Data sheet SilverLine

48-56V adjustable, PFC

SL10.106

- Input: AC 230/115V, DC 240...375V
- Output: 48-56V/240W
- PULS Overload Design™: Power boost up to 288W; high overload current, no switch-off
- Robust mechanics and EMC

CB Scheme IEC60950

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

cULus UL60950 E137006 CUL/CSA-C22.2 No 60950

CE EMC and Low Volt. Directive

Input

Input voltage	AC100-120/220-240V (switchable), 47-63 Hz (AC 85...132/176...264V, DC 240...375V)

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

Input current I_n	<6A (switch in 115V position) <2.8A (switch in 230V position)
Inrush current I_{pk}	<37A at AC 264V (T_{amb} = +25°C, cold start) <62A at AC 264V (T_{amb} = +50°C, cold start)
Fuse loading I^2t	<2.5A²s (T_{amb} = +25°C, cold start) <6A²s (T_{amb} = +50°C, cold start)
DCin at open output	8mA (preserves battery sources)

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)	according to EN 61000-3-2 Power factor: better than 0.68 at nominal load
Transient handling	Transient resistance acc. to VDE 0160 / W2 (750V/1.3ms), for *all* load conditions.
Hold up time	>25ms at AC 196V, 48V/5A (see Diagram overleaf)

Efficiency, Reliability etc.*

Efficiency	>90% (AC 230V, 48V/5A)
Losses	<26.7W (AC 230V, 48V/5A)
MTBF	425.000h acc. to Siemensnorm SN 29500 (48V/5A, AC 230V, T_{amb} = +40°C)
Life cycle (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

Output

Output voltage	DC 48-56V, adjustable by (covered) front panel potentiometer; preset: 48 V ±0.5% Adj. range guaranteed
Ambient temperature range T_{amb}	Operation: 0°C...+70°C (>60°C: Derating) Storage: -25°C...+85°C

Rated continuous loading with convection cooling

• T_{amb}=0°C - 60°C	48V/5A (240W) resp. 56V/4.3A (240W)
• T_{amb}=0°C - 45°C	48V/6A (288W) resp. 56V/5.1A (288W) short-term also at 60°C

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

Derating	typ. 6W/K (at T_{amb} = +60°C...+70°C)
Voltage regulation	better than 2% Vout overall
Ripple / Noise	<50mV$_{PP}$, (20MHz bandw., 50Ω measurement)
Parallel operation	possible; however, no equal load sharing
Overvolt. protection	typ. 59V
Power back immunity	60V
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

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

Ordering information

Order number	Description
SL10.106	SilverLine switched-mode power supply
SLZ14	Adapter for S7-300 rail
SLZ02	Wall mounting set

Start / Overload Behaviour

Startup delay	typ. 0.1s
Rise time	ca. 5-20ms, depending on load

Overload Behaviour

- Special PULS Overload Design (see diagram overleaf)
  - no disconnection, no hiccup if overloaded
  - high overload current (up to 1.6 I_{Nom}), Vout is gradually reduced with increasing current.
- 20% power boost
  - 6A short-term, at 45°C or forced cooling even continuous

Advantages:
- 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

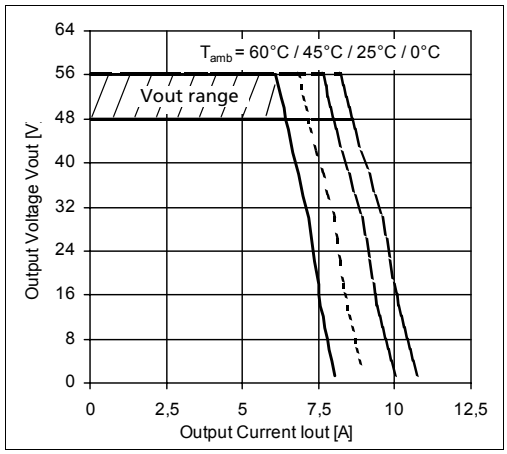
Further information

For further information, especially about
- EMC
- Connections
- Safety, Approvals
- Mechanics und Mounting,

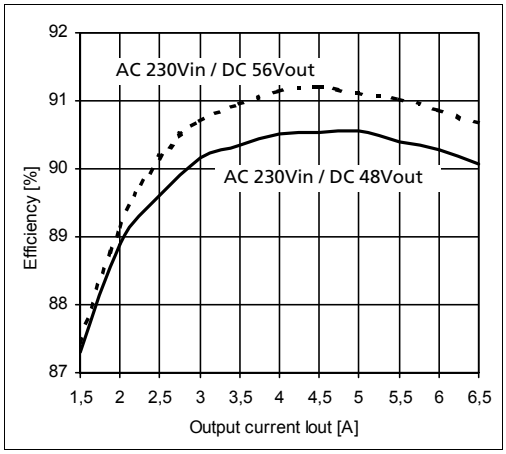
see page 2 of the „The SilverLine" data sheet.

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

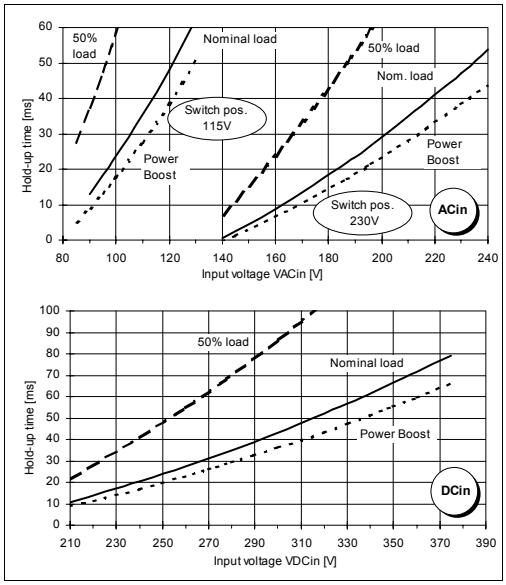
Output characteristic (min.)



Efficiency



Hold-up time (typ., at V_{out}=48V)



Alle Angaben gelten, sofern nicht anders angegeben, für AC 230V, +25°C Umgebungstemp. und 5 min. Einlaufzeit. Sie dienen ausschließlich der Produktbeschreibung und sind nicht als zugesicherte Eigenschaften im Rechtssinne aufzufassen. Änderungen vorbehalten.

with 50% Load = 120W /

Your partner in power supply:

ISO 9000:2000 certified

European Power Supply Manufacturers Association

AWARDED Bayerns Best 50 Czech 100 Best Europe's 500

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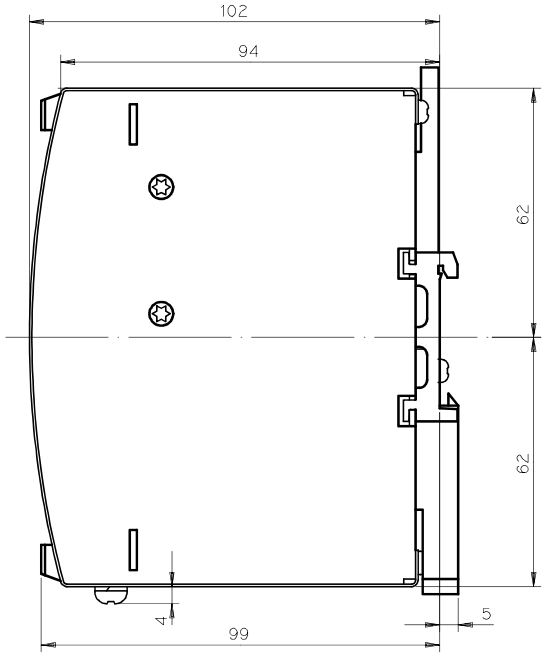
Data sheet

Mechanics

SL2.5/ SL5/ SL10

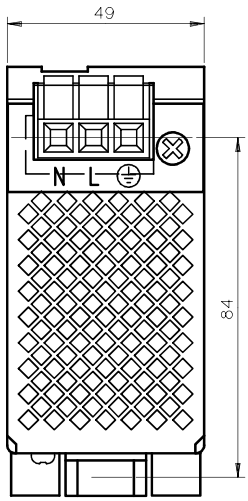
- Innovative DIN-Rail mount, unit holds even at vibration or lateral pressure
- Clearly arranged and user oriented
- Large, robust screw terminals
- Sealed metal housing
- Fine ventilating grid

Side view SL2.5



Front view SL2.5

Bottom view SL2.5



Construction / Mechanics

Housing dimensions and Weight

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

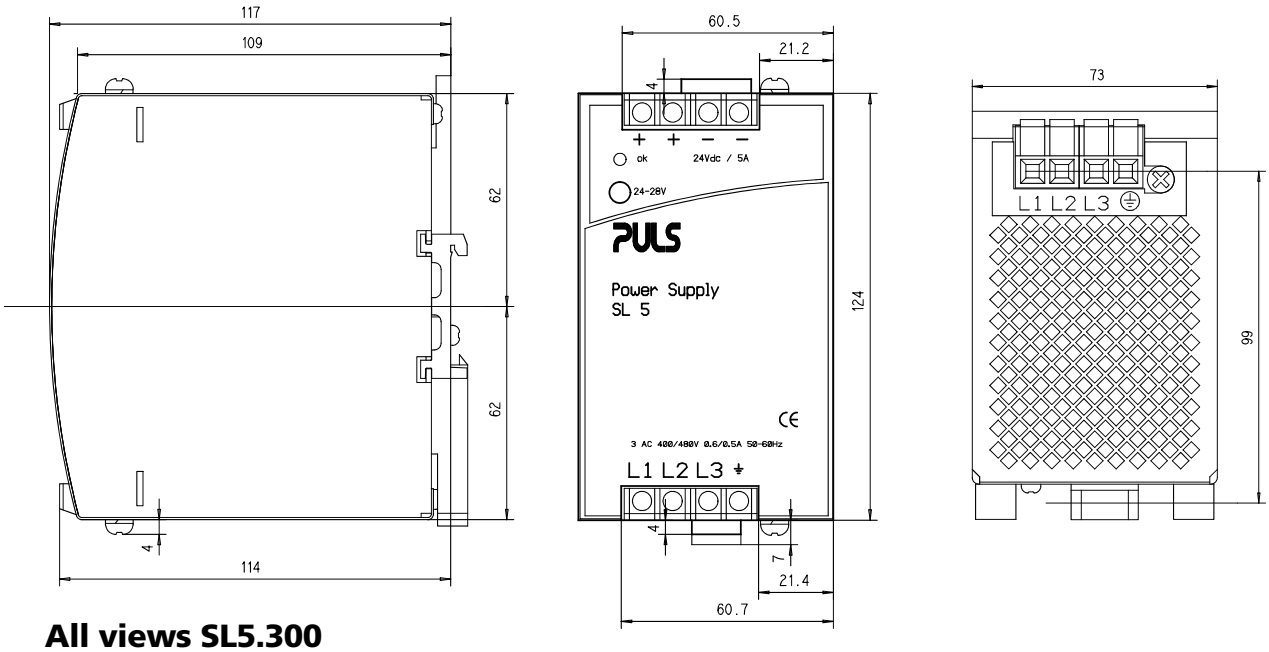
Connections
- Input/Output
- Current handling capacity
- Grid

Screw terminals, connector size range:
solid 0.5- 6 mm^2 / flexible 0.5- 4 mm^2
30 A per output
Two connectors per output, 9 mm distance between adjacent connectors

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

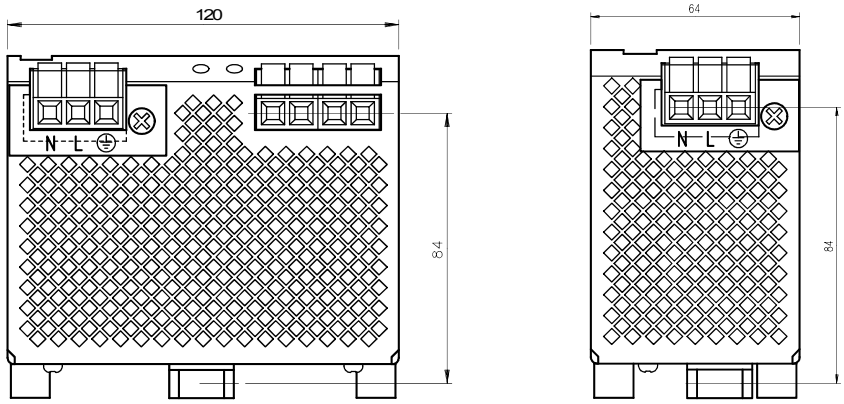
Order information

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

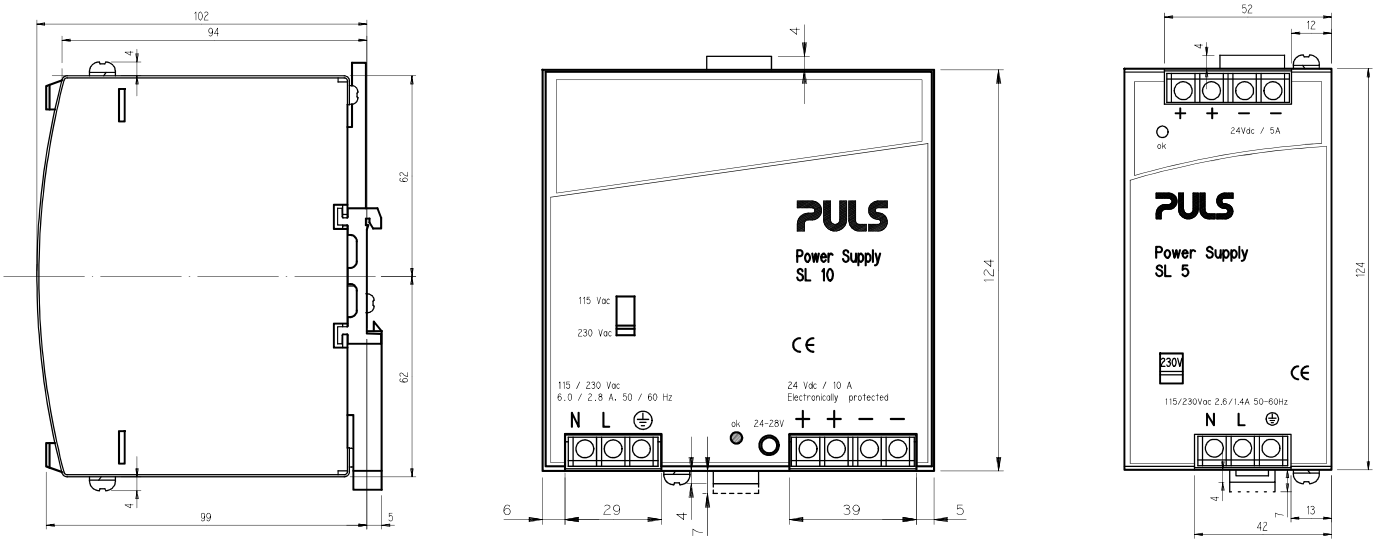


All views SL5.300

Bottom view
SL10 SL5.10x



Side view and front view
SL10, SL5.10x



his '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:

ISO 9000:2001 certified

EPSMA European Power Supply Manufacturers Association

AWARDED Bayerns Best 50 Czech 100 Best EuropeÕs 500

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