

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

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

**CE**  
EMC and  
Low Volt. EQ.  
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>2s</sup>	6.8A <sup>2s</sup>	4.2A <sup>2s</sup>

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 The unit uses longlife electrolytics, specified  
(electrolytics) 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:  $0^\circ\text{C} \dots +70^\circ\text{C}$  (>60°C: Derating)  
Storage:  $-40^\circ\text{C} \dots +85^\circ\text{C}$

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

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 above/below 25mm recommended  
ventilation 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

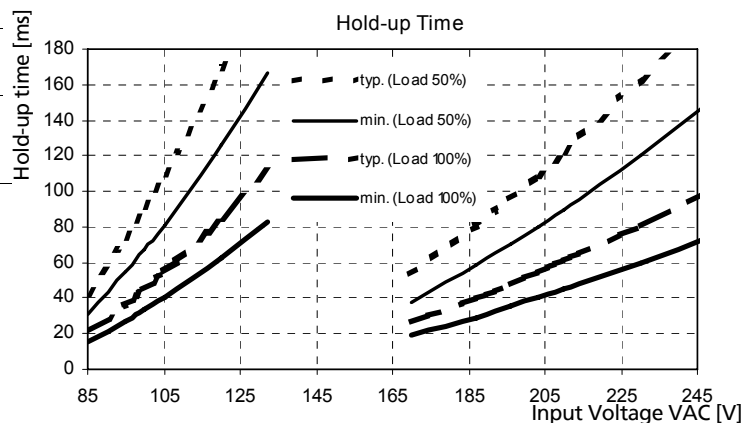
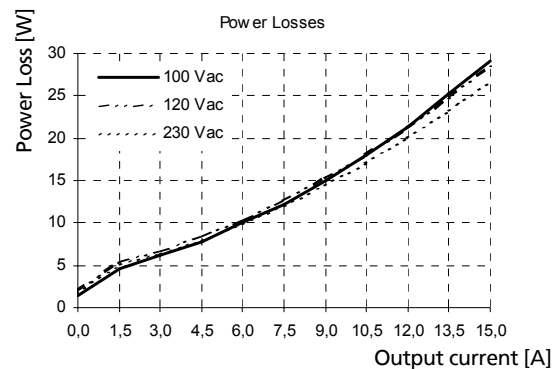
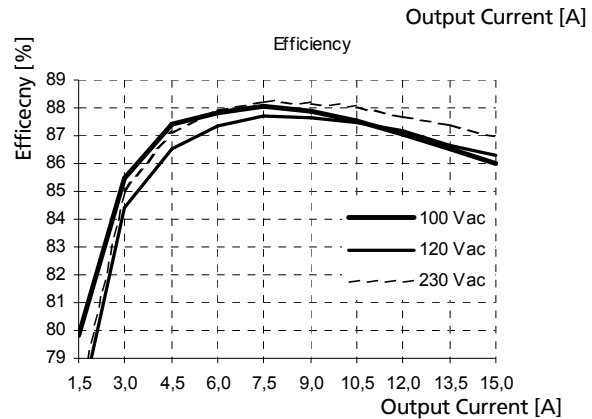
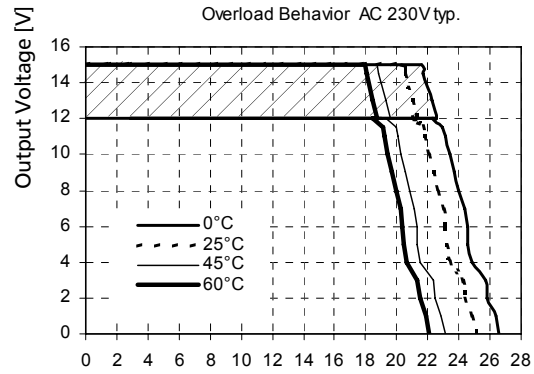
- EMC
- Connections
- Safety, Approvals
- Mechanics und Mounting,

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:**



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