

18W

AC-DC
power supplies

The VEL18 series of wall plug adaptors comply with energy efficiency VI standards, have high active mode efficiency and extremely low no load power consumption.

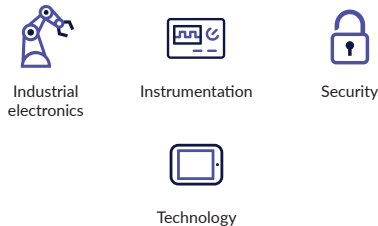
Available in US, UK & EU plug formats, the DC lead has a 5.5mm x 2.1mm centre positive barrel jack plug connector, these adaptors suit a wide variety of cost sensitive applications while maintaining industry leading performance.



Features

- ▶ Regulated single outputs 9.0V to 24.0VDC
- ▶ Energy efficiency level VI
- ▶ European CoC tier 2
- ▶ Fixed mains connectors
- ▶ Universal input
- ▶ Class II construction
- ▶ 1 year warranty

Applications



Dimensions

Body only:

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

Models & ratings

| Model number ⁽³⁾ | Output voltage | Output current | Total regulation ⁽²⁾ | Output connector | Output power |
|-----------------------------|----------------|----------------|---------------------------------|--------------------------|--------------|
| VEL18US090-XX-JA | 9.0VDC | 2000mA | 5% | 5.5 x 2.1 x 12mm DC Jack | 18W |
| VEL18US120-XX-JA | 12.0VDC | 1500mA | | 5.5 x 2.1 x 12mm DC Jack | |
| VEL18US150-XX-JA | 15.0VDC | 1250mA | | 5.5 x 2.1 x 12mm DC Jack | |
| VEL18US180-XX-JA | 18.0VDC | 1000mA | | 5.5 x 2.1 x 12mm DC Jack | |
| VEL18US240-XX-JA | 24.0VDC | 750mA | | 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.

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 | | | 0.6 | A | 100VAC |
| Inrush current | | | 60 | A | 240VAC cold start, +25°C |
| No load input power | | | 75 | mW | |
| Input protection | Internal T1.0A/250VAC fuse | | | | |

Output

| Characteristic | Minimum | Typical | Maximum | Units | Notes & conditions |
|--------------------------|---|---------|---------|-------------|--|
| Output voltage | 9 | | 24 | VDC | See models & ratings table |
| Minimum load | No minimum load required | | | | |
| Start up delay | | | 4 | s | |
| Start up rise time | | 30 | | ms | |
| Hold up time | 8 | | | ms | Full load and 100VAC |
| Total regulation | | | 5 | % | See models & ratings |
| Transient response | | | 4 | % deviation | Recovery within <1% within 500µs for a 60% step load change at 0.15A/µs |
| Ripple & noise | | | 200 | mV pk-pk | Measured with 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 | | 85 | | % | Typical average of efficiencies measured at 25%, 50%, 75% and 100% load and 115VAC 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, 25°C GB |
| Weight | | 85 (0.19) | | g (lb) | |

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, 60 mins for each of 3 axes |

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 | ±4kV contact, ±8kV air | A | |
| Radiated immunity | EN61000-4-3 | 3V/m | A | |
| EFT/burst | EN61000-4-4 | Level 2 | A | |
| Surge | EN61000-4-5 | Level 2 | A | |
| Conducted | EN61000-4-6 | 3V | A | |
| Magnetic field | EN61000-4-8 | 1A/m | A | |
| Dips and interruptions | EN55024 100% 10 ms, 30% 500 ms, 100% 5000 ms, Perf Criteria A, A, B | | | |

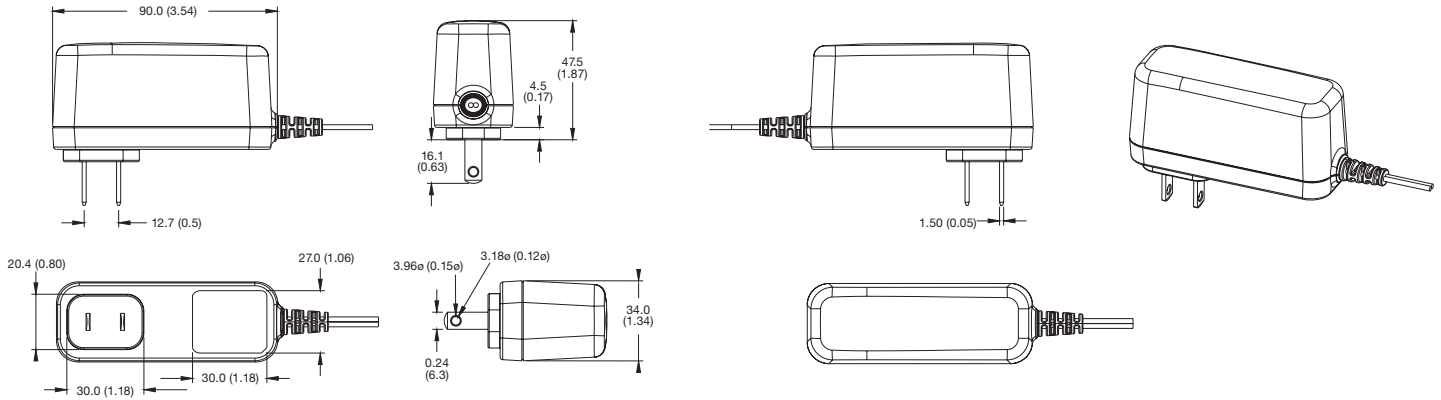
Safety approvals

| 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 | |

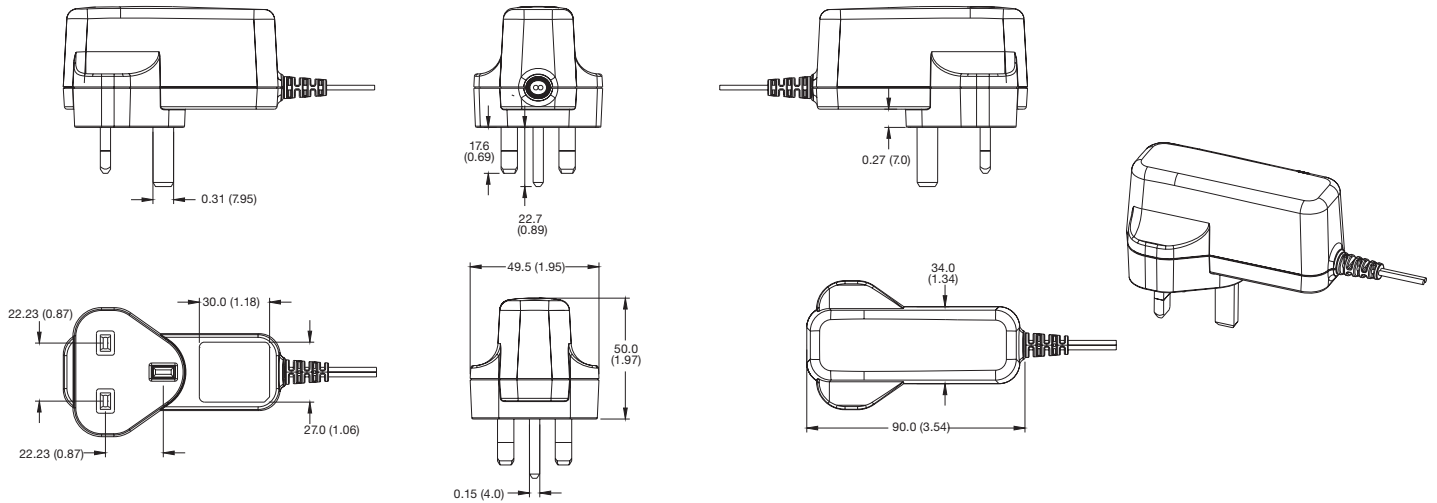
VEL18 series

Mechanical details

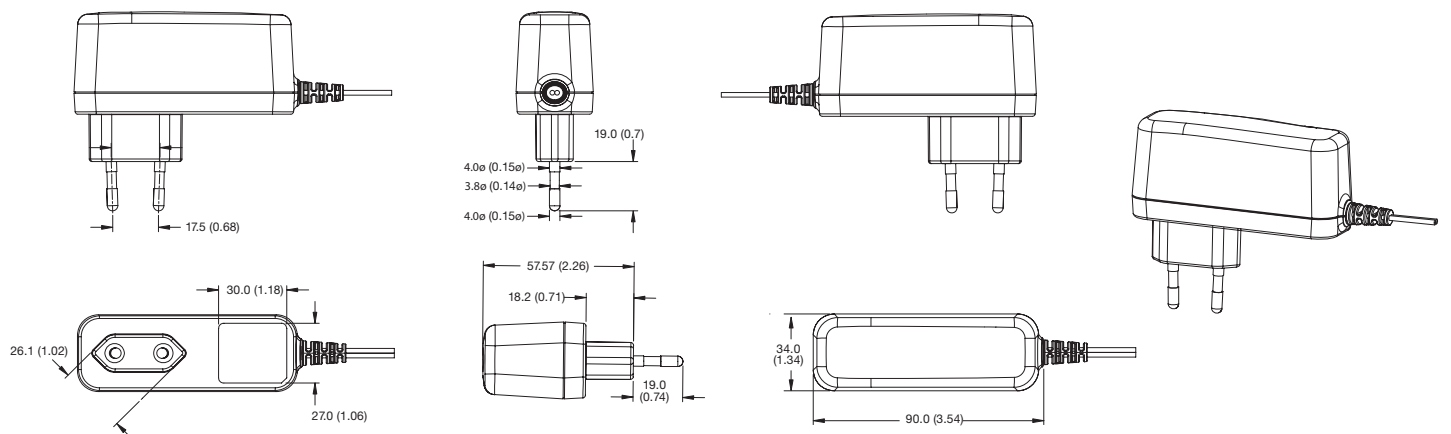
VEL18US-US-JA



VEL18US-UK-JA



VEL18US-EU-JA

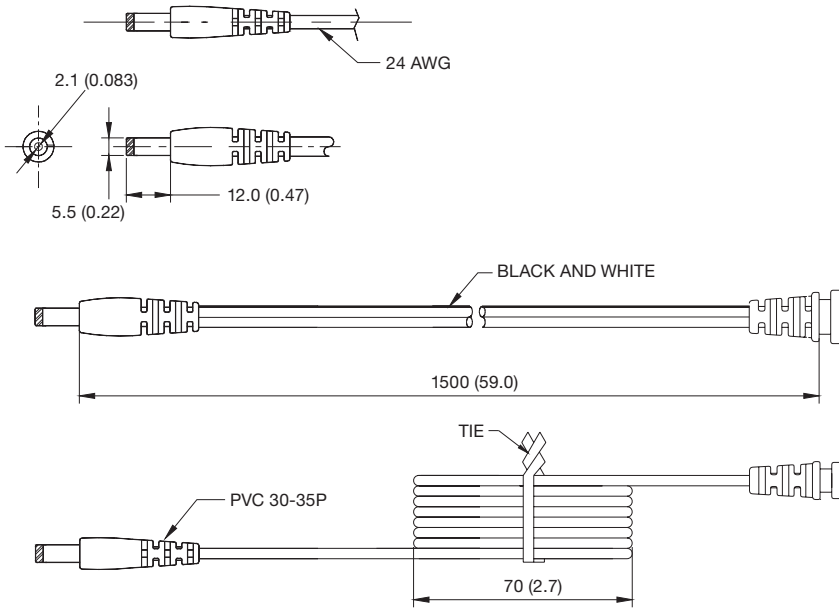


Notes:

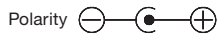
1. Dimensions in mm (inches).

Mechanical details

Output lead and connection



Wire type: VW-1 80°C 300V L=1500 mm 2468 18 AWG for 9V output, 24 AWG for other outputs, 2C Black and White. Black - Negative, White - Positive



Notes:

1. Dimensions in mm (inches).

Specifications subject to change without notice.