

# Switching Power Supply Type PSS 480W DIN rail mounting

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- Universal AC single phase input full range
- Can also be used as bi-phase 400VAC
- Installation on DIN rail 7.5 or 15mm
- PFC as standard
- High efficiency up to 90%
- Power ready output
- Parallel connection feature
- Compact dimensions
- CE, TÜV, CCC approved and cULus listed
- Class I Div 2 Groups A, B, C, D approved

## Product Description

The Switching power supplies SPD series are specially designed to be used in all automation application where the installation is on a DIN rail and compact dimensions and performance are a must.

## Ordering Key

**SP D 24 480 1 B**

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

Input type: 1= single phase

## Approvals



## Optional Features

Description	Code
Plug-in connectors	B

## Output Performances

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (min.)	EFF. (typ.)
Single Output Models						
SPD24	90~264 VAC	480 WATTS	+ 24 VDC	20 A	86%	89%
SPD48	90~264 VAC	480 WATTS	+ 48 VDC	10 A	87%	90%

<sup>1)</sup>When S/P switch is set to parallel, it is not possible to trim output voltage.

## Output Data

Line regulation	± 0.5%	Hold up time	
Load regulation		Vi= 115VAC	25ms
Non parallel model	±1%	Vi=230VAC	30ms
Parallel model	±5%	Voltage fall time (I <sub>o</sub> nom Vi nom)	150ms max
Minimum load	0A	Rated continuous loading	
Turn on time (full resistive load)		24V Model	20A @ 24VDC/16.8A @ 28.5VDC
Vi nom, Io nom	1000ms	48V Model	2.1A @ 48VDC/8.5A @ 56VDC
Vi nom, Io nom with 7000 µF CAP	1500ms	Reverse voltage	
Transient recovery time	2ms	24V Model	VDC 35
Ripple and noise	100mVpp	48V Model	VDC 63
Output voltage accuracy	±1%	Capacitor load	7000µF
Temperature coefficient	±0.03%/°C	Voltage rise time	
		Vi nom Io nom	150ms
		Vi nom, Io nom with 7000µF CAP	500ms

## Input Data

<b>Rated input voltage</b>	115 - 230VAC	<b>Power dissipation</b>	
<b>Voltage range</b>		(Vi : 400VAC, Io nom) <b>24V Model</b>	63W
<b>AC</b>	90 - 264VAC	<b>48V Model</b>	560W
<b>DC</b>	120 - 375VDC	<b>Frequency range</b>	47-63Hz
<b>Rated input current</b>		<b>Leakage current</b>	
(Vi:90VAC, Io nom)		<b>Input-Output</b>	0.25mA
<b>Typ.</b>	4.9/2.5A	<b>Input-FG</b>	3.5mA
<b>Max.</b>	7/3.5A	<b>P.F.C Vi=115/230VAC, Ionom</b>	0.99/0.97
<b>Inrush current</b>			
<b>Vi= 115VAC</b>	25A		
<b>Vi= 230VAC</b>	50A		

## Controls and Protections

<b>Overload</b>	110 - 140%	<b>Over voltage protection</b>	125/140%
<b>Input fuse</b>	T10A/250VAC internal	<b>Internal surge voltage protection</b>	Varistor
<b>Output short circuit</b>	Fold forward	(IEC 61000-4-5)	
<b>Power ready output threshold at start up</b>	≥17.6-19.4VDC		
<b>Electrical isolation</b>	500VDC		
<b>Contact rating at 60VDC</b>	0.3A		

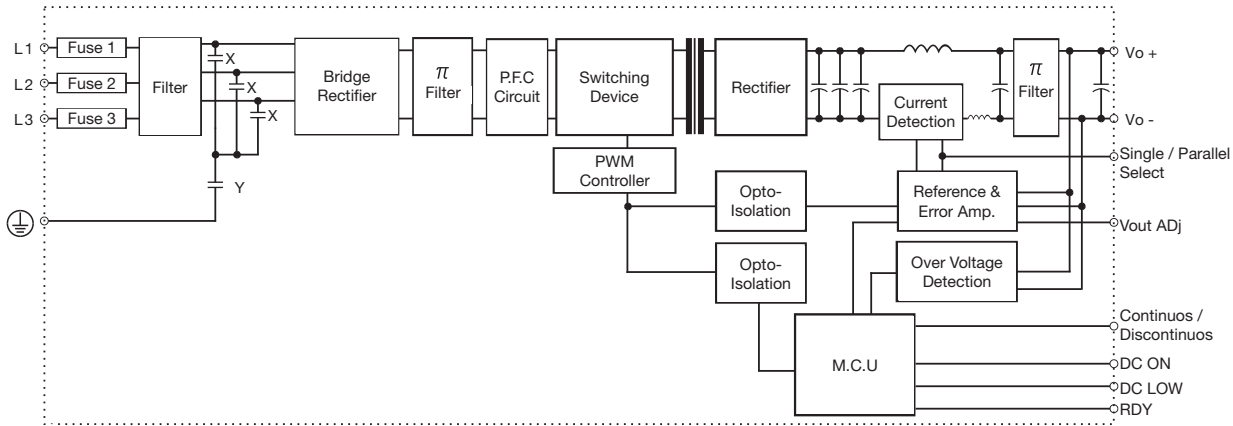
## General Data (@ nominal line, full load, 25°C)

<b>Ambient temperature</b>	-40°C to +71°C	<b>Case material</b>	Metal
<b>Derating (&gt;61°C to +71°C)</b>	2.5%/C	<b>Dimensions LxWxD mm (inch)</b>	
<b>Ambient humidity</b>	20 ~ 95%RH	Screw terminal type	124.5 x 175.5 x 123.6 mm (4.9 x 6.91 x 4.87 inches)
<b>Storage</b>	-40°C to +85°C	Detachable connector type	143.5 x 175.5 x 123.6 mm (5.65 x 6.91 x 4.87 inches)
<b>Protection degree</b>	IP20	<b>Weight</b>	430 g
<b>Cooling</b>	Free air convection		
<b>Pollution degree</b>	2		
<b>MTB</b> (Bellcore issue 6 @ 40°C, GB)			
<b>24V Model</b>	403000 Hours		
<b>48V Model</b>	416000 Hours		


## 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 Recognized		
<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		

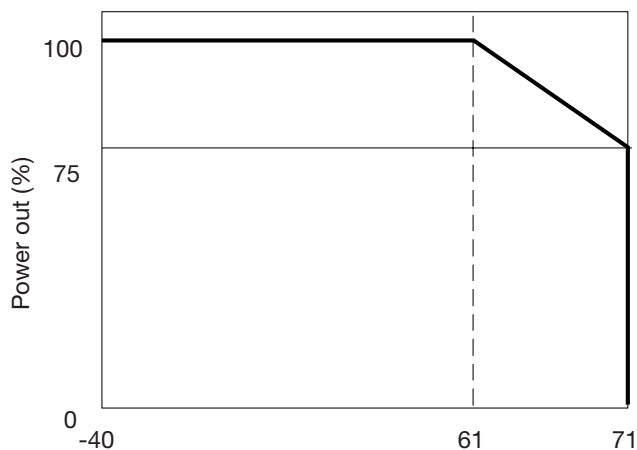
## Block Diagram



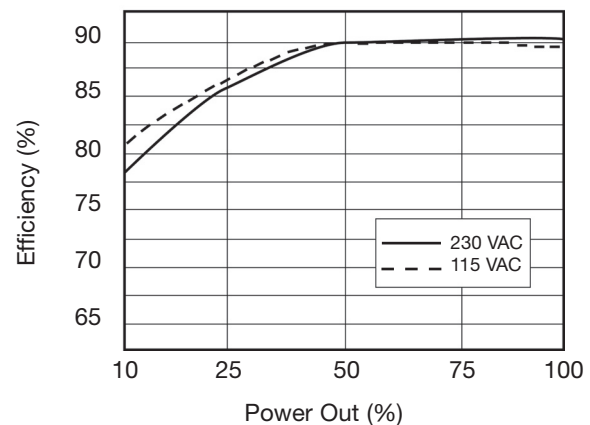
## Pin Assignment and Front Controls

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

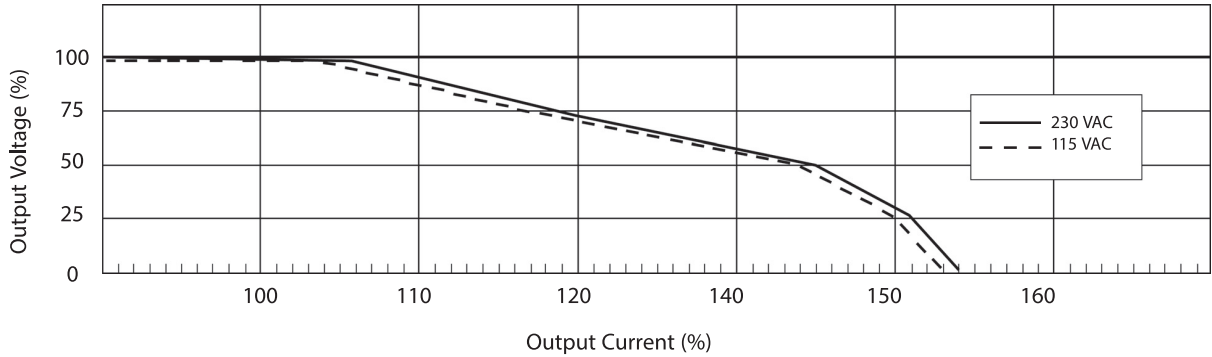
## Derating Diagram



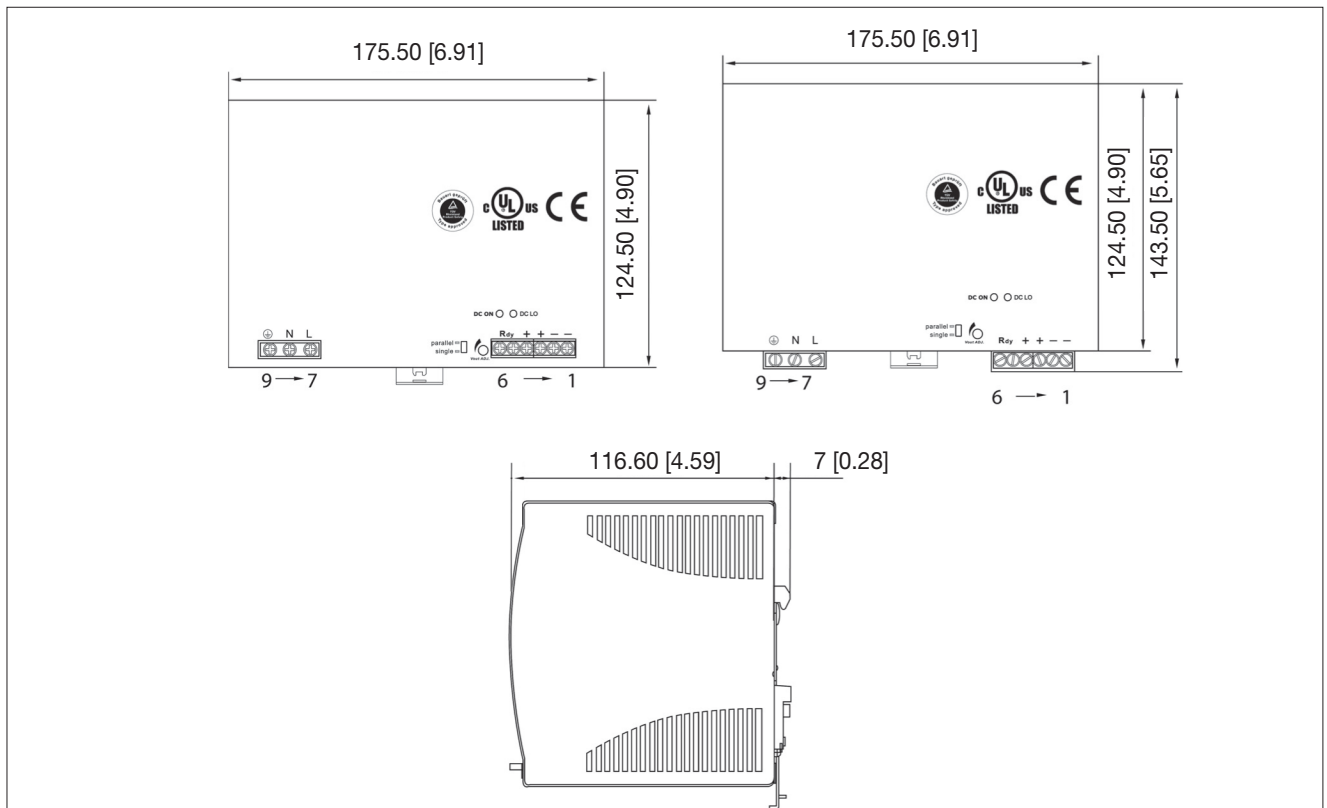
## Typ. Efficiency Curve



## Typ. Current Limited Curve



## Mechanical Drawings mm (inches)



## Installation

### Ventilation and cooling

Normal convection  
 All sides 25mm free space for cooling is recommended.

### Connector

Size range AWG 24-10 (0.2~4mm<sup>2</sup>) flexible/solid cable.

### Input Connector

can withstand torque at maximum 9 pound-inches

### Output Connector

can withstand torque at maximum 5.5 poundinches. 8 mm strip ping at cable end recom mends, use copper conductors only, 60/75°C.

### Max. torque for screws terminals

Input terminals  
 Output terminals

0.784Nm (7.0lb-in)  
 0.784Nm (7.0lb-in)