

100ACMEB Series

100W - Single Output AC-DC Converter - Universal Input - Isolated & Regulated



AC-DC Converter

100 Watt

- + Universal input: 90~264VAC
- + Regulated output, low ripple
- and noise
- + High efficiency up to 90%
- + Short circuit protection (SCP)
- Output power protection (OPP)
- **A** With PFC Function >0.9
- <0.3W No Load Input Power **A**
- Over voltage protection (OVP)
 Meets ENGODE _____ Meets EN60950, UL60950
- Ð UL / IEC / EN 60601 3.1
- Edition & UL / IEC / EN 60950 AM2 Safety Approvals Heets EN60601-1, ANSI/
- AAMI ES60601-1 standards (2 x MOOP)

The 100ACMEB series is a compact size power converter offered by GAPTEC. It features universal input voltage, taking both DC and AC input voltage, low power consumption, high efficiency, high reliability, safer isolation. It offers good EMC performance, meets IEC/EN61000-4, CISPR22/EN55022, UL60950 and EN60950 standards, and is widely used in medical instrumentation and critical applications in commercial and industrial electronic equipment.



Approval	Model	Power [W]	Output voltage [V]	Output current [mA, max]	Capacitive Load [µF, max]	Efficiency [@230VAC, %, typ]
UL/CE	100ACMEB_12S4	100	12	6666	3000	90
UL/CE	100ACMEB_24S4	100	24	4167	1500	90
UL/CE	100ACMEB_48S4	100	48	2083	500	90

Input specifications

Input voltage range	90-264 VAC " N " to DC " + " ; "L " to DC " - "			
Input frequency	47~63Hz			
Input current	115VAC • 2A (max)	230VAC • 1A (max)		
Inrush current (<2ms)	115VAC • 45A (typ)	230VAC • 90A (typ)		
Leakage current	< 0.1mA/264VAC (touch current)			
Power factor (at full load)	>0.97 (115 VAC) / PF>0.9 (230 VAC)			

Protection specifications

Short circuit protection	Protection type: Auto recovery, hiccup mode
Over-voltage protection	Protection type: Auto recovery, hiccup mode
Over-power protection	Protection type: Auto recovery, hiccup mode
Over-temperature protection	Protection type: Latch off

Output specifications						
Item	Test conditions	Min	Тур	Max	Units	
Output voltage accuracy	Full load		±2		%	
Line regulation			±1		%	
Load regulation	10% to 100% load		±1		%	
Ripple & noise*	• 100ACMEB_12S4 • Others			160 1% of Vo	mV out	
Hold-up time	@90% Vout/115VAC	10			ms	

* Measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.

Example: 100ACMEB 05S4

100 = 100Watt; AC = AC-DC; MEB = series; 5Vout; S = Single Output; 4 = 4kVAC

Note:

1. This product is not designed for use in critical life support systems, equipment used in hazardous environment, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other the ones listed in this datasheet.

2. All specifications valid at 230VAC input voltage, full load and +25°C after warm-up time unless otherwise stated.

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Common specifications			
Operating temperature range	-30°C ~ +70°C (with de	erating)	
Storage temperature range	-30°C ~ +85°C		
Case temperature range	Under 115VAC 73°C, ot	thers 80°C	
Humidity (non-condensing)	95% MAX		
Cooling	Free air convection		
Temperature coefficient	±0.05%/°C		
I/O-isolation voltage	Input-Output: 4000V Input-FG: 2000V Output-FG: 1500V/	AC or 5656VDC AC or 2828VDC AC or 2121VDC	
Altitude during operation	5000m		
Atmospheric pressure	70kPa to 106kPa		
$EMC \ / \ EMI \ / \ Conducted$ and radiated EMI^{\star}	EN55032 Conducted &	& Radiated Class B	
EMC / EMS / ESD	IEC/EN 61000-4-2	Contact ±4KV / Air ±8KV	perf. Criteria B
EMC / EMS / Radiated Immunity	IEC/EN 61000-4-3	10V/m	perf. Criteria A
EMC / EMS / Fast Transient	IEC/EN 61000-4-4	±2kV	perf. Criteria B
EMC / EMS / Surge	IEC/EN 61000-4-5	±1KV	perf. Criteria B
EMC / EMS / Conducted immunity	IEC/EN 61000-4-6	10Vr.m.s	perf. Criteria A
EMC / EMS / PFMF	IEC/EN 61000-4-8	30A/m	perf. Criteria A
EMC / EMS / Dips	IEC/EN 61000-4-11	30% / 10ms	perf. Criteria B
EMC / EMS / Interruption	EN61000-4-11	>95% 5000ms	
Safety standards	IEC60950, EN60950, U	JL60950	
Safety approvals	UL / IEC / EN 60601 3	.1rd Edition & UL / IEC / EN 60950 AM2	
Case material	UL94V-0		
MTBF	>250,000 h @ 25°C (M	1IL-HDBK-217F, Notice 1)	
Vibration	10~500Hz, 5G 10min./	/1cycle, 60min. each along X, Y, Z axes.	
Package	83.9 x 58.5 x 35.0 mm		
Weight	253 g		

* Please secure the power supply unit to your metal case by using the four screw holes in the corners for either Class I or Class II equipment.

Typical characteristics

Derating graphs



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Block diagram



		12S			24S			48S	
Trim	+5%		0%	+5%		0%	+5%		0%
→ -V	32Κ Ω	~	10M	36Κ Ω	~	10M	33Κ Ω	~	10M
Trim	0%		-5%	0%		-5%	0%		-5%
→ +V	10M	~	80Κ Ω	10M	~	205Κ Ω	10M	~	480Κ Ω

Mechanical dimensions



PIN	ø	Single	
1	1.2±0.1%mm	PE	
2	1.2±0.1%mm	AC IN (L)	
3	1.2±0.1%mm	AC IN (N)	
4	1.2±0.1%mm ON / OFF (Provide +5Vdc Controlled)		
5	1.8±0.1%mm	+DC OUT	
6	1.8±0.1%mm	-DC OUT	
7	1.8±0.1%mm	Trim	

Note:

Please reserve the pin 4 hole on PCB. If the remote on/off function is not required, please connect the pin 4 circuit layout with pin6, or keep pin 4 floating.

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