Switching Power Supply Type SPD 240W Compact DIN rail mounting



- **Universal AC input full range**
- **Installation on DIN rail 7.5 or 15mm**
- **Short circuit protection**
- **Active PFC as standard**
- **High efficiency up to 93%**
- **Power ready output**
- **LED indicator for DC power ON**
- **LED indicator for DC low**
- **Parallel connection feature**
- **Compact dimensions**
- **UL, cUL listed and TUV/CE approved**
- **150% peak load capability**

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 24 240 1C X

- **Model**
- **Mounting (D = Din rail)**
- **Output voltage**
- **Output power**
- **Input type**
- **Optional features**

Input type: 1C = single phase Compact version

Approvals

Optional features

Description	Code
Screw terminal	Nil
Plug-in connectors	B

Output Performance

MODEL NO.	INPUT VOLTAGE	OUTPUT POWER	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (min.)	EFF. (typ.)
Single Output Models						
SPD 12 240 1C X	88~264 VAC	192 WATTS	+12 VDC	16A	89%	91%
SPD 24 240 1C X	88~264 VAC	240 WATTS	+ 24 VDC	10A	91%	93%

Output Data (All specifications are at nominal values, full load, 25°C unless otherwise noticed)

Line regulation	± 1%
Load regulation	±1%
Minimum load	0%
Turn on time **Vi nom, Io nom**	1000ms (full resistive load) 1500ms with **7000**µF CAP
Transient recovery time	2ms
Ripple and noise	100mVpp
Output voltage accuracy	0% ~ +1%
Hold up time **Vi= 115VAC** **Vi= 230VAC**	25ms 30ms
Voltage fall time (I_0nom, Vi nom)	150ms
Voltage rise time **Vi nom, Io nom**	150ms (full resistive load) 500ms with **7000**µF CAP
Voltage trim range **12V Model** **24V Model**	 11.4-14.5 VDC 22.5-28.5 VDC
Rated continuous loading **12V Model** **24V Model**	 16A@12VDC/13A@14.5VDC 10A@24VDC/8.4A@28.5VDC

Reverse voltage		
12V Model	18VDC	
24V Model	35VDC	
Capacitor load	7000µF	
Temperature coefficient	±0.03°C	
DC ON indicator threshold at start up (Green LED)	**VDC**	
	Min.	**Max.**
Vi nom, Io nom 12V Model	10	11.2
24V Model	17.6	19.4
DC LOW indicator threshold at start up (Red LED)	**VDC**	
	Min.	**Max.**
Vi nom, Io nom 12V Model	10	11.2
24V Model	17.6	19.4
Parallel operation	0.1 Io min~0.9 Io max For parallel operation, turn the Switch S/P Single/Parallel to the position "P" in advance. Max 3 units and power out 90%	

Specifications are subject to change without notice. Pictures are just an example. For special features and/or customization, please ask to our sales network. 06/07/2017

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Input Data (All specifications are at nominal values, full load, 25°C unless otherwise noticed)

Rated input voltage Inom	100 - 240VAC
Voltage range	
AC IN	88 - 264VAC
DC IN	120 - 375VDC
Rated input current	
Vi: 88VAC Io nom	3.2A Max.
Vi: 115VAC Io nom	2.3A Typ.
Vi: 230VAC Io nom	1.15A Typ.
Inrush current	
Vi= 115VAC	24A
Vi= 230VAC	48A

Power dissipation		
(Vi : 230VAC, Io nom)	**12V Model**	19W
	24V Model	18W
Frequency range		47- 63Hz
Leakage current		
	Input-Output	<0.25mA
	Input-FG	<3.5mA
P.F.C. (Active)		0.97@Vi:230VAC, Io nom

Controls and Protections (All specifications are at nominal values, full load, 25°C unless otherwise noticed)

Overload Vi nom (see typ current limited curve)		120% - 150%
Input fuse		T5A/250VAC internal[1)]
Output short circuit		Shut-down protection, after 7s auto-restart
Over voltage protection (Auto recovery)		**VDC**
		Min. / **Max.**
	12V Model	15 / 16.5
	24V Model	30 / 33
Internal surge voltage protection IEC 61000-4-5		Varistor

[1)] Fuse not replaceable by user

Power RDY (for 24V model only)	Threshold voltage of contact closed (at start up) 17.6 - 19.4VDC
Electrical isolation	500VDC
Over temperature Detect on heat sink, shut down O/P voltage, recovers automatically after temperature goes down	100 - 110°C
Rated over load protection Vi nom (see typ current limited curve)	120 - 150%

General Data (All specifications are at nominal values, full load, 25°C unless otherwise noticed)

Ambient temperature	-40°C to + 71°C
Derating (+61°C to + 71°C)	2.5%/°C (see curve)
Relative humidity	20 ~ 95%RH
Storage temperature	-40°C to +85°C
Protection degree	IP20
Cooling	Free air convection
Insulation voltage	
Input-Output	3000VAC/4242VD min
Input-Fg	1500VAC/2121VD min
Insulation resistance I/O	100MΩ min (@ 500VDC)
Switching Frequency	90 Khz Typ

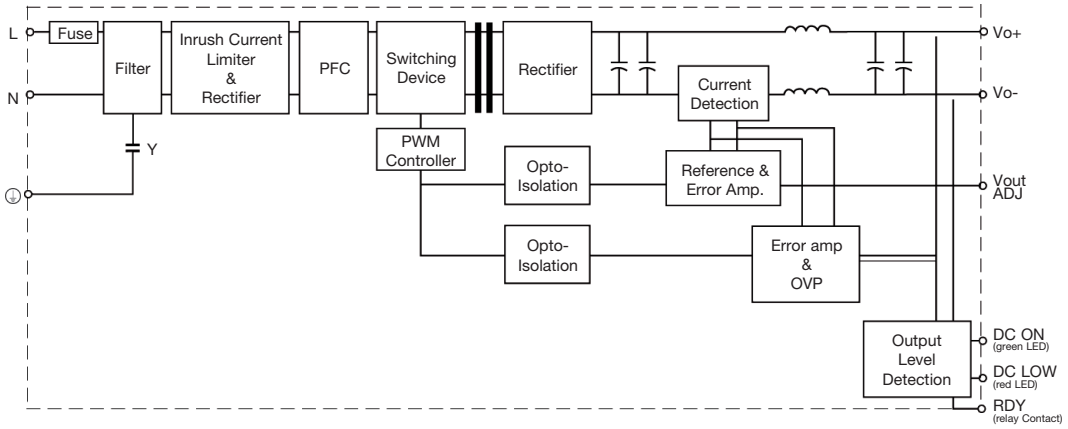
Pollution degree	2
MTBF (Bellcore issue 6 @ 40°C, GB)	
12V Model	374000 Hours
24V Model	384000 Hours
Case material	Metal
Altitude	4850m
Dimensions LxWxD mm(inch)	
Screw terminal type	124.5(4.9)x64(2.52)x123.6(4.87)
Detachable connector type	143.5(5.65)x64(2.52)x123.6(4.87)
Weight	860g
Packing	960g

Norms and Standards

Vibration resistance	meet IEC 60068-2-6 (Mounting by rail: Random wave, 10-500 Hz, 2G each long Z, Y, Z axes 10 min/cycle, 60min.)
Shock resistance	meet IEC 60068-2-27 (4G, 22ms, 3 Axis, 6 faces, 3 times for each face)
UL/cUL	UL 508 Listed UL 60950-1 Recognized
TUV	EN 60950-1 EN 21558-1 EN 6155-8-2-16

CE	EN 61000-6-3, EN 55037 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 EN 61000-4-6 level 3 EN 61000-4-8 level 4 EN 61000-4-11, ENV 50204 Level 2

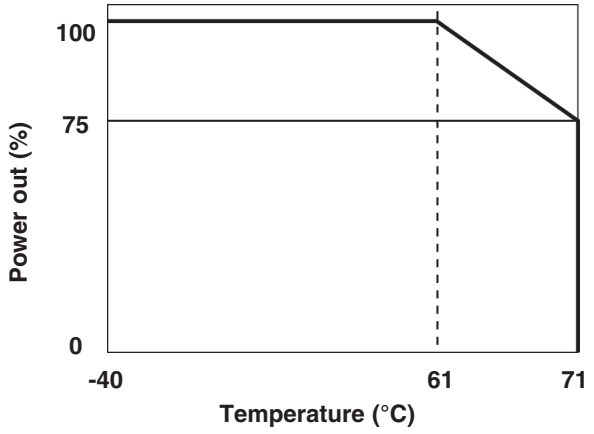
Block Diagram



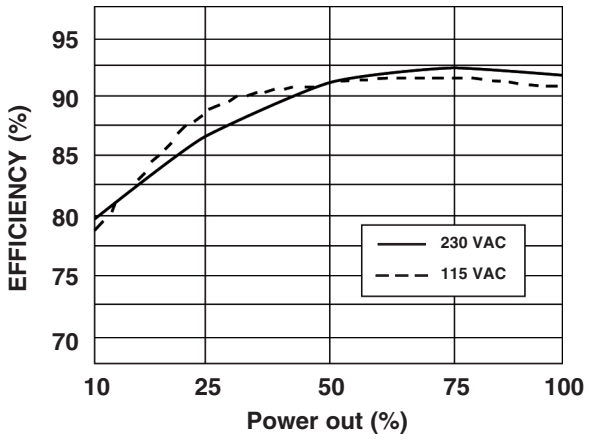
Pin Assignement and Front Controls

Pin No.	Designation	Description
1	RDY	A normal open relay contact for DC ON level control Never connect except 24V model
2		
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 terminal (phase conductor, no polarity at DC input)**
LED	**DC ON**	**Operation indicator LED**
LED	**DC LO**	**DC LOW voltage indicator LED**
Trimmer	**Vout ADJ.**	**Trimmer-potentiometer for Vout adjustment**
Switch	**S/P**	**Single / Parallel select switch**

Derating Curve

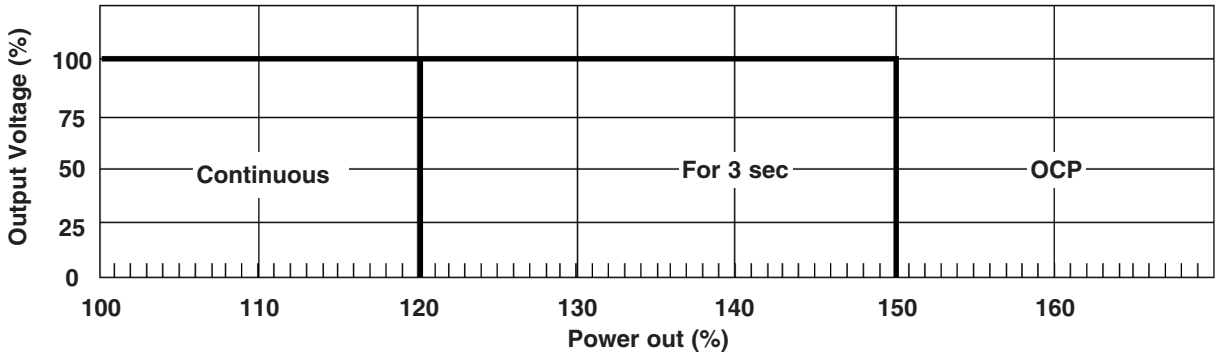


Typ. Efficiency curve

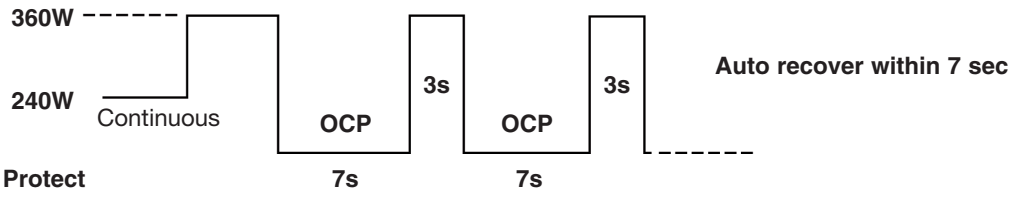


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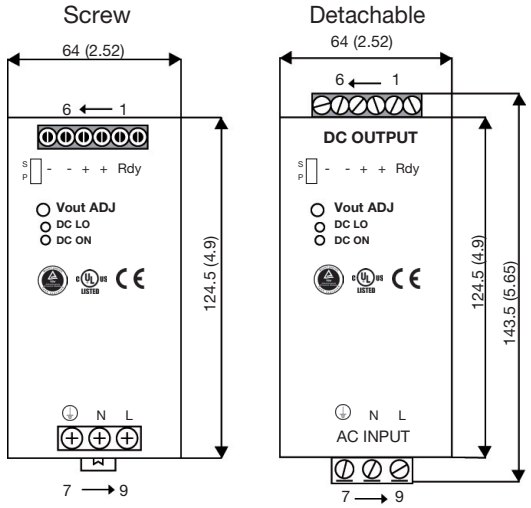
Typ. Current Limited Curve

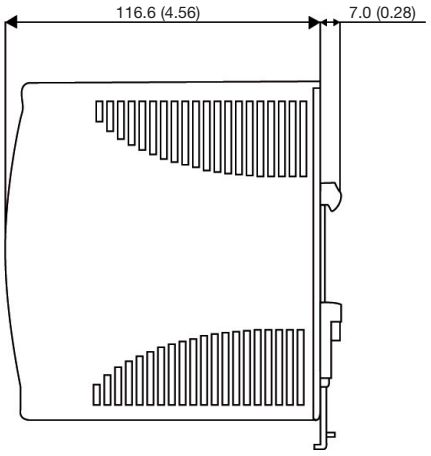


Peak Loading



Mechanical Drawings mm (inches)





Installation

Ventilation and cooling	Normal convection. All sides 25mm free space for cooling is recommended
Connector size range **Screw terminals:**	
- Input Terminals	AWG24-10 (0.2~4mm²) flexible / solid cable, max. torque at 1.16Nm (9 pound-inches).
- Output Terminals	max. torque at 0.616Nm (5.5 pound-inches). 8mm stripping at cable end recommends.
Detachable connectors:	AWG24-12 (0.2~2.5 mm²) flexible / solid cable,
- Input Terminals	max. torque at 0.51 Nm (4.5 pound-inches).
- Output Terminals	max. torque at 0.79 Nm (7 pound-inches). 4~5mm stripping at cable end recommends. Use copper conductors only, 60/75°C.

Parallel Connection

