

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

PULS

CE

UL US LISTED

CB
scheme



Data Sheet

MiniLine

with DC 24-28V / 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
- 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)

Mini is more.

◆ Technical Data ML30.100

◆ Input

Input voltage	AC100-240V (Wide Range), 47...63Hz Admiss. limits: AC 85...264V (DC 85...375V)
Input current	<0.6A (@ AC 100V, 30W P _{out}) <0.35A (@ AC 196V, 30W P _{out})
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 (see diagram below)	>190ms bei AC 230V, 24V / 1.3A >107ms @ AC 196V, 24V / 1.3A >19ms @ AC 100V, 24V / 1.3A

◆ Efficiency, Reliability

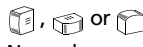
Efficiency	typ. 87.5% (AC 230V, 24V / 1.3A) (see also diagram below)
Losses	typ. 4.5W (AC 230V, 24V / 1.3A)
MTBF (Reliability)	ca. 650.000h acc. to Siemensnorm SN 29500 (24V/1.3A, AC 230V, T _{amb} = +40°C)

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

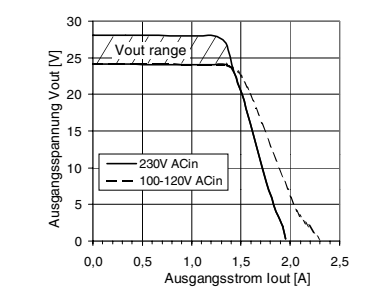
Dimensions and weight	
• B x H x T	45mm x 75mm x 91mm (+ DIN Rail) Depth incl. terminals: 98mm (+ DIN Rail)
• Weight	230g
Mounting orientation	 (cf. 'Output')
Ventilation/Cooling	Normal convection, no fan required
• Free space f. cooling	recom'd.: 25mm on sides with ventilation grid
Easy snap-on mounting 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: 2 terminals per output
• Connector size range	0.5-2.5mm ² 20 AWG – 12 AWG Ferrules admissible
• Wire strip length	6mm (0.24in) recommended

Design details – for your advantage:

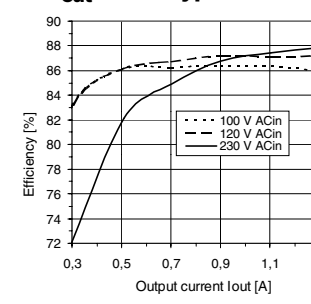
- All terminals are easy to reach as mounted on the front panel.
- Input and output are strictly apart from each other (input below, output above) and so cannot be mixed up
- **Mounting and connection do not require any screwdriver**
→ Easy, quick, durable and reliable installation

◆ Diagrams

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



Efficiency (@ V_{out} = 24V, typ.)



◆ Output

Output voltage	DC 24-28V, adj. by front panel potentiometer • preset 24.5V ±0.5%
Voltage regulation	stat. 0.5% V _{out} ; dyn. ±2% V _{out} overall
Ripple/Noise	<50mV _{pp} (20MHz bandw., 50 Ω-measur.)
Overvoltage prot. (OVP)	<40V
Output noise suppression	Radiated EMI values below EN50081-1, even when using long (>2m), unshielded output cables
Rated continuous loading	up to 1.3A (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 1.5 · 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
Power back immunity	35V
Operation indicator	Green LED (DC ON)

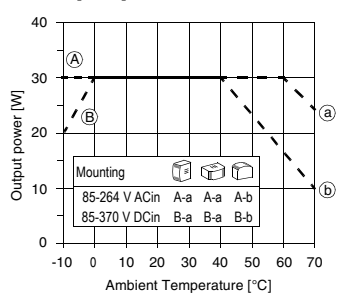
◆ Environmental Data, EMC, Safety

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 50081-1 (includes EN 50081-2) Class B (EN 55011, EN 55022) incl. Annex A thanks to noise suppression
Electromagnetic immunity (EMI)	EN 61000-6-2 (includes EN 55024)
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 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).

Operation on IT networks: The unit is designed to operate on IT networks. The unit may still deliver a hazardous voltage after the fuses are tripped.

Derating of output power



Hold-up time with ACin (@ V_{out} = 24V, typ. + min.)

