

AC/DC power supplies

MAA Family MAA2000, 2000 W threephase



Basic specifications

Power	2000 W
Input current	up to 92.6 A
Input voltage	~220 (187...253) VAC ~380 (323...437) VAC
Output voltage	=24 VDC, =28, 48 VDC
Typical efficiency.....	92%
Case operating temperature.....	-40...+85 °C; -50...+85 °C
Dimensions	250×140×50 mm
Warranty	2 years

Advantages

- ◀ Design to meet MIL-STD-810G and MIL-STD-461E
- ◀ Parallel and series operation
- ◀ Output voltage adjustment
- ◀ Conductive cooling



Description of MAA2000 on the manufacturer's website:
eng.kwsystems.ru/catalog/acdc/models/14

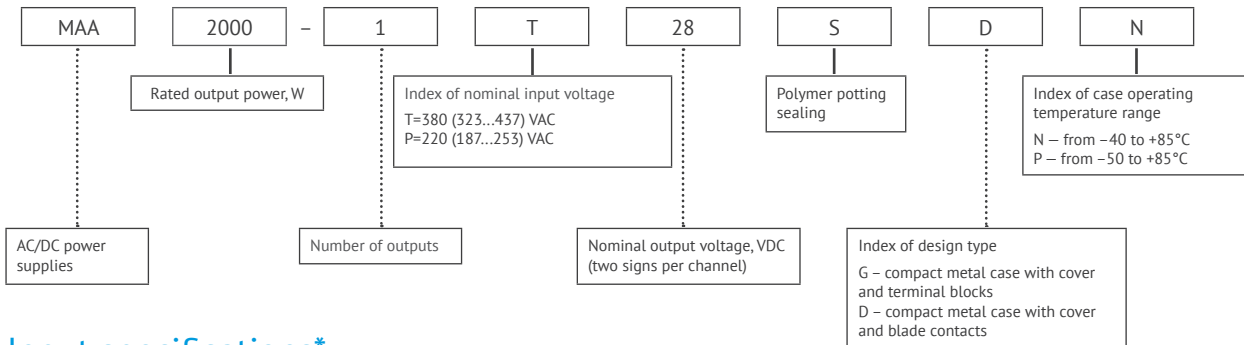
Order registration

+7 473 200 87 80, Global Operations Team

Technical support

Mikhail Timokhin, mtimohin@kwsystems.ru

Ordering information



Input specifications*

Parameter	Value	
Input voltage range, VAC	T (3ph without neutral)	323...437 (455...616 VDC)
	P (3ph without neutral)	187...253 (263...356 VDC)
Transient deviation range, VAC	T	-304...456
	P	-176...264
Transient time	T, P	1 s
Mains frequency range, Hz	T	47...53
	P	360...440
Consumed current, A	15	
Power factor	0.9	

Output specifications*

Parameter	Value		
Model	MAA2000-1T24-SXX	MAA2000-1T28-SXX	MAA2000-1T48-SXX
Nominal output voltage, VDC	24	28	48
Output voltage adjustment	10 %		
Rated output power, W	3000**		
Efficiency, %	91	91	92
Output voltage adjustment range, MBCB	by built-in trim resistor	-10...+10 %	-10...+10 %
Rated output current, A	83.3	71.4	41.66
Max output current, A	125	107.14	62.5
Ripple and noise (peak-to-peak)	<2%		
Line and load regulation	max 2%		
Start-up time, ms	<2000		
Parallel operation	redundancy, and boost of power		
Remote on/off	Off at 3.5...5.5 VDC (15...30 mA) output «REMOTE OFF»		
Maximum load capacity	36500 µF (Uout=28 VDC, Pout=50%)		

* All specifications are valid for normal climatic conditions (ambient temp. +15...+35°C; relative humidity 45...80%; air pressure 8.6*10⁴...10.6*10⁴ Pa), Uin. nom., Iout. nom., unless otherwise noted.

** See page 4, section «Operation time».

Protections

Type of protection	
Short-circuit protection*	auto recovery
Overload protection	$P_{max} < 1.2 P_{nom}$
Overvoltage protection level*	$< 125\% U_{out, nom.}$
Overheat protection	triggers at case temperature $> 85^{\circ}C$

Basic specifications**

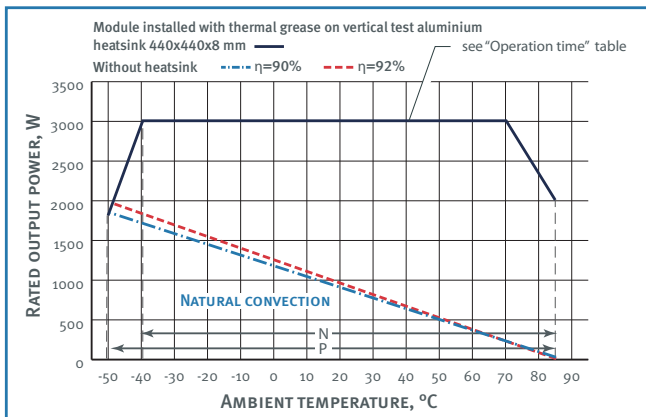
Parameter	Value
Type of connection	screw terminals and blade contacts
Derating	$-3.3\% / ^{\circ}C$ ($t^{\circ} < 40^{\circ}C$ and $> 70^{\circ}C$)
Protection level	IP20
Case temperature, operating	«N» $-40...+85^{\circ}C$
	«P» $-50...+85^{\circ}C$
Case temperature, storage	$-50...+70^{\circ}C$
Humidity	98% / $35^{\circ}C$
Isolation voltage	in /case ~ 1500 VAC
	in /out ~ 1500 VAC
	out /case, out/out ~ 500 VAC
Isolation resistance @ 500 VDC	≥ 20 MOhm min
Cooling	conductive, forced air
Environmental influence standards	design to meet MIL-STD-810G
EMC standards	EN55022 (CISPR22); design to meet MIL-STD-461E
Typical MTBF	3 000 000 Hrs
Case material	metal
Dimensions, mm	250×140×50
Weight, kg	< 3.4
Warranty	2 year

* 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.

** All specifications are valid for normal climatic conditions, $U_{in, nom.}$, $I_{out, nom.}$, unless otherwise noted.

Derating

vs Temperature



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.

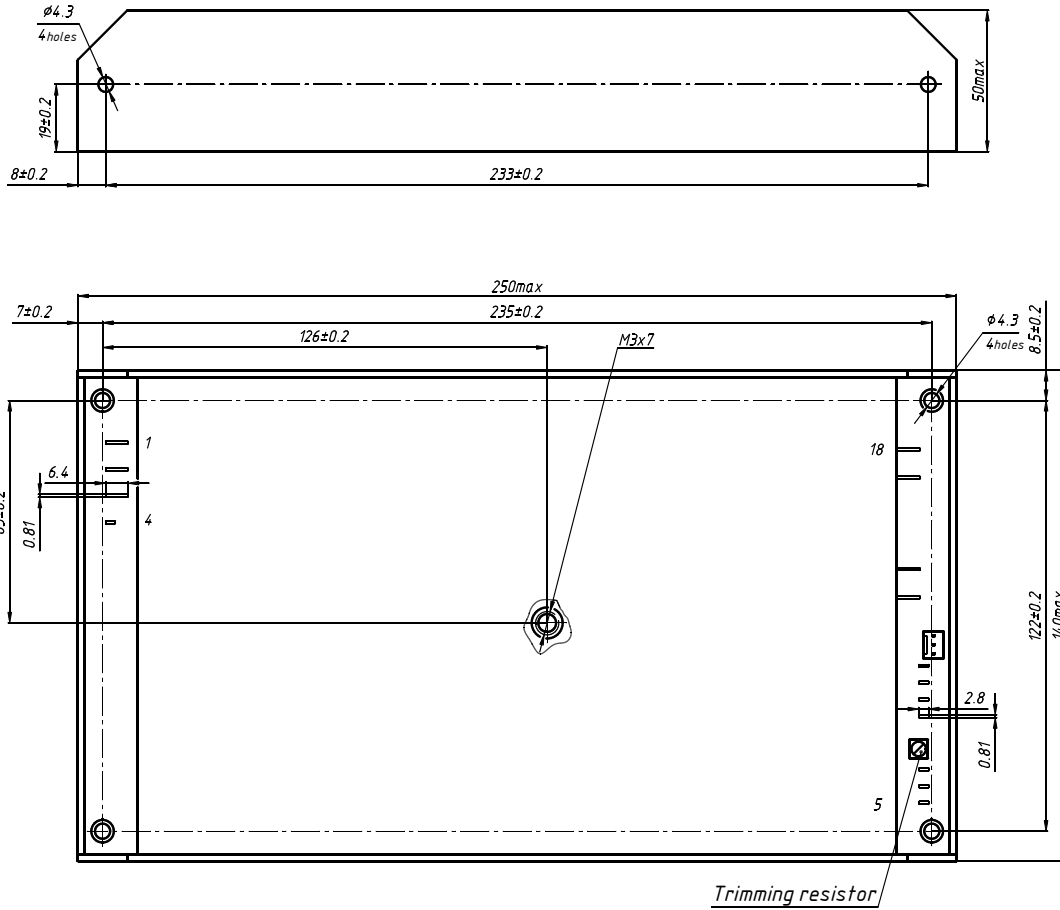
Operation time


Pls. contact our technical support to if you need assistance to calculate the heatsink.

Load	Cooling without air blow	Cooling with air blow
2000–3000 W	5 minutes	10 minutes
1500–2000 W	20 minutes	not limited
<1500 W	not limited	–

Dimensions

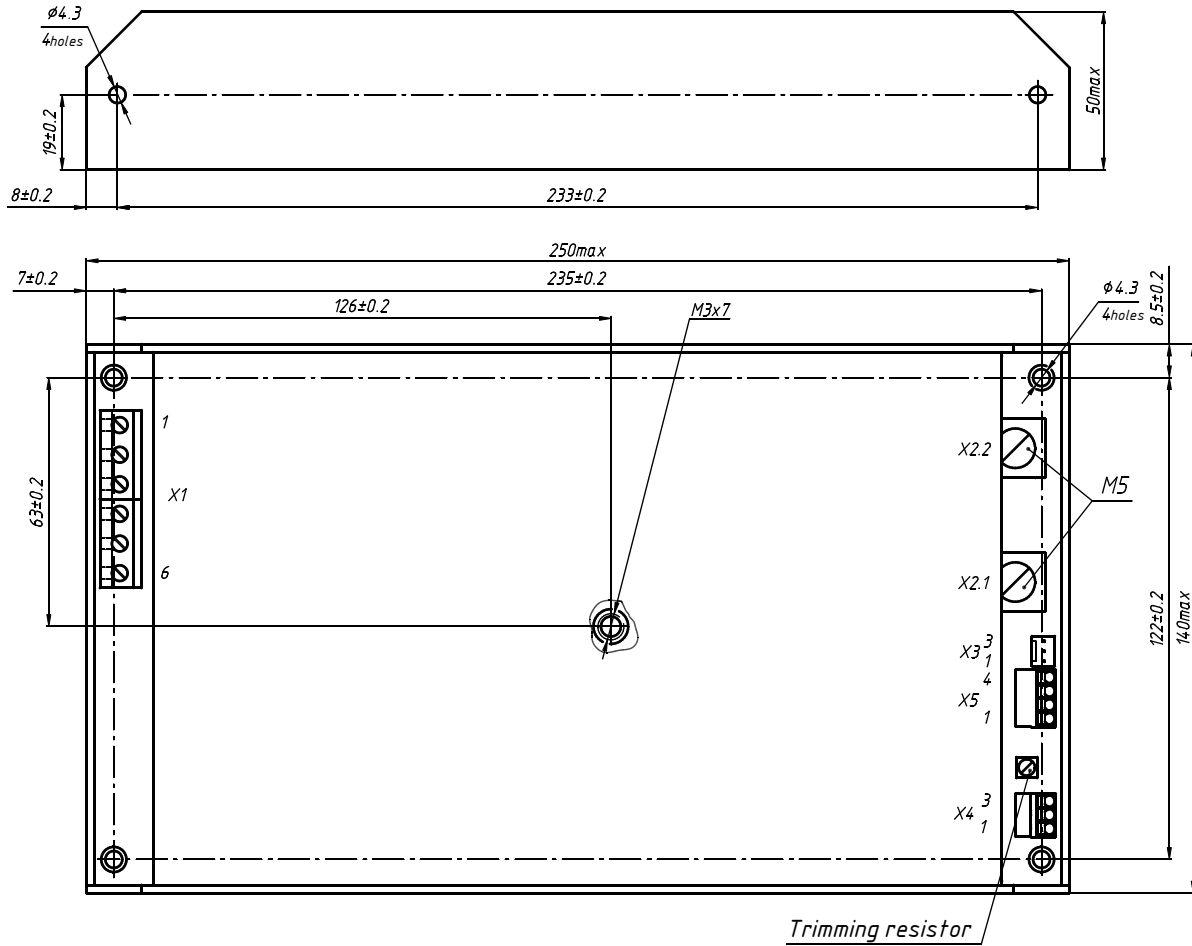
Single-channel design with blade contacts



PIN #	1	2	3	4	5	6	7	8	9
SINGLE-CHANNEL	A	B	C		-REMOTE OFF	+REMOTE OFF	AUX	+RS	-RS
PIN #	10	11	12	13	14	15	16	17	18
SINGLE-CHANNEL	PARAL	DC OK	+U FAN	- U FAN	NOT USE	+ OUT	+ OUT	-OUT	-OUT

Dimensions

Single-channel design with terminal blocks



Trimming resistor

PIN #	X1.1	X1.2	X1.3	X1.4	X1.5	X1.6	X2.1	X2.2	X3.1
SINGLE-CHANNEL	A	B	C	\oplus	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	-REMOTE OFF	+REMOTE OFF	AUX	+RS	-RS	PARAL	DC OK



www.kwsystems.ru info@kwsystems.ru

KW Systems, LLC is the leading Russian developer and manufacturer of AC/DC converters and power supply systems for mission critical applications.

Druzinnikov str. 5B, Voronezh, 394026, Russia. +7 473 200-87-80

This datasheet is valid for the following units:

MAA2000-1P24SXX, MAA2000-1P28SXX, MAA2000-1P48SXX, MAA2000-1T24SXX, MAA2000-1T28SXX, MAA2000-1T48SXX.