SL20 with 48...56V

SL20.113

- Input: AC 115/230V auto select
- Output: 48...56V / 480W
- 93% Efficiency
- Ideal for parallel operation

Datasheet

Input

<table>
<thead>
<tr>
<th>Input voltage</th>
<th>AC 100-120V/220-240V, 47-63Hz, auto select</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated tolerances</td>
<td></td>
</tr>
<tr>
<td>Continuous</td>
<td>AC 85...132V or AC 184...264V</td>
</tr>
<tr>
<td>Short-term (30s) at 48V/10A</td>
<td>AC 85...140V or AC 175...280V</td>
</tr>
<tr>
<td>Input current $I_n$</td>
<td>$&lt;12A$ (115V range), $&lt;6A$ (230V range)</td>
</tr>
<tr>
<td>Inrush current limiting with active bypass of the limiting resistor (NTC).</td>
<td></td>
</tr>
<tr>
<td>Inrush current $I_{pk}$</td>
<td>$&lt;18A$ @ AC 264V ($T_{amb} = +25^\circ C$, cold start), $&lt;37A$ @ AC 264V ($T_{amb} = +50^\circ C$, cold start)</td>
</tr>
<tr>
<td>Fuse loading $I^2t$</td>
<td>$&lt;5A^2s$ ($T_{amb} = +25^\circ C$, cold start), $&lt;8A^2s$ ($T_{amb} = +50^\circ C$, cold start)</td>
</tr>
<tr>
<td>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).</td>
<td></td>
</tr>
<tr>
<td>Transient handling</td>
<td>Transient resistance acc. to VDE 0160 / W2 (750V / 1.3ms), for all load conditions.</td>
</tr>
</tbody>
</table>
| Hold-up time | 30ms at 48V/10A, AC 230V
35ms at 48V/10A, AC 120V
15ms at 48V/10A, AC 100V |

Efficiency, Reliability etc.*

| Efficiency | typ. 93% (AC 230V, 48V/10A) |
| Losses | typ. 36.2% (AC 230V, 48V/10A) |
| MTBF | 519,000h acc. to Siemensnorm SN29500 (48V/10A, 230V, $T_{amb} = 40^\circ C$) |
| Life cycle (electrolytics) | The unit exclusively uses longlife electrolytics, specified for $+105^\circ C$ (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

Output

| Output voltage | DC 48...56V, adjustable by (covered) front panel potentiometer; preset: 48V ±0.5% |
| Adjustment range guaranteed |
| Output noise suppression | Radiated EMI values below ENS0081-1, even when long, unscreened output cables. |
| Ambient temperature range | $T_{amb}=0^\circ C$ - $60^\circ C$ (operation)
$T_{amb}=0^\circ C$ - $85^\circ C$ (storage) |
| Rated continuous loading with convection cooling: |
| | $T_{amb}=0^\circ C$ - $60^\circ C$, short-term (<30s) |
| | $48V/10A$ resp. 56V/8.6A |
| | $48V/12.5A$ resp. 56V/10.7A |
| Derating | 12W/K ($T_{amb} = 60-70^\circ C$) |
| Voltage regulation | better 2% over all |
| Ripple | incl. spikes (20MHz bandw.), 50Ω measurement |
| | $<400mV_{pp}$ (<0.09%) |
| | $<800mV_{pp}$ |
| | Over-voltage protection | At 58.6V ± 2.3%, 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 |

Construction/ Mechanics

Housing dimensions and Weight
- W x H x D: 220mm x 124mm x 102mm (+ DIN rail)
- Free space for ventilation: left/right 25mm recommended
- Weight: 1.8kg

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

<table>
<thead>
<tr>
<th>Order number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SL20.113</td>
<td>(wall mounting set; contains 2 pcs.)</td>
</tr>
<tr>
<td>SLZ02</td>
<td></td>
</tr>
</tbody>
</table>

CUL/CSA-C22.2
EMC and Low Volt.
UL60950 E137006
UL508 LISTED
IND. CONT. EQ.
Directive CB
scheme IEC60950
Type approval
• IEC / EN60950
• EN50178
Overvolt. cat. III
• EN60204

* For further information see data sheets „The SilverLine“, „SilverLine Family Branches“ and mechanics data sheet SL20
**Start / Overload Behaviour**

- **Start-up 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 10A.
- 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 „SilverLine“ data sheet

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

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**Hold-up time (min., at \( V_{\text{out}} = 48V \))**

- **60% Load**
- **100% Load**
- **125% Load**

- **at AC 230V**

**Efficiency (typ., at \( V_{\text{out}} = 48V \))**

- **100VAC**
- **120VAC**
- **230VAC**

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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:**

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www.puls-power.com
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

Order information

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

Connections

- Input/Output
- Current handling capacity
- Grid

Connections

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

Connections

Input terminals SL20.1xx

Output terminals SL20.115

Front view SL20.300

Housing dimensions and Weight

<table>
<thead>
<tr>
<th>W x H x D</th>
<th>220 mm x 124 mm x 102 mm (+ DIN rail)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free space for ventilation left/right 25 mm recommended</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>1.5 kg (SL20.100) / 1.8 kg (SL20.110, SL20.300) / 2.5 kg (SL20.111, SL20.115)</td>
</tr>
</tbody>
</table>

Robust metal housing with fine ventilat. grid (Ø 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)
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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**Input terminals**
SL20.1xx bottom view

**Input terminals**
SL20.30x bottom view

**Output terminals**
SL20.115 bottom view

**Side view SL20**

**Bottom view SL20**

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