150ACMEA Series

150W - Single Output AC-DC Converter - Universal Input - Isolated & Regulated

AC-DC Converter 150 Watt

- EMI for Both Class I (with PE) and Class II (without PE)
- High efficiency up to 93.5%
- Plastic case, meets UL94V-0
- Short circuit protection (SCP)
- Output power protection (OPP)
- With PFC Function >0.9
- <0.3W No Load Input Power
- Over voltage protection (OVP)
- Meets EN60950, UL60950
- UL / IEC / EN 60601 3.1 Edition & UL / IEC / EN 60950 AM2 Safety Approvals
- Meets EN60601-1, ANSI/ AAMI ES60601-1 standards (2 x MOOP)

The 150ACMEA 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.

c UL us (pending)

Approval	Model	Power [W]	Output voltage [V]	Output current [A, max]	Capacitive Load [µF, max]	Efficiency* [@230VAC, %, typ]
UL/CE	150ACMEA_12S4	150	12	12.5	6000	93
UL/CE	150ACMEA_15S4	150	15	10	5000	93
UL/CE	150ACMEA_24S4	150	24	6.25	2000	93.5
UL/CE	150ACMEA_48S4	150	48	3.125	330	93.5

* After 30 minutes of burn-in

Input specifications		
Input voltage range	90-264 VAC (see derating curve)	
Input frequency	47~63Hz	
Input current	115VAC • 2.5A (max)	230VAC • 1.25A (max)
Inrush current (<2ms)	115VAC • 45A (typ)	230VAC • 90A (typ)
Leakage current	< 0.1mA/264VAC (touch current)	
Power factor	PF>0.9 at full load	

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

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

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

Example:
150ACMEA_05S4
150 = 1050Watt; AC = AC-DC; MEA = 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.

150ACMEA Series

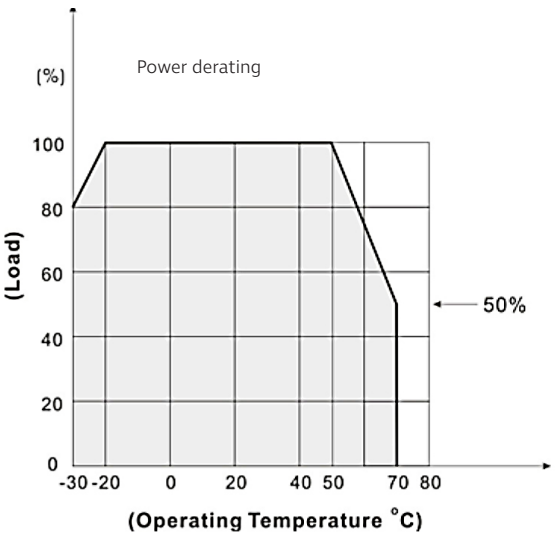
150W - Single Output AC-DC Converter - Universal Input - Isolated & Regulated

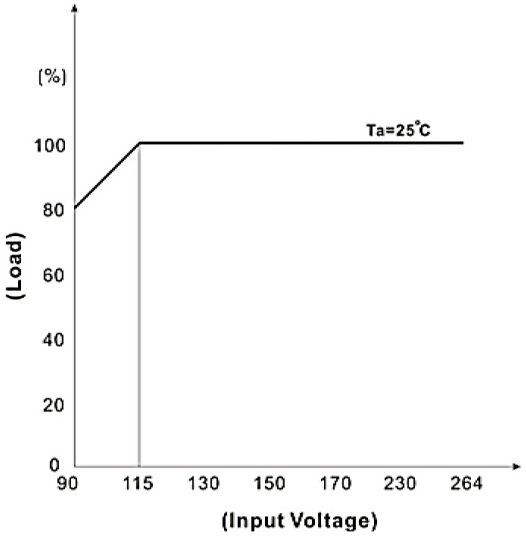
Common specifications			
Operating temperature range	-30°C ~ +70°C (with derating)		
Storage temperature range	-30°C ~ +85°C		
Humidity (non-condensing)	95% MAX		
Cooling	Free air convection		
Temperature coefficient	±0.05%/°C		
I/O-isolation voltage	Input-Output: 4000VAC or 5656VDC Input-FG: 2000VAC or 2828VDC Output-FG: 1500VAC or 2121VDC		
Altitude during operation	5000m		
Atmospheric pressure	56kPa to 106kPa		
EMC / EMI / Conducted and radiated EMI*	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, UL60950		
Safety approvals	UL / IEC / EN 60601 3.1rd Edition & UL / IEC / EN 60950 AM2		
Case material	UL94V-0		
MTBF	>250,000 h @ 25°C (MIL-HDBK-217F, Notice 1)		
Vibration	10~500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes.		
Dimension	109.0 x 58.5 x 35.0 mm / Tolerance ±5mm		
Weight	364g		

* 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.

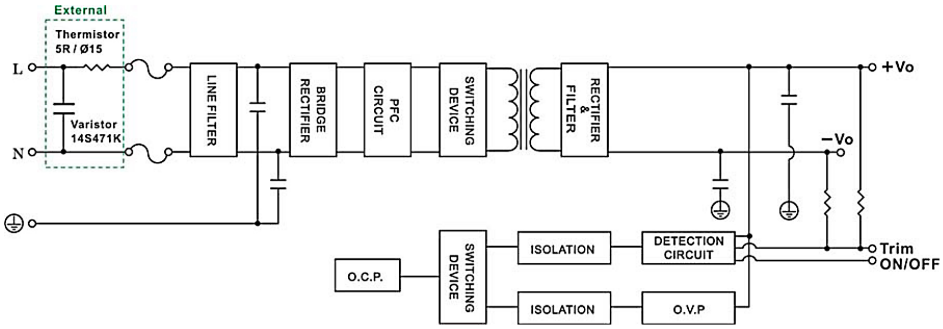
Typical characteristics

Derating graphs





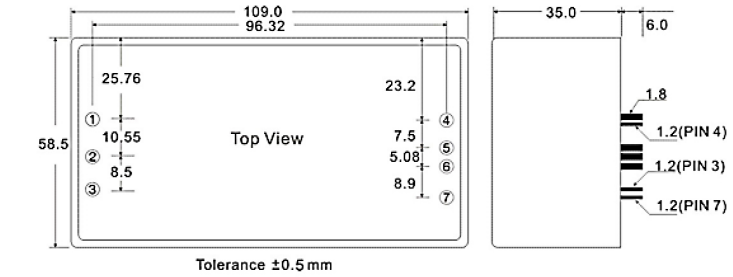
Block diagram

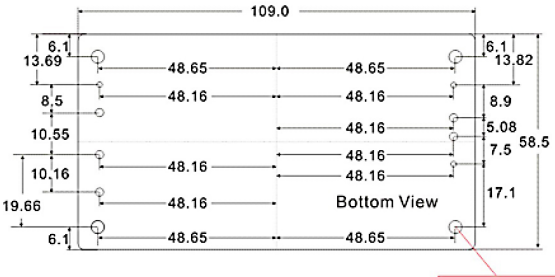


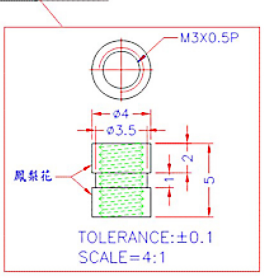
Trim

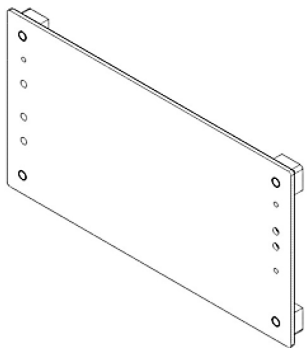
	12S			15S			24S			48S		
Trim → -V	+5%		0%	+5%		0%	+5%		0%	+5%		0%
	34KΩ	~	10MΩ	26KΩ	~	10MΩ	37.4KΩ	~	10MΩ	38KΩ	~	10MΩ
Trim → +V	0%		-5%	0%		-5%	0%		-5%	0%		-5%
	10MΩ	~	106KΩ	10MΩ	~	130KΩ	10MΩ	~	270KΩ	10MΩ	~	640KΩ

Mechanical dimensions









PIN	ø	Single
1	1.2±0.1%mm	AC IN (N)
2	1.2±0.1%mm	AC IN (L)
3	1.2±0.1%mm	PE
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	1.2±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.

Note:
Unit: mm[inch]
General tolerances: ±0.50mm [±0.020inch]