Data sheet

SL20 with 36...43V

SL20.112

- Input: AC 115/230V **auto select**
- Output: 36...43V / 480W
- 92% efficiency
- Ideal for parallel operation

IEC60950

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

UL60950 E137006
CUL/CSA-C22.2
No 60950

Type approval acc. to:
- IEC / EN60950
- EN50178 Overvolt. cat. III
- EN60204

EMC and Low Volt. Directive

Datasheet

Input

Input voltage	AC 100-120V/220-240V, 47-63Hz, auto select
Rated tolerances	
• Continuous operation	AC 85...132V resp. AC 184...264V
• Short-term (30s) at 36V/13A	AC 85...140V resp. AC 175...280V
Input current I_n	<10A (115V range) <5A (230V range)

Inrush current limiting with active bypass of the limiting resistor (NTC).

Inrush current I_{pk}	<18A @ AC 264V (T_{amb} = +25°C, cold start) <37A @ AC 264V (T_{amb} = +50°C, cold start)
Fuse loading I^2t	<5A^2s (T_{amb} = +25°C, cold start) <8A^2s (T_{amb} = +50°C, cold start)

To be fused with a 16A, B-type 'circuit-breaker' switch based on the usual thermomagnetic overload sensing principle (used anyway to fuse the input lines).

EN 61000-3-2 (harmonic current emissions [PFC]) is fulfilled

Transient handling	Transient resistance acc. to VDE 0160 / W2 (750V / 1.3ms), for *all* load conditions.
Hold-up time	27ms at 36V/13A, AC 230V_{in} 35ms at 36V/13A, AC 120V_{in} 15ms at 36V/13A, AC 100V_{in}

Output

Output voltage	DC 36...43V, adjustable by (covered) front panel potentiometer; preset: 36V ±0.5% Adjustment range guaranteed
Output noise suppression	Radiated EMI values below EN50081-1, even when using long, unscreened output cables.
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	36V/13.3A resp. 43V/11.2A
short-term (<30s)	36V/16.6A resp. 42V/14A
Derating	12W/K (at T_{amb} = 60-70°C)
Voltage regulation	better than 2% over all

Ripple	(incl. spikes (20 MHz bandw.), 50Ω measurem.
• Output charact. S	<30mV_{PP} (<0.09%)
• Output charact. P	<80mV_{PP} (In: AC 230V, Out: 36V/13A)
(S/P: **S**ingle/**P**arallel Mode)	<100mV_{PP} (In: AC 184V, Out: 42V/13A)
Over-voltage protection	At 49V ±10%: switch to hiccup mode

Front panel indicators:
- Green LED on, when V_{out} = V_{out} adjusted
- Red LED on, when V_{out} < V_{out} adjusted

Parallel operation	Yes, up to ten SL20

To achieve current sharing the output V/I characteristic can be altered to be 'softer' (36.6V at 0A, 35.2V at 13.3A). This is done by repositioning an external bridge connection (without opening the unit).

Power Back Immunity	max. 48V

Construction / Mechanics

Housing dimensions and Weight

• W x H x D	220mm x 124mm x 102mm (+ DIN rail)
• Free space for ventilation	above/below 70mm recommended left/right 25mm recommended
• Weight	2.5kg

Design advantages:
- All connection blocks are easy to reach as mounted on the front panel.
- PVC insulated cable can be used for all connections, as the connection blocks are mounted in the cooler area on the underside of the unit.

Order information

Order number	Description
SL20.112	
SLZ02	(wall mounting set; contains 2 pcs.)

Efficiency, Reliability etc.*

Efficiency	typ. 92% (AC 230V, 36V/13.3A)
Losses	typ. 42W (AC 230V, 36V/13.3A)
MTBF	519.000h acc. to Siemensnorm SN29500 (36V / 13A, 230V, T_{amb} = 40°C)
Life cycle (electrolytics)	The unit exclusively uses longlife electrolytics, specified for +105°C (cf. 'The SilverLine', p.2). High reliability, as • only five aluminium electrolytics and • no small aluminium electrolytics are used.

* For further information see data sheets„The SilverLine", „SilverLine Family Branches" and mechanics data sheet SL20

Start / Overload Behaviour

Startup delay	typ. 0.55s
Rise time	appr. 20-80ms, depending on load
Overload behaviour	Puls Overload Design (see right-hand diagram)

Advantages:
- No disconnection/hiccup, thus overloading is possible also for a longer period of time (load start-up), ideal for parallel operation.
- High overload/short-circuit current due to straight characteristic; each bias point of the V/I characteristic extends 13A.

Advantage: Due to the high and continuously supplied overload current the unit starts reliably even with awkward loads (DC-DC converters, motors). No 'sticking' can occur as, for example, with fold-back characteristics, and secondary fuses trigger more reliably.

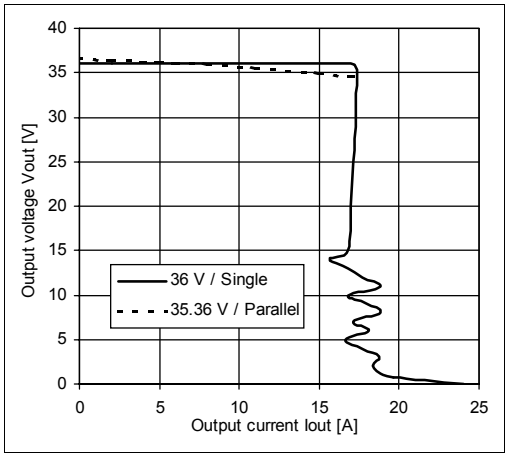
Further information

Further information, especially about
- EMC
- Connections
- Safety, Approvals
- Mechanics and Mounting,

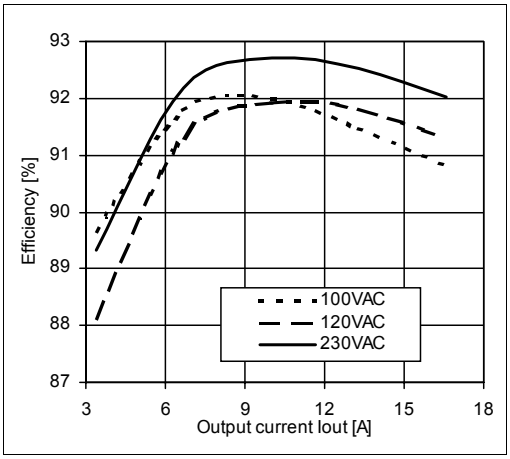
see page 2 of the „The SilverLine" data sheet

For detailed dimensions
see SilverLine mechanics data sheet SL20

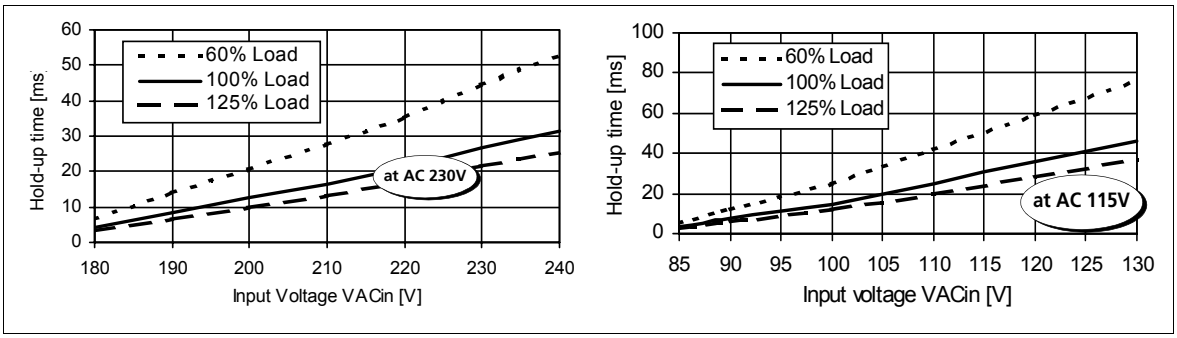
Output characteristic (typ.)



Efficiency (typ., at V_{out}=36V)



Hold-up time (min., at V_{out}=36V)



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:

ISO 9000:2001 certified

EPSMA European Power Supply Manufacturers Association

AWARDED Bayerns Best 50 Czech 100 Best Europe's 500

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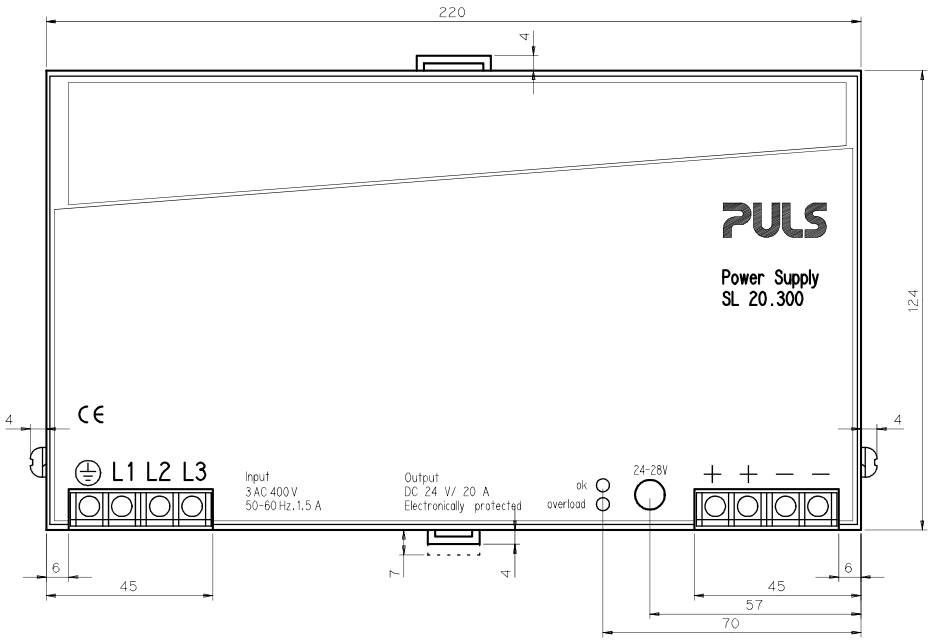
Data sheet

Mechanics

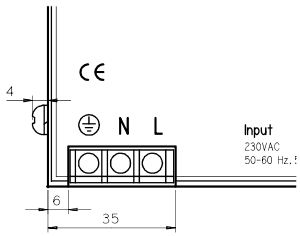
SL20

- 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

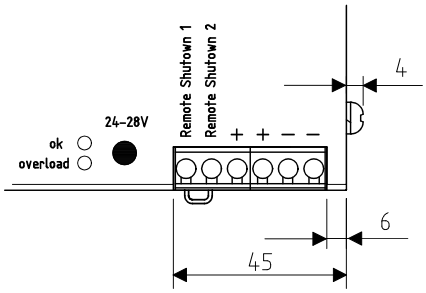
Front view SL20.300



Input terminals SL20.1xx



Output terminals SL20.115



Construction / Mechanics

Housing dimensions and Weight

• W x H x D	220 mm x 124 mm x 102 mm (+ DIN rail)
• Free space for ventilation	above/below 70 mm recommended left/right 25 mm recommended
• Weight	1.5 kg (SL20.100) / 1.8 kg (SL20.110, SL20.300) 2.5 kg (SL20.111, SL20.115)

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) therefore • 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	Screw terminals, connector size range:
• Input/Output	solid 0.5- 6 mm^2 / flexible 0.5 - 4 mm^2
• Current handling capacity	30 A per output
• Grid	Two connectors per output, 9 mm (SL20.115: 6 mm) distance between adjacent connectors

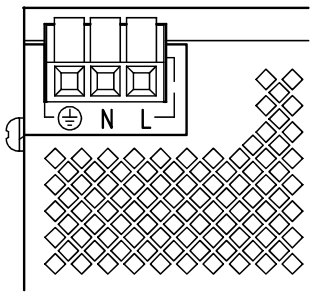
Design advantages:

- All connection blocks are easy to reach as mounted at the front panel. Input/output strictly apart from each other, thus no mixing up
- PVC insulated cable can be used for all connections, no thermal protection is needed

Order information

Order number	Description
SL20.100 / .101	AC 230 V, no PFC / incl. PFC
SL20.110 / .111	Auto select, no PFC / incl. PFC
SL20.115	Auto select, remote switch-off
SL20.300 / .301	3 AC 400 V / 3 AC 480 V
SLZ01	Screw mounting set, two needed per unit

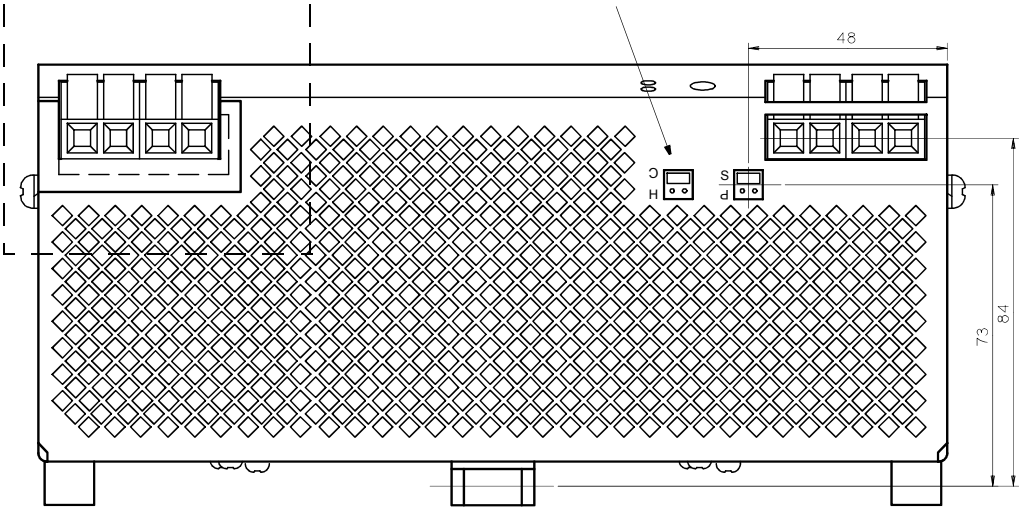
Input terminals
SL20.1xx bottom view



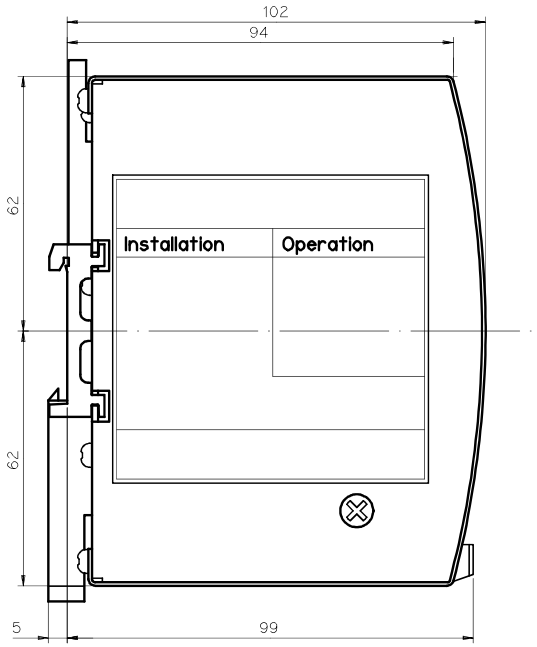
Input terminals
SL20.30x bottom view

only SL20.110/.111

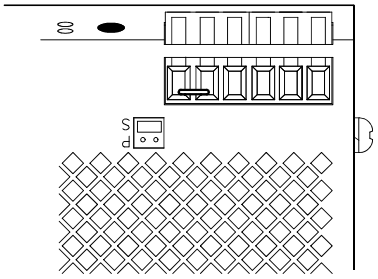
Bottom view SL20



Side view SL20



Output terminals
SL20.115 bottom view



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 SL20 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 EuropeÖs 500

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