

## AC/DC power supplies JETA2000



### Features

- Class: Expert, power density up to **1503 W/dm<sup>3</sup>**
- Without Fan
- Low profile: 38.1 mm design with terminal blocks
- Case operating temperature ranges: -40°C...+85°C, -50°C...+85°C
- Output current up to 100 A, output power 2000 W
- Input voltage ranges: 100...242 VAC, 176...242 VAC
- Parallel operation
- Power factor correction
- Additional output for fan
- Over current, short circuit, overvoltage and thermal protection
- Remote on/off by applying a voltage or a "dry contact"
- Output voltage adjustment
- Remote feedback
- Max capacitance – not limited
- Metal case

### Description

**AC/DC power supplies (modules) JETA2000** are especially designed for industrial applications and harsh environment operation. This compact unit (250 x 140 x 38.1 mm) proven maximum output power of up to 2000 W. The units can be switched on/off by a signal, have a full protection complex against over current, short circuit and overheating; they also can be connected in parallel or in series and provide compliance to EMC standard EN55022, class A (class B with filtration and protection modules JETA20).

Modules are made of customized element base. They are sealed with heat-conducting potting material and could have wide operating temperature range up to -50°C...+85°C, featuring a thermal protection chip. These power supplies undergo special temperature and burn-in tests with extreme on/off modes.

## Ordering information

**JETA 2000 - 230W S 15 - S C N**

**1 2 3 4 5 6 7 8**

- 1 - «JETA» Series
- 2 - Max output power, W
- 3 - Input voltages
  - 230W** – 230 VAC (100...242 VAC)
  - 230** – 230 VAC (176...242 VAC)
- 4 - Index of output channels quantity
  - S** – one
- 5 - Nominal output voltage, VDC (two signs for a channel)
- 6 - Index of design option
  - S** - modification with polymer potting protection
- 7 - Index of case design and outputs
  - C** - case with a cover and terminal blocks
- 8 - Index of operating temperature range of the case
  - N** -40°C ...+85°C (basic version)
  - P** -50°C ...+85°C

## Technical information

### Standard models with one output

Module	Input voltage range	Output power	Output voltage / nominal output current	Typical efficiency
JETA2000-230WS24-XXX	~100...242 VAC*	2000 W	24 VDC / 83,3 A	88%
JETA2000-230WS27-XXX			27 VDC / 74 A	88%
JETA2000-230WS48-XXX			48 VDC / 41,7 A	89%
JETA2000-230S24-XXX	~176...242 VAC		24 VDC / 83,3 A	88%
JETA2000-230S27-XXX			27 VDC / 74 A	88%
JETA2000-230S48-XXX			48 VDC / 41,7 A	89%

Modules with non-standard output voltage from 15 to 60 VDC with maximal output current up to 100 A, could be delivered by request.

\* For input voltage 230W (wide input) maximal output power decrease at input voltage 100...176 VAC according to the derating curves.

## Specifications for AC/DC power supplies JETA2000\*

<b>Input specifications</b>	
Input voltage range / Input voltage transient deviation (1 s) 230 W**	~ 100...242 VAC (accepted=140...342V)/ ~ 100...264 VAC (accepted=140...373V)
Input voltage range / Input voltage transient deviation (1 s) 230	~ 176...242 VAC (accepted=248...342V)/ ~ 176...264 VAC (accepted=248...373V)
Input frequency	47...440 Hz
Input current surging at start-up@~230B	130 A
Power factor	>0,96
Harmonics content of input current	EN61000-3-2, class D
<b>Output specifications</b>	
Output voltage adjustment using trimmer resistor ADJ	±5%
Output voltage adjustment using pin ADJ	-30%...+10%
Instability of output voltage in accordance to changing of output current from 10 to 100%	±2%
Instability of output voltage in accordance to instability of input voltage	±0,5%
Ripple and noise (peak-to-peak) (20 MHz)	<2% Uout
Overvoltage protection***	>125% Uout
Over current protection level & short circuit protection***	Iout limiting at 110-120% of Iout nom
Remote On/Off	Shuts down by applying 3...5VDC (≤5 mA) on REM outputs or shorting pins AUX & +REM
Max capacitance	not limited
Output for fan	9.5...13 VDC, I <sub>max</sub> =200 mA
Service functions OGOOD	Controlling "opened-collector transistor": on if output voltage Uout > 0,7*Uout.nom; off if output voltage Uout < 0,7*Uout.nom or module is turned off. U <sub>max</sub> = 20 V, I <sub>max</sub> = 15 mA
<b>General specifications</b>	
Case temperature (operating N)	-40°C ...+85°C*****
Case temperature (operating P)	-50°C ...+85°C*****
Case temperature (storage)	-50°C ...+85°C
Level of operation of thermal protection (temperature of case)	82°C ...+95°C, auto restore
Output power derating (natural convection)	See diagram (dashed, dash-dotted curves)
Output power with heatsink with thermal resistnace R <sub>ha</sub> =0,08°C/W, difference between ambient and module case temperature would be 15°C	See diagram (solid curve)
High humidity	95% @ 35 °C
Conversion frequency, fixed	125 - 150 kHz
Insulation voltage input/case	~1500 VAC
Insulation voltage input/output; input/REM, AUX, OGOOD	~3000 VAC
Insulation voltage output, REM, AUX, OGOOD/case; output/REM, AUX, OGOOD; REM, AUX/OGOOD	~500 VAC
Isolation resistance @ 500 VDC	20 MOhm
EMC standards	EN55022, class A (class B with filter JETA20)
Safety standard	IEC/EN60950
Thermal resistance case — environment without heat sink	0,8 °C/W
Typical MTBF (T <sub>case</sub> = 50°C; P <sub>out</sub> = 0,7 P <sub>out max</sub> )	30 000 hrs
Cooling method	Free air convection or forced air cooling
Weight (max)	1900 g

\* All specifications are valid for normal climatic conditions, U<sub>in.nom.</sub>, I<sub>out.nom.</sub>, unless otherwise stated.

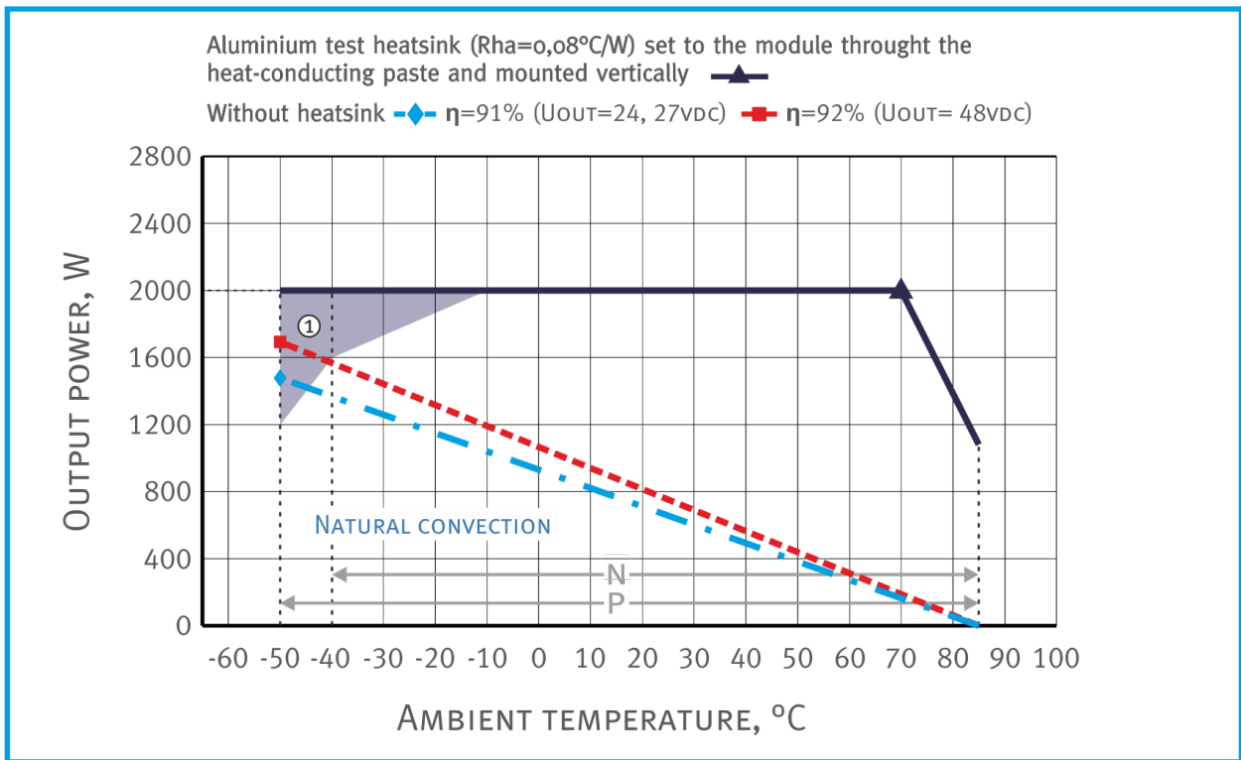
\*\* For input voltage 230W (wide input) maximal output power decrease at input voltage 100...176 VAC according to the derating curves.

\*\*\* Parameters are stated for information purposes and could not be applied to long term work, exceeding maximum output current, at work outside of operating temperature range.

\*\*\*\* For other output voltages the maximum output capacity is calculated from the fact that  $\frac{C_{max} \times U_{out}^2}{2}$  is a constant.

\*\*\*\*\* Turn-on delay of power supply at subzero temperatures can reach up to 5s at -40°C, 15...20s at -50°C.

## Output power vs ambient temperature for input voltages ~176...242 VAC

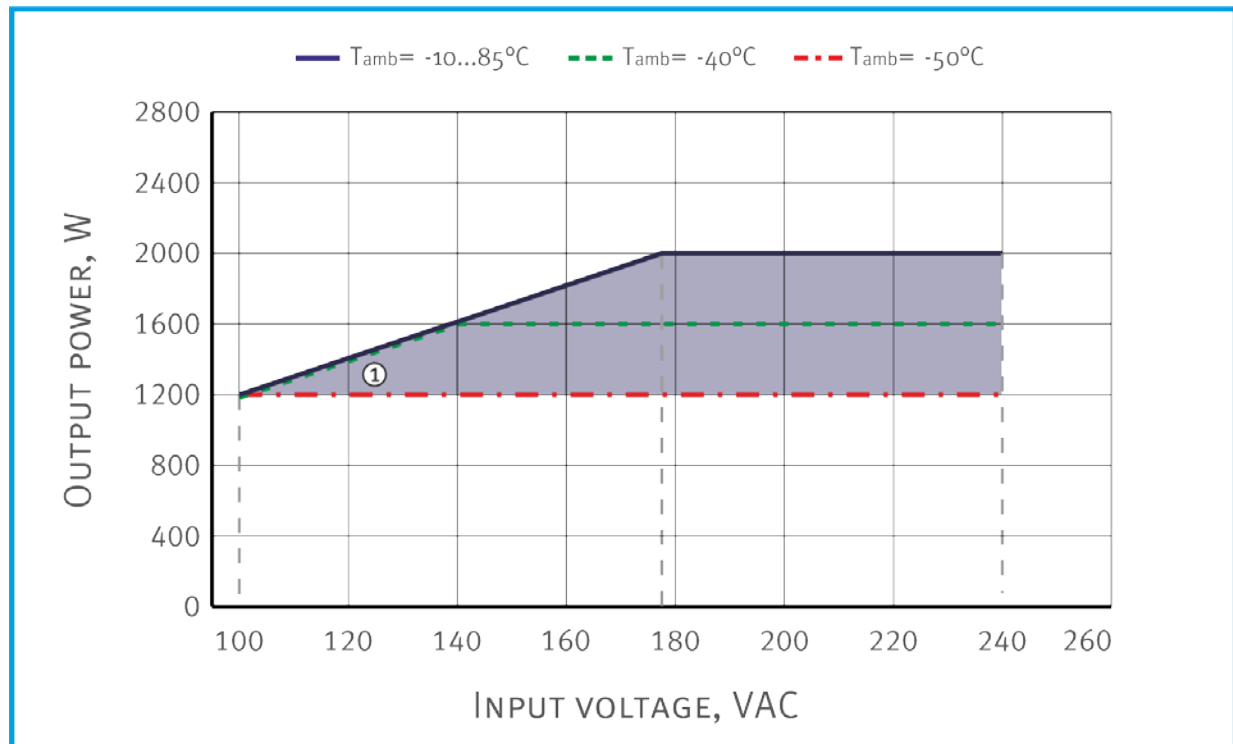


Dropping parts of the dashed and dash-dotted curves are in accordance with the **maximum temperature of the case** (for modules with index «N», «P» equal to  $+85^{\circ}\text{C}$ ). Output power must not exceed the values which are limited by corresponding curve for a given ambient temperature.

Modules can be used without a heat sink only when attached to a heat conductive plate with thermal paste. The length and width of the plate should not be less than those of the case, and its thickness must not be less than 4 mm.

Points  $\blacktriangle$ ,  $\blacklozenge$  and  $\blacksquare$  represent simultaneously several extreme worst-case conditions, such as the combination of maximum case temperature and maximum output power. Continuous module operation at these points should be avoided.

## Output power vs input voltages



① - For ambient temperature  $-50^{\circ}\text{C}\dots-10^{\circ}\text{C}$  in gray areas of diagrams some specification parameters may not be met.

## Pin out (models with the terminal blocks)

X1.1	X1.2	X1.3	X2.1	X2.2	X3.1	X3.2	X3.3	X3.4	X3.5	X3.6	X3.7	X3.8	X3.9	X3.10
L	N	GND	+OUT	-OUT	+OGOOD	-OGOOD	not use	not use	ADJ	PARAL	+FAN	-FAN	-RS	-OUT

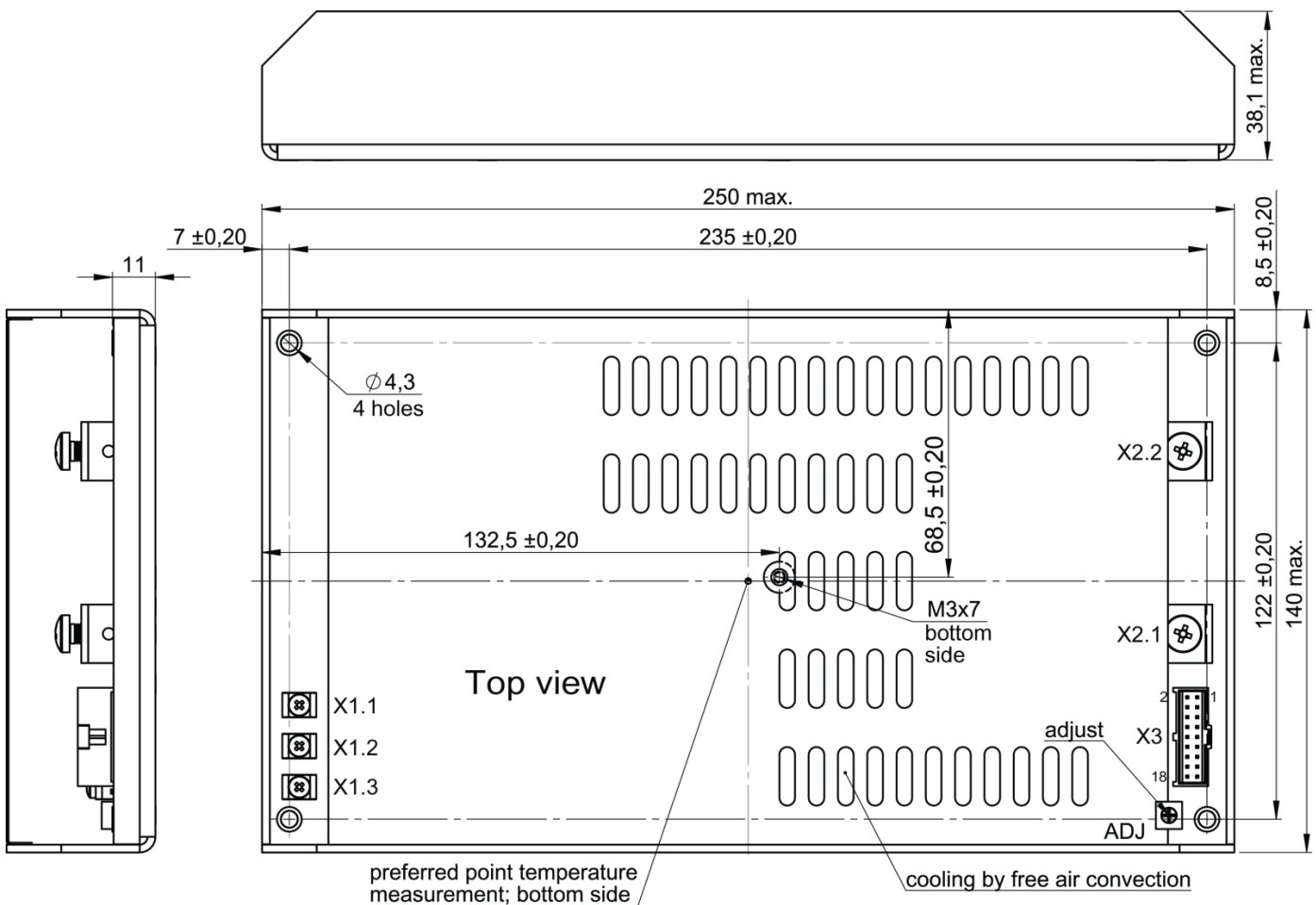
X3.11	X3.12	X3.13	X3.14	X3.15	X3.16	X3.17	X3.18
+RS	+OUT	not use	not use	not use	AUX	-REM	+REM

X1.1, X1.2, X1.3	Screw size: <b>6-32x1/4 L</b> Recommended Torque: <b>0,5 Nm</b> Recommended: Use ring terminal, for example MOLEX 19323-0007. MOLEX 19324-0007.
X2.1, X2.2	Screw size: <b>M5</b> Recommended torque: <b>2Nm</b> Recommended: Use ring terminal, for example Würth Electronics Inc. 5580510 or 5580516.
X3	MOLEX, C-GRID III MALE – SDA-90130-1118. FEMALE – SD-90142-0018 (18 pin) USE WITH "GRIMP 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.

The use of a central socket for attaching the module to the heatsink is required, whereas the fastening screw must enter the module body to a depth of no more than 7 mm.

Violation of these requirements may result in damage to the module, its failure and entails waiving of the warranty.

### Single output model with terminal blocks (IV A case size)



## Certificates

Certificate ISO 9001\*  
CE conformity declaration

\* Management system and R&D of Alexander Electric is ISO certified

## Note

Please note that information given in this document is not complete. More detailed information (additional requirements, typical connection schemes, operation manuals, etc.) may be provided to you upon request.

## Contact information

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