



## 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:

- 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;
- The ambient temperature derating of 5°C /1000m is needed for operating altitude greater than 2000m;
- All index testing methods in this datasheet are based on our company corporate standards
- 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;
- We can provide product customization service,.
- Products are related to laws and regulations: see "Features" and "EMC";
- The out case needs to be connected to the earth of system when the terminal equipment in operating;
- Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units;
- 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 <sub>o</sub> , self-recovery
Over-voltage protection**	<ul style="list-style-type: none"> <li>• 3.3V/5V ≤ 6.75VDC</li> <li>• 12V ≤ 16.2VDC</li> <li>• 15V ≤ 21.8VDC</li> <li>• 24V ≤ 33.6VDC</li> <li>• 48V ≤ 60.0VDC</li> </ul>

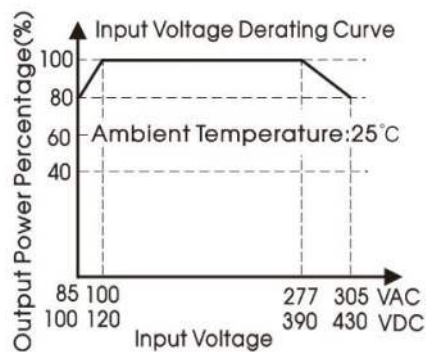
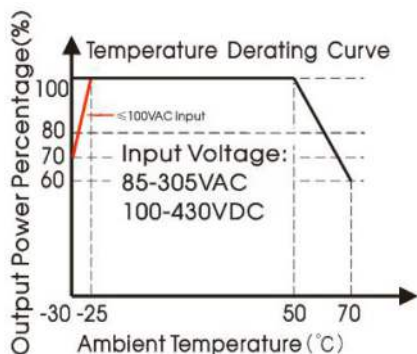
\*Output voltage hiccup or clamp

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

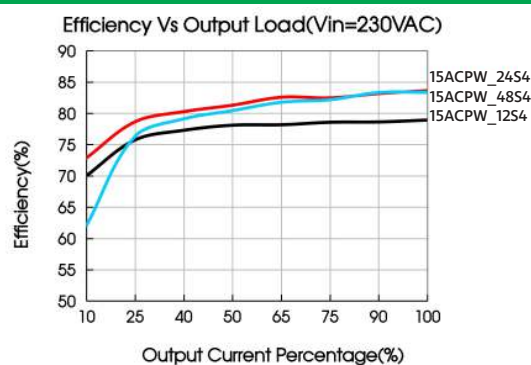
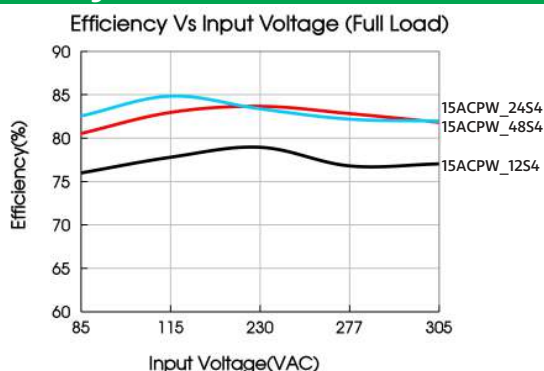
Selection Guide						
Approval	Model	Output Power [W]	Nominal Output Voltage and Current [Vo/Io]	Output Voltage Adjustable Range (V)	Efficiency at 220VAC [% , typ]	Capacitive Load (μF)
UL/CE/ CCC (Pending)	15ACPW_03S4	9.9	3.3V/3.0A	2.85-3.6	73	3000
UL/CE/ CCC (Pending)	15ACPW_05S4	15	5V/3.0A	4.5-5.5	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.

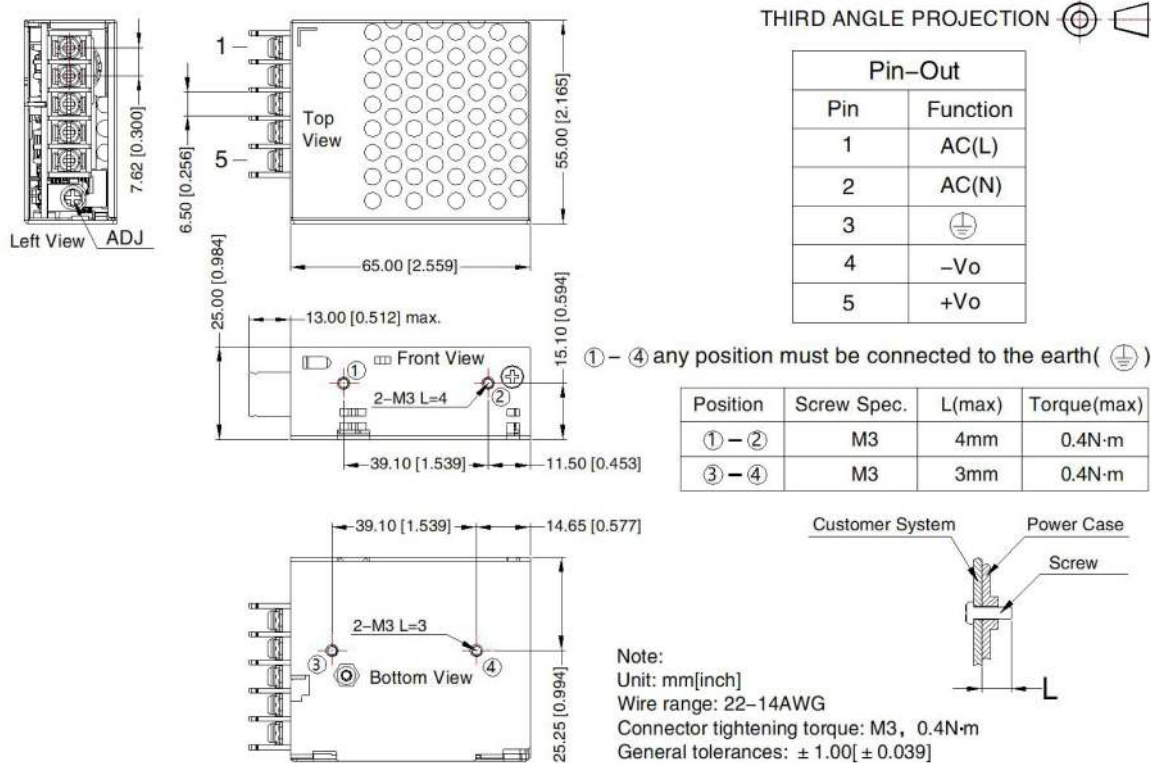
## Efficiency



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### Dimensions and Recommended Layout - Conformal coating



### Dimensions and Recommended Layout - Terminal With Protective Cover

