

SL20.100

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



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



UL60950 E137006
CUL/CSA-C22.2
No 60950



EMC and
Low Volt.
Directive

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)
(S/P: Single/Parallel Mode) <math><100mV_{pp}</math> (In: AC 184V, Out: 24V/20A)

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

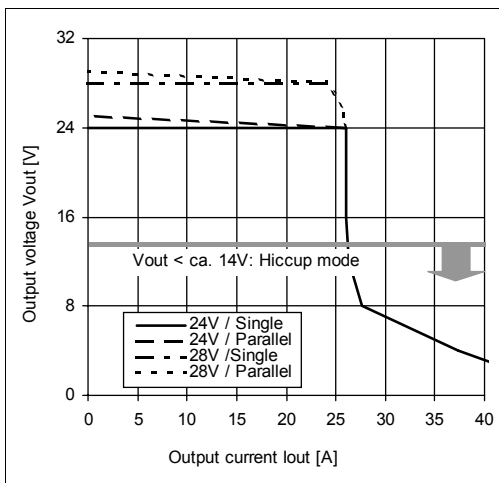
Startup delay	typ. 0.5s
Rise time	ca. 20-80ms, depending on load
Duration of switch-on attempts at	
• Initial application on mains	ca. 1.4s
• Subsequent attempts	ca. 0.5s
Hiccup operation at	$V_{out} < \text{ca. } 14V$
Duration between switch-on attempts	ca. 4s

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

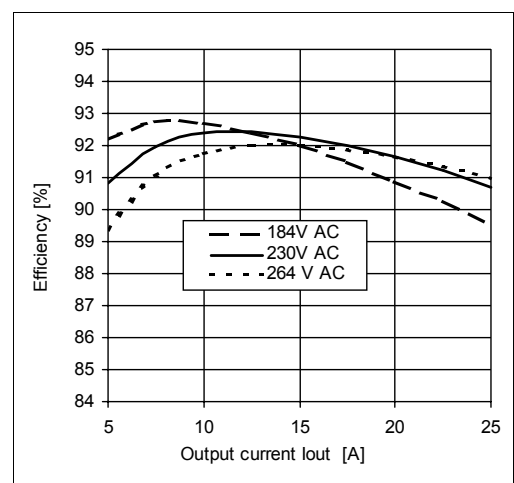
Advantages of the switch-on/overload behaviour:
 • Safer switch-on into highly non-linear loads with large starting currents
 • Short-term overloads result in current limiting and not in an immediate shut-down.
 • Parallel operation of several units possible. Proper switch-on performance is obtained.

Functional diagrams

Output characteristic (typ.)



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



Further information

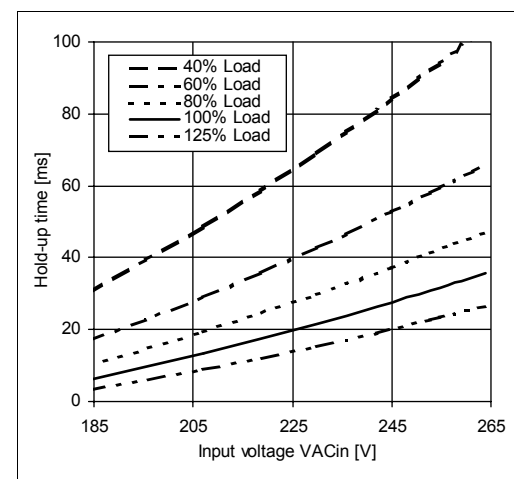
For further information, especially about

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

see page 2 of the „The SilverLine“ data sheet

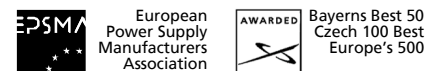
For detailed dimensions
 see SilverLine mechanics data sheet SL20

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:



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