

# Switching Power Supply

## Type SPDM 30

### DIN Rail Mounting



- Universal input 85~264Vac
- Short circuit protection
- Internal input filter
- High efficiency up to 86%
- High average efficiency meets ErP 2009/125/EC
- Low standby power consumption
- 3 years warranty

## Product Description

The Switching power supplies SPDM 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. In particular the SPDM Series power supplies are significantly smaller than the

standard power supplies of the same power. The greater compactness is achieved thanks to limited energy loss, that automatically generates greater effectiveness. This specific SPDM Series 30W Power supplies are available with 12VDC or 24VDC Output Voltage, with spring or screw terminals.

## Ordering Key

**SPDM12301B**

Model \_\_\_\_\_  
 Mounting (D = Din rail) \_\_\_\_\_  
 Medium Width \_\_\_\_\_  
 Output voltage \_\_\_\_\_  
 Size \_\_\_\_\_  
 Input type \_\_\_\_\_  
 Spring terminal (Nil= Screw terminal) \_\_\_\_\_

## Approvals



## Output Performance

Model NO.	Output voltage	Output wattage	Output current	Eff. (Min.)	Eff. (Typ.)	Eff. (avg)
SPDM1230	+12VDC	24 Watt	2A	83%	85%	83%
SPDM2430	+24VDC	30 Watt	1.25A	84%	86%	85%

## Output Data

All specifications are at nominal values, full load, 25°C ( 77°F ) unless otherwise noted

<b>Ripple &amp; noise</b> Vi nom, lo nom, BW=20MHz	100mV	<b>Hold up time</b> Vi: 115/230VAC, lo nom	20 / 50ms
<b>Minimum load</b> Vi nom	0%	<b>Transient recovery time</b> Vi nom 1~0.5 lo nom	2ms
<b>Voltage accuracy</b> lo nom, lo max	+1%	<b>Power back immunity</b> Vi nom, lo nom 1 second	12V 22VDC 24V 35VDC
<b>Line regulation</b> Vi nom, Vi min. ... Vi max.	±1%	<b>Capacitor load</b> Vi nom, lo nom	3500µF
<b>Load regulation</b> Vi nom, lo min. ... lo nom.	±1%	<b>DC ON indicator threshold at start up (Green LED)</b> Vi nom, lo nom	12V 9.6 ~ 10.8VDC 24V 19.2 ~ 21.6VDC
<b>Voltage trim range</b> Vi nom, 0.8 lo nom	12V 11.4 ~ 15.6V 24V 22.5 ~ 28.5V	<b>Efficiency</b> Vi nom, lo nom Po / Pi	Up to 86%, see model list and typ efficiency curve
<b>Rated continuous loading</b> Vi nom	12V 2A@12VDC/1.6A@15VDC 24V 1.25A@24VDC/1A@28.5VDC		
<b>Turn on time</b> Vi nom, lo nom	1000ms		

## Input Data All specifications are at nominal values, full load, 25°C ( 77°F ) unless otherwise noted

<b>Rated input voltage lo nom</b>	100VAC min 240VAC max	<b>Leakage current</b>	
<b>Voltage range</b>		Input-Output	0.25mA
AC in	85 ~ 264VAC	Input-FG	3.5mA
DC in	120 ~ 375VDC	<b>Rated input current (max)</b>	
<b>Line frequency</b>		Vi: 85VAC, lo nom	800 mA
Vi nom, lo nom	47 - 63Hz	<b>Power dissipation</b>	
<b>AC Current (typ.)</b>		Vi: 230VAC, lo nom 12V	4.9W
Vi: 115VAC	335mA	24V	5.7W
Vi: 230VAC	210mA	<b>Standby power consumption</b>	
<b>Inrush current</b>		Vi nom, IO=0A	0.3W
Vi: 115/230VAC, lo nom	20/40A		

## Controls and Protections All specifications are at nominal values, full load, 25°C ( 77°F ) unless otherwise noted

<b>Over load</b>		<b>Output short circuit</b>	Hiccup mode
Vi nom (see typ current limited curve)	140%	<b>Input fuse</b>	T2A / 250VAC internal
<b>Over voltage</b>		<b>Internal surge voltage protection</b>	
Vi nom, 0.8 lo nom (auto recovery)		IEC 61000-4-5	Varistor
12V	16.2 ~ 18VDC	<b>Degree of protection</b>	IP20
24V	28.8 ~ 32.4VDC		

## General Data All specifications are at nominal values, full load, 25°C ( 77°F ) unless otherwise noted

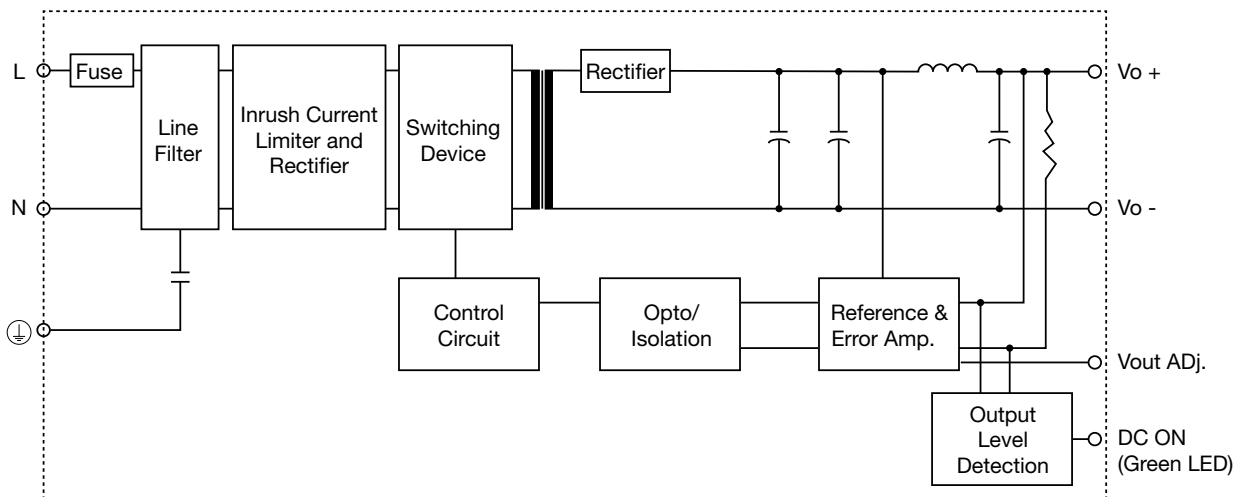
<b>Operating temperature</b>		<b>Switching frequency</b>	
Operating at Vi nom	-25 ~ +71°C (-13 ~ 159.8°F)	Vi nom, lo nom	65KHz
<b>Ambient humidity</b>		<b>Insulation voltage</b>	
Vi nom, lo nom	20 ~ 95% RH	Input - Output	3000 / 4242VAC / VDC
<b>Storage temperature</b>		Input - FG	1500 / 2121VAC / VDC
Non operational	-40 ~ +85°C (-40 ~ 185°F)	Output - FG	500 / 710VAC / VDC
<b>MTBF</b>		<b>Insulation resistance</b>	
Bellcore issue 6@40°C, GB		Input - Output, @500VDC	100MΩ
12V	721000 Hours	<b>Derating (see diagram)</b>	
24V	764000 Hours	Vi nom, from +51°C (123°F)	2.5%/°K
<b>Cooling method</b>	Free air convection	<b>Temperature coefficient</b>	
<b>Dimensions HxDxW</b>	90 x 100 x 22.5mm (3.54" x 3.937" x 0.885")	Vi nom, lo min	±0.03%/°K
<b>Weight</b>	140g (0.308lb)	<b>Altitude during operation</b>	
<b>Packing</b>		EN60950-1	5000m AMSL (16,400ft)
Single	150g (0.633lb)	<b>Pollution degree</b>	2
Carton	56pcs 10kg (22.04lb) 2.16CUFT	<b>Case material</b>	Plastic



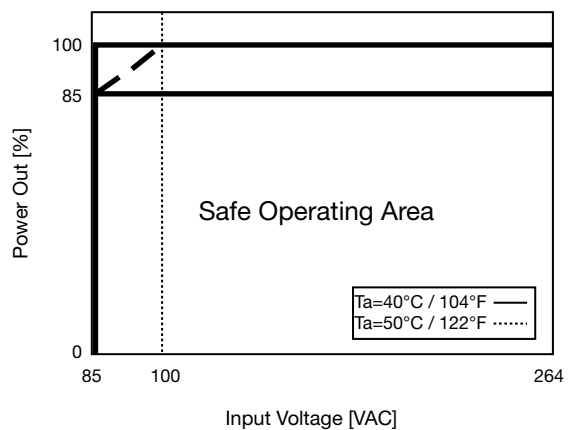
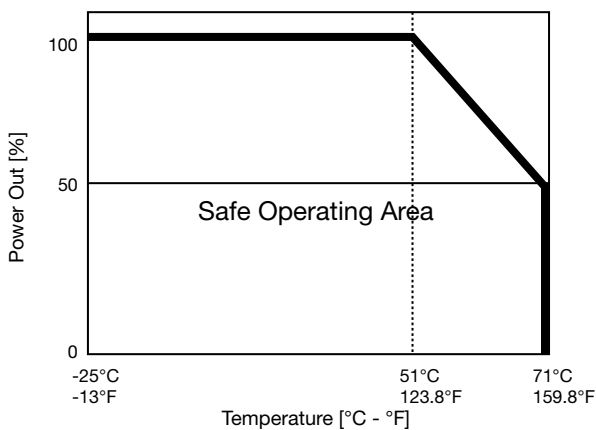
**Norms and Standard** All specifications are at nominal values, full load, 25°C ( 77°F ) unless otherwise noted

<b>UL / cUL</b>	UL508 Listed	<b>Vibration resistance</b>	Meets IEC 60068-2-6 Mounting on rail: 10-500 Hz, 2G, along X, Y, Z each Axis, 60 min for each Axis)
<b>UL1310</b>	Class 2 (pending)		
<b>cTUVus</b>	UL60950-1	<b>Shock resistance</b>	Meets IEC 60068-2-27 (15G, 11ms, 3Axis, 6Faces, 3 times for each Face)
<b>TUV</b>	EN60950-1		
<b>CE</b>	EN61000-6-3, EN55022		
	Class B, EN61000-3-2, EN61000-3-3 EN61000-6-2, EN55024, EN61000-4-2 Level 4, EN61000-4-3 Level 3, EN61000-4-4 Level 4, EN61000-4-5 L-N Level 3, L/N-FG Level 4, EN61000-4-6 Level 3, EN61000-4-8 Level 4, EN691000-4-11, ENV 50204 Level 2, EN61204-3		

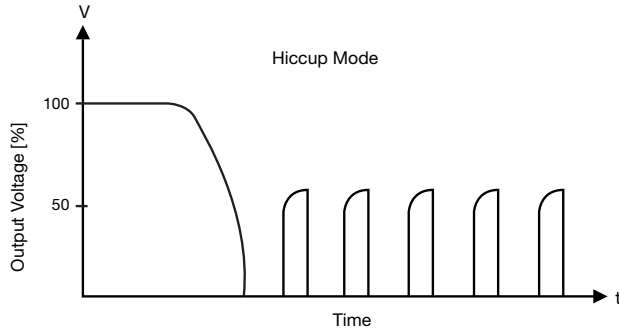
**Block Diagram**



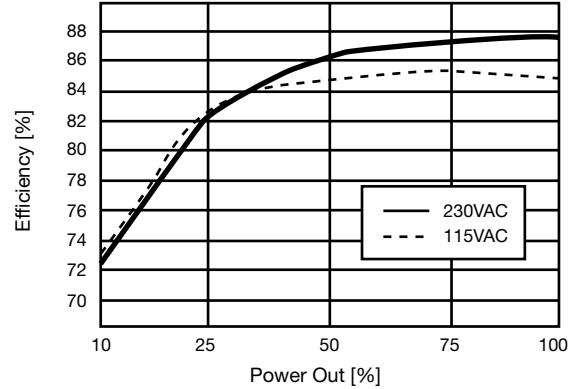
**Diagram Curve**




## Typ. Current Limited Curve



## Typ. Efficiency Curve



## Pin Assignment and Front Controls

PIN NO.	Designation	Description
1	V+	Positive output terminal
2	V-	Negative output terminal
3		Ground this terminal to minimize high frequency emissions
4	N	Input terminals (neutral conductor, no polarity with DC input)
5	L	Input terminals (phase conductor, no polarity with DC input)
	DC ON	Operation indicator LED
	Vout Adj.	Trimmer-potentiometer for Vout adjustment

## Mechanical Drawings mm (inches)

