

DC/DC converters JETD200



Features

- Class: Expert, power density up to **4824 W/dm³** (83,7 W/In³)
- Low profile 11,6 mm design
- Standard 1/2 brick size
- Case operating temperature range: $-60^{\circ}\text{C} \dots +110^{\circ}\text{C}$, Special request - up to 125°C
- Output current up to 40 A
- Output power 200 W
- Input voltage ranges: 10,5...18 VDC, 10,5...36 VDC, 17...36VDC, 18...36 VDC, 18...75 VDC, 36...75 VDC
- Parallel operation
- Feedback from load
- Output voltage adjustment, remote on/off
- Max capacitance 40000 μF ($U_{\text{out}}=5$ VDC, 50% Output power)
- Metal case, with mounting holes

Description

Ultra-compact isolated DC/DC converters (modules) are specially designed for industrial applications and harsh environment operation. These compact units (61,1 x 58,5 x 11,6 mm) have output power up to 200 W and wide operating temperature range between $-60 \dots +110^{\circ}\text{C}$.

Modules can be switched on and off by command, are provided with full complex of protections as following: output over-current, short-circuit, over-heat. Modules' outputs can be connected in parallel or series.

These modules are built using specially 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 holes.

Ordering information

JETD 200 - 24W S 12 - C T

1 2 3 4 5 6 7

- 1** - «JETD» Series
- 2** - Max output power, W
- 3** - Input voltages
 - 12W** - 12 VDC (10,5...36 VDC)
 - 12** - 12 VDC (10,5...18 VDC)
 - 24W** - 24 VDC (18...75 VDC)
 - 24** - 24 VDC (18...36 VDC)
 - 27** - 27 VDC (17...36 VDC)
 - 48** - 48 VDC (36...75 VDC)
- 4** - Index of output channels quantity
 - S** - one
- 5** - Nominal output voltage, VDC (two signs for a channel)
- 6** - Index of case design
 - C** - Metal case with mounting holes
- 7** - Index of operating temperature range of the case
 - T** -60°C...+110°C (*)

Technical information

Standard models with one output

| Module | Input voltage range | Output power | Output voltage / nominal output current | Typical efficiency | |
|-------------------|---------------------|--------------|---|--------------------|-----|
| JETD200-12S05-XX | 10,5...18 VDC | 200 W | 5 VDC / 40 A | 90% | |
| JETD200-12S12-XX | | | 12 VDC / 16,67 A | 91% | |
| JETD200-12S15-XX | | | 15 VDC / 13,33 A | 91% | |
| JETD200-12S24-XX | | | 24 VDC / 8,33 A | 92% | |
| JETD200-12S27-XX | | | 27 VDC / 7,41 A | 92% | |
| JETD200-12S48-XX | | | 48 VDC / 4,16 A | 90% | |
| JETD200-12WS05-XX | 10,5...36 VDC | | 5 VDC / 40 A | 89% | |
| JETD200-12WS12-XX | | | 12 VDC / 16,67 A | 90% | |
| JETD200-12WS15-XX | | | 15 VDC / 13,33 A | 90% | |
| JETD200-27S05-XX | 17...36 VDC | | 5 VDC / 40 A | 90% | |
| JETD200-27S12-XX | | | 12 VDC / 16,67 A | 91% | |
| JETD200-27S15-XX | | | 15 VDC / 13,33 A | 91% | |
| JETD200-27S24-XX | | | 24 VDC / 8,33 A | 92% | |
| JETD200-24WS05-XX | 18...75 VDC | | 5 VDC / 40 A | 90% | |
| JETD200-24WS12-XX | | | 12 VDC / 16,67 A | 91% | |
| JETD200-24WS15-XX | | | 15 VDC / 13,33 A | 91% | |
| JETD200-24S05-XX | 18...36 VDC | | 5 VDC / 40 A | 91% | |
| JETD200-24S12-XX | | | 12 VDC / 16,67 A | 92% | |
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| JETD200-48S05-XX | | | 36...75 VDC | 5 VDC / 40 A | 91% |
| JETD200-48S12-XX | | | | 12 VDC / 16,67 A | 92% |
| JETD200-48S15-XX | 15 VDC / 13,33 A | 92% | | | |
| JETD200-48S24-XX | 24 VDC / 8,33 A | 93% | | | |
| JETD200-48S27-XX | 27 VDC / 7,41 A | 93% | | | |
| JETD200-48S48-XX | 48 VDC / 4,16 A | 91% | | | |

Comment:

- * In special orders it's possible to produce modules with maximum case temperature up to 125 °C.
- For input voltage ranges 12W, 24W, 27 standard modules are produced with output voltage up to 15 V.
- It's possible to produce non-standard output voltages from 5 to 60 V and maximal current 40 A.
- In special orders it's possible to produce modules with 12 and 12V input with voltage ranges 9 -18 V and 9 - 36 V respectively.

Specifications for DC/DC converters JETD200*

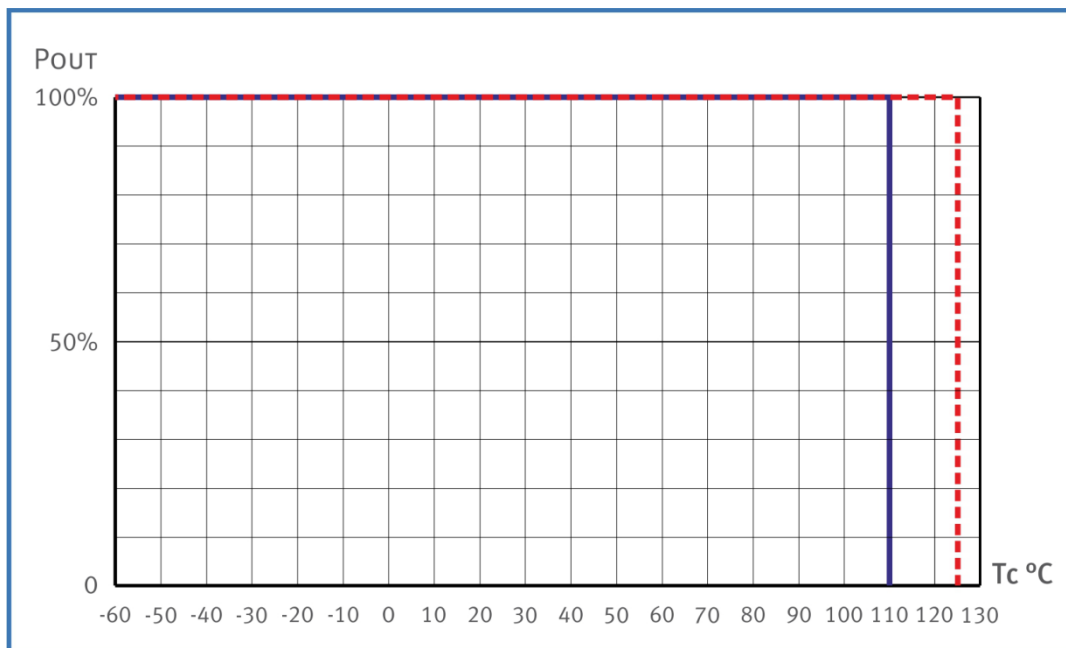
| Input specifications | |
|---|--|
| Input voltage range / transitional deviation, 1 sec 12 | =10,5...18 VDC / =10,5...20 VDC |
| Input voltage range / transitional deviation, 1 sec 12W | =10,5...36 VDC / =10,5...40 VDC |
| Input voltage range / transitional deviation, 1 sec 27 | =17...36 VDC / =17...80 VDC |
| Input voltage range / transitional deviation, 1 sec 24W | =18...75 VDC / =17...84 VDC |
| Input voltage range / transitional deviation, 1 sec 24 | =18...36 VDC / =17...40 VDC |
| Input voltage range / transitional deviation, 1 sec 48 | =36...75 VDC / =36...84 VDC |
| Input filter | P-type |
| 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 changing 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...1,1VDC or connection of output «ON» and «- IN», I≤5mA |
| Max capacitance for Pout=200 W, Uout=5VDC; 50% Output power*** | 40000 µF |
| General specifications | |
| Case temperature (operating) index T | -60°C ... +110°C |
| Case temperature (storage) | -60°C ... +125°C |
| Output power derating | See diagram |
| High humidity | 100% @35 °C |
| Thermal resistance case — environment without heat sink | 5,4 °C/W |
| Conversion frequency | 300 kHz typ. |
| Insulation voltage input/output | =1500 VDC |
| Insulation voltage input/case | =1500 VDC |
| Insulation voltage output/case | =1000 VDC |
| Insulation voltage output/output | =500 VDC |
| Isolation resistance @ 500 VDC | >20 MOhm |
| EMC standards | EN 55022, class A; EN 55022, class B with additional filter |
| Safety standards | IEC/ EN 60950 |
| Typical MTBF (Tcase = 50°C; Pout = 0,7 Pout max) | 150 000 hrs |
| Cooling method | Free air convection or forced air cooling |
| Weight (max) | 187 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 for long-term operation, exceeding maximum output current, for operation out of a range of operating temperatures.

*** For other output voltages the maximum output capacity is calculated basing upon the fact that $C_{max} \times U_{out}^2$ is a constant.

Maximum power output vs ambient temperature



— Allowed power output and case temperature range for standard version of unit.

- - - Possible range of output power and case temperature up to 125°C for special order.

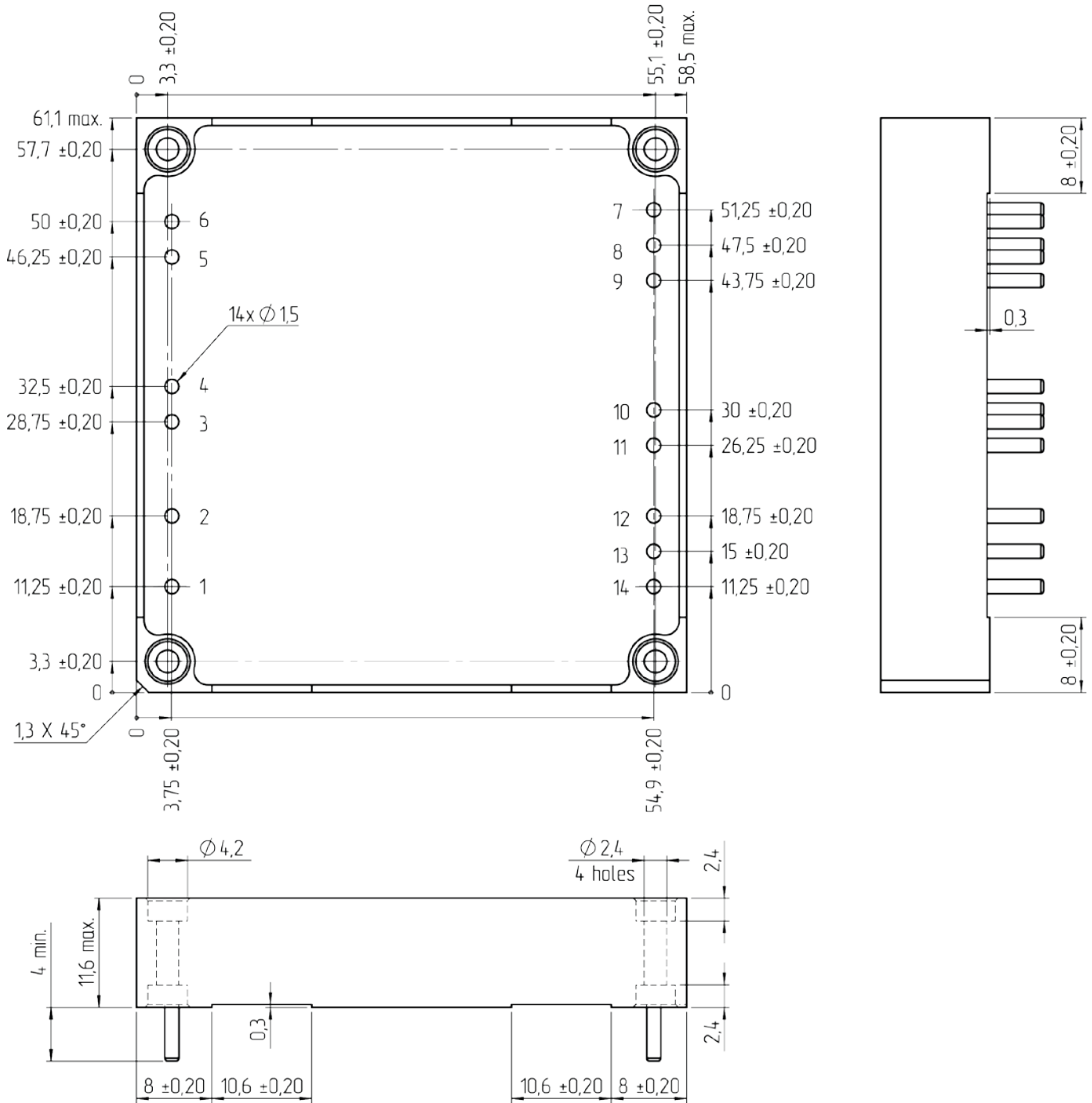
For modeling optimal heatsink and its delivery, with goal of providing allowed case temperatures, please contact us directly aeps@aeps-group.cz

When using without heatsink, it's necessary to attach heat-distributing aluminum or copper plate with thickness not less than 3 mm.

Pin out

| № Pin | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---------------|------|--------|------|------|------|------|---------|-------|--------|-------|-------|---------|-------|------|
| Single output | Case | On/Off | Vin- | Vin- | Vin+ | Vin+ | +RS out | Vout+ | V out+ | Vout- | Vout- | -RS out | Paral | Trim |

Single output model with mounting holes (1/2 brick size)



Certificates

Certificate ISO 9001*
CE conformity declaration

* Management system and R&D 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.goncharov-jet.com>

Contact information

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