




Application Note

1606-XLP30B with DC 10...12V/30W



- Mounted and connected in record time, no tools required
- World-wide approvals (  ) for industry
- Tiny: WxHxD = 45 x 75 x 91mm
- Low Ripple (<math><2\text{mV}_{\text{pp}}</math>, 200kHz)
- Adjustable output voltage:
DC 10...12V (without jumper) resp.
DC 12V (with jumper)
- 100...240V Wide Range Input

• Input

Input voltage	AC 100...240V (Wide Range), 47...63 Hz Admiss. limits: AC 85...264V (DC 85...375V)
Input current	<math><0.6\text{A}</math> (@ AC 100V, 30W P_{out}) <math><0.25\text{A}</math> (@ AC 240V, 30W P_{out})
External fusing	Unit has internal (not accessible) input fuse. No other protection required. In order to meet local requirements, please consult local codes and regulations for proper installation.
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, $T_{\text{amb}} = +40^{\circ}\text{C}$)

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, $T_{\text{amb}} = +60^{\circ}\text{C}$, on/off cycle)
- Functional test (100%)

• Construction, Mechanics, Installation

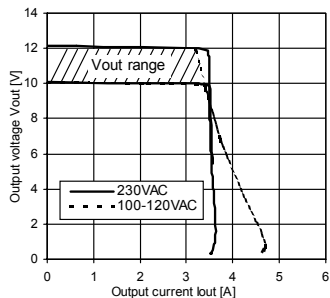
Robust plastic housing (US Patent No. D442, 923S), fine ventilation grid on three housing sides to keep out small parts (e.g. screws), IP20	
Dimensions and weight	
• W x H x D	45mm x 75mm x 91mm (+ DIN Rail)
• Weight	250g
Mounting orientation	 (cf. 'Output')
Ventilation/Cooling	Normal convection, no fan required
• Free space f. cooling	recommended: 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.
• Wire strip length	6mm (0.24in) recommended
• Wire Size Input/Output	Stranded 28...12 AWG (0.3...2.5 mm ²), Solid 28...12 AWG (0.3...4 mm ²)
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.	
• 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	static <1% @ $V_{out} = 10V$ static <1.2% @ $V_{out} = 12V$, dynamic ±2.5% V_{out} over all
Ripple	<2mV _{pp} (200kHz bandwidth, 50 Ω measurement)
Noise (Spikes)	<10mV _{pp} (20MHz bandwidth, 50 Ω measurement)
Overvoltage prot. (OVP)	<18V
Output noise suppression	Radiated EMI values below EN50081-1, even when using long (>2m), unshielded output cables
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 diagram 'output characteristic' below
Overload behavior	Straight V/I characteristic (depending on V_{in}); details see diagram '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)

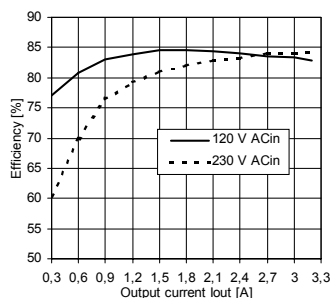
• Environmental Data, EMC, Safety	
Ambient temperature range (measured 25mm below unit)	
• storage/transport	-25°C ... +85°C
• operation	-10°C ... +70°C (for derating see diagram below)
Humidity	max. 95% (without condensation)
Electromagnetic emissions (EME)	EN 50081-1 (includes EN 50081-2) Class B (EN 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 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]).	
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.	

• Diagrams

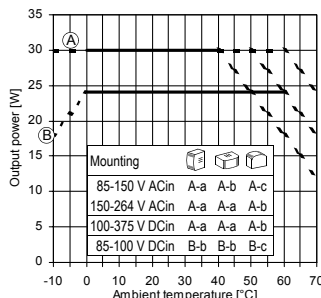
Output characteristic V_{out}/I_{out} (min.)



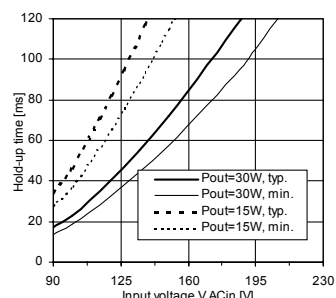
Efficiency (@ $V_{out} = 10V$, typ.)



Derating of output power



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



Specifications valid for 230V AC input voltage, +25°C ambient temperature, and 5 min run-in time, unless otherwise stated. They are subject to change without prior notice.

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