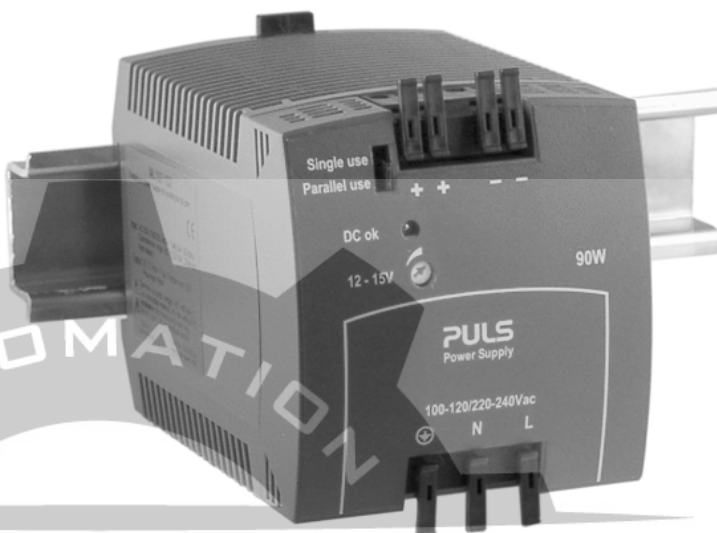


PULS does it again:
practical, versatile and reliable like
the SilverLine – yet small like
no other.

PULS



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 (UL 1604)
- Adjustable output voltage up to DC 15V
- 115/230V Auto Select Input
- Selectable single/parallel operation (jumper)

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Mini is more.

Technical Data ML100.102

Input

Input voltage	AC 100-120/220-240V (Auto Select), 47...63 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, 9235), 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 (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)
Humidity	max. 95% (without condensation)
Electromagnetic emissions (EME)	EN 61000-6-3 (includes EN 61000-6-4) Class B (EN 55011, EN 55022) EN 61000-3-2 (PFC)
Electromagnetic immunity (EMI)	EN 61000-6-2 (includes EN 61000-6-1)
Safe low voltage:	SELV (EN 60950, VDE0100/T.410), PELV (EN 50178)
Prot. class/degree:	Class 1 (EN 60950) / IP20 (EN 60529)

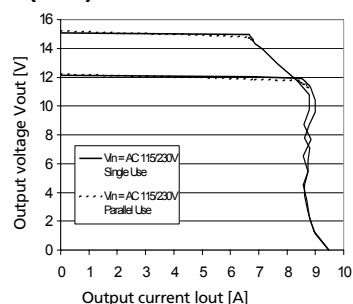
The PSU complies with all major **safety approvals** for EU (EN 60 950, EN 60204-1, EN 50178), USA (UL 60950, E137006, UL508 LISTED, E198865), Canada (CAN/CSA-C22.2 No 60950 [CUR], CAN/CSA-C22.2 No. 14 [CUL]), CB Scheme (IEC 60950). Hazardous Location Class I Div. 2 (UL 1604)

Design details – for your advantage:

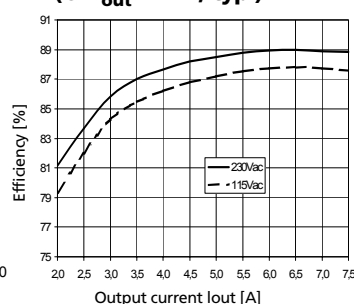
- All terminals are easy to reach as mounted on the front panel.
- Input and output are strictly apart from each other (input below, output above) and so cannot be mixed up.
- **Mounting and connection do not require any screwdriver**
→ Easy, quick, durable and reliable installation.

Diagrams

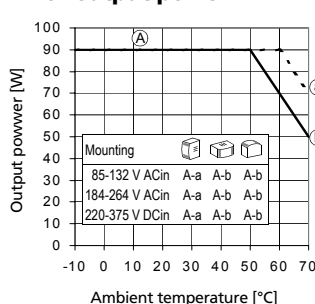
Output characteristic V_{out}/I_{out} (min.)



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



Derating of output power



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

