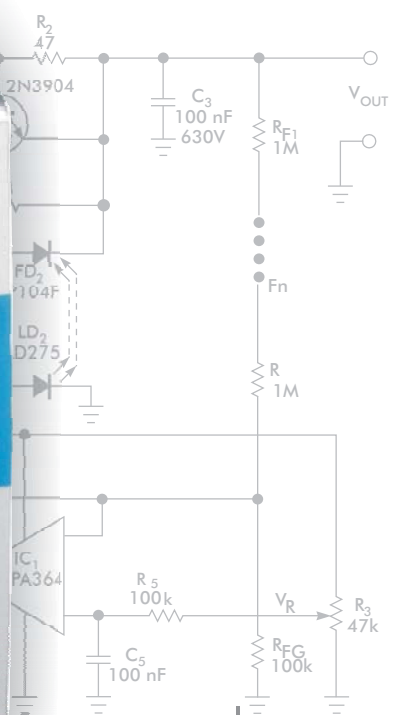


made
in
Germany

Data Sheet
Switching Power Supply . Single Phase

Switched-Mode Power Supply (SMPS)



| | |
|----------------------------------|---|
| Input | Single-Phase. 115 Vac - 230 Vac |
| Output | 12 Vdc 60°C |
| Efficiency | Up to 91% Up to 50% |
| Power Continuity | Strong Overload Without Switch-Off From 240 W to 336 W - Flexible "Power Good" Relay |
| Three Mode of Output Protections | <ol style="list-style-type: none"> 1) Manual Reset 2) Hiccup Mode 3) Continuous Out Mode |
| Installation | DIN Rail Mountable |
| Size | Extremely Small Size |
| Warranty | 3 Year |

PS1-1216
12 VDC - 16 A



Features

Input Data

| | |
|---|---|
| Nominal Input Voltage (2 x Vac) | 115 Vac - 230 Vac |
| Manual Select Input From 115 V to 230 V | |
| Input Voltage range (Vac) | 90 Vac to 135 Vac (115 Vac) 180 Vac to 264 Vac (230 Vac) |
| Inrush Current (Vn and In Load) I^2T | $\leq 16 \text{ A} \leq 5 \text{ msec.}$ |
| Frequency | 47 Hz to 63 Hz $\pm 6\%$ |
| Input Current (115 - 230 Vac) | 3.3 A - 2.2 A |
| Internal Fuse | T 6.3 A |
| External Fuse (recommended) | 16 A (MCB Curve B) |

Output Data

| | |
|--|---|
| Output Voltage (Vn) Factory Setting $\pm 3\%$ | 12 Vdc |
| Adjustment Range (Vadj) | 10 Vdc to 14 Vdc |
| Start Up with Strong Load (Capacitive Load) | $\leq 50.000\mu\text{F}$ |
| Turn-On Delay After Applying Mains Voltage | 1 sec. (Max) |
| Rated Current at 12 V 40 °C (In) | 16 A (Permanent) |
| Rated Current at 12 V 50 °C (In) | 15 A (Permanent) |
| Rated Current at 12 V 60 °C (In) | 14 A (Permanent) |
| Power Boost Current at 12 Vdc 60 °C (In) | $I_n (60^\circ\text{C}) \times 1.5 \geq 3 \text{ min.}$ |
| Current Max. Overload $\cong 4 \text{ Vdc}$ (Permanent) | $I_{max} = I_n 60^\circ\text{C} \times (1.8 - 2.2)$ |
| Current Short Circuit (Icc) | |
| Max 2 sec.: Hiccup Mode | 30 A |
| Permanent: Continuous Mode | |
| Hold-up Time (Min. Vac) 12 Vdc 5A | Typ. 20 msec |
| Residual Ripple | $\leq 80 \text{ mV}_{pp}$ |
| Efficiency | $\geq 91 \%$ |
| Over Temperature Protection | Yes. Shut-Down Output and Automatic Restart. |
| Short-Circuit Protection | 1° Manual Reset 2° Hiccup Mode 3° Continuous Out Mode |
| Dissipation Power Load Max (W) | 28 W |
| Over Load Protection | Yes |
| Over Voltage Output Protection | Yes. (Typ. 35 Vdc) |
| Parallel Connection | Yes. "Easy Parallel" |
| Power Good Contact Rating (EN60947.4.1): Max. DC1:30 Vdc 1A; AC1: 60 Vdc 1A Min. 1 mA at 5 Vdc | Resistive Load Min Permissive Load |

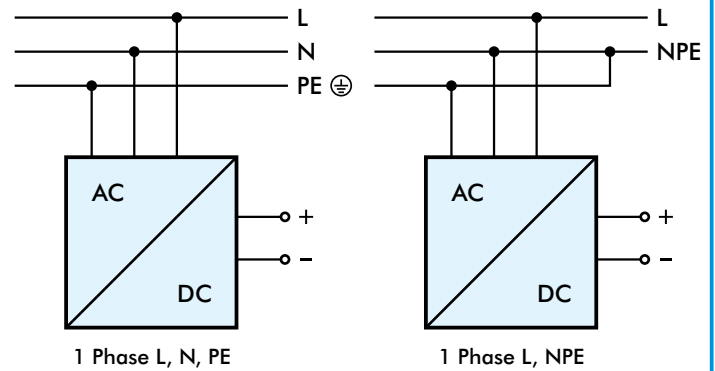
Climatic Data

| | |
|------------------------------------|---|
| Ambient Temperature Operation | -25 °C Up to +70 °C ($>60^\circ$ Derating 2.5% °C) |
| Ambient Temperature Storage | -40 °C Up to +85 °C |
| Humidity at 25 °C, No Condensation | 95 % to 25 °C |

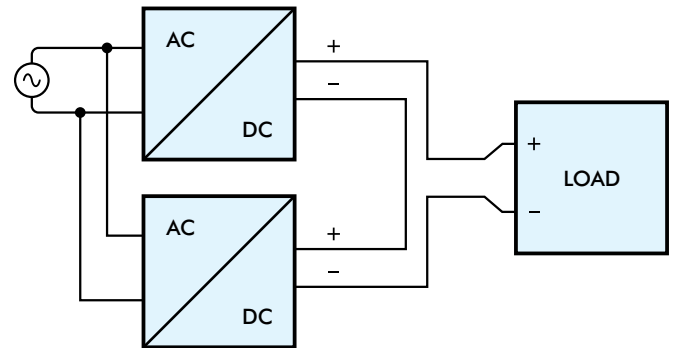
General Data

| | |
|--|--|
| Isolation Voltage (Input / Output) | 3000 Vac |
| Input / Ground Isolation PE (Input / PE) | 1605 Vac |
| Output / Ground Isolation PE (Output / PE) | 500 Vac |
| Protection Class (EN/IEC 60529) | IP20 (Degree of Protection) |
| Reliability: MTBF IEC 61709 | $> 500.000 \text{ h}$ |
| Pollution Degree Environment | 2 |
| Connection Terminal Blocks Screw Type | 2.5 mm (24 AWG to 14 AWG) |
| Protection Class | I with PE Connected |
| Dimension (W-H-D) | 72 mm x 115 mm x 135 mm |
| Weight | 0.65 kg Approx. |

Connection

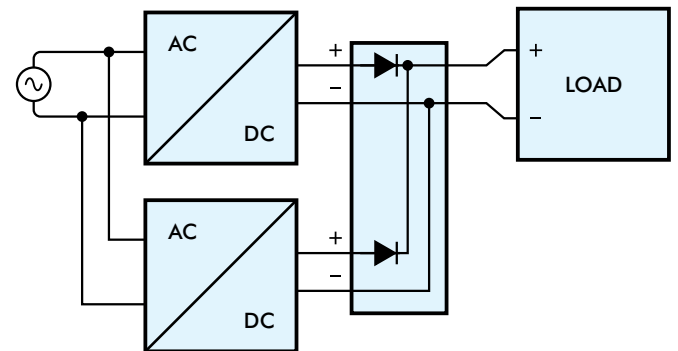


Serial Connection

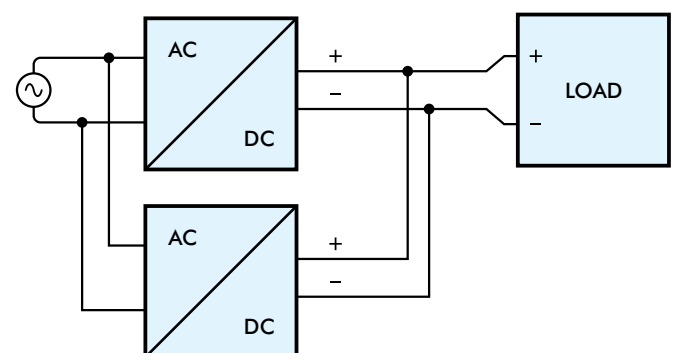


Parallel Connection

Parallel Connection Redundancy

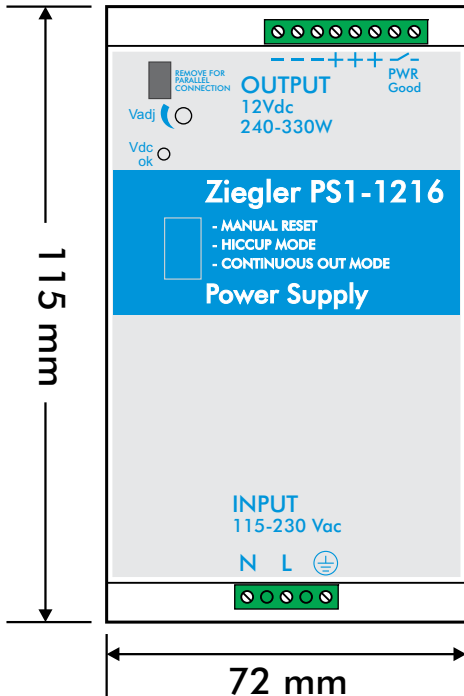


Parallel Connection, to Increase Output Power

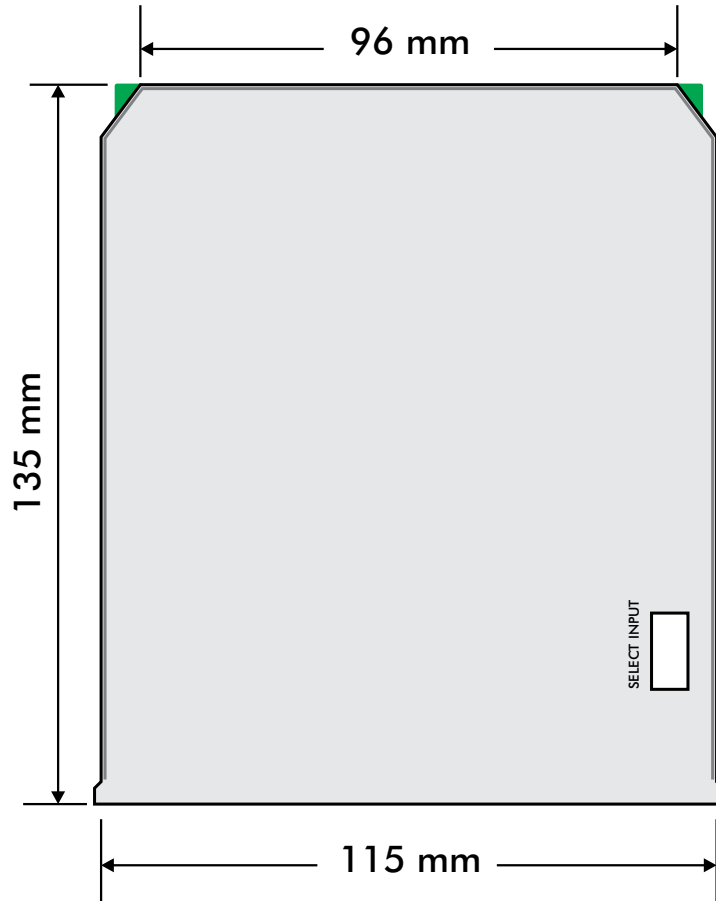


Features

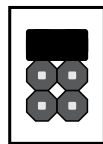
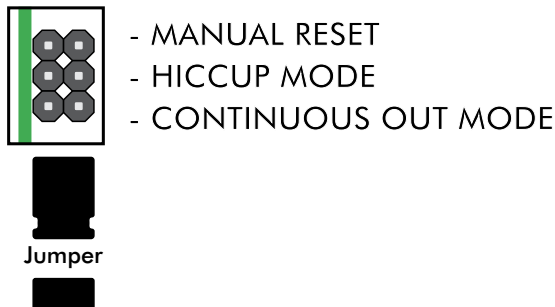
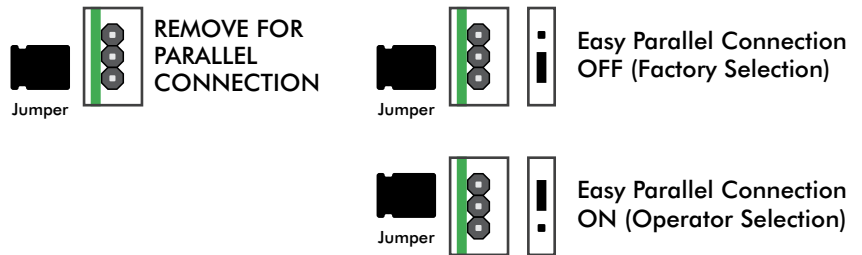
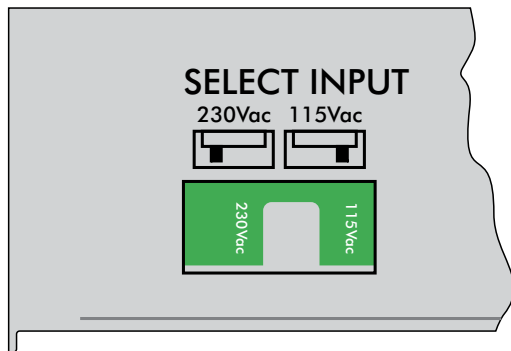
Connection



Top View

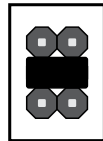


Side View



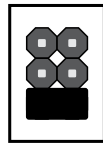
● MANUAL RESET (Manual Restart by Operator)

This Protection Mode Is Particularly Suggested in Applications Where Safety Procedures Require That Reset Be Carried Out Only By an Authorized Person. In Case Of Short-circuit or Overload, The Output Current Is Interrupted. In Order To Restart The Output It Is Necessary to Switch-off The Input Circuit For About 1 Minute.



● HICCUP MODE (Default Factory Jumper Setting)

General Purpose Mode, Used For Normal Load. Output Current Is Interrupted. The Device Tries Again to Re-Establish Output Voltage and Normal Condition About Every 2 Second Till The Problem Is Cleared.



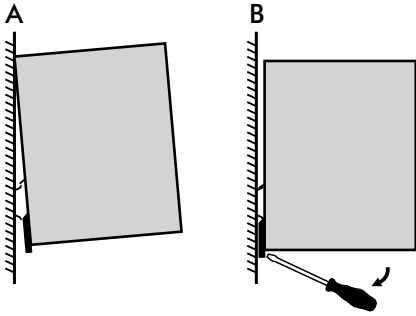
● CONTINUOUS OUT MODE

In Case Of Short-Circuit or Overload, the Output Current Is Kept at High Values With Near Zero Voltage. In Case of Short Circuit the Current Can Reach Up To 3 Times the Rated Current at 60 °C. This Protection Mode Is Used to Meet the Requirements of Demanding Loads Such as Motors, Solenoid Valves, Lamps, PLC With Highly Capacitive Input Circuits and Other Loads With Marked Transient Overload Behavior.

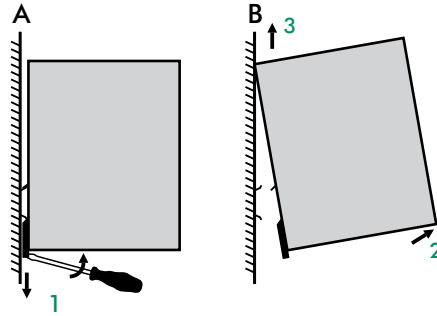
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Rail Mounting

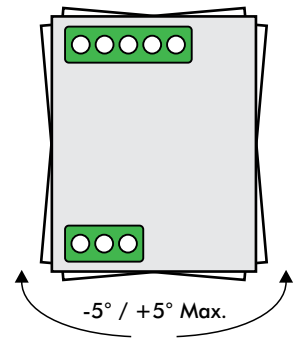
■ Assembly



■ Disassembly



■ Maximum Angle Assembly



Other Models / Modules Must have a Minimum Vertical and Horizontal Distance of 10 cm to This Power Supply in Order to Guarantee Sufficient Auto Convection. Depending on the Ambient Temperature and Load of the Device, the Temperature of the Housing Can Become Very High.

Standards and Certification

Norms and Certifications

The CE Mark in According to EMC 2004/108/EC and the Low Voltage Directive 2006/95/EC.

Electrical Safety

In Compliance to UL508.

According to IEC/EN 60950 (VDE 0805) e EN 50178 (VDE0160) for Assembling Device. The Unit Must be Installed According to IEC/EN 60950.

Input / Output Separation: SELV EN60950-1 6 Edition, and PELV EN 60204-1. Double or Reinforced Insulation.

EMC Immunity

EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-6-2.

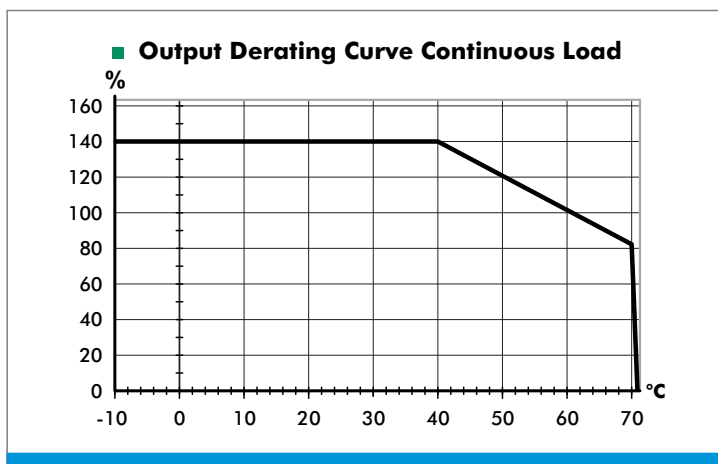
EMC Emission

EN 61000-6-4.

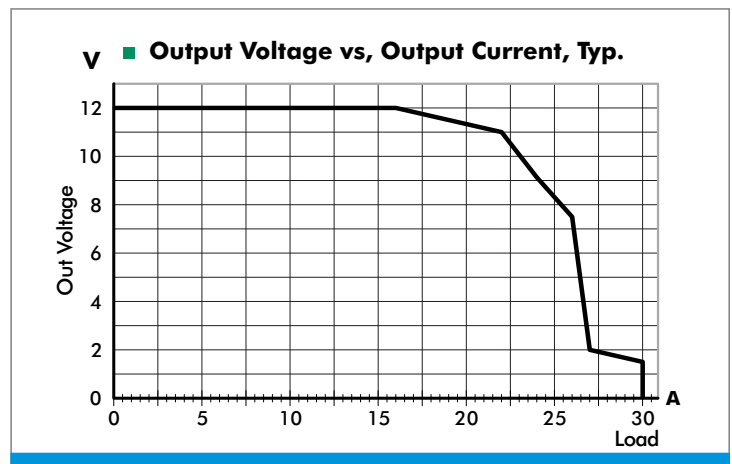
Standards Conformity

EN 60204-1 Safety of Electrical Equipment Machines.

Temperature Ratings



Output Device



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