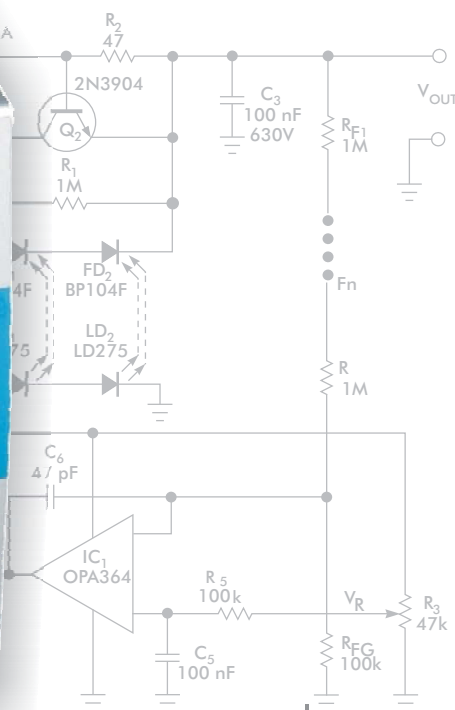


made  
in  
Germany

**Data Sheet**  
**Switching Power Supply . Single Phase**

Switched-Mode Power Supply (SMPS)



Input	Single-Phase. 115 Vac - 230 Vac
Output	24 Vdc 60°C
Efficiency	Up to 91% Up to 50% Strong Overload Without Switch-Off
Power Continuity	From 95 W to 120 W - Flexible "Power Good" Relay
Three Mode of Output Protections	1) Manual Reset 2) Hiccup Mode 3) Continuous Out Mode
Installation	DIN Rail Mountable
Size	Extremely Small Size
Warranty	3 Year

**PS1-2405**  
24 VDC - 5 A



### Features

#### Input Data

Nominal Input Voltage (2 x Vac)	<b>115 Vac - 230 Vac</b>
Manual Select Input From 115 V to 230 V	
Input Voltage range (Vac)	<b>90 Vac to 135 Vac (115 Vac) 170 Vac to 264 Vac (230 Vac)</b>
Inrush Current (Vn and In Load) $I^2T$	<b><math>\leq 11 \text{ A} \leq 5 \text{ msec.}</math></b>
Frequency	<b>47 Hz to 63 Hz <math>\pm 6\%</math></b>
Input Current (115 - 230 Vac)	<b>1.8 A - 0.9 A</b>
Internal Fuse	<b>T 4 A</b>
External Fuse (recommended)	<b>10 A (MCB Curve B)</b>

#### Output Data

Output Voltage (Vn) Factory Setting $\pm 3\%$	<b>24 Vdc</b>
Adjustment Range (Vadj)	<b>22 Vdc to 27 Vdc</b>
Start Up with Strong Load (Capacitive Load)	<b><math>\leq 50.000\mu\text{F}</math></b>
Turn-On Delay After Applying Mains Voltage	<b>1 sec. (Max)</b>
Continuous Current at 24 V < 40 °C (In)	<b>5 A (Permanent)</b>
Continuous Current at 24 V < 50 °C (In)	<b>4.5 A (Permanent)</b>
Continuous Current at 24 V < 60 °C (In)	<b>4 A (Permanent)</b>
Power Boost Current at 24 Vdc 60 °C (In)	<b>In (60 °C) <math>\times 1.5 \geq 3 \text{ min.}</math></b>
Current Max. Overload $\cong 4 \text{ Vdc}$ (Permanent)	<b>Imax = In 60 °C <math>\times (1.8 - 2.2)</math></b>
Current Short Circuit (Icc)	
Max 2 sec.: Hiccup Mode	<b>12 A</b>
Permanent: Continuous Mode	
Hold-up Time (Min. Vac) 24 Vdc 5A	<b>Typ. 20 msec</b>
Residual Ripple	<b><math>\leq 80 \text{ mV}_{\text{pp}}</math></b>
Efficiency	<b><math>\geq 91 \%</math></b>
Over Temperature Protection	<b>Yes. Shut-Down Output and Automatic Restart.</b>
Short-Circuit Protection	<b>1° Manual Reset 2° Hiccup Mode 3° Continuous Out Mode</b>
Dissipation Power Load Max (W)	<b>11 W</b>
Over Load Protection	<b>Yes</b>
Over Voltage Output Protection	<b>Yes. (Typ. 35 Vdc)</b>
Parallel Connection	<b>Yes</b>
Power Good Contact Rating (EN60947.4.1): Max. DC1:30 Vdc 1A; AC1: 60 Vdc 1A	<b>Resistive Load</b>
Min. 1 mA at 5 Vdc	<b>Min Permissive Load</b>

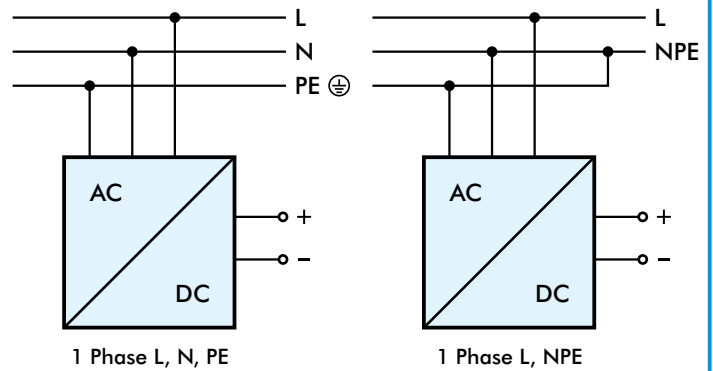
#### Climatic Data

Ambient Temperature Operation	<b>-25 °C Up to +70 °C (<math>&gt;60^\circ</math> Derating 2.5% °C)</b>
Ambient Temperature Storage	<b>-40 °C Up to +85 °C</b>
Humidity at 25 °C, No Condensation	<b>95 % to 25 °C</b>

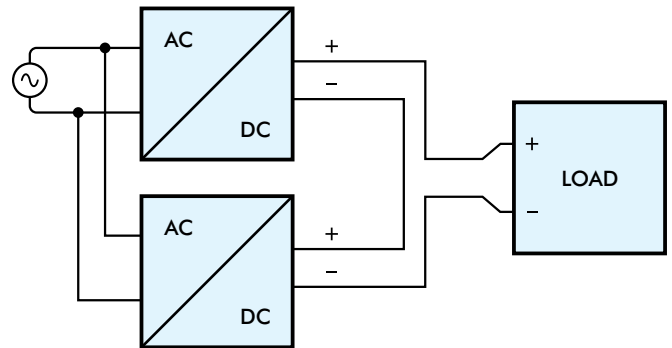
#### General Data

Isolation Voltage (Input / Output)	<b>3000 Vac</b>
Input / Ground Isolation PE (Input / PE)	<b>1605 Vac</b>
Output / Ground Isolation PE (Output / PE)	<b>500 Vac</b>
Protection Class (EN/IEC 60529)	<b>IP20 (Degree of Protection)</b>
Reliability: MTBF IEC 61709	<b><math>&gt; 500.000 \text{ h}</math></b>
Pollution Degree Environment	<b>2</b>
Connection Terminal Blocks Screw Type	<b>2.5 mm (24 AWG to 14 AWG)</b>
Protection Class	<b>I with PE Connected</b>
Dimension (W-H-D)	<b>55 mm <math>\times</math> 110 mm <math>\times</math> 105 mm</b>
Weight	<b>0.50 kg Approx.</b>

#### Connection

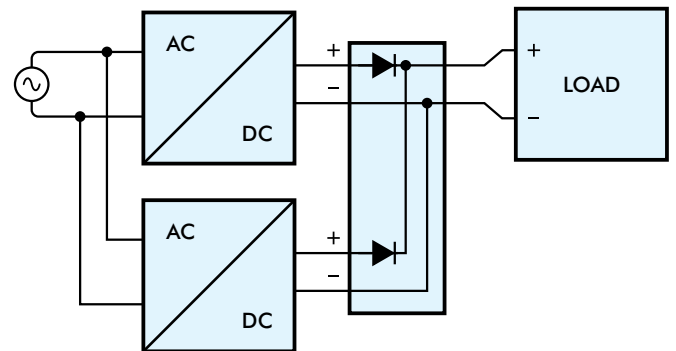


#### Serial Connection

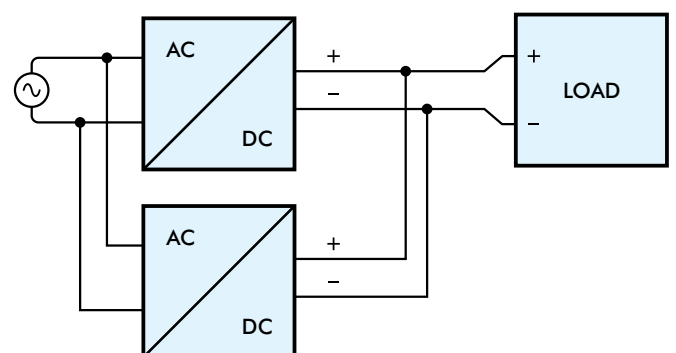


#### Parallel Connection

##### Parallel Connection Redundancy

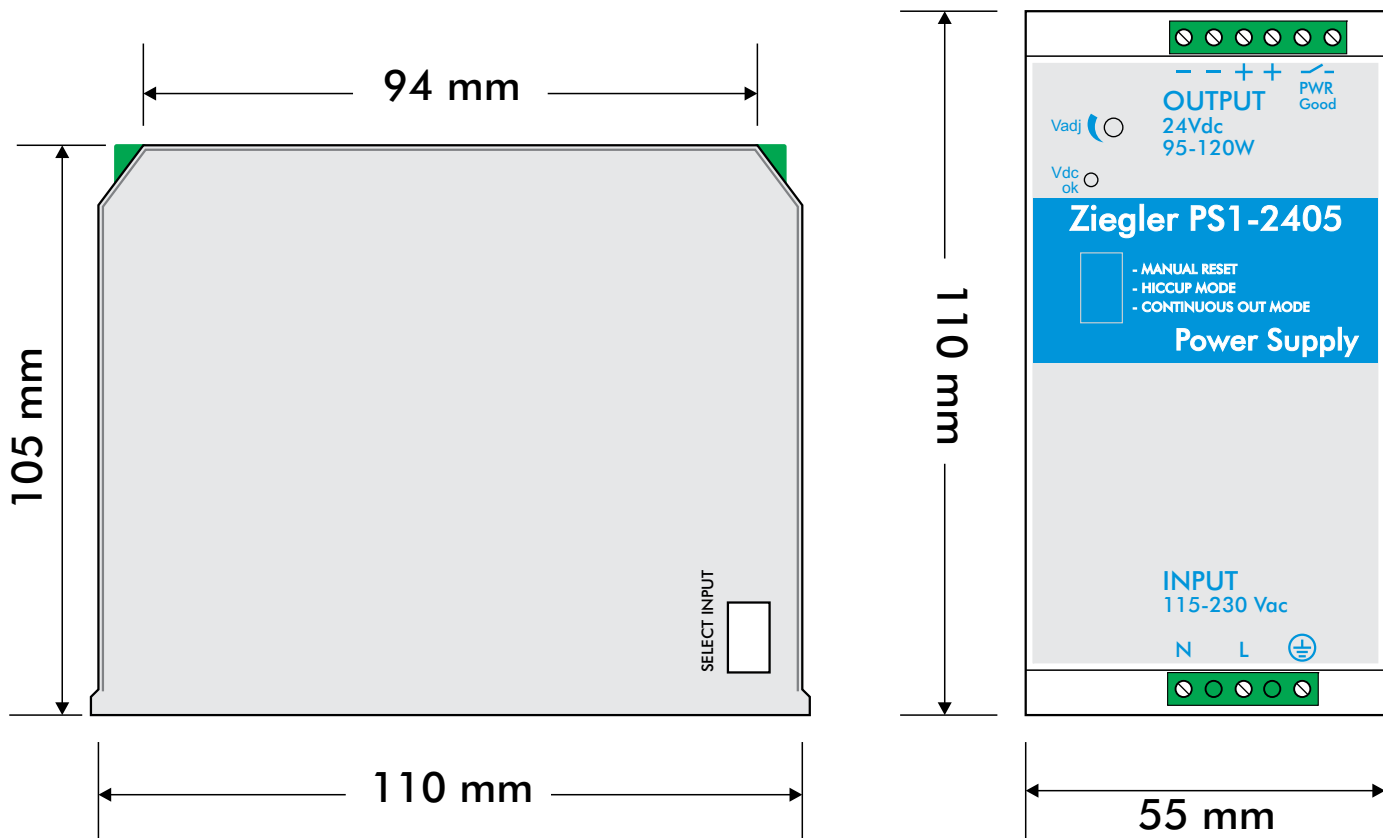


##### Parallel Connection, to Increase Output Power



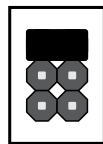
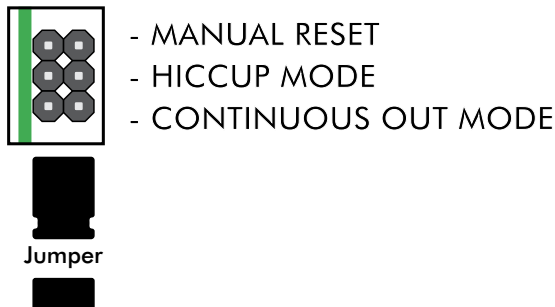
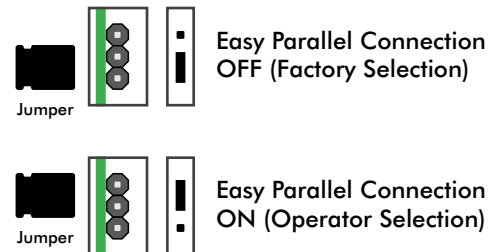
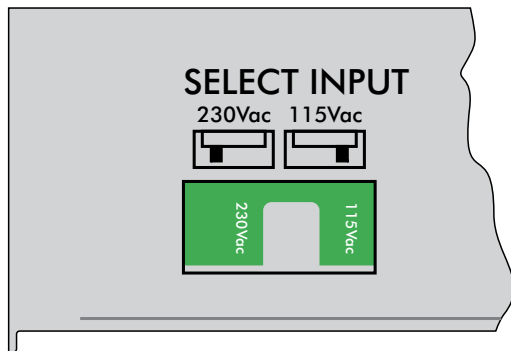
### Features

#### Connection



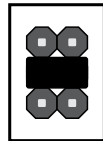
Side View

Top View



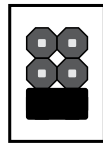
● **MANUAL RESET (Manual Restart by Operator)**

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.



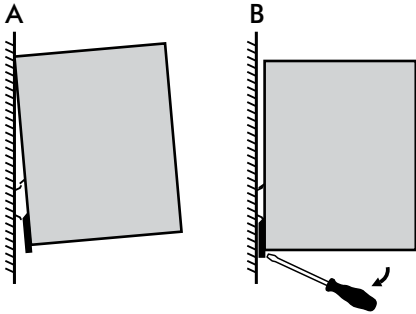
● **CONTINUOUS OUT MODE**

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.

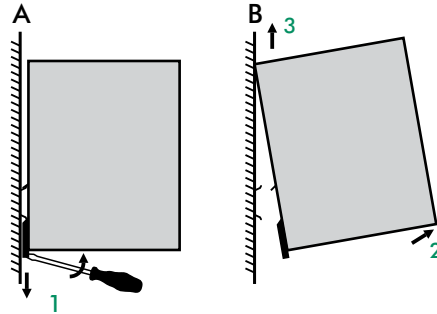
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## Rail Mounting

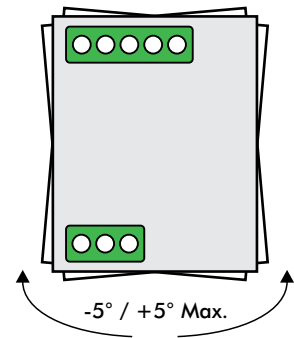
### ■ Assembly



### ■ 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 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.

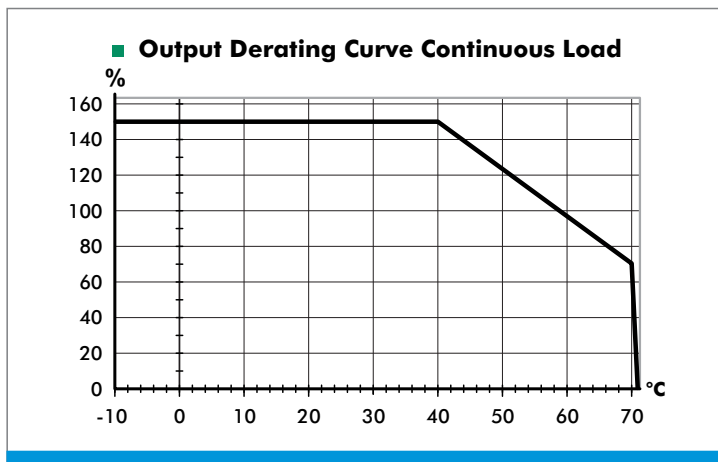
### EMC Emission

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

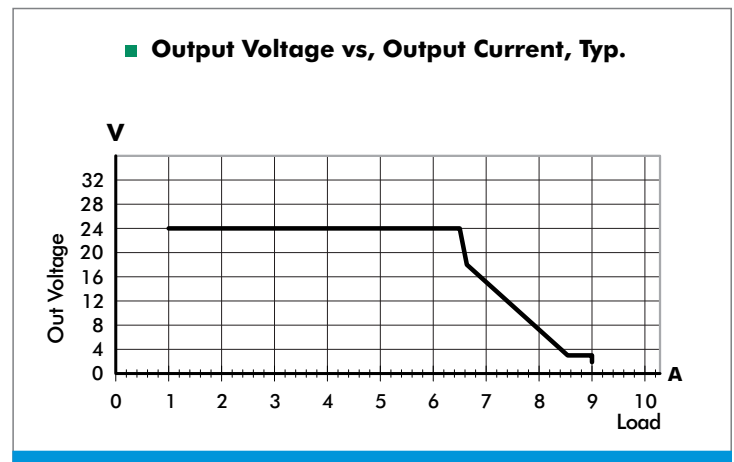
### Standards Conformity

EN 60204-1 Safety of Electrical Equipment Machines.

## Temperature Ratings



## Output Device



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