

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



Approvals

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	0A
Turn on time (full resistive load)	
Vi nom, Io nom	1000ms
Vi nom, Io nom with 3500µF	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 (I _{o,nom} Vi 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	VDC 7.5
12V Model	VDC 18
24V Model	VDC 35
48V Model	VDC 63
Capacitor load	
7000µF	
Voltage rise time at full resistive load	150ms
Vi nom, Io nom with 3500µF	500ms

Input Data

Rated input voltage	100 - 240VAC		Power dissipation		
Voltage range			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		Input-Output	0.25mA	
Inrush current			Input-FG	3.5mA	
Vi= 115VAC	20A				
Vi= 230VAC	40A				

Controls and Protections

Overload	110%~140%		Over voltage protection	VDC	
Input fuse	T25A/250VAC internal ¹⁾			Min.	Max.
Output short circuit	Fold forward		5V Model	6	6.8
Power ready output			12V Model	15	16.5
(only SPD24)	On threshold	≥19.2-19.4VDC	24V Model	30	33
	Off threshold	≤19.1-19.3VDC	48V Model	60	66
			Internal surge voltage protection	Varistor	

1) Fuse not replaceable by user

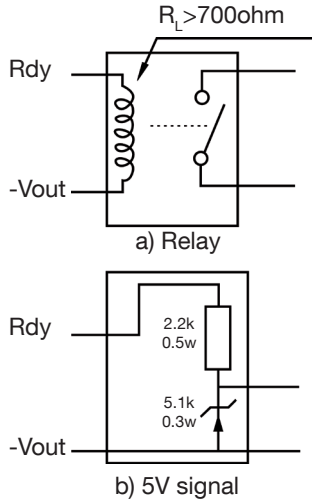
General Data (@ nominal line, full load, 25°C)

Ambient temperature	-40°C to +71°C		MTB		
Derating (>61°C to +71°C)	2.5%/C		5V Model	551000 Hours	
Ambient humidity	20 - 90% RH		12V Model	582000 Hours	
Storage	-40°C to +85°C		24V Model	588000 Hours	
Protection degree	IP20		48V Model	609000 Hours	
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	270 g	

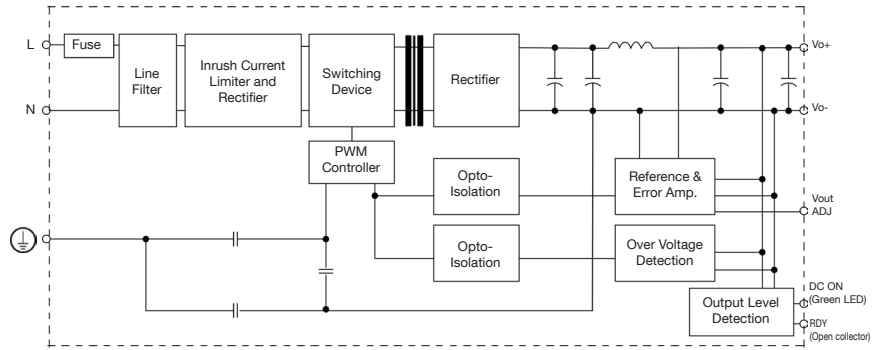
Norms and Standard

Vibration resistance	meet IEC 60068-2-6 (Mounting by rail: 10-500Hz, 2G, along X, Y, Z each Axis, 60 min for each Axis)	CCC	Available upon request
Shock resistance	meet IEC 60068-2-27 (15G,11ms, 3 Axis, 6 faces, 3 times for each face)	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
UL/cUL	UL508 listed, UL60950-1, UL1310 Class 2 Power (only 5V, 12V w/o Class 2) Reco gnized, 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)		


Rdy Connection



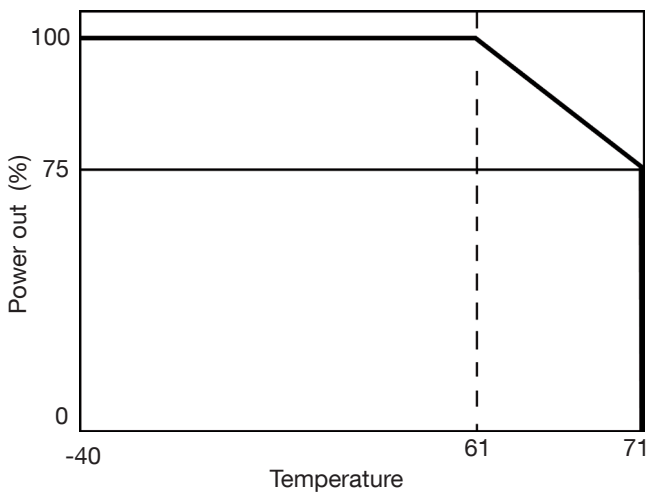
Block Diagram



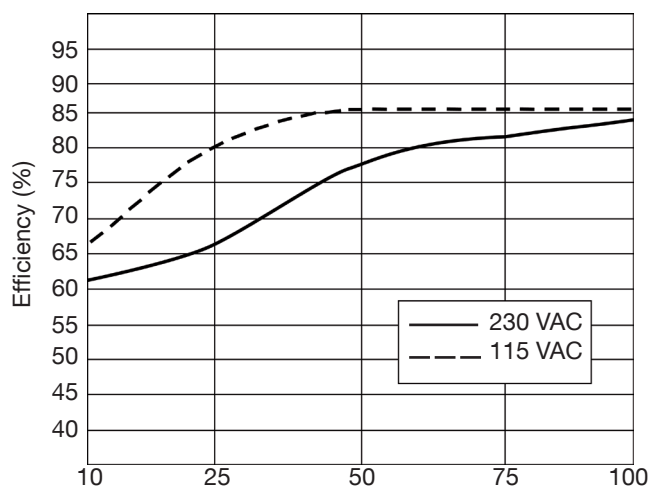
Pin Assignment and Front Controls

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

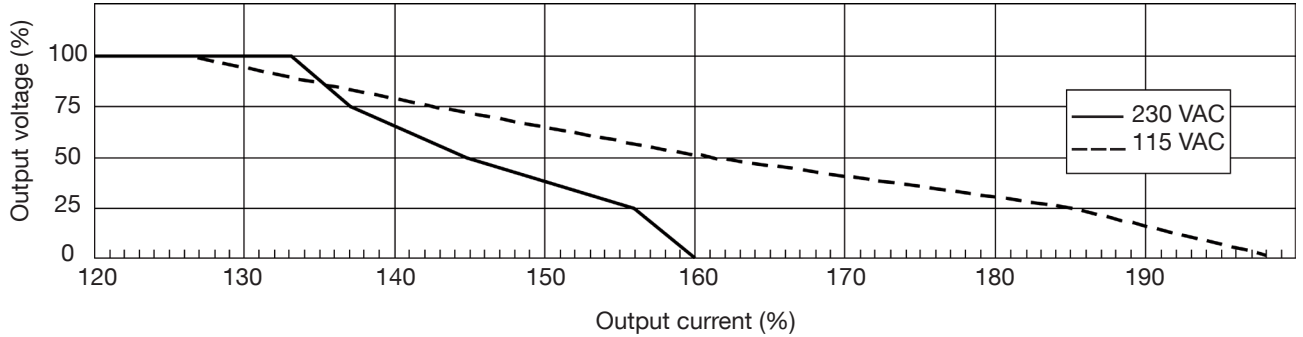
Derating Diagram



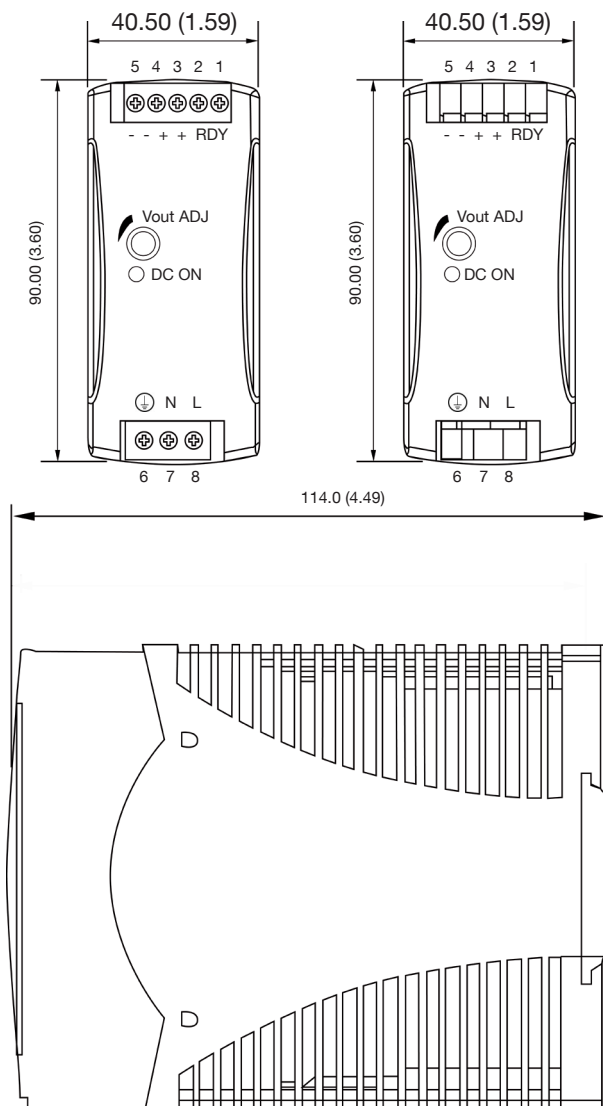
Typ. Efficiency Curve



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 (0.2~2mm²)
 flexible/solid cable, 10mm
 stripping at cable and
 recommends use copper
 conductors only, 60/75°C

Screw terminal

AWG26-12 (0.2~2.5mm²)
 flexible/solid cable, con nector
 can withstand torque at max
 0,56Nm (5 lbs-in). 4~5 mm
 stripping at cable and recom
 mends use copper conductors
 monly, 60/75°C

Max. torque for terminal

Input terminal

0.56Nm (5.0lb-in)

Output terminal

0.56Nm (5.0lb-in)

General tollerance 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)

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