AC/DC POWER SUPPLIES MAA500

with threephase input voltage

- Power density max 916 W/dm^3 (15 W/in^3)
- 2 year warranty
- Output current max. 60 A, rated output power up to 500 W
- Input voltage ranges 323...437 VAC threephase; 187...253 VAC threephase
- Low-profile design (35 mm) with blade contacts or connector block
- Case operating temperature range −40...+85°C, −50...+85°C
- Single or dual output models
- Galvanic output isolation
- Fan power output (12 V; 0,2 A)
- Overvoltage, short-circuit and thermal protection
- Typical efficiency 89% (Uout=27 VDC)
- Remote off/on
- Voltage output adjustment
- Parallel operation, external feedback
- Parallel or series mode
- Polymer potting sealing
- Maximum capacity 6700 uF (Uout=27 VDC, Pout=50%)
- Recommended for application in a new designs

DESCRIPTION

Power supply modules of MAA500 series are designed for industrial and special equipment. These compact units (175×93×35 mm) have output power up to 500 W and wide case operating temperature range between −50...+85°C. Depending on the version there are models with one, two or three galvanically isolated output channels, remote off/on mode, over current, overvoltage and thermal protection. They can be operated in parallel or series mode. To compensate the voltage drop in load conductors there is a utility function of external feedback, allowing to accurately maintain the voltage 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 climatic influences by a thin-walled steel cover.

COMPLIANCE

Designed to meet MIL-STD-810G

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

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ORDERING INFORMATION

MAA	500	–	2	T	15 15	S	D	N
①	②		③	④	⑤	⑥	⑦	⑧

① – MAA series

② – Rated output power, W

③ – Quantity of output channels (1, 2)

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

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SINGLE OUTPUT MODELS

MODEL	INPUT VOLTAGE RANGE	OUTPUT POWER	OUTPUT VOLTAGE / RATED OUTPUT CURRENT	EFFICIENCY
MAA500-1P05 SXX	187...253 VAC threephase	300 W	5 VDC / 60 A	78%
MAA500-1P09 SXX	187...253 VAC threephase	500 W	9 VDC / 55,5 A	80%
MAA500-1P12 SXX	187...253 VAC threephase	500 W	12 VDC / 41,6 A	82%
MAA500-1P15 SXX	187...253 VAC threephase	500 W	15 VDC / 33,3 A	82%
MAA500-1P24 SXX	187...253 VAC threephase	500 W	24 VDC / 20,8 A	84%
MAA500-1P28 SXX	187...253 VAC threephase	500 W	28 VDC / 18,5 A	85%
MAA500-1T05 SXX	323...437 VAC threephase	300 W	5 VDC / 60 A	78%
MAA500-1T09 SXX	323...437 VAC threephase	500 W	9 VDC / 55,5 A	80%
MAA500-1T12 SXX	323...437 VAC threephase	500 W	12 VDC / 41,6 A	82%
MAA500-1T15 SXX	323...437 VAC threephase	500 W	15 VDC / 33,3 A	82%
MAA500-1T24 SXX	323...437 VAC threephase	500 W	24 VDC / 20,8 A	84%
MAA500-1T28 SXX	323...437 VAC threephase	500 W	28 VDC / 18,5 A	85%

Modules with non-standard output voltage from 5 to 60 VDC with maximal output current up to 60 A,

DUAL OUTPUT MODELS

MODEL	INPUT VOLTAGE RANGE	OUTPUT POWER	OUTPUT VOLTAGE / RATED OUTPUT CURRENT	EFFICIENCY
MAA500-2P1212 SXX	187...253 VAC threephase	500 W	12 VDC / 20,8 A; 12 VDC / 20,8 A	78%
MAA500-2P1515 SXX	187...253 VAC threephase	500 W	15 VDC / 16,6 A; 15 VDC / 16,6 A	80%
MAA500-2P2424 SXX	187...253 VAC threephase	500 W	24 VDC / 10,4 A; 24 VDC / 10,4 A	82%
MAA500-2P2828 SXX	187...253 VAC threephase	500 W	28 VDC / 9,2 A; 28 VDC / 9,2 A	82%
MAA500-2T1212 SXX	323...437 VAC threephase	500 W	12 VDC / 20,8 A; 12 VDC / 20,8 A	78%
MAA500-2T1515 SXX	323...437 VAC threephase	500 W	15 VDC / 16,6 A; 15 VDC / 16,6 A	80%
MAA500-2T2424 SXX	323...437 VAC threephase	500 W	24 VDC / 10,4 A; 24 VDC / 10,4 A	82%
MAA500-2T2828 SXX	323...437 VAC threephase	500 W	28 VDC / 9,2 A; 28 VDC / 9,2 A	82%

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SPECIFICATIONS OF AC/DC POWER SUPPLIES MAA500*

Input specifications	
Input voltage range**	
T	(323...437 VAC) 380 V threephase
P	(187...253 VAC) 220 V threephase
Input frequency	
P	360...440 Hz
T	47...440 Hz
Output specifications	
Output voltage adjustment	10%
Line and load regulation	max 2% for first channel max 10% for second (third) channel
Ripple and noise (peak-to-peak)	<2% Uout. nom.
Short circuit protection***	automatic repair
Overload protection level***	<125% Uout. nom.
Remote on/off	Off at 3.5 VAC (5 mA) output «Contr»
General specifications	
Case temperature	
operating "N"	−40...+85°C
operating "P"	−50...+85°C
storage	−50...+85°C
power derating (free convection)	diagram (dashed, dash-dotted curve)
without power derating using heatsink	diagram (solid curve)
Humidity	93...95% / 25°C
Efficiency	80% Uout=5 VDC 86% Uout=24 VDC
Switching frequency, constant	100 kHz
Isolation voltage	
in./case	1500 VAC
in./out.	1500 VAC
out./case, out./out.	500 VAC
isolation resistance @ 500 VDC	20 Mohm min
EMC standards	IEC 60950, EN55022 (CISPR22), Class B
Thermal resistance case-ambient	1,8°C/W
Typical MTBF	2000 kHrs
Cooling	conductive (baseplate-cooled)
Weight	max 700 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.
* All specifications are valid for normal climatic conditions, Uin. nom., Iout. nom., unless otherwise noted.
** Maximum output power for input voltage C (wide circuit) at Uout 100...187 VDC is reducing according to Power reduction diagram of module according to input voltage.
*** 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.

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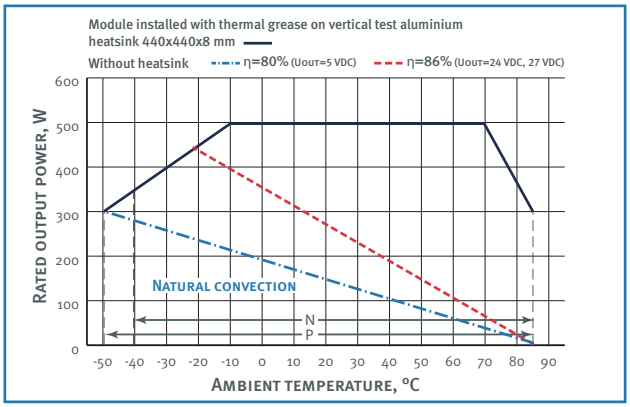
POWER DERATING VS AMBIENT TEMPERATURE DIAGRAM



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 lenght and width not less than case's and with thikness not less than 8 mm.

PIN OUT (DESIGN WITH BLADE CONTACTS)

PIN #	1	2	3	4	5	6	7	8
SINGLE CHANNEL	C	B	A	⏚	-TRIM	+TRIM	+RS	-RS
DUAL CHANNEL	C	B	A	⏚	-TRIM	+TRIM	+U FAN	-U FAN

PIN #	9	10	11	12	13	14	15	16	17
SINGLE CHANNEL	PARAL	TRIM	NOT USE	-U FAN	+U FAN	+OUT	+OUT	-OUT	-OUT
DUAL CHANNEL	+U FAN	+OUT1	-OUT1	-OUT2	+OUT2	-	-	-	-

PIN OUT (DESIGN WITH CONNECTOR BLOCKS)

PIN #	X1.1	X1.2	X1.3	X1.4	X1.5	X1.6	X2.1	X2.2
SINGLE CHANNEL	C	B	A	⏚	NOT USE	NOT USE	+OUT	+OUT
DUAL CHANNEL	C	B	A	⏚	NOT USE	NOT USE	+OUT1	-OUT1

PIN #	X2.3	X2.4	X3.1	X3.2	X3.3	X4.1	X4.2	X5.1	X5.2	X5.2	X5.4
SINGLE CHANNEL	-OUT	-OUT	NOT USE	-U FAN	+U FAN	-ADJ	+ADJ	+RS	-RS	PARAL	TRIM
DUAL CHANNEL	-OUT2	+OUT2	NOT USE	-U FAN	+U FAN	-ADJ	+ADJ	-	-	-	-

AC/DC POWER SUPPLIES
MAA500
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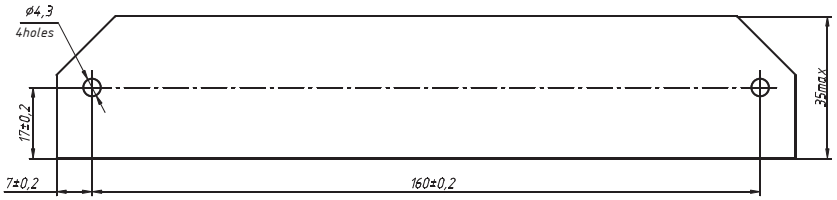
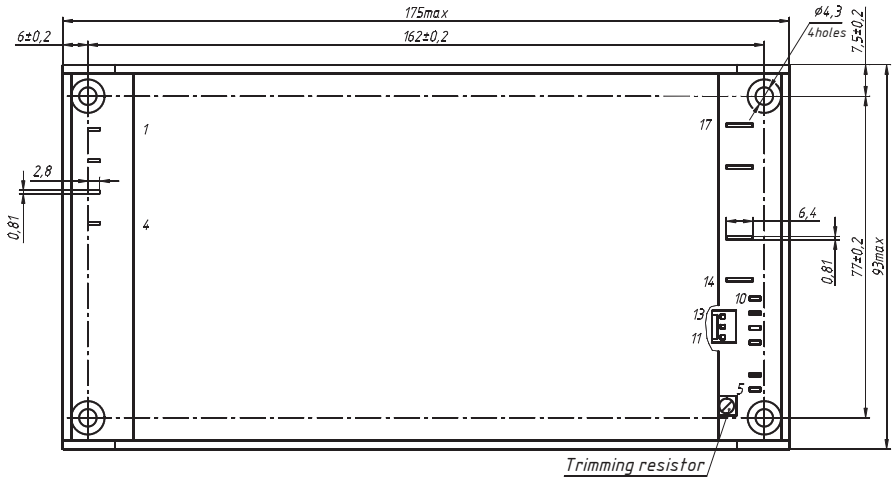
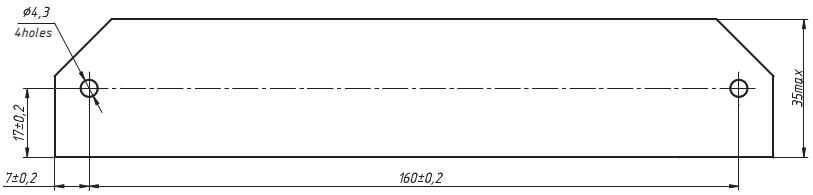
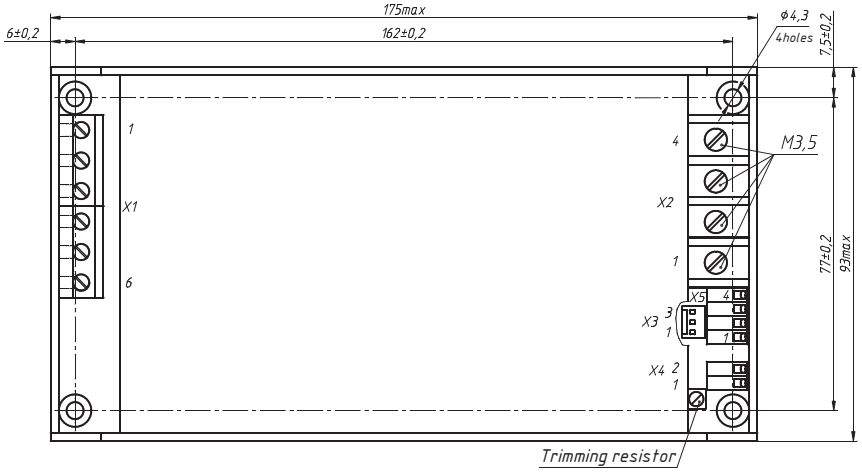
SINGLE CHANNEL DESIGN WITH BLADE CONTACTS





SINGLE CHANNEL DESIGN WITH CONNECTOR BLOCKS





Specifications can be changed without the prior notification. Up-to-date information can be found at kwsystems.ru

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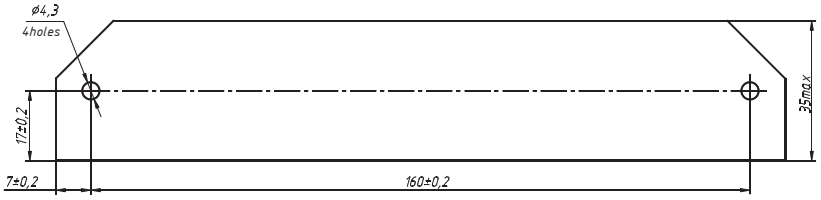
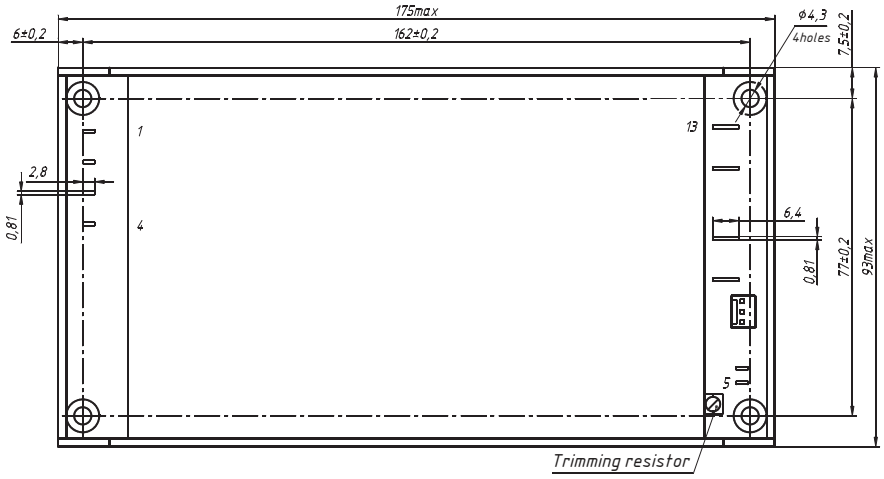
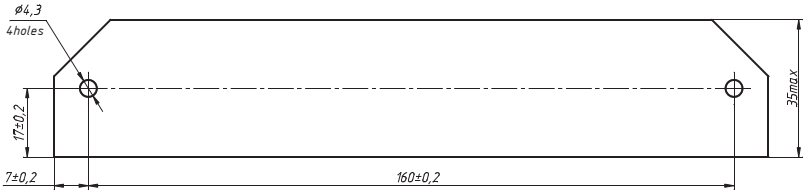
MAA500
with threephase input voltage

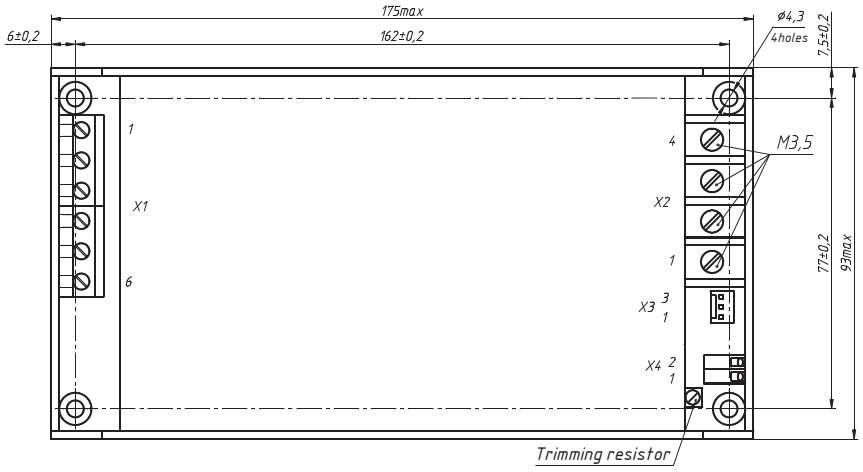
DUAL CHANNEL DESIGN WITH BLADE CONTACTS





DUAL CHANNEL DESIGN WITH CONNECTOR BLOCKS





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