

## Features

- Up to 50 W nominal output power, power density up to 16 W/in<sup>3</sup>
- Extreme case operating temp. range up to -60° to +130° C on request
- Efficiency up to 86 %
- Possible working without heatsink 73x53x13 (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/off
- Dual isolated output channels available on request



## Description

TESAV50-F5 are the series of isolated DC/DC converters meant to work under both heavy electrical and environmental conditions. Output power is **up to 50 Watts**, power density is up to **16 W/in<sup>3</sup>**. 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 50 W units (optimized for output power 15-40 W)

Model*	Input voltage range**	Power max.	Output voltage nom.***	Output current max.	Efficiency typ.
TESAV 50 - 27W S05 – F5 – XU	182-242 VDC (264 VAC transient)	50 W	5 V	10.00 A	86 %
TESAV 50 - 27W S12 – F5 – XU		50 W	12 V	4.17 A	86 %
TESAV 50 - 27W S15 – F5 – XU		50 W	15V	3.33 A	86 %
TESAV 50 - 27W S24 – F5 – XU		50 W	24 V	2.08 A	86 %
TESAV 50 - 27W D0505 – F5 – XU		50 W	±05 V	5.00 A	86 %
TESAV 50 - 27W D1212 – F5 – XU		50 W	±12 V	2.08 A	86 %
TESAV 50 - 27W D1515 – F5 – XU		50 W	±15 V	1.67 A	86 %
TESAV 50 - 27W D2424 – F5 – XU		50 W	±24 V	0.83 A	86 %

\* 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.

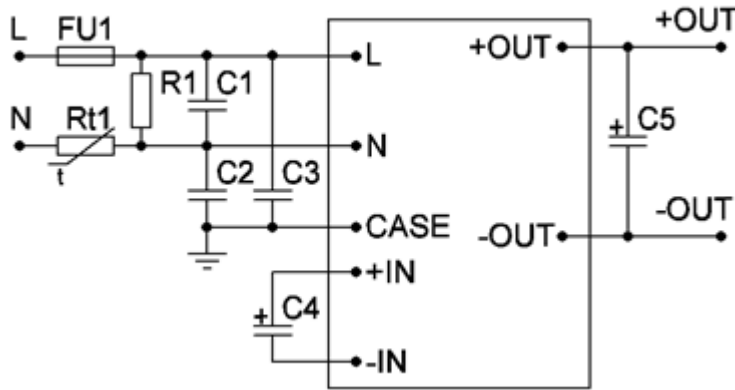
General specifications		
Switching frequency		300 kHz typ. (PWM modulation)
Temperature ranges	operating case temp.	-40° C to +110° C (up to -60° C to +130° C on request)
	storage temp.	-60° C to +130° C
Over-temperature protection		+130° C typ.
Cooling method		Conductive cooling (heat-sink)
Thermal resistance	natural convection without heatsink	5.3 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)		100 000 h
Weight (max)		110 g
Input specifications		
Input voltage range - standard**	230	182-242 VAC (1s transient 264 VDC)
Start-up voltage for 230 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. 28 000 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](http://www.aeps-group.com).

Please contact the tech. team at [aeps@aeps-group.cz](mailto: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)



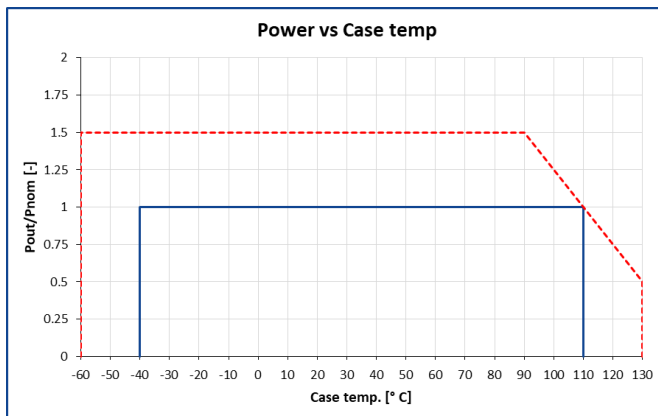
The design of the units allows their use only when mounted on a PCB.

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

for 230 input	
C1	0.1uF 275VAC, X2 class
C2, C3	2200pF 250VAC, Y2 class
C4	68 uF 400 V for normal climatic conditions & 100% Output power
C5	Tantalum, Low ESR
R1	470kOhm 0.5W
Rt1	NTC 20Ω 1A
FU1	3A 250V

Exact information can be found [Technical Materials](#) on our website [www.aeps-group.com](http://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  $\mu\text{m}$ , 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.

### Note:

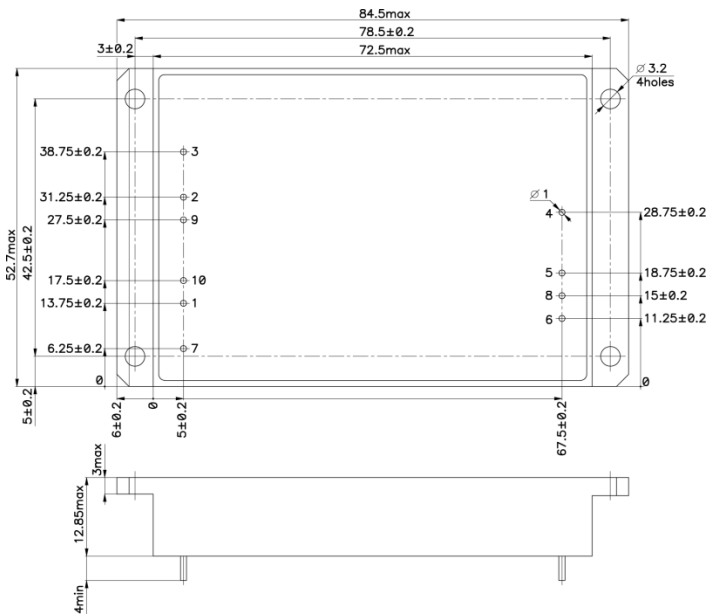
The units have a short-circuit output protection, which is for emergency only, not for long-term operation. It's prohibited to use the units with reversed input voltage polarity or turn on the units with short-circuited outputs (the units have the special detectors inside).

If you have any questions please contact us directly at [aeps@aeps-group.cz](mailto:aeps@aeps-group.cz).

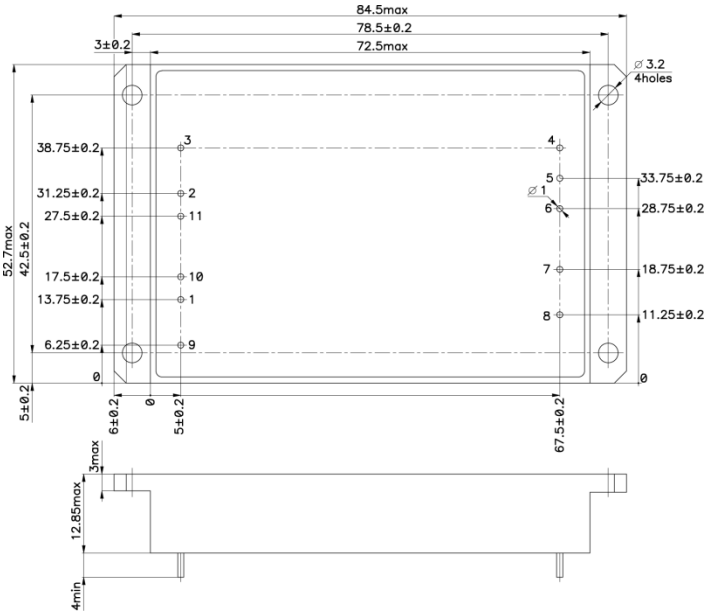
## Dimensions

Pin	1	2	3	4	5	6	7	8	9	10	11
<b>Single</b>	+ IN	- IN	ON/OFF	+OUT	-OUT	Case	Case	Trim	L	N	-
<b>Dual</b>	+ IN	- IN	ON/OFF	+OUT1	-OUT1	+OUT2	-OUT2	Case	Case	N	L

Single



Dual



## 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](http://www.aeps-group.com) or provided via an email request at [aeps@aeps-group.cz](mailto: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](http://www.aeps-group.com).

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