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VEL12 series

XP Power

12W

AC-DC power supplies

The VEL12 series of wall plug adaptors comply with energy efficiency VI standards, have high active mode efficiency and extremely low no load power consumption.

Available in US, UK & EU plug formats, the DC lead has a 5.5mm x 2.1mm centre positive barrel jack plug connector, these adaptors suit a wide variety of cost sensitive applications while maintaining industry leading performance.



Features

- Regulated single outputs 5V to 12VDC
- Energy efficiency level VI
- European CoC tier 2
- Fixed mains connectors
- Universal input
- Class II construction
- 1 year warranty

Applications

Industrial electronics

Instrumentation

IoT

Technology

Dimensions

Body only:

-US: 76.0 x 29.5 x 43.87mm (2.99” x 1.16” x 1.73”)

-EU: 76.0 x 29.5 x 39.37mm (2.99” x 1.16” x 1.55”)

-UK: 76.0 x 49.5 x 46.37mm (2.99 x 1.95 x 1.83”)

Documentation

For further information click the link or scan the code

→ xppower.com

Models & ratings

Model number[3]	Output voltage[1]	Output current	Total regulation[2]	Efficiency	Output connector	Output power
VEL12US050-XX-JA	5.0VDC	2100mA	±5%	76%	5.5 x 2.1 x 12mm DC Jack	12W
VEL12US090-XX-JA	9.0VDC	1280mA		78%	5.5 x 2.1 x 12mm DC Jack	
VEL12US120-XX-JA	12.0VDC	1000mA		79%	5.5 x 2.1 x 12mm DC Jack	

Notes:

1. Other output voltages available, contact sales for details.
2. Total regulation includes initial set accuracy, line and load regulation.
3. Replace ‘XX’ in model number with ‘US’ for US mains plug, ‘UK’ for UK mains plug or ‘EU’ for European mains plug.

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Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage	90		264	VAC	
Input frequency	47		63	Hz	
Power factor					EN61000-3-2 class A
Input current			0.3	A	100VAC
Inrush current			60	A	240VAC cold start, +25°C
No load input power			0.1	W	
Input protection	Internal T1.0A/250VAC fuse				

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage	5		12	VDC	See models & ratings
Minimum load	No minimum load required				
Start up delay			4	s	
Start up rise time		30		ms	
Hold up time		11		ms	Full load and 115VAC
Total regulation	5		10	%	See models & ratings
Transient response			4	% deviation	Recovery within <1% within 500µs for a 50% step load change at 0.15A/µs
Ripple & noise			200	mV pk-pk	20MHz bandwidth and 47µF electrolytic in parallel with 0.1µF ceramic capacitor
Temperature coefficient			0.05	%/°C	
Short circuit protection	Continuous, trip and restart (hiccup mode) with auto recovery				

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Efficiency	79		83	%	5VDC/9VDC, 12VDC typical average of efficiencies measured at 25%, 50%, 75% and 100% load and 115VAC input
Energy efficiency					Level VI
Isolation: input to output		3000		VAC	
Switching frequency	24		70	kHz	Variable
Mean time between failure	100			khrs	MIL-HDBK-217F, +25°C GB
Weight		0.19 (85)		lb (g)	

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating temperature	0		+60	°C	Derate from 100% load at +40°C to 50% load at +60°C
Storage temperature	-40		+85	°C	
Cooling	Natural convection				
Operating humidity	5		95	%	RH, non-condensing
Shock	1m drop onto concrete on each of 6 axes				
Vibration	10		300	Hz	2g, 15 mins/sweep, 30 mins for each of 3 axes

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EMC: Emissions

Phenomenon	Standard	Test level	Notes & conditions
Conducted	EN55032	Level B	
Radiated	EN55032	Level 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	2, 3	B	±4kVDC contact, ±8kVDC air
Radiated immunity	EN61000-4-3	3V/m	A	
Eft/burst	EN61000-4-4	Level 2	B	
Surge	EN61000-4-5	Level 2	A	
Conducted	EN61000-4-6	3V	A	
Magnetic field	EN61000-4-8	1A/m	A	
Dips and interruptions	EN55035	Dip: 100% 10ms	A	
		Dip: 30% 500ms	A	
		Int: 100% 5000ms	B	

Safety approvals

Certification	Standard	Notes & conditions
UL	UL62368-1	
EN	EN60950-1, EN62368-1	
CB	IEC60950-1, IEC62368-1	
CCC	China Compulsory Certification, GB4943	
AU/NZ	AU/NZ 60950.1	
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

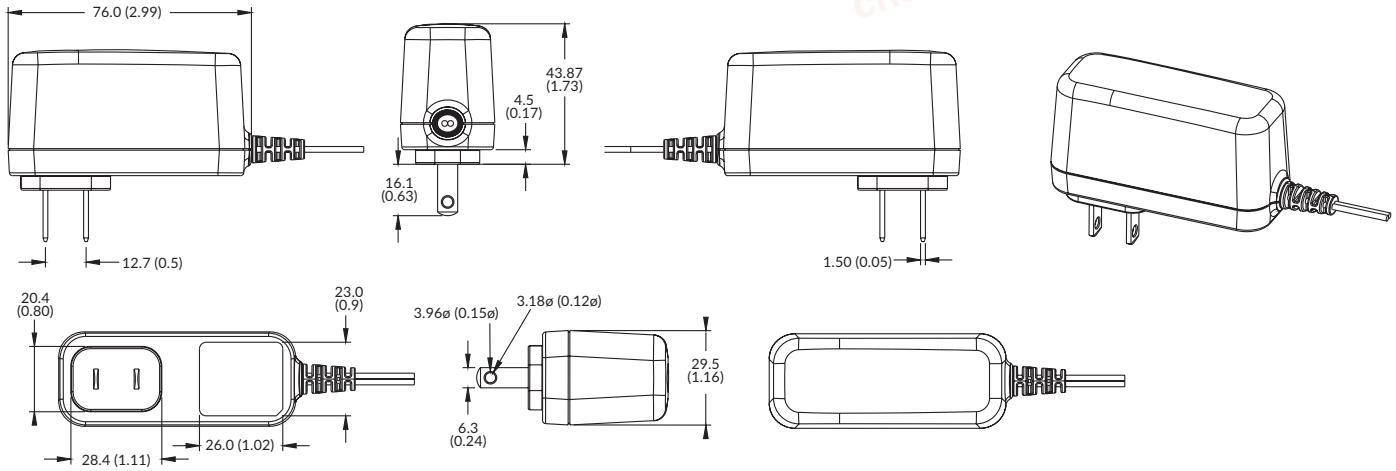
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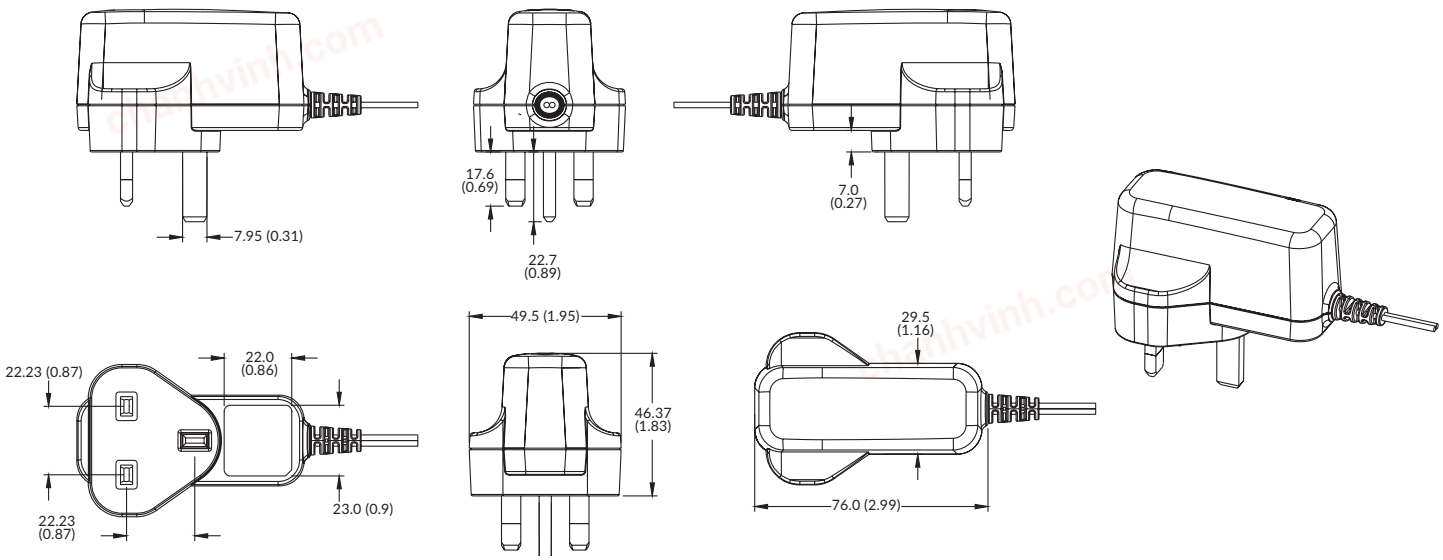
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Mechanical details

VEL12US-US-JA



VEL12US-UK-JA



Notes:

1. Dimensions in mm (inches).

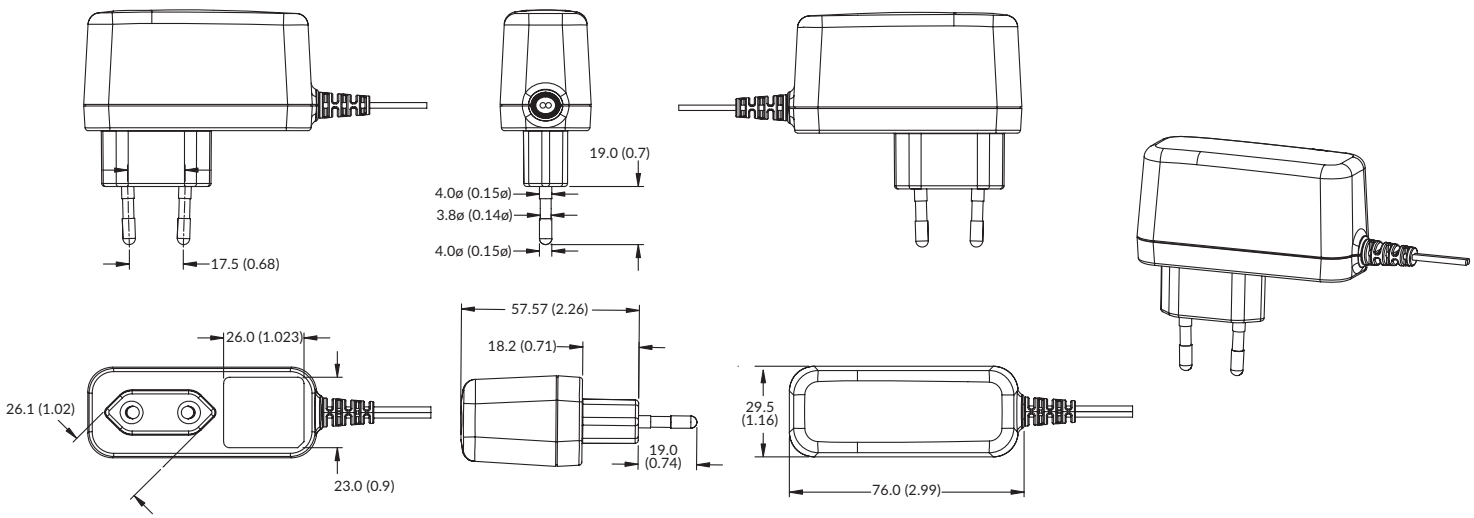
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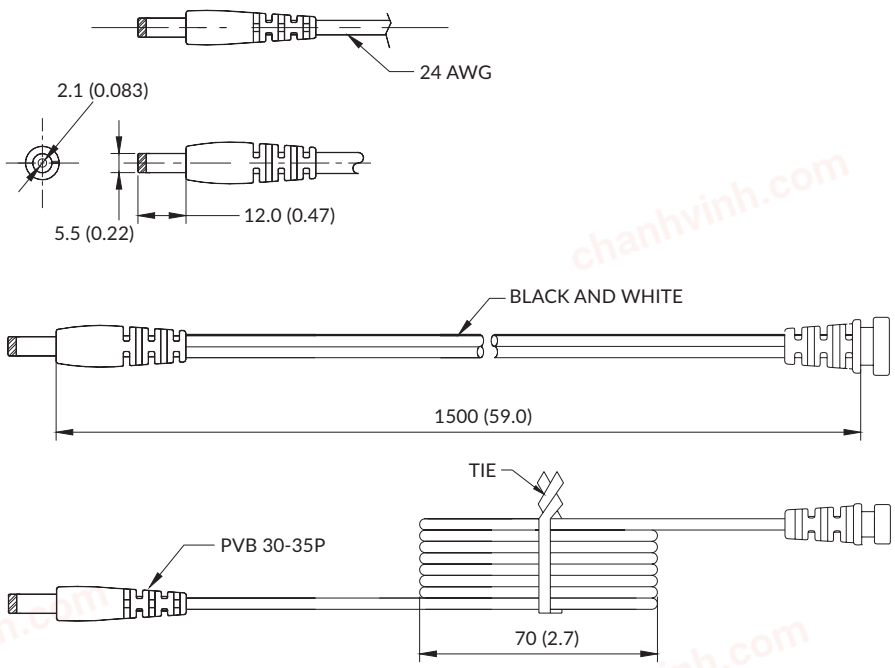
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Mechanical details

VEL12US-EU-JA



Output Lead and Connection



Wire type: VW-1 80°C 300 V L=1500 mm 2464 24 AWG 2C Black and White. Black - Negative, White - Positive

The polarity 

Notes:

1. Dimensions in mm (inches).