# 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**
- **UL, cUL listed and TUV/CE approved**
- **Class I Div 2 Groups A, B, C, D 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.

## Ordering Key

**SP D 24 120 1 B N**

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

**Input type:** 1= single phase

## Approvals

## Optional Features

| Description | Code |
|---|---|
| Standard screw terminal | Nil |
| Plug-in connectors | B |

## Output Performances

| Model | Rated output Voltage (VDC) | Output Power (W) | Output Current (A) | Voltage Trim Range | | DC ON LED (VDC) Thereshold at start-tup | | DC LO 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% |
| **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** | - 0 +1% max (factory adjusted) |
| **Line regulation** | ± 0.5% |
| **Load regulation**<br>Non parallel mode<br>Parallel mode | <br>± 1%<br>± 5% |
| **Temp. coefficient** | ± 0.03% / °C |
| **Transient recovery time** | 2ms |

| | |
|---|---|
| **Ripple and noise**<br>Vi nom, Io nom BW = 20Mhz | 50mVpp |
| **Hold up Time Vi = 115VAC**<br>**Hold up time Vi = 230VAC** | 25ms<br>30ms |
| **Minimum load** | 0% |
| **Parallel Operation** | 3 units max. |

## Input Data

| | |
|---|---|
| **Rated input voltage** | 115/230VAC autoselect |
| **Voltage range** | |
| AC in, 115 | 90 - 132VAC |
| AC in, 230 | 180 - 264VAC |
| DC in | 210 - 370VDC |
| **Rated input current** | 2.2 / 0.83A |
| **Input current** | Vi 90 / 180 VAC |
| 2.8 / 1.4A max | |

| | |
|---|---|
| **Frequency range** | 47- 63 Hz |
| **Inrush current** | |
| Vi= 115VAC | 24A |
| Vi= 230VAC | 48A |
| **P.F.C.** | |
| Passive 230VAC Io nom | 0.7 |
| **Leakage current** | |
| Input-Output | 0.25mA Max. |
| Input-Fg | 3.5mA Max. |

## Controls and Protections

| | |
|---|---|
| **Input Fuse** | T3.15/250VAC internal[1)] |
| **Overvoltage Protection** | |
| Vi nom 0.8 Ionom | 30 - 33VDC |
| **Output Short Circuit** | Current limited |

| | |
|---|---|
| **Rated Overload Protection** | 110 - 145% |
| **Power ready** (only SPD 24) | |
| Threshold at start up (contact closed) | 17.6 - 19.4VDC |
| Contact rating at 60VDC | 0.3A |
| Insulation | 500VDC |

[1)] Fuse not replaceable by user

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

| | |
|---|---|
| **Ambient temperature** | -35°C to 71°C |
| **Derating (>60°C to +71°C)** | 2.5% / °C |
| **Ambient humidity** | 20 to 95%RH |
| **Storage temperature** | -40°C to +85°C |
| **Protection degree** | IP20 |
| **Cooling** | Free air convection |
| **Switching frequency** | 55kHz |
| **MTBF (MIL-HDBK-217F)** | 450.000h |

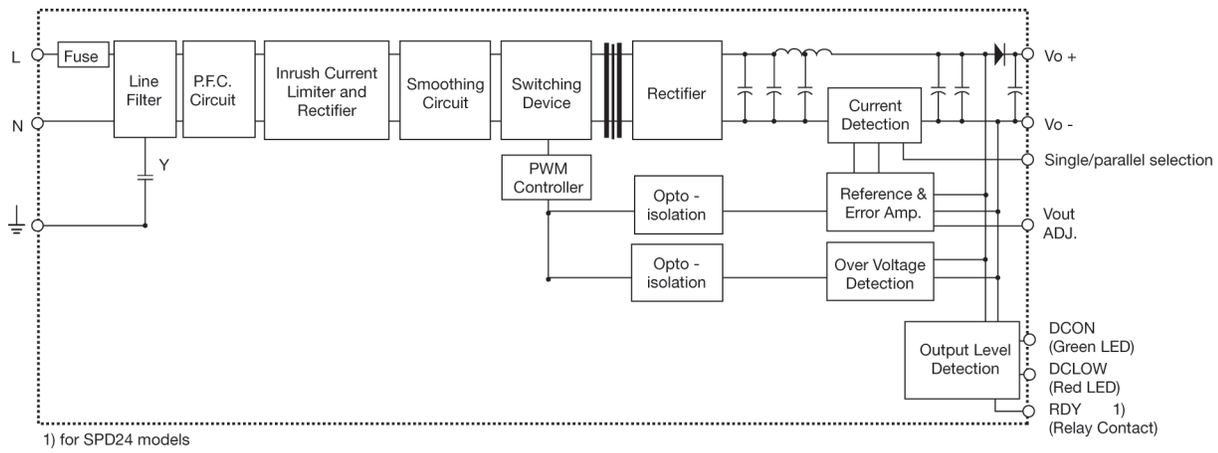
| | |
|---|---|
| **Case material** | Metal (powder painted aluminium) |
| **Dimensions L x W x D** | |
| Screw terminal type | 124.5 x 64 x 126 |
| Detachable connector type | 143.5 x 64 x 126 |
| **Weight** | 920g |

## Approvals and EMC

| | |
|---|---|
| **Insulation voltage I / O** | 3.000VAC min |
| **Insulation resistance** | 100MΩ min |
| **UL / cUL** | UL508 listed, UL60950-1 Recognized |
| **TUV** | EN60950-1 |
| **ISA** | 12.12.01 Class I Div 2 Groups A, B, C, D |

| | |
|---|---|
| **CE** | EN50081-1<br>EN55022 class B<br>EN61000-3-2<br>EN61000-3-3<br>EN61000-6-2<br>EN61000-6-3<br>EN55024 |

## Block Diagrams




1) for SPD24 models

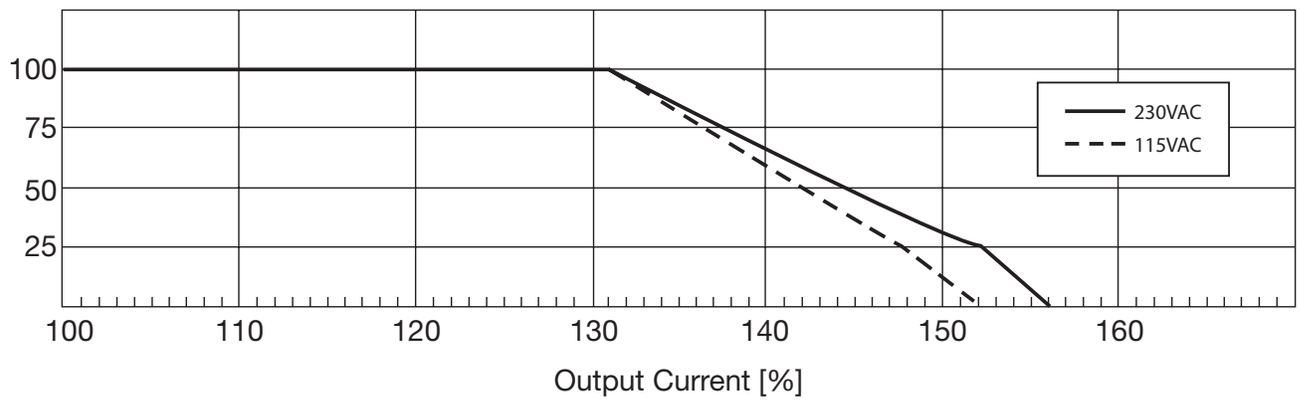
## Pin Assignement and Front Controls

| Pin No. | Designation | Description |
|---|---|---|
| 1 | RDY | DC OK, relay normally open contact |
| 2 | RDY | DC OK, relay normally open contact |
| 3 | + | Positive output terminal |
| 4 | + | Positive output terminal |
| 5 | - | Negative output terminal |
| 6 | - | Ground terminal to minimise High frequency emissions |
| 7 | GND | Negative output terminal |
| 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 |

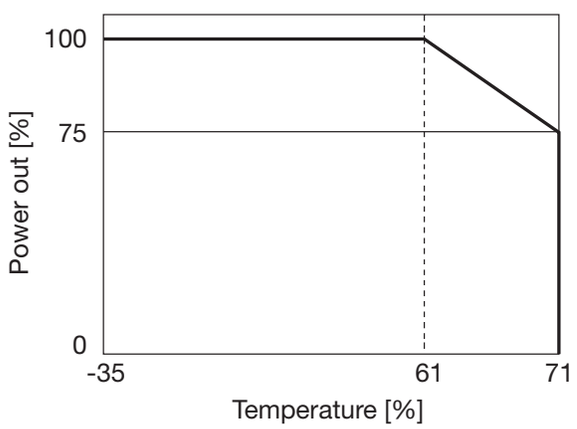
## Installation

| | |
|---|---|
| **Ventilation and cooling** | Normal convection<br>All sides 25mm free space for cooling is recommended |
| **Screw terminals** | 10-24AWG flexible or solid cable<br>8mm stripping recommend |
| **Max. torque for screws terminals** | |
| Input terminals | 1.008Nm (9.0lb-in) |
| Output terminals | 0.616Nm (5.5lb-in) |
| **Plug-in connectors** | 10-24AWG flexible or solid cable<br>7mm stripping recommend |
| **Max. torque for plug-in terminals** | |
| Input terminals | 0.784Nm (7.0lb-in) |
| Output terminals | 0.784Nm (7.0lb-in) |

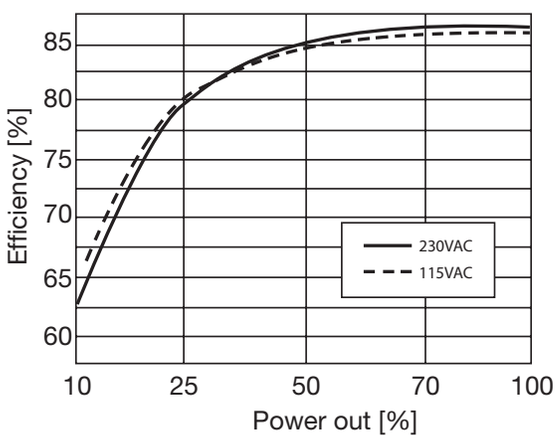
## Typ. Current Limited Curve




## Derating Diagram




## Typ. Efficiency Curve




## Mechanical Drawings mm (inches)