Mini is more.

Data Sheet

MiniLine ML50.100
with DC 24-28V / 50W

- Mounted and connected in record time, no tools required
- World-wide approvals (UL, EN, CSA, CB Scheme) for industry and office/home
- Tiny: WxHxD = 45 x 75 x 91mm
- NEC Class 2 Power Supply and Hazardous Location Class I Div. 2 (UL 1604)
- Output voltage adjustable to DC 28V
- 100-240V Wide Range Input (AC 85...264V permitted)
- PULS Overload Design™ (no switch-off at overload but up to 1.5 times nominal current)
- ML50.101 with load sharing for reliable parallel operation

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**Technical Data ML50.100/.101**

### Input

- **Input voltage**: AC100-240V (Wide Range), 47...63Hz
- **Admiss. limits**: AC 85...264V (DC 85...375V)
- **Input current**: 
  - <1.0A (at AC 100V, 50W Pout)
  - <0.6A (at AC 196V, 50W Pout)
- **External Fusing**: Not required, unit provides internal fuse (T3AH, not accessible)
- **Transient immunity**: Transient resistance acc. to VDE 0160 / W2 (750V / 1.3ms), over entire load range
- **Hold-up time**:
  - >171ms bei AC 230V, 24V / 2.1A (see diagram below)
  - >97ms @ AC 196V, 24V / 2.1A
  - >17ms @ AC 100V, 24V / 2.1A

### Efficiency, Reliability

- **Efficiency**
  - typ. 88.5% (AC 230V, 24V / 2.1A) (see also diagram below)
- **Losses**
  - typ. 6.8W (AC 230V, 24V / 2.1A)
- **MTBF (Reliability)**
  - ca. 600,000 h acc. to Siemens SN 29500
  - (24V / 2.1A, AC 230V, T_amb = +40°C)

Prior to shipment, every unit undergoes the following tests in order to isolate any defective units which might suffer an early failure:
- Run-in/burn-in (Full load, T_amb = +60°C, on/off cycle)
- Functional test (100%)

### Construction, Mechanics, Installation

Robust plastic housing (US Patent No. D442, 923S), fine ventilation grid on three housing sides to keep out small parts (e.g. screws), IP20

#### Dimensions and weight
- B x H x T
  - 45mm x 75mm x 91mm (+ DIN Rail)
  - Depth incl. terminals: 98mm (+ DIN Rail)
- **Weight**: 240g

#### Mounting orientation
- Normal convection, no fan required

#### Free space f. cooling
- reom’d.: 25mm on sides with ventilation grid

Easy snap-on mounting onto the DIN-rail (TS35/7,5 or TS35/15).

#### Connection
- by Spring Clamp terminals; uniformly firm hold, vibration-resistant and maintenance-free: 2 terminals per output

#### Connector size range
- **flexible cable**: 0.3-2.5mm² (28-12 AWG)
- **solid cable**: 0.3-4mm² (28-12 AWG)
- **Ferrules admissible**: 0.3-4mm² (28-12 AWG)

Design details – for your advantage:
- All terminals are easy to reach as mounted on the front panel.
- Input and output are strictly apart from each other (input below, output above) and so cannot be mixed up

**Mounting and connection do not require any screwdriver** → Easy, quick, durable and reliable installation

### Output (incl. Logic)

- **Output voltage**: DC 24-28V, adj. by front panel potentiometer
  - 24.5V ±0.5% (ML50.101: at half Irated)
- **Voltage regulation**: stat. 0.5% V_out (ML50.100) / 5% (ML50.101, load sharing), dyn. ±2% V_out overall
- **Ripple/Noise**: <50mVpp (20MHz bandwidth, 50 Ω-measurment.)
- **Overvoltage prot. (OVP)**: <40V
- **Output noise**: Radiated EMI values below EN 61000-6-3, even suppression with long (>2m), unscreened output cables
- **Rated continuous loading** up to 2.1A (convection cooling) depending on built-in orientation, V_out and T_amb for details see derating diagram below

**Overload behaviour**
- **PULS Overload Design™**: No switch-off at overload/short-circuit, instead: up to 1.5 I_rated. So you need no oversizing to start awkward loads.

- **Protection**: Unit is protected against (also permanent) short-circuit, overload and open-circuit
- **Derating**
  - depending on built-in orientation; see diagram below

- **Parallel operation**: Yes with ML50.101 by load sharing, incl. characteristic curve (ΔV = ±0.6V @ 0A...I_rated)
- **Power back immunity**: 35V
- **Power indicator**: Green LED (DC OK), threshold: V_out = 20V ±4%

### Environmental Data, EMC, Safety

#### Ambient temperature range (measured 25mm below unit)
- Storage: -25°C...+85°C
- Operation: -10°C...+70°C (for derating see diagram below)

#### Humidity
- max. 95% (without condensation)

#### Electromagnetic emissions (EME)
- EN 61000-6-1
- EN 61000-6-3 (includes EN 61000-6-4)
- EN 61000-6-2 (includes EN 61000-6-1)

#### Electromagnetic immunity (EMI)
- EN 61000-6-3 (includes EN 61000-6-1)
- EN 61000-6-4 (includes EN 61000-6-4)
- EN 61000-6-1

#### Safe low voltage:
- SELV (EN60950, VDE0100/T.410), PELV (EN50178)

#### Prot. class/degree:
- Class I (EN60950) / IP20 (EN60529)

#### The PSU complies with all major safety approvals
- for EU (EN 60950, EN 60204-1, EN 50178), USA (UL 60950, E137006, UL508 LISTED, E198865), Canada (CAN/CSA-C22.2 No 60950 [CUR], CAN/CSA-C22.2 No. 14 [CUL]), CB Scheme (IEC 60950), NEC Class 2 Power Supply and Hazardous Location Class I Div. 2 (UL 1604)

#### Output Power

- **Rated continuous power**: typ. 6.8W (AC 230V, 24V / 2.1A)
- **Efficiency**: typ. 88.5% (AC 230V, 24V / 2.1A)
- **Reliability**: ca. 600,000 h acc. to Siemens SN 29500
- **Overload behaviour**: PULS Overload Design™: No switch-off at overload/short-circuit, instead: up to 1.5 I_rated. So you need no oversizing to start awkward loads.

#### Protection
- **Unit is protected against (also permanent) short-circuit, overload and open-circuit**

#### Derating
- depending on built-in orientation; see diagram below

#### DC OK output
- To feed a 24V relay (R_coil >700 Ω−

#### Operation indicator
- Green LED (DC OK), threshold: V_out = 20V ±4%

#### Mounting orientation
- Normal convection, no fan required

#### Free space f. cooling
- reom’d.: 25mm on sides with ventilation grid

#### Power back immunity
- 35V

#### Power indicator
- Green LED (DC OK), threshold: V_out = 20V ±4%

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### Diagrams

**Output characteristic V_out/I_out (min.)**

**Efficiency (@ V_out = 24V, typ.)**

**Derating of output power**

**Hold-up time with AC_in (@ V_out = 24V, typ. + min.)**