Switching Power Supply
Type SPD 100W
DIN rail mounting



- **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 Div 2 Groups A, B, C, D approved**

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%
Load regulation	
Non parallel model	±1%
Parallel model	±5%
Minimum load	0A
Turn on time (full resistive load)	
Vl nom, Io nom 12V/24V models with 7000 µF CAP	1000ms
Vl nom, Io nom 48V models with 3500 µF CAP	2000ms
Transient recovery time	2ms
Ripple and noise	50mVpp
Output voltage accuracy	±1%
Temperature coefficient	±0.03%/°C
Hold up time	
Vi= 115VAC	15ms
Vi=230VAC	30ms

Voltage fall time (I_o**nom Vi nom**)	150ms max
Rated continuous loading	
12V Model	8.4A @ 12VDC/6.9A @ 14.5VDC
24V Model	4.2A @ 24VDC/3.5A @ 28.5VDC
48V Model	2.1A @ 48VDC/1.8A @ 56VDC
Reverse voltage	
12V Model	VDC 18
24V Model	VDC 35
48V Model	VDC 63
Capacitor load	7000µF
Voltage rise time	
Vi nom Io nom	150ms
Vi nom, Io nom 12V/24V models with 7000µF CAP	500ms
48V model with 3500µF CAP	500ms

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Input Data

Rated input voltage		100 - 240VAC
Voltage range		
	AC	90 - 264VAC
	DC	120 - 375VDC
Rated input current		
(Vi:90VAC, Io nom)	**Typ.**	2.4A
Inrush current		
	Vi= 115VAC	30A
	Vi= 230VAC	60A

Power dissipation		
(Vi : 230VAC, Io nom)	**12V Model**	18.5W
	24V Model	15W
	48V Model	14W
Frequency range		47-63Hz
Leakage current		
	Input-Output	0.25mA
	Input-FG	3.5mA

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
Input fuse	T3.15A/250VAC internal1[1)]
Output short circuit	Fold forward
Power ready output threshold at start up	≥17.6-19.4VDC
Electrical isolation	500VDC
Contact rating at60VDC	0.3A

Over voltage protection	**VDC**	
	Min.	**Max.**
12V Model	14.5	16.5
24V Model	30	33
48V Model	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	-35°C to +71°C
Derating (>61°C to +71°C)	2.5%/C
Ambient humidity	22 - 95% RH
Storage temperature	-40°C to +85°C
Protection degree	IP20
Cooling	Free air convection
Pollution degree	2
Switching frequency Vi nom, Io nom	45-60 kHz
Isolation voltage	
Input/output	3,000/4,242 VAC/VDC
Input/FG	1,500/2,121 VAC/VDC
Output/FG	500/710 VAC/VDC

Isolation resistance	
input/output, @500VDC	100MΩ
Altitude during operation	5000m
Installation position	Vertical
MTB (Bellcore issue 6 @ 40°C, GB)	
	5V Model 498000 Hours
	12V Model 504000 Hours
	24V Model 520000 Hours
	48V Model 531000 Hours
Case material	Plastic: PC, UL94-V0
Dimensions LxWxD mm(inch)	90(3.6) x 54(2.13) x 114(4.49)
Weight	430 g

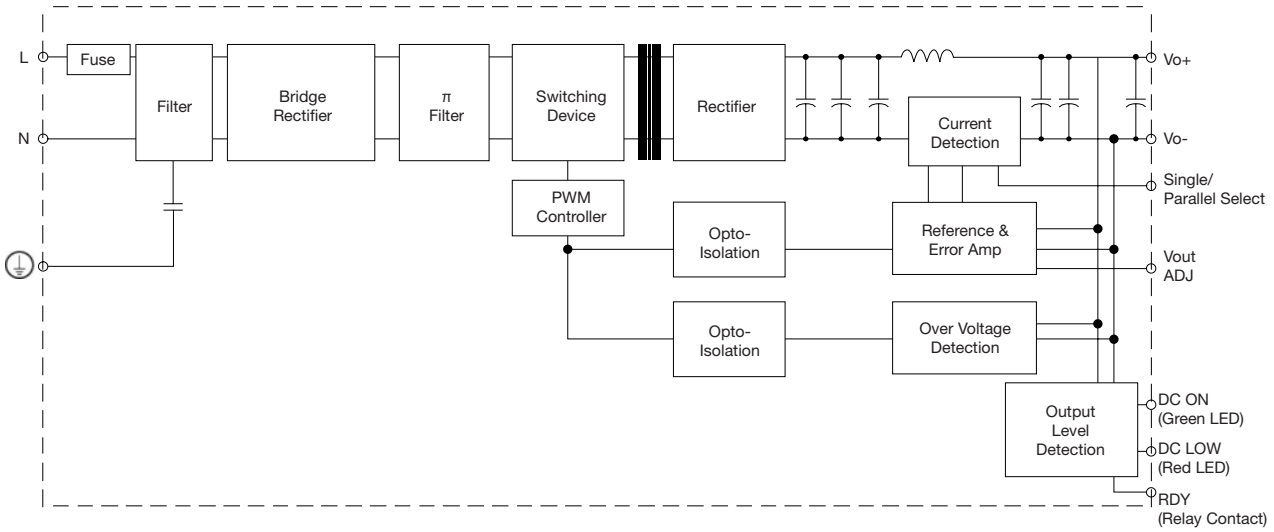
Norms and Standards

Vibration resistance	meet IEC 60068-2-6 (Mounting by rail: 10-500Hz, 2G, along X, Y, Z each Axis, 60 min for each Axis)
Shock resistance	meet IEC 60068-2-27 (15G,11ms, 3 Axis, 6 faces, 3 times for each face)
UL/cUL	UL508 listed, UL60950-1
TUV	EN 60950-1, CB scheme EN 61558-1, EN 61558-2-17 (meet EN 60204)
ISA	12.12.01 Class I Div 2 Groups A, B, C, D

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

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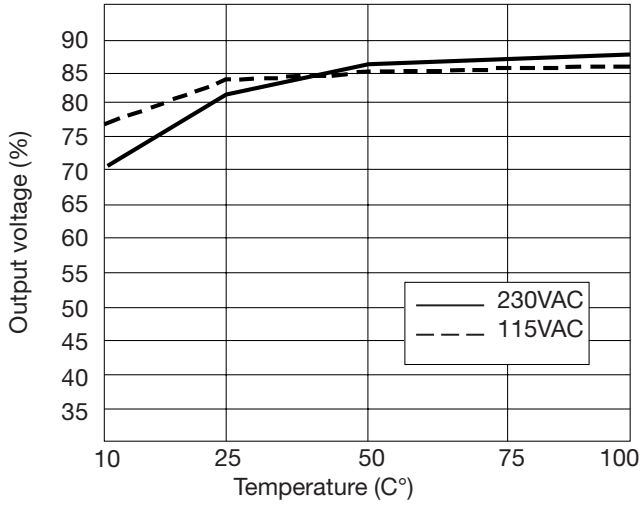
Block Diagram



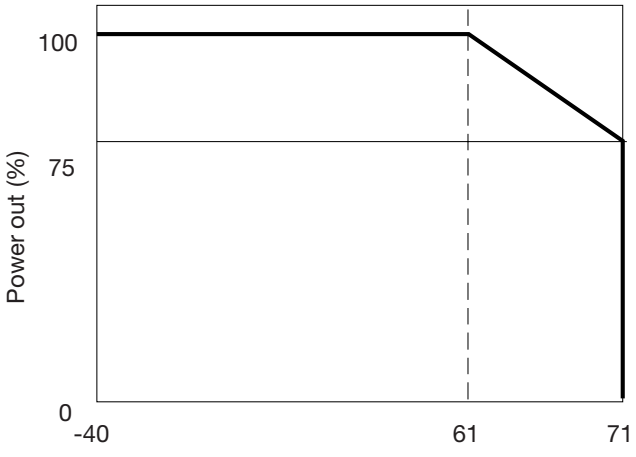
Pin Assignement and Front Controls

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	⏚	Grounf 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

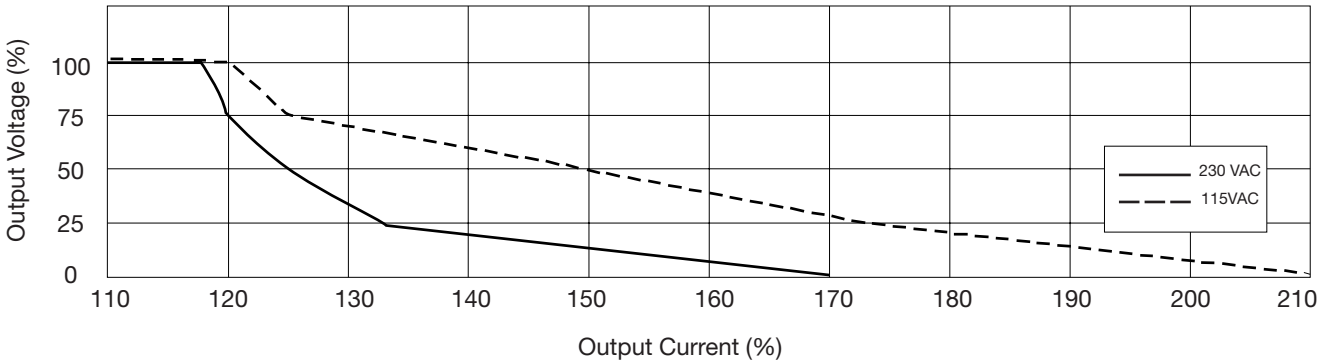


Derating Diagram



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Typ. Current Limited Curve

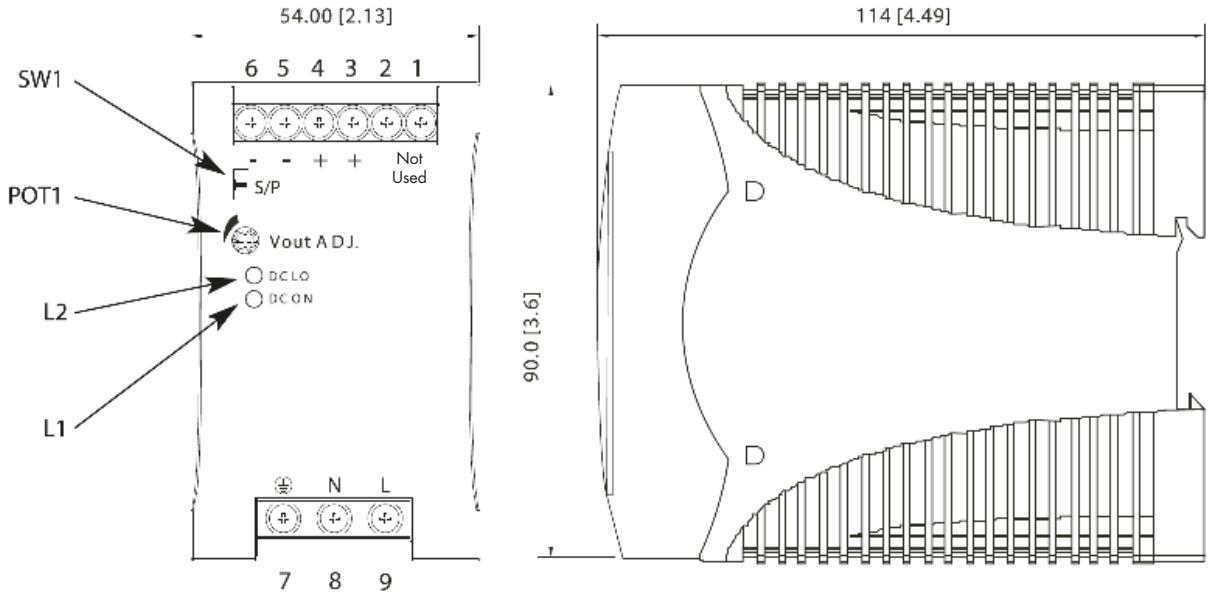


Installation

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)

Mechanical Drawings mm (inches)



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