



15ACPW_4 series

15W - Single Output AC-DC Converter - Enclosed Switching - Universal Input - Isolated

AC-DC Converter 15 Watt

- ⊕ 85 - 305VAC or 100 - 430VDC input voltage
- ⊕ Accepts AC or DC input (dual-use of same terminal)
- ⊕ Operating ambient temperature range: -30°C to +70°C
- ⊕ Up to 83% efficiency
- ⊕ No-load power consumption <0.5W
- ⊕ High I/O isolation test voltage up to 4000VAC
- ⊕ Output short circuit, over-current, over-voltage protection
- ⊕ Safety according to IEC/EN/UL62368, GB4943
- ⊕ Withstand 335VAC surge input for 5s
- ⊕ Over-voltage class III (designed to meet EN61558)
- ⊕ Operating up to 5000m altitude

The 15ACPW_4 is one of GAPTEC's enclosed AC-DC switching power supply. It features universal AC input and at the same time accepts DC input voltage, cost-effective, low no load power consumption, high efficiency and high reliability. These converters offer excellent EMC performance and meet IEC/EN61000-4, CISPR32/EN55032, IEC/UL/EN62368, GB4943 standards and they are widely used in areas of industrial, LED, street light control, electricity, security, telecommunications, smart home etc.



Common specifications

Item	Test conditions	Min	Typ	Max	Units
Short circuit protection	recovery time <5s after the short circuit disappear	Hiccup, continuous, self-recovery			
Operating temperature		-30		+70	°C
Storage temperature		-40		+85	°C
Storage humidity	Non-condensing			95	%RH
Operating humidity	Non-condensing	20		90	%RH
Switching Frequency			65		kHz
Power derating	• -30°C to -25°C / 85VAC - 100VAC • +50°C to +70°C • 85VAC - 100VAC • 277VAC - 305VAC	6.0	2.0	1.33	%/°C %/°C %/VAC %/VAC
Safety standard	IEC/EN/UL62368/GB4943				
Safety certification	IEC/EN/UL62368/GB4943 (Pending)				
Safety class	CLASS I				
MTBF	MIL-HDBK-217F@25°C	>700,000 h			
Case Material	Metal (AL5052, SGCC)				
Dimensions	65.00 x 55.00 x 25.00 mm				
Weight	90g TYP.				
Cooling Method	Air cooling / 10CFM				

Input specifications

Item	Test conditions	Min	Typ	Max	Units
Input Voltage Range	• AC input • DC input	85		305	VAC VDC
Input frequency		47		63	Hz
Input current	• 115VAC • 230VAC			0.35 0.25	A A
Inrush current (Cold start)	• 115VAC • 230VAC		30	50	A A
Leakage current	277VAC	<0.5mA			
Hot plug	Unavailable				

Output specifications

Item	Test conditions	Min	Typ	Max	Units
Output voltage accuracy	Full load range • 3.3V • 5V • 12V/15V/24V/48V		±3.0 ±2.0 ±1.0		% % %
Line regulation	Rated load • 3.3V/5V • 12V/15V/24V/48V		±1 ±0.5		% %
Load regulation	0% - 100% load • 3.3V/5V • 12V/15V/24V/48V		±1 ±0.5		% %
Ripple & noise*	20MHz bandwidth; peak-to-peak value • 3.3V/5V • 12V/15V • 24V/48V			80 120 150	mV mV mV
Temperature coefficient	0% - 100% load		±0.03		%/°C
Minimum load		0			%
Stand-by power consumption			0.3	0.5	W
Hold-up time	• 115VAC • 230VAC		7 48		ms

*The "Tip and barrel method" is used for ripple and noise test, please refer to Enclosed Switching Power Supply Application Notes for specific information. Application Notes for specific information;

Example:

15ACPW_24S4

15 = 15Watt; AC = AC-DC; P = series; W = wide-input (2:1);
24 = 24 Vout; S = single output; 4 = 4kVAC isolation

Note:

1. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta = 25°C, humidity <75%RH with nominal input voltage and rated output load;
2. The ambient temperature derating of 5°C /1000m is needed for operating altitude greater than 2000m;
3. All index testing methods in this datasheet are based on our company corporate standards
4. In order to improve the efficiency at high input voltage, there will be audible noise generated, but it does not affect product performance and reliability;
5. We can provide product customization service,.
6. Products are related to laws and regulations: see "Features" and "EMC";
7. The out case needs to be connected to the earth of system when the terminal equipment in operating;
8. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units;
9. The power supply is considered a component which will be installed into a terminal equipment. All EMC tests should be confirmed with the final equipment.

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Protection specifications

Over-current protection	110%-200% I _o , self-recovery
Over-voltage protection**	<ul style="list-style-type: none"> • 3.3V/5V ≤ 6.75VDC • 12V ≤ 16.2VDC • 15V ≤ 21.8VDC • 24V ≤ 33.6VDC • 48V ≤ 60.0VDC

*Output voltage hiccup or clamp

Isolation specifications

Item	Test condition	Min	Typ	Max	Units
Isolation test	• Input	2000			VAC
	• Input-output	4000			VAC
	• Output	1250			VAC
Isolation resistance	At 500VDC				
	• Input	100			MΩ
	• Input-output	100			MΩ
	• Output	100			MΩ

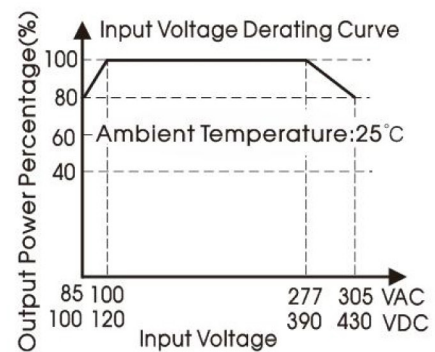
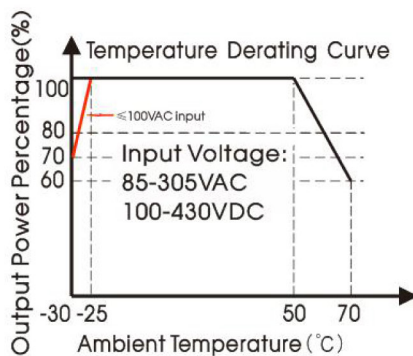
EMC specifications

Emissions	CE	CISPR32/EN55032	CLASS B
Emissions	RE	CISPR32/EN55032	CLASS B
Immunity	ESD	IEC/EN61000-4-2	Contact ±6KV/Air ±8KV perf. Criteria B
Immunity	RS	EC/EN61000-4-3	10V/m perf. Criteria A
Immunity	EFT	IEC/EN61000-4-4	±2KV perf. Criteria B
Immunity	Surge	IEC/EN61000-4-5	line to line ±1KV/line to ground ±2KV perf. Criteria A
Immunity	CS	IEC/EN61000-4-6	10Vr.m.s perf. Criteria A
Immunity	Voltage dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11	0%,70% perf. Criteria B

Selection Guide

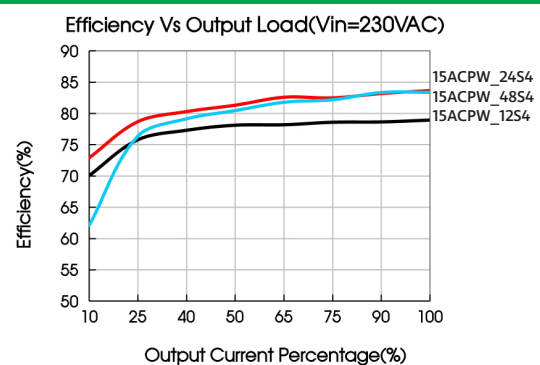
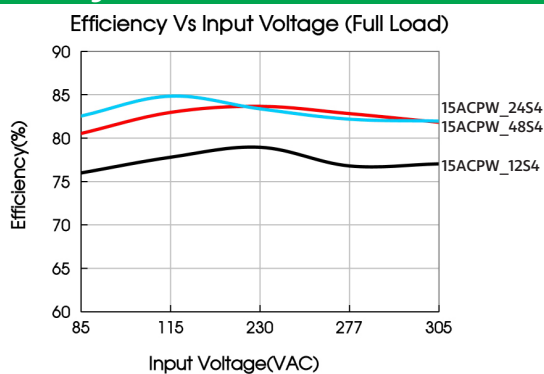
Approval	Model	Output Power [W]	Nominal Output Voltage and Current [Vo/Io]	Output Voltage Adjustable Range (V)	Efficiency at 220VAC [% , typ]	Capacitive Load (μF)
UL/CE/ CCC (Pending)	15ACPW_03S4	9.9	3.3V/3.0A	2.85-3.6	73	3000
UL/CE/ CCC (Pending)	15ACPW_05S4	15	5V/3.0A	4.5-5.5	78	2400
UL/CE/ CCC (Pending)	15ACPW_12S4	15.6	12V/1.3A	10.2-13.8	82	1800
UL/CE/ CCC (Pending)	15ACPW_15S4	15	15V/1.0A	13.5-18	82	1200
UL/CE/ CCC (Pending)	15ACPW_24S4	15	24V/0.625A	21.6-28.8	83	600
UL/CE/ CCC (Pending)	15ACPW_48S4	15.36	48V/0.32A	42-54	83	300

Product Characteristic Curve



Note: ① With an AC input between 85-100V/277-305VAC and a DC input between 100-120VDC/390-430VDC, the output power must be derated as per temperature derating curves;
 ② This product is suitable for applications using natural air cooling; for applications in closed environment please consult factory or one of our FAE.

Efficiency



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Dimensions and Recommended Layout - Conformal coating

THIRD ANGLE PROJECTION

Pin-Out	
Pin	Function
1	AC(L)
2	AC(N)
3	⊕
4	-Vo
5	+Vo

① - ④ any position must be connected to the earth (⊕)

Position	Screw Spec.	L(max)	Torque(max)
① - ②	M3	4mm	0.4N·m
③ - ④	M3	3mm	0.4N·m

Note:
Unit: mm[inch]
Wire range: 22-14AWG
Connector tightening torque: M3, 0.4N·m
General tolerances: ± 1.00[± 0.039]

Dimensions and Recommended Layout - Terminal With Protective Cover

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