ASP10 Series

FiDUS
power in motion...

10 Watts

- 85-265VAC Input no derating
- IEC 62368-1 ITE approval & designed to meet IEC 60335-1 Home Appliance
- EI48 Transformer footprint
- -25 to +85°C Operation
- EN55032 Level B conducted & radiated
- 5 Year warranty

The ASP10 series of encapsulated AC-DC power modules are PCB mount and have low emissions, meeting EN55032 level B for both conducted and radiated noise. The units are suitable for home appliance designed to meet IEC60335-1, also they are approved to the latest IEC62368-1 safety standard. They provide 10W of power and have a wide temperature range from -25 to +85°C. The series offers low no-load power consumption of <0.1W and outputs are available from 3.3 to 24V. All models have a FiDUS 5 year warranty.

Dimensions:

1.89 x 1.57 x 1.02" (48 x 40 x 26mm)

Models & Ratings

Model Number	Output Power	Output voltage	Output Current	Efficiency	Capacitive Load
ASP10210	10W	3.3V	3000mA	72%	100,000uF
ASP10211	10W	5V	2000mA	74%	100,000uF
ASP10212	10W	9V	1100mA	80%	70,000uF
ASP10213	10W	12V	830mA	82%	33,000uF
ASP10214	10W	15V	670mA	82%	7,600uF
ASP10215	10W	18V	560mA	82%	5,300uF
ASP10216	10W	24V	420mA	82%	1,720uF

Key specifications

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
AC Input range	85		265	VAC	120-370 VDC also. No derating
Operating temperature	-25		85	°C	See derating curve
Efficiency	72		82	%	See model table above. At 230VAC full load
Dimensions	1.89 x 1.57 x 1.02" (48 x 40 x 26mm)				
EMC	EN55032 Level B Conducted and Radiated. EN61000-3 and EN61000-4, harmonics, flicker, Surge, EFT, ESD, conducted and radiated.				
Safety	UL / IEC / EN 62368-1, Designed to meet IEC / EN 60335-1, CE				

Input

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Input voltage	85		265	VAC	No derating
	120		370	VDC	DC fuse required.
Input frequency	47		63	Hz	
Power factor					EN61000-3-2 class A compliant
Input current			400	mA rms	230mA 115VAC and 140mA at 230VAC
Inrush current			25	A	Cold start at 25°C 230VAC
No load input power			0.1	W	

ASP10 Series

FiDUS
power in motion...

Output

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Output voltage	3.3		24	VDC	See Model & Ratings table
Set point accuracy		±2		%	
Line regulation		±1		%	From 85 to 265VAC
Load regulation		±1		%	0 to 100% load
Minimum load	0			%	
Ripple & Noise		150		mV pk-pk	Noise and ripple measured with 0.1uF ceramic and 47uF electrolytic. 20 MHz bandwidth 12" twisted pairs, 240VAC full load.
Transient response			110	%	50-100% load, 1A/us, 1kHz, 50% duty ratio.
Hold up time		5		mS	At 230VAC. Full load
Overload protection					Trip & restart. Automatic recovery
Short circuit protection					Trip & restart. Automatic recovery
Over temperature protection	130		150	%	Automatic recovery

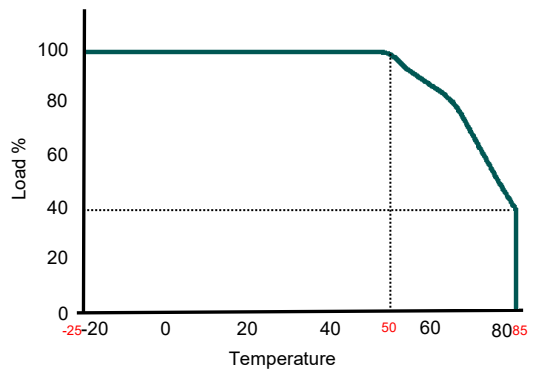
General

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency	72		82	%	See models & Ratings table. At 230VAC full load
Isolation	4000			VAC	Input to output
Power density			3.31	W/In^3	
MTBF		>550		KHrs	As per MIL-HDBK-217F, 25°C GB
Weight		76.5		g	

Environmental

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating temperature	-25		85	°C	See derating curve below . 10-90& RH
Storage temperature	-40		85	°C	5-95% RH
Cooling					Convection cooled

Derating curve



ASP10 Series

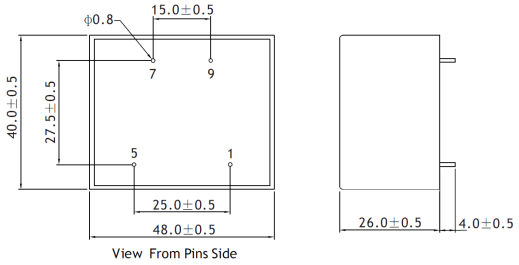
EMC: Emissions

	Standard	Test level	Criteria	Notes & Conditions
Conducted	EN55032	B		
Radiated	EN55032	B		
Harmonic current	EN61000-3-2	Class A		
Voltage flicker	EN61000-3-3			

Safety Approvals

	Safety standard	Notes & Conditions
UL	UL 62368-1	
CB	IEC 62368-1, Designed to meet IEC 60335-1	
TUV	EN 62368-1, Designed to meet EN 60335-1	
CE		2014/35/EU Low voltage directive
Equipment protection class		Class II

Mechanical Details



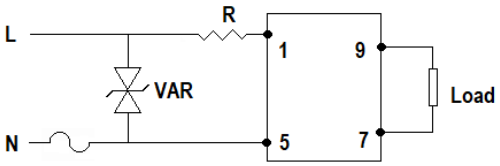
Pin Connections	
Pin	Function
1	Line
5	Neutral
7	+Vout
9	-Vout

* All dimensions shown in millimetres

Application note:

If the unit is required to withstand surge levels in excess of the standard 1KV, its surge performance can be enhanced with the following circuit for up to 6KV in accordance with EN600004-5, where:

R = 10R/1W to 3W resistance wire Ø0.1 to0.23
VAR = 14D471, 300Vac 118J
Fuse is 6.3A to 10A 250Vac slow blow



Output must remain floating and can not be directly connected to earth. Please utilise one of the following circuits where:

L = 10mH to 30mH
CX = X2 Cap 0.1uF to 22uF /275Vac
CY1/2 = Y cap 1000pf to 2200pF/400V