MiniLine



Data Sheet

MiniLine ML100.100 ML100.109 with DC 24-28V / 100W

- Mounted and connected within seconds, no tools required
- World-wide approvals (UL, EN, CSA, CB Scheme) for industry and office/ home
- Tiny: WxHxD = 73 x 75 x 103mm
- Hazardous Location Class I Div. 2
- Adjustable output voltage up to DC 28V
- 115/230V Auto Select Input
- PULS Overload Design (high output overload capability)
- Selectable single/parallel operation (jumper)

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Technical Data ML100.100/109

Input

Input voltage	AC 100-120/220-240V (Auto Select), 50...60 Hz (AC 85...132V / AC 184...264V, DC 220...375V N=⊕ and L=⊖)
Input current	<2.1A (@ AC 100V_{in}, 100W P_{out}) <1A (@ AC 220V_{in}, 100W P_{out})
External fusing	not required, unit provides internal fuse (T3A15H, not accessible)
Transient immunity	Transient resistance acc. to VDE 0160 / W2 (750V/ 1.3 ms), over entire load range
Hold-up time (see diagram below)	>40 ms @ AC 230V, 24.5V / 4.2A >20 ms @ AC 196V, 24.5V / 4.2A >20 ms @ AC 100V, 24.5V / 4.2A

Efficiency, Reliability

Efficiency	typ. 90% (AC 230V, 24.5V / 4.2A) (see also diagram below)
Losses	typ. 11.4W (AC 230V, 24.5V / 4.2A)
MTBF (Reliability)	appr. 500.000 h acc. to Siemensnorm SN 29500 (24.5V / 4.2A, 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	
• W x H x D	73 mm x 75 mm x 103 mm (+ DIN rail) Depth incl. terminals: 98 mm (+ DIN rail)
• Weight	360 g
Mounting orientation	 (cf. 'Output')
Ventilation/Cooling	Normal convection, no fan required
• Free space f. cooling	recom'd.: 25 mm on sides with ventilation grid

Easy snap-on mounting onto the DIN-rail (TS35/7,5 or TS35/15).
Unit sits safely and firmly on the rail; no tools required even to remove

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
• Wire strip length	6mm recommended

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

Output voltage	DC 24-28V (adj. by front panel potentiometer)
• preset	24.5V ± 0.5% @ 4.2A
Voltage regulation	stat. <1% V_{out} (Jumper in pos. 'Single Use') stat. <3% V_{out} (Jumper in pos. 'Parallel Use'), dyn. ±1.5% V_{out} over all
Ripple/Noise	<50mV_{PP} (20 MHz bandw., 50 Ω measurem.)
Overvoltage prot. (OVP)	<36V
Output noise suppression	EMI values below EN 61000-6-3, even when using long (>2m), unscreened output cables
Rated continuous loading	up to 4.2A @ 24.5V / 3.6A @ 28V (convection cooling), depending on built-in orientation, V_{in} and T_{amb} For details see derating diagram below
Overload behaviour	**PULS Overload Design:** No switch-off at overload/short-circuit, instead: up to 1.9 · 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 (selectable by front panel jumper)
Power back immunity	35V
Operating indicator	Green LED

Environmental Data, EMC, Safety

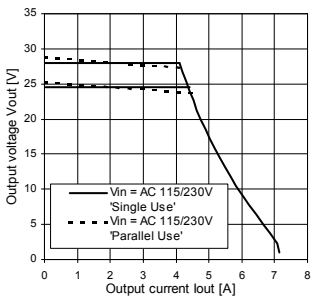
Ambient temperature range (measured 25 mm below unit)	
• storage/transport	-25°C ... +85°C
• operation	-10°C ... +70°C (for derating see diagram below) -10°C ... +60°C (for hazardous location areas)
Humidity	max. 95% (without condensation)
Safety:	SELV (IEC/UL 60950-1), PELV (EN 50178)
Prot. class/degree:	Class I (IEC/UL 60950-1) / IP20 (EN 60529)

The PSUs comply with all major **safety approvals**
UL 508 LISTED: E198865,
IEC 61010-2-201 CB Scheme,
IEC 60950-1 CB Scheme,
UL 60950-1: E137006 US and Canada,
CSA Class I Div 2: 5318-01 (Canada), 5318-81 (USA),
Marine DNV: TAA00002JT (ML100.100 only)

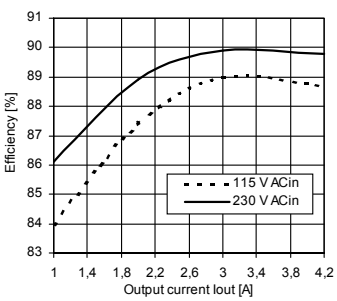
CE: EU Declaration of Conformity (EU DoC): 2014/35/EU (LVD), 2014/30/EU (EMC), 2011/65/EU (RoHS),
WEEE Directive (2012/19/EU), WEEE-Reg.-Nr. DE 55837529

Diagrams

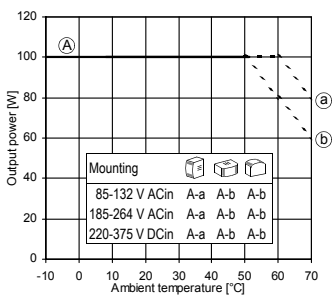
Output characteristic V_{out}/I_{out} (min.)



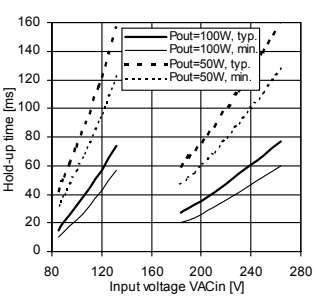
Efficiency (@ V_{out} = 24.5V, typ.)



Derating of output power



Hold-up time with ACin (at V_{out} = 24.5V, typ. + min.)



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