

12-15V adjustable, 180W

**PULS****SL10.104**

- Input: AC 230/115V, DC 240...375V
- Output: 12-15V/180W
- PULS Overload Design™: 20% Power boost up to 215W; high overload current, no switch-off
- Robust mechanics and EMC
- DC ok LED
- Inrush current limiting and Overtemperatur protection



**UL**  
UL60950 E137006  
CUL/CSA-C22.2  
No 60950

**UL**  
UL508 LISTED  
IND. CONT. EQ.  
18 WM, 60°C

**CE**  
EMC and  
Low Volt.  
Directive

**Input**

Input voltage AC100-120/210-240V (Manual Select), 50-60 Hz  
(AC 85...132/176...264V, DC 240...375V, 47-63 Hz)

Note: At DC input, always leave the switch in the 230V position

Input current  $I_n$  <5A (switch in 115V position)  
<2.3A (switch in 230V position)

	AC 100V	AC 120V	AC 230V
Inrush current $I_{pk}$	37A	45A	51A
Fuse loading $I^2t$	4.6A <sup>2</sup> s	6.8A <sup>2</sup> s	4.2A <sup>2</sup> s

at  $T_{amb} = +50^\circ\text{C}$ , cold start

Unit is internally fused (fuse not accessible). For external fusing of unit and for input line protection, use circuit breaker with B-characteristic 10A or slower action, or alternatively T10A HBC fuse.

	AC 100V	AC 120V	AC 230V
Power factor	0.67	0.64	0.54

Harmonic current emissions (PFC) see page 2

Transient handling Transient resistance acc. to VDE 0160 / W2 (750V/1.3ms), for all load conditions.

Hold up time 45,7 / 84,6 / 81,3ms (bei AC 100/120/230V, 12V/15A) (see Diagram overleaf)

IT Mains allowed

**Efficiency, Reliability etc.\***

Efficiency >87% (AC 230V, 12V/15A)

Losses <26.9W (AC 230V, 12V/15A)

MTBF 425.000h acc. to Siemensnorm SN 29500 (12V/15A, AC 230V,  $T_{amb} = +40^\circ\text{C}$ )

Lifetime expectancy (electrolytics) The unit uses longlife electrolytics, specified for +105°C (cf. 'The SilverLine', p.2).

\* For further information see data sheets „The SilverLine“, „SilverLine Family Branches“ and mechanics data sheet

**Ordering information**

Order number	Description
SL10.104	SilverLine switched-mode power supply
SLZ14	Adapter for S7-300 rail
SLZ02	Wall mounting set

**Output**

Output voltage DC 12-15V, adjustable by (covered) front panel potentiometer; preset: 12V  $\pm 0.5\%$   
Adjustment range guaranteed

Rated continuous loading with convection cooling

- $T_{amb}=0^\circ\text{C} - 60^\circ\text{C}$  12V/15A (180W) resp. 15V/12A
- $T_{amb}=0^\circ\text{C} - 45^\circ\text{C}$  12V/18A (215W) resp. 15V/14.4A  
short-term also at 60°C (< 1 min)

Output is protected against short-circuit, open circuit and overload

Short-circuit current 21A min., 28A max.

Ambient temperature range  $T_{amb}$  Operation:  $0^\circ\text{C}...+70^\circ\text{C}$  (>60°C: Derating)  
Storage:  $-40^\circ\text{C}...+85^\circ\text{C}$

Derating typ. 5 W/K (at  $T_{amb} = +60^\circ\text{C}...+70^\circ\text{C}$ )

Voltage regulation < - 150mV overall

Ripple / Noise <50mV<sub>pp</sub>, (20MHz bandw., 50 $\Omega$  measurement)

Serial operation not allowed

Parallel operation not allowed

Overvolt. protection typ. 19V

Power back immunity < 18V

Front panel indicator Green LED on front panel

**Construction / Mechanics\***

Housing dimensions and Weight

- W x H x D 120mm x 124mm x 102mm (+ DIN rail)
- Free space for ventilation above/below 25mm recommended  
left/right 15mm recommended
- Weight 980g

Connection Screw terminals, input=3, output=4

- Wire gauge 0,5...4mm<sup>2</sup> / 20...10 AWG
- Recomm. tightening 0,8Nm / 7lb.in torque
- Wire stripping length 7mm / 0,275"

Design advantages:

- All connection blocks are easy to reach as mounted at the front panel.

**Start / Overload Behaviour**

Startup delay	typ. 0,22s
Rise time	5...25ms, depending on load
<b>Overload Behaviour</b>	
<ul style="list-style-type: none"> <li>Special PULS Overload-Design (see diagram overleaf) – no disconnection, no hiccup if overloaded</li> <li>20% power boost – 18A short-term, at 45°C or forced cooling even continuous</li> </ul>	<ul style="list-style-type: none"> <li>high overload current (up to 2.2 I<sub>Nom</sub>), V<sub>out</sub> is gradually reduced with increasing current.</li> <li>18A short-term, at 45°C or forced cooling even continuous</li> </ul>
<b>Advantages:</b>	
<ul style="list-style-type: none"> <li>High short-circuit current, giving large 'start-up window': unit starts reliably even with heavy loads (DC-DC converters, motors).</li> <li>No 'sticking' such as can occur with fold-back characteristics</li> <li>Secondary fuses operate more reliably</li> </ul>	

**Electromagnetic Compatibility (EMC)**

<b>Emissions</b>	
<ul style="list-style-type: none"> <li>EN 61000-6-4, Class B (EN 55011, EN 55022)</li> <li>EN 61000-3-3</li> <li>Output power less than 98W: EN 61000-3-2 Class A and EN 61000-6-3 are fulfilled.</li> <li>Output power more than 98W: EN 61000-3-2 Class A and EN 61000-6-3 are <b>not</b> fulfilled.</li> </ul>	
<b>Immunity</b>	
<ul style="list-style-type: none"> <li>Electrostatic Discharge (ESD) – EN 61000-4-2, Level 4 (15kV; 8kV)</li> <li>Electromagnetic radiated fields – EN 61000-4-3, Level 3 (10V/m)</li> <li>Burst, coupled to:                             <ul style="list-style-type: none"> <li>ACin-lines – EN 61000-4-4, Level 4 (4kV)</li> <li>DCout-lines – EN 61000-4-4, Level 3 (2kV)</li> </ul> </li> <li>Surge transients                             <ul style="list-style-type: none"> <li>(L -&gt; PE) – EN 61000-4-5, Installation class 4 (4kV)</li> <li>(N -&gt; PE) – EN 61000-4-5, Installation class 4 (4kV)</li> <li>(L -&gt; N) – EN 61000-4-5, Installation class 4 (2kV)</li> </ul> </li> <li>Conducted noise immunity – EN 61000-4-6, Level 3 (10V, 150kHz - 80MHz)</li> <li>Voltage Dips – EN 61000-4-11</li> <li>Transient immunity – Transient resistance acc. to VDE 0160/W2 over entire load range</li> </ul>	

**Further information**

For further information, especially about

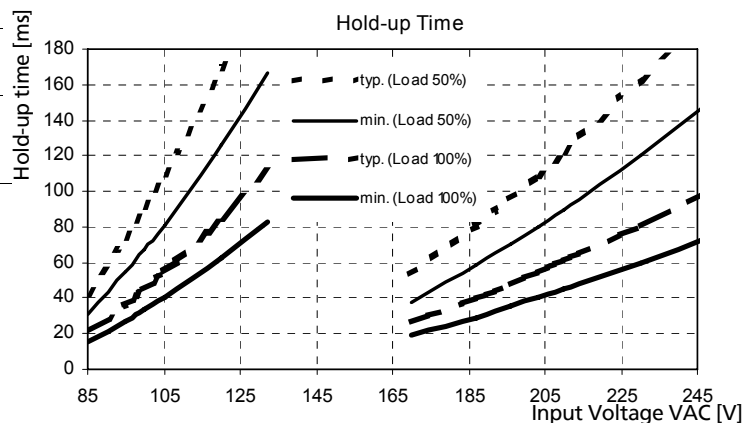
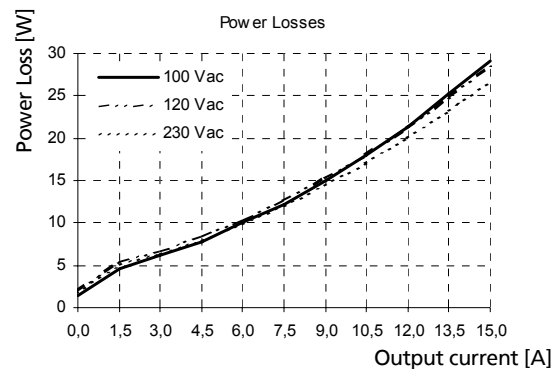
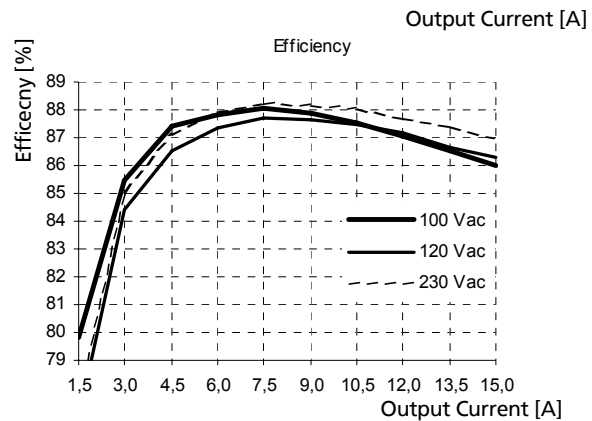
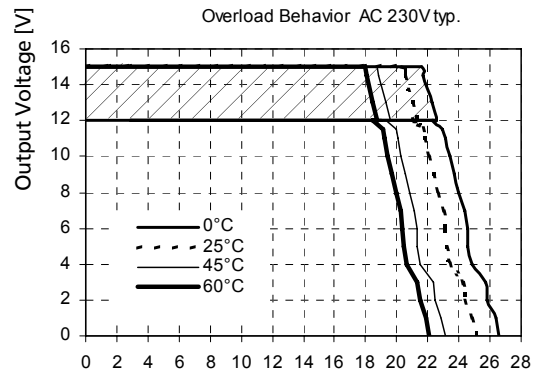
- EMC
- Connections
- Safety, Approvals
- Mechanics und Mounting,

see page 2 of the „The SilverLine“ data sheet.

**For detailed dimensions**  
see SilverLine mechanics data sheet SL2.5/ SL5/ SL10

Unless otherwise stated, specifications are valid for AC 230V input voltage, +25°C ambient temperature, and 5 min. run-in time. They are subject to change without prior notice.

**Your partner in power supply:**



Bayerns Best 50  
Czech 100 Best  
Europe's 500

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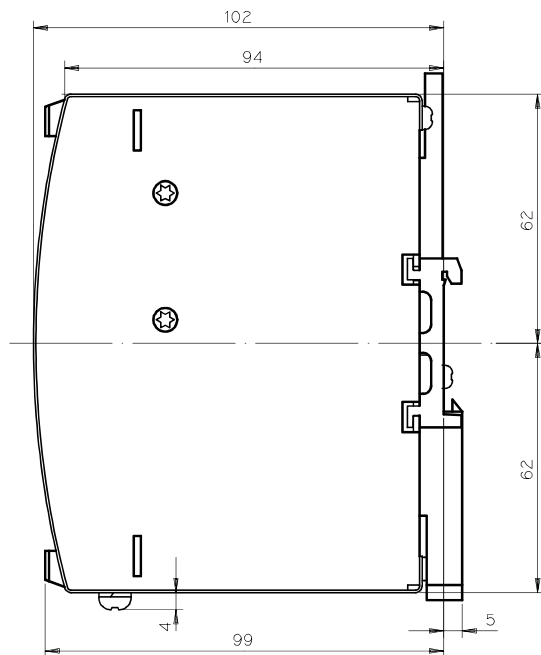
## SL2.5/ SL5/ SL10

- Innovative DIN-Rail mount, unit holds even at vibration or lateral pressure
- Clearly arranged and user oriented
- Large, robust screw terminals
- Sealed metal housing
- Fine ventilating grid

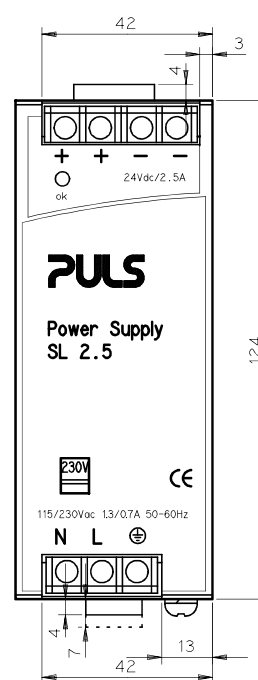


Data sheet

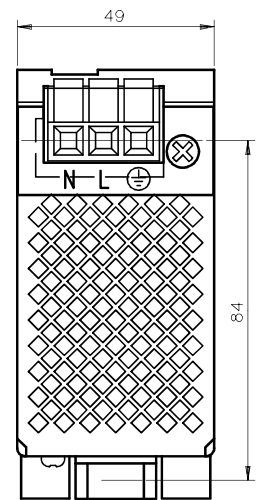
**Side view SL2.5**



**Front view SL2.5**



**Bottom view SL2.5**



### Construction / Mechanics

Housing dimensions and Weight		Free space for ventilation	
Unit	W x H x D [mm] weight	left	above/below right
• <b>SL2.5</b>	49 x 124 x 102 460 g	0 mm	25 mm each 10 mm
• <b>SL5.10x</b>	64 x 124 x 102 620 g	15 mm	25 mm each 15 mm
• <b>SL5.300</b>	73 x 124 x 117 730 g	15 mm	50 mm each 15 mm
• <b>SL10</b>	120 x 124 x 102 980 g	15 mm	25 mm each 15 mm

Overall depth = depth value as mentioned + DIN rail depth

Robust metal housing with fine ventilat. grid (◇ 3,5 mm, IP20), to keep out small parts (e.g. screws)

Mounting on DIN-Rail (TS35/7.5 or TS35/15, 1...1.5 mm thick), thus

- Simple snap-on system
- Sits safely and firmly on the DIN-Rail
- No tools required to remove

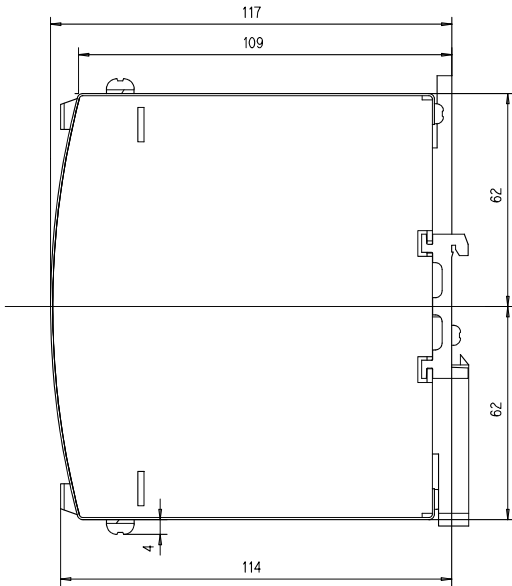
or backplane-mounted (two optional screw mounting sets SLZ01 required)

### Connections

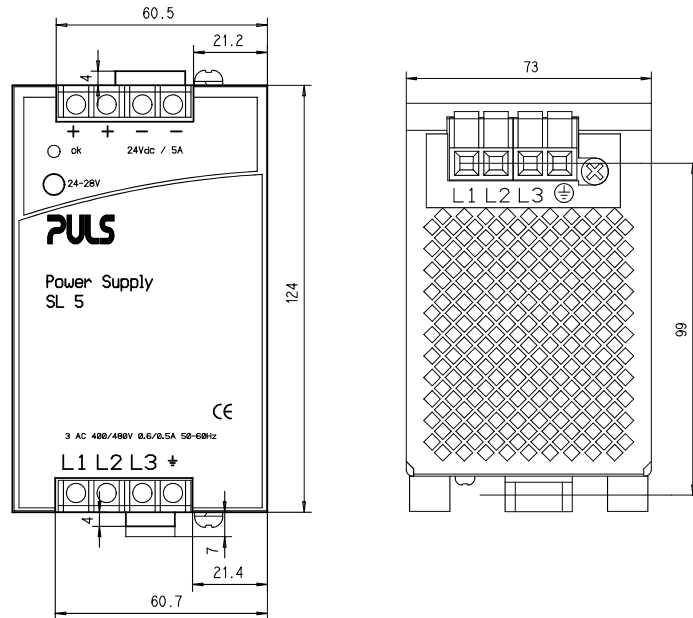
- Connections
- Input/Output
  - Current handling capacity
  - Grid
- Design advantages:
- All connection blocks are easy to reach as mounted at the the front panel.
  - Input and output are strictly apart from each other and so cannot be mixed up
- Screw terminals, connector size range: solid 0.5- 6 mm<sup>2</sup> / flexible 0.5- 4 mm<sup>2</sup>  
30 A per output  
Two connectors per output, 9 mm distance between adjacent connectors

### Order information

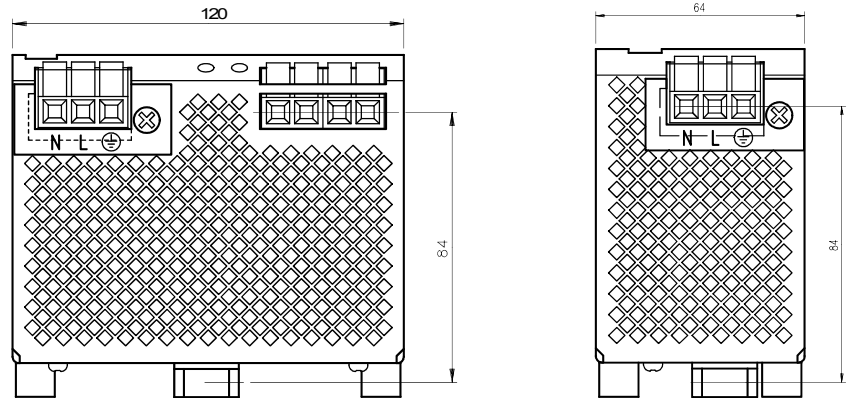
Order number	Description
SL2.100	24V/2.5A
SL2.103	12-15V/40W
SL5.100	24V/5A
SL5.102	24-28V/120W
SL5.105	24-28V/120W
SL5.300	24-28V/120W, 3AC400-500V input
SL10.100 and SL10.105	24-28V/240W
SL10.101	48-56V/240W
SLZ01	Screw mounting set, two needed per unit



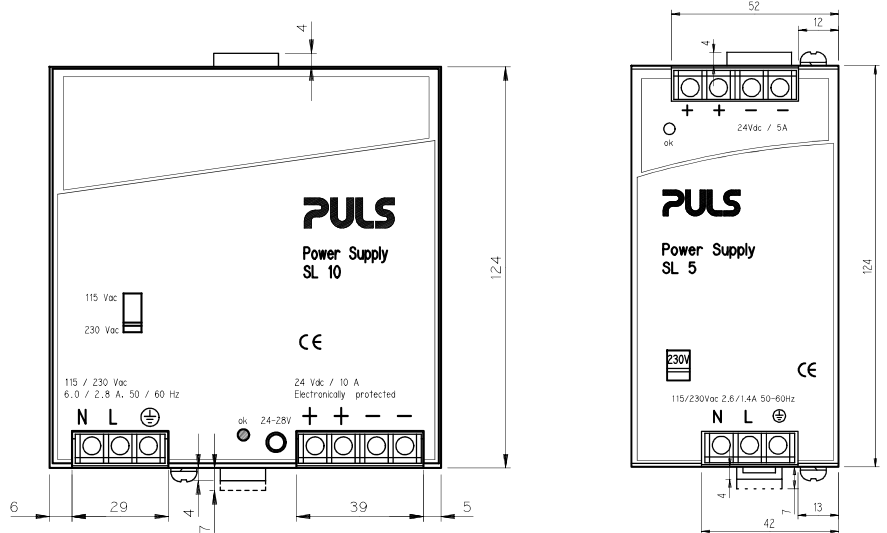
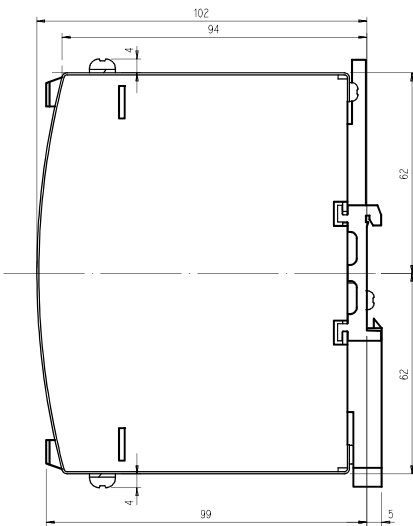
**All views SL5.300**



**Bottom view  
SL10 SL5.10x**



**Side view and front view  
SL10, SL5.10x**



This 'mechanics data sheet' exclusively deals with the mechanical properties of the product. For further information (especially concerning electrical properties), please refer to the generic data sheet of the SL2.5, SL5 and SL10 and to the basic data sheet „The SilverLine“ dealing with common features of all SilverLine units. This data sheet is subject to change without prior notice.

**Your partner in power supply:**



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