

Switching Power Supply

Type SPD 100W

DIN rail mounting

CARLO GAVAZZI



- Installation on DIN Rail 7.5 or 15mm
- Short circuit protection
- PFC standard
- Power ready output on 24VDC
- LED indicator for DC power ON
- LED indicator for DC low
- Standard parallel function
- Very compact dimensions
- UL, cUL listed and TUV/CE approved
- Class I div2 certification (in progress)

Product Description

This SPD is the most compact 100W power supply on the market. Relay output for "power ready" parallel function and PFC are included. Performances are unique with high efficiencies and the possibility of being used up to 70°C with a little derating.

Ordering Key

SP D 24 100 1

Model _____
 Mounting (D = Din rail) _____
 Output voltage _____
 Output power _____
 Input type _____

Input type: 1= single phase

Approvals



Output Performances

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (min.)	EFF. (typ.)
Single Output Models						
SPD12100	90~264 VAC	100.8 WATTS	+12 VDC	8,4 A	82%	84%
SPD24100	90~264 VAC	100.8 WATTS	+24 VDC	4,2 A	84%	86%
SPD48100	90~264 VAC	100.8 WATTS	+48 VDC	2,1 A	86%	88%

Output Data

Line regulation	± 1%	Voltage fall time (I _{0nom})	150ms max
Load regulation		Rated continuous loading	
Non parallel model	± 1%	12V Model	8.4A @ 12VDC/6.9A @ 14.5VDC
Parallel model	± 5%	24V Model	4.2A @ 24VDC/3.5A @ 28.5VDC
Minimum load	0	48V Model	2.1A @ 48VDC/1.8A @ 56VDC
Turn on time (full resistive load)		Reverse voltage	
Vi nom, Io nom 12V/24V models with 7000µF CAP	1000ms	12V Model	18VDC
Vi nom, Io nom 48V model with 3500µF CAP	2000ms	24V Model	35VDC
Transient recovery time	2ms	48V Model	63VDC
Ripple and noise	50mVpp	Capacitor load	
Output voltage accuracy	± 1%	12V/24V models	7000µF
Temperature coefficient	± 0.03%/°C	48V model	3500µF
Hold up time Vi= 115VAC	15ms	Voltage rise time	
Vi= 230VAC	30ms	Vi nom Io nom	150ms
		Vi nom, Io nom 12V/24V models with 7000µF CAP	500ms
		48V model with 3500µF CAP	500 ms

Input Data

Rated input voltage	100 - 240VAC	Power dissipation (Vi : 230VAC, Io nom)	12V Model 18.5W 24V Model 15W 48V Model 14W
Voltage range	AC 90- 264VAC DC 120 - 375VDC	Frequency range	47- 63Hz
Rated input current (Vi : 90VAC, Io nom) Typ.	2.4A	Leakage current	Input-Output 0.25mA Input-FG 3.5mA
Inrush current	Vi= 115VAC 30A Vi= 230VAC 60A		

Controls and Protections

Overload	12V model 14.5V to 17.4V 24V model 30.0V to 33.0V 48V model 60.0V to 66.0V	Over voltage protection	VDC Min. 14.5 Max. 17.4
Input fuse	T3.15A/250VAC internal ¹⁾	12V Model 30 24V Model 33 48V Model 66	
Output short circuit	Fold forward	Internal surge voltage protection (IEC 61000-4-5)	Varistor
Power ready output threshold at start up	≥17.6-19.4VDC		
Electrical isolation	500VDC		
Contact rating at 60VDC	0.3A		

¹⁾ Fuse not replaceable by user

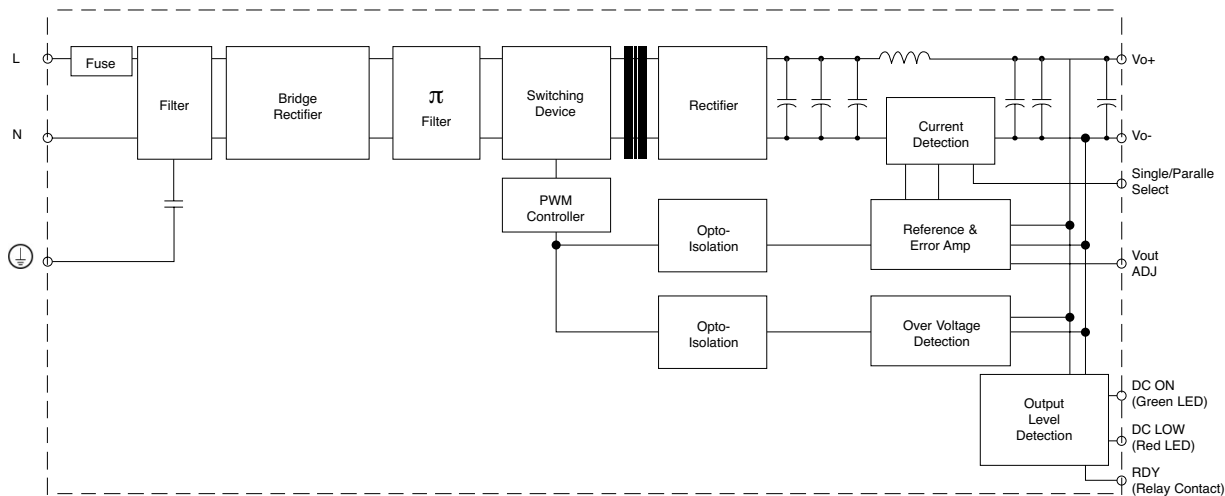
General Data (@ nominal line, full load, 25°C)

Ambient temperature	-35°C to 71°C	MTBF (Bellcore issue 6 @ 40°C, GB)	12V Model 448000 Hours 24V Model 456000 Hours 48V Model 490000 Hours
Derating (>61°C to +71°C)	2.5%/°C	Case material	Plastic: PC, UL94-V0
Ambient humidity	22 ~ 95%RH	Dimensions LxWxD mm(inch)	90(3.6) x 54(2.13) x 114(4.49)
Storage	-40°C to +85°C	Weight	430g
Protection degree	IP20		
Cooling	Free air convection		
Pollution degree	2		

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-N 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 Recognized		
TUV	EN 60950-1, CB scheme EN 61558-1, EN 61558-2-17 (meet EN 60204)		

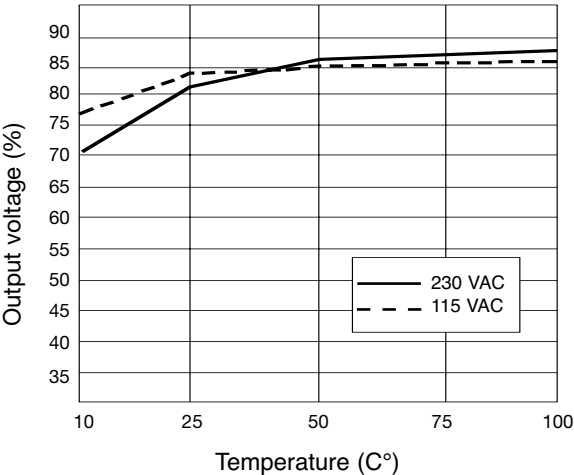
Block Diagrams



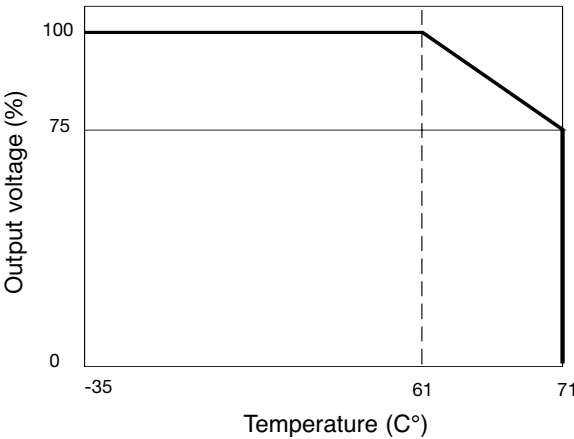
Pin Assignment and Front Controls

Pin No.	Designation	Description
1	RDY	A normal open relay contact for DC ON level control
2		Never connect
3, 4	V+	Positive output terminal
5, 6	V-	Negative output terminal
7		Ground this terminal to minimize high-frequency emissions
8	N	Input terminals (neutral conductor, no polarity at DC input)
9	L	Input terminals (phase conductor, no polarity at DC input)
	DC ON	Operation indicator LED
	DC LO	DC LOW voltage indicator LED
	Vout ADJ	Trimmer-potentiometer for Vout adjustment

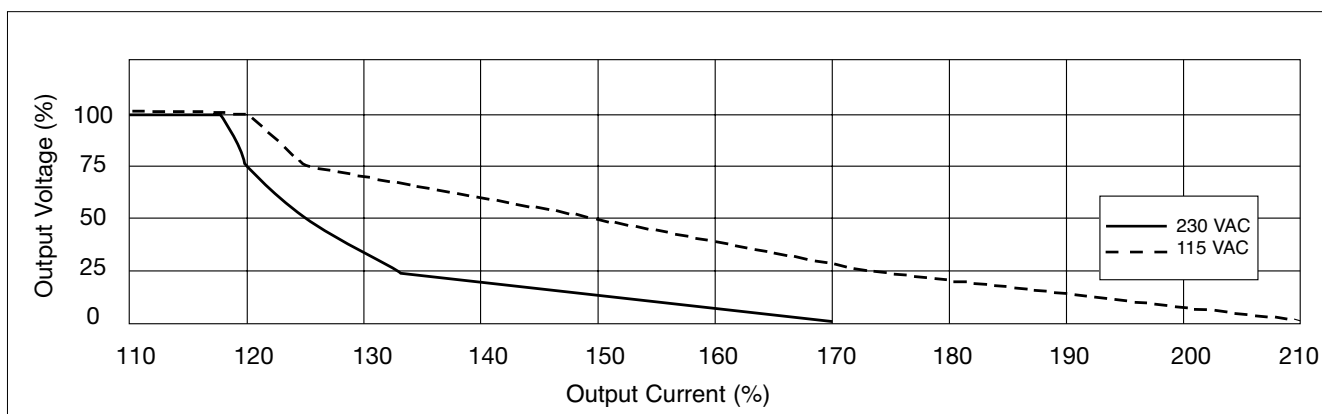
Typ. Efficiency Curve



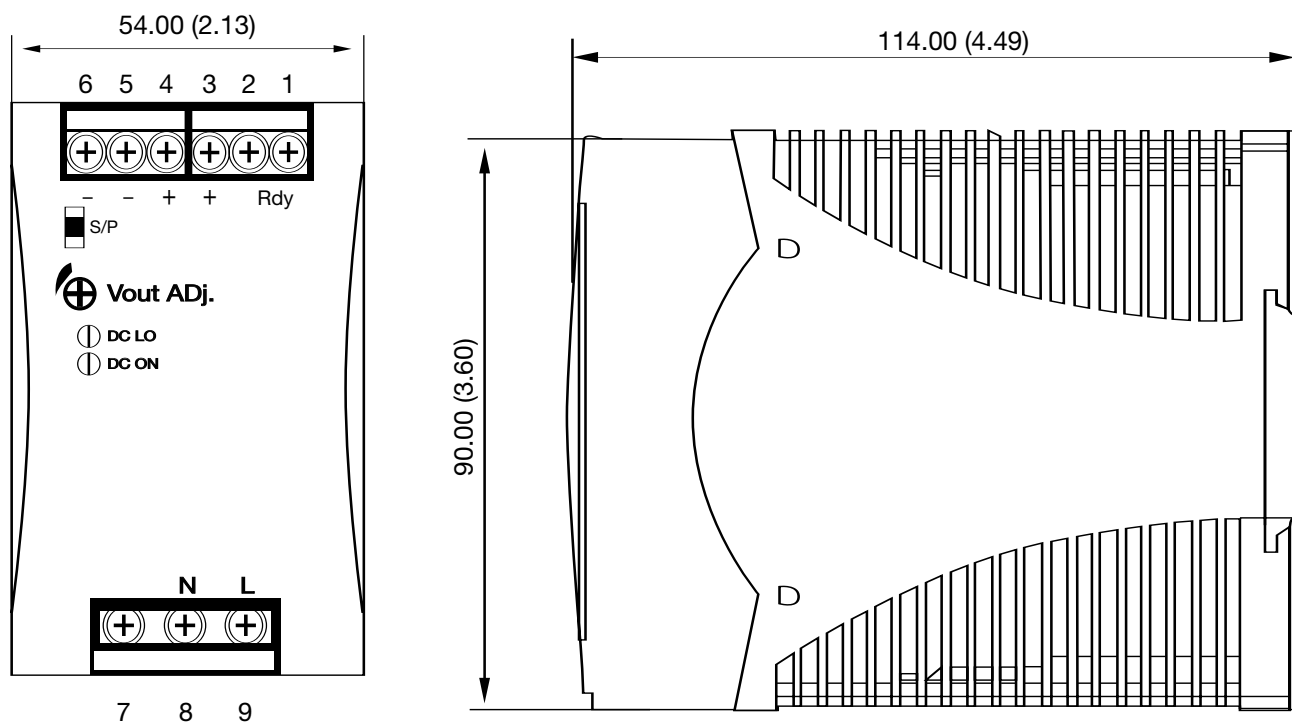
Derating Diagram



Typ. Current Limited Curve



Mechanical Drawings mm (inches)



Installation

Ventilation and cooling	Normal convection All sides 25mm free space for cooling is recommended
Screw terminals	10-24AWG flexible or solid cable 8mm stripping recommend
Max. torque for screws terminals	
Input terminals	1.008Nm (9.0lb-in)
Output terminals	0.616Nm (5.5lb-in)
Plug-in connectors	10-24AWG flexible or solid cable 7mm stripping recommend
Max. torque for plug-in terminals	
Input terminals	0.784Nm (7.0lb-in)
Output terminals	0.784Nm (7.0lb-in)
Recommended circuit breaker	5A / 6A / 10A B, D characteristics