



Military standard MIL-STD-810F, test methods 514.5 and 516.5 and MIL-STD-461F, test method CE 102



Features

- Class: Expert, power density up to **1279 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 80 A, output power up to 1200 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
 - Output voltage adjustment
 - Remote feedback
 - Max capacitance - not limited
 - Metal case
 - Completely replace the previous generation modules TESA1000
- For all special requirements placed on the last page of datasheet [please click here](#).**

Description

AC/DC power supplies (modules) JETA1200 are especially designed for industrial applications and harsh environment operation. This compact unit (211 x 117 x 38.1 mm) proven maximum output power of up to 1200 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 JETA10).

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 1200 - 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 |
|----------------------|---------------------|---------------|---|--------------------|
| JETA1200-230WS15-XXX | 100...242 VAC* | 1200 W | 15 VDC / 80 A | 84% |
| JETA1200-230WS24-XXX | | | 24 VDC / 50 A | 88% |
| JETA1200-230WS27-XXX | | | 27 VDC / 44,4 A | 88% |
| JETA1200-230WS48-XXX | | | 48 VDC / 25 A | 89% |
| JETA1200-230S15-XXX | 176...242 VAC | | 15 VDC / 80 A | 84% |
| JETA1200-230S24-XXX | | | 24 VDC / 50 A | 88% |
| JETA1200-230S27-XXX | | | 27 VDC / 44,4 A | 88% |
| JETA1200-230S48-XXX | | | 48 VDC / 25 A | 89% |

Modules with non-standard output voltage from 15 to 60 VDC with maximal output current up to 80 A, could be delivered on 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 |
|----------------------|---------------------|---------------|---|--------------------|
| JETBA1000-230S15-XXX | 176...242 VAC | 900 W | 15 B / 60 A | 84% |
| JETBA1000-230S24-XXX | | 1000 W | 24 B / 41.6 A | 88% |
| JETBA1000-230S27-XXX | | | 27 B / 37 A | 88% |
| JETBA1000-230S48-XXX | | | 48 B / 21 A | 89% |

Modules with non-standard output voltage from 15 to 60 VDC with maximal output current up to 60 A, could be delivered on 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 |
| Max capacitance | not limited |
| Output for fan | 9.5...13 VDC, I _{max} =200 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 R _{ha} =0,069°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 | 3000 VAC |
| Insulation voltage output/case, output/REM, REM/case | 500 VAC |
| Isolation resistance @ 500 VDC | 20 MOhm |
| EMC standards | EN55022, class A (class B with filter JETAF10) |
| Safety standard | IEC/EN60950 |
| Thermal resistance case — environment without heat sink | 1,2 °C/W |
| Typical MTBF (T _{case} = 50°C; P _{out} = 0,7 P _{out max}) | 30 000 hrs |
| Cooling method | Free air convection with heat sink or forced air |
| Weight (max) | 1500 g |

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

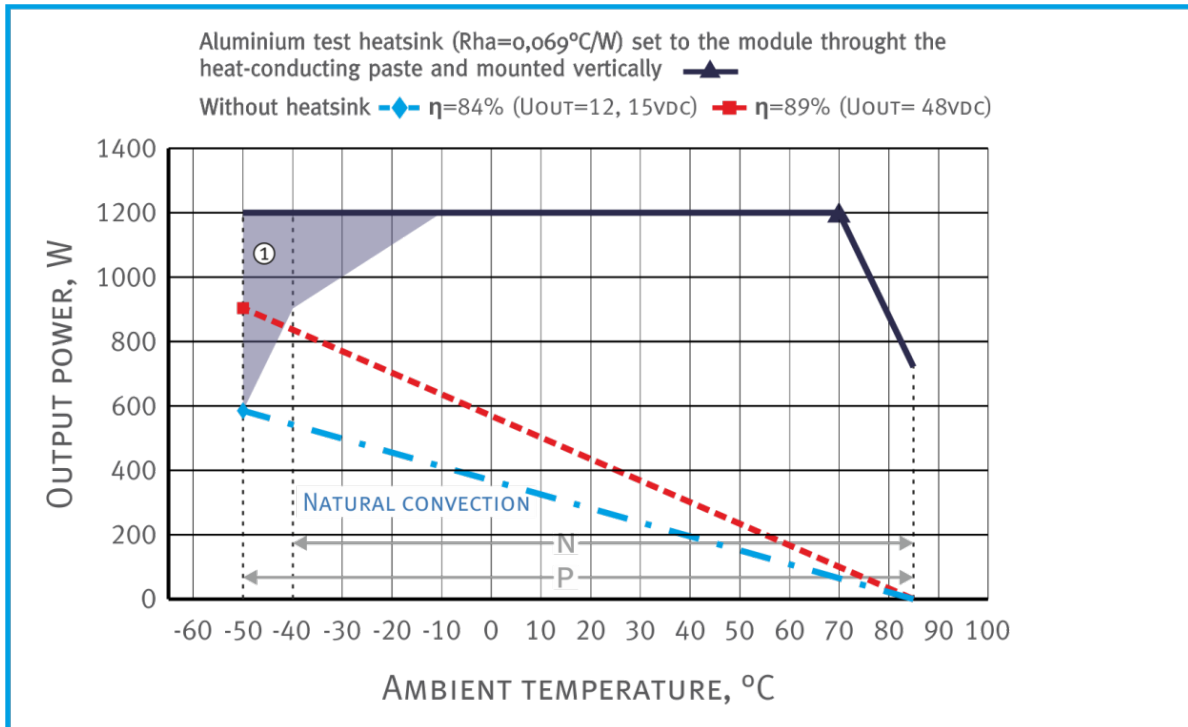
** For input voltage 230W (wide input) maximal output power decrease at input voltage 100...176 VAC according to the derating curves.

*** 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

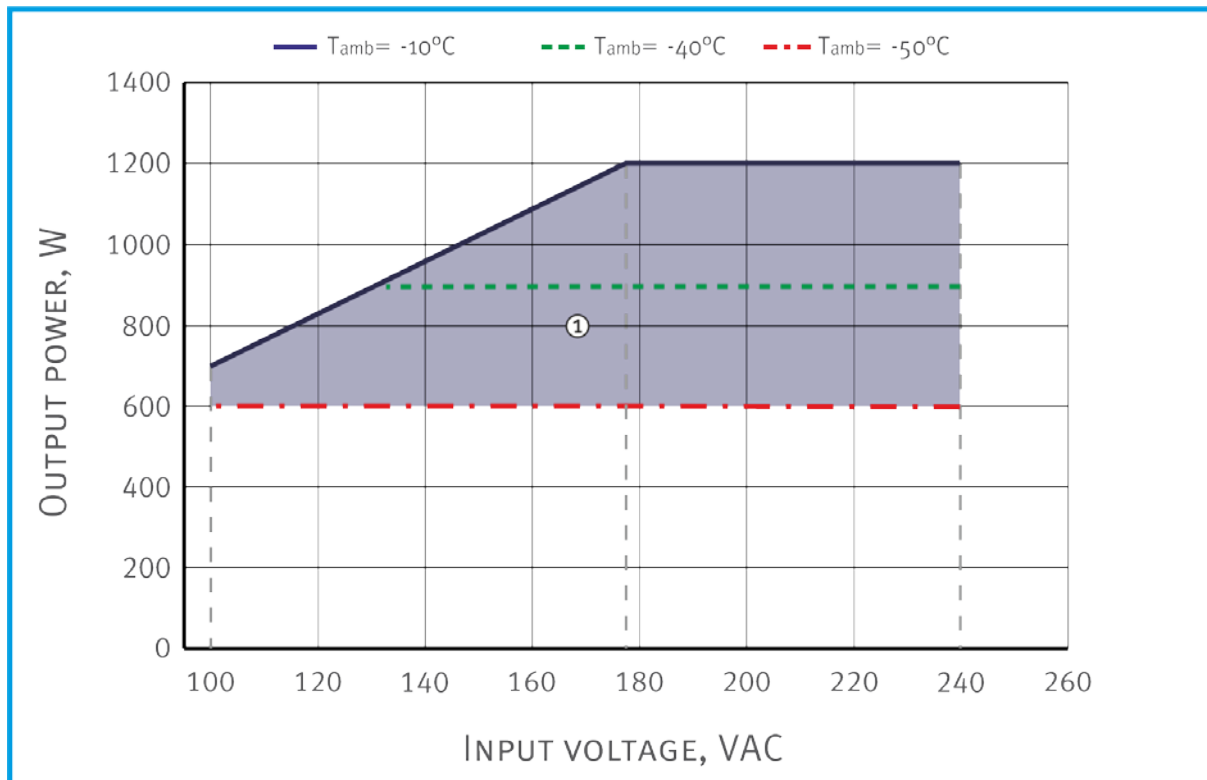


Dropping parts of the dashed and dash-dotted curves are in accordance with the **maximum temperature of the case** (for modules with index «N», «P» equal to $+85^{\circ}\text{C}$). Output power must not exceed the values which are limited by corresponding curve for a given ambient temperature.

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 3,5 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°C ... -10°C in gray areas of diagrams some specification parameters may not be met.

Pin out (models with the terminal blocks)

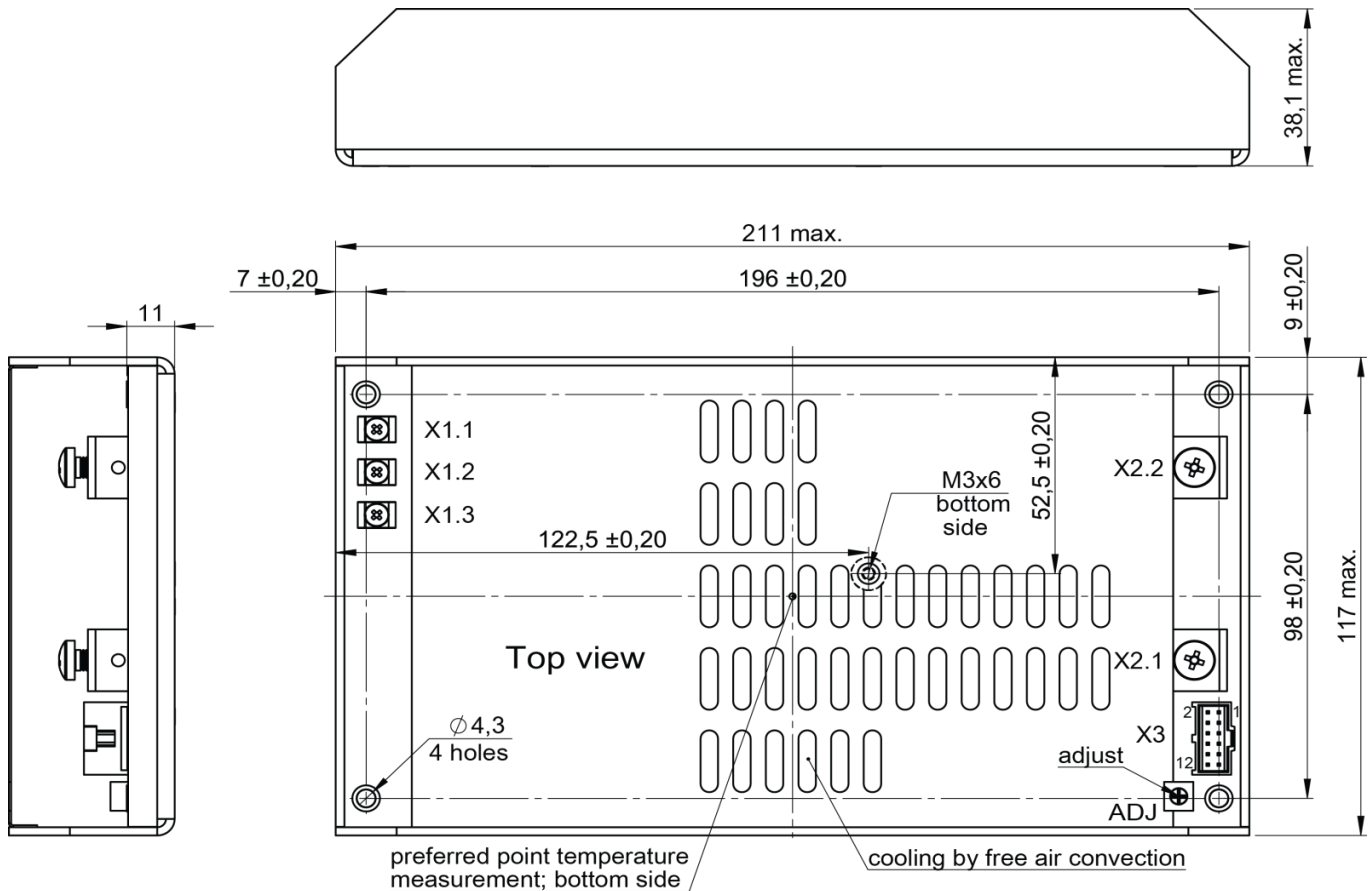
| X1.1 | X1.2 | X1.3 | X2.1 | X2.2 | X3.1 | X3.2 | X3.3 | X3.4 | X3.5 | X3.6 | X3.7 | X3.8 | X3.9 | X3.10 | X3.11 | X3.12 |
|------|------|------|------|------|------|-------|------|------|------|------|------|------|---------|---------|-------|-------|
| GND | N | L | +OUT | -OUT | ADJ | PARAL | +FAN | -FAN | -RS | -OUT | +RS | +OUT | not use | not use | -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 Würth Electronics Inc. 5580510 or 5580516. |
| X3 | MOLEX, C-GRID III MALE – SDA-90130-1112. FEMALE – SD-90142-0012 (12 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 6 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 (V A case size)



Certificates

Certificate ISO 9001*
CE conformity declaration

All JETA 1200 family power supplies are certified for military standard MIL-STD-810-F, Test methods 514.5 / 516.5.

* 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