Switching Power Supply Type SPD 120W New DIN rail mounting

- **Installation on DIN Rail 7.5 or 15mm**
- **Short circuit protection**
- **PFC standard**
- **High efficiency**
- **Power ready output**
- **LED indicator for DC power ON**
- **LED indicator for DC low**
- **Parallel versions standard**
- **Compact dimensions**
- **Specific model for UL 1310 class 2**
- **UL, cUL listed and TUV/CE approved**

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. Then version features PFC and parallel function as standard.

Approvals

Ordering Key

SP D 24120 1 B N

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

Input type: 1= single phase

Optional Features

Description	code
Standard screw terminal	Nil
Plug-in connectors	B

Output performances

Model	Rated output Voltage (VDC)	Output Power	Output Current (A)	Voltage Trim Range		DC on LED (VDC) Thereshold at startup		DC on LED (VDC) Thereshold after startup		Typical Efficiency
				Min. VDC	Max. VDC	Min.	Max.	Min.	Max.	
SPD12120	12	120	10	11.4	14.5	10	11.2	10	11.2	84%
SPD2490	24	92	3.8	22.5	24.5	17.6	19.4	17.0	19.4	85%
SPD24120	24	120	5	22.5	28.5	17.6	19.4	17.6	19.4	86%
SPD48120	48	120	2.5	45.0	55.0	37.0	43.0	37.0	43.0	87%

Output data

Output voltage accuracy adjusted	-0 +1% max (factory
Line regulation	± 0.5%
Load regulation	
Non parallel model	± 1%
Parallel model	± 5%
Temp. coefficient	± 0.3% / °C

Transient recovery time	300µs
Ripple and noise	50mVpp
Hold up Time Vi = 115Vac	25ms
Hold up time Vi = 230Vac	30ms
Minimum load	0%
Parallel Operation (Not available SPD2490)	3 units max.

Switching Power Supply
Type SPD 120W New
DIN rail mounting

CARLO GAVAZZI

Input data

Rated input voltage	115/230 autoselect	**Frequency range**	47- 63 Hz
Voltage range		**Inrush current**	
AC in, 115	90 - 132 Vac	Vi= 115Vac	24A
AC in, 230	186 - 264 Vac	Vi= 230Vac	48A
DC in	210 - 370 Vdc	**P.F.C.**	0.7
Rated input current	2.8 / 1.4A		
Rated input current SPD2490	2.0 / 0.8A		

Controls and Protections

Input Fuse	T3.15/250Vac internal*		
Overvoltage Protection	125 – 145%	**Power ready** (only SPD 24)	
Overvoltage Protection SPD2490	102 - 106%	Threshold at start up	17.6 - 19.4
Output Short Circuit	Current limited	(contact closed)	
		Contact rating at 60Vdc	0.3A
Rated Overload Protection	110 - 145%	insulation	500Vdc
Rated Overload Prot. SPD2490	102 - 108%		

* Not replaceable by user.

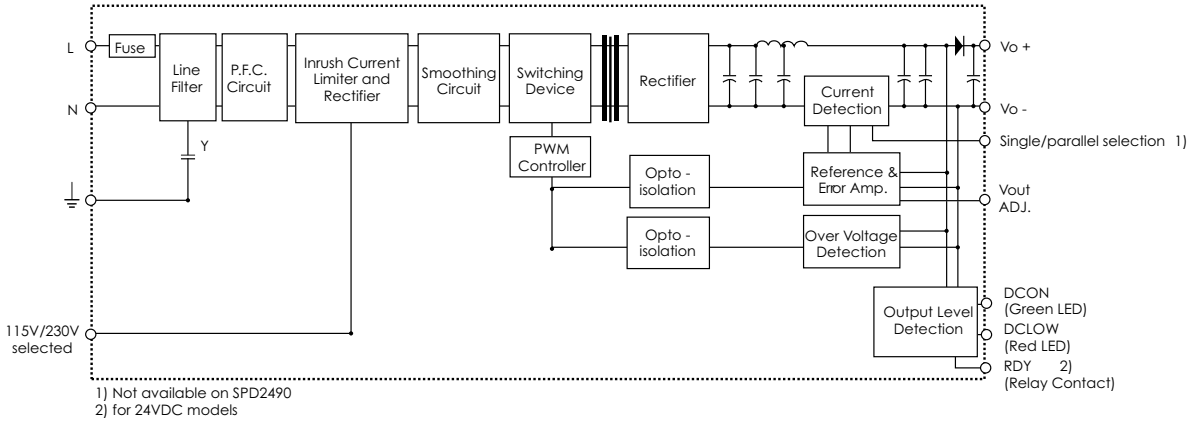
General data (@ nominal line, full load, 25°C)

Ambient temperature	-10°C to 71°C	**Switching frequency**	80kHz
Derating (>60°C to +71°C)	2.5% / °C	**MTBF (MIL-HDBK-217F)**	480.000h
Ambient humidity	20 to 95%RH	**Case material**	Metal (powder painted aluminium)
Storage	-25°C to +85°C	**Dimensions L x W x D**	125 x 63.5 x 126
Protection degree	IP20	**Weight**	920g
Cooling	Free air convection		

Approvals and EMC

Insulation voltage I / O	3.000Vac min	**CE**	EN50081-1
Insulation resistance	100Mohm min		EN55022 class B
UL / cUL	UL508 listed, UL60950-1		EN61000-3-2
	Recognised		EN61000-3-3
SPD2490 only	UL1310 class 2		EN61000-6-2
TUV	EN60950-1		EN61000-6-3
			EN55024

Block diagrams



1) Not available on SPD2490
2) for 24VDC models

Pin assignement and front controls

Pin No.	Designation	Description
1	**RDY** (only SPD 24)	DC OK, relay normally open contact
2	**RDY** (only SPD 24)	DC OK, relay normally open contact
3	**+**	Positive output terminal
4	**+**	Positive output terminal
5	**-**	Negative output terminal
6	**-**	Negative output terminal
7	**GND**	Ground terminal to minimise High frequency emissions
8	**L**	Phase input (no polarity with DC input)
9	**N**	Neutral input (no polarity with DC input)
	DC ON	DC output ready LED
	DC LO	DC low indicator LED
	Vout ADJ.	Trimmer for fine output voltage adjustment
	S/P	Single/parallel selection switch (Not available on SPD2490)

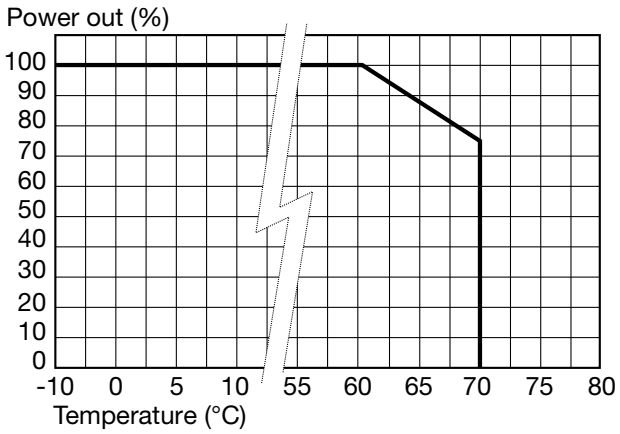
Installation

VENTILATION / COOLING:
- **Normal air convection**
- **25mm of free space along all sides to allow good cooling**

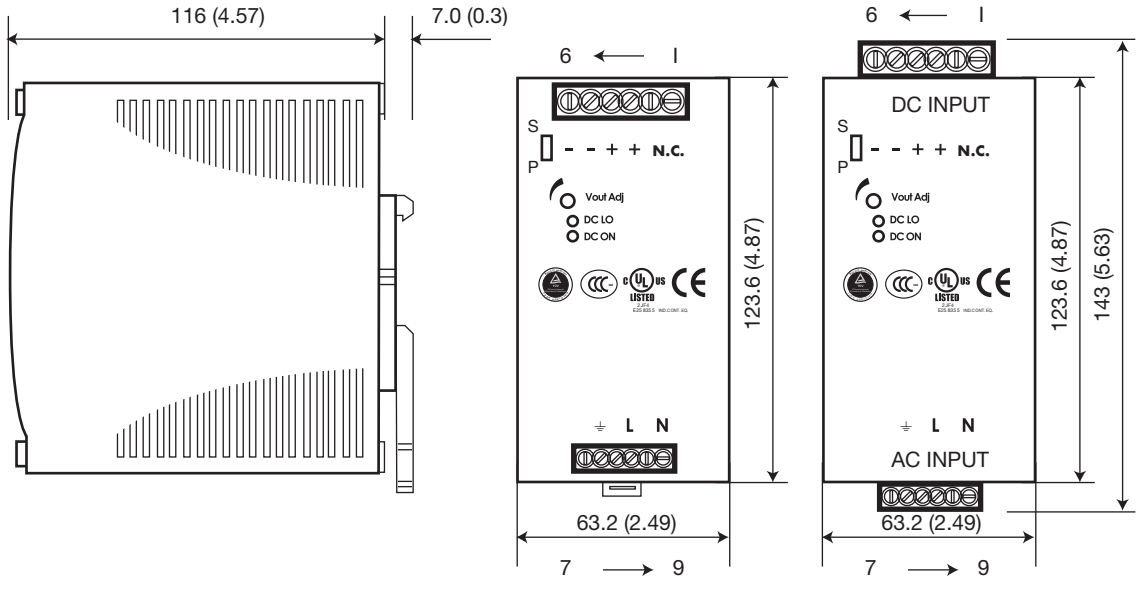
SCREW CONNECTIONS:
- **10-24AWG Flexible or solid cable. 8mm stripping recommended**

PLUG IN CONNECTORS:
- **10-24AWG Flexible or solid cable. 7mm stripping recommended**

Derating Diagram

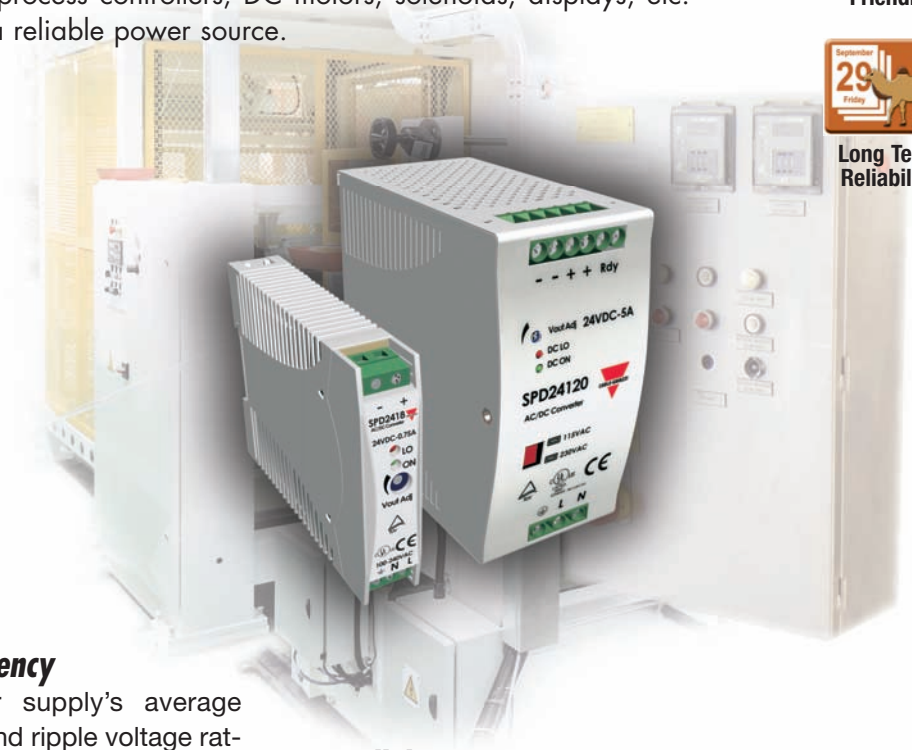


Mechanical Drawings mm (inches)



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, TUV 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.

c UL us LISTED · 2 Year Warranty · RoHS COMPLIANT · TÜV · CE

Ventilation Grid

Output Ready Terminals
Useful feature providing an electrical indication of good operation.

Output Terminals
Double terminals for each pole for easy parallel connection or to use smaller conductors.

Single/Parallel Switch
Selection of operation as a single power supply or in parallel with another one.

Vout Adjustment
Allows adjustment of output voltage within a small range to the required value.

'LO' LED
Indicates output voltage too low.

'ON' LED
Indicates power output is OK.

Model Number

Input Terminals
Also available with removable terminals and/or built in PFC function.

SPD 120W

- 120W Switching Power Supply
- Metal housing
- DIN rail mounting
- Screw terminals or detachable connectors
- Input voltage: 93-264VAC or 210-370VDC (115/230 selectable by switch)
- Available output voltages: 12, 24 and 48VDC
- Output voltage adjustment
- PFC function available on request
- Parallel function available on request (up to three power supplies)
- Short circuit protection and overload protection
- Front indication of Power 'OK' and 'Output Voltage Low'
- Relay output for power 'Ready' signal (voltage free terminals)
- Operating temperature without derating: –10° to +60°C

SPD 240W

- 240W Switching Power Supply
- Metal housing
- DIN rail mounting
- Screw terminals or detachable connectors
- Input voltage 93-264VAC or 210-370VDC (115/230 autoselect)
- Available output voltages 24 and 48VDC
- Output voltage adjustment
- PFC function standard
- Parallel function standard (up to three power supplies) selectable from front panel
- Short circuit protection, overvoltage and overload protection
- Front indication of Power 'OK' and 'Output Voltage Low'
- Relay Output for power 'Ready' signal (voltage free terminals)
- Operating temperature without derating: –10° to +60°C

Switching Power Supplies

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Part Number	Description	Vin *VAC	Vout VDC	Iout A
SPD 05 05 1	Switching Power Supply 5W, DIN Rail	100 - 240	5	1
SPD 05 05 1B	Switching Power Supply 5W, DIN Rail Spring terminals	100 - 240	5	1
SPD 12 05 1	Switching Power Supply 5W, DIN Rail	100 - 240	12	0.42
SPD 12 05 1 B	Switching Power Supply 5W, DIN Rail, Spring terminals	100 - 240	12	0.42
SPD 15 05 1	Switching Power Supply 5W, DIN Rail	100 - 240	15	0.34
SPD 15 05 1 B	Switching Power Supply 5W, DIN Rail, Spring terminals	100 - 240	15	0.34
SPD 24 05 1	Switching Power Supply 5W, DIN Rail	100 - 240	24	0.21
SPD 24 05 1 B	Switching Power Supply 5W, DIN Rail, Spring terminals	100 - 240	24	0.21
SPD 05 10 1	Switching Power Supply 10W, DIN Rail	100 - 240	5	2
SPD 05 10 1 B	Switching Power Supply 10W, DIN Rail, Spring terminals	100 - 240	5	2
SPD 12 10 1	Switching Power Supply 10W, DIN Rail	100 - 240	12	0.84
SPD 12 10 1 B	Switching Power Supply 10W, DIN Rail, Spring terminals	100 - 240	12	0.84
SPD 15 10 1	Switching Power Supply 10W, DIN Rail	100 - 240	15	0.67
SPD 15 10 1 B	Switching Power Supply 10W, DIN Rail, Spring terminals	100 - 240	15	0.67
SPD 24 10 1	Switching Power Supply 10W, DIN Rail	100 - 240	24	0.42
SPD 24 10 1 B	Switching Power Supply 10W, DIN Rail, Spring terminals	100 - 240	24	0.42
SPD 05 18 1	Switching Power Supply 15W, DIN Rail	100 - 240	5	3
SPD 05 18 1 B	Switching Power Supply 15W, DIN Rail, Spring terminals	100 - 240	5	3
SPD 12 18 1	Switching Power Supply 18W, DIN Rail	100 - 240	12	1.5
SPD 12 18 1 B	Switching Power Supply 18W, DIN Rail, Spring terminals	100 - 240	12	1.5
SPD 15 18 1	Switching Power Supply 18W, DIN Rail	100 - 240	15	1.2
SPD 15 18 1 B	Switching Power Supply 18W, DIN Rail, Spring terminals	100 - 240	15	1.2
SPD 24 18 1	Switching Power Supply 18W, DIN Rail	100 - 240	24	0.75
SPD 24 18 1 B	Switching Power Supply 18W, DIN Rail, Spring terminals	100 - 240	24	0.75
SPD 05 30 1	Switching Power Supply 30W, DIN Rail	100 - 240	5	6
SPD 05 30 1 B	Switching Power Supply 30W, DIN Rail, Spring terminals	100 - 240	5	6
SPD 12 30 1	Switching Power Supply 30W, DIN Rail	100 - 240	12	2.5
SPD 12 30 1 B	Switching Power Supply 30W, DIN Rail, Spring terminals	100 - 240	12	2.5
SPD 24 30 1	Switching Power Supply 30W, DIN Rail,	100 - 240	24	1.25
SPD 24 30 1 B	Switching Power Supply 30W, DIN Rail, Spring terminals	100 - 240	24	1.25
SPD 48 30 1	Switching Power Supply 30W, DIN Rail,	100 - 240	48	0.625
SPD 48 30 1 B	Switching Power Supply 30W, DIN Rail, Spring terminals	100 - 240	48	0.625
SPD 05 60 1	Switching Power Supply 50W, DIN Rail	100 - 240	5	10
SPD 05 60 1 B	Switching Power Supply 50W, DIN Rail, Spring terminals	100 - 240	5	10
SPD 12 60 1	Switching Power Supply 60W, DIN Rail	100 - 240	12	5
SPD 12 60 1 B	Switching Power Supply 60W, DIN Rail, Spring terminals	100 - 240	12	5
SPD 24 60 1	Switching Power Supply 60W, DIN Rail	100 - 240	24	2.5
SPD 24 60 1 B	Switching Power Supply 60W, DIN Rail, Spring terminals	100 - 240	24	2.5
SPD 48 60 1	Switching Power Supply 60W, DIN Rail	100 - 240	48	1.25
SPD 48 60 1 B	Switching Power Supply 60W, DIN Rail, Spring terminals	100 - 240	48	1.25
SPD 12 120 1	Switching Power Supply 120W, DIN Rail	100 - 240	12	10
SP D 12 120 1 F	Switching Power Supply 120W, DIN Rail,	100 - 240 with PFC	12	10
SP D 12 120 1 P	Switching Power Supply 120W, DIN Rail, with Parallel function	100 - 240	12	10
SP D 12 120 1 FP	Switching Power Supply 120W, DIN Rail, with PFC and Parallel function	100 - 240	12	10

Part Number	Description	Vin *VAC	Vout VDC	Iout A
SP D 12 120 1 B	Switching Power Supply 120W, DIN Rail, Removable connectors	100 - 240	12	10
SPD 12 120 1 BF	Switching Power Supply 120W, DIN Rail, Removable connectors and PFC	100 - 240	12	10
SPD 12 120 1 BP	Switching Power Supply 120W, DIN Rail, Removable connectors and Parallel function	100 - 240	12	10
SPD 12 120 1 BFP	Switching Power Supply 120W, DIN Rail, Removable connectors, PFC and Parallel function	100 - 240	12	10
SPD 24 120 1	Switching Power Supply 120W, DIN Rail	100 - 240	24	5
SPD 24 120 1 F	Switching Power Supply 120W, DIN Rail,	100 - 240 with PFC	24	5
SPD 24 120 1 P	Switching Power Supply 120W, DIN Rail, with Parallel function	100 - 240	24	5
SPD 24 120 1 FP	Switching Power Supply 120W, DIN Rail, with PFC and Parallel function	100 - 240	24	5
SPD 24 120 1 B	Switching Power Supply 120W, DIN Rail, Removable connectors	100 - 240	24	5
SPD 24 120 1 BF	Switching Power Supply 120W, DIN Rail, Removable connectors and PFC	100 - 240	24	5
SPD 24 120 1 BP	Switching Power Supply 120W, DIN Rail, Removable connectors and Parallel function	100 - 240	24	5
SPD 24 120 1 BFP	Switching Power Supply 120W, DIN Rail, Removable connectors, PFC and Parallel function	100 - 240	24	5
SPD 48 120 1	Switching Power Supply 120W, DIN Rail	100 - 240	48	2.5
SPD 48 120 1 F	Switching Power Supply 120W, DIN Rail,	100 - 240 with PFC	48	2.5
SPD 48 120 1 P	Switching Power Supply 120W, DIN Rail, with Parallel function	100 - 240	48	2.5
SPD 48 120 1 FP	Switching Power Supply 120W, DIN Rail, with PFC and Parallel function	100 - 240	48	2.5
SPD 48 120 1 B	Switching Power Supply 120W, DIN Rail, Removable connectors	100 - 240	48	2.5
SPD 48 120 1 BF	Switching Power Supply 120W, DIN Rail, Removable connectors and PFC,	100 - 240	48	2.5
SPD 48 120 1 BP	Switching Power Supply 120W, DIN Rail, Removable connectors and Parallel function,	100 - 240	48	2.5
SPD 48 120 1 BFP	Switching Power Supply 120W, DIN Rail, Removable connectors, PFC and Parallel function	100 - 240	48	2.5
SPD 24 240 1	Switching Power Supply 240W, DIN Rail, PFC and Parallel function	100 - 240	24	10
SPD 24 240 1 B	Switching Power Supply 240W, DIN Rail, Removable connectors, PFC and Parallel function	100 - 240	24	10
SPD 48 240 1	Switching Power Supply 240W, DIN Rail, PFC and Parallel function	100 - 240	48	5
SPD 48 240 1 B	Switching Power Supply 240W, DIN Rail, Removable connectors, PFC and Parallel function	100 - 240	48	5
SPD 24 480 1	Switching Power Supply 480W, DIN Rail, PFC and Parallel function	100 - 240	24	20
SPD 24 480 1B	Switching Power Supply 480W, DIN Rail, Removable connector, PFC and Parallel function	100 - 240	24	20
SPD 48 480 1	Switching Power Supply 480W, DIN Rail, PFC and Parallel function	100 - 240	48	10
SPD 48 480 1B	Switching Power Supply 480W, DIN Rail, Removable connector, PFC and Parallel function	100 - 240	48	10

* Approximate AC supply voltage is 100-240VAC. However, they can also be powered by lower and higher AC voltages and also DC Voltages.
See datasheet for more accurate specifications.