

Features

- Output power up to 300 W, 18 W/inch³
- Operating case temperature -50 ... +95 °C
- Efficiency up to 92 %
- Case dimensions 133x83x25 (mm) - A3
- CNC milled case
- Component polymer potting protection
- Input "230W" or "115", 50 Hz (400 Hz)
- Remote OFF
- 1 or 2 galvanically isolated channels
- Additional temperature sensor for operation in air-tight equipment (on request)



Description

JETA-LP series of 1-phase AC/DC isolated power supply units meant for operation in harsh environmental conditions. The combination of electro-technical and mechanical parameters creates versatility for the series to be used in various application fields: both low and high altitude in unprotected equipment compartments, in all types of transport, in supercomputers, in low and high temperature environments, digital signage equipment, in radar systems. The series is an optimal fit for any environment which requires low-profile, minimized dimensions and weight, high efficiency and wide temperature range.

Ordering information

JETA 300 - LP - 230W S 24 - W - A3

1 2 3 4 5 6 7 8

- 1 Series name.
- 2 Nominal output power, W: default **300 W**, other output power limits may be provided on request.
- 3 Part of series name.
- 4 Input voltage range: default "**230W**" **100-264 VAC**; possible to provide "**115**" range on request.
- 5 Number of output channels: "**S**" - 1 channel, "**D**" - 2 channels.
- 6 Nominal output voltage of channel or channels; i.e., for 2 channels of 5 VDC each - "**0505**".
- 7 Index of case operating temperature range: "**W**" - default **-50 ... +95 °C**; other temperature ranges possible on request.
- 8 Index of case form-factor.

Base models (1 channel)					
Model part number	Input voltage	Output power	Output voltage	Output current per channel	Typical efficiency at 70 % load
JETA300-LP-230WS05-W-A3	100-264 VAC (230 VAC nom.) or DC equivalent	150 W	05 VDC	30.00 A	88 %
JETA300-LP-230WS12-W-A3		300 W	12 VDC	25.00 A	90 %
JETA300-LP-230WS15-W-A3		300 W	15 VDC	20.00 A	91 %
JETA300-LP-230WS24-W-A3		300 W	24 VDC	12.50 A	92 %
JETA300-LP-230WS27-W-A3		300 W	27 VDC	11.11 A	92 %
JETA300-LP-230WS36-W-A3		300 W	36 VDC	8.33 A	92 %
JETA300-LP-230WS48-W-A3		300 W	48 VDC	6.25 A	92 %
JETA300-LP-230WS60-W-A3		300 W	60 VDC	5.00 A	92 %

Base models (2 channels)					
Model part number	Input voltage	Output power	Output voltage	Output current per channel	Typical efficiency at 70 % load
JETA300-LP-230WD0505-W-A3	100-264 VAC (230 VAC nom.) or DC equivalent	150 W	2 x 05 VDC	15.00 A	83 %
JETA300-LP-230WD1212-W-A3		300 W	2 x 12 VDC	12.50 A	86 %
JETA300-LP-230WD1515-W-A3		300 W	2 x 15 VDC	10.00 A	88 %
JETA300-LP-230WD2424-W-A3		300 W	2 x 24 VDC	6.25 A	89 %
JETA300-LP-230WD2727-W-A3		300 W	2 x 27 VDC	5.56 A	89 %
JETA300-LP-230WD3636-W-A3		300 W	2 x 36 VDC	4.17 A	89 %
JETA300-LP-230WD4848-W-A3		300 W	2 x 48 VDC	3.13 A	89 %
JETA300-LP-230WD6060-W-A3		300 W	2 x 60 VDC	2.50 A	89 %

Additional ordering information:

- 1) The units may be provided with a different range of input voltage on request, please see available ranges in our [selection guide](#).
- 2) Units with non-standard output voltage may be provided on request.
- 3) Units with non-standard output power may be provided on request.

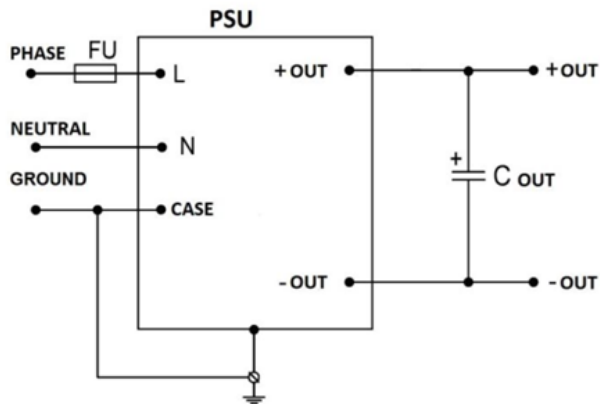
General characteristics ³		
Switching frequency		200 kHz typ. (PWM modulation)
Temperature ranges	case operating temperature	-50° C ... +95° C (default "W")
	storage temperature	-50° C ... +100° C
Over-temperature protection		+95° C typ.
Thermal mode and cooling method	cooling methods, from most preferred (for the unit to be used with a coldplate or heatsink it's necessary to consult with the producer)	1. Conductive - heatsink-coldplate 2. Forced air heatsink cooler 3. Convectional heatsink cooling with vertical orientation of itself and vertical orientation of its ribs for free air flow from bottom to top
Thermal resistance	case to ambient	3 K/W
Humidity (non-condensing)		5-95 % rel. H
Insulation	in/case	1500 VAC
	in/out	3000 VAC
	out/case	500 VAC
	out/out	500 VDC
Isolating resistance @ 500 VDC		>20 MOhm
Thermal shock, mechanical shock & vibration		MIL-STD-810F
Safety standards		IEC/EN 60950-1
Typical MTBF	Pout = 0.7·Pout,max	130 000 hrs (Tcase = 25° C)
Weight (max)		500 g
Input characteristics ³		
Input voltage range (with power derating)	"230W"	100-264 VAC, nominal 230 VAC, 50 Hz
	DC equivalent	140-372 VDC, nominal 324 VDC
Start-up input voltage		typ. 90 VAC
EMC standard compliance ¹	with JETA5 filter – CE 102 MIL-STD-461F	
Power Factor typ.		0.96
Harmonics of input current		EN61000-3-2, class D
Output characteristics ³		
Power derating based on input voltage	linear derating, for input "230W"	derating from 300 W to 170 W with input voltage decrease from 175 VAC to 100 VAC
Output voltage adjustment	-20 % ... +5 % via in. trimmer ADJ	
Output voltage regulation ²	input variance Uin,min to Uin,max	±0.5 % for load 10-100 %
	load variance 10 % to 100 %	±1 %
Ripple and noise (peak-to-peak)	20 MHz bandwidth	<1 % for load 10-100 %
Protection	over-current	auto-reset at 110-140 % of Iout,nom
	over-voltage	<130 % Uout
Capacitive load (max)	24 VDC, 50% Pout,nom	typ. 10 000 uF
Remote OFF	Unit is shut down by applying 3-5VDC (2-10 mA) to +REM, -REM	

1. See available filters on www.aeps-group.com.

2. For secondary loads 30-100 % with main channel load set in range of 30-100 %, load variance for secondary channels may reach ±13 %.

3. All specifications are valid for normal climatic conditions, nominal output voltage and current, unless stated otherwise.

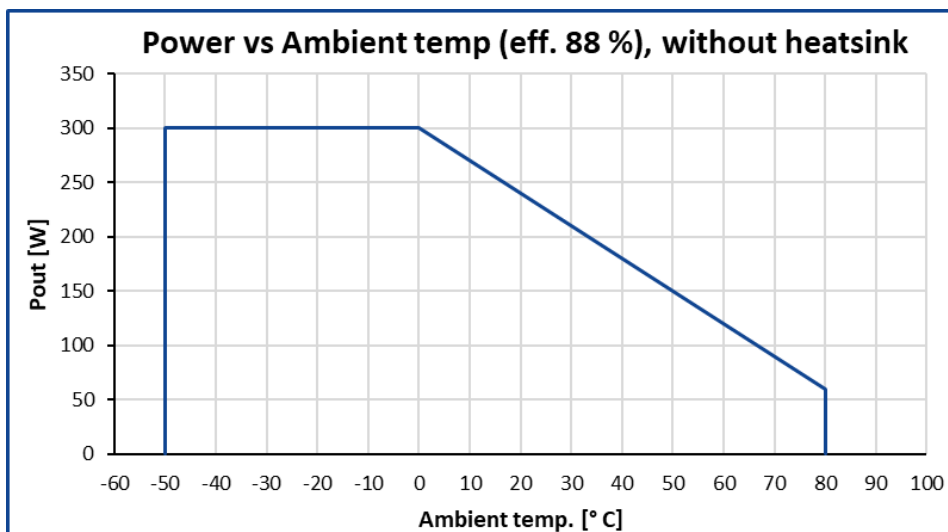
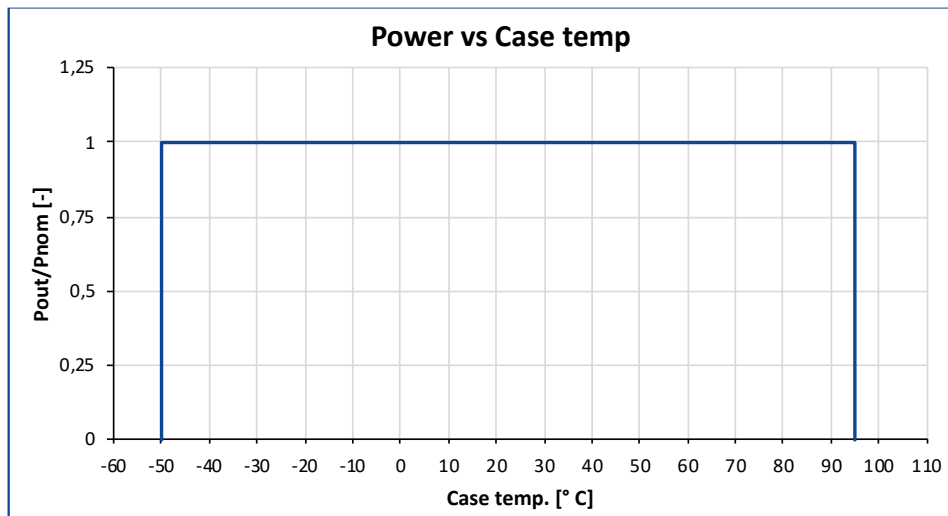
Minimal connection scheme



In any system application it's necessary to at least use minimal connection scheme consisting of components shown on the picture.

C out – chosen in accordance with Technical Reference Manual (see on our website).

Power-temperature relationship



Additional application information

1. Value of case temperature

The case temperature is measured at the middle of the long side of the case base. When using a thermocouple, it is necessary to attach the thermocouple conductors to the base surface at a distance of at least 20 mm from thermocouples head. **The thermocouple measuring end and its conductors must be covered with a layer of heat-conducting paste 2-3 mm thick to provide correct measurements.**

2. Possible cooling methods

- 1) Conductive cooling with aluminum (or copper) **heatsink or coldplate, with base at least 2 mm thick.**
- 2) Forced air.
- 3) Convectional heatsink cooling with vertical orientation of itself and vertical orientation of its ribs for free air flow from bottom to top.

To use the units without a heatsink it's necessary to consult with the producer.

Most of the unit's dissipated heat (93-95 %) is concentrated **on the BOTTOM SIDE of the unit (fully metal surface)** which must be attached to the heatsink-coldplate or ribbed heatsink surface. Requirements for the heatsink surface (preferably CNC milled) - flatness tolerance of the heatsink surface must be lower than 0.1 mm per 100 mm of length.

3. Unit heatsink fixation

Mounting screws tightening order should be following: first the central screw (mandatory if available), then one pair of diagonally placed screws, then another pair of diagonally placed screws. First installation of the screws should be done without force. Then all the screws should be tightened with the recommended torque.

For quality contact between the unit and a heatsink - it's necessary to use thermal conductive paste with thickness less than 0.1 mm, with thermal conductivity **greater than 2 W/K.m**. The paste must be applied with mesh stencil in a pattern of squares (i.e. 2x2 mm to 4x4 mm squares mm with 0.5-1 mm spacing between the squares). This allows paste to be evenly spread in a thin layer and excess air to escape when tightening screws during unit mounting.

4. Short-term unit operation

If it's necessary to shortly turn on the unit for 3-5 minutes (for example for input-control testing), an aluminium (copper) coldplate must be used as a heatsink. Its width and length must be not less than of the unit itself, with thickness at least 10 mm. The unit must be placed on coldplate through a thin (0.15-0.3 mm) silicone-based heat-conducting sheet.

5. Thermal protection tripping

When internal unit's thermal protection is tripped the unit is turned off (until automatic restart) and "OGOOD" outputs state becomes high-resistance (where available). **Such state should lead to measures of forced heatsink cooling, for example via fans turn-on.** Time before automatic restart of the unit after thermal protection tripping can last from several seconds up to several minutes depending on thermal inertia of the heatsink. **For units meant to operate in airtight equipment** - on request it's possible to include **additional thermal sensor** to monitor ambient temperature of air closest to the unit's surfaces.

6. Operation with shorted outputs

The units have a short-circuit output protection. **The protection is for emergency only, not for long-term operation. It's prohibited to use the units with shorted outputs (the units have the special detectors inside).**

If you have any questions, please contact us directly at aepe@aepe-group.cz.

Dimensions

Pin #	X1.1	X1.2	X1.3	X2.1	X2.2	X2.3	X2.4	X3.1	X3.2
One channel	GND	N	L	+OUT	-OUT	-	-	+REM	-REM
Two channels	GND	N	L	-OUT1	+OUT1	-OUT2	+OUT2	+REM	-REM

X1	<p>RATED WIRE SIZE SOLID: max.: 4mm² Stranded (flexible): max. 2.5mm² Stranded with Ferrule: max 2.5mm² Screw size: M3 Torque: 0,5 Nm</p>
X2	<p>Screw size: M4 Recommended torque: 1.2Nm Recommended: Use ring terminal, for example MOLEX 19323-0012, MOLEX 19324-0012</p> <p><u>OR same spec as X1 for Dual Models</u></p>
X3	<p>MOLEX, C-GRID III MALE – SDA-90136-1102. FEMALE – SD-90123-0102 (2 pin) USE WITH "CRIMP TERMINAL" SD – 90119-0109 or other. USE "HAND CRIMP TOOL" for C-GRID III female Crimp Terminals for example 63825-8100 or other depending on the CRIMP TERMINALS.</p>

Dimensions in millimeters, cover rivets may protrude beyond case cover by 0.4 mm on each long side

One channel

