

Switching Power Supply Type SPD 480W DIN rail mounting

CARLO GAVAZZI



- 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

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%

¹⁾ 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 $V_i = 115/230VAC$	25-30ms
Load regulation		Voltage fall time ($I_{O\text{nom}}$)	150ms max
Single mode	± 1%	Rated continuous loading	
Parallel mode	± 5%	24V Model	20A @ 24VDC/16.8A @ 28.5VDC
Minimum load	0	48V Model	10A @ 48VDC/8.5A @ 56VDC
Turn on time (full resistive load)		Reverse voltage	
$V_i \text{ nom, } I_o \text{ nom}$	1000ms	24V Model	35VDC
$V_i \text{ nom, } I_o \text{ nom with } 7000\mu F \text{ CAP}$	1500ms	48V Model	63VDC
Transient recovery time	2ms	Capacitor load	7000 μF
Ripple and noise	100mVpp	Voltage rise time	
Output voltage accuracy	+ 1%	$V_i \text{ nom } I_o \text{ nom}$	150ms
Temperature coefficient	± 0.03%/°C	$V_i \text{ nom, } I_o \text{ nom with } 7000\mu F \text{ CAP}$	500ms

Input data

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

Controls and Protections

Overload	110 – 1405%	Over voltage protection	125/140%
Input fuse	T10A/250VAC internal	Internal surge voltage protection (IEC 61000-4-5)	Varistor
Output short circuit	Fold forward		
Power ready output (only SPD 24) On threshold	≥17.6-19.4VDC		
electrical isolation	500VDC		
Contact Rating at 60VDC	0.3A		

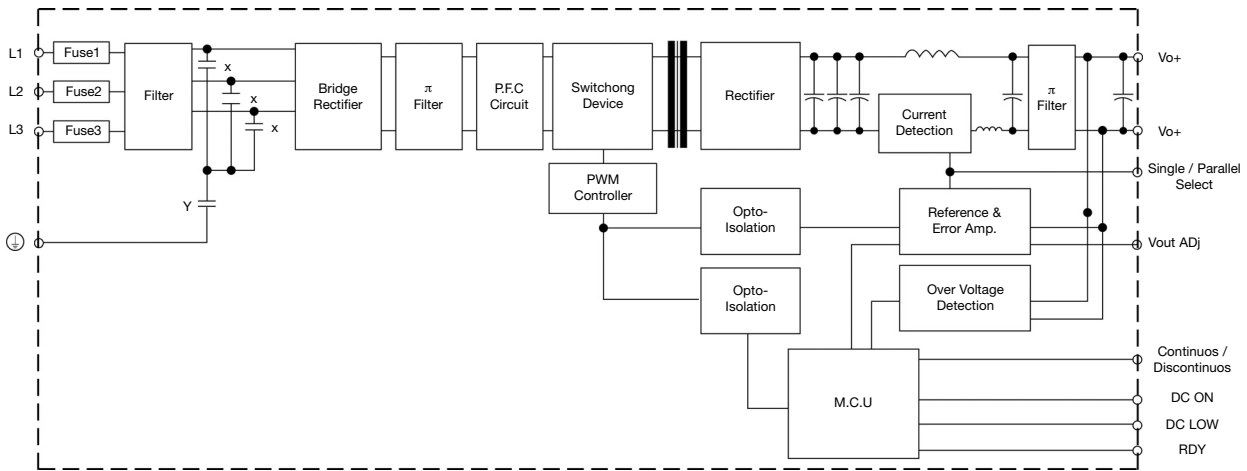
General data (@ nominal line, full load, 25°C)

Ambient temperature	-40°C to 71°C	MTBF (Bellcore issue 6 @ 40°C, GB)	24V Model 403000 Hours 48V Model 416000 Hours
Derating (>61°C to +71°C)	2.5%/°C	Case material	Metal
Ambient humidity	20 ~ 95%RH	Dimensions LxWxD mm (inch)	124.5 (4.9) x 175.5 (6.91) x 123.6 (4.87)
Storage	-40°C to +85°C	Weight	1920g
Protection degree	IP20		
Cooling	Free air convection		
Pollution degree	2		


Norms and Standards

Vibration resistance	meet IEC 60068-2-6 (Mounting by rail: 10-500Hz, 2G, along X, Y, Z each Axis, 60 min for each Axis).	CCC	GB4943, GB9254, GB17625.1.
Shock resistance	meet IEC 60068-2-27 (15G, 11ms, 3 Axis, 6 faces, 3 times for each face).	CE	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.
UL / cUL	UL508 listed, UL60950-1 Recognized, ISA 12.12.01 (Class 1, Division 2, Groups A, B, C and D).		
TUV	EN 60950-1, CB scheme EN 61558-1, EN 61558-2-17 (meet EN 60204).		

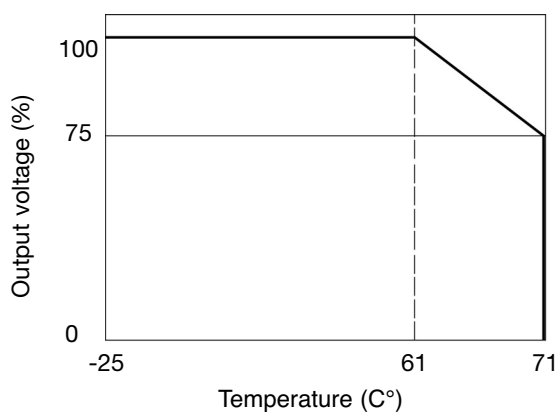
Block diagrams



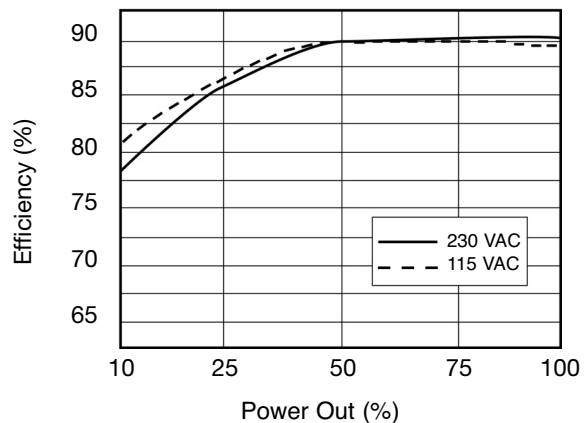
Pin Assignment and Front Controls

Pin No.	Designation	Description
1, 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 LO	DC LOW voltage indicator LED
	Vout ADJ	Trimmer-potentiometer for Vout adjustment
	S/P	Single / Paralle select switch

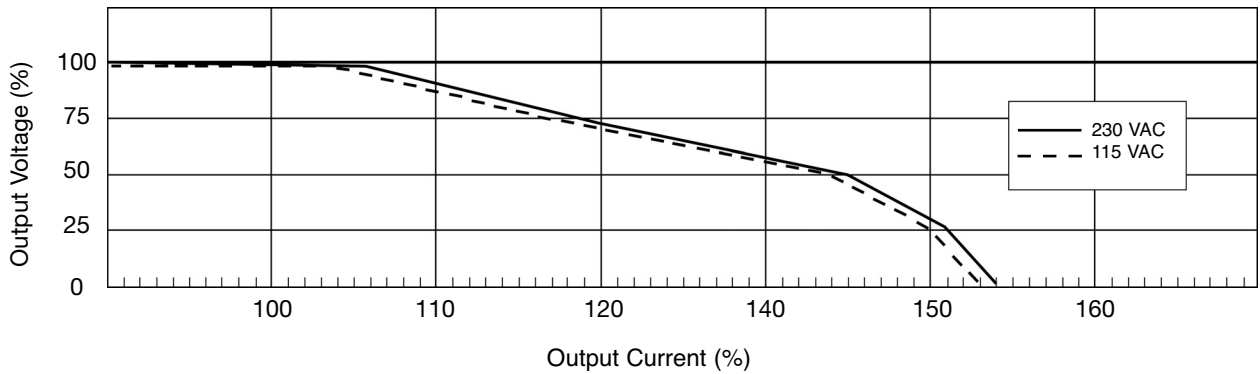
Derating Diagram



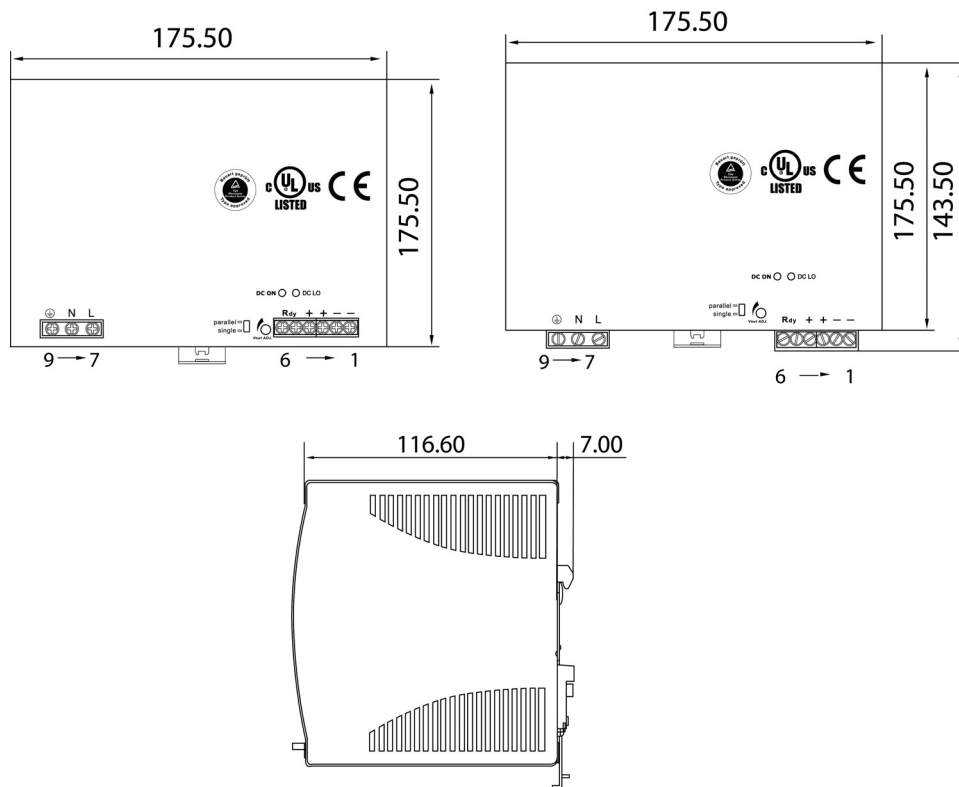
Typ. Efficiency Curve



Typ. Current Limited Curve



Mechanical Drawings mm (inches)



Installation

Ventilation and cooling	Normal convection All sides 25mm free space for cooling is recommended.	Output Connector	can withstand torque at maximum 5.5 pound-inches. 8 mm strip ping at cable end recom mends, use copper conductors only, 60/75°C.
Connector	Size range AWG 24-10 (0.2~4mm ²) flexible/solid cable.	Max. torque for screws terminals	
Input Connector	can withstand torque at maximum 9 pound-inches.	Input terminals	0.784Nm (7.0lb-in)
		Output terminals	0.784Nm (7.0lb-in)