

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)

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

Inrush current typ. 33A at AC 264V

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 <math><10A^2s</math>

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

Transient handling Active transient filter incorporated, so transient resistance acc.to VDE 0160 / W2 (750V/ 1.3ms), for *all* load conditions.

Hold up time >20ms
at AC 230V, 24V/20A

Efficiency, Reliability etc.*

Efficiency typ. 91% (AC 230V, 24V/20A)

Losses typ. 48W (AC 230V, 24V/20A)

MTBF 310.000h acc. to Siemensnorm SN 29500
(24V/20A, AC 230V, $T_{amb} = +40^{\circ}C$)

Life cycle (electrolytics) The unit exclusively uses longlife electrolytics, specified for +105°C (cf. 'The SilverLine', p.2). High reliability, as

- only four aluminium electrolytics and
- no small aluminium electrolytics are used.

* 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 $\pm 0.5\%$
Adjustment range guaranteed

Output noise suppression Radiated EMI values below EN61000-6-3, 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

- $T_{amb}=0^{\circ}C - 60^{\circ}C$ 24V/20A (480W) resp. 28V/18A (504W)
- $T_{amb}=0^{\circ}C - 45^{\circ}C$ 24V/25A (600W) resp. 28V/22A (616W)
short-term also at 60°C

Derating typ. 12W/K (at $T_{amb}= +60^{\circ}C...+70^{\circ}C$)

Voltage regulation better than 2% over all

Ripple (incl. spikes (20MHz bandw.), 50Ω measurem.)

- Output charact. S <math><20mV_{pp}</math> (<math><0.1\%</math>)
- Output charact. P <math><40mV_{pp}</math> (In: AC 230V, Out: 24V/20A)
<math><100mV_{pp}</math> (In: AC 184V, Out: 24V/20A)
(S/P: Single/Parallel Mode)

Over-voltage protection At 33V $\pm 10\%$: switch to hiccup mode

Front panel indicators:

- Green LED on, when $V_{out} > U_T$, where U_T is ca. 2 V below V_{out} adjusted (24V...28V)
- Red LED on, when $14V < V_{out} < U_T$
- Red LED flashes, when $0V < V_{out} < 14V$

Parallel operation Yes, up to ten SL20 units

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

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

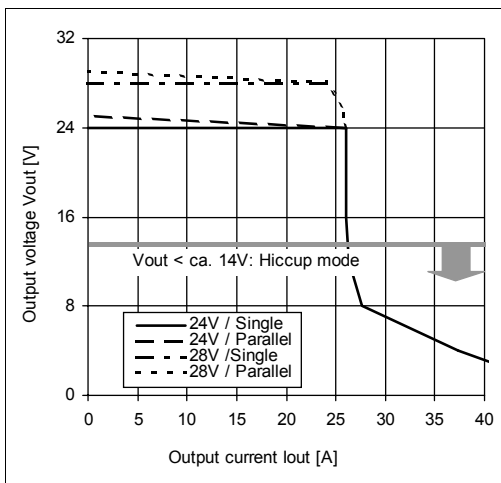
Startup delay	typ. 0.5s
Rise time	ca. 20-80ms, depending on load
Duration of switch-on attempts at	
• Initial application on mains	ca. 1.4s
• Subsequent attempts	ca. 0.5s
Hiccup operation at	$V_{out} < \text{ca. } 14V$
Duration between switch-on attempts	ca. 4s

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

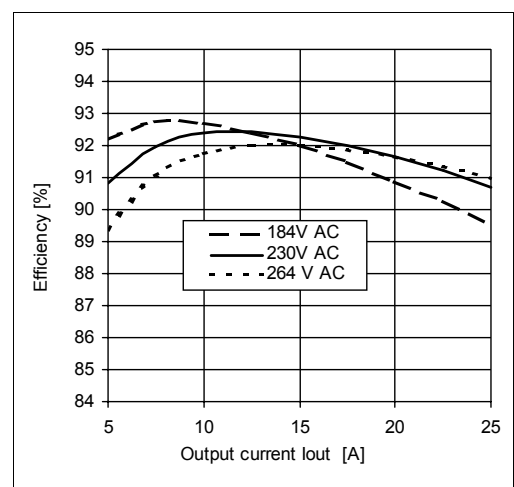
Advantages of the switch-on/overload behaviour:
 • Safer switch-on into highly non-linear loads with large starting currents
 • Short-term overloads result in current limiting and not in an immediate shut-down.
 • Parallel operation of several units possible. Proper switch-on performance is obtained.

Functional diagrams

Output characteristic (typ.)



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



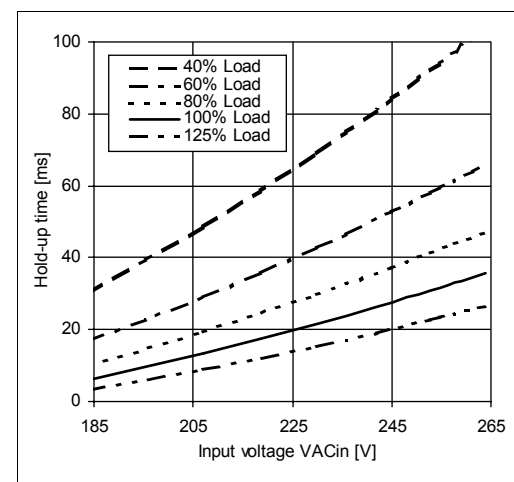
Further information

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



Bayerns Best 50
 Czech 100 Best
 Europe's 500

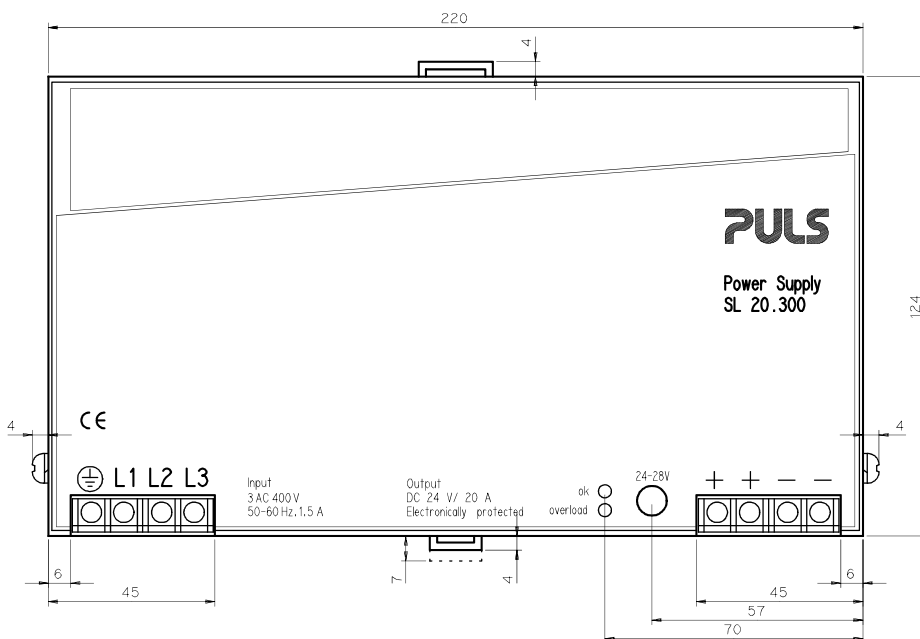
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SL20

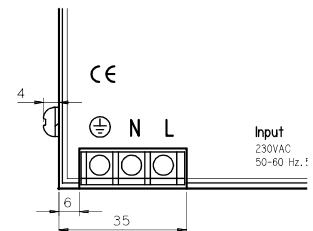
- Innovative DIN-Rail mount, unit holds even at vibration or lateral pressure
- Clearly arranged and user oriented
- Large, robust screw terminals
- Sealed metal housing
- Fine ventilating grid



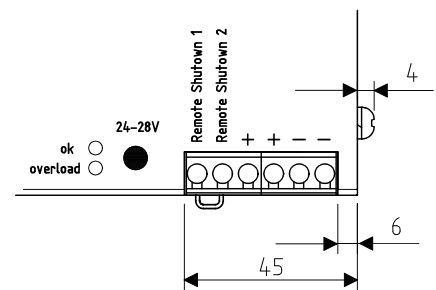
Front view SL20.300



Input terminals SL20.1xx



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 (Δ 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 mm² / flexible 0.5 - 4 mm²

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

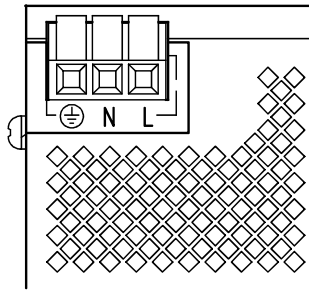
Order number

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

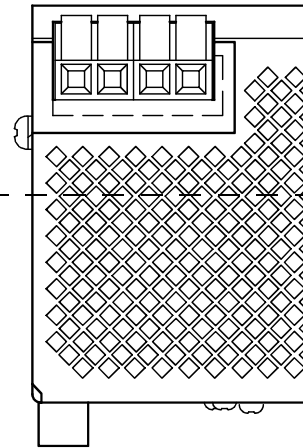
Description

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

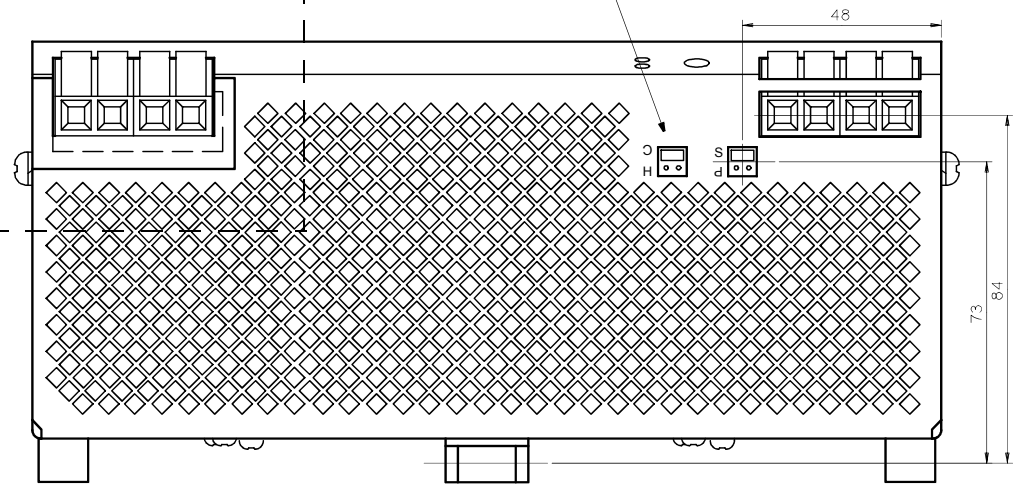


Input terminals
SL20.30x bottom view

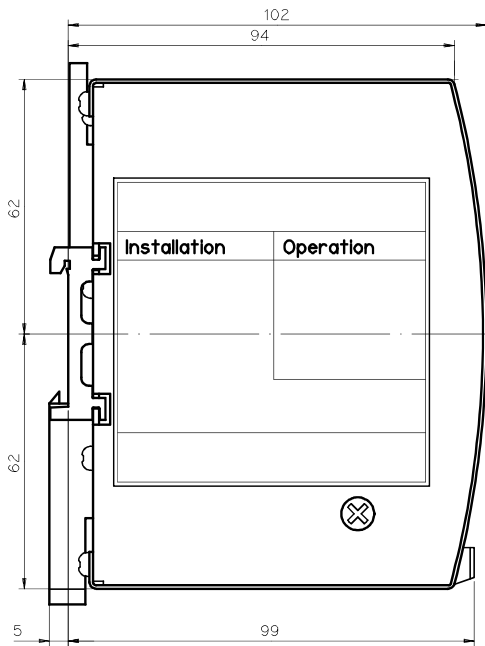


only SL20.110/.111

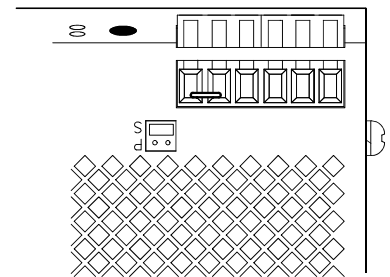
**Bottom view
SL20**



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 data sheet is subject to change without prior notice

Your partner in power supply:



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