

Application Note

1606-XLP90B



- DC 12...15V / 90 W
- Mounted and connected within seconds, no tools required
- World-wide approvals ( ) for industry and office/home

- Tiny: WxHxD = 73 x 75 x 103 mm
- Adjustable output voltage up to DC 15V
- 115/230V Auto Select Input
- Selectable single/parallel operation (jumper)

• Input	
Input voltage	AC 100...120/220...240V (Auto Select), 47...63 Hz (AC 85...132V / AC 184...264V, DC 220...375V)
Input current	<1.9 A (@ AC 100V _{in} , 90 W P _{out}) <0.9 A (@ AC 220V _{in} , 90W 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/ 1.3 ms), over entire load range
Hold-up time (see diagram)	>40 ms @ AC 230V, 12V / 7.5 A >20 ms @ AC 196V, 12V / 7.5 A >20 ms @ AC 100V, 12V / 7.5 A

• Efficiency, Reliability	
Efficiency	> 88.5% (AC 230V, 12V / 7.5 A) (see also diagram)
Losses	<11.7 W (AC 230V, 12V / 7.5 A)
MTBF (Reliability)	appr. 500.000 h acc. to Siemensnorm SN 29500 (12V / 7.5 A, 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	73 mm x 75 mm x 103 mm (+ DIN rail) Depth incl. terminals: 98 mm (+ DIN rail)
• Weight	360 g
Mounting orientation	 or  (cf. 'Output')
Ventilation/Cooling	Normal convection, no fan required
• Free space f. cooling	recommended: 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...2.5 mm ² (28...12 AWG)
• solid cable	0.3...4 mm ² (28...12 AWG) Ferrules admissible
• Wire strip length	6 mm (0.24 in.) 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.	

• Output

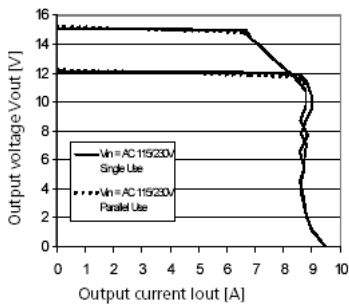
Output voltage	DC 12...15V (adj. by front panel potentiometer)
• preset	12V $\pm$ 0.5% @ 7.5 A
Voltage regulation	static <1.5% V_{out} (Jumper in pos. 'Single Use') static <3% V_{out} (Jumper in pos. 'Parallel Use'), dynamic $\pm$ 2.5% V_{out} over all
Ripple/Noise	<50mV _{pp} (20 MHz bandwidth, 50 Ω measurement)
Overvoltage prot. (OVP)	<18.5V
Output noise suppression	Radiated EMI values below EN61000-6-3, even when using long (>2m), unscreened output cables
Rated continuous loading	up to 7.5 A @ 12V / 6 A @ 15V (convection cooling), depending on built-in orientation, V_{in} and T_{amb} For details see derating diagram below
Overload behavior	Straight V/I characteristic (depending on V_{in}); for 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
Parallel operation	yes (selectable by front panel jumper)
Power back immunity	25V
Operating indicator	Green LED

• Environmental Data, EMC, Safety

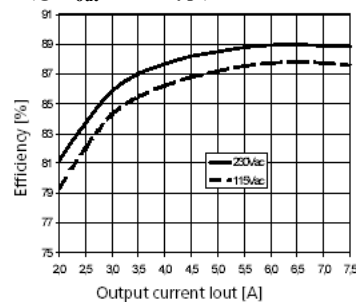
Ambient temperature range (measured 25 mm below unit)	
• storage/transport	-25°C ... +85°C
• operation	-10°C ... +70°C (for derating see diagram below)
Humidity	max. 95% (without condensation)
Electromagnetic emissions (EME)	EN 61000-6-3 (includes EN 61000-6-4) Class B (EN 55011, EN 55022) incl. Annex A thanks to noise suppression EN 61000-3-2 (PFC)
Electromagnetic immunity (EMI)	EN 61000-6-2 (includes EN 55024)
Safe low voltage:	SELV (EN 60950, PELV (EN 50178) Class 1 (EN 60950)
Prot. class/degree:	/ IP20 (EN 60529)
The PSU complies with all major safety approvals for EU (EN 60950, EN 60204-1, EN 50178), USA (UL 60950, E168663, UL508 LISTED, E56639), Canada (CAN/CSA-C22.2 No 60950 [CUR], CAN/CSA-C22.2 No. 14 [CUL]).	

• Diagrams

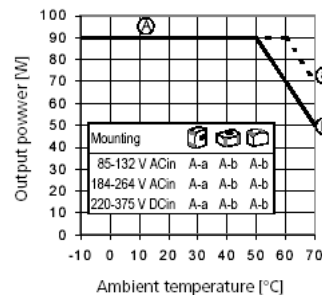
Output characteristic V_{out}/I_{out} (min.)



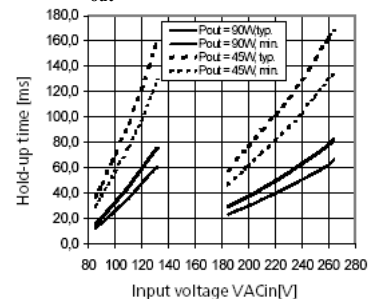
Efficiency (@ $V_{out} = 12V$, typ.)



Derating of output power



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



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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