TESZ500-F8

Features

- **Up to 500 W nominal output power, power density up to 28 W/in^3**
- **Extreme case operating temp. range up to -40° to +110° C on request**
- **Efficiency up to 85 %**
- **Possible working without heatsink 168x110x16 (mm) metal aluminum case with flanges (size is without flanges)**
- **Variants input:**
- **110Z - (66-165 VDC) - standard, other: 72Z, 96Z**
- **Adjustable output voltage**
- **Remote on/of**
- **External feedback**
- **Parallel operation**

Description

TESZ500-F8 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 **28 W/in^3**. 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: land transport, mining equipment and others - where there are needed compact dimensions, durability 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.**
TESZ 500 - 110ZS12 – F8 – SU	**66-165 VDC** (385 VAC transient)	**400 W**	12 V	34.00 A	85 %
TESZ 500 - 110ZS15 – F8 – SU		**500 W**	15 V	33.33 A	85 %
TESZ 500 - 110ZS24 – F8 – SU		**500 W**	24 V	20.83 A	85 %

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

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

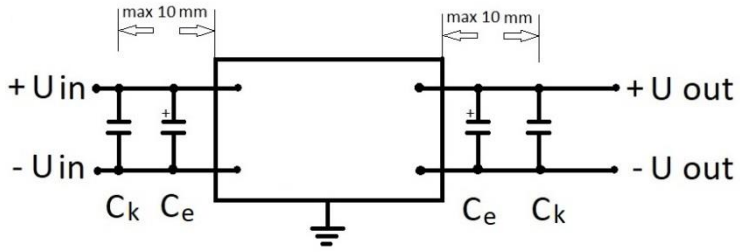
General specifications		
Switching frequency		**300 kHz typ. (PWM modulation)**
Temperature ranges	operating case temp.	**–40° C to +110° C**
	storage temp.	**–40° C to +110° C**
Over-temperature protection		**+115° C typ.**
Cooling method		**Conductive cooling (heat-sink)**
Thermal resistance	natural convection without heatsink	**2.7 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)		**500 g**
Input specifications		
Input voltage range - standard**	110Z	**66-165 VDC (20ms transient 385 VDC)**
Input surge protection	110Z	**385 VDC @ 20 ms, trise=tfall = 2 ms, Rsourse=0,2 Ω**
Start-up voltage		**Start-up at <65 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. 3 500 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)

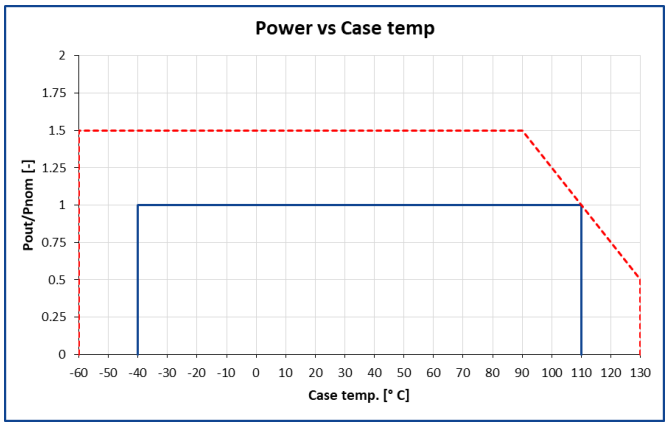


The design of the units allows their use only when mounted on a PCB.

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

In the figure: Ck – ceramic capacitors of a certain operating voltage and of several µF capacity; Ce – electrolytic capacitors of a certain operating voltage and of polymer, aluminum or tantalum type of tens to hundreds µF capacity.
Exact information can be found Technical Materials on our website www.aeps-group.com

Output power based on case temperature



Standard maximum power output based on case temperature.

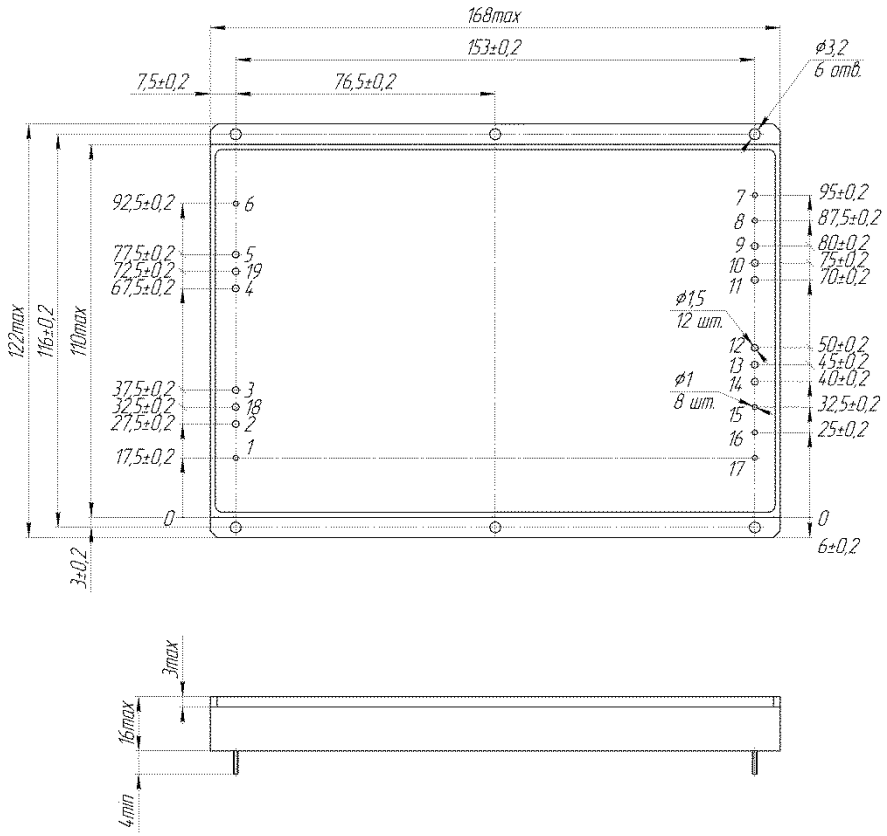
Possible extreme range of output power for customized product.

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, 18	4, 5, 19	6	7	8	9, 10, 11	12, 13, 14	15	16	17
Name	On/Off	-IN	+IN	Case	Diag	+RS	+OUT	-OUT	-RS	Trim	Paral



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.