



### Ordering information

**MAA 50 - 3 S 05 15 15 S U N**  
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

- ① - MAA Series
- ② - Nominal output power, Watt
- ③ - Channel quantity (1, 2, 3)
- ④ - Input voltage  
S - 220VAC  
K - 115VAC
- ⑤ - Output voltage channel 1, VDC
- ⑥ - Output voltage channel 2, VDC
- ⑦ - Output voltage channel 3, VDC
- ⑧ - Execution with sealing
- ⑨ - Embodiment  
B - uniform case with priming
- ⑩ - Operating temperature range of case  
N - - 40°C...+85°C  
P - - 50°C...+85°C

- Rugged environment in operation in technical equipment of industrial and special purpose.
- Low-profile construction
- Metal case
- Cooling by heat sink or free air convection
- Electromagnetic compatibility index to GOST V 25803-91 for group 1.2.1 (curve 2)
- Stability to external factors of group 1U GOST RV 20.39.414.1-97 (additional)
- Short circuit protection, overload, overvoltage and thermal protection
- Galvanic isolated outputs
- Acceptance «5»

### Single-output models

Module	MAA50-1S03SXX	MAA50-1S05SXX	MAA50-1S12SXX	MAA50-1S15SXX	MAA50-1S24SXX	MAA50-1S27SXX	MAA50-1S48SXX	MAA50-1S68SXX
Output power	26,4 W	40 W	50 W					
Output voltage	3,3 VDC	5 VDC	12 VDC	15 VDC	24 VDC	27 VDC	48 VDC	68 VDC
Output current	8 A	8 A	4,17 A	3,33 A	2,27 A	1,85 A	1,04 A	0,73 A

### Dual-output models

Module	MAA50-2S0505SXX		MAA50-2S1212SXX		MAA50-2S1515SXX	
Output power	50 W					
Channel number	1	2	1	2	1	2
Output voltage	5 VDC	5 VDC	12 VDC	12 VDC	15 VDC	15 VDC
Output current	5 A	5 A	2,1 A	2,1 A	1,67 A	1,67 A

### Triple-output models

Module	MAA50-3S051212SXX			MAA50-3S051515SXX		
Output power	50 W					
Channel number	1	2	3	1	2	3
Output voltage	5 VDC	12 VDC	12 VDC	5 VDC	15 VDC	15 VDC
Output current	5 A	1,04A	1,04A	5 A	0,83 A	0,83 A

\* by request can be delivered modules with non-standard output voltage from 3 to 70 VDC and maximal output current to 8A.

### Input specifications

Parameter	Conditions of dimensions	MIN	NOM	MAX	Unit	
Input voltage	Steady-state deviation	S	187	220	242	VAC
		K	80	115	140	VAC
	Transient deflection, 1 sec	S	176		264	VAC
		K	80		150	VAC
Input frequency	S	47	400	440	Hz	
	K					

### Output specifications

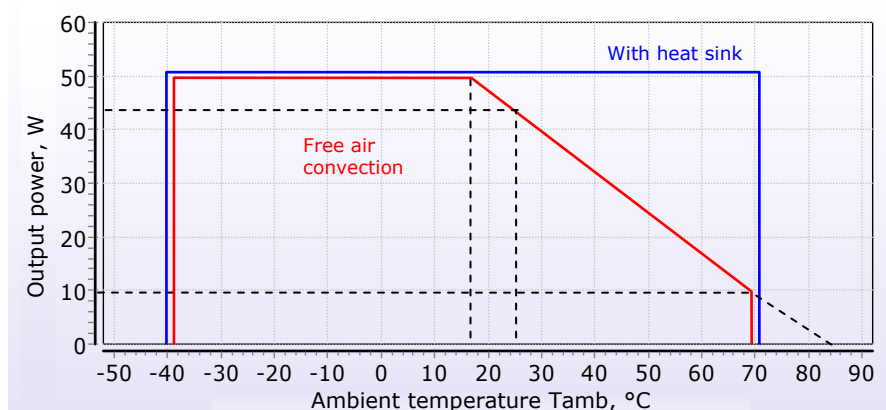
Parameter	Conditions of dimensions	MIN	NOM	MAX	Unit	
Total output voltage instability	Single-output execution (Inom 10 – 100%)				±3	%
	Uout2&3 differs from Uout1 less than 20%	Output 1 multi-output execution (Inom 10 – 100%)			±3	%
		Output 2 and 3 multi-output execution (Inom 10 – 100%)			±13	%
	Uout2&3 differs from Uout1 more than 20%	Output 1 multi-output execution (Inom 30 – 100%)			±3	%
Output 2 and 3 multi-output execution (Inom 50-100%)				±15	%	
Output voltage pulsations ripple (peak-to-peak)	Dimension by device for pulsation control			2	% Uout.nom.	
Current overload protection actuation level		110			% Iout.nom.	
Short circuit protection	Autorepair	150			% Iout.nom.	
Overvoltage protection		120			% Uout.nom.	
Thermal protection		90-95			°C	

### General specifications

Parameter	Conditions of dimensions	MIN	NOM	MAX	Unit
Temperature	- operating of case	N - 40 P - 50		+85	°C
	- power loss		See diagram		
	- storage		- 50		+85
Efficiency			78		%
Conversion frequency			50		kHz
Isolation	~ in/out	1500			VAC
	~ in/case	1500			VAC
	~ out/case	500			VDC
	~ out/out	500			VDC
Insulation resistance	Voltage 500VDC	20			Ohm
High humidity	Temperature 35°C			98	%
Cyclic overpatching of temperature		- 60		+85	°C
Multiple mechanical shocks	Speeding-up 15g	2		15	ms
Sinusoidal vibration	Speeding-up 5g	50		500	Hz
Atmosphere pressure		6x10 <sup>4</sup>		1,2x10 <sup>5</sup>	Pa
Time to failure	Temperature 35°C	10 <sup>5</sup>			hour
Mass				0,4	kg

★ all specifications reduced for normal climatic conditions, Uin.nom., Iout.nom., if it is not specified differently.

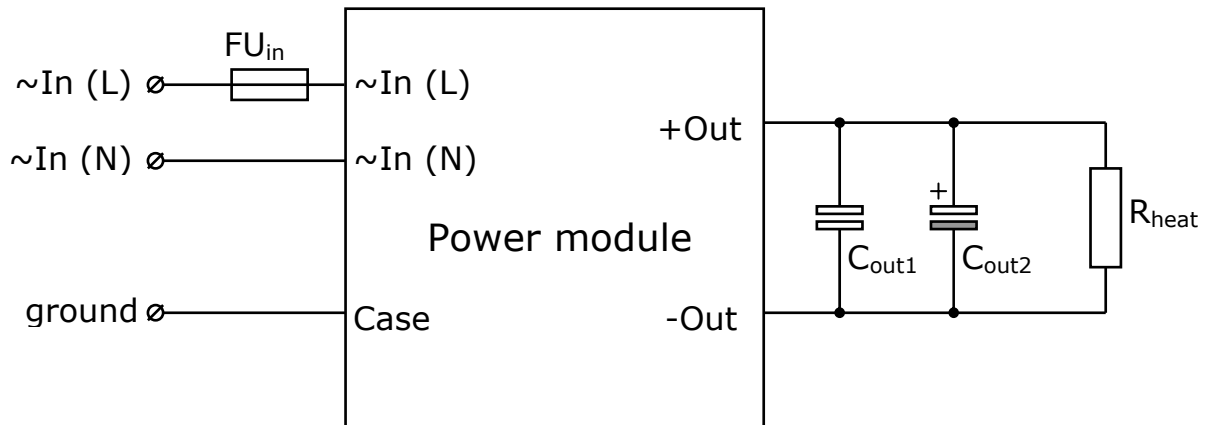
### Power loss diagram



### Output settings

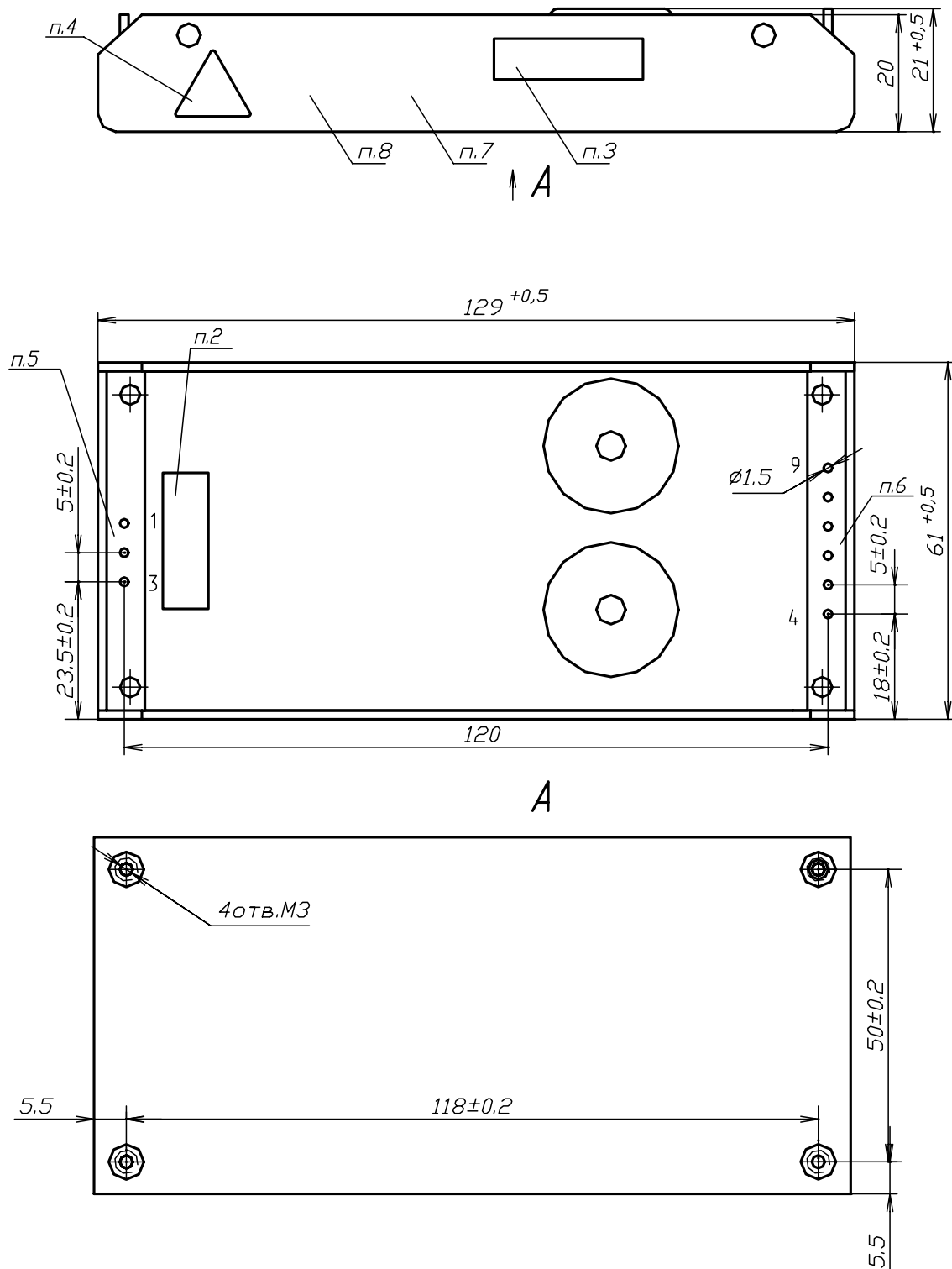
№ pin	1	2	3	4	5	6	7	8	9
<b>Single-channel</b>	case	~IN (N)	~IN (L)	+out1	+out1	+out1	-out1	-out1	-out1
<b>Dual-channel</b>	case	~IN (N)	~IN (L)	+out1	+out1	-out1	-out1	-out2	+out2
<b>Triple-channel</b>	case	~IN (N)	~IN (L)	-out3	+out3	+out1	-out1	-out2	+out2

### Switching on standart diagram

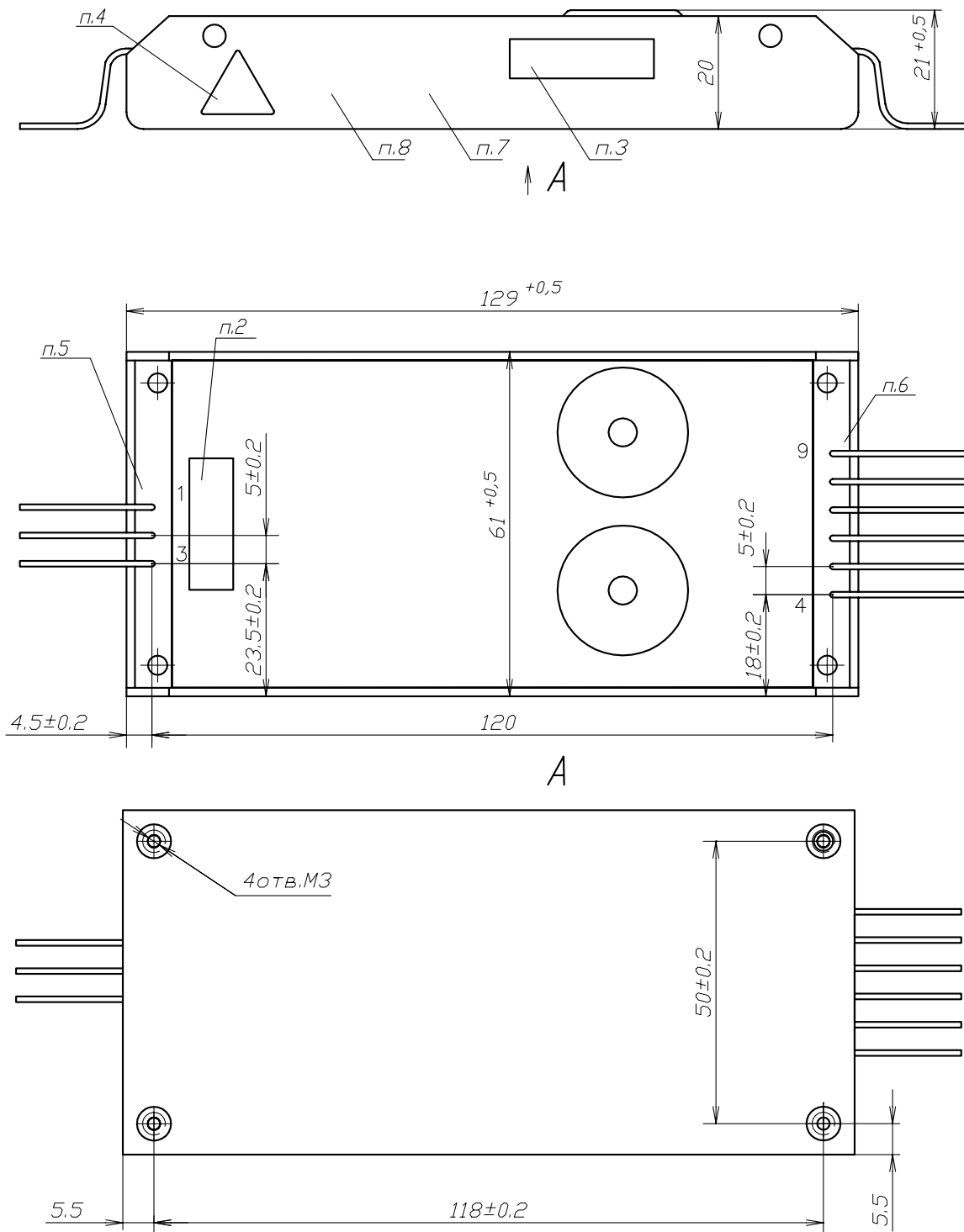


- ★ **FU<sub>in</sub>** – current safety device 1A for input voltage 220VAC, 2A for input voltage 115VAC.
- ★ **S<sub>out</sub>** – ceramic condenser capacity 0,47-15 mcF with corresponding operating voltage to decrease high-frequency noise level.
- ★ **S<sub>out2</sub>** – electronic condenser capacity 22-100 mcF in consideration with operating voltage and polarity. It makes for purpose to decrease dynamic instability when module work at dynamic load.

### Single, Dual, and Triple-output execution SBN



Single, Dual, and Triple-output execution SVN (with flexible erection joints)



The Flexible erection fjoints by length  $(100 \pm 5)$ mm is executed by wire section  $(0,5 \dots 1,5)$ mm<sup>2</sup>.