

10W, AC/DC Power Converter

SAP10H

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Introduction

SAP10H series are compact size AC/DC power converters, featuring universal input voltage range, low stand by power consumption, high efficiency. Designed for high reliability industrial applications, these converters are encapsulated to protect from dust and moisture. They are certified to IEC/EN/UL62368-1, EN60335-1, EN61558-1, UKCA and EMC performance meets CISPR32, EN55032 Class B without support from any external components, ideally suitable for industrial, and critical commercial applications.

Features

- Rated power: 10W Max
- Universal input: 85~305VAC 47~63Hz
- Regulated single output
- Isolation voltage 4000VAC
- Typical efficiency 78 ... 85%
- Energy saving, standby power only about 0.1W
- Operating temperature range: -40~+85°C
- RoHS compliance
- No external components required for operating
- Over voltage, over current and short circuit protection
- Certified to IEC/EN/UL62368-1, OVC II, EN60335-1, EN61558-1, UKCA, CISPR32, EN55032 Class B with NO external circuits
- 3 year warranty

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Part numbers

Model Number	Input Voltage (VAC)	Output Voltage (VDC)	Output Current (mA) Max	Efficiency (%) Typ.	Capacitive Load (uF) Max.
SAP10H033	85~305VAC 100~430VDC	3.3	2500	78	6600
SAP10H050		5	2000	82	5000
SAP10H090		9	1111	84	3000
SAP10H120		12	833	85	2000
SAP10H150		15	666	85	1500
SAP10H240		24	416	85	680

* Only typical models are listed, other models may be available, upon request.

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Electrical characteristics

Unless otherwise indicated, specifications are measured at TA=25°C, humidity <75%, nominal input voltage and rated output load.

Parameter	Condition	Min.	Type	Max.	Unit	Note
Input Voltage Range	AC in	85	-	305	VAC	
	DC in	100		430	VDC	
Input Frequency		47	-	63	Hz	
Nominal Input Voltage		100	-	277	VAC	
Input current	115VAC	-	-	0.18	A	
	230VAC			0.12		
Inrush current Cold start	115VAC	-	35	-	A	
	230VAC		70			
Leakage current	230VAC, 50Hz	-	-	0.6	mA RMS	
Output voltage accuracy		-	±3	-	%	
Line regulation		-	±0.5	-	%	
Full load						
Load regulation IOUT=0%~100% of IOUT, rated		-	±1.0	-	%	
Ripple and noise 20MHz band- width, peak to peak		-	150	200	mV	
Temperature coefficient		-	±0.03	-	%/°C	
Standby power consumption		-	0.1	-	W	

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Hold up time Full load	115VAC	-	10	-	mS	
	230VAC		50			
Over load protection		115	-	190	% I _{OUT, rated}	
Over voltage protection	V _{OUT} =3.3, 5V	-	-	8.5	VDC	
				20		
	V _{OUT} =9, 12V			24		
				34		
	V _{OUT} =15V					
	V _{OUT} =24V					
Short circuit protection		Hiccup mode, automatic recovery				
Recommended external fuse		2A, 300V, slow blow				
Minimum load		No minimum load is required				

* Ripple and noise measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 1uF ceramic capacitor and a 10uF electrolytic capacitor in parallel.

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General Specifications

Parameters	Condition	Min.	Typ.	Max.	Unit
Isolation voltage Tested for 1 minute	I/P to O/P	4000	-	-	VAC
Isolation resistance 500VDC, 25°C, 70%RH	I/P to O/P	100	-	-	M Ohm
Switching frequency		-	65	-	KHz
Operating temperature range	See "Derating Curve"	-40	-	85	°C
Storage temperature		-40	-	105	°C
Storage humidity		10	-	95	%RH
Maximum case temperature		-	-	95	°C
Soldering temperature	5 seconds	-	260	-	°C
Case material		Black plastic UL94-V0			
Cooling method		Free air convection			
Vibration		10Hz to 55Hz, 5G, 30 minutes along X, Y and Z axis			
Class II power		Yes, no FG			
MTBF	MIL-HDBK-217F	> 1,000,000 Hours, 25°C			
Design based on standards		RoHS & REACH directives, IEC/EN/UL 62368-1, OVC II, EN 60335-1, EN 61558-1, UKCA			
Safety certifications		IEC/EN/UL 62368-1, EN 60335-1, EN 61558-1, UKCA			
EMC	CE	CISPR32, EN55032 Class B with "NO External Circuit"			
1. With External Circuit as shown in "Figure 1"	ESD	IEC/EN61000-4-2, Contact ±8kV, Air ±15kV, Criteria B			
	RS	IEC/EN61000-4-3, 10V/m, Criteria A			
	EFT	IEC/EN61000-4-4, ±2kV, Criteria B			
2. With External Circuit as shown in "Figure 2"	Surge	IEC/EN61000-4-5, Line to Line ±2kV, Criteria B			
	CS	IEC/EN61000-4-6, 10Vrms, Criteria A			

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Size and Weight	Default Package	45.7x25.4x21.5mm, 37g
Packing		350pcs/carton, size: 460x350x285mm, 14Kg G.W.

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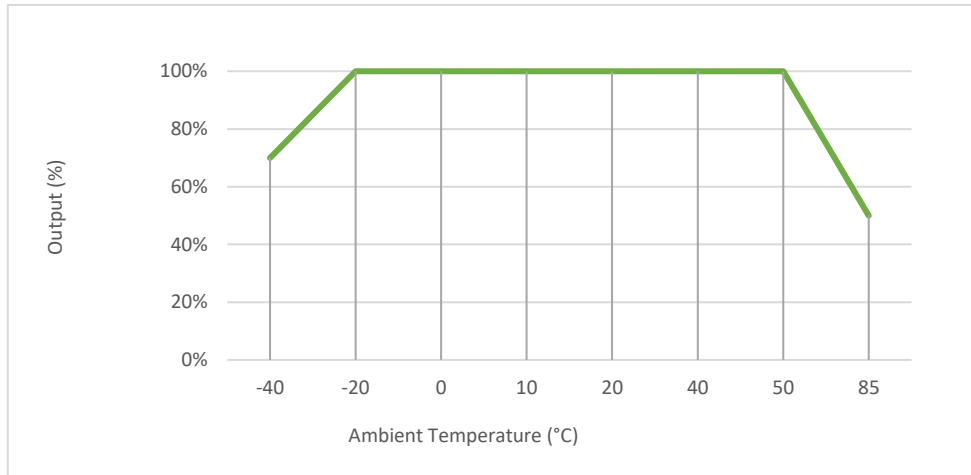
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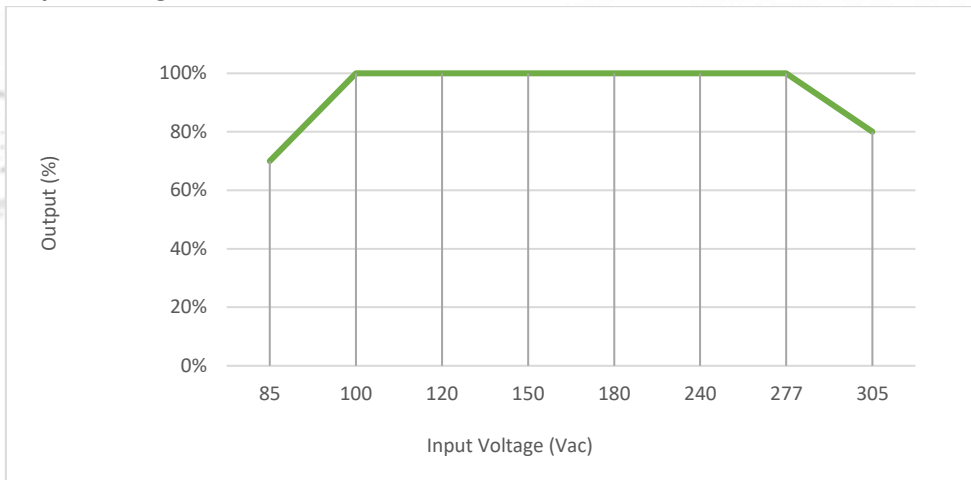
Characteristics Curves

Derating Curve

Output vs Ambient Temperature



Output vs Input Voltage

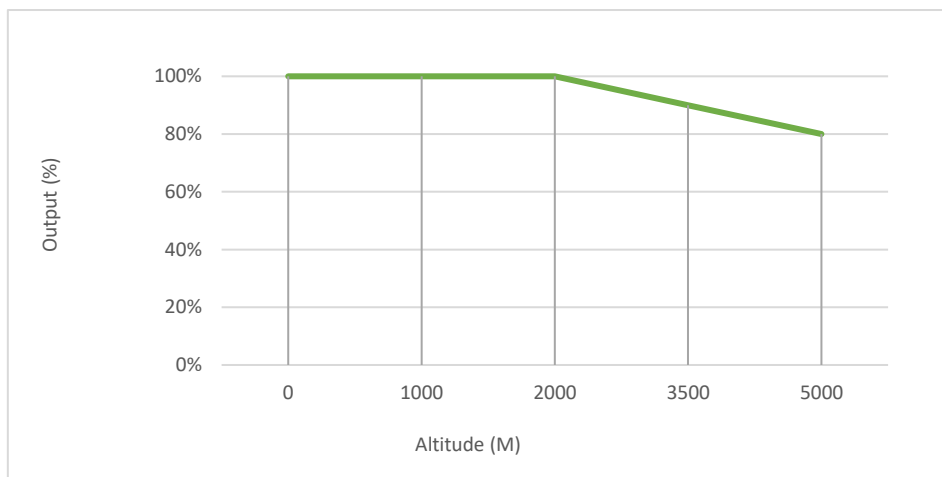


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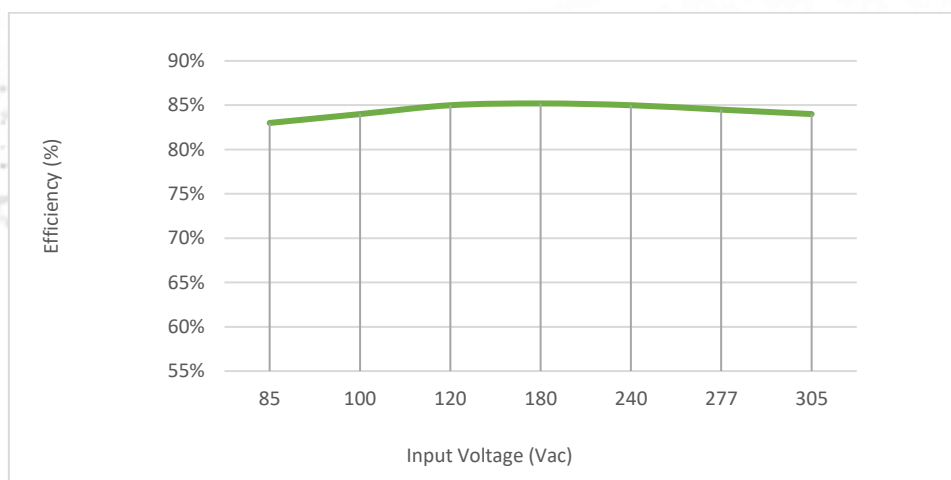
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Output vs Altitude



Efficiency Curves

Efficiency vs Input Voltage



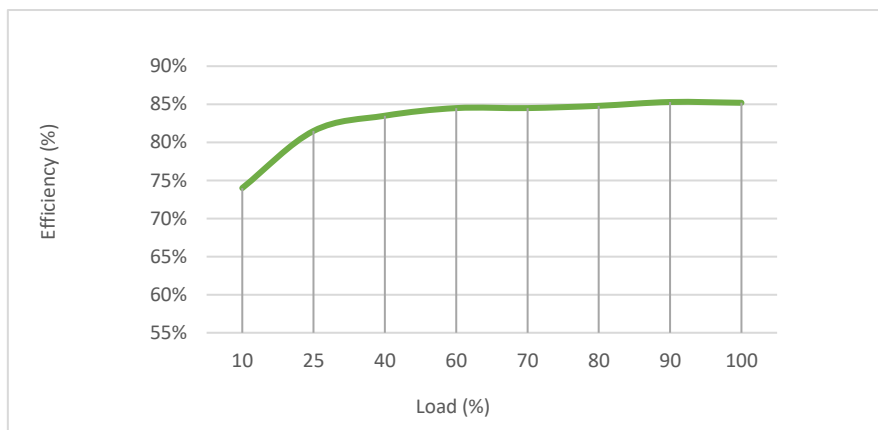
SAP10H, Full load

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Efficiency vs Load



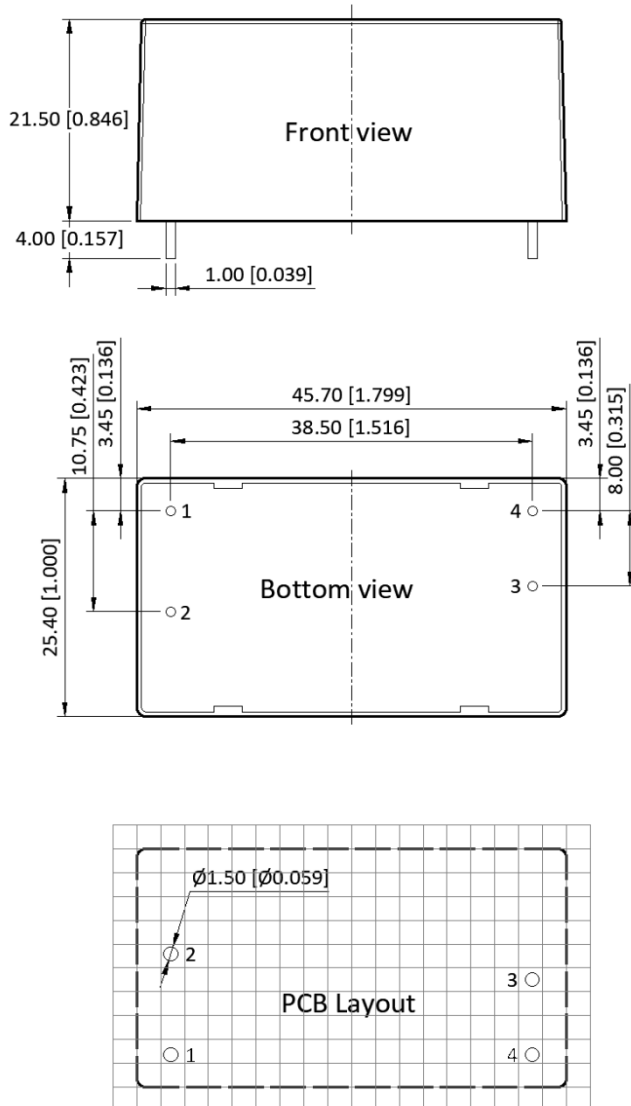
SAP10H, 230VAC

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Mechanical Specifications



Pin Definition

Pin #	Single Out	
1	AC (L)	
2	AC (N)	
3	+V _{OUT}	
4	-V _{OUT}	

* Unless otherwise specified unit:
mm [inch]

* General tolerance: ± 1.00 [± 0.040]

* Pin thickness: ± 0.15 [± 0.006]

* Pin distance: ± 0.50 [± 0.020]

* Footprint grid 2.54 x 2.54 mm

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Ordering information

Ordering can be done via www.summit-electronics.com or via info@summit-electronics.com. Please contact us for more information. Customisation of the product is available on request.

Technical support

For all product questions please contact us via info@summit-electronics.com

Document revision

Rev	Date	Changes
2025v0.1	26-08-2025	First issue of document