JETDiR-MIL-1600C-R6E2

Features

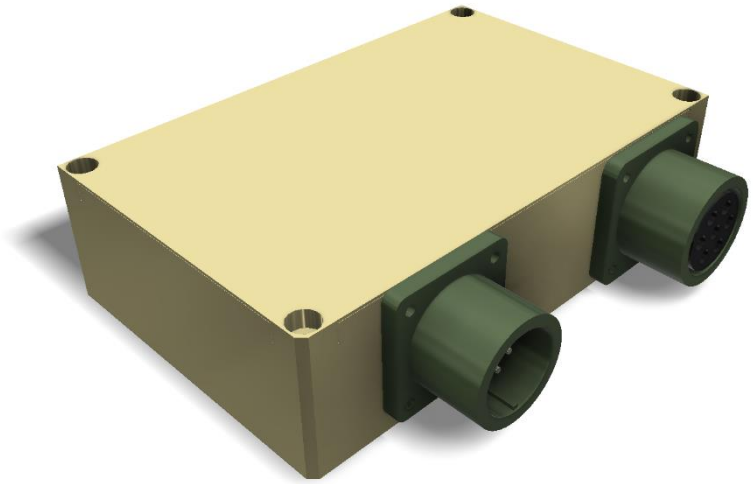
- **1600 W output power**
- **124 x 70 x 35 (mm)**

- **Input range:**
  100-210 VDC, 150 VDC nominal
- **Available models:**
  28 VDC x 58 A
  48 VDC x 34 A

- **Yellow Chromate coating (Alodine)**
- **Fully encapsulated in aluminium case**
- **Conductive cooling**
- **Sunken mounting holes**

- **MIL-STD-461F CE101 and CE102 built-in**
- **No external components needed for operation**

- **Parallel operation (up to 5 units)**
- **Synchronization input**



Description

JETDiR-MIL are the series of isolated DC/DC converters meant to work under both heavy electrical and environmental conditions while providing built-in MIL-STD-461 CE101 and CE102. The units feature a system of over-current protection and over-voltage protection. Its versatility allows you to implement the converter in a vast number of industrial applications, supplying capacitive, constant-power and impulse load. Application fields: low-high altitude, land transport, supercomputers, mining, equipment in high and low temperature regions, digital signage equipment, APAR radars and others - where there are needed low-profile and high efficiency.

1600 W output power					
Single channel	**Input voltage range**	**Power max.**	**Output voltage nom.**	**Output current max.**	**Efficiency typ.**
JETDiR-MIL-1600C-150CS28-R6E2	100-210 VDC **nom. 150 VDC**	**1600 W**	**28 VDC**	**58 A**	**88 %**
JETDiR-MIL-1600C-150CS48-R6E2		**1600 W**	**48 VDC**	**34 A**	**88 %**

Important parameters

1. Input

1.1 Reverse polarity protection	*constant protection*
1.2 No-load power consumption	*<20 W (typ. 10 W at Uin.nom)*
1.3 EMC compliance	MIL-STD-461F CE101 & CE102 built-in filter
1.4 Input voltage range	100-210 VDC, nom. 150 VDC

2. Output

2.1 Output voltage regulation	input variance Uin,min to Uin,max for load 10-100 %	*< ±0.75 %*
2.2 Ripple and noise	20 MHz bandwidth for 10-100 % load	*< 0.5 %*
2.3 Capacitive load (max)	*not limitted*	
2.4 Minimum load	not required	
2.5 Parallel operation	*via +PAR output*, up to 5 units; connect PAR outputs and -OUT with as short low-resistance wires as possible	
2.6 SYNC function (external)	*via isolated -SYNC and +SYNC inputs* (apply rectangle signal, 210 kHz, edge slew rate >20 V/us, 30-70 % duty cycle, 5-10 VDC amplitude)	

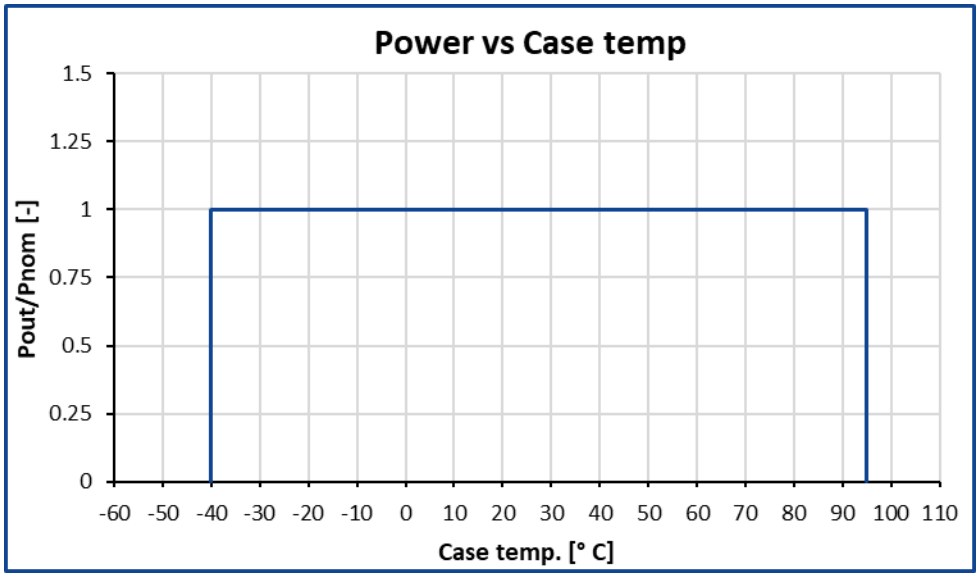
3. General, thermal, mechanical

3.1 Minimal connection scheme	the unit operates with declared specs without any additional components
3.2 Case type	full metal enclosure
3.3 Case material and coating	Alu 6061 (or equivalent) with Yellow Chromate coating (Alodine)
3.4 Connector type	circular, based on MIL-C-5015
3.5 Connector addition	units delivered with corresponding straight cable plugs
3.5 Case operating temp.	–40 to +95 °C of Tcase
3.6 Weight	*<1200 g*
3.7 Dimensions (goal)	124 x 70 x 35 (mm)
3.8 Dimensions (MAX)	150 x 95 x 40 (mm) max
3.8 Insulation	500 VDC in/out, in/case, out/case
3.9 Operating frequency	105 kHz typical
3.10 Cooling type	the unit must be cooled conductively via coldplate or heatsink

General specifications		
Switching frequency		*see "Important parameters"* (PWM modulation)
Temperature ranges	operating case temp.	–40 to +95 °C
	storage temp.	–55 °C to +125 °C
Over-temperature protection		+100 °C typ., auto-recovery
Thermal mode and cooling method		conduction cooled only
Humidity (non-condensing)		5-95 % rel. H
Insulation	input/case, input/output, output/case	500 VDC
Isolating resistance @ 500 VDC		>20 MOhm
Thermal shock, mechanical shock & vibration		MIL-STD-810F
Safety standards		IEC/EN 60950-1
Typical MTBF	Pout = 0.7·Pout.max	150 000 hrs (Tcase = 50 °C)
Weight		*see "Important parameters"*
Input specifications		
Input voltage range	"150C"	100-210 VDC, nominal 150 VDC
Reverse polarity protection		*see "Important parameters"*
EMC standard compliance	MIL-STD-461F CE101 & CE102 built-in	
Output specifications		
Power derating based on input voltage	*no derating*	
Output voltage regulation	input variance Uin,min to Uin,max	*see "Important parameters"*
	load var. 10 % to 100 %	*see "Important parameters"*
Ripple and noise (peak-to-peak)	20 MHz bandwidth	*see "Important parameters"*
Protection	over-load / short-circuit	auto-reset at 110-150 % of Iout,nom
	over-voltage	<130 % Uout
Capacitive load (max), CH1, CH2 and CH3	*see "Important parameters"*	
Minimum load	*see "Important parameters"*	

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.

Max output power based on case temperature



The unit must be operated on a heatsink with thermal conductive paste applied between the unit surface and a heatsink for quality contact (with thickness less than 100 µm, of minimal thermal resistance 5 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.

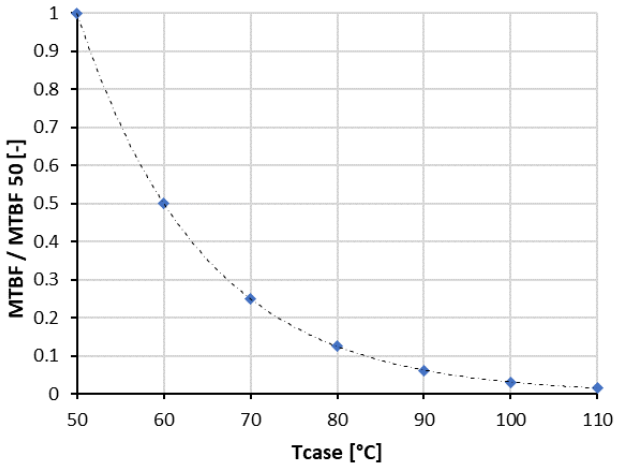
Note:

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.

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.

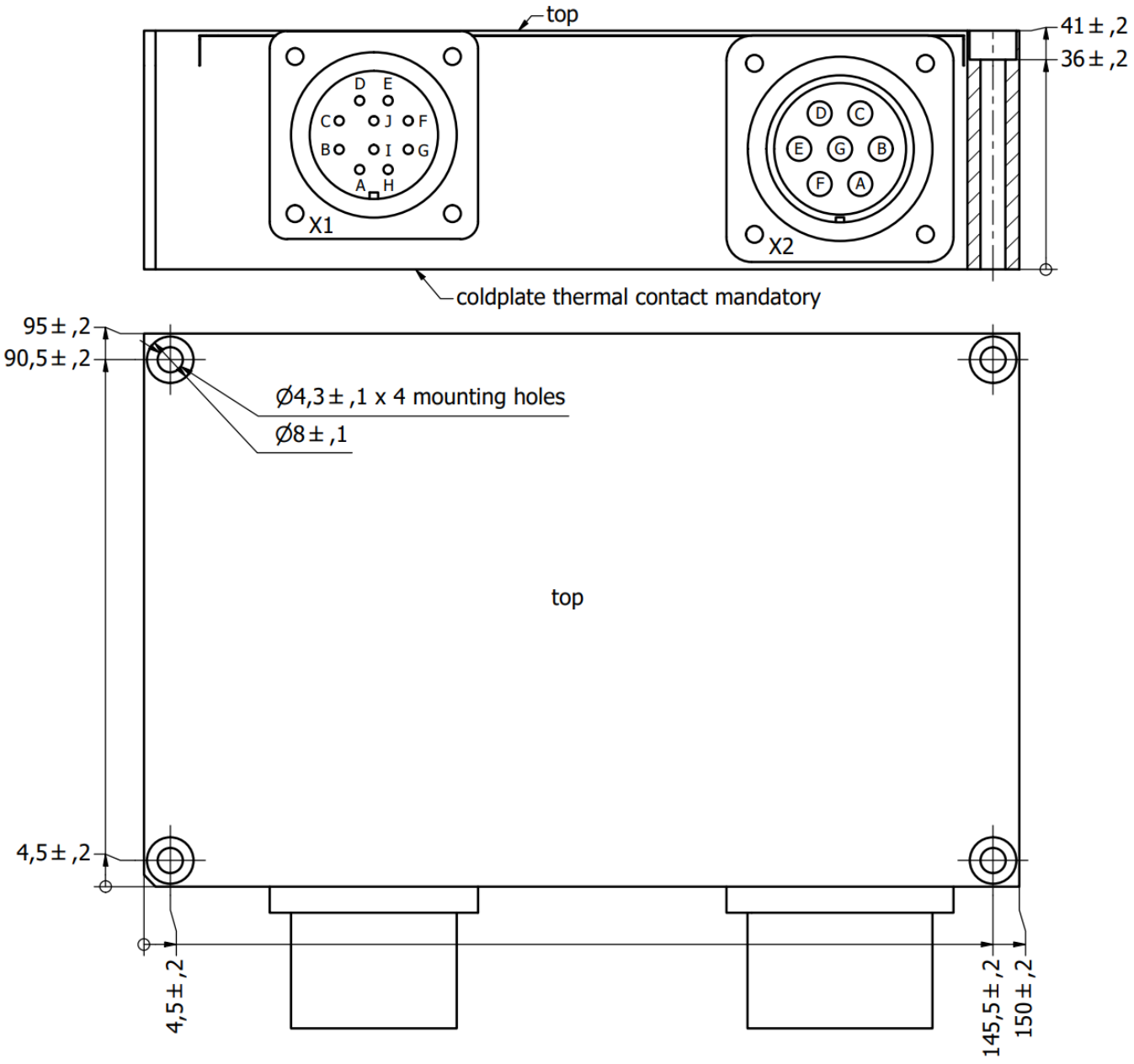


Dimensions

X1 (MS3102A18-1P, 10 pins)						
A, H	**B, C**	**F, G**	**D**	**E**	**J**	**I**
CASE	-IN	+IN	+SYN	-SYN	PAR	*n. c.*

X2 (MS3102E20-15S, 7 sockets)		
A, B, C	**D, E, F**	**G**
+OUT	-OUT	REM

Dimensions in millimeters, 4 mounting holes



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. All pictures shown are for illustration purpose only, actual product appearance may vary, incl. inner components choice and placement and connectors placement.

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