

**300W** CONVECTION COOLED

AC-DC power supplies

The VES300 with energy efficiency level VI and CoC tier 2 these 300W desktop/external AC-DC power supplies are designed for high volume/low cost applications.

With class I construction the VES300 are fitted with an IEC320-C14 inlet and have a voltage input range of 90 to 264VAC. Suitable UK, US and European mains cables are available to order separately.



## Features

- ▶ Single outputs from 19V to 48VDC
- ▶ Energy efficiency level VI
- ▶ European CoC Tier 2
- ▶ China compulsory certification (CCC) qualified
- ▶ High power density
- ▶ 0.15W standby power
- ▶ -10°C to +60°C operating temperature
- ▶ 1 year warranty

## Applications



Industrial electronics

Instrumentation

Technology

## Dimensions

197.4 x 88.9 x 39.0mm (7.77" x 3.5" x 1.53")

## Models & ratings

Model number	Output voltage	Output current	Total regulation	Efficiency <sup>(1)</sup>	Output power
VES300PS19	19.0VDC	15.79A	±5%	92%	300W
VES300PS24	24.0VDC	12.50A		92%	
VES300PS48	48.0VDC	6.25A		91%	

### Notes:

1. Typical average of efficiencies measured at 25%, 50%, 75% and 100% load and 230VAC input.

## Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage	90		264	VAC	Derate linearly from +100% load at 100VAC to 88% load at 90VAC
Input frequency	47		63	Hz	
Input current		2.9/1.5		A	Measured at 115/230VAC
Inrush current			120		230VAC, cold start at +25°C
Power factor	EN61000-3-2 Class A				
Earth leakage current			1	mA	264VAC, 60Hz
No load input power			0.15	W	
Input protection	T6.3A/250VAC internal fuse in line				

## Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage	19		48	VDC	See models & ratings
Initial set accuracy			±2	%	At 50% load
Minimum load	No minimum load required				
Start up delay			3	s	
Start up rise time			50	ms	
Hold up time	10			ms	Full load and 115VAC
Line regulation			±0.5	%	
Total regulation			±5	%	
Transient response			5	%	Maximum deviation, recovering to less than 1% within 500µs for 50% to 100% step load change
Ripple & noise			260/380	mV pk-pk	19-24/48VDC. Measured with 20MHz Bandwidth and 10µF electrolytic in parallel with 0.1µF ceramic capacitor.
Temperature coefficient		0.04		%/°C	
Short circuit protection	Trip and restart (hiccup), auto resetting				
Overshoot			10	%	At turn on / turn off
Overload protection	110		160	%	
Overvoltage protection			180	%	Recycle mains to reset

## General

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Efficiency		91		%	See models and ratings table and curves DoE Level VI, CoC Tier 2, MEPS
Isolation		3000		VAC	Input to output
		1500		VAC	Input to ground
		Output return is connected to input ground		VDC	Output to ground
	25		60	kHz	Variable. Main converter
		80			Variable. PFC stage
Power density		0.43 (7.1)		W/cm <sup>3</sup> (W/in <sup>3</sup> )	
Mean time between failure	100			khrs	MIL-HDBK-217F, 25°C GB
Weight		1340 (2.95)		g (lbs)	

## Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating temperature	-10		+60	°C	Derate from 100% load at +40°C to 50% load at +60°C
Storage temperature	-20		+95	°C	
Cooling	Natural convection				
Operating humidity	10		90	%	RH, non-condensing
Storage temperature	-20		+95	°C	
Operating altitude			5000	m	
Shock	IEC68-2-27, 30g, 30ms half sine, 3 times in each of 6 axes				
Vibration	IEC68-2-6, 10-300 Hz, 2g 15 mins/sweep, 60 mins for each of 3 axes, non operating				

## EMC: Emissions

Phenomenon	Standard	Test Level	Notes & conditions
Conducted	EN55032/FCC part 15	Class B	
Radiated	EN55032/FCC part 15	Class B	
Harmonic currents	EN61000-3-2	Class A	
Voltage flicker	EN61000-3-3		

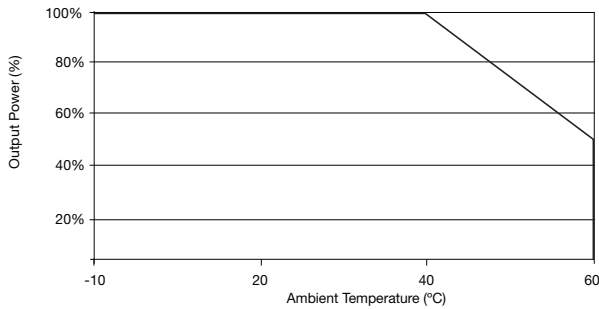
## EMC: Immunity

Phenomenon	Standard	Test Level	Criteria	Notes & conditions
ESD immunity	EN61000-4-2	±8kV Air, ±6kV contact	A	
Radiated immunity	EN61000-4-3	3V/m	A	
EFT/burst	EN61000-4-4	2kV	A	
Surge	EN61000-4-5	Installation Class 3	A	
Conducted	EN61000-4-6	3V	A	
Magnetic fields	EN61000-4-8	3A/m	A	
Dips and interruptions	EN61000-4-11	Dip: 30% 500ms	A/B	High line/low line
		Dip: 100% 5000ms	B	
		Int: 100% 10ms	B	

## Safety approvals

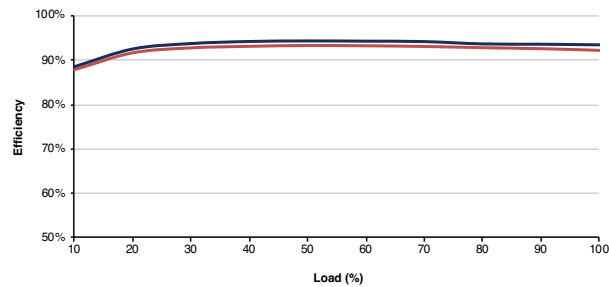
Certification	Standard	Notes & conditions
UL	UL62368-1	Approved for 0 to +40°C ambient.
EN	EN62368-1	
CB	IEC62368-1	
AU/NZ	AU/NZ 62368-1	
CCC	China Compulsory Certification, GB4943	
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

## Derating curve

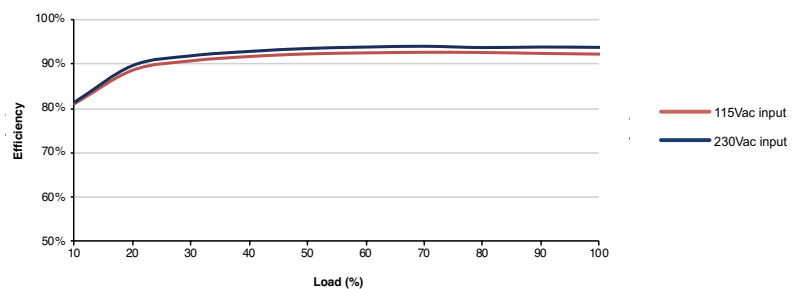


## Efficiency curve

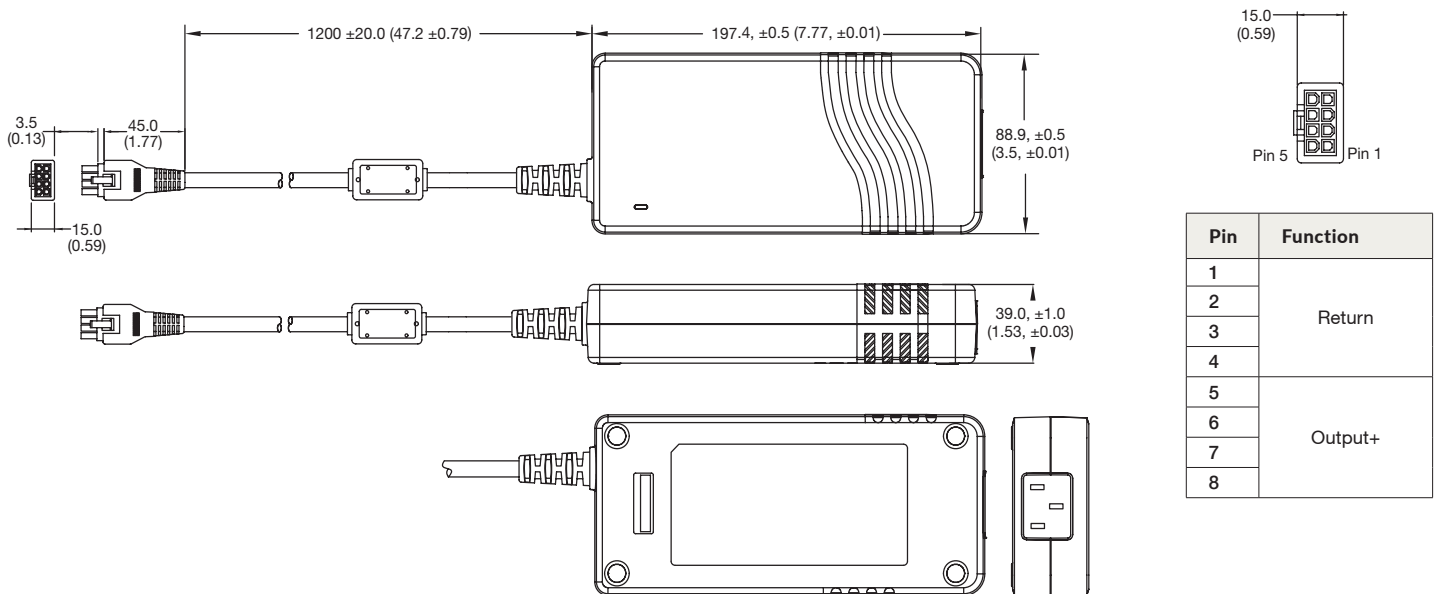
VES300US12



VES300US24



## Mechanical details



### Notes:

- All dimensions shown in mm (inches). Tolerance is 0.5 (0.02) maximum, except output cable length.
- Output connector: molex Mini Fit JR, 8 way, mates with molex series #5569 plugs.
- Weight: 1340g (2.95lbs) approx.
- Output lead gauge is 16AWG.
- For European mains lead, order part EU-MAINS-IEC, For UK mains lead order part UK-MAINS-IEC, For US mains lead order part US-MAINS-IEC

Specifications subject to change without notice.