

# DC/DC and AC/DC

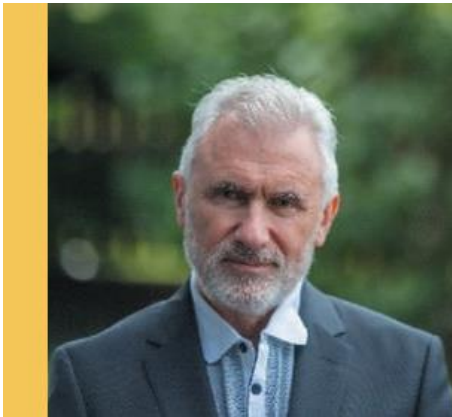
planar wide temperature range converters  
for land, maritime and aero-space application



Our motto:

"Always choose the most difficult path – you will not meet competitors there"

Charles de Gaulle



**Alexander Goncharov**  
CEO, founder, general designer

**ALEXANDER ELECTRIC s.r.o.** was founded in Prague, Czech Republic, in 2006, as a start-up company for design and creation of new power supply systems to compete with American companies like SYNQOR, VPT, INTERPOINT.

The braveness of the company was rewarded with many interesting projects from England, Spain, Israel, India, South Korea, USA and other countries.

Cooperation with European contract manufactures made us into a producer of both serial and custom AC/DC and DC/DC power supply units and converters of both serial and custom products with appropriate lead times.

**ALEXANDER ELECTRIC s.r.o.** has recently become a member of Czech defense industry association "AOBP" ("DSIA" in English), which defined new constructive-technical properties and abilities for us to reach in our updated products.

In 2023 **ALEXANDER ELECTRIC s.r.o.** has specialized in design and production of planar AC/DC and DC/DC fan-less power units aimed at application in mission-critical equipment owing to unique characteristics of operation while under effect of extreme environmental factors like ultralow and ultrahigh temperatures, pollution, salt mist, strong vibrations and impacts.

Our core competencies are in the development and production of power supply units and systems for application in:

1. Flying objects - artillery shells, rockets, planes, helicopters, drones.
2. Different types of radar (including APAR and long-distance radars).
3. Armored vehicles - transporters, tanks, launchers, etc.
4. Communication and radio-electronics equipment, including optical fiber equipment.
5. Repairs and modernization of power supply systems for obsolete specialized equipment.

#### Features and properties of our products:

- Operating case temperature **from -60°C to +125°C** makes possible functioning in compartments with loss of sealing on land, in mountains and deserts, at low and high altitudes, up to near space.
- **Low profile** power supply construction allows minimization of space occupied by the power supply in the whole device, thereby saving up space for most important part of the device. Our units reach power density of more than **200 W/in<sup>3</sup>** for DC/DC units and more than **40 W/in<sup>3</sup>** for AC/DC units.
- The units and power blocks offer **adaptation ("flexibility") of its geometric dimensions**, including changing the location of mounting points which is essential when replacing or modernizing a product of other manufacturers.
- Our products are designed to be **cooled conductively** and therefore don't contain any fans which (having moving parts) are an element of unreliability. The ability to use conduction cooling is crucial **in airtight spaces** where air extraction not possible.
- Resistance to mechanical shocks and heavy vibrations due to special potting makes possible application in **artillery shots with overload of up to 16000 G and more.**

**Our outlook into the future is optimistic. We're in search for partners and investors for further development of our company.**

Best regards, **Alexander Goncharov CEO.**

Parameters	DC/DC JETDiR-SP	DC/DC JETDiV	DC/DC JETDiR	DC/DC JETDi	AC/DC JETA-LP	AC3PH/DC JETNA-LP
Input type (AC also accepts DC)	DC	DC	DC	DC	AC 1 ph.	AC 3 ph.
Maximum power, W	300	600	1 500	150	3 000	10 000
Maximum power density, W/in <sup>3</sup>	57	82	205	124	28	47
Number of channels possible	1, 2, 3	1, 2	1, 2	1, 2	1, 2	1
DC "28W" 16-50 VDC, surge 80 VDC	•		•	•		
DC "28" 16-40 VDC, surge 50 VDC	•		•	•		
DC "48" 34-75 VDC, surge 100 VDC	•		•	•		
DC "48W" 9-80 VDC, surge 100 VDC	•		•	•		
DC HV "150" 82-200 VDC, surge 230 VDC		•				
DC HV "270" 155-400 VDC, surge 450 VDC		•				
AC 1ph. "115" 80-138 VAC, surge 150 VAC					•	
AC 1ph. "230W" 100-264 VAC					•	
AC 3ph. "220" 187-253 VAC						•
AC 3ph. "400" 323-440 VAC						•
I out max 25 A				•		
I out max 30 A	•					
I out max 50 A		•	•			
I out max 100 A					•	
I out max 270 A						•
Tcase -50 ... +100°C					•	
Tcase -60 ... +100°C						•
Tcase -60 ... +110°C		•				
Tcase -60 ... +125°C	•		•	•		
Mounting holes	•	•	•		•	•
ON/OFF	•	•	•	•	•	•
Active parallel operation	•	•	•		•	•
Remote sense	•	•	•		•	•
Constant current mode for charging large capacities					•	•

**JETDiR-SP series, 5 - 300 W, DC/DC converters for aero-space applications. BRICK formfactors. Counter-bore mounting holes. Up to two output channels. Operating case temperature range -60 ... +125°C. No optocouplers inside, built-in filters, CE MIL-STD-461**



- Brick form factors with double-sided counter-bore mounting holes.
- Built-in input and output EMC filters (MIL-STD-461), no opto-couplers circuit solutions.
- Input mains: **28W, 28, 48 and 48W**.
- Ultra-wide case operating temperature range -60 ... +125°C.
- Outputs with galvanically isolated channels, which allows them to be connected in series to obtain high-voltage output.

**Application:** DC/DC **aerospace JETDiR-SP** series is designed to operate in both (a) protected sealed and (b) unprotected compartments of various equipment sensitive to impulse EM interference including:

- analogue signal processing equipment,
- radio-receiving and radio-transmitting equipment,
- radars and digital informational equipment,
- equipment powering gyroscopes.

Beyond standard long-term application **JETDiR-SP** series units are also designed for **mission-critical** applications:

- operation in case of equipment compartment breach and loss of airseal,
- short-term over-maximum-power operation.

**Electric features:** the units operate with three variants of input mains: **28W** (16-50 VDC, 80 VDC tran.), **28** (16-40 VDC, 50 VDC tran.), **48W** (9-80 VDC, 100 VDC tran.) and **48** (34-75 VDC, 100 VDC tran.). The power supplies have the standard range of service functions, including parallel operation in high-power models. Efficiency of up to 93 % due synchronous rectification in most models makes possible operation with up to +125°C of case temperature.

**Design features:** **JETDiR-SP** as a series with complete built-in filtering presents unprecedentedly high power density up to 56 W/in<sup>3</sup>. Reinforced aluminum units cases contain double-side counter-bore mounting holes which provide space for screw heads. Case base has stiffening ribs and also serves for conductive cooling. Considering that all components are constructively connected to the base and submerged in heat-transferring potting – **resistance to and durability against mechanical stress is unique**.

The converters are meant to be mounted on a coldplate or heatsink for one sided conductive or forced-air cooling. In certain cases purely convectional cooling method is allowed.

**Absence of internal cavities and materials emitting gases in vacuum conditions allows the JETDiR-SP series to be used at all altitudes, including near-space.**

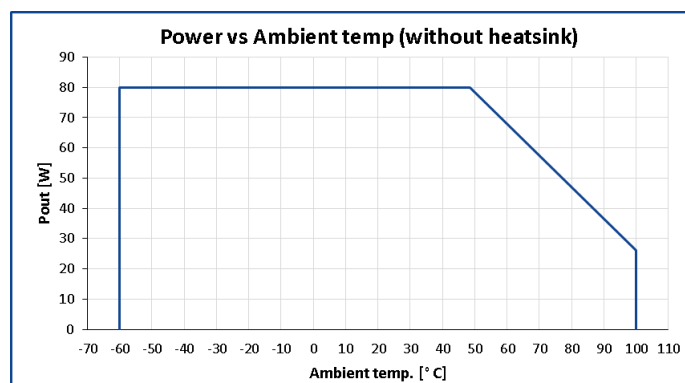
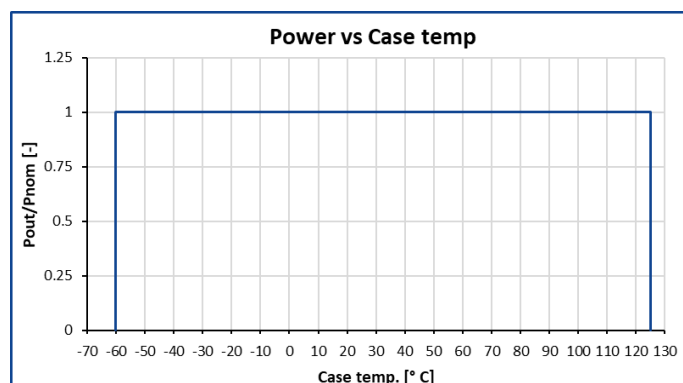
The table below shows basic parameters of this series.

Type of the unit	Maximum power when ordering, W	Dimensions, mm without flanges	Maximum output current, A	Power density, W/in3	Number of outputs	Input 28W (16-50 V), surge 80 V	Input 28 (16-40 V), surge 50 V	Input 48 (34-76 V), surge 100 V	Input 48W (9-80 V), surge 100 V	Isolation input-output, kV	Trimming	Parallel operation	EMC standards	
													Additional EMC filter	MIL-STD-461 CE
JETDiR-SP-10	10	R1: 32x21x10 DIP 24	2	25	1	•	•	•	•	=1.5	•		JETDF2.5	•
JETDiR-SP-15	15	R2: 26x26x10 1x1"	3	35	1	•	•	•	•	=1.5	•		JETDF2.5	•
JETDiR-SP-20	20	R3: 37x26x10 1/16 BRICK	4	31	1	•	•	•	•	=1.5	•		JETDF2.5	•
JETDiR-SP-50	50	R4: 51x26x11 1/8 BRICK	10	57	1	•	•	•	•	=1.5	•		JETDF5	•
JETDiR-SP-80	80	R5: 58x37x11 1/4 BRICK	16	56	1	•	•	•	•	=1.5	•		JETDF5	•
JETDiR-SP-150	150	R6: 61x59x12 1/2 BRICK	20	53	1	•	•	•	•	=1.5	•	•	JETDF10	•
JETDiR-SP-300	300	R7: 117x61x13 FULL BRICK	30	53	1	•	•	•		=1.5	•	•	JETDF20	•

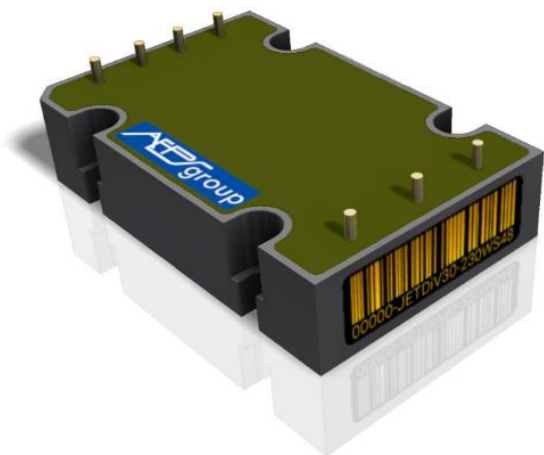
**Notes:** • - available, the standard version of the input voltage is highlighted in blue.

### Possible cooling methods

These power supplies can operate with conductive heat removal or with forced As an example, see the temperature diagram of **JETDiR-SP-80** (90% efficiency) unit without an additional heat sink with case temperature controlled and maintained under +125°C -air cooling., as well as output power dependence from ambient temperature with no heat sink. As the ambient temperature rises, the output power needs to be reduced.



**JETDiV series, 50 - 600 W, high input voltage DC/DC planar converters with output voltage up to 200 VDC. Open-slot mounting holes. Up to two output channels. Wide operating case temperature range -60 ... +110°C.**



- Brick form-factors with open-slot mounting holes.
- High voltage input mains: **150** and **270**.
- Output voltage variants from 5 VDC to 200 VDC.
- Wide case operating temperature range -60°C ... +110°C.
- Outputs with galvanically isolated channels, which allows them to be connected in series to obtain high-voltage output.

**Application:** DC/DC power supply units of **JETDiV** series are meant for a wide range of application where high input voltage is obtained by rectification and filtration of 3-phase mains or is provided by high voltage lithium battery (and similar). Fit to be used in:

- flying and stationary objects at low, medium, and high altitudes,
- aircraft and missiles with strong vibrations and mechanical shocks,
- maritime equipment and transport,
- telecommunication facilities and radars.

Beyond standard long-term application **JETDiV** series units are also designed for **mission-critical** applications:

- operation in case of equipment compartment breach and loss of airseal,
- short-term over-maximum-power operation.

**Electric features:** the units operate with three variants of input mains: **150** (113-196 VDC, 210 VDC tran.) and **270** (240-425 VDC, 450 VDC tran.). The power supplies have the standard range of service functions, including parallel operation in high-power models. Efficiency of up to 90 % makes possible operation with up to +110°C of case temperature.

**Design features:** **JETDiV** series presents small dimensions and high power density up to 81 W/in<sup>3</sup>. Reinforced aluminum units cases contain open-slot mounting holes allowing certain freedom in choosing of mounting coordinates. Case base has stiffening ribs and also serves for conductive cooling. Considering that all components are constructively connected to the base and submerged in heat-transferring potting – **resistance to and durability against mechanical stress is unique.**

The converters are meant to be mounted on a coldplate or heatsink for one sided conductive or forced-air cooling. In certain cases purely convectional cooling method is allowed.

The table below shows basic parameters of this series.

Type of the unit	Maximum power when ordering, W	Dimensions, mm without flanges	Maximum output current, A	Power density, W/in <sup>3</sup>	Number of outputs	Input 150 (82-200 V), surge 230 V	Input 270 (155-400 V), surge 450 V	Isolation input-output, kV	Trimming	Parallel operation	MIL-STD-461 CE
<b>JETDiV75</b>	<b>75</b>	<b>V1: 58x37x11 1/4 BRICK</b>	15	<b>53</b>	1	•	•	=1.5	•		•
<b>JETDiV150</b>	<b>150</b>	<b>V2: 61x59x12 1/2 BRICK</b>	20	<b>53</b>	1	•	•	=1.5	•	•	•
<b>JETDiV300</b>	<b>300</b>	<b>V3: 117x61x13 FULL BRICK</b>	40	<b>53</b>	1	•	•	=1.5	•	•	•
<b>JETDiV600</b>	<b>600</b>	<b>V4: 119x63x16 FULL BRICK+</b>	50	<b>82</b>	1	•	•	=1.5	•	•	•

**Notes:** • - available, the standard version of the input voltage is highlighted in blue.

### Possible cooling methods

These power supplies can operate with conductive heat removal or with forced-air cooling. As an example, see the temperature diagram of **JETDiV75** (91% efficiency) unit without an additional heat sink with case temperature controlled and maintained under +110°C, as well as output power dependence from ambient temperature with no heat sink. As the ambient temperature rises, the output power needs to be reduced.

**JETDiR series, 15 - 1500 W, planar DC/DC units for aerial, land and maritime applications. Aluminum case of BRICK format. Minimized dimensions and weight. Operating case temperature range -60 ... +125°C**



- Brick form factors with double-sided count-bore mounting holes.
- Flexible cases - customization of case dimensions is available (dimensions can be increased only).
- A wide selection of input mains: 28, 28W, 48, 48W.
- Ultra-wide case operating temperature range -60 ... +125°C.

**Application:** DC/DC power supply units of **JETDiR** series are meant for universal application with different low voltage DC input ranges. In both (a) protected sealed and (b) unprotected compartments of:

- flying and stationary objects at low, medium and high altitudes,
- ground transport, i.e. railway, automobile, and tracked types of vehicles,
- maritime equipment,
- telecommunication facilities, radars, supercomputers,
- digital signage equipment, flat displays and other informational devices.

Beyond standard long-term application **JETDiR** series units are also designed for **mission-critical** applications:

- operation in case of equipment compartment breach and loss of airseal,
- short-term over-maximum-power operation.

**Electric features:** the units operate with three variants of input mains: **28W** (16-50 VDC, 80 VDC tran.), **28** (16-40 VDC, 50 VDC tran.), **48** (34-75 VDC, 100 VDC tran.), **48W** (9-80 VDC, 100 VDC tran.). The power converters offer the standard range of service functions, including parallel operation in high-power models. Efficiency of up to 93 % due synchronous rectification in most models makes possible operation with up to +125°C of case temperature.

**Design features:** **JETDiR** series presents small dimensions and high power density up to 205 W/in<sup>3</sup>. Reinforced aluminum units cases contain double-side counter-bore mounting holes which provide space for screw heads. Case base has stiffening ribs and also serves for conductive cooling. Considering that all components are constructively connected to the base and submerged in heat-transferring potting – **resistance to and durability against mechanical stress is unique.**

The converters are meant to be mounted on a coldplate or heatsink for one sided conductive or forced-air cooling. In certain cases purely convectional cooling method is allowed.

**JETDiR series** units may be modified to offer different dimensions (increased), mounting holes placement, additional constructive components (like cooling ribs).



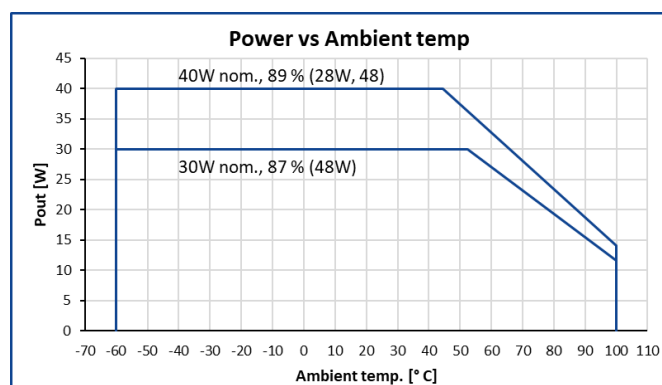
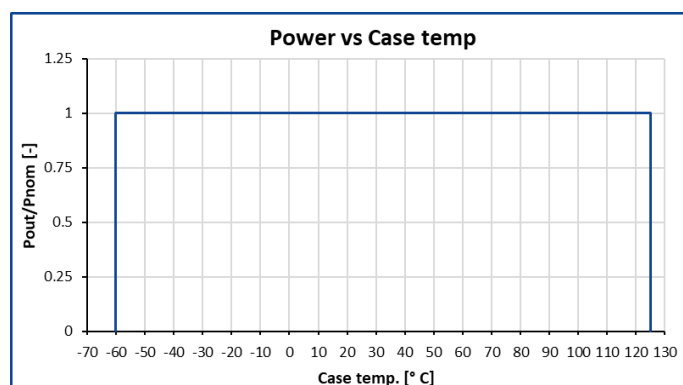
The table below shows basic parameters of this series.

Type of the unit	Maximum power when ordering, W	Dimensions, mm without flanges	Maximum output current, A	Power density, W/in3	Input 28W (16-50 V), surge 80 V	Input 28 (16-40 V), surge 50 V	Input 48 (34-75 V), surge 100 V	Input 48W (9-80 V), surge 100 V	Isolation input-output, kV	Trimming	Parallel operation	EMC standards	
												Additional EMC filter	MIL-STD-461 CE
<b>JETDiR20</b>	20	<b>R1:</b> 32x21x10 DIP 24	4	<b>49</b>	•	•	•	•	1.5	•		JETDF2.5	•
<b>JETDiR30</b>	30	<b>R2:</b> 26x26x10 1x1"	6	<b>73</b>	•	•	•	•	1.5	•		JETDF2.5	•
<b>JETDiR40</b>	40	<b>R2B:</b> 37x26x10 1/16 BRICK	6	<b>62</b>	•	•	•	•	1.5	•		JETDF2.5	•
<b>JETDiR100</b>	100	<b>R3:</b> 51x26x11 1/8 BRICK	12	<b>113</b>	•	•	•	•	1.5	•		JETDF5	•
<b>JETDiR150</b>	150	<b>R4:</b> 58x37x11 1/4 BRICK	20	<b>105</b>	•	•	•	•	1.5	•		JETDF10	•
<b>JETDiR300</b>	300	<b>R5:</b> 61x59x12 1/2 BRICK	40	<b>106</b>		•	•		1.5	•	•	JETDF20	•
<b>JETDiR700</b>	700	<b>R6:</b> 117x61x13 FULL BRICK	50	<b>124</b>		•	•		1.5	•	•	external	•
<b>JETDiR1500</b>	1500	<b>R6E:</b> 119x63x16 FULL BRICK+	50	<b>205</b>		•	•		1.5	•	•	external	•

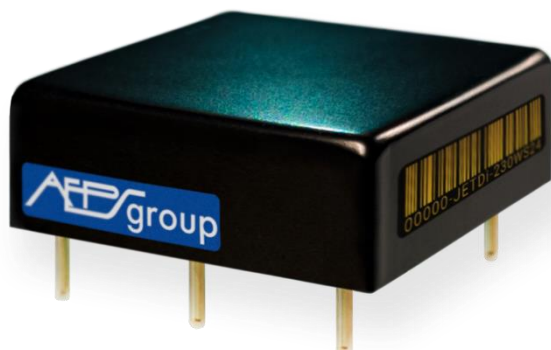
**Notes:** • - available, the standard version of the input voltage is highlighted in blue.

## Possible cooling methods

These power supplies can operate with conductive heat removal or with forced-air cooling. As an example, see the temperature diagram of **JETDiR40** unit without an additional heat sink with case temperature controlled and maintained under +125°C, as well as output power dependence from ambient temperature with no heat sink. As the ambient temperature rises, the output power needs to be reduced.



## JETDi series, 10 - 150 W, DC/DC converters with no mounting holes for simple installation. Copper thin-walled cases, minimized weight and dimensions. Operating case temperature range -60 ... +125°C



- Thin-walled copper cases with excellent heat conduction, pin-to-pin compatible with most popular models of other manufacturers that can be replaced by JETDi with improvement of basic specifications (like power output).
- Ultra-wide case operating temperature range -60 ... +125°C.
- A wide selection of input mains: **28W**, **28**, **48** and **48W**.
- Feasibility of two-channel output with galvanically isolated channels, which allows them to be connected in parallel or in series to obtain high-voltage output.
- Lightweight construction doesn't require additional mounting.

**Application:** DC/DC power supply units of **JETDi** series are designed to operate in various conditions. However due to simplified casing without any mounting holes the units should only be used with medium-strength vibrations and mechanical shocks, in equipment of:

- flying and stationary objects at low and medium altitudes,
- ground transport, i.e. railway, automobile, and tracked types of vehicles,
- maritime equipment,
- telecommunication facilities, radars, supercomputers,
- digital signage equipment, flat displays and other informational devices.

Beyond standard long-term application **JETDi** series units are also designed for **mission-critical** applications:

- operation in case of equipment compartment breach and loss of airseal,
- operation in case of contamination by sand, in salt fog, in high humidity.

**Electric features:** the units operate with three variants of input mains: **28W** (16-50 VDC, 80 VDC tran.), **28** (16-40 VDC, 50 VDC tran.), **48** (34-75 VDC, 100 VDC tran.), **48W** (9-80 VDC, 100 VDC tran.). The power supplies have the standard range of service functions, including parallel operation in high-power models. Efficiency of up to 93 % due synchronous rectification in most models makes possible operation with up to +125°C of case temperature.

**Design features:** **JETDi** series presents small dimensions and high power density up to 122 W/in<sup>3</sup>. Considering that all components are constructively connected to the base and submerged in heat-transferring potting – **resistance to and durability against mechanical stress is high.**

The converters are meant to be attached to a coldplate or heatsink via thermal adhesive for one sided conductive or forced-air cooling. In certain cases purely convectional cooling method is allowed.

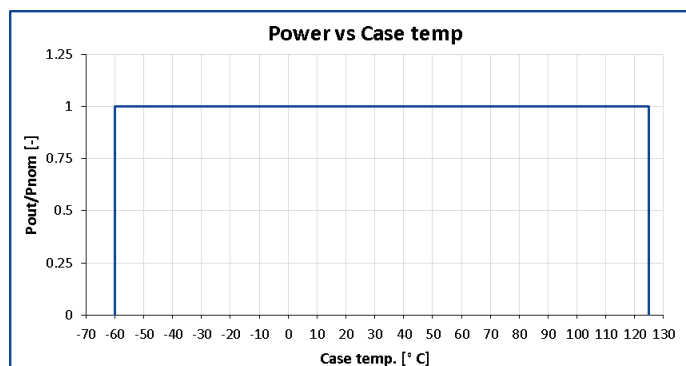
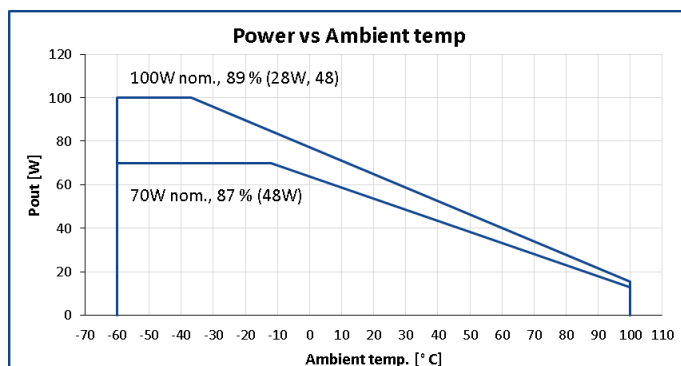
The table below shows basic parameters of this series.

Type of the unit	Maximum power when ordering, W	Dimensions, mm without flanges	Maximum output current, A	Power density, W/in3	Number of outputs	Input 28W (16-50 V), surge 80 V	Input 48 (34-76 V), surge 100 V	Input 48W (9-80 V), surge 100 V	Isolation input-output, kV	Trimming	EMC standards	
											Additional EMC filter	MIL-STD-461 CE
<b>JETDi20</b>	20	<b>C1:</b> 32x21x10 DIP 24	4	<b>49</b>	1,2	•	•	•	1.5	•	JETDF2.5	•
<b>JETDi30</b>	30	<b>C2:</b> 26x26x10 1x1"	6	<b>73</b>	1,2	•	•	•	1.5	•	JETDF2.5	•
<b>JETDi40</b>	40	<b>C2B:</b> 26x26x10 1x1"	8	<b>62</b>	1,2	•	•	•	1.5	•	JETDF2.5	•
<b>JETDi100</b>	100	<b>C3:</b> 51x26x10 1/8 BRICK	15	<b>124</b>	1,2	•	•	•	1.5	•	JETDF5	•
<b>JETDi150</b>	150	<b>C4:</b> 58x37x11 1/4 BRICK	25	<b>105</b>	1	•	•	•	1.5	•	JETDF10	•

**Notes:** • - available, the standard version of the input voltage is highlighted in blue.

### Possible cooling methods

These power supplies can operate with conductive heat removal or with forced-air cooling. As an example, see the temperature diagram of **JETDi100** unit without an additional heat sink with case temperature controlled and maintained under +125°C, as well as output power dependence from ambient temperature with no heat sink. As the ambient temperature rises, the output power needs to be reduced.





**JETA-LP series, 50 - 3000 W, 1 ph. AC/DC fan-less units. High precision CNC-milled aluminum cases. Top output power in low-profile. Operating case temperature range -50 ... +100°C**



- CNC milled casings, mounting footprint replacing units of previous generations.
- Powered by 1-phase AC input or DC equivalent, up to 400 Hz on request.
- The max heights of the units of this series are from 19 mm (100 W) to 39 mm (3000 W).
- Ultra-wide case operating temperature range -60 ... +100°C.
- Dual-zone unit temperature sensor.
- Output up to 400 VDC on request.

**Application:** AC/DC 1 phase power supply units of **JETA-LP** series are designed to operate in both (a) protected sealed and (b) unprotected compartments of:

- flying and stationary objects at low and medium altitudes,
- ground transport, i.e. railway, automobile, and tracked types of vehicles,
- maritime equipment,
- telecommunication facilities, radars, supercomputers,
- digital signage equipment, flat displays and other informational devices.

Beyond standard long-term application **JETA-LP** series units are also designed for **mission-critical** applications:

- operation in case of equipment compartment breach and loss of airseal,
- operation in case of contamination by sand, in salt fog, in high humidity.

**Electric features:** the **JETA-LP** units operate with two variants of input mains: **230W** (100-264 VAC), and **115** (80-138 VAC, 150 VAC transient). The power supplies have the standard range of service functions, including parallel operation in high-power models. The series offers up to 95 % efficiency and +100°C of case operating temperature. Units of 300 W and higher contain active PFC.

**Design features:** **JETA-LP** series doesn't contain any fans, presents small dimensions, low profile and high power density up to 28 W/in<sup>3</sup>. Considering that all components are constructively connected to the base and submerged in heat-transferring potting – **resistance to and durability against mechanical stress is high.**

The power supply units are meant to be attached to a coldplate or heatsink via thermal adhesive for one sided conductive or forced-air cooling. Power supplies of 300 W and higher are equipped with a dual-zone temperature sensor with one control zone in the lower area next to the baseplate, and the second control area in the upper part of the unit under the cover. This ensures high reliability and makes it possible to solve the problems of so-called thermal pockets in the unit's operating area, for example, under its casing.

The table below shows basic parameters of this series.

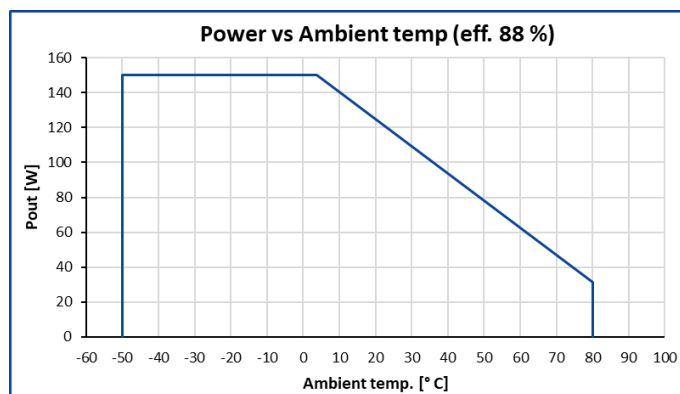
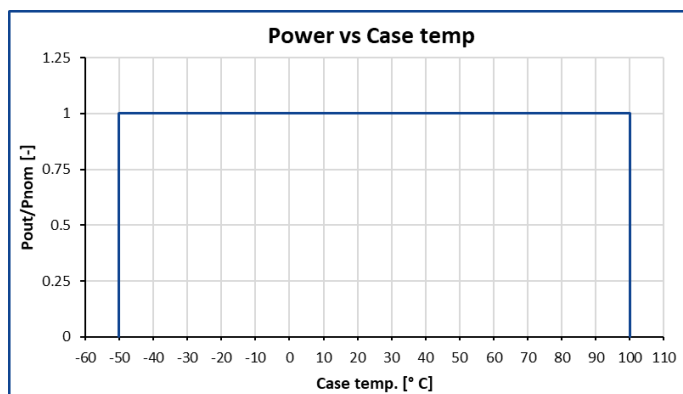
Type of the unit	Maximum power when ordering, W	Dimensions, mm	Maximum output current, A	Power density, W/in <sup>3</sup>	Number of outputs	Input 115 (80 - 138 VAC) surge 150 VAC	Input 230W (100 - 264 VAC) no surge	Isolation input-output, kVAC	Parallel operation	Trimming	Parallel operation	EMC Standards		
												EN55022 Class B	EN55022 Class A	MIL-STD-461 CE
JETA100-LP	100	A1: 100x51x19	16	17	1.2	×	•	3				•		•
JETA150-LP	150	A2: 110x61x21	24	18	1.2	×	•	3				•		•
JETA300-LP	300	A3: 133x83x25	30	18	1.2	×	•	3		•		JETAF5	•	•
JETA700-LP	700	A4: 174x92x29	50	25	1	×	•	3	•	•	•	JETAF10	•	•
JETA1500-LP	1500	A5: 210x116x37	60	28	1	×	•	3	•	•	•	JETAF10	•	•
JETA2000-LP	2000	A6: 250x141x38	80	25	1	×	•	3	•	•	•	JETAF20	•	•
JETA3000-LP	3000	A7: 300x170x39	100	25	1	×	•	3	•	•	•	JETAF20	•	•

**Notes:** • - available, × - on request, the standard version of the input voltage is highlighted in blue.

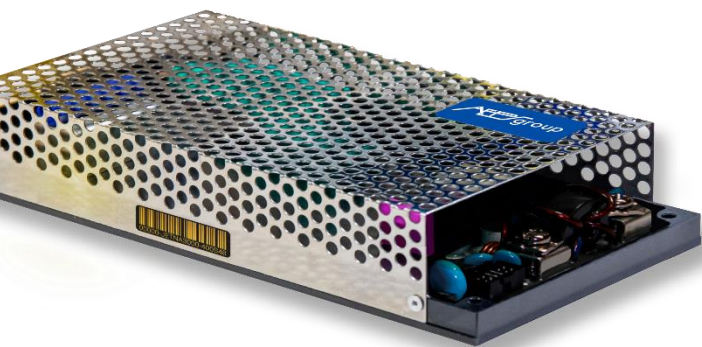
### Possible cooling methods

JETA100-LP, JETA150-LP and JETA300-LP units can be used without an additional heat sink in accordance with the diagram below (**JETA150-LP**); for example, they can be located on a metal wall of an equipment cabinet (use of heat-conducting paste is needed). As the ambient temperature rises, the output power needs to be reduced.

JETA700-LP - JETA3000-LP power supply units of higher power are designed only for use either with conductive cooling using aluminum or copper heatsink for forced air cooling or with a natural convection heatsink with vertical fins for easy passage of air between the fins from bottom up.



**JETNA-LP series, 50 - 3000 W, 1 ph. AC/DC fan-less units. High precision CNC-milled aluminum cases. Top output power in low-profile. Operating case temperature range -60 ... +100°C**



- Aluminum or copper CNC milled casings, mounting footprint replacing units of previous generations.
- Powered by 3-phase AC input 50 Hz up to 400 Hz on request without neutral or DC equivalent.
- The max heights of the units of this series are from 29 mm (800 W) to 40 mm (10 000 W).
- Ultra-wide case operating temperature range -60°C ... +100°C.
- Dual-zone unit temperature sensor.
- Output up to 400 VDC on request.

**Application:** AC/DC 3 phase power supply units of **JETNA-LP** series are designed to operate in both (a) protected sealed and (b) unprotected compartments of:

- flying and stationary objects at low and medium altitudes,
- ground transport, i.e. railway, automobile, and tracked types of vehicles,
- maritime equipment,
- telecommunication facilities, radars, supercomputers,
- digital signage equipment, flat displays and other informational devices.

Beyond standard long-term application **JETNA-LP** series units are also designed for **mission-critical** applications:

- operation in case of equipment compartment breach and loss of airseal,
- operation in case of contamination by sand, in salt fog, in high humidity.

**Electric features:** the **JETNA-LP** units operate with two variants of input mains (3 phases without neutral): **400** (323-440 VAC) and **220** (187-253 VAC). The power supplies have the standard range of service functions, including parallel operation. The series offers up to 96 % efficiency and +100°C of case operating temperature.

**Design features:** **JETNA-LP** series doesn't contain any fans, presents small dimensions, low profile and high power density up to 47 W/in<sup>3</sup>. Considering that all components are constructively connected to the base and submerged in heat-transferring potting – **resistance to and durability against mechanical stress is high.**

**The power supply units are only meant to be attached to a coldplate or heatsink via thermal adhesive for one sided conductive or forced-air cooling.** Power supplies of 300 W and higher are equipped with a dual-zone temperature sensor with one control zone in the lower area next to the baseplate, and the second control area in the upper part of the unit under the cover. This ensures high reliability and makes it possible to solve the problems of so-called thermal pockets in the unit's operating area, for example, under its casing.



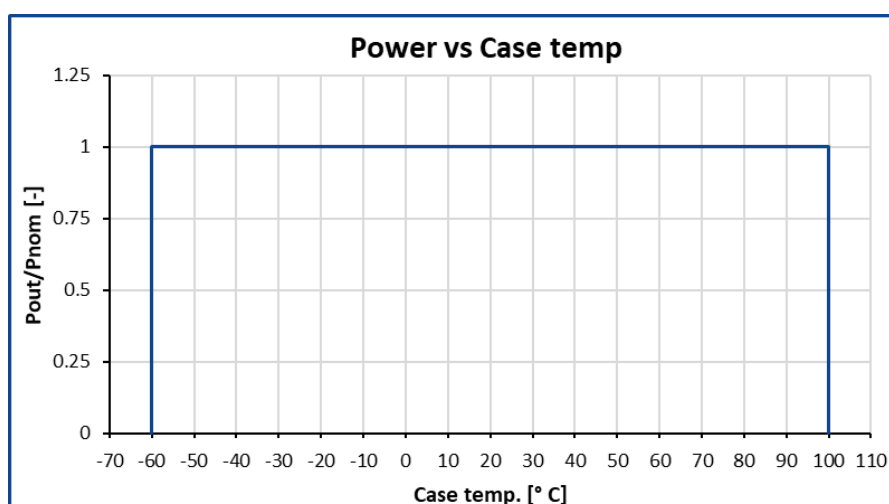
The table below shows basic parameters of JETNA-LP series.

Type of the unit	Maximum output power, W	Dimensions, mm	Maximum output current, A	Power density, W/in3	Input 220 (187 - 253 VAC) 3 phases without N	Input 400 (323 - 440 VAC) 3 phases without N	Isolation input-output, kVAC	Number of outputs	Dual-zone temperature sensor	Trimming	Parallel operation	EMC Standards		
												EN55022 Class B	EN55022 Class A	MIL-STD-461 CE
JETNA1000-LP	1000	A4: 174x92x29	60	36	×	•	3	1	•	•	•	JETAF15-400	•	•
JETNA2000-LP	2000	A5: 210x116x37	100	37	×	•	3	1	•	•	•	JETAF15-400	•	•
JETNA3000-LP	3000	A6: 250x141x38	125	37	×	•	3	1	•	•	•	JETAF15-400	•	•
JETNA5000-LP	5000	A7: 300x170x39	200	42	×	•	3	1	•	•	•	JETAF15-400	•	•
JETNA10000-LP in development	10000	A8: 350x220x40	270	47	×	•	3	1	•	•	•	JETAF30-400	•	•

**Notes:** • - available, × - on request, the standard version of the input voltage is highlighted in blue.

### Possible cooling methods

These units do not have their own cooling system and are intended for use in conjunction with conductive cooling using an aluminum or copper heatsink or coldplate (for example, an aluminum plate 4 mm thick or more). Forced air cooling or a convection heatsink with a vertical arrangement of fins can also be used for easy air passage between the fins from bottom up.





## **ALEXANDER ELECTRIC s.r.o.**

AEPS-group located in the Czech Republic is an European developer and manufacturer of high-tech planar AC/DC and DC/DC power supply units, converters and custom systems of power from 10 to 10 000 Watts for reliable use in demanding applications and extreme harsh environment operating conditions.

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