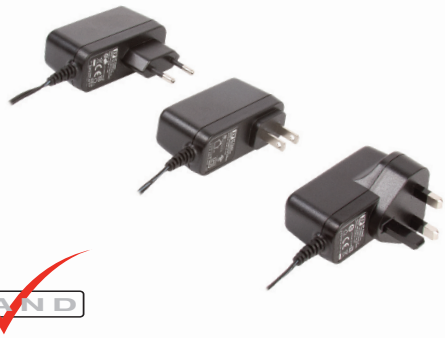
VEL24 Series

AC-DC Power Supplies

XP Power

24 Watt

- Energy Efficiency Level VI
- European CoC Tier 2
- Fixed Mains Connectors
- Universal Input
- Output Voltages from 12 V to 24 V
- Class II Construction
- Low Cost



The VEL24 series of wall plug adaptors comply with the very latest energy efficiency VI standards with high active mode efficiency and extremely low no load power consumption. Available with a standard jack plug connector these adaptors suit a wide variety of cost sensitive applications while maintaining industry leading performance.

Dimensions:

VEL (body only):
-US: 3.54 x 1.34 x 1.87" (90.0 x 34.0 x 47.5 mm)
-EU: 3.54 x 1.34 x 2.26" (90.0 x 34.0 x 57.57 mm)
-UK: 3.54 x 1.95 x 1.96" (90.0 x 49.5 x 50.0 mm)

Models & Ratings

Output Power	Output Voltage	Output Current	Total Regulation[2]	Output Connector	Model Number[3]
24 W	12.0 V	2000 mA	5%	5.5 x 2.1 x 12 mm DC Jack	VEL24US120-XX-JA
	15.0 V	1600 mA	5%	5.5 x 2.1 x 12 mm DC Jack	VEL24US150-XX-JA
	18.0 V	1320 mA	5%	5.5 x 2.1 x 12 mm DC Jack	VEL24US180-XX-JA
	24.0 V	1000 mA	5%	5.5 x 2.1 x 12 mm DC Jack	VEL24US240-XX-JA

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.

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage	90		264	VAC	
Input Frequency	47		63	Hz	
Input Current			0.6	A	100 VAC
Inrush Current			60	A	240 VAC, cold start at 25 °C
Power Factor					EN61000-3-2, class A
No Load Input Power			75	mW	
Input Protection	Internal T1.0A/250 VAC fuse				

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage	12		24	V	See Models and Ratings table
Minimum Load	0			A	No minimum load required
Start Up Delay			4	s	
Start Up Rise Time		55		ms	
Hold Up Time	8			ms	Full load and 100 VAC
Total Regulation			5	%	See Models and Ratings table
Transient Response			4	% deviation	Recovely within <1% within 500 µs for a 60% step load change at 0.15 A/µs
Ripple & Noise			200	mV pk-pk	Measured with 20 MHz bandwidth and 47 µF electrolytic in parallel with 0.1 µF ceramic capacitor
Short Circuit Protection					Continuous, trip and restart (hiccup mode) with auto recovely
Temperature Coefficient			0.05	%/°C	

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency		85		%	Typical average of efficiencies measured at 25%, 50%, 75% and 100% load and 115 VAC input
Energy Efficiency					Level VI
Isolation	3000			VAC	Input to Output
Switching Frequency	24		70	kHz	Variable
Mean Time Between Failure	250			kHrs	MIL-HDBK-217F at 25 °C GB
Weight		0.29 (130)		lb (g)	For UK Plug Version

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	
Operating Humidity	5		95	%	RH, non-condensing
Cooling					Natural convection
Shock					1 m drop onto concrete on each of 6 axes
Vibration	10		300	Hz	2 g 15 mins/sweep, 60 mins for each of 3 axes

EMC: Emissions

Phenomenon	Standard	Test Level	Notes & Conditions
Conducted	EN55032	Level B	
Radiated	EN55032	Level B	
Harmonic Current	EN61000-3-2	Class A	
Voltage Flicker	EN61000-3-3		

EMC: Immunity

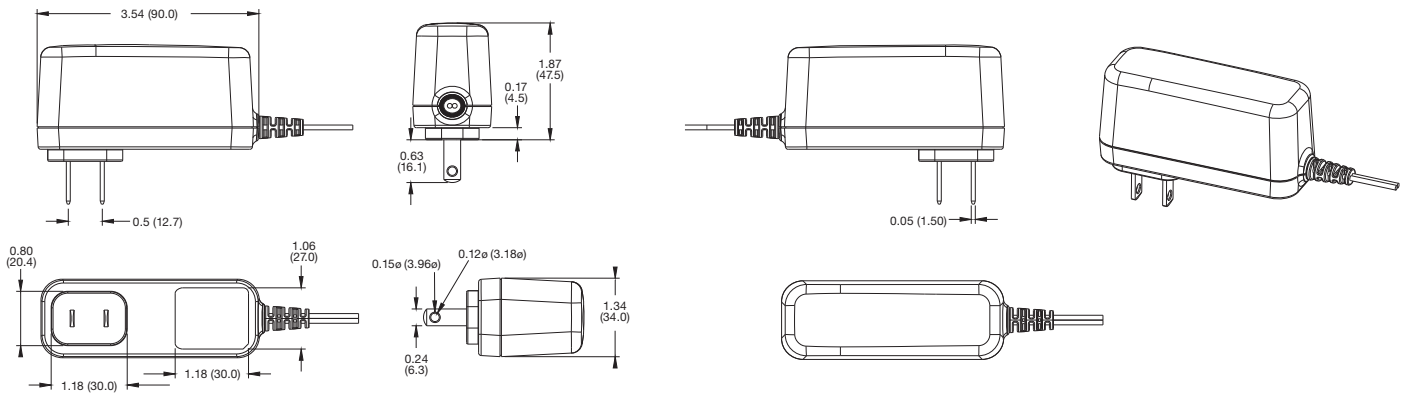
Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
ESD Immunity	EN61000-4-2	±4 kV contact, ±8 kV air	A	
Radiated Immunity	EN61000-4-3	3 V/m	A	
EFT/Burst	EN61000-4-4	Level 2	A	
Surge	EN61000-4-5	Level 2	A	
Conducted Immunity	EN61000-4-6	3 V	A	
Magnetic Fields	EN61000-4-8	1 A/m	A	
Dips and Interruptions	EN55024 100% 10 ms, 30% 500 ms, 100% 5000 ms, Perf Criteria A, A, B			

Safety Approvals

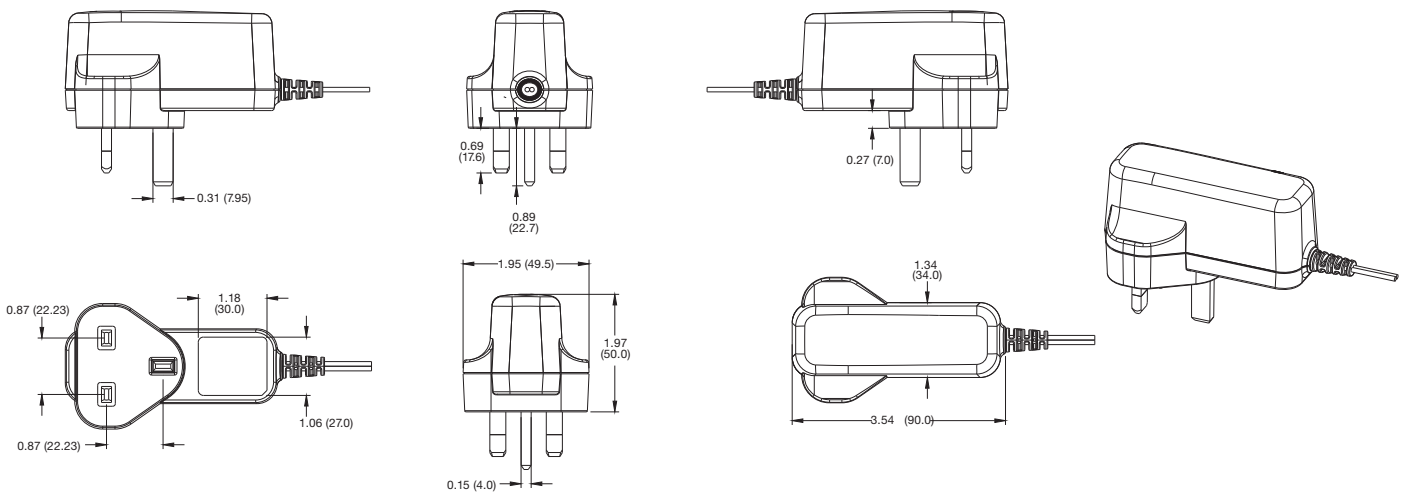
Phenomenon	Standard
CB Report	IEC60950-1
UL	UL/cUL60950-1, approved as limited power source (LPS)
TUV	EN60950-1
CCC	China Compulsory Certification, GB4943
AU/NZ	AU/NZ 60950.1

Mechanical Details

VEL24US-US-JA

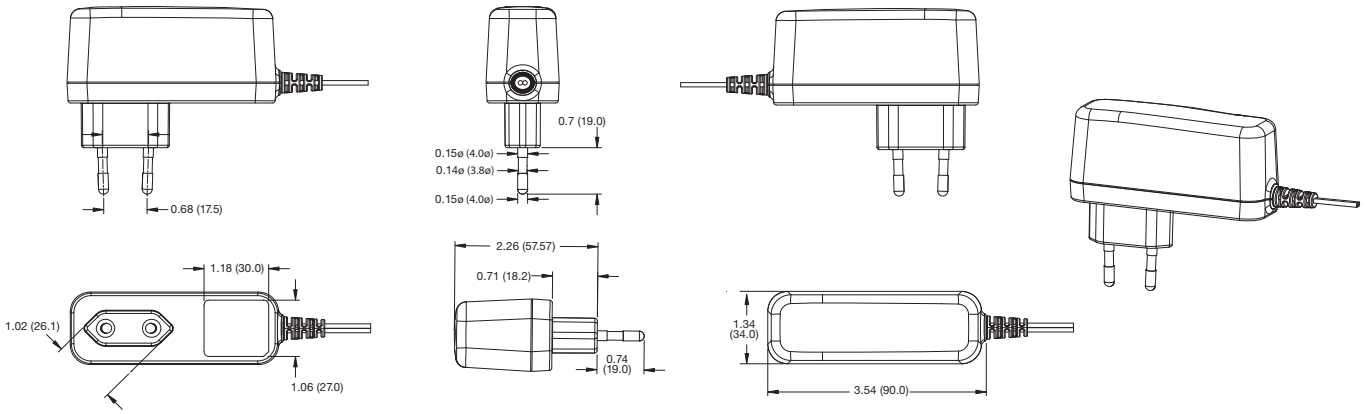


VEL24US-UK-JA

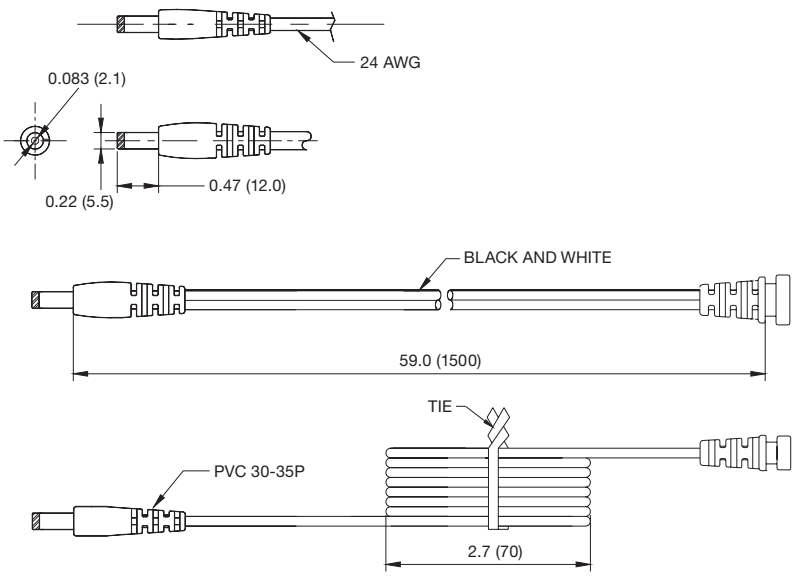


Mechanical Details

VEL24US-EU-JA



Output Lead and Connection



Wire type: VW-1 80°C 300 V L=1500 mm 2468 20 AWG for 5 V output, 22 AWG for 9 V ouput, 24 AWG for 12 V output, 2C Black and White. Black - Negative, White - Positive

Polarity