



## 10ACOW\_3 series

10W - Single Output AC-DC Converter - Universal input - Isolated & Regulated

## AC-DC Converter 10 Watt

- ⊕ Universal 85-305VAC or 100-430VDC input voltage
- ⊕ Operating ambient temp. range -25°C to +70°C
- ⊕ Output short circuit, over-current & over-voltage protection
- ⊕ High efficiency, high reliability
- ⊕ Regulated output, low ripple & noise
- ⊕ EMI performance meets CISPR32/EN55032 CLASS B
- ⊕ Designed to meet UL/EN/IEC62368, EN/UL60335 standards

The 10ACOW\_3 is one of GAPTEC's compact size power converter, it features universal AC input and at the same time accepts DC input voltage, low power consumption, high efficiency, high reliability, reinforced isolation. The converters meet IEC/EN61000-4, CISPR32/EN55032, UL62368, EN62368, UL60335, EN60335 standards. The converters are widely used in industrial, office and civil applications.



Common specifications					
Item	Test conditions	Min	Typ	Max	Units
Isolation (input-output)	Electric Strength Test for 1min. (leakage current < 5mA)	3000			VAC
Short circuit protection	Hiccup, continuous, self-recovery				
Operating temperature		-25		+70	°C
Storage temperature		-25		+85	°C
Storage humidity				90	%RH
Altitude				2000	m
Power derating	<ul style="list-style-type: none"> <li>• -25°C to -10 °C</li> <li>• +50 °C to +70 °C</li> <li>• 85VAC-100VAC</li> </ul>	1		3	%/°C %/°C %/VAC
Safety standard	IEC62368/EN62368/UL62368/UL60335/EN60335				
Safety certification	EN62368 (pending)				
Safety class	CLASS II				
MTBF	MIL-HDBK-217F@25°C	>300,000	h		
Dimensions	60.00x42.00x16.30 mm				
Weight	34g TYP.				
Cooling Method	Free air convection				

Output specifications					
Item	Test conditions	Min	Typ	Max	Units
Output voltage accuracy	<ul style="list-style-type: none"> <li>• 3.3V Output</li> <li>• Other Outputs</li> </ul>		±3.0		% %
Line regulation	Full load		±0.5		%
Load regulation	0% - 100% load		±1.		%
Ripple & noise*	20MHz bandwidth (peak-to-peak value)			100	mV
Temperature coefficient				±0.02	%/°C
Stand-by power consumption	<ul style="list-style-type: none"> <li>• 3.3V/5V/9V</li> <li>• 12V/15V/24V</li> </ul>			0.3	W W
Over-voltage protection**	<ul style="list-style-type: none"> <li>• 3.3/5V Output</li> <li>• 9V Output</li> <li>• 12/15V Output</li> <li>• 24V Output</li> </ul>		≤7.5V ≤15V ≤20V ≤30V		
Over-current protection				≥110%Io	self-recovery
Minimum load			0		%
Hold-up time	115VAC input, Io=100%		8		ms
	230VAC input, Io=100%		75		ms

\* The „Tip and barrel method“ method is used for ripple and noise test, please refer to AC-DC Converter Application Notes for specific information.

\*\* Output voltage clamp or hiccup

Input specifications					
Item	Test conditions	Min	Typ	Max	Units
Input Voltage Range	<ul style="list-style-type: none"> <li>• AC input</li> <li>• DC input</li> </ul>	85		305	VAC VDC
Input frequency		47		60	Hz
Input current	<ul style="list-style-type: none"> <li>• 115VAC</li> <li>• 230VAC</li> </ul>			0.23	A A
Inrush current	<ul style="list-style-type: none"> <li>• 115VAC</li> <li>• 230VAC</li> </ul>		20		A A
Leakage current	305VAC	0.25mA RMS max.			
Hot plug	Unavailable				

### Example: 10ACOW\_24S3

**10 = 10Watt; AC = AC-DC; O = series; 24 = 24 Vout;  
W = Wide input (2:1); S = single output; 3 = 3kVAC isolation**

### Note:

- If the product is not operated within the required load range, the product performance cannot be guaranteed to comply with all parameters in the datasheet;
- Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta = 25 °C, humidity < 75% with nominal input voltage and rated output load;
- All index testing methods in this datasheet are based on our Company's corporate standards;
- The performance parameters of the product models listed in this manual are as above, but some parameters of non-standard model products may exceed the requirements mentioned above.
- We can provide product customization service;
- Products are related to laws and regulations: see "Features" and "EMC";
- Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

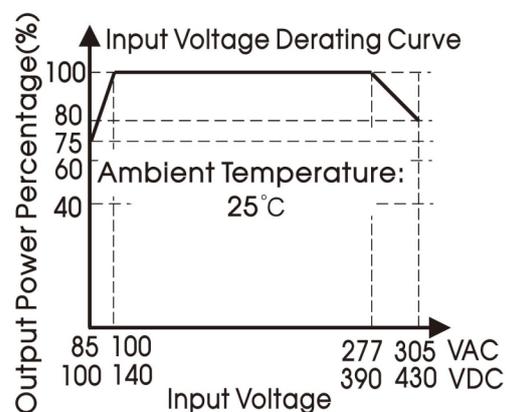
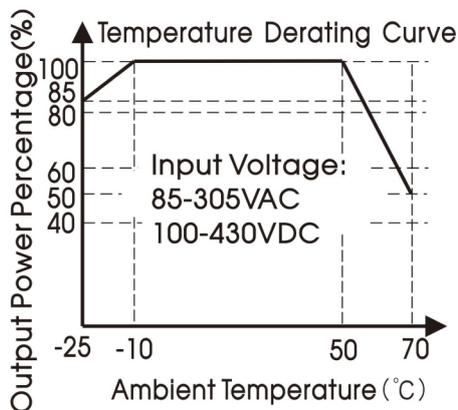
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EMC specifications				
Emissions	CE	CISPR32/EN55032	CLASS B	
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Immunity	ESD	IEC/EN61000-4-2	Contact ±6KV	perf. Criteria B
Immunity	RS	EC/EN61000-4-3	10V/m	perf. Criteria A
Immunity	EFT	IEC/EN61000-4-4	±2KV	perf. Criteria B
Immunity	Surge	IEC/EN61000-4-5	line to line ±1KV	perf. Criteria B
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]	Efficiency at 220VAC [%, typ]	Max. Capacitive Load (µF)
CE (Pending)	10ACOW_03S3	6.6	3.3V/2000mA	73	20000
CE (Pending)	10ACOW_05S3	10	5V/2000mA	78	12000
CE (Pending)	10ACOW_09S3	10	9V/1100mA	79	3600
CE (Pending)	10ACOW_12S3	10	12V/900mA	81	2000
CE (Pending)	10ACOW_15S3	10	15V/700mA	81	1170
CE (Pending)	10ACOW_24S3	10	24V/450mA	81	370

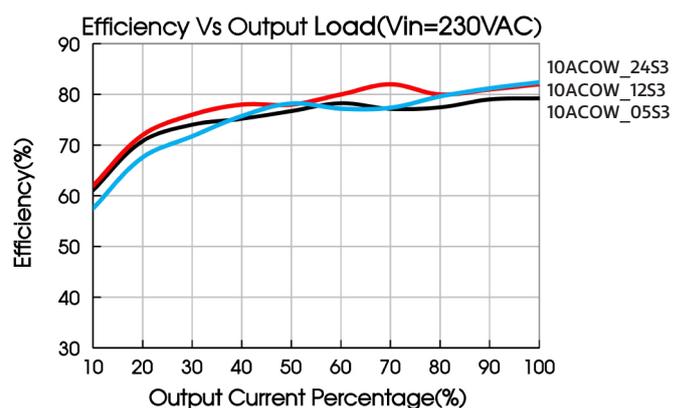
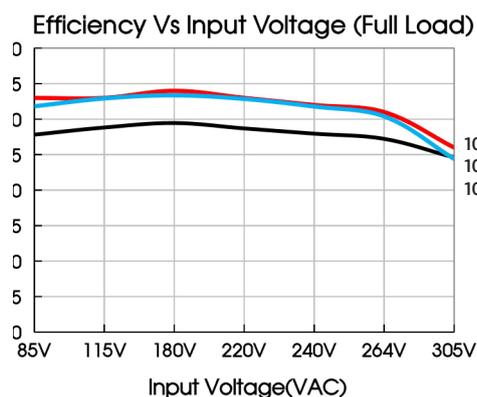
## Product Characteristic Curve



Note:

- With an AC input voltage between 85-100VAC/277-305VAC and a DC input between 100-140VDC/390-430VDC the output power must be derated as per temperature derating curves;
- This product is suitable for applications using natural air cooling; for applications in closed environment please consult factory or one of our FAE.

## Efficiency

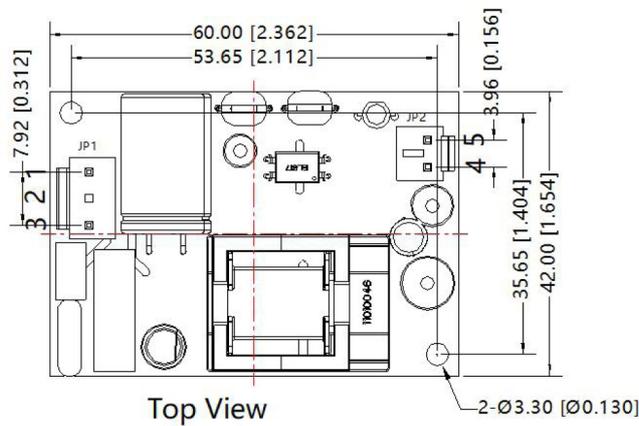


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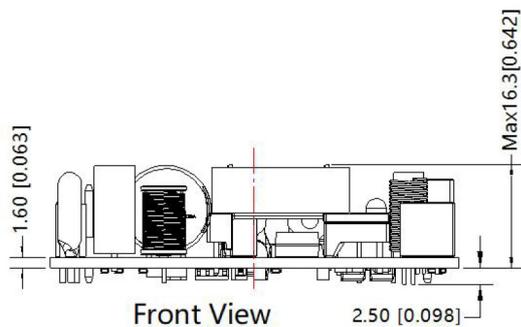
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# Dimensions and Recommended Layout

THIRD ANGLE PROJECTION 



Pin-Out			
Pin	Function	Connector	Terminal
1	AC(L)	VH-3A or B2P3-VH or the same Spec.	VH-3Y or VHR-3N or the same Spec.
2	NoPin		
3	AC(N)		
4	+Vo	VH-2A or B2P-VH or the same Spec.	VH-2Y or VHR-2N or the same Spec.
5	-Vo		



### Note:

Unit :mm[inch]

General tolerances:±0.50[±0.020]

In JP1 model: VH-3A, Recommend terminal: VH-3Y

Out JP2 model: VH-2A, Recommend terminal: VH-2Y

Mounting hole screwing torque: Max 0.4 N · m

The layout of the device is for reference only, please refer to the actual product