

# 5 A with power boost

# PULS

## SL5.100

- Input: AC 230V / 115V
- Output: 24V / 5A
- Power boost up to 6A
- High overload current, no switch-off
- Quasi-Wide-Range Input
- Robust mechanics and EMC



Data sheet

### Input

Input voltage	AC100-120/200-240 V (switchable), 47-63 Hz (85-132 VAC / 176-264 VAC, 210-375 VDC, see also „Output: Continuous Loading“)
Quasi-Wide-Range Input: With the switch in the 230V position the power-supply unit operates at low and moderate loads (until 3 A) at any input voltage between 95 and 264 V AC (see 'Output' below). Note: At DC input, always leave the switch in the 230V position	
Input current	< 2.6 A (switch in 115V position) < 1.4 A (switch in 230V position)
• DCin at open output	typ. 5 mA (preserves battery sources)
Inrush current	typ. 15 A at 264 V AC and cold start
To be fused with a 10A, B-type 'circuit-breaker' switch based on the usual thermomagn. overload sensing principle (used anyway to fuse the input lines). In addition, the unit contains an internal fuse (not accessible)	
EN 61000-3-2 (harmonic current emissions) is fulfilled	
Transient handling	Transient resistance acc. to VDE 0160 / W2 (750 V / 1.3 ms), for all load conditions.
Hold up time	> 37 ms at 196 VAC, 24 V / 5 A (see Diagram overleaf)

### Efficiency, Reliability etc.\*

Efficiency	typ. 90 % (230 VAC, 24 V / 5 A)
Losses	typ. 13,3 W (230 VAC, 24 V / 5 A)
MTBF	520,000 h acc. to Siemensnorm SN 29500 (24 V/5 A, 230 VAC, T <sub>amb</sub> = +40 °C)
Life cycle (electrolytics)	The unit exclusively uses longlife electrolytics, specified for +105°C (cf. 'The SilverLine', p.2).

### Construction / Mechanics\*

Housing dimensions and Weight	
• W x H x D	64 mm x 124 mm x 102 mm (+ DIN rail)
• Free space for ventilation	above/below 25 mm recommended left/right 15 mm recommended
• Weight	620 g
Design advantages:	
• All connection blocks are easy to reach as mounted at the front panel.	
• Input and output are strictly apart from each other and so cannot be mixed up (Input below, output above).	

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

### Output

Output voltage	24 V DC +5% -1%															
Output noise suppression	Radiated EMI values below EN 61000-6-3, even when using long, unscreened output cables.															
Ambient temperature range T <sub>amb</sub>	Operation: -10°C...+70°C (>60°C: Derating) Storage: -25°C...+85°C															
Continuous loading (at T <sub>amb</sub> = -10°C...+60°C, convection cooling), see also diagram overleaf. For start at T <sub>amb</sub> < 0°C and low input voltage, please contact PULS.	<table border="1"> <thead> <tr> <th>Switch</th> <th>AC/DCin</th> <th>I<sub>out</sub></th> </tr> </thead> <tbody> <tr> <td rowspan="3">230V</td> <td>176-264 V</td> <td>ACin 5 A / 6 A *</td> </tr> <tr> <td>95-176 V</td> <td>ACin 3 A</td> </tr> <tr> <td>210-375 V</td> <td>DCin 5 A / 6 A *</td> </tr> <tr> <td rowspan="2">115V</td> <td>150-210 V</td> <td>DCin 3 A</td> </tr> <tr> <td>100-150 V</td> <td>DCin 2 A</td> </tr> </tbody> </table>	Switch	AC/DCin	I <sub>out</sub>	230V	176-264 V	ACin 5 A / 6 A *	95-176 V	ACin 3 A	210-375 V	DCin 5 A / 6 A *	115V	150-210 V	DCin 3 A	100-150 V	DCin 2 A
Switch	AC/DCin	I <sub>out</sub>														
230V	176-264 V	ACin 5 A / 6 A *														
	95-176 V	ACin 3 A														
	210-375 V	DCin 5 A / 6 A *														
115V	150-210 V	DCin 3 A														
	100-150 V	DCin 2 A														
Output is protected against short circuit, open circuit and overload	* short-term 6 A (< 1 min), at 45°C or forced cooling even continuous															
Derating	typ. 3 W/K (at T <sub>amb</sub> =+60°C...+70°C)															
Voltage regulation	better than 2% V <sub>out</sub> overall															
Ripple / Noise	< 50 mV <sub>pp</sub> , (20 MHz bandw., 50 Ω measur.)															
Overvolt. protection	typ. 29 V															
Parallel operation	yes; current sharing available on request															
Power back immunity	26 V															
Front panel indicator	Green LED, goes out at V <sub>out</sub> <18V															

### Start / Overload Behaviour

Startup delay	typ. 0.1 s
Rise time	ca. 5-20 ms, depending on load
Overload Behaviour	<ul style="list-style-type: none"> <li>• Special PULS Overload Design (see diagram overleaf)</li> <li>• 20% power boost</li> </ul>
	<ul style="list-style-type: none"> <li>- no disconnection, no hiccup if overloaded</li> <li>- high overload current (up to 1.9 I<sub>Nom</sub>), V<sub>out</sub> is gradually reduced with increasing current.</li> <li>- 6A short-term, at 45°C or forced cooling even continuous</li> </ul>

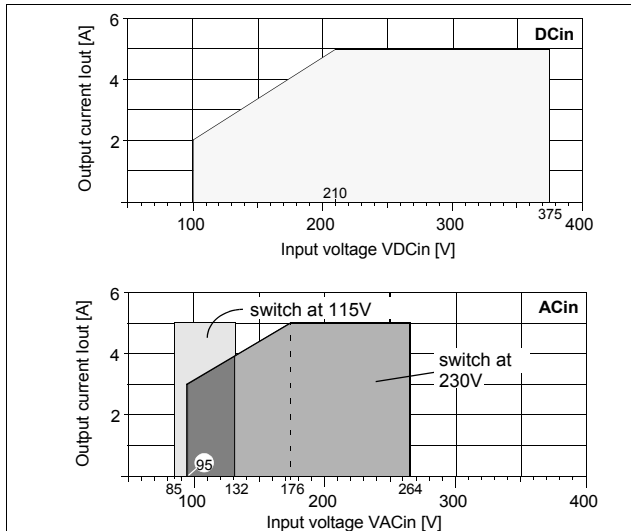
#### Advantages:

- High short-circuit current, giving large 'start-up window': unit starts reliably even with awkward loads (DC-DC converters, motors).
- No 'sticking' such as can occur with fold-back characteristics
- Secondary fuses operate reliably

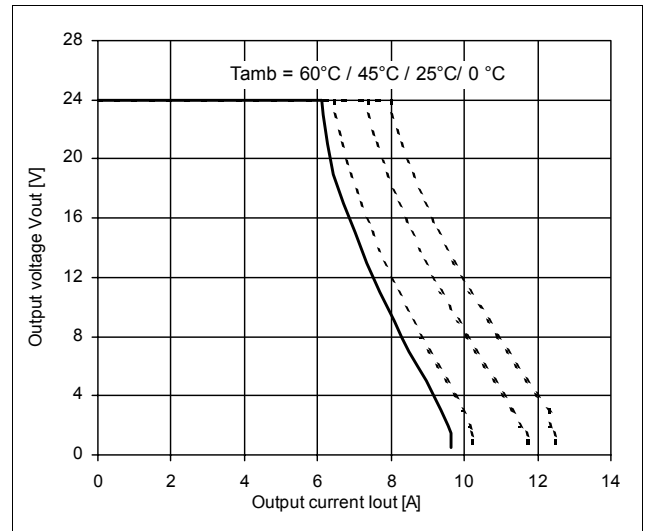
### Order information

Order number	Description
SL5.100	(Basic version*)
SLR5.100	(N+1 redundancy*)
SLS5.100	(Safety Cover*)
SLZ01	Screw mounting set, two needed per unit

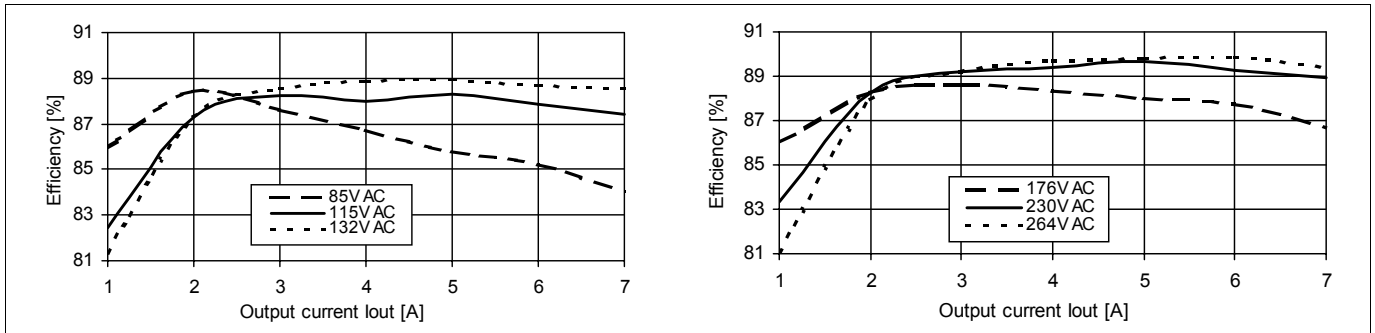
### Output Current over Input Voltage (min.)



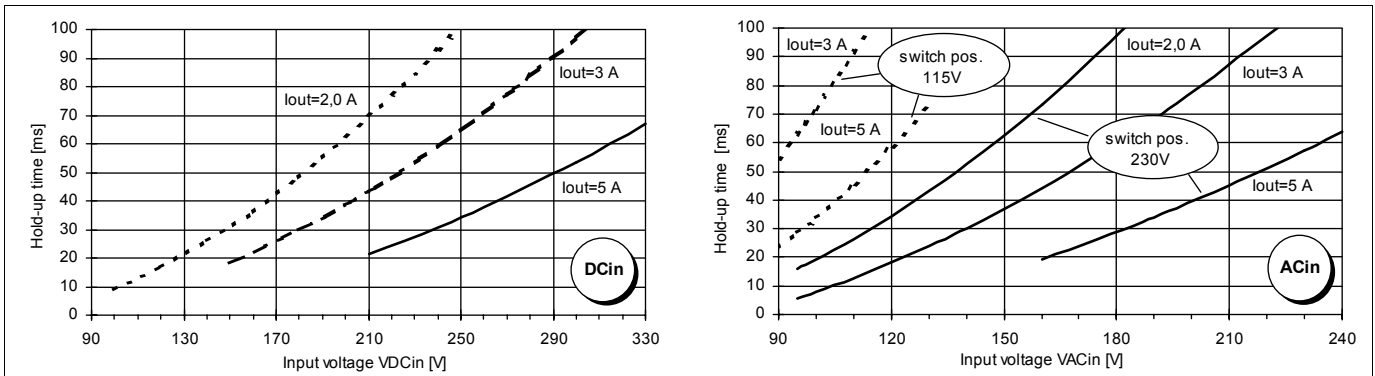
### Output characteristic (min.)



### Efficiency (min.)



### Hold-up time (min.)



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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