

Features

- Up to 500 W nominal output power, power density up to 59 W/in³
- Extreme case operating temp. range up to -60° to +130° C on request
- Efficiency up to 91 %
- Possible working without heatsink 110x84x15 (mm) metal aluminum case with flanges (size is without flanges)
- Variants input:
- 230 - (182-242 VAC) - standard, other: 36, 115, 150W
- Adjustable output voltage
- Remote on/of
- External feedback
- Parallel operation



Description

TESAV500-F7 are the series of isolated DC/DC converters meant to work under both heavy electrical and environmental conditions. Output power is **up to 500 Watts**, power density is up to **59 W/in³**. The units offer you flexibility of wide input range with both extremely low and high case temperatures of **-40° to +110° C**. The units feature a system of over-current and short-circuit protection and over-voltage protection. Standard functions include remote on/off, energy-saving zero-load operation. The units maintain high efficiency across broad load range. Its versatility allows you to implement the converter in a vast number of industrial applications, supplying capacitive, constant-power and impulse load. Application fields: very high, high, low altitude, land transport, telecom, mining equipment, supercomputers, equipment in low-temperature regions, high-temperature regions, digital signage equipment, APAR radars and others - where there are needed compact dimensions and forced air (or conductive cooling via heat sink) is possible.

up to 500 W units (optimized for output power 150-400 W)

| Model* | Input voltage range** | Power max. | Output voltage nom.*** | Output current max. | Efficiency typ. |
|------------------------------|---------------------------------------|------------|------------------------|---------------------|-----------------|
| TESAV 500 - 230S12 – F7 – XU | 182-242 VDC (264 VAC transient) | 400 W | 12 V | 34.00 A | 89 % |
| TESAV 500 - 230S15 – F7 – XU | | 500 W | 15 V | 33.33 A | 89 % |
| TESAV 500 - 230S27 – F7 – XU | | 500 W | 24 V | 10.41 A | 91 % |

* Index of temperature range (instead X): -40...+110° C (S), -60...+110° C (M), -40...+130° C (P), -60...+130° C (E);

**Models with custom input voltage range may be provided on request.

*** Models with custom output voltage may be provided on request.

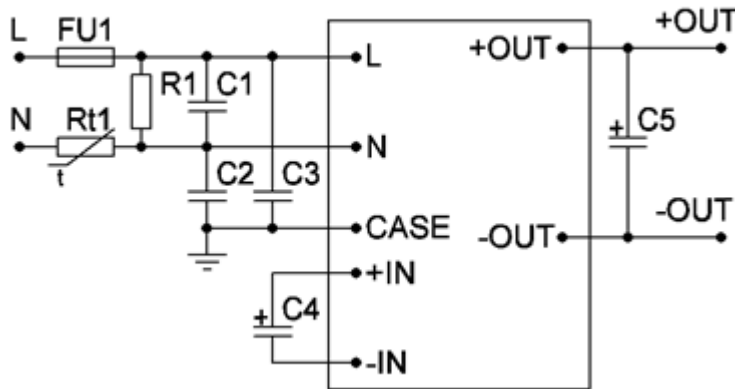
| General specifications | | |
|---|-------------------------------------|--|
| Switching frequency | | 150 kHz typ. (PWM modulation) |
| Temperature ranges | operating case temp. | -40° C to +110° C (up to -60° C to +130° C on request) |
| | storage temp. | -60° C to +130° C |
| Over-temperature protection | | +130° C typ. |
| Cooling method | | Conductive cooling (heat-sink) |
| Thermal resistance | natural convection without heatsink | 3 K/W typ. |
| Humidity (non-condensing) | | 5-95 % rel. H |
| Insulation | input/output, input/case | 1500 VDC |
| | output/case | 1000 VDC |
| Isolating resistance @ 500 VDC | | >20 MOhm |
| Thermal shock, mechanical shock & vibration | | MIL-STD-810F |
| Safety standards | | IEC/EN 60950-1 |
| Typical MTBF (Tcase = 50° C; Pout = 0.7·Pout,max) | | 80 000 h |
| Weight (max) | | 270 g |
| Input specifications | | |
| Input voltage range - standard** | 230 | 182-242 VDC (1s transient 264 VDC) |
| Start-up voltage for 27W input range | | Start-up at <176 VDC |
| EMC standard compliance**** | | MIL-STD-461F, EN 55022 - class A (class B with filter) |
| Output specifications | | |
| Output voltage adjustment | range | ±5 % |
| Output voltage regulation | input variance Uin,min to Uin,max | ±0.5 % |
| | load variance 10 % to 100 % | ±2 % |
| Ripple and noise (peak-to-peak) | 20 MHz bandwidth | <2 % |
| Protection | over-load | <130 % of Pout,nom |
| | short-circuit | >150 % of Iout,nom with automatic recovery |
| | over-voltage | <130 % Uout |
| Capacitive load (max) | 5 VDC model (50% output power) | typ. 56 000 uF |
| Minimum load | | Not required |
| Remote On/Off | method | Connect ON to -IN or apply 0-0.5 VDC to ON |

**** See product page for DC/DC filters at www.aeps-group.com.

Please contact the tech. team at aeps@aeps-group.cz for more information.

All specifications are valid for normal climatic conditions, nominal output voltage and current, unless otherwise stated.

Typical connection scheme (minimum required)



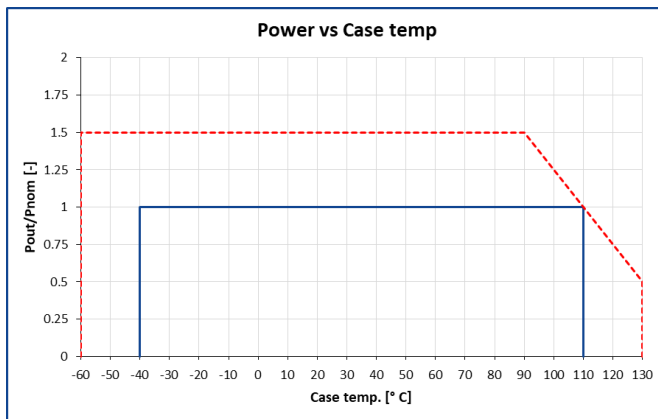
The design of the units allows their use only when mounted on a PCB.

When using the units with typical connection scheme it's necessary to use certain type components.

| for 230 input | |
|---------------|---|
| C1 | 0.47 uF 275VAC, X2 class |
| C2, C3 | 2200 pF 250VAC, Y2 class |
| C4 | 470 uF 400 V for normal climatic conditions & 100% Output power |
| C5 | Tantalum, Low ESR |
| R1 | 470kOhm 0.5W |
| Rt1 | NTC 4 Ω 3A |
| FU1 | 12A 250V |

Exact information can be found [Technical Materials](http://www.aeps-group.com) on our website www.aeps-group.com

Output power based on case temperature



—— Standard maximum power output based on case temperature.

- - - Possible extreme range of output power for customized product.

When using the unit with heatsink thermal/conductive paste must be placed between the unit surface and a heatsink for quality contact (with thickness less than 100 μm, of minimal thermal resistance 2 W/K.m). Mesh stencil should be used to

apply paste in a pattern of 2x2 mm to 4x4 mm squares mm with 0.5-1 mm spacing between the squares. This allows paste to be evenly spread in a thin layer and excess air to escape when tightening screws during unit mounting.

If it's necessary to shortly turn on the unit (for example for input-control testing), it must be attached to a metal coldplate. Its width and length must be not less than of the unit itself, with thickness at least 5 mm. It's prohibited to use the units without the specified coldplate.

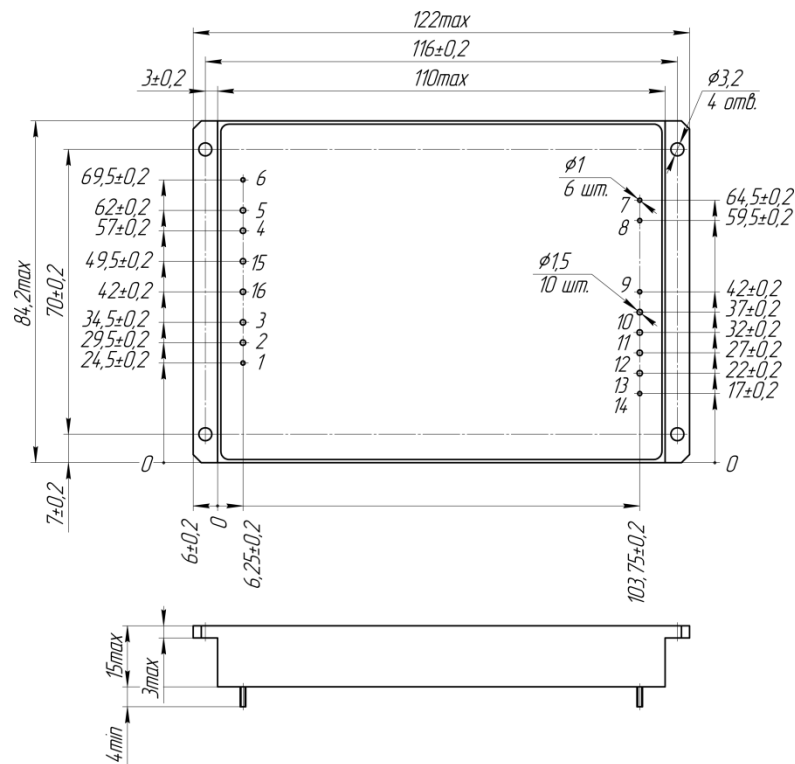
Note:

The units have a short-circuit output protection, which is for emergency only, not for long-term operation. It's prohibited to use the units with reversed input voltage polarity or turn on the units with short-circuited outputs (the units have the special detectors inside).

If you have any questions please contact us directly at aeps@aeps-group.cz.

Dimensions

| Pin | 1 | 2,3 | 4,5 | 6 | 7 | 8 | 9 | 10,11 | 12,13 | 14 | 15 | 16 |
|------|--------|-----|-----|------|-------|------|-----|-------|-------|-----|----|----|
| Name | On/Off | -IN | +IN | Case | Paral | Trim | -RS | -OUT | +OUT | +RS | L | N |



Additional information

Please, note that all information in this material is for reference only. Further detailed information (including: additional requirements, manuals and circuit schemes) is found at www.aeps-group.com or provided via an email request at aeps@aeps-group.cz.

According to company's policy in view of constant improvements of the production design the manufacturer reserves the right to change the contents of specifications and promotional materials without prior notice! Make sure you are using the latest documentation downloadable at www.aeps-group.com.

Management system and R&D of Alexander Electric s.r.o. are ISO 9001 certified.

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