



## Switch mode power supplies

# Controls

# SPD, SPDC, SPDM... Switching power supplies

Carlo Gavazzi provides one of the most complete range of switch mode power supplies for most of applications where reliable low DC voltage is required.

The broadest part of product Line-up is dedicated to DIN Rail mounted devices for both electric distribution panels and automation industry cabinets whilst the SPPC family features enclosed switch mode power supplies from 25W to 800W which can be deployed in virtually any kind of device or machinery.

The latest products added to the range feature reduced dimensions as this is the latest technological requirement. In order to achieve this goal the overall efficiency has been increased.

SPDC series features some of the most slim DIN rail power supplies available on the market.

Bi and Tri Phase input power supplies are available from 100W up to 960W, single phase from 5W to 800W. Besides the standard CE and RoHS compliances, UL and CCC approvals the range features also some devices which comply to UL Class I, Div 2 hazardous location installation certification and UL1310 Class 2.



## A supply source for any requirement

### SPM

Single phase input power supplies. Their low profile DIN enclosure, for installation in electric distribution panels, makes them the ideal choice for deployment in home and building automation. Output Power from 7.5W to 100W. CE, RoHS, UL, TUV, UL 1310 Class 2, hazardous classification Class I Div 2.

### SPPC

Enclosed type single phase input power supplies. These devices are not specific for any application, they can be deployed in virtually any appliance requiring DC voltage. Available DC voltages: 5, 12, 15, 24 and 48V with output powers from 25W to 800W, with PFC from 100W. CE, RoHS and UL on all sizes.

### SPD

This is the broadest family among Carlo Gavazzi power supplies product line-up. It features DIN Rail mounting devices from 5W to 480W with single phase input, 1 bi-phase input 100W and from 120W to 960W with three phase input. SPD series are suitable for demanding applications where dimensions are not issue. They provide DC OK output, PFC and Parallel operation facility. CE, RoHS, CCC, TUV, UL, UL 1310 Class 2 <90W, hazardous classification Class I Div 2.

### SPDM

This new family of single phase input power supplies features reduced width and general volume reduction if compared with similar devices with same output power. No Frills, just basic functions, but high performance and high reliability. Output power from 30W to 120W but only two available voltages: 12 and 24V. CE, RoHS, UL, TUV.

### SPDC

This new family of power supplies has been developed with the goal of reaching the highest performance with the lowest dimensions. Two only available output powers 120W and 240W. These power supplies feature one of highest compactness among DIN rail mounting power supplies. Besides compactness they provide PFC, DC OK relay output and parallel connection facility. CE, RoHS.



## Applications

### Automation systems

The choice of power supplies for automation systems is broad, virtually any kind of power supply is suitable for deployment in automation applications.

The most common types of power supplies are DIN rail mounting with 24 Vdc output.

The reliability of an automation system depends on the quality and stability of the power supply.

Power losses, dips and peaks even of short duration, can limit the performance of the systems and could have expensive consequences, such as loss of data, malfunctions of the control system and production process downtime.

In high volume production processes, such as the automotive industry, where the average productivity is around 2000 cars per day, even a short downtime of half an hour can cause considerable financial losses.



### Building automation

Building Automation Systems consists of the networking of electronic devices designed to monitor and control the mechanical, security, lighting, HVAC, humidity and ventilation systems in buildings such as shopping malls, Offices, Airports, Hospitals, Schools, Car parks, Production facilities, Logistics centres. New energy-efficient buildings and the improvement of existing ones are arguably the most important initiatives we can take to reduce energy consumption and limit CO<sub>2</sub> emissions. To meet the mandatory requirements for energy saving, building owners must comply with efficiency improvement regulations.

Carlo Gavazzi provides 1, 2 and 3 phases power supplies, with output power from 5W to 960W. These power supplies feature, besides enclosures suitable for distribution panels, versions with DC OK output in order to provide immediate feedback to automation.

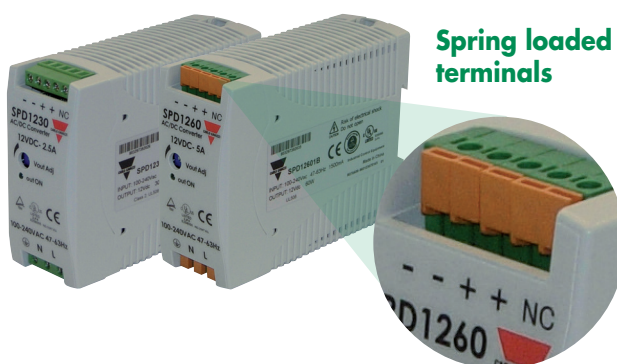


# SPD DIN-Rail switching power supplies

## SPD 5-10-18W

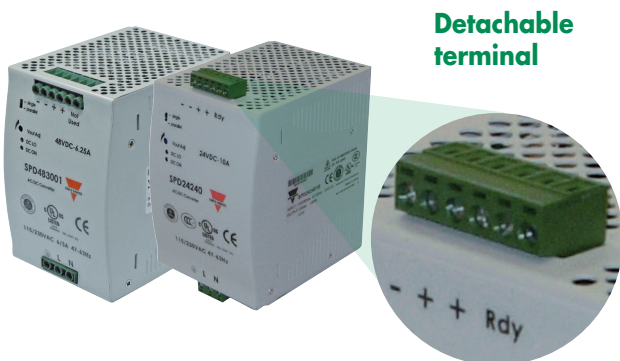


## SPD 30-60W



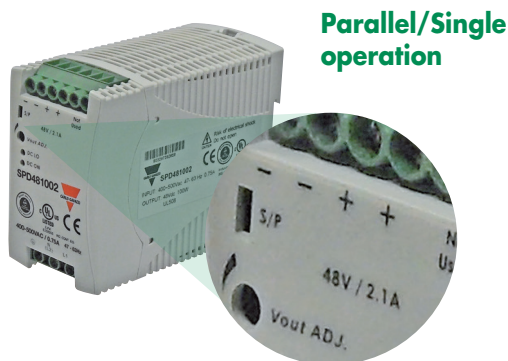
Spring loaded terminals

## SPD 240-300W 1-Phase



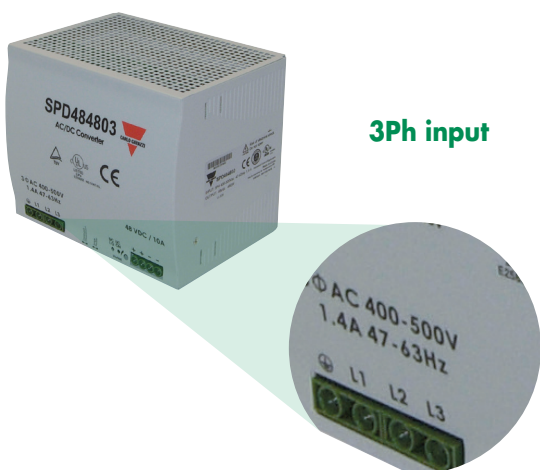
Detachable terminal

## SPD 100W 1/2-Phase



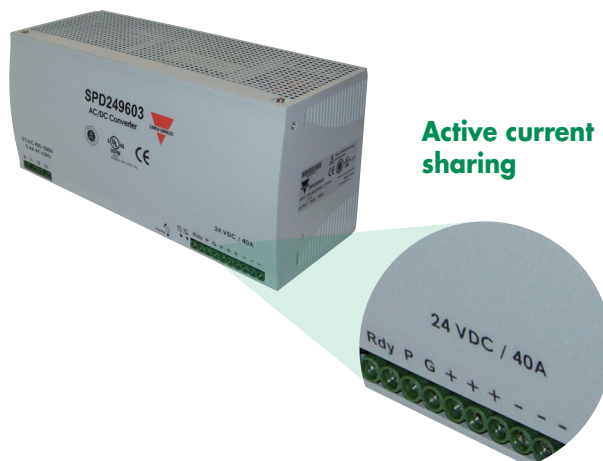
Parallel/Single operation

## SPD 240-480W 3-Phase



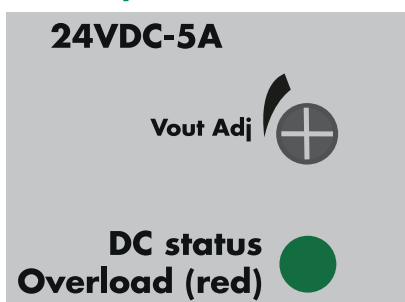
3Ph input

## SPD 960W 3-Phase

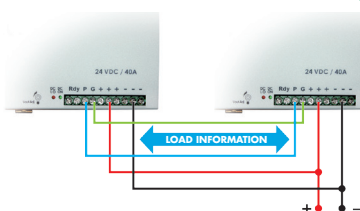


Active current sharing

## Front adjustments and LEDs



## Active current sharing



The 960 watt power supplies feature active current sharing. By connecting two wires from one power supply to the other, they exchange information regarding the output current and adapt to one another to have equal outputs.

# SPDM-SPDC

## DIN-Rail switching power supplies



### SPDM 30

NEW



### SPDM 50

NEW



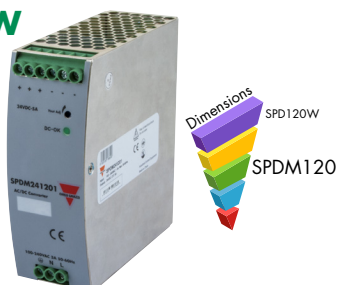
### SPDM 75

NEW



### SPDM 120

NEW



### SPDC 120

SPD120W



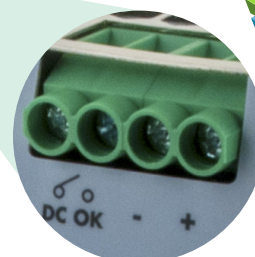
Reduced Dimensions  
-50%



NEW  
SPDC 120



Dimensions  
SPD120W  
SPDC 120



DC OK  
output

### SPDC 240

SPD240W



Reduced Dimensions  
-40%



NEW  
SPDC 240



Dimensions  
SPD240W  
SPDC240



Single/  
Parallel

# SPM

## Low profile switching power supplies

**SPM1 10W**



**SPM3 30W**



**SPM4 60W**

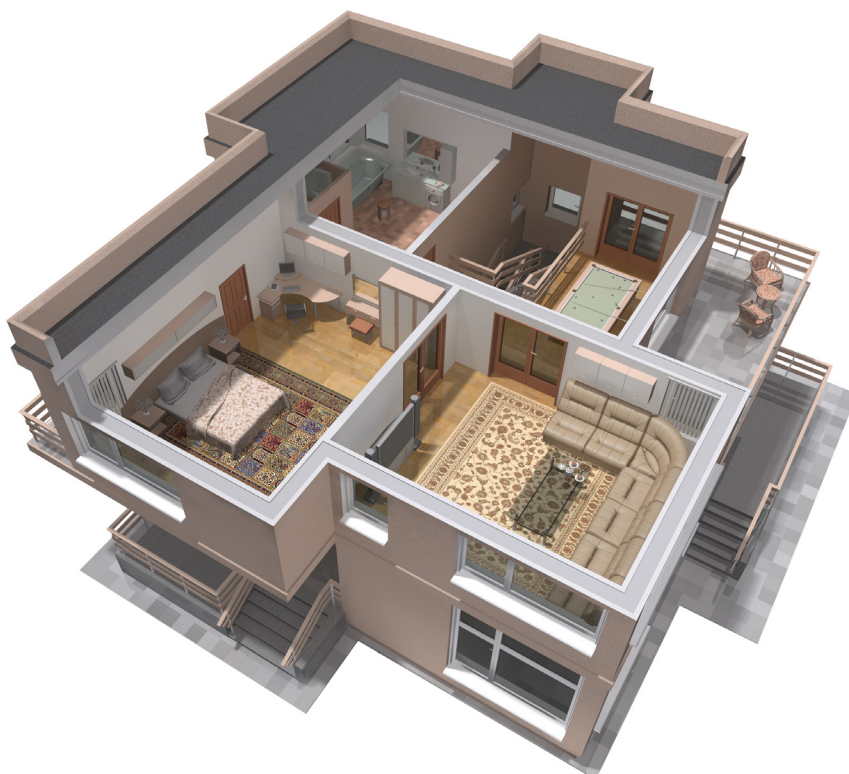


**SPM5 100W**



### SPM Modular switching Power Supplies

SPM switching power supplies are specifically designed in order to satisfy both the industrial automation and the building automation application requirements, as in distribution boxes, with just a little more than 55mm/2.18" of depth, SPMs allow flush mounting on the front panel of the boxes. This concept is modular according to DIN standard.



# SPPC Compact

## Enclosed switching power supplies



**SPPC Miniature 25W / 35W / 50W**



SPPC miniature are suitable where low power, and special voltages are required. Thanks to their small dimensions they can be virtually fitted in any kind of device.

**SPPC Medium 75W / 100W / 150W**



SPPC medium have the best compromise between power and dimensions. The 150W is available either with PFC or without.

**SPPC Compact 200W / 240W / 320W**



SPPC compact all feature PFC with  $PF > 0.95$  besides very compact dimensions if compared to other devices of similar power.

**SPPC High Power 480W / 600W / 800W**



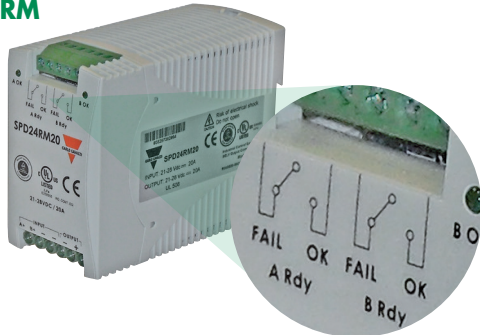
SPPC Hi-power can satisfy the requirement of relatively high powers all with PFC ( $PF > 0.96$ ) ZVS technology reduces the power dissipation allowing to have only 41 mm of U profile height.



# Special Devices

## Redundant modules

**SPD RM**

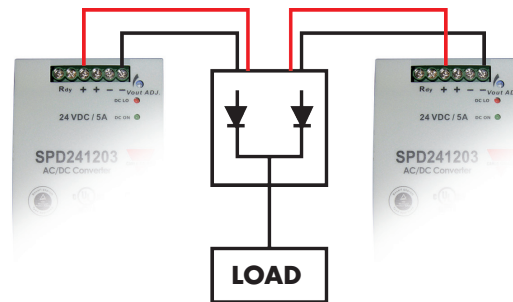


**SPM2RM**



## Redundant module

Special redundant modules are available. They allow the connection of 2 or more power supplies. In case of failure, of one of the power supplies, the redundant module guarantees continuity of the DC supply.



## Battery chargers & UPS

### SPM5 Battery charger

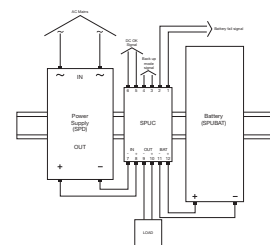


The SPM5BC battery chargers are a range of power supply units which charge lead-acid batteries, optimising their performance and duration. Based on switch-mode technology, they produce an output voltage stabilized at a preset value, even when not being charged. Made in a low profile plastic housing, they feature universal input 90~264VAC, integrated short circuit protection and battery polarity protection.

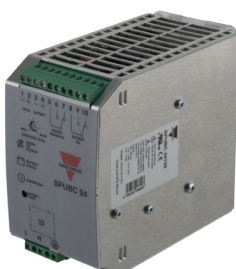
### SPUC UPS controller



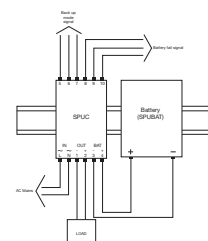
SPUC is an UPS controller that allows to convert a standard system with a generic DC power supply, with output current up to 30A, into a UPS system capable of providing power also in case of mains failure. The SPUC manages the battery charging and monitoring and provides stabilized 12Vdc or 24Vdc output.



### SPBC UPS battery charger











SPUBC is a smart UPS system integrating into a single unit a power supply, a battery charger and a UPS. DC output is guaranteed also in mains failure. The power supply can double its output current by drawing additional current from the battery. Battery is continuously monitored.








# Product selection tables

## SPD Series, SINGLE PHASE - Standard DIN Rail mounting







Device	Output power	Available output voltages	Input VAC	Input VDC	Approvals	Dimensions L x W x D mm, (inch)
	SPD 5W	5W	90 - 264	120 - 370	CE, TUV, cULus, UL 1310 Cl. 2, Class I Div 2	90 x 22.5 x 114 (3.60 x 0.89 x 4.49)
	SPD 5W/B					
	SPD 10W			120 - 375		
	SPD 10W/B					
	SPD 18W	18W	85 - 264	90 - 375		90 x 40.5 x 114 (3.60 x 1.59 x 4.49)
	SPD 18W/B					
	SPD 30W					
	SPD 30W/B					
	SPD 60W	60W				
	SPD 60W/B					
	SPD 90W/L	90W	24V	120 - 375	CE, TUV, cULus, Class I Div 2	90 x 54 x 114 (3.60 x 2.13 x 4.49)
	SPD 100W	100W				
	SPD 120W	120W	12V - 24V - 48V	210 - 315		124 x 64.4 x 118.8 (4.88 x 2.53 x 4.68)
	SPD 120W/B			210 - 370		125 x 63.5 x 126 (4.92 x 2.5 x 4.96)
	SPD 120W N					
	SPD 240W	240W	12V / 24V	90 - 264		124.5 x 83.5 x 123.6 (4.9 x 3.29 x 4.87)
	SPD 240W/B					143.5 x 83.5 x 123.6 (5.65 x 3.29 x 4.87)
	SPD 300W	300W		120 - 375		124 x 83.5 x 123.6 (4.88 x 3.29 x 4.87)
	SPD 300W/B					
	SPD 480W	480W	24V - 48V			124.5 x 175.5 x 12.6 (4.9 x 6.91 x 4.87)
	SPD 480W/B					

## SPD Series, BI - THREE PHASE - standard DIN Rail mounting





Device	Output power	Available output voltages	Input VAC	Input VDC	Approvals	Dimensions L x W x D mm, (inch)
	SPD 100W/2	100W	12V - 24V - 48V		CE, TUV, cULus, Class I Div 2	90 x 54 x 14.4 (3.6 x 2.13 x 4.49)
	SPD 120W/3	120W				124 x 74.3 x 118.8 (4.88 x 2.92 x 4.68)
	SPD 240W/3	240W		340 - 575 340 - 820		124 x 89. x 118.8 (4.88 x 3.5 x 4.68)
	SPD 480W/3	480W	24V - 48V			124 x 150 x 118.8 (4.88 x 5.91 x 4.68)
	SPD 960W/3	960W				126.2 x 275.8 x 118.8 (4.97 x 10.86 x 4.68)

# Product selection tables

## SPDM / SPDC Series - Narrow DIN Rail mounting

Device	Output power	Available output voltages	Input VAC	Input VDC	Approvals	Dimensions L x W x D mm, (inch)
 SPDM 30 SPDM 30/B	24W / 30W	12V - 24V	85 - 264	120 - 375	CE, TUV, cULus, UL 1310 Cl. 2	90 x 100 x 22.5 (3.54 x 3.937 x 0.885)
 SPDM 50 SPDM 50/B	48W / 50W					90 x 100 x 30 (3.54 x 3.937 x 1.181)
 SPDM 75 SPDM 75/B	66W / 72W					90 x 100 x 40.50 (3.54 x 3.937 x 1.594)
 SPDM 120	120W	24V	90 - 264	127 - 370	CE	124 x 119 x 45 (4.88 x 4.69 x 1.77)
 SPDC 120		12V - 24V				124 x 119 x 32 (4.88 x 4.69 x 1.26)
 SPDC 240	240W	24V	85 - 264	127 - 375		124 x 119 x 45 (4.88 x 4.69 x 1.77)

## SPM Series - LOW profile DIN



Device	Output power	Available output voltages	Input VAC	Input VDC	Approvals	Dimensions L x W x D mm, (inch)
 SPM 1	7.5 - 10 - 10 - 10W	5V - 12V - 15V - 24V	90 - 264	120 - 375	CE, TUV, cULus, UL 1310 Cl2, Class I Div 2	91 x 18 x 56.5 (3.58 x 0.709 x 2.22)
 SPM 3	15 - 25 - 30 - 30W					91 x 52 x 55.5 (3.58 x 2.047 x 2.185)
 SPM 4	35 - 54 - 60 - 60W					91 x 71 x 56.5 (3.58 x 2.8 x 2.22)
 SPM 5	60 - 72 - 75 - 91W				CE, TUV, cULus, Class I Div 2	91 x 90 x 57 (3.58 x 3.54 x 2.24)
SPM 5 100W	100W					91 x 90 x 57 (3.58 x 3.54 x 2.24)

# Product selection tables

## SPPC Series - Enclosed type

Device	Output power	Available output voltages	Input VAC	Input VDC	Approvals	Dimensions L x W x D mm, (inch)
 SPPC 25W	25W	5V - 12V - 15V - 24V				79 x 51 x 28.8 (3.11 x 2 x 1.13)
 SPPC 35W	35W					101.6 x 63.5 x 33 (4 x 2.5 x 1.29)
 SPPC 50W	50W	5V - 12V - 15V - 24V - 48V				99 x 82 x 35 (3.89 x 3.22 x 1.37)
 SPPC 100W	100W					160 x 98 x 38 (6.29 x 3.85 x 1.49)
 SPPC 100W/F				127 - 370		194 x 99 x 50 (7.63 x 3.89 x 1.96)
 SPPC 150W/F	150W	12V - 15V - 24V - 48V	90 - 264			160 x 98 x 38 (6.29 x 3.85 x 1.49)
 SPPC 200W	200W	5V - 12V - 24V - 48V		120 - 370		
 SPPC 240W	240W	12V - 24V	85 - 264		CE, cURus	199 x 99 x 50 (7.83 x 3.89 x 1.96)
 SPPC 320W	320W	5V - 12V - 24V - 48V				
 SPPC 480W	480W	12V - 24V - 48V	90 - 264	127 - 370		226 x 116.5 x 41 (8.89 x 4.58 x 1.61)
 SPPC 600W	600W					
 SPPC 800W	800W	24V - 48V				

## Redundant modules

Device	Output power	Available output voltages	Input VAC	Input VDC	Approvals	Dimensions L x W x D mm, (inch)
 SPD RM	-	24	-		CE, TUV, cULus	90 x 54 x 114 (3.6 x 2.13 x 4.49)
 SPM RM	-	24	-	21 - 28	CE	91 x 35 x 56.55 (3.58 x 1.37 x 2.22)

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