



- ◀ Power density up to 1714 W/dm<sup>3</sup> (28,1 W/in<sup>3</sup>)
- ◀ 2 year warranty
- ◀ Output current max 125 A, rated output power up to 3000 W
- ◀ Input Voltage range 323...437 VAC (threephase), 187...253 VAC (threephase)
- ◀ Low-profile design (50 mm) with blade contacts or connector block
- ◀ Case operating temperature range -40...+85°C, -50...+85°C
- ◀ Overcurrent, overvoltage and thermal protection
- ◀ Typ. efficiency 92% (U<sub>out</sub>=48 V)
- ◀ Remote off/on
- ◀ Output voltage adjustment
- ◀ Parallel operation
- ◀ Remote feedback
- ◀ Polymer potting sealing
- ◀ Maximum load capacitance 36500 µF (U<sub>out</sub>=28 V, P<sub>out</sub>=50%)
- ◀ Fan power output (12 V; 0,2 A)

## DESCRIPTION

MAA3000 Series is a family of power supplies designed for industrial and special applications. These compact units (250×140×50 mm) have an output power up to 3000 W and wide case operating temperature range up to -50...+85°C. The units are equipped with remote off/on mode, overcurrent, overvoltage and thermal protection. To compensate for the voltage drop across the load conductors a service function of external feedback is available. It allows to maintain the voltage accurately at the load remote from the converter. These converters utilize the function of active leveling of output current in case of parallel operation of several modules on a common load. Polymer potting sealing ensures reliable environmental protection and excludes damage to the converter caused by vibration, dirt, moisture or salt mist.

Module case is designed as a U-shaped aluminum base. The PCB is protected from mechanical and environmental influences by a thin-walled steel cover.

## COMPLIANCE

Designed to meet MIL-STD-810G

Designed to meet MIL-STD-461E with additional circuit

### ORDERING INFORMATION

MAA 3000 - 1 I 28 S D N  
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧

- ① - MAA series
- ② - Rated output power, W  
(Maximum power for this standard size is indicated on the case and is stipulated at the time of order)
- ③ - Quantity of output channels (1)
- ④ - Index of nominal input voltage  
T — 380 VAC (323...437 VAC), 50 Hz  
P — 220 VAC (187...253 VAC), 400 Hz
- ⑤ - Nominal output voltage, VDC (two signs per channel)
- ⑥ - Polymer potting sealing
- ⑦ - Index of design type  
G — compact metal case with cover and terminal blocks  
D — compact metal case with cover and blade contacts
- ⑧ - Index of case operating temperature range  
N — from -40 to +85°C  
P — from -50 to +85°C

### SINGLE OUTPUT MODELS

MODEL	INPUT VOLTAGE RANGE	OUTPUT POWER	OUTPUT VOLTAGE / RATED OUTPUT CURRENT	EFFICIENCY
MAA3000-1P24-SXX	187...253 VAC threephase	3000 W	24 VDC / 125 A	91%
MAA3000-1P28-SXX	187...253 VAC threephase	3000 W	28 VDC / 111 A	91%
MAA3000-1P48-SXX	187...253 VAC threephase	3000 W	48 VDC / 62,5 A	92%
MAA3000-1T24-SXX	323...437 VAC threephase	3000 W	24 VDC / 125 A	91%
MAA3000-1T28-SXX	323...437 VAC threephase	3000 W	28 VDC / 111 A	91%
MAA3000-1T48-SXX	323...437 VAC threephase	3000 W	48 VDC / 62,5 A	92%

Optionally custom design modules with output voltage from 5 to 68 VDC and maximum output current 125 A can be produced.

## SPECIFICATIONS OF AC/DC CONVERTERS MAA3000\*

### Input specifications

Input voltage range	T P	(323...437 VAC) 380 V threephase (187...253 VAC) 220 V threephase
Input frequency	T P	47...440 Hz 360...440 Hz

### Output specifications

Output voltage adjustment		±10%
Line and load regulation		max 2%
Ripple and noise (peak-to-peak)		<2% U <sub>out. nom.</sub>
Short circuit protection**		automatic repair
Overcurrent protection		P <sub>out</sub> ... 1,8 P <sub>max</sub>
Overload protection level**		<125% U <sub>out. nom.</sub>
Remote on/off		Off at 3.5 VAC (5 mA) output "Contr"

### General specifications

Case temperature	operating "N" operating "P" storage power derating (free convection) without power derating using heatsink	-40...+85°C -50...+85°C -50...+85°C diagram (dashed, dash-dotted curve) diagram (solid curve)
Humidity		93...95% / 25°C
Efficiency		86% U <sub>out</sub> =24 VDC
Isolation voltage	in./case in./out. out./case, out./out. isolation resistance @ 500 VDC	1500 VAC 1500 VAC 500 VAC 20 Mohm min
EMC standards		IEC 60950, EN55022 (CISPR22), Class B
Thermal resistance case-ambient		0,8°C/W
Typical MTBF		2000 kHrs
Cooling		conductive (baseplate-cooled)
Weight		max 2900 g

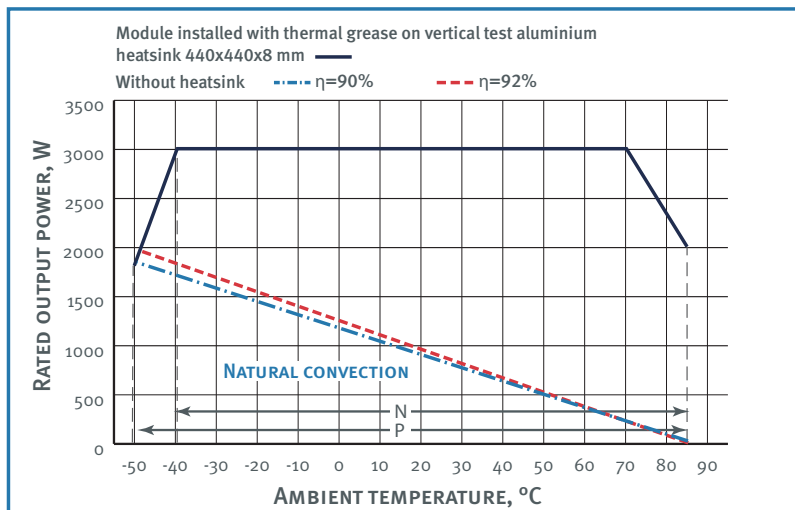
It is important to note that the information herein is not full.

More detailed information (specific requirements, basic connection circuits, rules of operations etc.) can be found on our web-site: [www.kwsystems.ru](http://www.kwsystems.ru).

\* All specifications are valid for normal climatic conditions, U<sub>in. nom.</sub>, I<sub>out. nom.</sub>, unless otherwise noted.

\*\* Parameters are stated for the information purposes and could not be used at long term work, exceeding maximum output current, operating outside of a working temperatures range or when output voltage is over the range of adjustment.


### POWER DERATING VS AMBIENT TEMPERATURE DIAGRAM



Decreasing parts of the dashed and dash-dotted curves correspond to the maximum case temperature (+85°C for models with index "N" and "P"). Output power must not exceed the values limited by curve for a given ambient temperature.

Modules can be used without the heatsink only on condition of installation with thermal grease on heat-distribution baseplate with length and width not less than case's and with thickness not less than 8 mm.

### PIN OUT (DESIGN WITH BLADE CONTACTS)

PIN #	1	2	3	4	5	6	7	8	9
SINGLE CHANNEL	A	B	C		-TRIM	+TRIM	ΔEX	+RS	-RS

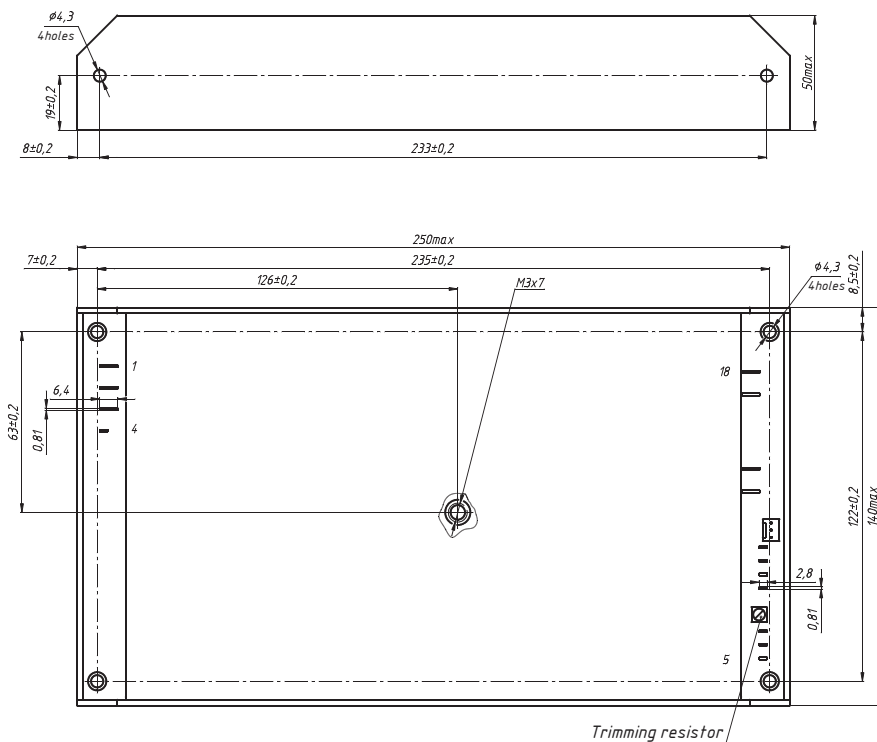
PIN #	10	11	12	13	14	15	16	17	18
SINGLE CHANNEL	PARAL	PGOOD	+U FAN	-U FAN	NOT USE	+OUT	+OUT	-OUT	-OUT

### PIN OUT (DESIGN WITH CONNECTOR BLOCKS)

PIN #	X1.1	X1.2	X1.3	X1.4	X1.5	X1.6	X2.1	X2.2	X3.1
SINGLE CHANNEL	A	B	C		NOT USE	NOT USE	+OUT	-OUT	+U FAN

PIN #	X3.2	X3.3	X4.1	X4.2	X4.3	X5.1	X5.2	X5.3	X5.4
SINGLE CHANNEL	-U FAN	NOT USE	TRIM	+TRIM	ΔEX	+RS	-RS	PARAL	DIAG

### DESIGN WITH BLADE CONTACTS



### DESIGN WITH CONNECTOR BLOCKS

