

# Switching Power Supply Type SPD 120W DIN rail mounting

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- Installation on DIN Rail 7.5 or 15mm
- Short circuit protection
- PFC available
- High efficiency
- Power ready output
- LED indicator for DC power ON
- LED indicator for DC low
- Parallel versions available
- Compact dimensions
- 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.

## Ordering Key

**SPD 24 120 1 BFP**

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     | Bxx  |
| With P.F.C.            | xFx  |
| With Parallel function | xxP  |

## Output performances

| Model | Rated output Voltage (VDC) | Output Current (A) | Voltage Trim Range <sup>1)</sup> |          | DC on LED (VDC) |      | DC low LED (VDC) |      | Typical Efficiency |
|-------|----------------------------|--------------------|----------------------------------|----------|-----------------|------|------------------|------|--------------------|
|       |                            |                    | Min. VDC                         | Max. VDC | Min.            | Max. | Min.             | Max. |                    |
| SPD12 | 12                         | 10                 | 11.4                             | 14.5     | 10              | 11   | 10               | 11.2 | 84%                |
| SPD24 | 24                         | 5                  | 22.5                             | 30       | 21              | 22   | 20.5             | 22.5 | 86%                |
| SPD48 | 48                         | 2.5                | 45                               | 55       | 42              | 44   | 41               | 45   | 87%                |

## Output data

|                                |             |                                 |                        |
|--------------------------------|-------------|---------------------------------|------------------------|
| <b>Output voltage accuracy</b> | ± 1% max    | <b>Output Voltage accuracy</b>  | +1% (factory adjusted) |
| <b>Line regulation</b>         | ± 0.5%      | <b>Temperature coefficient</b>  | ± 0.3%/°C              |
| <b>Load regulation</b>         |             | <b>Hold up Time Vi = 115Vac</b> | 25ms                   |
| Non parallel model             | ± 1%        | <b>Hold up time Vi = 230Vac</b> | 30ms                   |
| Parallel model                 | ± 5%        | <b>Minimum load</b>             | 5%                     |
| <b>Temp. coefficient</b>       | ± 0.3% / °C | <b>Parallel Operation</b>       | 3 units max.           |
| <b>Transient recovery time</b> | 300µs       | (only specific models)          |                        |
| <b>Ripple and noise</b>        | 50mVpp      |                                 |                        |

1)N.A. on parallel model. Output voltage is fixed in house, cannot be trimmed by user.

Specifications are subject to change without notice



## Input data

|                                 |                    |                          |           |
|---------------------------------|--------------------|--------------------------|-----------|
| <b>Rated input voltage</b>      | 115/230 selectable | <b>Frequency range</b>   | 47- 63 Hz |
| <b>Voltage range</b>            |                    | <b>Inrush current</b>    |           |
| AC in, 115 selected             | 93 - 132 Vac       | Vi= 115Vac               | 24A       |
| AC in, 230 selected             | 186 - 264 Vac      | Vi= 230Vac               | 48A       |
| DC in, <b>only 230 selected</b> | 210 - 370 Vdc      | <b>P.F.C. (optional)</b> | 0.7       |

## Controls and Protections

|                                  |                      |   |                |
|----------------------------------|----------------------|---|----------------|
| <b>Input Fuse</b>                | T4A/250Vac internal* | <b>Power ready (only SPD 24)</b>        |                |
| <b>Overvoltage Protection</b>    | 125 - 145%           | Threshold at start up (contact closed)  | 21.1-23.1      |
| <b>Output Short Circuit</b>      | Current limited      | Threshold after start up (contact open) | 20.6-19.0      |
| <b>Rated Overload Protection</b> | 105-125%             | Contact rating at 60Vdc insulation      | 0.3A<br>500Vdc |

\* Not replaceable by user.

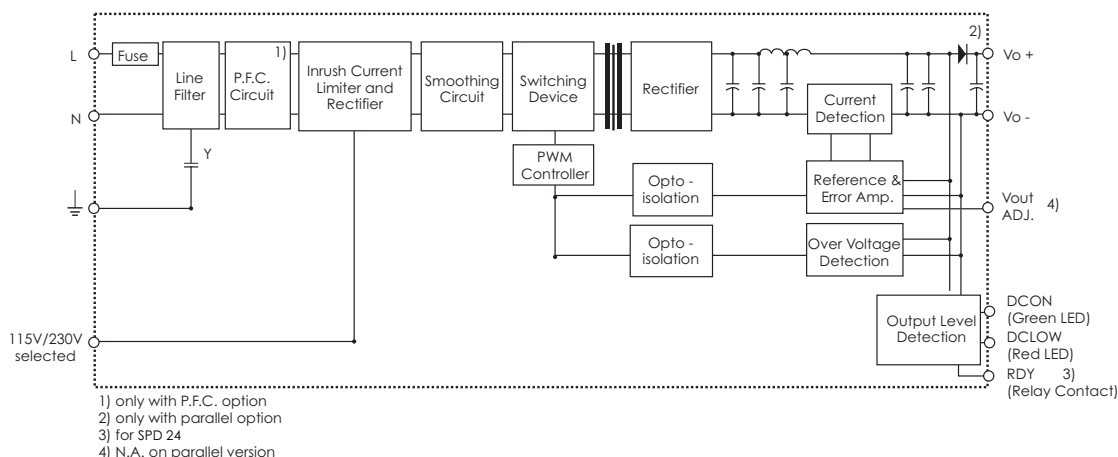
## General data (@ nominal line, full load, 25°C )

|                                     |                |                             |                                  |
|-------------------------------------|----------------|-----------------------------|----------------------------------|
| <b>Ambient temperature</b>          | -10°C to 71°C  | <b>Cooling</b>              | Free air convection              |
| <b>Derating (&gt;60°C to +71°C)</b> | 2.5% / °C      | <b>Switching frequency</b>  | 80kHz                            |
| <b>Ambient humidity</b>             | 20 to 95%RH    | <b>MTBF (MIL-HDBK-217F)</b> | 480.000h                         |
| <b>Storage</b>                      | -25°C to +85°C | <b>Case material</b>        | Metal (powder painted aluminium) |
| <b>Protection degree</b>            | IP20           | <b>Dimensions L x W x D</b> | 125 x 63.5 x 126                 |
|                                     |                | Without P.F.C.              | 640g                             |
|                                     |                | With P.F.C.                 | 860g                             |

## Approvals and EMC

|                                 |                                     |           |  |
|---------------------------------|-------------------------------------|-----------|--|
| <b>Insulation voltage I / O</b> | 3.000Vac min                        | <b>CE</b> | EN50081-1<br>EN55022 class B<br>EN61000-3-2<br>EN61000-3-3<br>EN50082-1<br>EN55024 |
| <b>Insulation resistance</b>    | 100Mohm min                         |           |  |
| <b>UL / cUL</b>                 | UL508 listed, UL60950-1, Recognised |           |  |
| <b>TUV</b>                      | EN60950                             |           |  |

## Block diagrams



## 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           |
|         | 115/230           | Input voltage selection switch                       |

## Installation

### VENTILATION / COOLING:

- Normal air convection
- 25mm of free space along all sides to allow good cooling

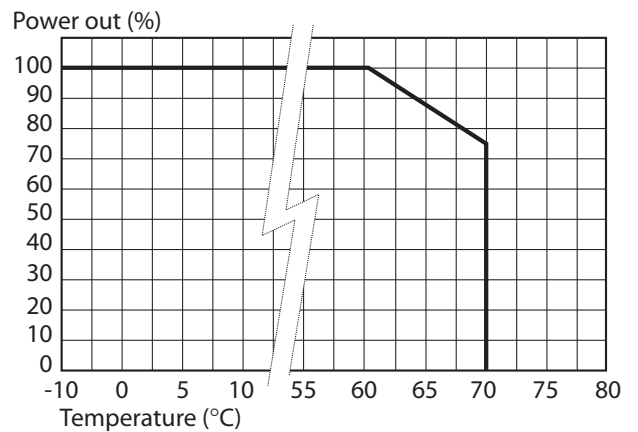
### SCREW CONNECTIONS:

- 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

