Features

- Class: Expert, power density up to **1503** W/dm³
- Budget version – on request !
- 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 up to 2000 W
- Input voltage ranges: 100...242 VAC, 176...242 VAC (**on request possible 90...265 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
- Completely replace the previous generation modules TESA1500

  For all special requirements placed on the last page of datasheet please click here.

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 JETAF20).

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

JETBA 2000 - 230W S 15 - S C N

1 2 3 4 5 6 7 8 9

1 - «JETA» Series
2 - For request is possible budget version **B**
3 - Max output power, W
4 - Input voltages
230W – 230 VAC (100…242 VAC)
230 – 230 VAC (176…242 VAC)
Note: from 90 to 265 VAC upon request
5 - Index of output channels quantity
S – one
6 - Nominal output voltage, VDC (two signs for a channel)
7 - Index of design option
S - modification with polymer potting protection
8 - Index of outputs
C - case with terminal blocks
9 - 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
JETA2000-230WS15-XXX	100…242 VAC*	**1500 W**	15 VDC / 100 A	88%
JETA2000-230WS24-XXX		**2000 W**	24 VDC / 83,3 A	88%
JETA2000-230WS27-XXX			27 VDC / 74 A	88%
JETA2000-230WS48-XXX			48 VDC / 41,7 A	88%
JETA2000-230S15-XXX	176…242 VAC	**1500 W**	15 VDC / 100 A	88%
JETA2000-230S24-XXX		**2000 W**	24 VDC / 83,3 A	88%
JETA2000-230S27-XXX			27 VDC / 74 A	88%
JETA2000-230S48-XXX			48 VDC / 41,7 A	88%

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.

Module	Input voltage range	Output power	Output voltage / nominal output current	Typical efficiency
JETBA1500-230S15-XXX	176…242 VAC	**1200 W**	15 VDC / 80 A	88%
JETBA1500-230S24-XXX		**1500 W**	24 VDC / 62.5 A	88%
JETBA1500-230S27-XXX			27 VDC / 55.5 A	88%
JETBA1500-230S48-XXX			48 VDC / 31.3 A	88%

Modules with non-standard output voltage from 15 to 60 VDC with maximal output current up to 80 A, could be delivered by request.

Specifications *

Input specifications	
Input voltage range / Input voltage transient deviation (1 s) 230 W**	100…242 VAC (accepted 140…342 VDC)/ 100…264 VAC (accepted 140…373 VDC)
Input voltage range / Input voltage transient deviation (1 s) 230	176…242 VAC (accepted 248…342 VDC)/ 176…264 VAC (accepted 248…373 VDC)
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
Output specifications	
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, Imax=200 mA
Service functions OGOOD	Controling "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. Umax = 20 V, Imax = 15 mA
General specifications	
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 Rha=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 кHz
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 JETAF20)
Safety standard	IEC/EN60950
Thermal resistance case — environment without heat sink	0,8 °C/W
Typical MTBF (Tcase = 50°C; Pout = 0,7 Pout max)	30 000 hrs
Cooling method	Free air convection or forced air cooling
Weight (max)	1900 g

* All specifications are valid for normal climatic conditions, Uin.nom., Iout.nom., unless otherwise stated.

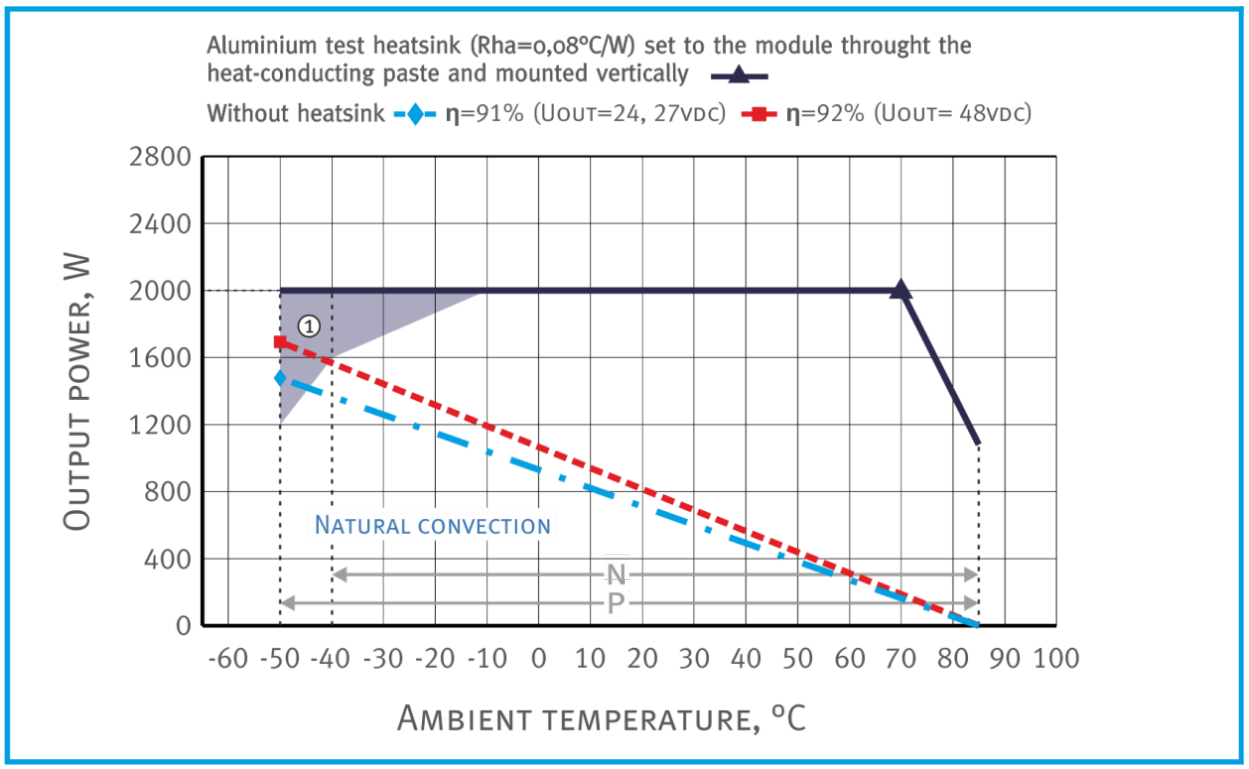
** For input voltage 230W (wide input) maximal output power decrease at input voltage 100...176 VAC according to the derating curves.

*** 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 $\frac{Cmax \times Uout^2}{2}$ 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.

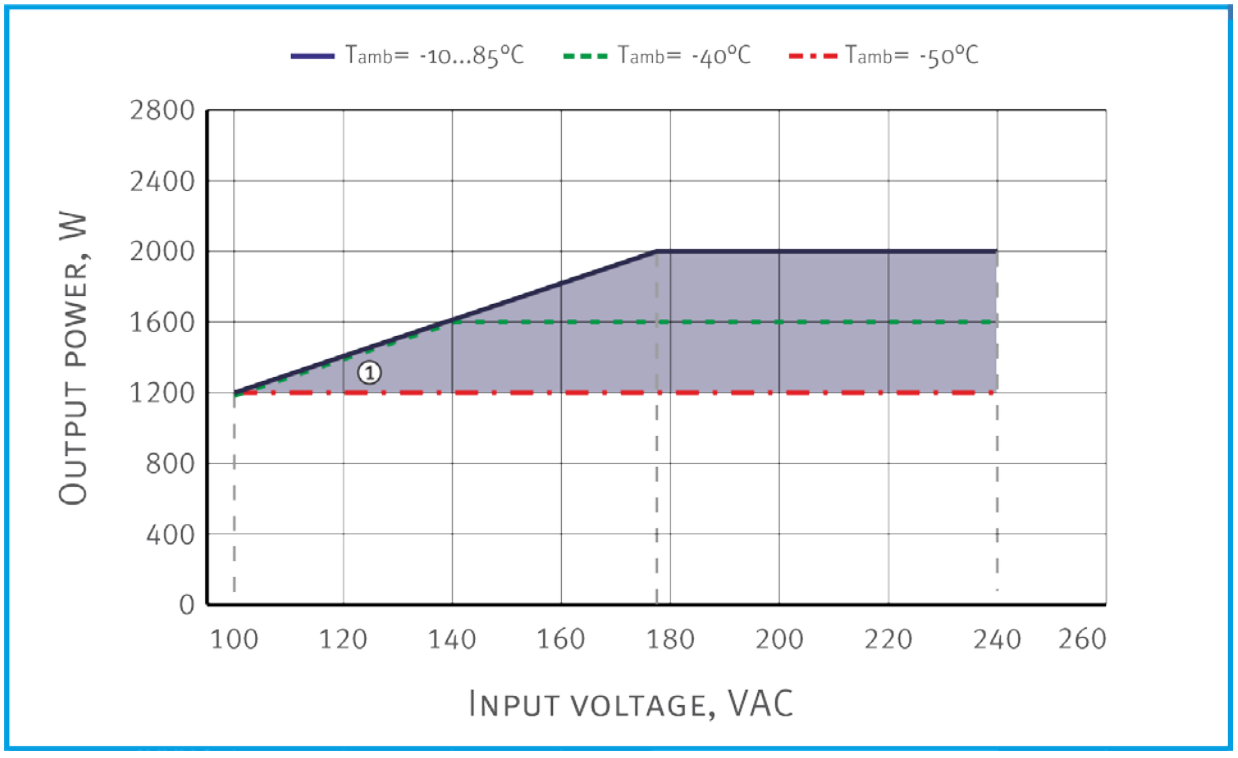
Output power vs ambient temperature for input voltages 176...242 VAC



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 °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 ▲, ◆ and ■ 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°C...-10°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

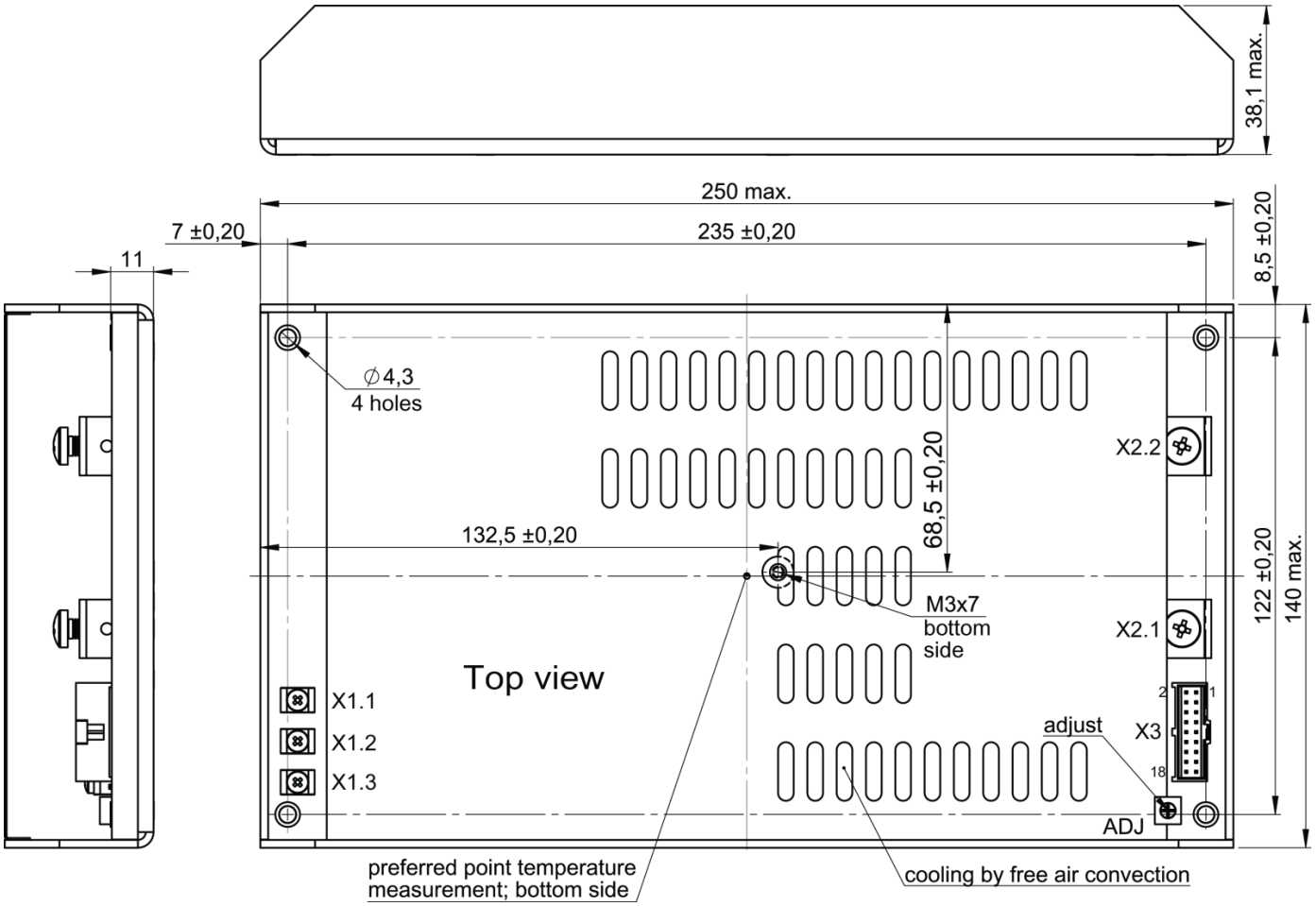
X3.11	X3.12	X3.13	X3.14	X3.15	X3.16	X3.17	X3.18
+RS	+OUT	not use	not use	not use	AUX	-REM	+REM

X1.1, X1.2, X1.3	Screw size: **6-32x1/4 L** Recommended Torque: **0,5 Nm** Recommended: Use ring terminal, for example MOLEX 19323-0007. MOLEX 19324-0007.
X2.1, X2.2	Screw size: **M5** Recommended torque: **2Nm** Recommended: Use ring terminal, for example Wurth 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 waivering 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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Special requirements