

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%	Rated continuous loading	
Load regulation	±0.5%	5V Model	6A @ 5VDC/5.4A @ 5.5VDC
Minimum load	0A	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	2000ms	Reverse voltage	
Transient recovery time	2ms	5V Model	VDC 7.5
Ripple and noise	50mVpp	12V Model	VDC 18
Output voltage accuracy	±1%	24V Model	VDC 35
Temperature coefficient	±0.03%/°C	48V Model	VDC 63Capacitor load
Hold up time		7000µF	
Vi= 115VAC	20ms	Voltage rise time at full resistive load	150ms
Vi=230VAC	30ms	VI nom, Io nom with 3500µF	500ms
Voltage fall time (I _o nom Vi nom)	150ms max		

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)		24V Model	30	33
On threshold	≥19.2-19.4VDC	48V Model	60	66
Off threshold	≤19.1-19.3VDC			
1) Fuse not replaceable by user		Internal surge voltage protection	Varistor	

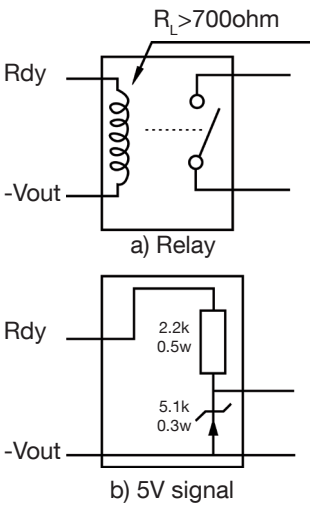
General Data (@ nominal line, full load, 25°C)

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

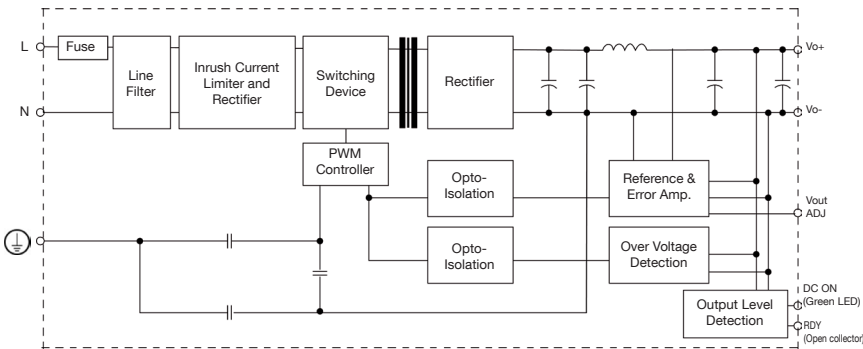
Norms and Standard

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



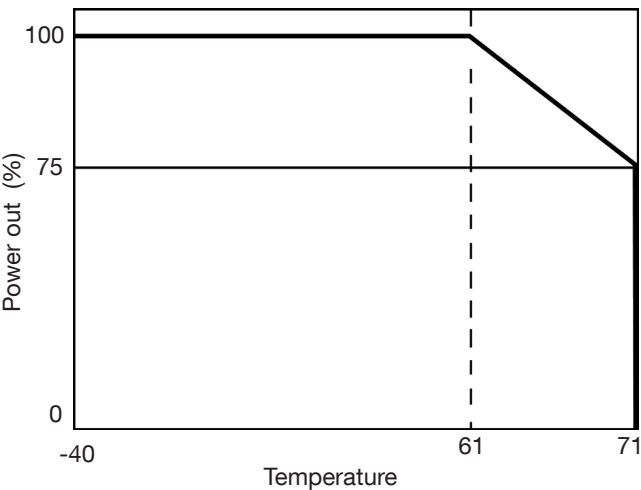
Block Diagram



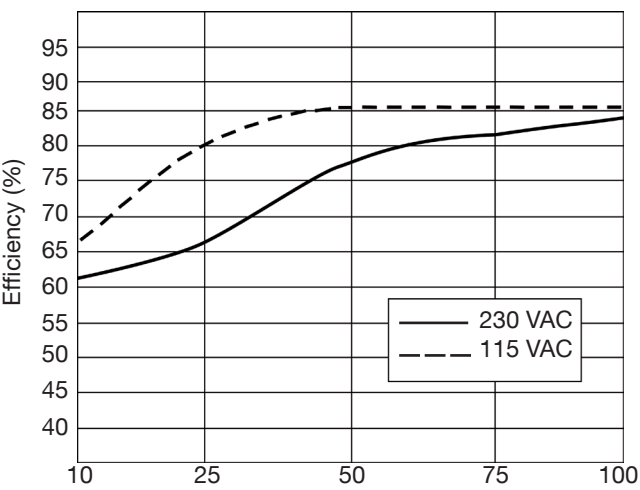
Pin Assignment and Front Controls

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

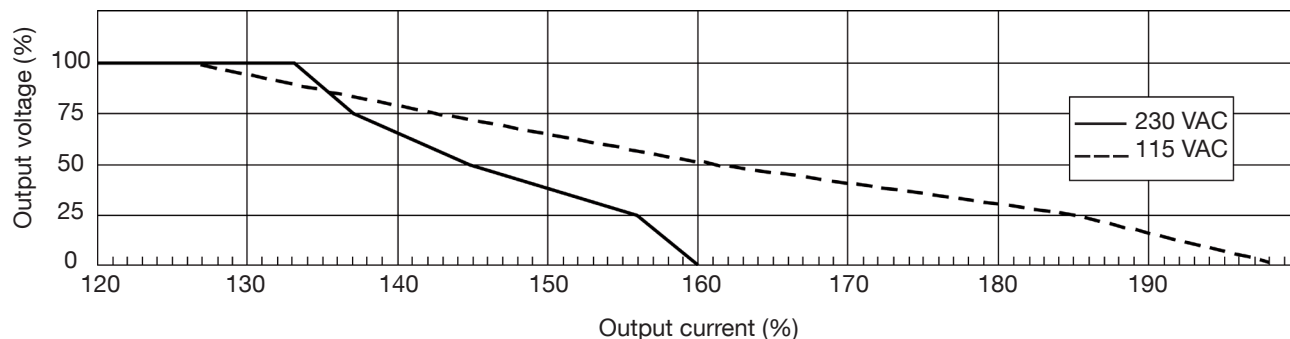
Derating Diagram



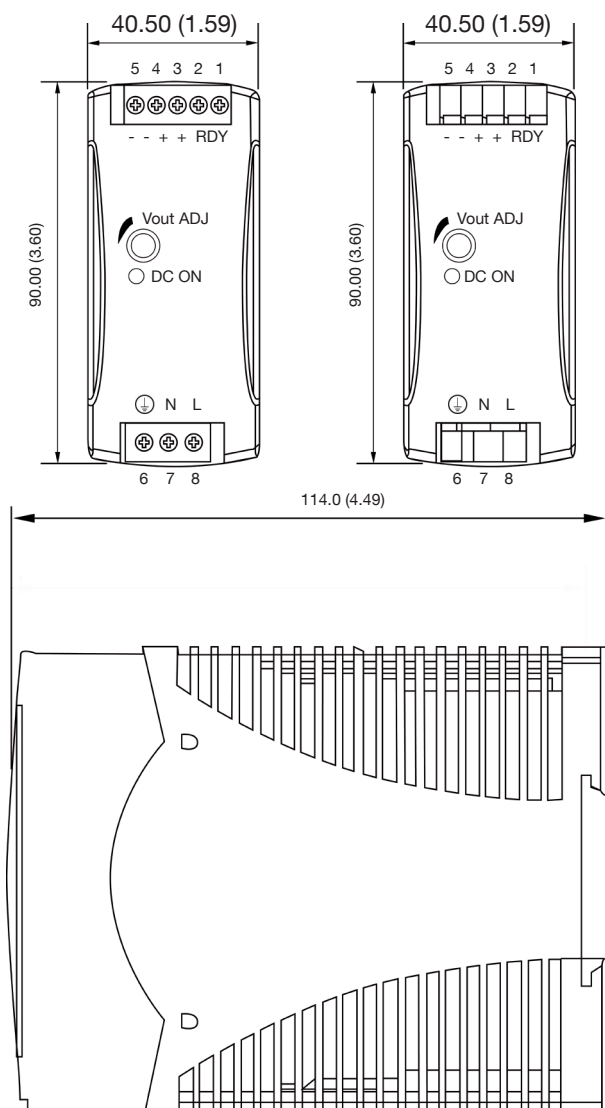
Typ. Efficiency Curve



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 (0.2~2mm 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, 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)