

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



under preparation:



under preparation:

**Input**

Input voltage	AC100-120/220-240V (Manual Select), 50-60 Hz (AC 85...132/176...264V, DC 240...375V, 47-63 Hz)
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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)
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	AC 100V	AC 120V	AC 230V
Inrush current I_{pk}	37A	45A	51A
Fuse loading I^{2t}	4.6A ^{2s}	6.8A ^{2s}	4.2A ^{2s}

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.

Harmonic current emissions (PFC)	AC 100V	AC 120V	AC 230V
	0.67	0.64	0.54

above 98W > class A

Transient handling	Transient resistance acc. to VDE 0160 / W2 (750V/1.3ms), for all load conditions.
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Hold up time	45,7 / 84,6 / 81,3ms (bei AC 100/120/230V, 12V/15A) (see Diagram overleaf)
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IT Mains	allowed
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Efficiency, Reliability etc.*

Efficiency	>87% (AC 230V, 12V/15A)
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Losses	<26.9W (AC 230V, 12V/15A)
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MTBF	425.000h acc. to Siemensnorm SN 29500 (12V/15A, AC 230V, $T_{amb} = +40^\circ\text{C}$)
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Lifetime expectancy (electrolytics)	The unit uses longlife electrolytics, specified for $+105^\circ\text{C}$ (cf. 'The SilverLine', p.2).
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* 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
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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.
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Ambient temperature range T_{amb}	Operation: $0^\circ\text{C}...+70^\circ\text{C}$ (> 60°C : Derating) Storage: $-40^\circ\text{C}...+85^\circ\text{C}$
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Derating	typ. 5 W/K (at $T_{amb} = +60^\circ\text{C}...+70^\circ\text{C}$)
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Voltage regulation	< - 150mV overall
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Ripple / Noise	<50mV _{pp} , (20MHz bandw., 50 Ω measurement)
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Serial operation	not allowed
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Parallel operation	not allowed
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Overvolt. protection	typ. 19V
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Power back immunity	< 18V
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Front panel indicator	Green LED on front panel
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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
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- Wire gauge 0,5...4mm² / 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
Overload Behaviour	
<ul style="list-style-type: none"> Special PULS Overload-Design (see diagram overleaf) – no disconnection, no hiccup if overloaded – high overload current (up to 2.2 I_{Nom}), V_{out} is gradually reduced with increasing current. 20% power boost – 18A short-term, at 45°C or forced cooling even continuous 	
Advantages:	
<ul style="list-style-type: none"> High short-circuit current, giving large 'start-up window': unit starts reliably even with heavy loads (DC-DC converters, motors). No 'sticking' such as can occur with fold-back characteristics Secondary fuses operate more reliably 	

Electromagnetic Compatibility (EMC)

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

Further information

For further information, especially about

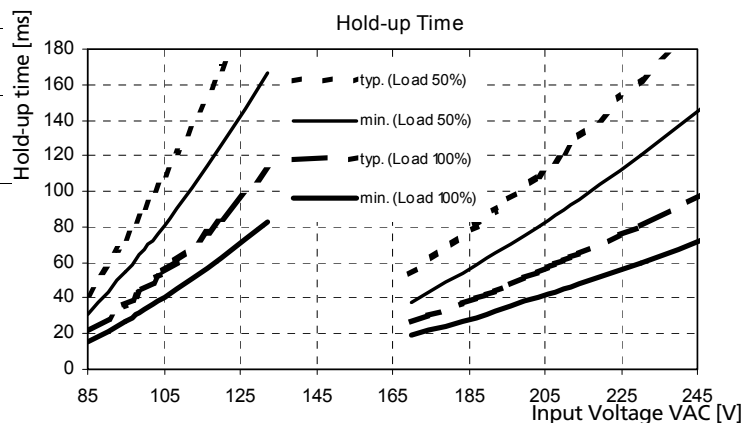
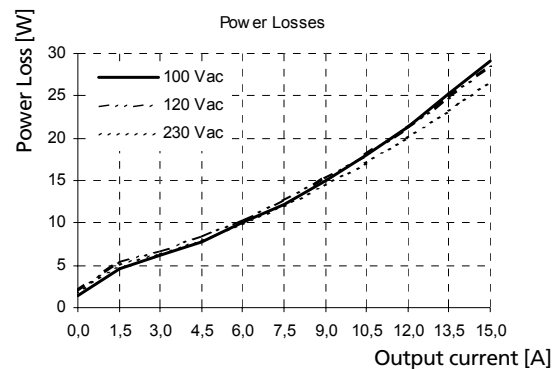
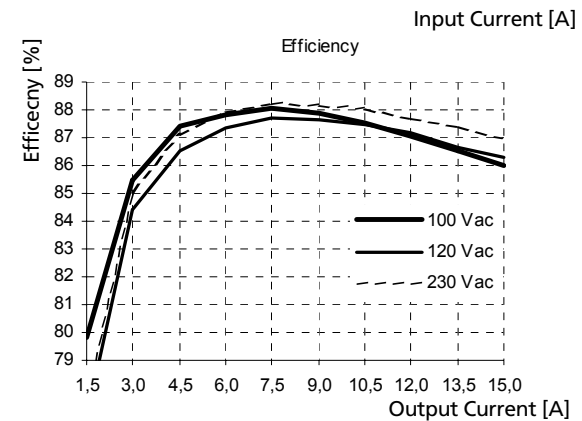
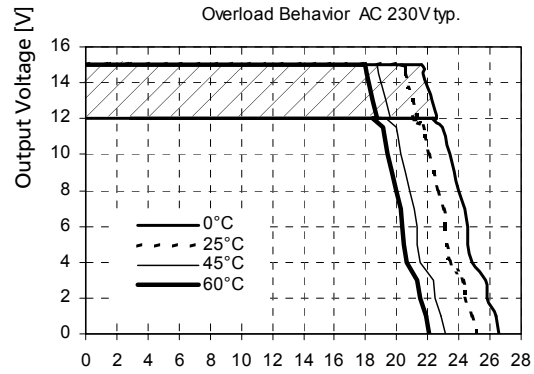
- EMC
- Connections
- Safety, Approvals
- Mechanics und Mounting,

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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Czech 100 Best
Europe's 500

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