

Switching Power Supply Type SPD 960W 3 phases DIN rail mounting

CARLO GAVAZZI



- Universal AC 3 phases input full range
- Can also be used as single phase 960VAC
- Installation on DIN rail 7.5 or 15mm
- PFC as standard
- High efficiency up to 93%
- Power ready output
- Parallel connection feature
- Compact dimensions
- UL, cUL listed and TUV/CE

Product Description

The Switching power supplies SPD XX9603 series are suitable for those applications where high DC power is required. Besides the PFC as standard, it also features the parallel connection with active current sharing.

Ordering Key

SP D 24 960 3 L

Model _____
 Mounting (D = Din rail) _____
 Output voltage _____
 Output power _____
 Input Type _____
 Option _____

Input type: 3 = three phase
 (or single phase 400/500VAC³⁾
 Option: Nil = standard version
 L = without active current sharing feature

Approvals



Output performances

Model	Rated output Voltage (VDC)	Output Power (W)	Output Current (A)	Voltage Trim Range ¹⁾		DC on LED Threshold at startup (VDC)		DC low LED Threshold after startup(VDC)		Typical Efficiency
				Min. VDC	Max. VDC	Min.	Max.	Min.	Max.	
SPD24	24	960	40	22.5	28.5	17.6	19.4	17.6	19.4	92%
SPD24...L ²⁾	24	960	40	22.5	28.5	17.6	19.4	17.6	19.4	92%
SPD48	48	960	20	47.0	56.0	37.0	43.0	37.0	43.0	93%

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

²⁾ This model is without active current sharing feature.

Output data

Line regulation	± 1%	Temperature Coefficient	+0.02% / °C
Load regulation	± 1%	Hold up time Vi = 400VAC	14ms min. 15ms typ.
Non parallel mode		Vi = 500VAC	28ms min. 30ms typ.
Parallel mode	± 5%	Minimum load	0%
Output Voltage accuracy	from 0 to +1% (factory adjusted)	Parallel Operation	2 units max. ³⁾
Ripple and Noise	80mV	(only with S/P switch on "P" position)	

³⁾ Except SPD24...L model.

Input data

Rated input voltage	380/480VAC	Frequency range	47- 63 Hz
Voltage range	340 - 575VAC ⁴⁾ 480 - 820VDC	Inrush current 24 and 48 model	30A
AC in		24L model	50A
DC in		P.F.C. Vi= 500VAC, Io nom.	0.7
Rated input current (380/500)	2.4A / 1.6A		

⁴⁾ Biphasic or triphasic input (biphase can be: L1 L2, L2 L3 or L1 L3.
 Note: when used as biphase, the maximum output power is 75% of rated power.

Controls and Protections

Input Fuse	6.3A/250VAC internal/phase	Power ready output⁹	17.6 - 19.4VDC 0.3A 500VDC
Overvoltage Protection SPD24 SPD48	30 - 33VDC 60 - 68VDC	Threshold voltages Contact rating at 60Vdc Insulation	
Output Short Circuit (Continuous)	Current limited	Overtemperature (temperature detected on heatsink)	100 - 110°C (shutdown with auto-restart when temperature is back to normal)
Rated Overload Protection	110 - 130%		

⁹ SPD24L Model no this function

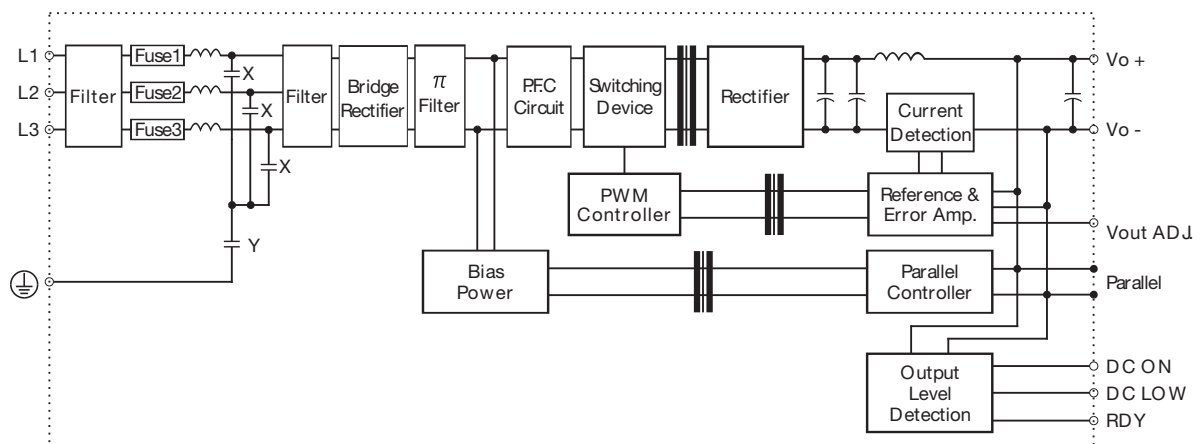
General data (@ nominal line, full load, 25°C)

Ambient temperature	-25°C to 71°C	Cooling	Free air convection
Derating (>61°C to +71°C)	3.5%/°C	MTBF (MIL-HDBK-217F)	n.a.
Ambient humidity	20 - 95%RH	Case material	Metal (powder painted aluminium)
Storage	-25°C to +85°C	Weight	3200g / 112.88oz
Dimensions L x W x D Screw terminal type	125.9 x 275.8 x 118.2 mm 4.96 x 10.86 x 4.65 inches	Protection degree	IP20

Approvals and EMC

UL / cUL	UL508 listed, UL60950-1, Recognized	CE	EN61000-6-3 EN55022 class B EN61000-3-2 EN61000-3-3 EN61000-6-2 EN55024
TUV	EN60950-1		

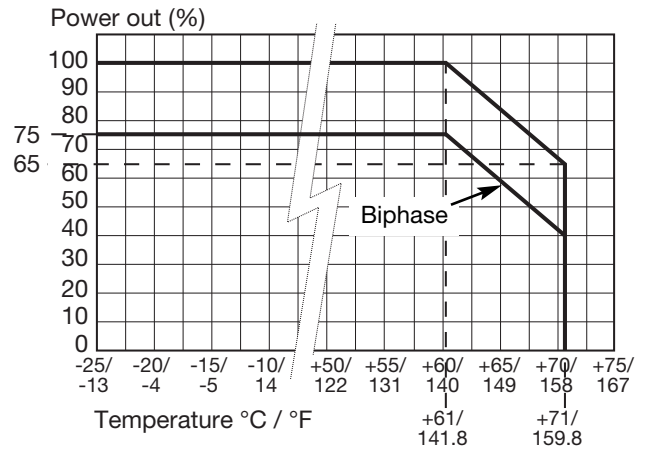
Block diagrams



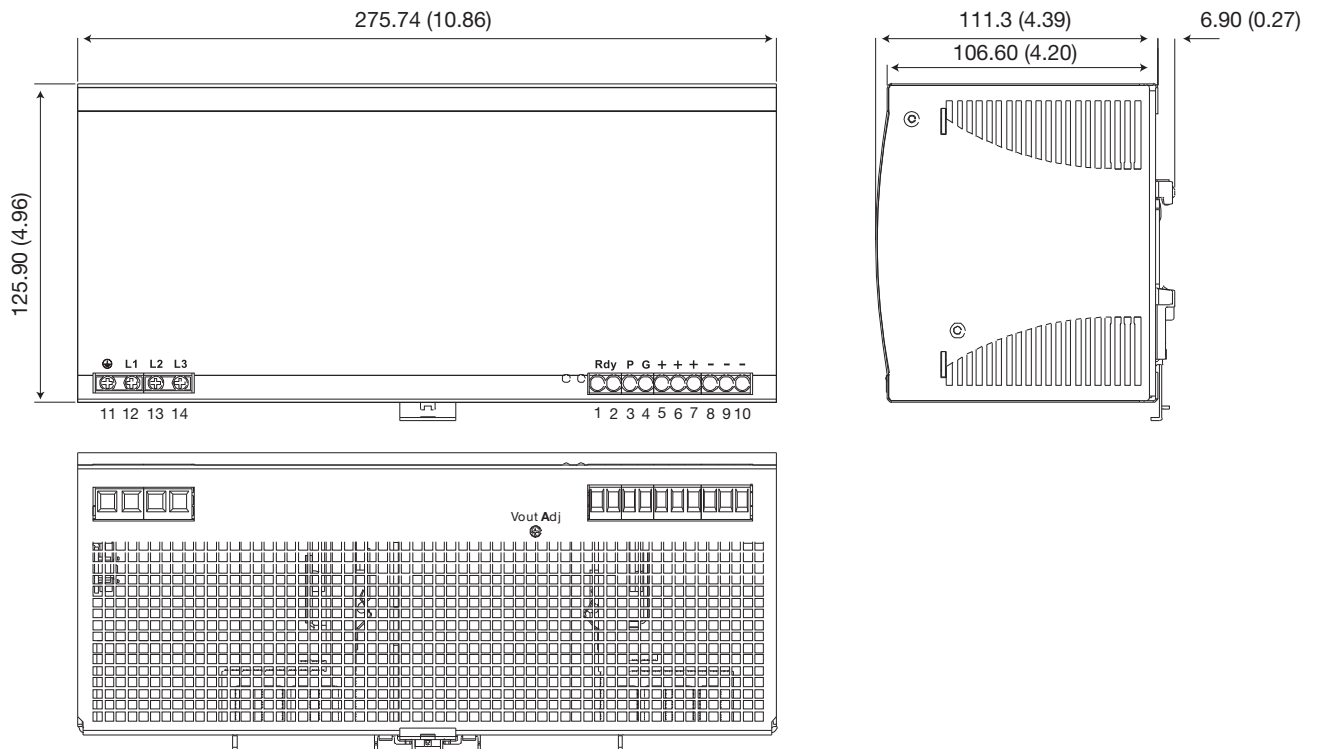
Installation

Ventilation and cooling	Normal convection All sides 25mm free space for cooling is recommended
Screw connections	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)

Derating Diagram



Mechanical Drawings mm/inches



Sense



Switch



Control



Safety



Fieldbus



SPD Switching Power Supplies

CARLO GAVAZZI presents a new range of power supplies especially designed for the automation market. The wide range of supply voltages and DC output voltages/power provide a multitude of choices for all low power electrical or electronic devices commonly used in automatic machinery. Components such as sensors, electromechanical relays, contactors, solid state relays, timers, temperature controllers, PLCs, process controllers, DC motors, solenoids, displays, etc. now have a reliable power source.



Space
Optimization



Diagnostic
Warning



User
Friendly



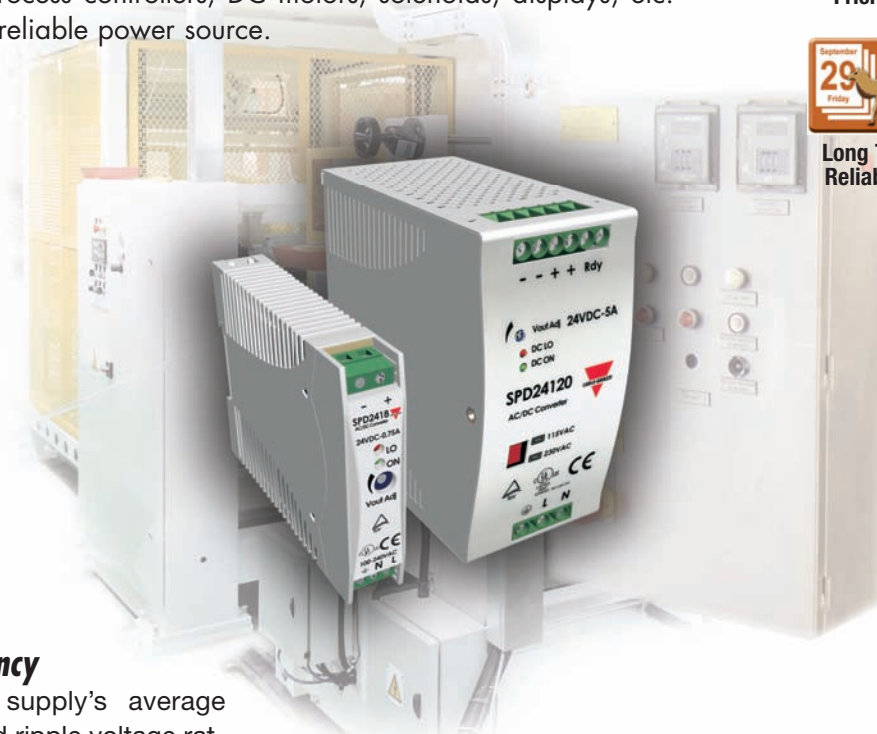
Minimizing
Energy Cost



Long Term
Reliability



Long Term
Reliability



High Efficiency

The power supply's average efficiency and ripple voltage ratings are comparable or better than most power supplies on the market.

Product Range

	5V	12V	15V	24V	48V
SPD 5-10-18W	■	■	■	■	
SPD 30-60W	■	■		■	■
SPD 120W		■		■	■
SPD 240-480W				■	■

Adjustable Output

All models provide a front potentiometer in order to adjust the output voltage. This useful feature can provide a voltage surplus when line voltage losses cause low voltages to the load.

Parallel Connection

Parallel connection is a standard feature with the 240W and 480W versions, and optional on the 120W version.

Visual and Electrical Indications

Models up to 18W are equipped with two front LEDs, which provide a visual indication of the 'Power Out' enabled and 'Low Voltage' on the output. All other sizes are equipped with an LED indication and also with an output 'Power Ready' signal. This signal could be used by other electronic devices or to power an alarm (this feature is only available on 24VDC output versions).

Power Factor Correction (PFC)

The PFC function is a standard feature on the 240W and 480W models and available upon request on the 120W model.

Approvals and Warranty

All SPD Power Supplies are approved according to UL, cUL, TÜV and CE safety standards: UL class 2 recognized and Class B for the emissions according to European standards. They are also RoHS compliant. All models feature a Two Year Warranty.

