

# Low Emission AC/DC-Module 13.2W

## Single Output MAAK 3,3.4



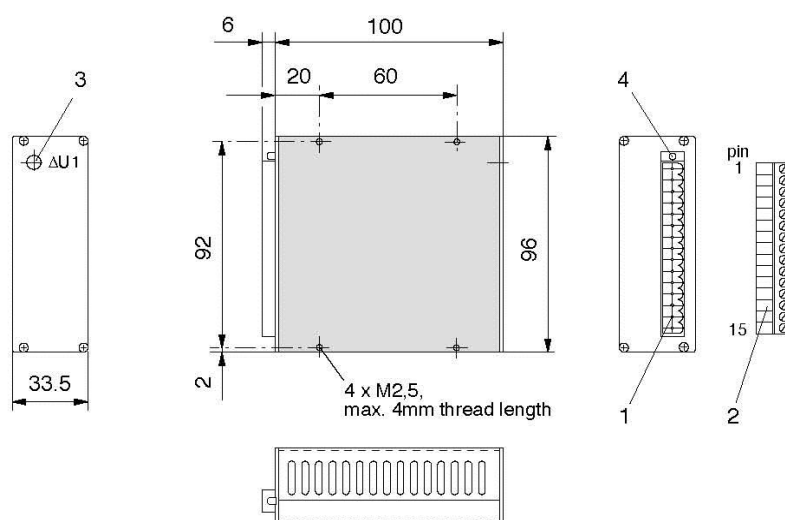
### Ordering Information

Type	Output ( ) Power Boost	Input Voltage *	Housing Dimensions see drawing	Article No. *1
<b>MAAK 3,3.4</b>	O1 = 3.3V ; 4A	115/230 Vac	100x33.5x96mm	<b>170-410-00</b>

\* automatic mains shift \*1 Housing chromated

### Dimensions in mm without accessories

- 1 = connector
- 2 = female connector with screw terminal strip (accessory)
- 3 = potentiometer
- 4 = LED, green



### Terminal Strip

Free pins may not be connected external!

	Pin
+ Output 1	1
+ Sense Lead 1	2
- Output 1	3
- Sense Lead 1	4
I/O External ON/OFF	11
Live L1	13
Neutral N	14
Earth PE	15

**Technical Data**

Guaranteed values after a warm-up period of approx. 15 min. at nominal load, measured at the unit's output.

Output		O1			
Output Voltage	[Vdc]	3.3			
Adjustment Range (±)	[V]	0.3			
Output Current					
Nominal	[A]	4			
Current Limiting	[A]	4.5			
Characteristic Curve		approx. V-I			
Type of Regulation		resonant conv.			
Efficiency	[%]	≥ 70			
Voltage Deviation for					
Load Change 0... 100% (static)	[mV]	≤ 7			
Mains Voltage Change Vin min-Vin max	[mV]	≤ 5			
Residual Ripple (100Hz)	[mVpp]	< 2			
Operating Frequency Ripple (50-190kHz)	[mVpp]	< 4			
Superimposed Switching Spikes	[mVpp]	< 4			
Dynamic Voltage Deviation for					
ΔIo = 65...100% Inom	[mV]	≤ 80			
Regulation Time for					
ΔIo = 65...100% Inom	[μs]	≤ 250			
Starting Delay					
	[ms]	≤ 800			
Overvoltage Protection Output					
Factory Setting	[V]	voltage limitation by TVS diode			
Sense Lead Operation	[V]	max. 0.25			
(load line compensation)		per load line			
Overload Protection					
		continuous short-circuit-proof			
Temperature Coefficient	[ppm/K]	200			
Input Voltage					
Nominal	[Vac]	108 - 120		216 - 240	
Operating Range (automatic mains shift)	[Vac]	+6%/-10%	≈ 97-127	+6%/-10%	≈ 194-254
Frequency	[Hz]	50 - 400 ±10%	≈ 45-440	50 - 400 ±10%	≈ 45-440
in the Event of Mains Failure					
at Nominal Load: Buffer Time	tBuff	[ms]	≥ 25		
Max. Input Current (nominal range)	[A]	0.6	0.3		
Starting Inrush Current					
Unit Cold	$\int i^2 dt ; I_p$	[A <sup>2</sup> s] ; [A]	≤ 0.41 ; ≤ 32		
Worst Case	$\int i^2 dt ; I_p$	[A <sup>2</sup> s] ; [A]	≤ 1.1 ; ≤ 86		
Unit Fuse (primary, internal)	[A]	T 0.63			
Operating Temperature Range					
(measured 5mm from the side wall)	[°C]	- 25... 0... + 50			
Max. allowed Case-/Radiator-Temperature	[°C]	+ 70			
Storage Temperature Range	[°C]	- 40... + 85			
Weight approx.	[kg]	0.4			
For definitions, informations about electrical safety, EMC and mechanical stressability see description.					