MiniLine

Data Sheet

MiniLine ML100.102 with DC 12-15V / 90W

- 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 15V
- 115/230V Auto Select Input
- Selectable single/parallel operation (jumper)

PULS GmbH, Elektrastr. 6, 81925 Munich
Tel. +49 (0)89 9278-0, info@pulspower.com,
http://www.pulspower.com

Technical Data **ML100**.102

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	<1.9A (@ AC 100V_{in}, 90W P_{out}) <0.9A (@ AC 220V_{in}, 90W 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, 12V / 7.5A >20 ms @ AC 196V, 12V / 7.5A >20 ms @ AC 100V, 12V / 7.5A

Efficiency, Reliability

Efficiency	>88.5% (AC 230V, 12V / 7.5A) (see also diagram below)
Losses	<11.7W (AC 230V, 12V / 7.5A)
MTBF (Reliability)	appr. 500.000 h acc. to Siemensnorm SN 29500 (12V / 7.5A, 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	, or (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 (0.24in) recommended

Output

Output voltage	DC 12-15V (adj. by front panel potentiometer)
• preset	12V ± 0.5% @ 7.5A
Voltage regulation	stat. <1.5% V_{out} (Jumper in pos. 'Single Use') stat. <3% V_{out} (Jumper in pos. 'Parallel Use'), dyn. ±2.5% V_{out} over all
Ripple/Noise	<50mV_{PP} (20 MHz bandw., 50 Ω measurement)
Overvoltage prot. (OVP)	<18.5V
Rated continuous loading	up to 7.5A @ 12V/6A @ 15V (convection cooling), depending on built-in orientation, V_{in} and T_{amb} For details see derating diagram below
Overload behaviour	Straight V/I characteristic (depending on V_{in}); details see diagr. 'output characteristic' below
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	25V
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)
Safe low voltage:	SELV (IEC/UL 60950-1, VDE0100/T.410), PELV (EN 50178)
Prot. class/degree:	Class 1 (IEC/UL 60950-1) / IP20 (EN 60529)

The PSU complies with all major safety approvals
UL 508 LISTED: E198865,
IEC 61010-2-201 Manufacturer´s Declaration,
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

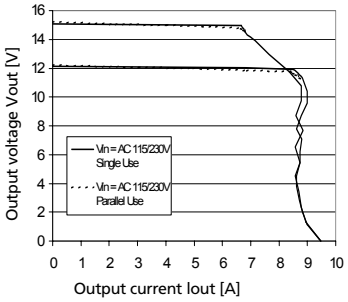
CE: EU Declaration of Conformity (EU DoC): 2014/35/EU (LVD), 2014/30/EU (EMC), 2011/65/EU (RoHS),
WEEE Directive (2012/19/EU), WEEE-Reg.-Nr. DE 55837529

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**

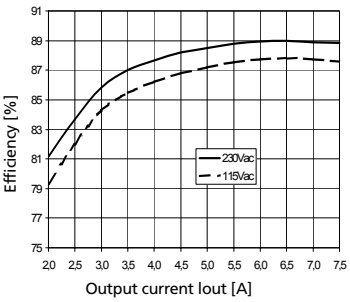
→ Easy, quick, durable and reliable installation.

Diagrams

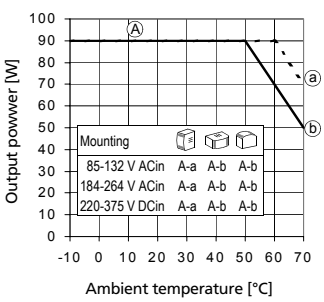
Output characteristic V_{out}/I_{out} (min.)



Efficiency (@ V_{out} = 12V, typ.)



Derating of output power



Hold-up time with ACin (at V_{out} = 12V, typ. + min.)