Vi= 230VAC	30ms	Voltage rise time	
Voltage fall time (IOnom)	150ms max	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)				Frequency range		47- 63Hz
Typ.		560mA		Leakage current		
Max.		800mA				
Inrush current						
Vi= 115VAC		20A		Input-Output		0.25mA
Vi= 230VAC		40A		Input-FG		3.5mA

Controls and Protections

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

¹⁾ Fuse not replaceable by user

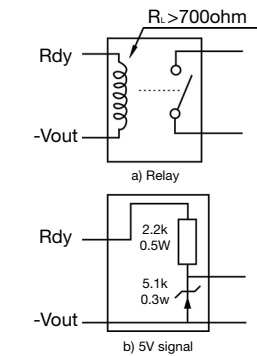
General Data (@ nominal line, full load, 25°C)

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

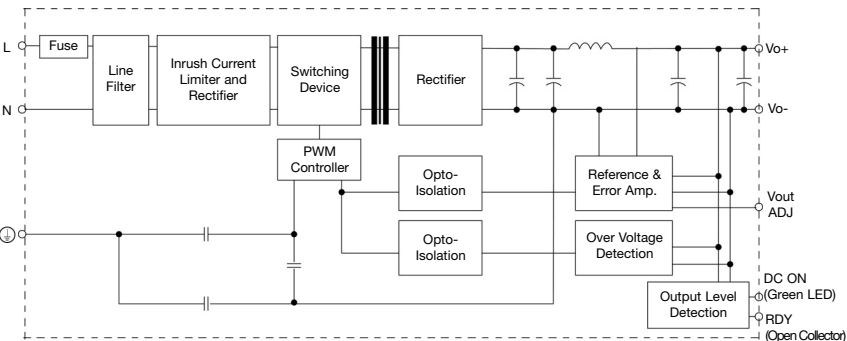
Norms and Standards

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



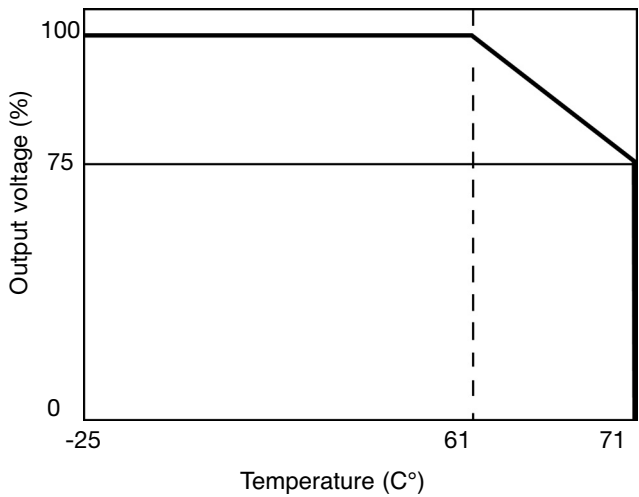
Block Diagrams



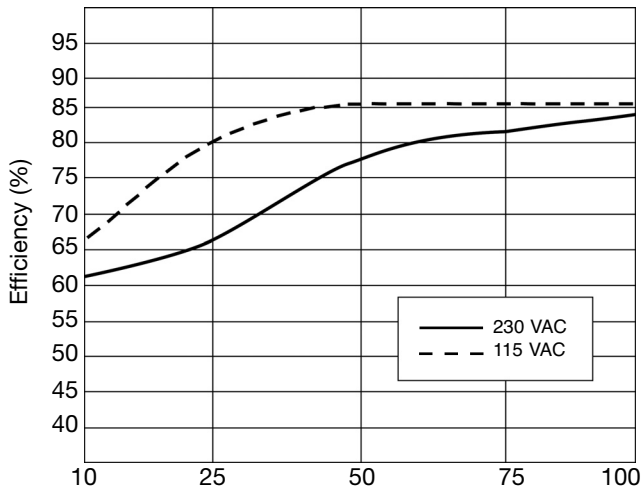
Pin Assignement and Front Controls

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

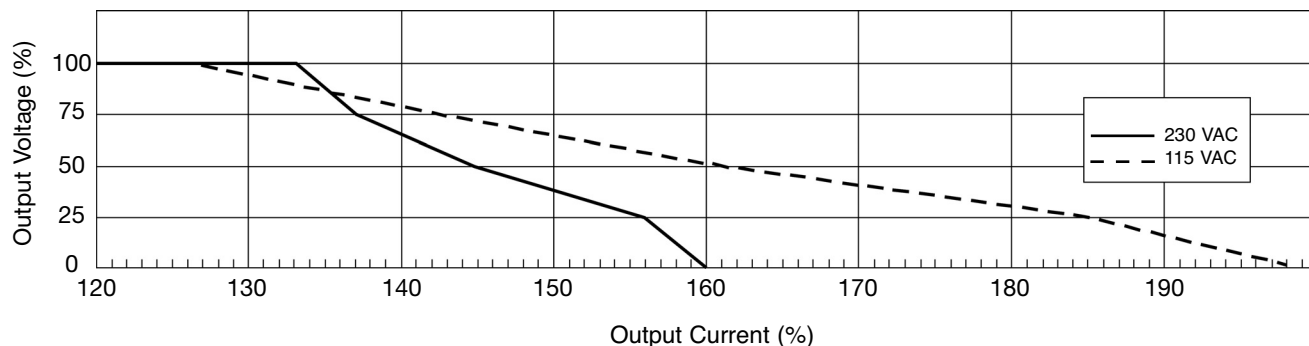
Derating Diagram



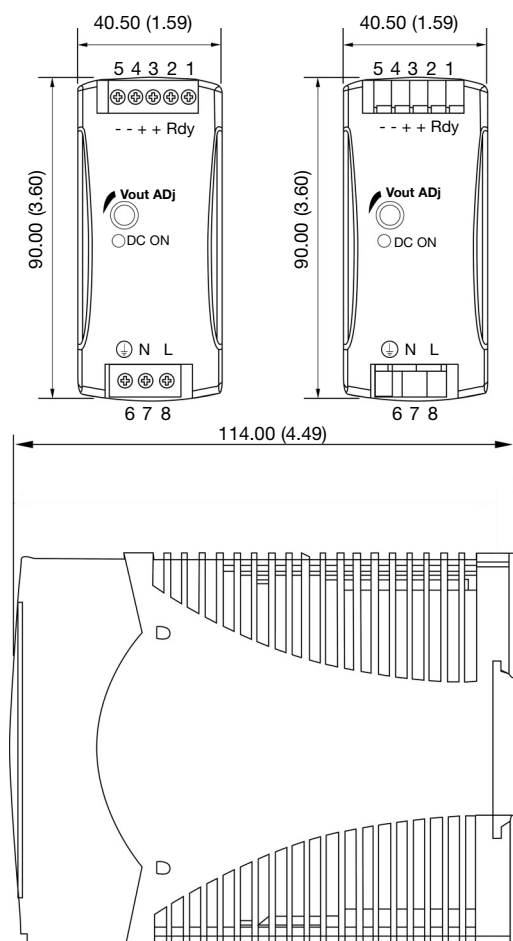
Typ. Efficiency Curve



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)