

## SL20.100

- Input: AC 230V
- Output: 24-28V / 480W (600W)
- 91% efficiency
- Ideal for parallel operation
- Simple fusing



## Input

Input voltage	AC 230V, +15%, – 20% 47...63Hz (SL20.300/.301: 3 AC 400/480V, see separate data sheet)
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Rated Tolerances	
• Continuous operation	AC 184...264V resp. DC 270...370V
• Short term (1 min) at 24 V/20 A	AC 170...280V resp. DC 250...400V

Input current	5A
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Inrush current	typ. 33A at AC 264V
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Inrush current limiting done with a fixed 15R resistor (not a thermistor) which is bridged after the unit is running, so losses are minimised. That means no reset time even at a warm-start.

Fuse loading	<10A <sup>2</sup> s
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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)	SL20.100 on request SL20.101 acc. to EN61000-3-2
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Transient handling	Active transient filter incorporated, so transient resistance acc.to VDE 0160 / W2 (750V/ 1.3ms), for <i>all</i> load conditions.
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Hold up time	>20ms at AC 230V, 24V/20A
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## Efficiency, Reliability etc.\*

Efficiency	typ. 91%	(AC 230V, 24V/20A)
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Losses	typ. 48W	(AC 230V, 24V/20A)
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MTBF	310.000h acc. to Siemensnorm SN 29500 (24V/20A, AC 230V, T <sub>amb</sub> = +40°C)
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Life cycle (electrolytics)	The unit exclusively uses longlife electrolytics, specified for +105°C (cf. 'The SilverLine', p.2). High reliability, as <ul style="list-style-type: none"> <li>• only four aluminium electrolytics and</li> <li>• no small aluminium electrolytics are used.</li> </ul>
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\* For further information see data sheets „The SilverLine“, „SilverLine Family Branches“ and mechanics data sheet

## Order information

## Order number

SL20.100 (Basic version\*),  
SL520.100 (Safety Cover\*),  
SLZ01

## Description

including PFC: SL20.101  
including PFC: SL520.101  
Screw mounting set, two needed per unit

## Output

Output voltage	DC 24-28V adjustable by (covered) front panel potentiometer, preset: 24.0V ±0.5% Adjustment range guaranteed
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Output noise suppression	Radiated EMI values below EN61000-6-3, even when using long, unscreened output cables.
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Ambient temperature range T <sub>amb</sub>	Operation: 0°C...+70°C (>60°C: Derating) Storage: -25°C...+85°C
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## Rated continuous loading with convection cooling

• T <sub>amb</sub> =0°C - 60°C	24V/20A (480W) resp. 28V/18A (504W)
• T <sub>amb</sub> =0°C - 45°C	24V/25A (600W) resp. 28V/22A (616W) short-term also at 60°C

Derating	typ. 12W/K (at T <sub>amb</sub> = +60°C...+70°C)
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Voltage regulation	better than 2% over all
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Ripple	(incl. spikes (20MHz bandw.), 50Ω measurem.)
• Output charact. S	<20mV <sub>pp</sub> (<0.1%)
• Output charact. P	<40mV <sub>pp</sub> (In: AC 230V, Out: 24V/20A)
(S/P: Single/Parallel Mode)	<100mV <sub>pp</sub> (In: AC 184V, Out: 24V/20A)

Over-voltage protection	At 33V ±10%: switch to hiccup mode
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Front panel indicators:	<ul style="list-style-type: none"> <li>• Green LED on, when V<sub>out</sub> &gt; U<sub>T</sub>, where U<sub>T</sub> is ca. 2 V below V<sub>out</sub> adjusted (24V...28V)</li> <li>• Red LED on, when 14V &lt; V<sub>out</sub> &lt; U<sub>T</sub></li> <li>• Red LED flashes, when 0V &lt; V<sub>out</sub> &lt; 14V</li> </ul>
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Parallel operation	Yes, up to ten SL20 units
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To achieve current sharing the output V/I characteristic can be altered to be 'softer' (25V at 0.4A, 24V at 20A). This is done by repositioning a bridge connection (without opening the unit).

Power Back Immunity	>30V
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## 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	SL20.100: 1800g SL20.101: 2400g

## Design advantages:

- All connection blocks are easy to reach as mounted at 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.

**Start / Overload Behaviour**

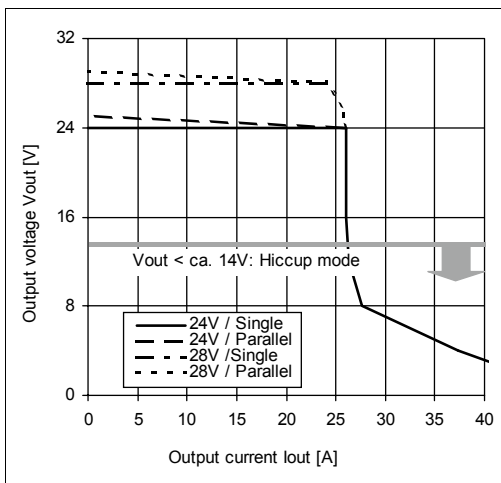
Startup delay	typ. 0.5s
Rise time	ca. 20-80ms, depending on load
Duration of switch-on attempts at	
• Initial application on mains	ca. 1.4s
• Subsequent attempts	ca. 0.5s
Hiccup operation at	$V_{out} < \text{ca. } 14V$
Duration between switch-on attempts	ca. 4s

Electronic current limiting, protects against overload and short circuit:  
 •  $V_{out} < \text{ca. } 14V$ : Periodical switch-on attempts (hiccup-mode).

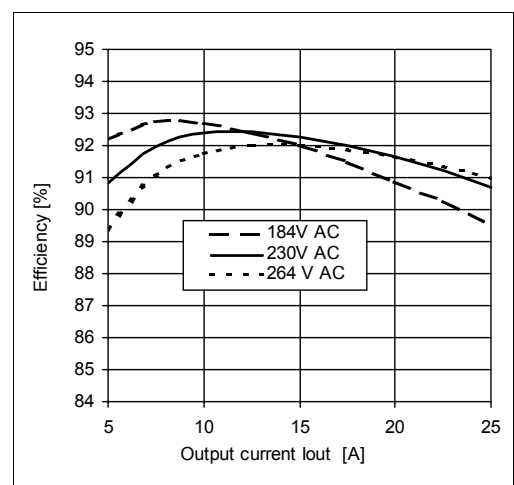
Advantages of the switch-on/overload behaviour:  
 • Safer switch-on into highly non-linear loads with large starting currents  
 • Short-term overloads result in current limiting and not in an immediate shut-down.  
 • Parallel operation of several units possible. Proper switch-on performance is obtained.

**Functional diagrams**

**Output characteristic (typ.)**



**Efficiency (typ., at  $V_{out}=24V$ )**



**Further information**

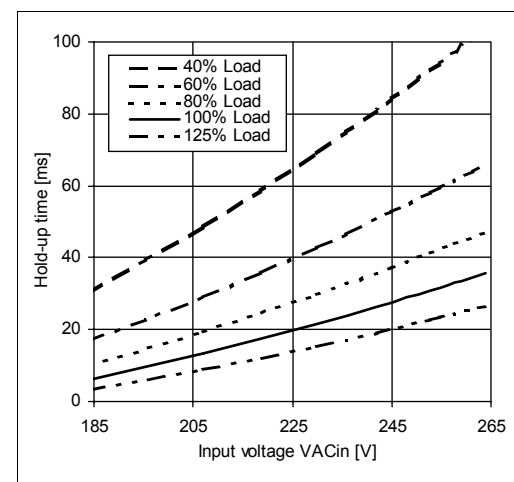
For further information, especially about

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

see page 2 of the „The SilverLine“ data sheet

**For detailed dimensions**  
 see SilverLine mechanics data sheet SL20

**Hold-up time (min., at  $V_{out}=24V$ )**



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.  
**All data is valid for SL20.100. Regarding the SL20.101 (including PFC) some values may differ.**

**Your partner in power supply:**



European Power Supply Manufacturers Association



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 Czech 100 Best  
 Europe's 500

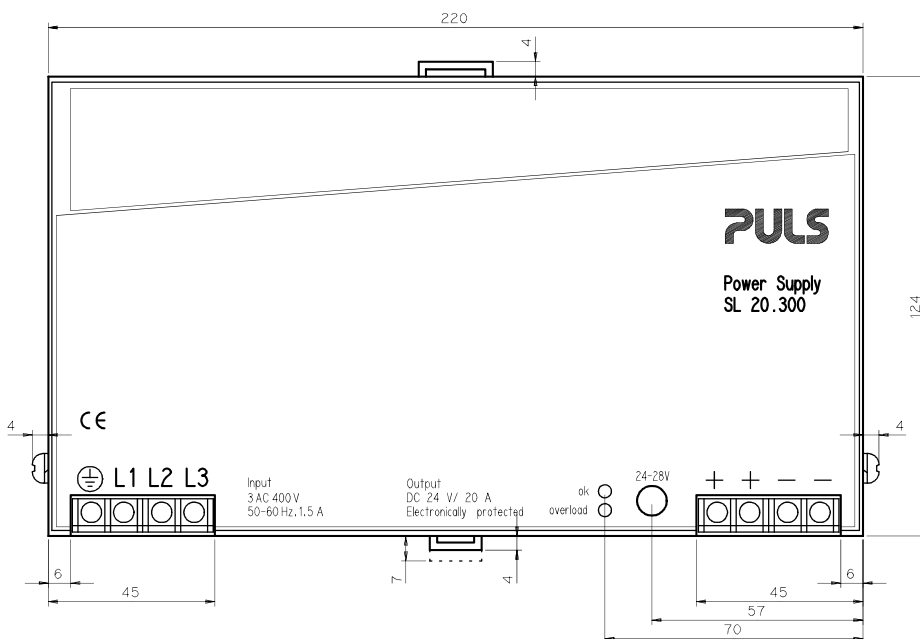
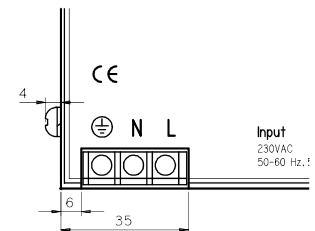
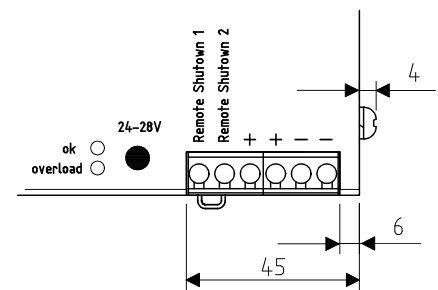
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## SL20

- 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  
SL20.1xxOutput 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 ( $\llcorner$  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

- Input/Output
- Current handling capacity
- Grid

Screw terminals, connector size range: solid 0.5- 6 mm<sup>2</sup> / flexible 0.5 - 4 mm<sup>2</sup>

30 A per output

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

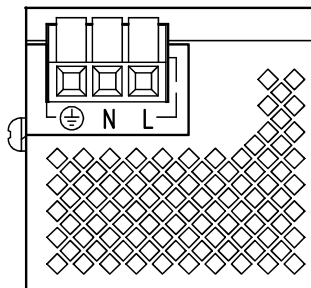
## Order number

SL20.100 / .101  
SL20.110 / .111  
SL20.115  
SL20.300 / .301  
SLZ01

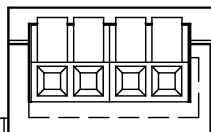
## Description

AC 230 V, no PFC / incl. PFC  
Auto select, no PFC / incl. PFC  
Auto select, remote switch-off  
3 AC 400 V / 3 AC 480 V  
Screw mounting set, two needed per unit

Input terminals  
SL20.1xx bottom view

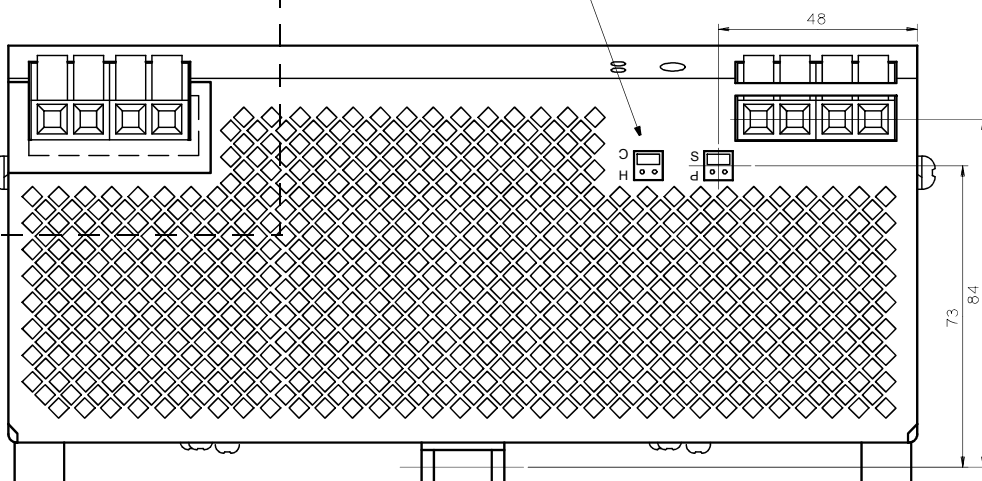


Input terminals  
SL20.30x bottom view

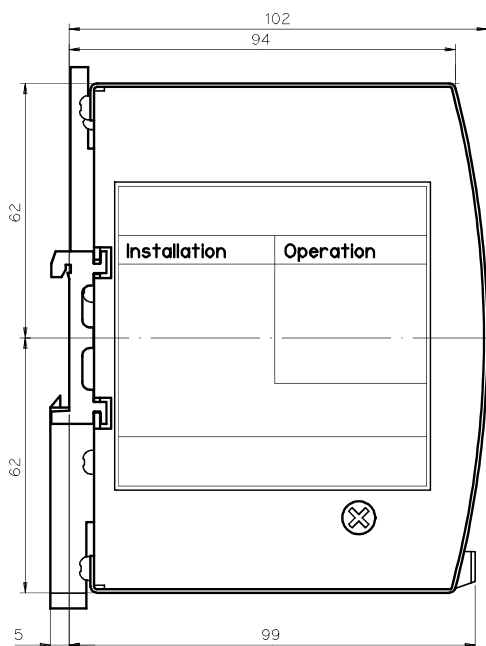


only SL20.110/.111

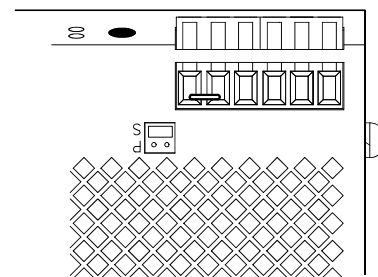
**Bottom view  
SL20**



**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 datasheet is subject to change without prior notice

**Your partner in power supply:**



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