

Switching Power Supply Type SPD 18W DIN rail mounting

CARLO GAVAZZI



- Universal AC input full range
- Installation on DIN rail 7.5 or 15mm
- Short circuit protection
- Overload protection
- High efficiency
- LED indicator for DC power ON
- LED indication for DC low
- Internal input filter
- CE, TUV approved and cULus Listed

Product Description

The Switching power supplies and compact dimensions and performance are a must. designed to be used in all automation application where the installation is on a DIN rail

Ordering Key

SP D 24 18 1 B

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

Input type: 1= single phase

Approvals



UL US C **UL** US C **UL** US
 Class I, Div 2 UL 1310 UL 60950-1

Optional Features

| Description | Code |
|-------------------|------|
| Spring connectors | B |

Output performances

| MODEL NO. | INPUT VOLTAGE | OUTPUT WATTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT | EFF. (min.) | EFF. (typ.) |
|-----------------------------|---------------|----------------|----------------|----------------|-------------|-------------|
| Single Output Models | | | | | | |
| SPD05 | 90~264 VAC | 15 WATTS | + 5 VDC | 3000 mA | 73% | 75% |
| SPD12 | 90~264 VAC | 18 WATTS | +12 VDC | 1500 mA | 75% | 77% |
| SPD15 | 90~264 VAC | 18 WATTS | +15 VDC | 1200 mA | 75% | 77% |
| SPD24 | 90~264 VAC | 18 WATTS | +24 VDC | 750 mA | 75% | 77% |

Output data

| | | | | | |
|--|------------|--------------------------|------------------------------|--------------------------------|--|
| Line regulation | ± 1% | Rated continuous loading | 5V Model | 3A @ 5VDC/2.6A @ 5.75VDC | |
| Load regulation | ± 2% | | 12V Model | 1.5A @ 12VDC/1.3A @ 13.8VDC | |
| Minimum load | 0 | 15V Model | 1.2A @ 15VDC/1.0A @ 17.25VDC | Reverse voltage | |
| Turn on time (full resistive load) | 1000ms | 24V Model | 0.75A @ 24VDC/0.6A @ 28.8VDC | | |
| Vi nom, Io nom with 7000µF CAP | 1500ms | Capacitor load | 7000µF | | |
| Transient recovery time | 2ms | | Voltage rise time | 150ms | |
| Ripple and noise | 50mVpp | | | 500ms | |
| Output voltage accuracy | ± 1% | | | Vi nom, Io nom with 7000µF CAP | |
| Temperature coefficient | ± 0.03%/°C | | | | |
| Hold up time Vi= 115VAC | 20ms | | | | |
| Vi= 230VAC | 75ms | | | | |
| Voltage fall time (I _o nom) | 150ms max | | | | |

Input data

| | | | |
|---|---|---|--|
| Rated input voltage | 100 - 240VAC | Power dissipation (Vi : 230VAC, Io nom) | 5V Model 5.0W 12V Model 4.65W 15V Model 4.25W 24V Model 4.45W |
| Voltage range | AC 90 - 264VAC DC 120 - 375VDC | Frequency range | 47- 63Hz |
| Rated input current Vi: 115VAC, Io nom | 335-500mA | Leakage current | Input-Output 0.25mA Input-FG 3.5mA |
| Inrush current | Vi= 115VAC 10A Vi= 230VAC 18A | | |

Controls and Protections

| | | | |
|--|---|---|-------------|
| Overload | 110 – 140% | Output Short Circuit | Hiccup mode |
| Input Fuse Overvoltage Protection | T2A/250VAC internal ¹⁾ 125 – 145% | Internal surge voltage protection (IEC 61000-4-5) | Varistor |

¹⁾ Fuse not replaceable by user

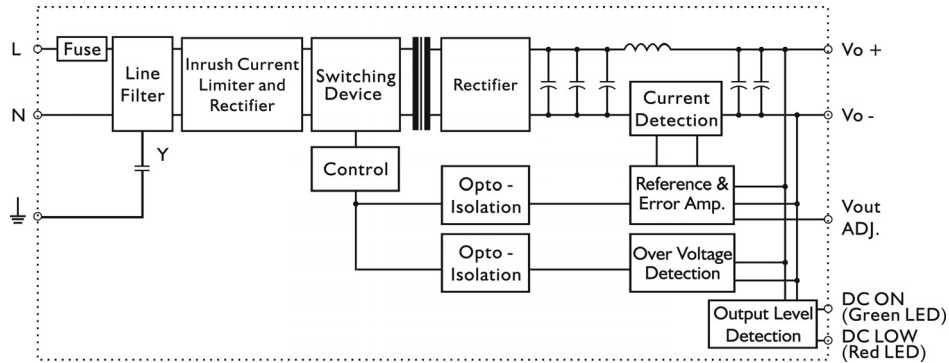
General data (@ nominal line, full load, 25°C)

| | | | |
|-------------------------------------|--|---|---|
| Ambient temperature | -20°C to 71°C | MTBF (Bellcore issue 6 @ 40°C, GB) | 5V Model 795000 Hours 12V Model 797000 Hours 15V Model 796000 Hours 24V Model 800000 Hours |
| Derating (>61°C to +71°C) | 2.5%/°C | Case material | Plastic: PC, UL94-V0 |
| Ambient humidity | 20 ~ 95%RH | Pollution degree | 2 |
| Storage | -25°C to +85°C | Altitude | 2000m |
| Protection degree | IP20 | Dimensions LxWxD mm(inch) | 90(3.60)x22.5(0.89)x114(4.49) |
| Cooling | Free air convection | Weight | 150g |
| Insulation voltage | Input-Output 3.000VAC/4242VDC min Input-FG 1.500VAC/2121VDC min | | |
| Insulation resistance I/O | 100MΩ min (@ 500VDC) | | |


Norms and Standards

| | | | |
|-----------------------------|--|-----------|--|
| Vibration resistance | meet IEC 60068-2-6 (Mounting by rail: 10-500Hz, 2G, along X, Y, Z each Axis, 60 min for each Axis) | CE | EN 61000-6-3, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 55024, EN 61000-4-2 Level 4, EN 61000-4-3 Level 3, EN 61000-4-4 Level 4, EN 61000-4-5 L-N Level 3, L/N-FG Level 4, EN 61000-4-6 Level 3, EN 61000-4-8 Level 4, EN 61000-4-11, ENV 50204 Level 2, EN 61204-3 |
| Shock resistance | meet IEC 60068-2-27 (15G, 11ms, 3 Axis, 6 faces, 3 times for each face) | | |
| UL / cUL | UL508 listed, UL60950-1, UL1310 Class 2 Power (only 5V, 12V w/o Class 2) Recognized, ISA 12.12.01 (Class 1, Division 2, Groups A, B, C and D) | | |
| TUV | EN 60950-1, CB scheme | | |
| CCC | GB4943, GB9254, GB17625.1 | | |

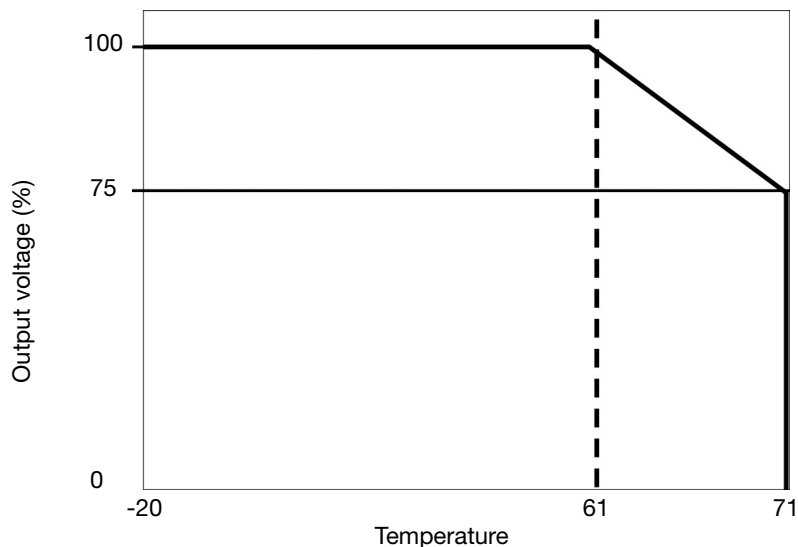
Block diagrams



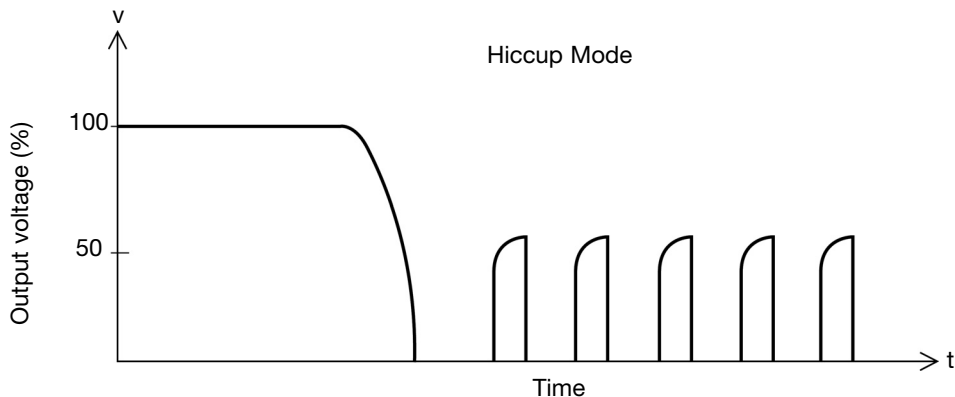
Pin Assignment and Front Controls

| Pin No. | Designation | Description |
|---------|---|--|
| 1 | V+ | Positive output terminal |
| 2 | V- | Negative output terminal |
| 3 |  | Ground this terminal to minimize high-frequency emission |
| 4 | N | Input terminals (neutral conductor, no polarity at DC input) |
| 5 | L | Input terminals (phase conductor, no polarity at DC input) |
| | ON | Operation indicator LED |
| | LO | DC LOW indicator LED |
| | Vout ADJ. | Trimmer-potentiometer for Vout adjustment |

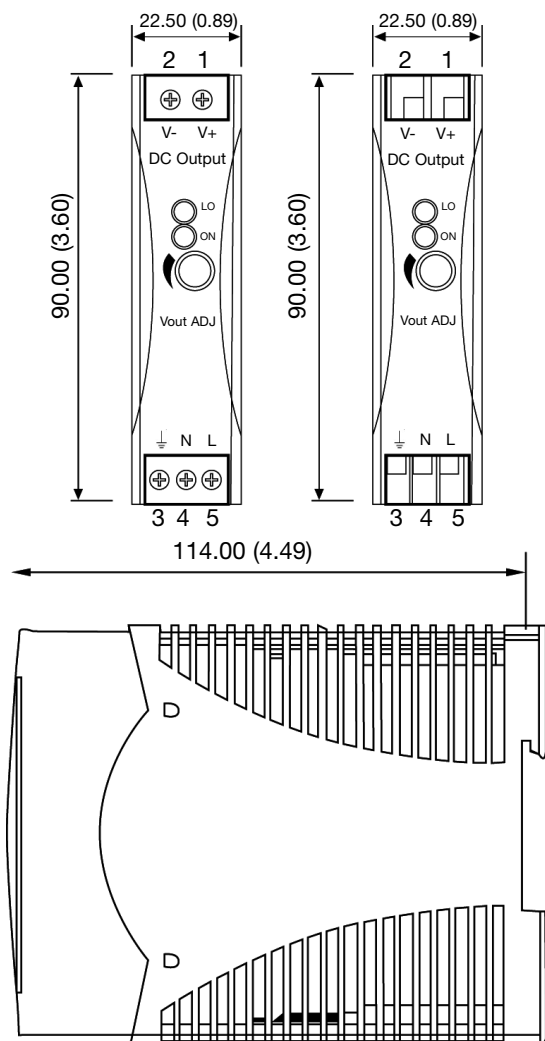
Derating Diagram



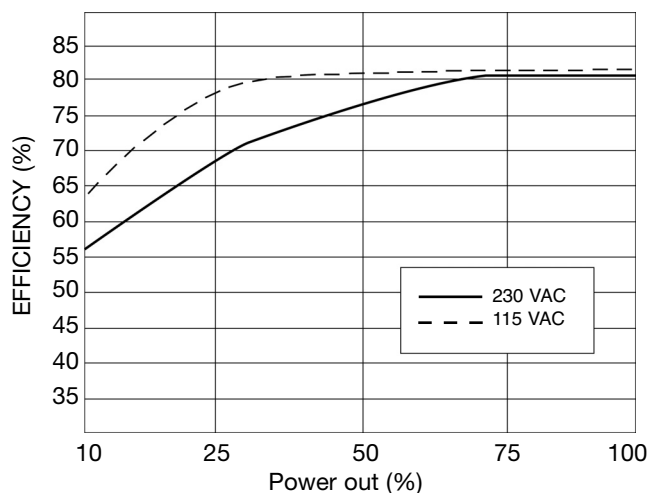
Typ. Current Limited Curve



Mechanical Drawings mm (inches)



Typ. Efficiency Curve



Installation

| | |
|-------------------------------------|--|
| Ventilation and cooling | Normal convection All sides 25mm free space for cooling is recommended |
| Connector size range | AWG24-14 (0.2~2mm ²) flexible/solid cable, 10mm stripping at cable and recommends use copper conductors only, 60/75°C |
| Spring terminal | |
| Screw terminal | AWG26-12 (0.2~2.5mm ²) flexible/solid cable, connector can withstand torque at max 0,56Nm (5 lbs-in). 4~5 mm stripping at cable and recommends use copper conductors only, 60/75°C |
| Max. torque for terminal | |
| Input terminals | 0.56Nm (5.0lb-in) |
| Output terminals | 0.56Nm (5.0lb-in) |
| General tolerances mm(in.) | |
| 0.00 (0.00) ÷ 30.00 (1.18) | ±0.30 (0.01) |
| 30.00 (1.18) ÷ 120.00 (4.72) | ±0.50 (0.02) |