

# 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.)
<b>Single Output Models</b>						
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)	
VI nom, Io nom 12V/24V models with 7000 µF CAP	1000ms
VI 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 (Io 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

## Input Data

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

## Controls and Protections

<b>Overload</b>	<b>12V Model</b>	14.5V to 17.4V	<b>Over voltage protection</b>	<b>VDC</b>	
	<b>24V Model</b>	30.0V to 33.0V		<b>Min.</b>	<b>Max.</b>
	<b>48V Model</b>	60.0V to 66.0V			
<b>Input fuse</b>	T3.15A/250VAC internal <sup>1)</sup>		<b>12V Model</b>	14.5	16.5
<b>Output short circuit</b>	Fold forward		<b>24V Model</b>	30	33
<b>Power ready output threshold at start up</b>	≥17.6-19.4VDC		<b>48V Model</b>	60	66
<b>Electrical isolation</b>	500VDC		<b>Internal surge voltage protection</b> (IEC 61000-4-5)	Varistor	
<b>Contact rating at60VDC</b>	0.3A				

<sup>1)</sup> Fuse not replaceable by user

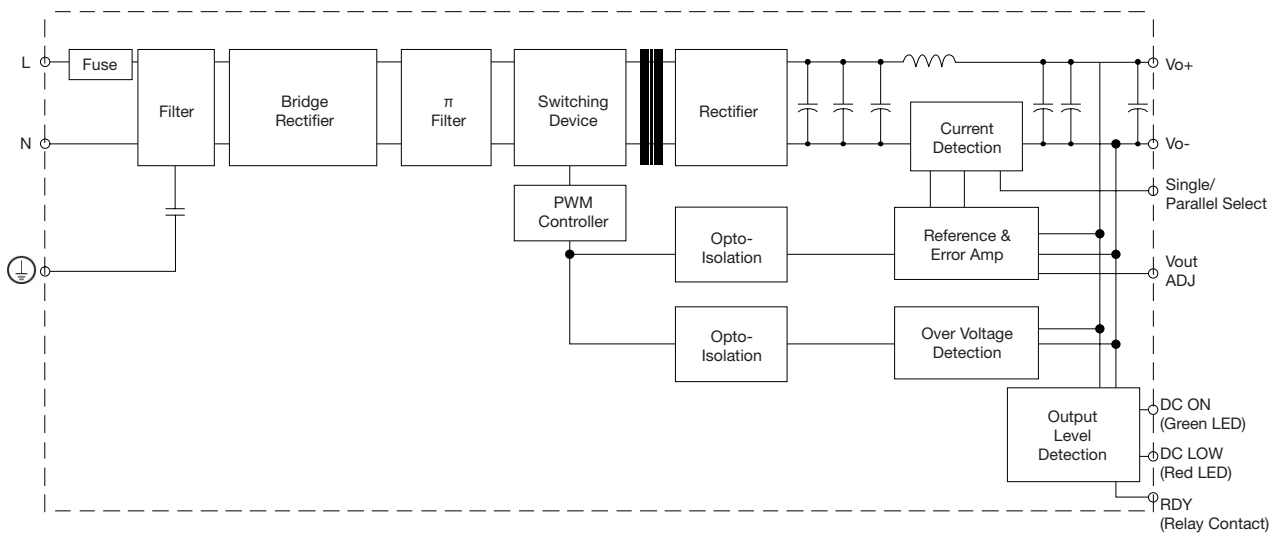
## General Data (@ nominal line, full load, 25°C)

<b>Ambient temperature</b>	-35°C to +71°C	<b>Isolation resistance</b>	input/output, @500VDC	100MΩ
<b>Derating (&gt;61°C to +71°C)</b>	2.5%/C	<b>Altitude during operation</b>		5000m
<b>Ambient humidity</b>	22 - 95% RH	<b>Installation position</b>		Vertical
<b>Storage temperature</b>	-40°C to +85°C	<b>MTB</b> (Bellcore issue 6 @ 40°C, GB)		
<b>Protection degree</b>	IP20		<b>5V Model</b>	498000 Hours
<b>Cooling</b>	Free air convection		<b>12V Model</b>	504000 Hours
<b>Pollution degree</b>	2		<b>24V Model</b>	520000 Hours
<b>Switching frequency</b>			<b>48V Model</b>	531000 Hours
<b>Vi nom, Io nom</b>	45-60 kHz	<b>Case material</b>	Plastic: PC, UL94-V0	
<b>Isolation voltage</b>		<b>Dimensions LxWxD mm(inch)</b>	90(3.6) x 54(2.13) x 114(4.49)	
Input/output	3,000/4,242 VAC/VDC	<b>Weight</b>	430 g	
Input/FG	1,500/2,121 VAC/VDC			
Output/FG	500/710 VAC/VDC			

## Norms and Standards

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

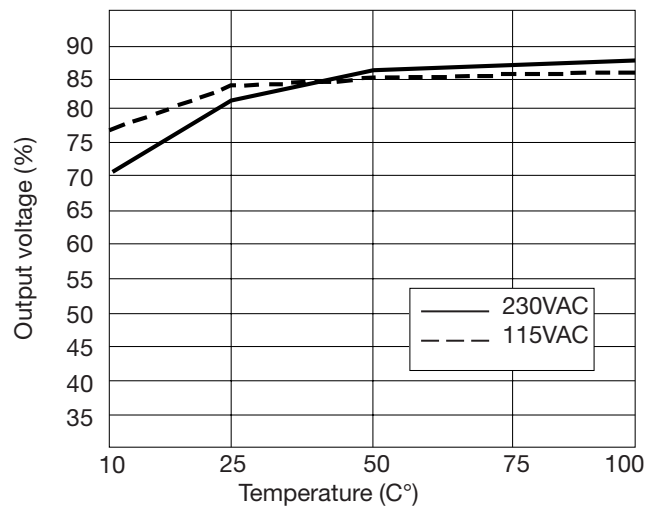
## Block Diagram



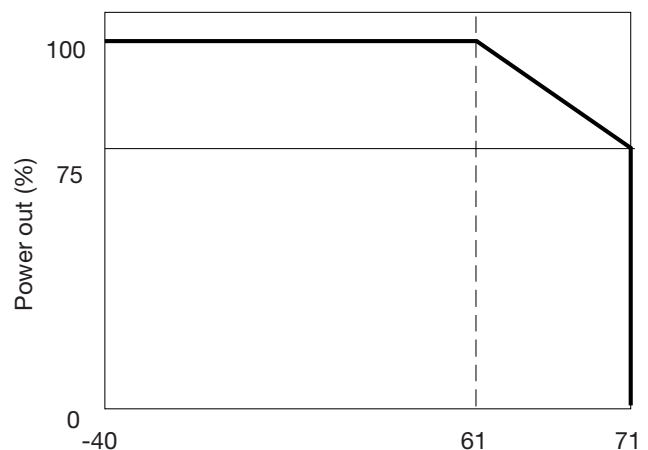
## Pin Assignment and Front Controls

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

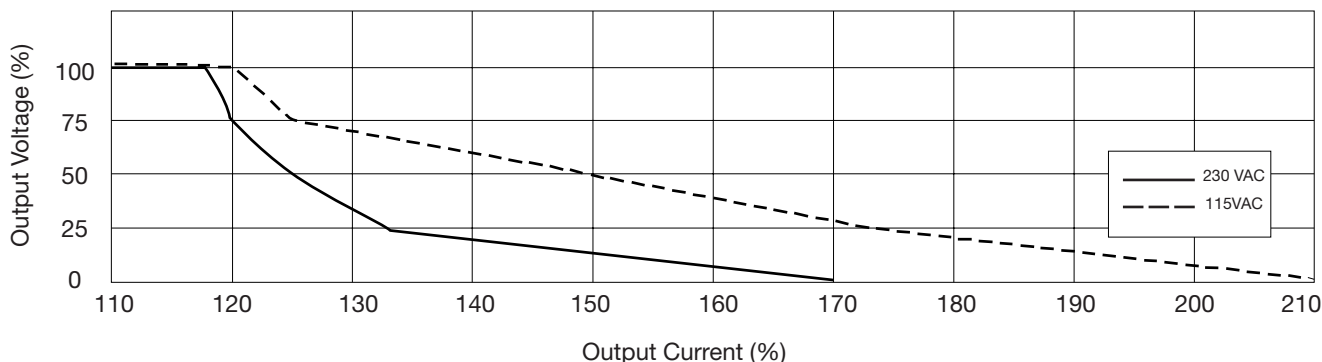
## Typ. Efficiency Curve



## Derating Diagram



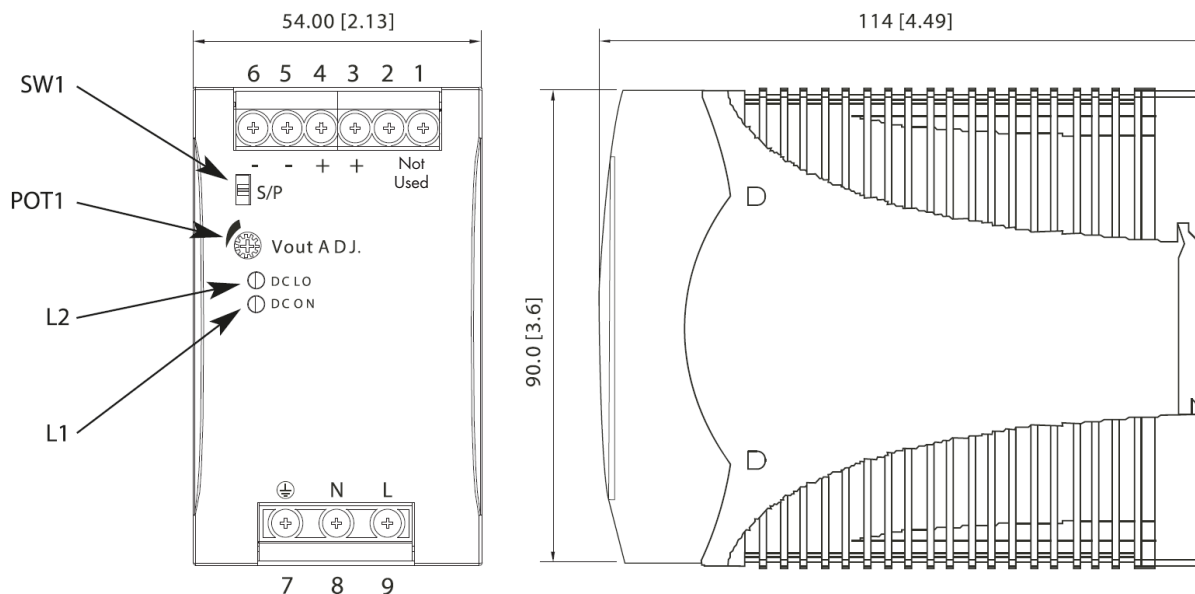
## Typ. Current Limited Curve



## Installation

<b>Ventilation and cooling</b>	Normal convection All sides 25mm free space for cooling is recommended	<b>Max. torque for terminal</b>	
		<b>Input terminal</b>	0.56Nm (5.0lb-in)
		<b>Output terminal</b>	0.56Nm (5.0lb-in)
<b>Connector size range</b>		<b>General tolerance mm(in.)</b>	
<b>Spring terminal</b>	AWG24-14 (0.2~2mm <sup>2</sup> ) flexible/solid cable, 10mm stripping at cable and recommends use copper conductors only, 60/75°C	<b>0.00 (0.00) ÷ 30.00 (1.18)</b>	±0.30 (0.01)
<b>Screw terminal</b>	AWG26-12 (0.2~2.5mm <sup>2</sup> ) 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	<b>30.00 (1.18) ÷ 120.00 (4.72)</b>	±0.50 (0.02)

## Mechanical Drawings mm (inches)



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