Single-Phase Power

**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
- **Rated Tolerances**
  - Continuous operation: AC 184...264V resp.
  - Short term (1 min): AC 170...280V resp.
- **Input current:** 5A
- **Inrush current:** typ. 33A at AC 264V
- **Fuse loading:** <10A²s
- **Input voltage AC 230V, +15%, – 20% 47...63Hz**
- **Rated Tolerances**
  - Continuous operation: AC 184...264V resp.
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  - Continuous operation: AC 184...264V resp.
  - Short term (1 min): AC 170...280V resp.
- **Input current:** 5A
- **Inrush current:** typ. 33A at AC 264V
- **Fuse loading:** <10A²s

### Output
- **Output voltage:** DC 24-28V adjustable by (covered) front panel potentiometer, preset: 24.0V ±0.5%
- **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**
  - 24V/20A (480W) resp. 28V/18A (504W)
  - 24V/25A (600W) resp. 28V/22A (616W)
- **Derating** typ. 12W/K (at T_{amb}= +60°C...+70°C)
- **Voltage regulation** better than 2% over all
- **Ripple**
  - Output charact. S <20mVPP (In: AC 230V, Out: 24V/20A)
  - Output charact. P <40mVPP (In: AC 230V, Out: 24V/20A)
- **Over-voltage protection** At 33V ±10%; switch to hiccup mode
- **Front panel indicators:**
  - Green LED on, when V_{out} > U_T, where U_T is ca. 2 V below Vout 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

### 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°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.

### Order information

<table>
<thead>
<tr>
<th>Order number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SL20.100</td>
<td>(Basic version*), Including PFC: SL20.101</td>
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<tr>
<td>SL20.100 (Basic version*), Including PFC: SL20.101</td>
<td>Screw mounting set, two needed per unit</td>
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* For further information see data sheets „The SilverLine“, „SilverLine Family Branches“ and mechanics data sheet

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**Puls**

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**Order number**

| SL20.100 (Basic version*), Including PFC: SL20.101 | Screw mounting set, two needed per unit |

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Start / Overload Behaviour

Startup delay: typ. 0.5s
Rise time: ca. 20-80ms, depending on load
Duration of switch-on attempts:
- Initial application on mains: ca. 1.4s
- Subsequent attempts: ca. 0.5s

Hiccup operation at $V_{\text{out}} < \text{ca. 14V}$
Duration between switch-on attempts: ca. 4s

Electronic current limiting, protects against overload and short circuit:
- $V_{\text{out}} < \text{ca. 14V}$: 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.)

![Output characteristic diagram]

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

![Efficiency diagram]

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

![Hold-up time diagram]

Further information

For further information, especially about
- EMC
- Connections
- Safety, Approvals
- Mechanics and Mounting,
  see page 2 of the „The SilverLine“ data sheet

For detailed dimensions
see SilverLine mechanics data sheet SL20

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:
**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

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<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>
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### 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 ventilating 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)

### Connections

**Input terminals SL20.1xx**

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

**Output terminals SL20.115**

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
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: