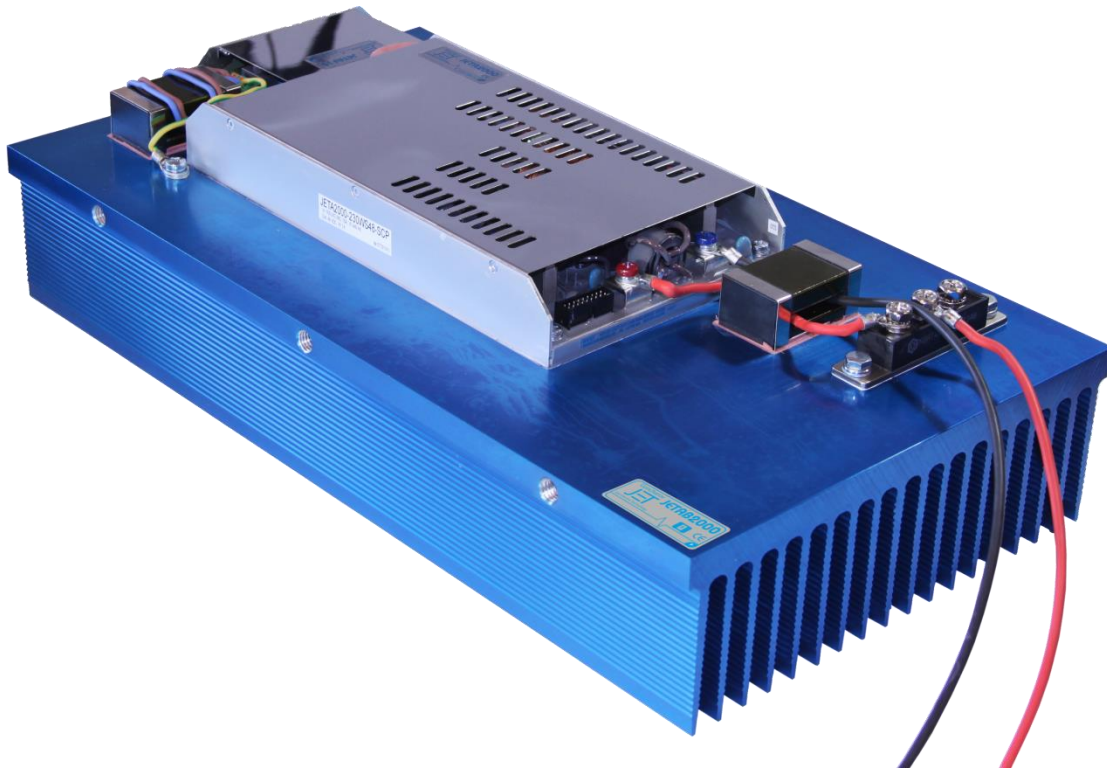


AC/DC power supply block JETAB2000 for systems with increased EMC requirements



Basic parameters

- The block consists of JETA2000-230WS48-SCP PSU and filter JETAF10-230W-SCP
- Without fan
- Input voltage: 100...242 V
- PFC
- Output current up to 41,7 A, output power 2000 W
- Fan power output
- Overload, short circuit and overvoltage protection, thermal protection
- Remote on/off by voltage feed or potential-free contact
- Output voltage regulation
- Parallel operation, remote feedback
- Maximum connected output capacitance – without limitation
- In-built aluminum heat sink
- In-built output isolation diode

Description

Power supply block based upon planar ultra-low JETA2000 unit placed on the heat sink, and operating in natural air convection cooling conditions. Special filtration and distribution elements for improving EMC characteristics and implementation of parallel operation with analog blocks are placed at the input and the output.

The device has increased integration opportunities – parallel operation of a number of analog blocks and special place for functional parts placement by the customer.

Upon customer's request, power supply block is designed with regard to maximum energy efficiency requirements – for operation in limited space conditions with maximum ambient temperature up to +50 °C without fan.

Advantages

Performance capability at +50 °C with air convection cooling.

Block possesses high efficiency of 92 %.

Energy efficiency, thermal mode and EMC issues are completely resolved for the customer – manufacturer guarantees compliance of the products with all necessary requirements.

Technical specifications*

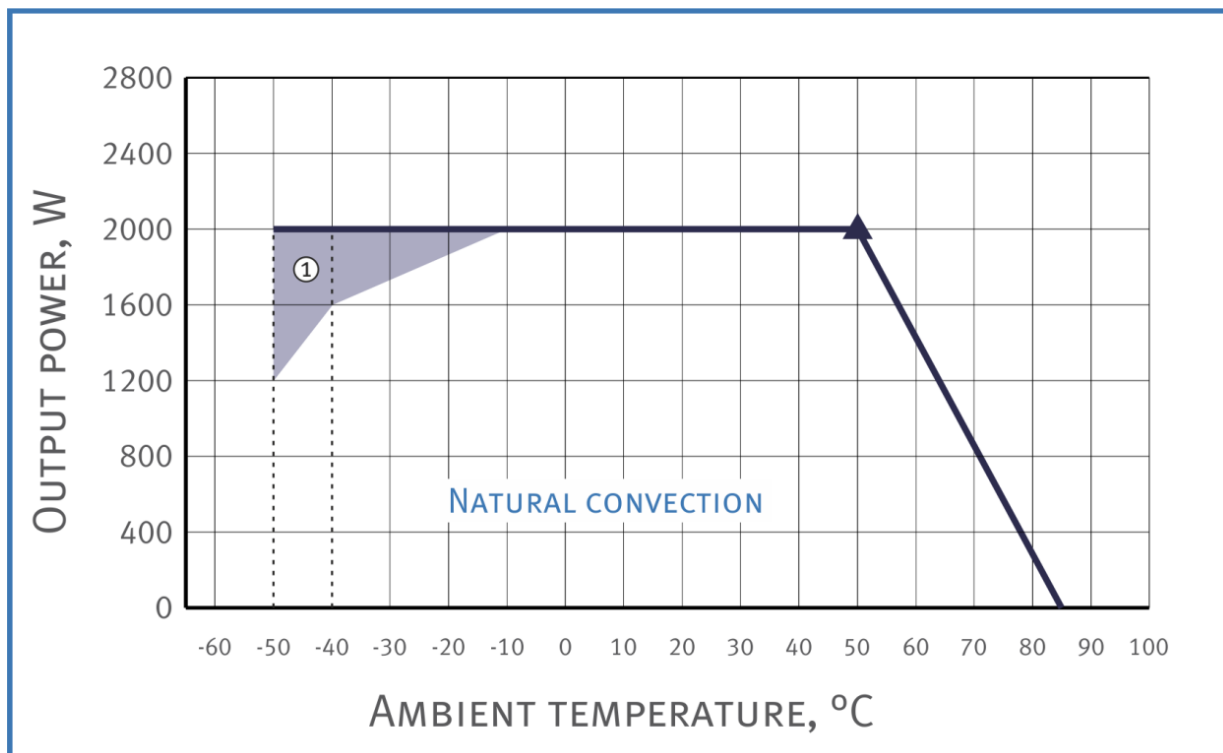
Input characteristics	
Input voltage range / Input voltage transient deviation, 1 sec.**	~ 100...242 V (accepted=141...343 V)/ ~ 100...264 V (accepted=141...373 V)
Input frequency	47...440 Hz
Input current surge at start-up@~230 V	130 A
Power factor	>0,96
Harmonics content of input current	EN61000-3-2, class D
Output characteristics	
Nominal output voltage	48 V
Output voltage adjustment using trimmer resistor ADJ	±5 %
Output voltage adjustment using ADJ pin	-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 % U _{out}
Safe operation at zero load	0...10 % I _{nom}
Overload and short circuit protection ***	I _{out} limiting at 110-120 % of I _{out nom}
Overvoltage protection***	>125 % U _{out}
Remote on/off	Shuts down by applying 3...5VDC (≤5 mA) on REM outputs or shorting pins AUX & +REM
Maximum output capacitance	Unlimited
Fan power output	U=9,5...13 V, I _{max} =200 mA
OGOOD output	Controlling "opened-collector transistor": on if output voltage U _{out} > 0,7*U _{out nom} ; off if output voltage U _{out} < 0,7*U _{out nom} or module is turned off U _{max} = 20 V, I _{max} = 15 mA
Main characteristics	
Case temperature (operating)	-50 °C ...+85 °C
Case temperature (storage)	-50 °C ...+85 °C
Level of operation of thermal protection (temperature of block's case)	+82 °C...+95 °C, automatic recovery
Output power derating (natural convection)	See the graph
High humidity	95 % @ 35 °C
Conversion frequency, fixed	125-150 kHz
Insulation strength input/case	~1500 V
Insulation voltage input/output; input/REM, AUX, OGOOD	~3000 V
Insulation voltage output, REM, AUX, OGOOD/case; output/REM, AUX, OGOOD; REM, AUX/OGOOD	~500 V
Isolation resistance @ 500 VDC	20 MOhm
EMC standards	EN55011, class A
Safety standard	IEC/EN60950
Thermal resistance block — environment	0,144 °C/W
Efficiency, at U _{in} =230 W, P _{out} =1300 W	≥89,5%
MTBF (T _{case} = 50 °C; P _{out} = 0,7 P _{out max})	30 000 hours
Cooling method	Convictional with heat sink or active fan

* All specifications are valid for normal climatic conditions, U_{in.nom.}, I_{out.nom.} unless otherwise stated.

** For input voltage 230W (wide input) maximal output power decreases 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, for operation out of operating temperature range.

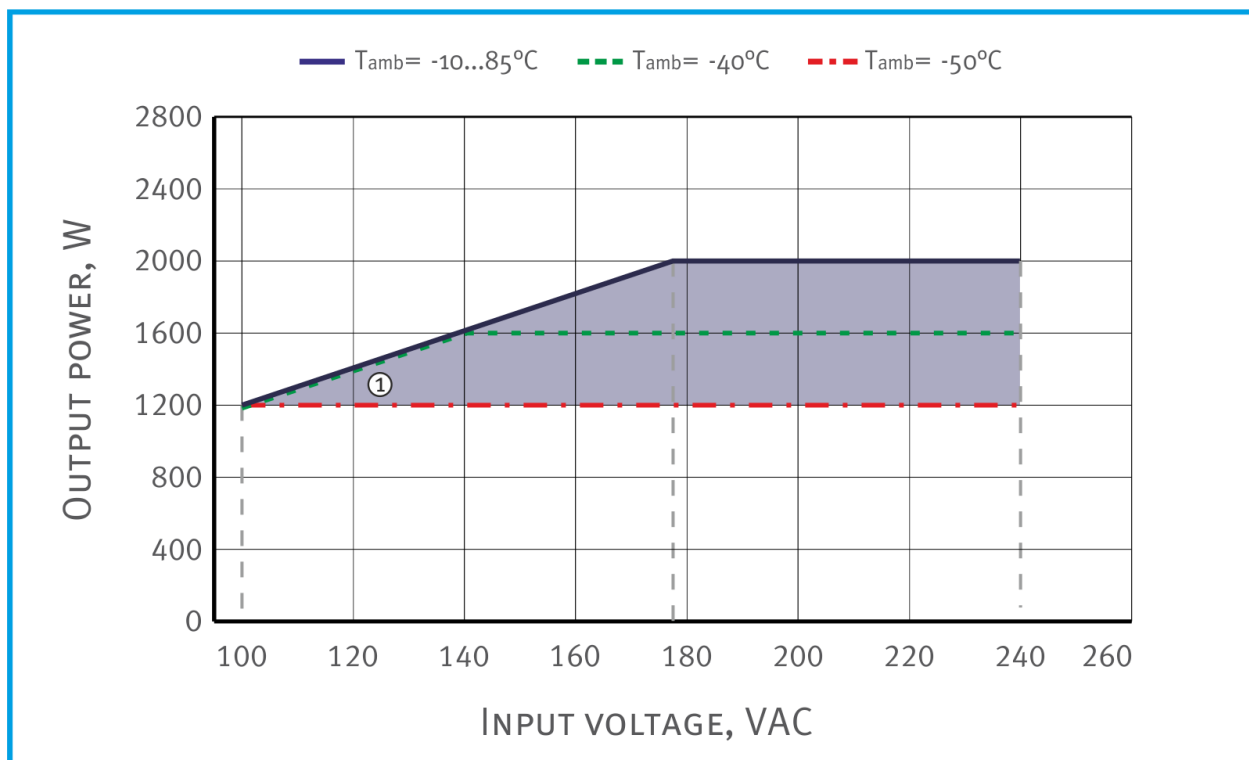
Output power vs ambient temperature for input voltages ~176...242 VAC



Derating curve area is in accordance with maximum case temperature of the block (+85 °C). Output power of the block must not exceed the values, limited by corresponding curve at given ambient temperature. Thermal characteristics are given provided that the block is placed in such a way that the ribs of a heat sink are perpendicular to the horizon, input is below, and natural convection is not complicated.

At point ▲ there are several marginal parameters, for example, combination of maximum case temperature and maximum output power. Long-term operation of the block at this point is not allowed.

Output power vs input voltage



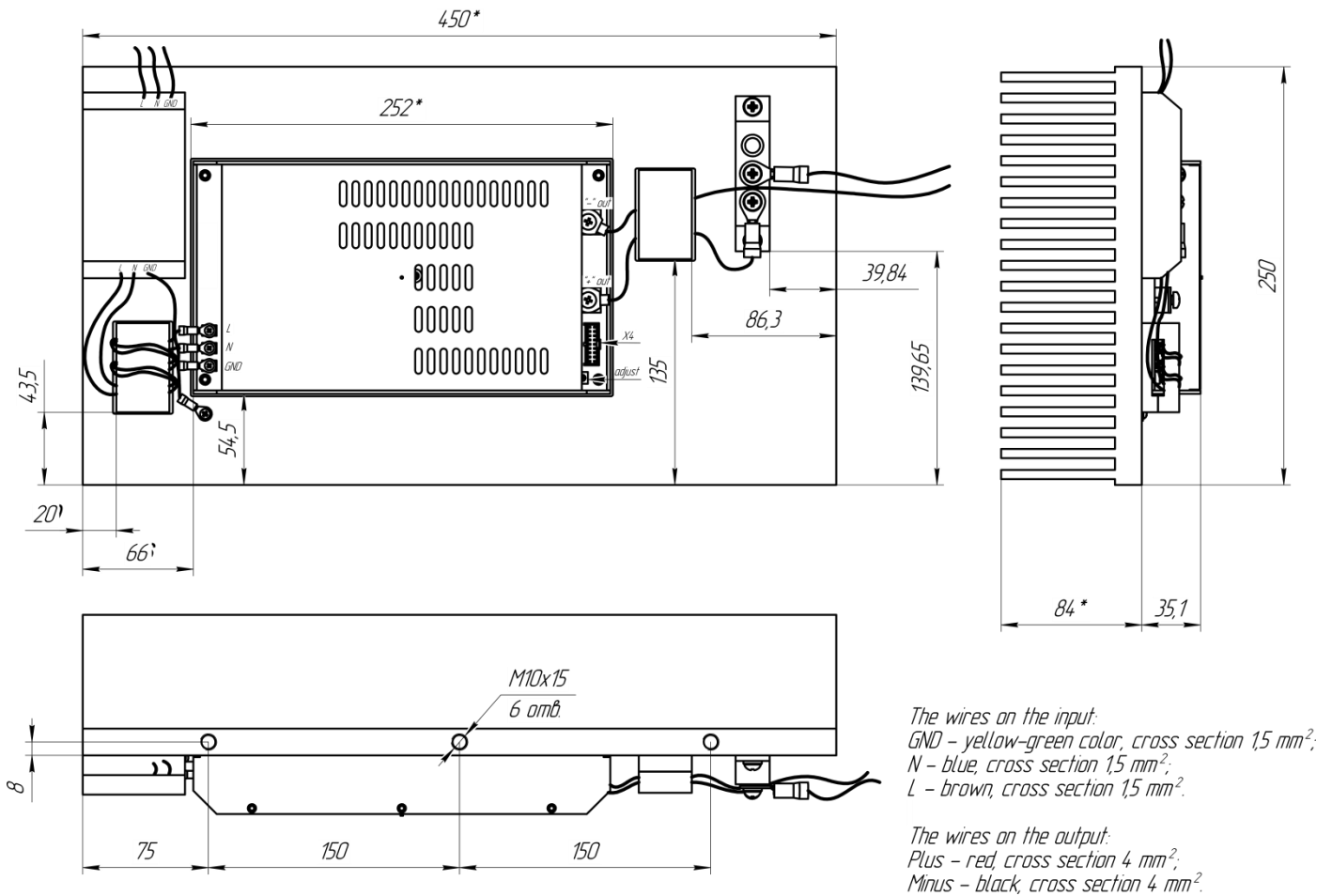
① - For ambient temperature -50°C...-10°C in gray areas of diagrams some specification parameters may not be met.

Pinout

X4.1	X4.2	X4.3	X4.4	X4.5	X4.6	X4.7	X4.8	X4.9	X4.10
+OGOOD	-OGOOD	not use	not use	ADJ	PARAL	+FAN	-FAN	-RS	-OUT

X4.11	X4.12	X4.13	X4.14	X4.15	X4.16	X4.17	X4.18
+RS	+OUT	not use	not use	not use	AUX	-REM	+REM

X4	<p>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.</p>
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Certificates and reports

Qualification testing report

ISO 9001* Certificate

CE Conformity declaration

* quality management system at Alexander Electric s.r.o. throughout all departments, including R&D department, is certified in compliance with ISO requirements

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