

NEW!



AC/DC power supplies TESAV500 series



Features

- Class: Industrial
- Cases with mounting flanges; or copper case (optional)
- Parallel operation
- Feedback from load
- Output current up to 40 A, output power 500 W; one output channel
- Input voltage ranges: 176...240 VAC; 80...140 VAC
- Power density up to **3608** W/dm³
- Low profile 15 mm design
- Case operating temperature range: -60°C...+125°C
- Magnetic feedback without optocouplers
- Output voltage adjustment, remote on/off
- Max capacitance 2200 μ F for $U_{out}=27$ VDC

Description

Ultra-compact isolated AC/DC converters are especially designed for industrial applications and harsh environment operation. These compact units (110 x 84 x 15 mm) have output power up to 500 W and operating temperature range between -60...+125°C. The absence of optocouplers in the converter's circuit empowers safeness during unit's entire lifetime even when performing in conditions of ionizing radiations and at high temperature. These modules have full protection complex against over current, shorting and overheating, can be switched on/off by a signal and be connected in parallel or in series.

These modules are built using especially designed electronic components and sealed with heat-conducting potting material. They have wide operating temperature range and thermal protection chip. These modules undergo special thermal and limit tests, including burn-in-tests with extreme on/off modes. They are available in metal cases with mounting flanges.

Upon customers' request this module can be produced in copper cases (covered by "Black chrome"), allowing its installation on aluminum heat sink and providing a positive effect on the modules EMC and heat transfer.

Upon customers request a low-cost version of a module is available.

Ordering information

TESAV 500 - 230 S 12 - U T B

1 2 3 4 5 6 7 8

- 1 - «TESAV» Series
- 2 - Max output power, W
- 3 - Input voltages
 - 230 – 230 VAC (176...240 VAC)
 - 115 – 115 VAC (80...140 VAC)
- 4 - Index of output channels quantity
 - S – one
- 5 - Nominal output voltage, VDC (two signs for a channel)
- 6 - Index of case design
 - U – metal case with flanges
- 7 - Index of operating temperature range of the case
 - T –60°C...+125°C
- 8 - Index of low cost version
 - B – Low cost version (customer-considered simplified construction)

Technical information

Standard models with one output

| Module | Input voltage range | Output power | Output voltage / nominal output current | Typical efficiency |
|--------------------|---------------------|--------------|---|--------------------|
| TESAV500-115S12-UT | 80...140 VAC | 480 W | 12 VDC / 40 A | 87% |
| TESAV500-115S15-UT | 80...140 VAC | 500 W | 15 VDC / 33,3 A | 87% |
| TESAV500-115S24-UT | 80...140 VAC | 500 W | 24 VDC / 20,8 A | 88% |
| TESAV500-115S27-UT | 80...140 VAC | 500 W | 27 VDC / 18,5 A | 88% |
| TESAV500-115S48-UT | 80...140 VAC | 500 W | 48 VDC / 10,4 A | 90% |
| TESAV500-230S12-UT | 176...240 VAC | 480 W | 12 VDC / 40 A | 88% |
| TESAV500-230S15-UT | 176...240 VAC | 500 W | 15 VDC / 33,3 A | 88% |
| TESAV500-230S24-UT | 176...240 VAC | 500 W | 24 VDC / 20,8 A | 89% |
| TESAV500-230S27-UT | 176...240 VAC | 500 W | 27 VDC / 18,5 A | 89% |
| TESAV500-230S48-UT | 176...240 VAC | 500 W | 48 VDC / 10,4 A | 91% |

Modules with non-standard output voltage from 3 to 80 VDC with maximal output current up to 40 A, could be delivered by request.

¹ - Typical efficiency are stated for module which were set to an aluminum test heatsink (310x310x6mm) through a heat-conducting paste.

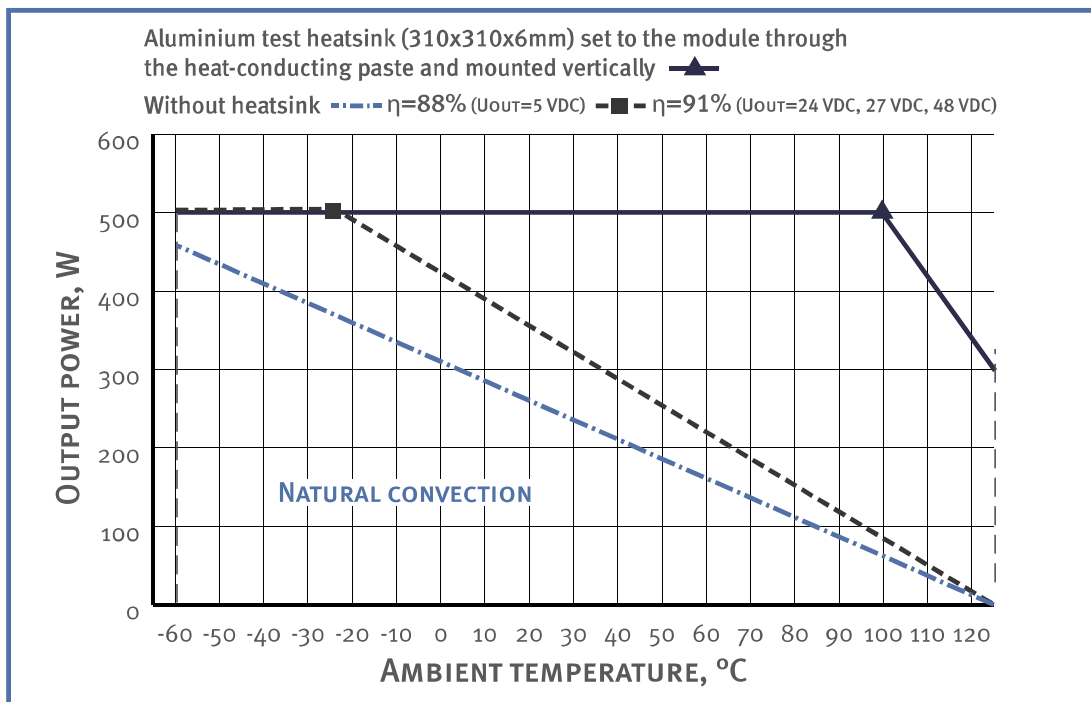
Specifications for AC/DC power supplies TESAV500*

| Input specifications | |
|---|---|
| Input voltage range / transitional deviation, 1 sec 115 | ~80...140 VAC/~80...140 VAC |
| Input voltage range / transitional deviation, 1 sec 230 | ~176...240 VAC/~176...264 VAC |
| Input frequency | 47...440 Hz |
| Input filter | absent |
| Output specifications | |
| Output voltage adjustment (single-channel models only) | ±5% Uout |
| Instability of output voltage in accordance to changing of output current from 10 to 100% for single output model | ±2% |
| Instability of output voltage in accordance to instability of input voltage | ±0,5% |
| Ripple and noise (peak-to-peak) (20 MHz) | <2% Uout |
| Short circuit protection** | >150% Iout nom, auto repair |
| Overvoltage protection** | <130 % Uout |
| Over current protection level** | Pout ... 1.3·Pout |
| Remote On/Off | Shuts down outputs by applying 0...1,1 VDC or connection of output «ON» and «- IN», I≤5mA |
| The maximum output power without the heatsink, Tamb=50°C | 183 W |
| General specifications | |
| Case temperature (operating) | -60°C ...+125°C |
| Case temperature (storage) | -60°C ...+125°C |
| Case temperature power decrease (natural convection) | See diagram (dashed, dash-dotted curve) |
| Case temperature without power decrease with heat sink | See diagram (solid curve) |
| High humidity | 100% @35 °C |
| Thermal resistance case — environment without heat sink | 3 °C/W |
| Insulation voltage input/output | ~3000 VAC |
| Insulation voltage input/case | ~1500 VAC |
| Insulation voltage output/case | ~500 VAC |
| Isolation resistance @ 500 VDC | >20 MOhm |
| EMC standards | EN 55022, class A with additional filter |
| Safety standard | IEC/ EN 60950 |
| Typical MTBF (Tcase = 50°C; Pout = 0,7 Pout max) | 50000 hrs |
| Cooling metod | Free air convection or forced air cooling |
| Weight (max) | 250 g |

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

** Parameters are stated for the information purposes and could not be used at long term work, exciding maximum output current, at work outside of a range of working temperatures, at module's work with the output voltage over a range of adjustment.

Output power vs an ambient temperature at input voltage =176...240 VAC (copper case)

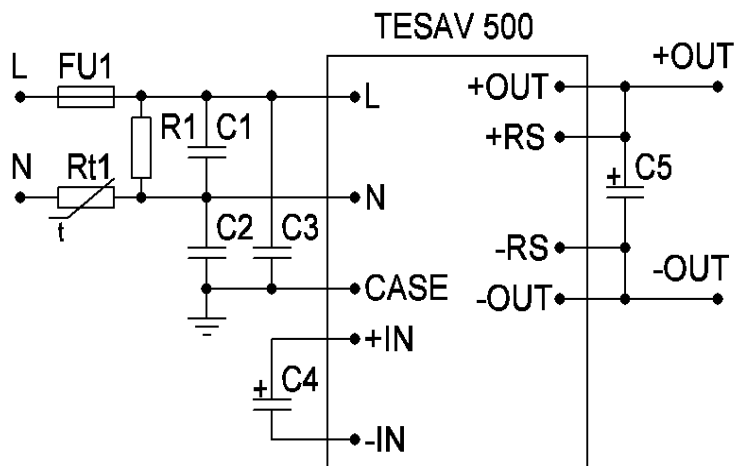


Dropping parts of the dashed and dash-dotted curves are in accordance with the **maximum temperature of the case**. Output power must not exceed the values which are limited by corresponding curve for a given ambient temperature.

Modules can be used without a heat sink only when screwing them heat conductive plate with thermal paste and with the length and width not less than case size and thickness of not less than 3 mm.

At points ■ and ▲ simultaneously present 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.

Typical connection diagram

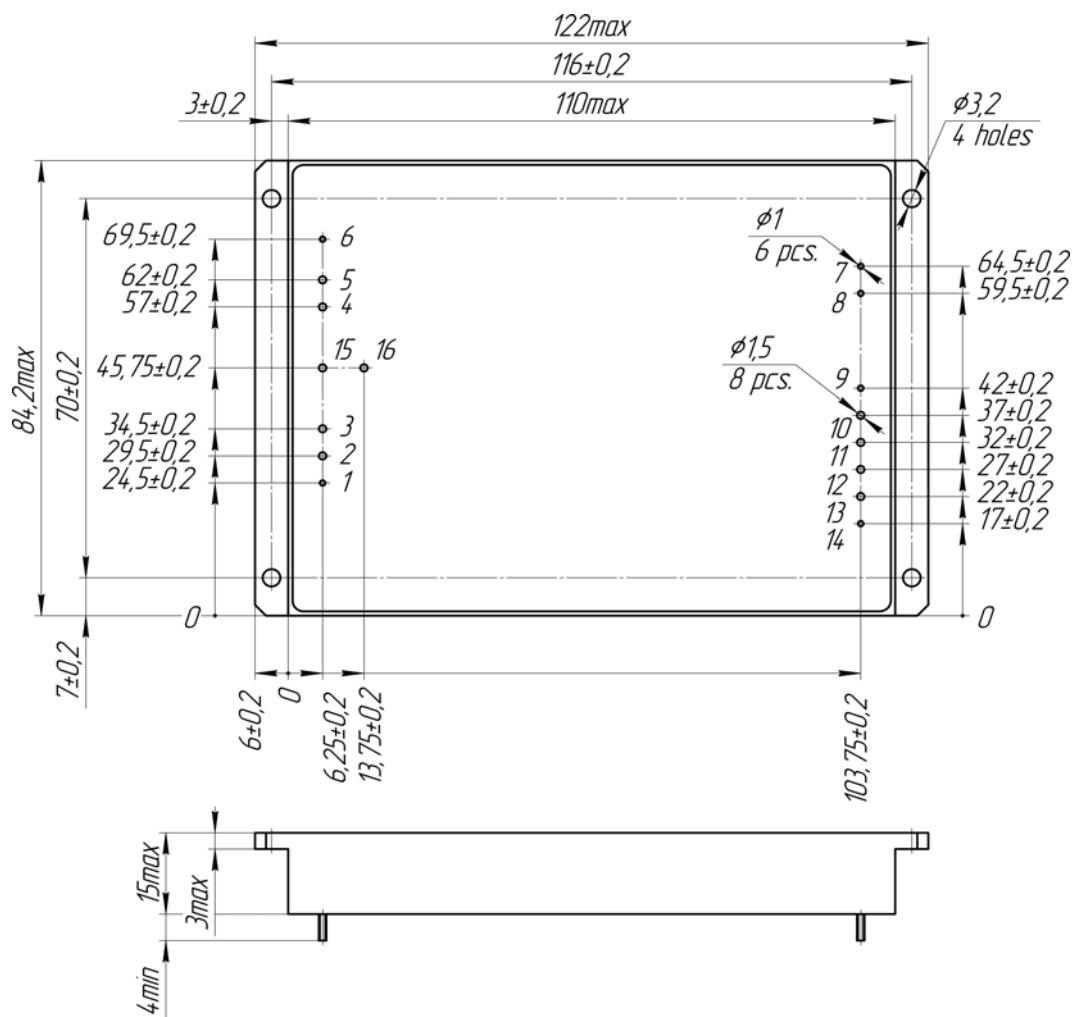


| | |
|--------|-------------------------|
| C1 | 0.47uF 275VAC, X2 class |
| C2, C3 | 2200pF 250VAC, Y2 class |
| C4 | 470uF 400V |
| C5 | Tantalum, Low ESR |
| R1 | 470kOhm 0.5W |
| Rt1 | NTC 40hm 8A |
| FU1 | 12A 250V |

Pin out

| Nº Pin | 1 | 2,3 | 4,5 | 6 | 7 | 8 | 9 | 10,11 | 12,13 | 14 | 15 | 16 |
|---------------|----|-----|-----|------|-------|-----|-----|-------|-------|-----|----|----|
| Single output | ON | -IN | +IN | CASE | PARAL | ADJ | -RS | -OUT | +OUT | +RS | L | N |

Single output model with flanges (VII case size)



Certificates

Certificate ISO*
CE conformity declaration

*Management system of Alexander Electric is ISO certified

Note

The label with sign "remove before use" can be placed on the top surface of the module and must be removed before installation.

Please, note that all information in this material is for reference only. Further detailed information (including: additional requirements, manuals and circuit schemes) is found on our website <http://www.teslaelectric-eu.com>.

Contact information

<http://www.teslaelectric-eu.com>, e-mail: contact@teslaelectric-eu.com, phone/fax: +420 266 107 303

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