

### Advantages

- Successor to the popular NN60A, TESA80 and TESA100 models
- Made in Russia (under the import substitution program)\*
- Export deliveries are possible
- Increased power up to 120 W, 14 W/in<sup>3</sup>
- Maximum operating temperature of the housing up to - 50°C to +85°C
- Efficiency up to 93 %
- 111x61x21 (mm) metal base
- Input voltage options:  
"230" - (176-242 V)  
"115" - (80-138 V)
- One or two galvanically separated outputs
- The ability to receive an increased output voltage by connecting the outputs in series

\* Under a License agreement with AEPS-group



### Description

**JETAs120** isolated converters are standard AC/DC modules for operation in harsh operating conditions. Output power up to **120 W** is available at a power density of **14 W/in<sup>3</sup>**. The modules are operable in a wide range of input voltages and operating temperatures, up to **-50 °C...+85°C**. They have a full range of protections. The optimal combination of technical parameters and competitive price makes it possible to use these modules in a variety of fields – in AFAR and other types of radars, in transport, in distributed power supply systems of supercomputers - wherever low profile, small size and weight, high efficiency are important.

When ordering, the power can be selected from a range of 80, 100 and 120 watts					
Single channel 120 W model *	Input voltage**	Pout max.	Output voltage nominal***	Output current max.	Typical efficiency
JETAs120-230WS05-SxN-A2	~176-242 V (1s ~264 V transient) or DC equal	120 W	5 V	24.0 A	88 %
JETAs120-230WS12-SxN-A2		120 W	12 V	10.0 A	90 %
JETAs120-230WS15-SxN-A2		120 W	15 V	8.0 A	90 %
JETAs120-230WS24-SxN-A2		120 W	24 V	5.0 A	91 %
JETAs120-230WS27-SxN-A2		120 W	27 V	4.4 A	91 %
JETAs120-230WS36-SxN-A2		120 W	36 V	3.3 A	92 %
JETAs120-230WS48-SxN-A2		120 W	48 V	2.5 A	93 %
JETAs120-230WS60-SxN-A2		120 W	60 V	2.0 A	93 %

\*Execution of output contacts (index instead of X): "C" - with terminal blocks, "H" - with knife contacts (on request)

\*\* It is possible to supply modules on request with a different input voltage range.

\*\*\* Modules with non-standard output voltage are available on request.

When ordering, the power can be selected from a range of 80, 100 and 120 watts

Dual channel 120 W model*	Input voltage**	Pout max.	Output voltage nominal***	Output current max on channel	Typical efficiency
JETAs120-230WD0505-SxN-A2	~176-242 V (1s ~264 V transient) or DC equal	120 W	2 x 05 V	12.0 A	84 %
JETAs120-230WD1212-SxN-A2		120 W	2 x 12 V	5.0 A	84 %
JETAs120-230WD1515-SxN-A2		120 W	2 x 15 V	4.0 A	86 %
JETAs120-230WD2424-SxN-A2		120 W	2 x 24 V	2.5 A	86 %
JETAs120-230WD2727-SxN-A2		120 W	2 x 27 V	2.2 A	87 %
JETAs120-230WD3636-SxN-A2		120 W	2 x 36 V	1.7 A	87 %
JETAs120-230WD4848-SxN-A2		120 W	2 x 48 V	1.3 A	88 %
JETAs120-230WD6060-SxN-A2		120 W	2 x 60 V	1.0 A	88 %

\*Execution of output contacts (index instead of X): "C" - with terminal blocks, "H" - with knife contacts (on request)

\*\* It is possible to supply modules on request with a different input voltage range.

\*\*\* Modules with non-standard output voltage are available on request.

## Ordering information

### JETAs 120 - 230WD1212 - SCN - A2

1 2 3 4 5 6 7 8 9

- 1 «JETAs» series
- 2 Nominal output power, W
- 3 Index of the nominal input voltage:
  - 115 115 (80...138 V) transient 150 V, 1s
  - 230 220 (176...242 V) without transient
- 4 Index of the number of output channels:
  - S one
  - D two
- 5 Nominal output voltage, V (two characters on channel)
- 6 Index of constructive execution:
  - S version with polymer sealing filling
- 7 Index of execution of terminals and housings
  - C base with cover and terminal blocks
  - H base with lid and knife contacts (on request)
- 8 Index of the operating temperature range of the housing:
  - N -40°C...+85°C
  - P -50°C...+85°C
- 9 Case size

General specifications		
Switching frequency		200 kHz typ. PWM
Temperature range	Operating case temp	-40° C до +85° C (Standard "N")
	Storage temp	-60° C до +85° C
Overheat protection		+90° C typ.
Cooling method		conductive through the radiator or natural convection (after consultation with the manufacturer)
Case thermal resistance	case - ambient	4.8 K/W
Humidity		5-95 % rel. H
Insulation	in/case	~1500 V
	in/out, in/REM	~3000 V
	out/case, out/REM, REM/case	~500 V
	out/out	=500 V
Isolation resistance @ =500 V		>20 MOhm
Thermal, shock, mechanical shock & vibration		MIL-STD-810F
Safety standards		IEC/EN 60950-1
Typical MTBF	Pout = 0,7 Pout max	50 000 hrs (Tcase = 50 °C)
Weight (max)		270 g
Input specifications		
The range of vx. power supply (with reduced power)	50 Hz	~176-242 V (1s transient. ~176-264 V)
	DC equal.	=140-342 V (1s transient =140-372 V)
Starting voltage		typ. ~90 V
EMC Standards	CE MIL-STD-461F, CE EN 55022 - Class B. Additional application of the filter JETAF1 is possible	
Power factor		>0.67
Output specifications		
Decrease output power from input voltage	linear reduction from 120 W to 60 W from 175 V to 100 V	
Output voltage adjustment	<i>not available</i>	
Instability of the output voltage**	when changing from Uin,min to Uin,max	±0.5 % (with a load of 10% to 100%)
	Load var from 10 % to 100%	±2 %
Ripple and noise (peak-to-peak)	20 MHz range	<2 % for load. 10-100 %
Protection	Over-load	Auto-reset at 110-140 % or Iout,nom
	Over-voltage	<130 % Uout,nom
Capacitive load (max)	24 V out, 50% Pout,nom	typ. 7 800 uF
Remote OFF	<i>Not available</i>	

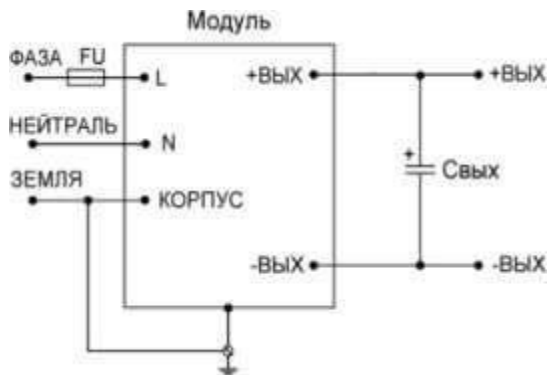
\* See description of filters on the website [www.te-power.ru](http://www.te-power.ru) .

If necessary, contact us by e-mail [russia@te-power.ru](mailto:russia@te-power.ru) .

\*\* When the load changes in the main stabilized channel from 10% to 100%, the voltage instability of the second channel can reach ± 13 %

All characteristics are given for NCU, Uout.nom., Iout.nom., unless otherwise specified

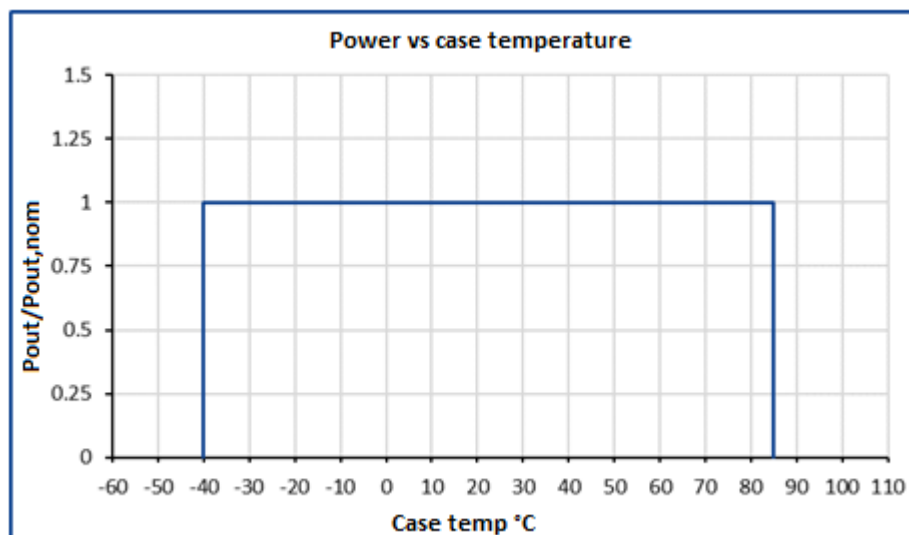
## Typical connection scheme (minimum required)



For any applications of these modules as part of the connection diagram, it is mandatory to use elements of the typical scheme shown in the figure.

$C_{out}$  - are selected in accordance with Table 9.2 of the [Technical Specifications for the JETAs series modules](#) on our website.

## Температурная зависимость мощности и принципы охлаждения



The zone of permissible loads for the standard version of the modules.

## Cooling method

These units do not have their own cooling system and are designed for use with conductive cooling (liquid) or with a convection radiator. The majority of the heat generated by the module (93-95%) is concentrated on the lower surface of the case, on the sole, designed for articulation with the surface of the radiator (aluminum or copper). Requirements for the articulated surface of the radiator (preferably pre-milled) - non-flatness of less than 0.1 mm per 100 mm of length. To use the module without a radiator, consultation with the manufacturer is mandatory.

## Mounting the module to the radiator if necessary

When attaching the module to the radiator, first one pair of diagonally placed screws is twisted, then another. At the first pass, all screws are tightened easily, without effort. During the second pass, all screws are tightened with the recommended tightening torques of the screws.

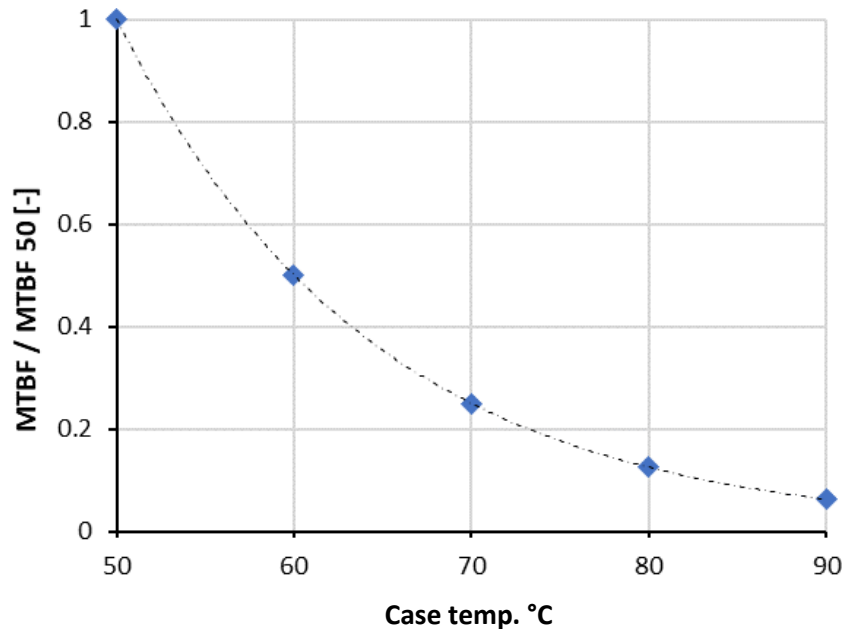
For a high-quality fit to the radiator, it is necessary to use a heat-conducting paste with a layer thickness of no more than 0.1 mm and a thermal conductivity coefficient of at least  $2.0 \text{ W} / (\text{m} \cdot \text{K})$ , applied using a mesh stencil with the formation of square sections of paste after its application (for example, 2x2 mm - 4x4 mm and a distance between squares of 0.5-1 mm). This allows you to ensure the output of excess air and the minimum thickness of the paste layer when the module is attracted to the radiator.

## Short-term activation of the module

If it is necessary to briefly turn on the unit for 3-5 minutes (for example, to conduct an input control), an aluminum (or copper) plate can be used as a radiator. Width and length of the plate should not be less than that of the module itself, and the thickness should not be less than 2 mm..

## MTBF based on case temperature

When using the unit, a customer must in one way or another monitor maximal heatsink temperature. Maximal heatsink temperature near the center point of the longer unit's side (considered as unit case temperature) must correspond to the expected unit's MTBF. Approximate MTBF function shown on the graph lower, where MTBF / MTBF 50 is unit's MTBF value at chosen unit's case operating temperature relative to value at 50°C unit's case temperature.



## Activation of thermal protection

When the internal thermal protection of the module is triggered (type +85 °C...+95°C) the module is turned off (before automatic restart). Such a condition in the equipment should lead to measures of forced cooling of the radiator of the module, for example, the inclusion of fans. In case of prolonged use of this mode (especially in cases of operation close to idling), the module may fail due to frequent shutdowns at the maximum temperature of the module radiator. The time before the automatic restart when the thermal protection is triggered can last from several seconds to several minutes, depending on the thermal inertia of the radiator.

## Short-circuit operation of the outputs

The units have protection against short-term short-circuit at the output, this mode is emergency, not for permanent working use. It is forbidden to turn on the modules when the output contacts are short-circuited (the units have internal indicators).

If necessary contact us by e-mail [russia@te-power.ru](mailto:russia@te-power.ru).

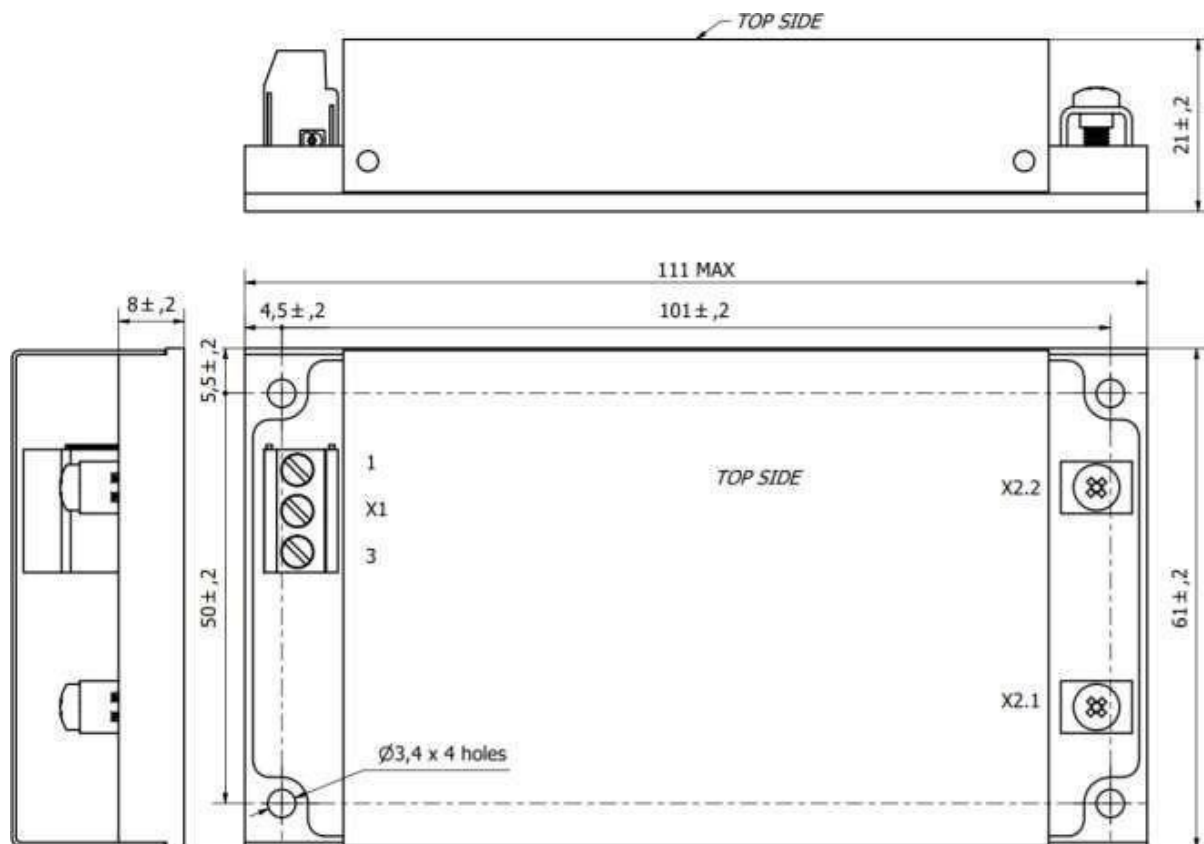
## Dimensions

Pin #	X1.1	X1.2	X1.3	X2.1	X2.2	X2.3	X2.4	X2.5	X2.6
Single channel	GND	L	N	+OUT	-OUT	-	-	-	-
Dual channel	GND	L	N	+OUT1	+OUT1	-OUT1	-OUT1	+OUT2	-OUT2

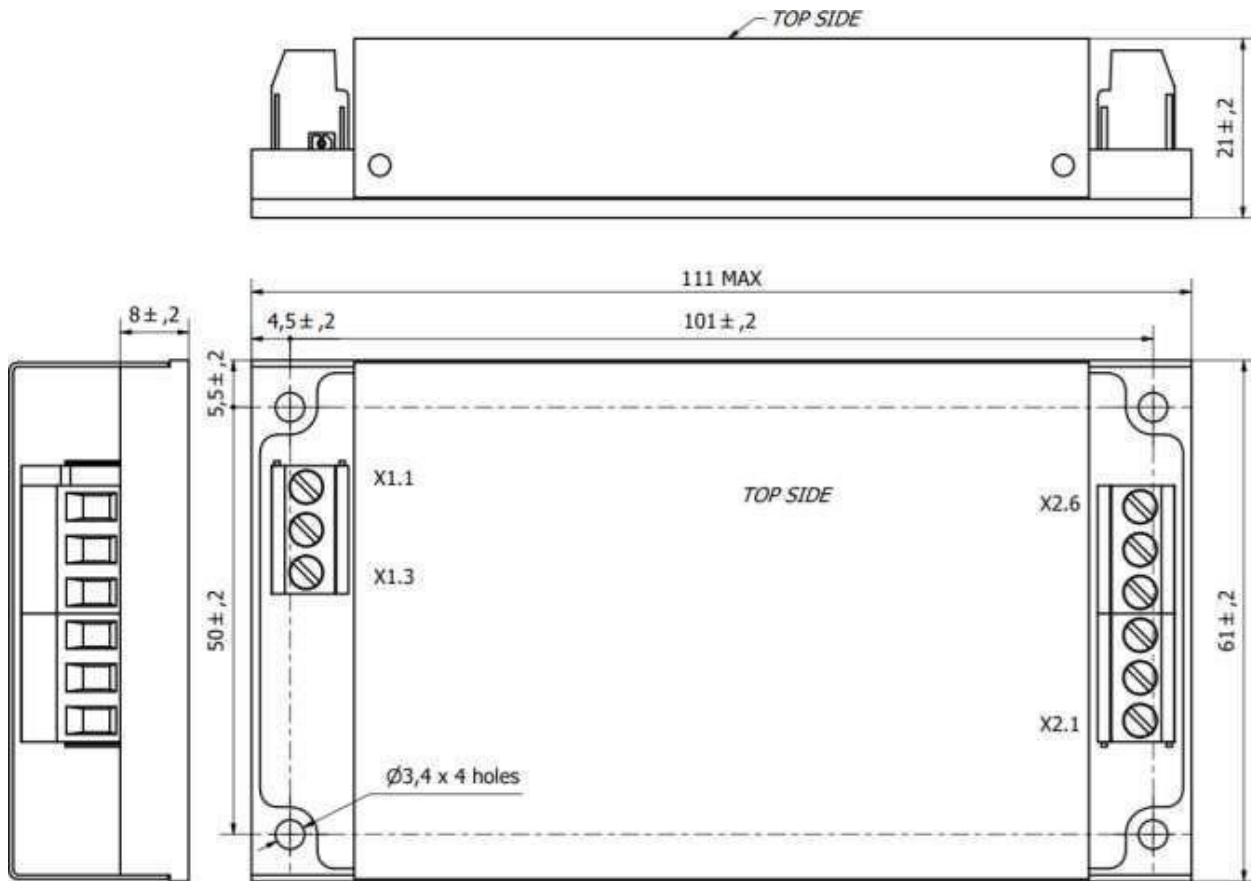
<b>X1</b>	RATED WIRE SIZE SOLID: max.: 3.3mm <sup>2</sup> Stranded (flexible): max.: 3.3mm <sup>2</sup> Stranded with Ferrule: max 3.3mm <sup>2</sup> Screw size: M3 Torque: 0,5 Nm
<b>X2</b>	Screw size: 6-32 x 1/4L Recommended torque: 0.5Nm Recommended: Use ring terminal, for example MOLEX 19323-0007, MOLEX 19324-0007 <b>OR same spec as X1 for Dual Models</b>

Dimensions in millimeters

### Single channel



## Dual channel



## Additional information

When ordering these products, the consumer is fully responsible for using the products in strict accordance with the rules and principles of operation given in this product data sheet and technical specifications (TU) given on the manufacturer's website.

Please note that the information in this document is not complete. More detailed information (additional requirements, typical switching schemes, operating rules, etc.) is provided on the website [www.te-power.ru](http://www.te-power.ru). All images are for illustration purposes only, the actual appearance of the product may vary, including the type and placement of internal components and the placement of connectors.

In accordance with the company's policy in connection with the continuous improvement of the design of products, the manufacturer reserves the right to change the content of specifications and promotional materials without prior notice! Make sure you are using the latest documentation, which can be downloaded at [www.te-power.ru](http://www.te-power.ru).

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