

# Switching Power Supply Type SPD 300W DIN rail mounting

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- Installation on DIN Rail 7.5 or 15mm
- Short circuit protection
- Passive PFC
- Power ready relay output on 24VDC
- LED indicator for DC power ON
- LED indicator for DC low
- Parallel function by switch
- Very compact dimensions
- UL, cUL listed and TUV/CE approved
- Class I division 2 certification
- Selv design

## Product Description

This SPD is the most compact 300W 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. Thanks to the Class I Div 2 design is suitable for installation in potentially explosive environments.

## Ordering Key

**SP D 24 300 1 B**

Model \_\_\_\_\_  
 Mounting (D= Din rail) \_\_\_\_\_  
 Output voltage \_\_\_\_\_  
 Output power \_\_\_\_\_  
 Input type \_\_\_\_\_  
 Connection \_\_\_\_\_

Input type: 1= single phase  
 Connection: Nil= screw terminals  
 B= Detachable connectors

## Approvals



## Output performances

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (min.)	EFF. (typ.)
<b>Single Output Models</b>						
SPD24300	115~230 VAC	300 WATTS	+ 24 VDC	12.5 A	87%	89%
SPD48300	115~230 VAC	300 WATTS	+ 48 VDC	6.25 A	88%	90%

## Output data

Line regulation	± 0.5%	Hold up time Vi115/230 VAC	25/30 ms
Load regulation	± 1%	Voltage fall time (I <sub>0nom</sub> )	150ms max
Minimum load		Rated continuous loading	
Single mode	± 1%	24V Model	12.5A @ 24VDC/10.5A @ 28.5VDC
Parallel mode	± 5%	48V Model	6.25A @ 48VDC/5.35A @ 56VDC
Turn on time (full resistive load)		Reverse voltage	
Vi nom, Io nom	1000ms	24V Model	35VDC
Vi nom, Io nom with 7000µF CAP	1500ms	48V Model	63VDC
Transient recovery time	2ms	Capacitor load	
Ripple and noise	100mVpp	Vi nom Io nom	7000µF
Output voltage accuracy	± 1%	Voltage rise time	
Temperature coefficient	± 0.03%/°C	Vi nom Io nom	150ms
		Vi nom, Io nom	
		12v model with 7000µF CAP	500ms

## Input data

<b>Rated input voltage</b>	115 - 230VAC	<b>Power dissipation</b>	
<b>Voltage range</b>		<b>24V Model</b>	42W
<b>AC in 115V selected</b>	90 - 132VAC	<b>48V Model</b>	40W
<b>AC in 230V selected</b>	180 - 264VAC	<b>Frequency range</b>	47- 63Hz
<b>DC in</b>	210 - 375VDC	<b>Leakage current</b>	
<b>Rated input current</b> (Vi : 90/180VAC, Io nom)	<b>Typ.</b> 6.0A	<b>Input-Output</b>	0.25mA
	<b>Max.</b> 3.0A	<b>Input-FG</b>	3.5mA
<b>Inrush current</b> Vi= 115/230VAC	35 - 65A		

## Controls and Protections

<b>Overload</b>	120-145%	<b>Over voltage protection</b>	125 - 140%
<b>Input fuse</b>	T8A/250VAC internal <sup>1)</sup>	<b>Internal surge voltage protection</b> (IEC 61000-4-5)	Varistor
<b>Output short circuit</b>	Fold forward		
<b>Power ready output</b> (only 24V model)	<b>On threshold</b> ≥17.6 -19.4VDC		
<b>Electrical isolation</b>	500VDC		
<b>Contact rating at 60vdc</b>	0.3A		

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

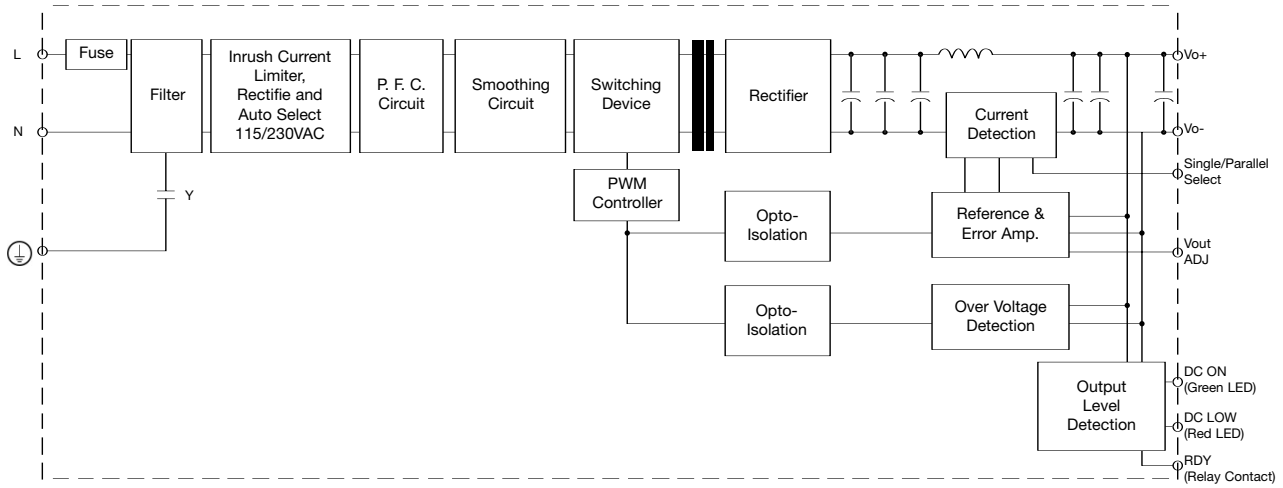
## General data (@ nominal line, full load, 25°C )

<b>Ambient temperature</b>	-30°C to 71°C	<b>MTBF</b> (Bellcore issue 6 @ 40°C, GB)	
<b>Derating (&gt;56°C to +71°C)</b>	2.5%/°C	<b>24V Model</b>	415000 Hours
<b>Ambient humidity</b>	20 ~ 90%RH	<b>48V Model</b>	431000 Hours
<b>Storage</b>	-40°C to +85°C	<b>Case material</b>	Metal
<b>Protection degree</b>	IP20	<b>Dimensions LxWxD mm(inch)</b>	124(4.88) x 83.5(3.29) x 123.6(4.87)
<b>Cooling</b>	Free air convection	<b>Weight</b>	1400g
<b>Pollution degree</b>	2		


## 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 Class D, 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
<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, Recognized, ISA 12.12.01 (Class 1, Division 2, Groups A, B, C and D)		
<b>TUV</b>	EN 60950-1, CB scheme EN 61558-1, EN 61558-2-17 (meet EN 60204)		

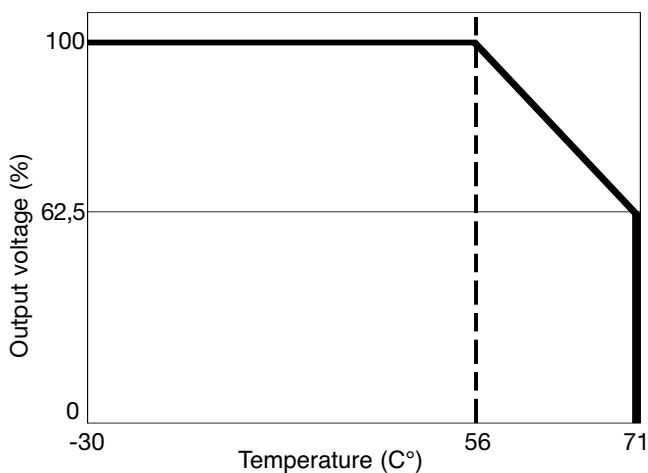
## Block Diagrams



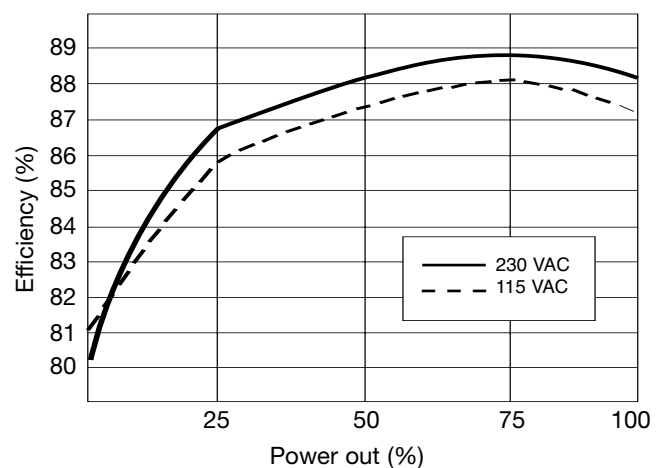
## Pin Assignment and Front Controls

Pin No.	Designation	Description
1	RDY	A normal open relay contact for DC ON level control
2		(Never connect except 24V model)
3, 4	V+	Positive output terminal
5, 6	V-	Negative output terminal
7		Ground this terminal to minimize high-frequency emissions
8	L	Input terminals (phase conductor, no polarity at DC input)
9	N	Input terminals (neutral 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
	S/P	Single / Parallel select switch

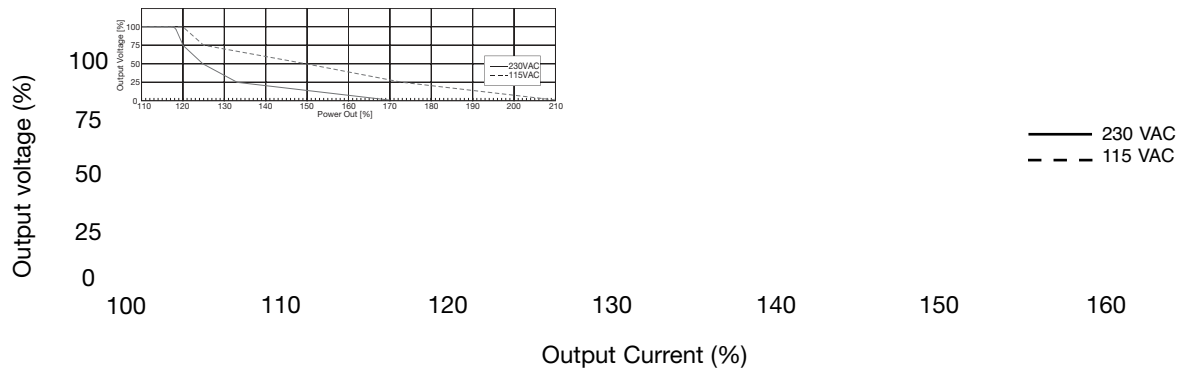
## Derating Diagram



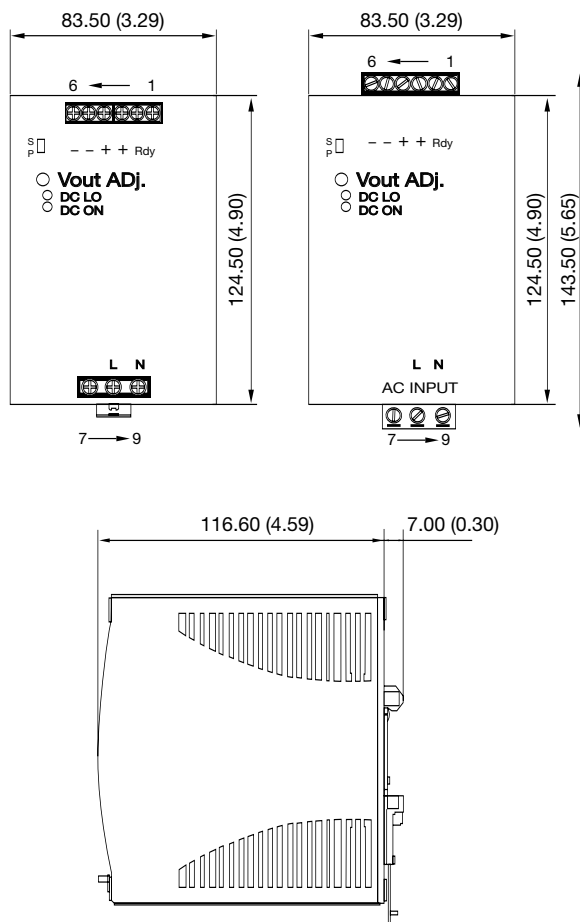
## Typ. Efficiency Curve



## Typ. Current Limited Curve



## Mechanical Drawings mm (inches)



## Installation

<b>Ventilation and cooling</b>	Normal convection All sides 25mm free space for cooling is recommended
<b>Screw terminals</b>	10-24AWG flexible or solid cable 8mm stripping recommend
<b>Max. torque for screws terminals</b>	Input terminals: 1.008Nm (9.0lb-in) Output terminals: 0.616Nm (5.5lb-in)
<b>Max. torque for detachable connections</b>	Input terminals: 1.008Nm (9.0lb-in) Output terminals: 0.616Nm (5.5lb-in)
<b>Plug-in connectors</b>	10-24AWG flexible or solid cable 7mm stripping recommend
<b>Max. torque for plug-in terminals</b>	Input terminals: 0.784Nm (7.0lb-in) Output terminals: 0.784Nm (7.0lb-in)
<b>Recommended circuit breaker</b>	15A / 16A B, D characteristics