



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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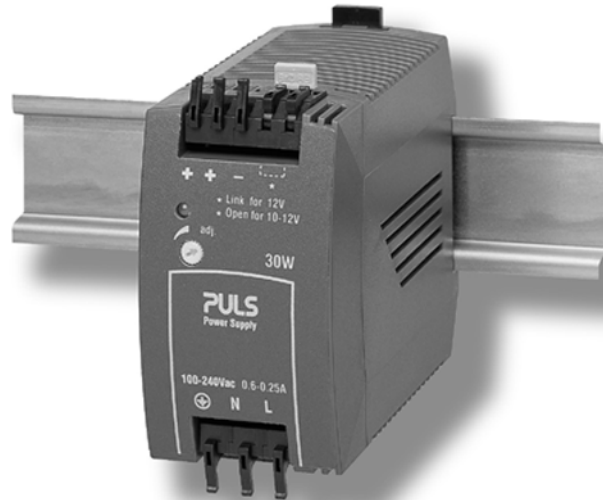
PULS does it again:
practical, versatile and reliable like
the SilverLine – yet small like
no other.

PULS

CE

CB
scheme

UL
US LISTED



Data Sheet

MiniLine ML30.102 with DC 10-12V / 30W

- 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)
- Low Ripple (<2mV_{pp}, 200kHz)
- Adjustable output voltage: DC 10-12V (without jumper) resp. DC 12V (with jumper)
- 100-240V Wide Range Input

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Mini is more.

◆ Technical Data ML30.102

◆ Input

Input voltage	AC 100-240V (Wide Range), 47...63 Hz Admiss. limits: AC 85...264V (DC 85...375V)
Input current	<0.6A (@ AC 100V, 30W P _{out}) <0.25A (@ AC 240V, 30W P _{out})
External fusing	not required, unit provides internal fuse (T3A15H, not accessible)
Transient immunity	Transient resistance acc. to VDE 0160 / W2 (750V / 1.3ms), over entire load range
Hold-up time (see diagram below)	>170ms @ AC 230V, 10V / 3A >100ms @ AC 196V, 10V / 3A >18ms @ AC 100V, 10V / 3A

◆ Efficiency, Reliability

Efficiency	typ. 84% (AC 230V, 10V / 3A) (see also diagram below)
Losses	typ. 5.8W (AC 230V, 10V / 3A)
MTBF (Reliability)	appr. 650.000h acc. to Siemensnorm SN 29500 (10V / 3A, 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 45mm x 75mm x 91mm (+ DIN Rail)
- Weight 250g

Mounting orientation  (cf. 'Output')

Ventilation/Cooling Normal convection, no fan required

- Free space f. cooling recom'd.: 25mm 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.

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

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, out-put above) and so cannot be mixed up.
- **Mounting and connection do not require any screwdriver**
→ Easy, quick, durable and reliable installation.
- A jumper (output terminal) serves to adjust the output voltage (10V resp. 12V).

◆ Output

Output voltage	without jumper: DC 10-12V (adj. by front panel potentiometer, adj. range guaranteed); with jumper: 12V ±0.5%, without jumper: 10V ±0.5%
• preset	
Voltage regulation	stat. <1% @ V _{out} = 10V stat. <1.2% @ V _{out} = 12V, dyn. ±2.5% V _{out} over all
Ripple	<2mV _{pp} (200kHz bandw., 50 Ω measurem.)
Noise (Spikes)	<10mV _{pp} (20MHz bandw., 50 Ω measurem.)
Oversvoltage prot. (OVP)	<18V
Rated continuous loading	at convection cooling: max. I _{out} = 3A @ V _{out} = 10V, max. I _{out} = 2.5A @ V _{out} = 12V, details see derating diagram below
• power reserve	25%–40% (depending on V _{in}); details see diag. 'output characteristic' below
Overload behaviour	Straight V/I characteristic (depending on V _{in}); details see diag. '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
Power back immunity	30V
Operating indicator	Green LED (DC ON)

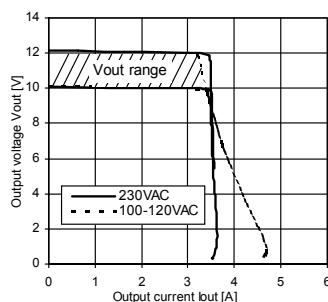
◆ Environmental Data, EMC, Safety

Ambient temperature range (measured 25mm 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)
Electromagnetic immunity (EMI)	EN 61000-6-2 (includes EN 61000-6-1)
Safe low voltage:	SELV (EN60950, VDE0100/T.410), PELV (EN50178)
Prot. class/degree:	Class I (EN60950) / IP20 (EN60529)

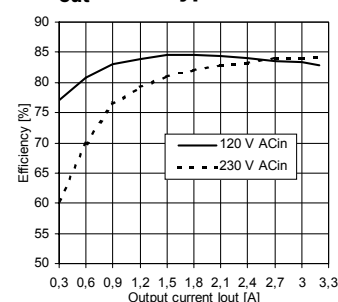
The PSU complies with all major **safety approvals** for EU (EN 60950, EN 60204-1, EN 50178), USA (UL 60950, E137006, UL508 LISTED, E198865), Canada (CAN/CSA-C22.2 No 60950 [CUR], CAN/CSA-C22.2 No. 14 [CUL]), CB Scheme (IEC 60950). NEC Class 2 Power Supply and Hazardous Location Class I Div. 2 (UL 1604)

◆ Diagrams

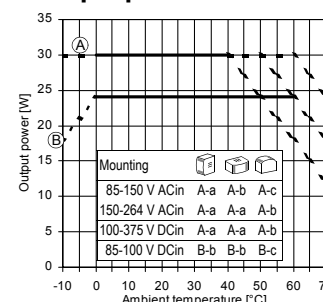
Output characteristic V_{out}/I_{out} (min.)



Efficiency (@ V_{out} = 10V, typ.)



Derating of output power



Hold-up time with ACin (at V_{out} = 10V, typ. + min.)

