

All-rounder

PULS

SL20.300 SL20.301

- Input: 3 AC 400V / 3 AC 480V
- Output: 24...28V / 480W (600W)
- 92% efficiency
- Ideal for parallel operation
- Simple fusing



CE
EMC and
Low Volt.
Directive

UL US
UL60950 E137006
CUL/CSA-C22.2
No. 60950

UL US
UL508 LISTED
IND. CONT. EQ.
18 WIM, 60°C

CB
scheme
IEC60950

Data sheet

Input

Input voltage	SL20.300: 3 AC 400 V, - 15 %, + 20 % SL20.301: 3 AC 480 V, - 15 %, + 20 % (SL20.100: AC 230 V, s. separate data sheet) 47-63 Hz, Suitable for IT power systems
Rated Tolerances	<ul style="list-style-type: none"> • Continuous operation SL20.300: 340-479 V AC resp. 450-700 V DC SL20.301: 408-576 V AC resp. 550-820 V DC • Short term (1 min) at 24 V/20 A SL20.300: 300-550 V AC resp. 370-790 V DC SL20.301: 360-620 V AC resp. 450-890 V DC
Input current	3 x 1.5 A
Inrush current	< 15 A at 440 V AC, < 17 A at 480 V AC
Inrush current limiting	done with a fixed 47R 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	< 2 A ² s
	To be fused with a 3 x 10A, B-type 'circuit-breaker' switch based on the usual thermomagnetic overload sensing principle (used anyway to fuse the input lines; unit has no internal fuses).
Harmonic current emissions (PFC)	acc. EN 61000-3-2
Transient handling	Active transient filter incorporated, so transient resistance acc.to VDE 0160 / W2 (1300 V / 1.3 ms), for all load conditions.
Hold up time	> 11 ms at 24 V/20 A, V _{in,nom}

Efficiency, Reliability etc.*

Efficiency	typ. 92 % (24 V/20 A, V _{in,nom})
Losses	typ. 42 W (24 V/20 A, V _{in,nom})
MTBF	310.000 h acc. to Siemensnorm SN 29500 (24 V/20 A, V _{in,nom} , 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 <ul style="list-style-type: none"> • 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

Output

Output voltage	24...28 V DC, adjustable by (covered) front panel potentiometer; preset: 24 V ±0.5% Adjusting range guaranteed
Output noise suppression	Radiated EMI values below EN50081-1, even Silent Switcher™ when using long, unshielded 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	<ul style="list-style-type: none"> • T_{amb}=0°C - 60°C 24 V / 20 A (480 W) resp. 28 V / 18 A (504 W) • T_{amb}=0°C - 45°C 24 V / 25 A (600 W) resp. 28 V / 22 A (616 W) short-term also at 60 °C
Derating	typ. 12 W/K (at T _{amb} =+60°C...+70°C)
Voltage regulation	better than 2% over all
Ripple	< 20 mV _{pp} (i.e. < 0.1 %) incl. spikes 20 MHz bandwidth, 50 Ω measurement
Over-voltage protection	At 32 V ± 10%: switch to hiccup mode
Front panel indicators:	<ul style="list-style-type: none"> • 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 14 V < V_{out} < U_T • Red LED flashes, when 0 V < V_{out} < 14 V
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).
Reverse power immunity	> 30 V

Order information

Order number	Description
SL20.300	400 V input
SL20.301	480 V input
SLZ02	Screw mounting set, two needed per unit

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 1.8 kg

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. 0.2 s
- Rise time ca. 20-80 ms, depending on load
- Duration of switch-on attempts at

- Initial application on mains ca. 1.4 s
- Subsequent attempts ca. 0.5 s

Hiccup operation at $V_{out} < ca. 14 V$

Duration between switch-on attempts ca. 4 s

Electronic current limiting, protects against overload and short circuit:

- $V_{out} < ca. 14 V$: Periodical switch-on attempts (hiccup-mode).
- $V_{out} > ca. 14 V$: The output current is continuous.

The V/I characteristic of the supply is straight.

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.

Further Information

For further information, especially about

- EMC
 - Connections
 - Safety, Approvals
 - Mechanics und Mounting,
- see page 2 of the „The SilverLine“ data sheet.

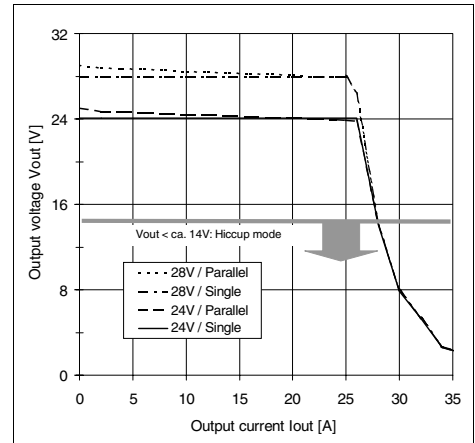
For detailed dimensions

see SilverLine mechanics data sheet SL20

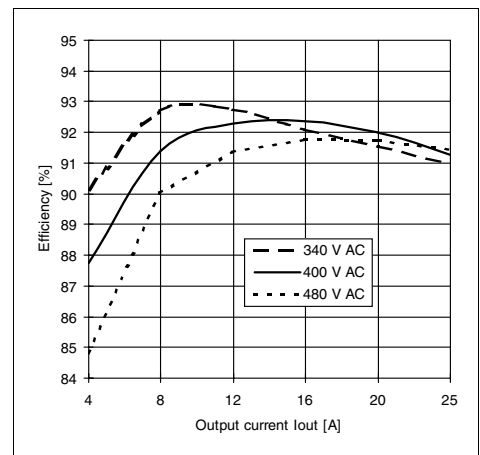
All data is valid for SL20.300.

For SL20.301 (with 480 V input) some values may differ.

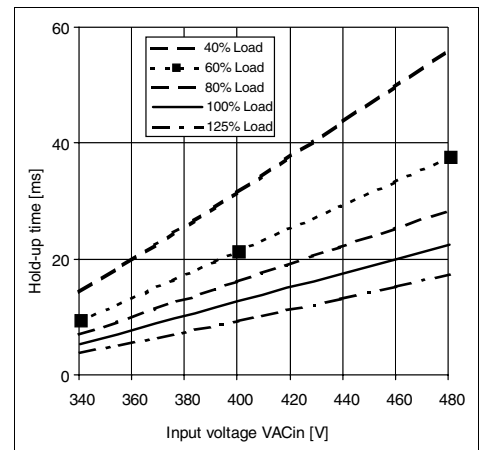
Output V/I characteristic (typ.)



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



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



Specifications valid for 3 x AC 400V input voltage, +25°C ambient temperature, and 5 min run-in time, unless otherwise stated. They are subject to change without prior notice.

Your partner in power supply:



European Power Supply Manufacturers Association



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PULS GmbH

Arabellastraße 15
D-81925 München
Tel.: +49 89 9278-0
Fax: +49 89 9278-199
www.puls-power.com