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

## **PULS**





Data Sheet

# MiniLine with DC 48-56V / 50W

- 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 91 mm
- NEC Class 2 Power Supply

- Adjustable output voltage up to DC 56V
- 100-240V Wide Range Input
- PULS Overload Design™ (high output overload capability)

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## Mini is more.



## Technical Data ML50.105

♦ Input	
Input voltage	AC 100-240V (Wide Range), 4763Hz Admiss. limits: AC 85264V (DC 85375V)
Input current	<1.0A (@ AC 100V, 50W P <sub>out</sub> ) <0.6A (@ AC 196V, 50W P <sub>out</sub> )
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, 48V / 1.05A >97ms @ AC 196V, 48V / 1.05A >17ms @ AC 100V, 48V / 1.05A

#### Efficiency, Reliability

		-
Efficiency	typ. 90%	(AC 230V, 48V / 1.05A)
	(see also d	iagram below)
Losses	typ. 6W	(AC 230V, 48V / 1.05A)
MTBF (Reliability)	appr. 600.0	000h acc. to Siemensnorm SN 29500
	(48V / 1.05	A, AC 230V, T <sub>amb</sub> = +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<sub>amb</sub> = +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

• WxHxD	45mm x 75mm x 91mm (+ DIN Rail) Depth incl. terminals: 98mm (+ DIN Rail)	
Weight	240g	
Mounting orientation	🗊 , 🍙 or 🏠 (cf. 'Output')	
Ventilation/Cooling <ul> <li>Free space f. cooling</li> </ul>	Normal convection, no fan required 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 • flexible cable 0.3-2.5mm<sup>2</sup> (28-12 AWG) • solid cable 0.3-4mm<sup>2</sup> (28-12 AWG)

Ferrules admissible
 Wire strip length 6mm (0.24in) recommended



🔶 Output	
Output voltage <ul> <li>preset</li> </ul>	DC 48-56V (adj. by front panel potentiometer) $48V \pm 0.5\%$ @ 1.05A
Voltage regulation	stat. <1% V <sub>out</sub> dyn. ±2% V <sub>out</sub> over all
Ripple/Noise	<200mV <sub>PP</sub> (20MHz bandw., 50 $\Omega$ measurem.)
Overvoltage prot. (OVF	?) <60V
Rated continuous loading	up to 1.05A @ 48V / 0.9A @ 56V (convection cooling), depending on built-in orientation, V <sub>in</sub> and T <sub>amb</sub> For details see derating diagram below
Overload behaviour	<b>PULS Overload Design™:</b> No switch-off at overload/short-circuit, instead: up to 1.5 · I <sub>rated.</sub> 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
Power back immunity	63V
Operating indicator	Green LED
	ntal Data EMC Safety

Environmental Data, EMC, Safety			
Ambient temperature range (measured 25mm below unit)			
<ul> <li>storage/transport</li> </ul>	-25°C +85°C		
<ul> <li>operation</li> </ul>	-10°C +70°C (for derating see diagram below)		
Humidity	max. 95% (without condensation)		
Electromagnetic	EN 61000-6-3 (includes EN 61000-6-4)		
emissions (EME)	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)		
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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).

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
- $\rightarrow\,$  Easy, quick, durable and reliable installation.

### Diagrams



Product information (ML50e105), Rev.: 6. May 2004. Unless otherwise stated, specifications are valid for AC 230V input voltage, +25°C ambient temperature, and 5 min. run-in time. They are subject to change without prior notice.

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