

Switching Power Supply Type SPD 90W DIN rail mounting



- Installation on DIN Rail 7.5 or 15mm
- Short circuit protection
- PFC standard
- Power ready output
- LED indicator for DC power ON
- LED indicator for DC low
- Very compact dimensions
- UL, cUL listed and TUV/CE approved
- UL 1310 Class 2
- Class I div2 certification (in progress)

Product Description

This SPD is the most compact 90W power supply on the market. Relay output for “power ready” function is 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 90 1 L

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

Input type: 1= single phase

Approvals



Output Performances

Model	Rated output Voltage (VDC)	Output Power (W)	Output Current (A)	Voltage Trim Range		DC ON LED (VDC) Threshold at startup		DC LO LED (VDC) Threshold after startup		Typical Efficiency
				Min. VDC	Max. VDC	Min.	Max.	Min.	Max.	
SPD2490	24	91.2	3.8	22.5	24.5	17.6	19.4	17.6	19.4	85%

Output Data

Output voltage accuracy	-0 +1% max (factory adjusted)	Turn On Time	
Line regulation	± 1%	$V_{i\ nom}, I_{o\ nom}$	1.0s
Load regulation		$V_{i\ nom}, I_{o\ nom}$ with Capacitor load	1.5s
Non parallel model	± 1%	Rise Time	
Parallel model	± 5%	$V_{i\ nom}, I_{o\ nom}$	150ms
Temp. coefficient	± 0.03% / °C	$V_{i\ nom}, I_{o\ nom}$ with Capacitor load	500ms
Ripple and noise	50mV	Capacitor Load	7000µF
$V_{i\ nom}, I_{o\ nom}, BW=20MHz$		Reverse Voltage Immunity	35V
Rated continuous Loading	3.8A @ 24VDC / 3.7A @ 24.5VDC	Hold up Time $V_i = 115VAC$ $I_{o\ nom}$	15ms
Fall Time	150ms	Hold up Time $V_i = 230VAC$ $I_{o\ nom}$	30ms
Transient recovery time		Minimum load $V_{i\ nom}$	0%
$V_{i\ nom}, I_{o\ nom} = 0.5 \times I_{nom}$	2ms	Parallel Operation	No

Input Data

Rated input voltage	110/240	Leakage Current	
Voltage range		Input / Output	0.25mA
AC in	90 - 264VAC	Input / FG	3.5mA
DC in	120 - 375VDC	Inrush current	
Rated input current	1.65A / 1.4A	Vi= 115VAC	30A
Power dissipation	15W	Vi= 230VAC	60A
Frequency range	47- 63 Hz	P.F.C.	0.7
Internal Voltage Surge Protection (acc. to IEC61000-4-5)	Varistor		

Controls and Protections

Input Fuse	T3.15/250VAC internal ¹⁾	Power ready	
Output Short Circuit	fold forward	Threshold at start up (contact closed)	Min. 17.6VDC - Max.19.4VDC
Rated Overload Protection	102 - 108%	Contact rating at 60VDC	0.3A
Over voltage protection (auto recovery)	24.5V to 25.5V	Insulation	500VDC
Input Voltage Surge Protection	Varistor		

¹⁾ Fuse not replaceable by user

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

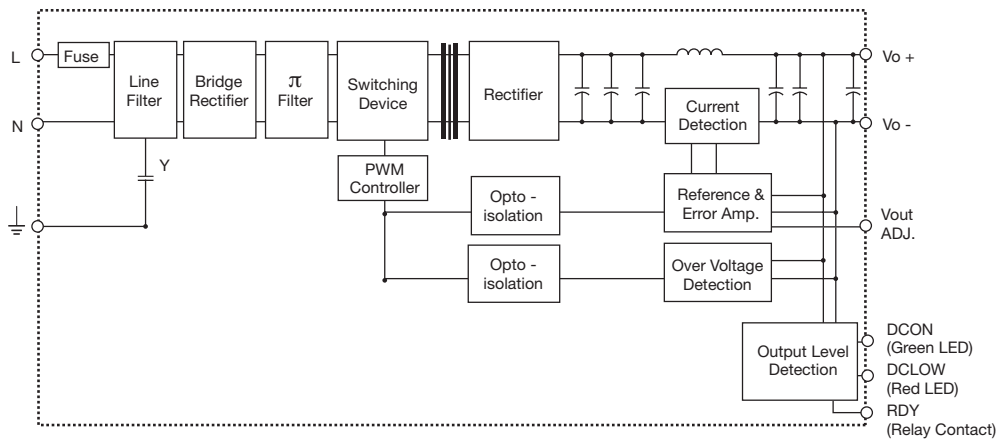
Ambient temperature	-25°C to 71°C	Switching frequency	
Derating (>61°C to +71°C)	2.5% / °C	Min.	45kHz
Ambient humidity	20 to 95%RH	Max.	60kHz
Storage	-25°C to +85°C	MTBF (Bellcore Issue 6@40°C), GB	493,000h
Pollution degree	2	Altitude during operation	3.000m
Protection degree	IP20	Case material	Plastic
Cooling	Free air convection	Dimensions L x W x D	90 x 54 x 114mm
		Weight	430g

Approvals and EMC

Insulation voltage	Input / Output 3.000VAC / 4242VDC Input / FG 1500VAC / 2121VDC	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
Insulation resistance	100MΩ min		
Shock resistance	acc. to IEC 60068-2-27 (15G, 11ms, 3 Axis, 6 Faces, 3 times for each Face)		
Vibration resistance	acc. to IEC 60068-2-6 (Mounting by rail: 10-500 Hz, 2G, along X, Y, Z each Axis, 60 min for each Axis)		
UL / cUL	UL 508 Listed UL 60950-1, UL 1310 Class 2 Power Recognized ISA 12.12.01 (Class I, Division 2, Groups A, B, C and D in progress)		
TUV	EN 60950-1, CB scheme EN 61558-1, EN 61558-2-17 (acc.to EN 60204)		



Block Diagrams

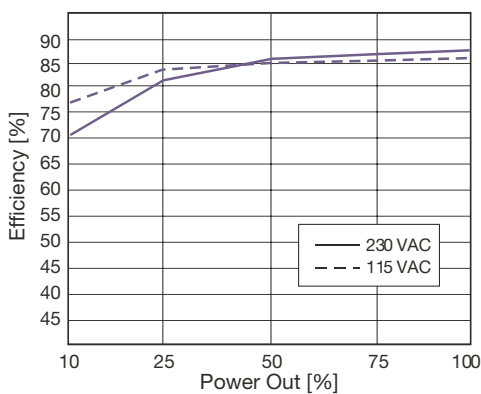


Pin Assignment and Front Controls

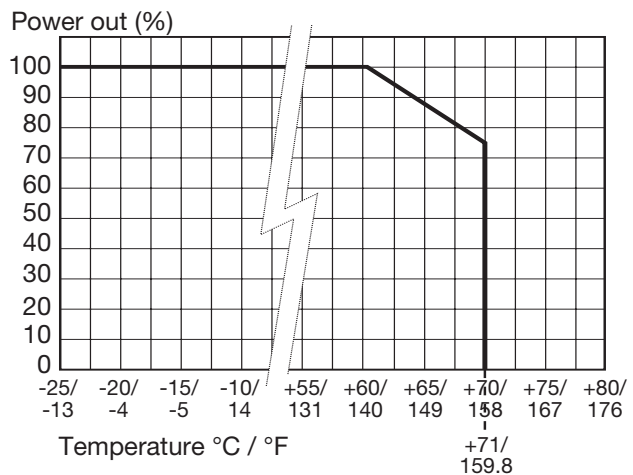
Terminal Nr.	Designation	Description
1	RDY	N.O. relay contact for DC OK (only SPD241001)
2	RDY	N.O. relay contact for DC OK (only SPD241001)
3	V+	Positive output terminal
4	V+	Positive output terminal
5	V-	Negative output terminal
6	V-	Negative output terminal
7	GND	Ground terminal to minimise High frequency emissions
8	N	Neutral input (no polarity with DC input)
9	L	Phase input (no polarity with DC input)

Device	Designation	Description
L1	DC ON	DC output ready LED
L2	DC LO	DC low indicator LED
POT1	Vout Adj.	Trimmer for fine output voltage adjustment

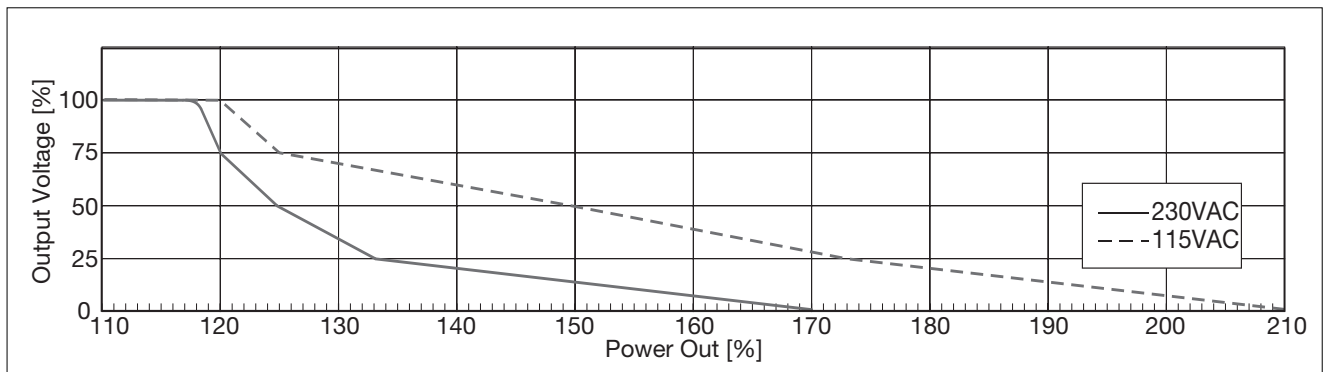
Typ. Efficiency Curve



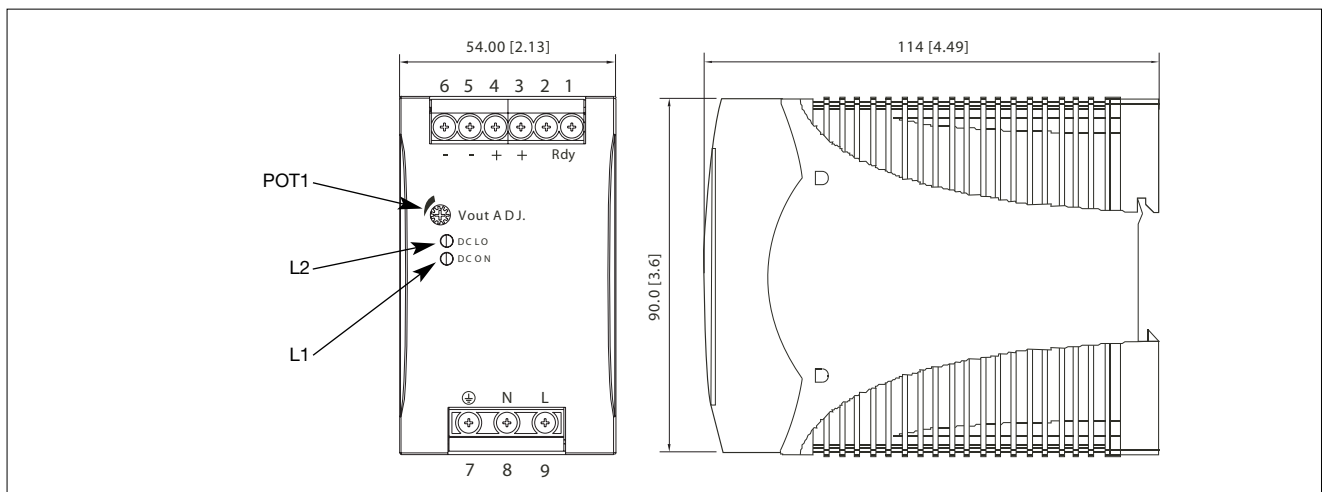
Derating Diagram



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)
Reccomended circuit breaker	5A / 6A / 10A B, D characteristics