

## 36W

AC-DC  
power supplies

The VER36 series of 36W class II wall plug adaptors comply with energy efficiency VI standards, have high active mode efficiency, low no load power consumption and are limited power source (LPS) approved.

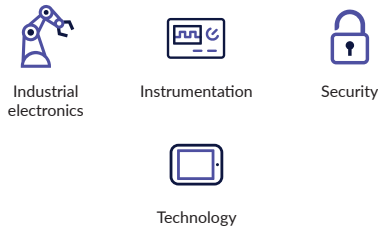
Supplied complete with interchangeable US, UK, EU, CN & AU mains plugs, the DC lead has a 5.5mm x 2.1mm centre positive barrel jack plug connector, these adaptors suit a wide variety of cost sensitive applications while maintaining industry leading performance.



### Features

- ▶ Energy efficiency level VI
- ▶ European CoC tier 2
- ▶ Interchangeable AC mains connectors included
- ▶ Universal input
- ▶ Output voltages from 12.0VDC to 24.0VDC
- ▶ Class II construction
- ▶ Low cost
- ▶ 1 year warranty

### Applications



### Dimensions

**Body only:**  
94.5 x 47.0 x 43.9mm (3.72" x 1.85" x 1.71")

### Models & ratings

| Model number                 | Output voltage | Output current | Total regulation <sup>(2)</sup> | Output connector         | Output power |
|------------------------------|----------------|----------------|---------------------------------|--------------------------|--------------|
| VER36US120-JA <sup>(3)</sup> | 12.0VDC        | 3000mA         | 5%                              | 5.5 x 2.1 x 12mm DC Jack | 36W          |
| VER36US150-JA                | 15.0VDC        | 2400mA         |                                 | 5.5 x 2.1 x 12mm DC Jack |              |
| VER36US180-JA                | 18.0VDC        | 2000mA         |                                 | 5.5 x 2.1 x 12mm DC Jack |              |
| VER36US240-JA                | 24.0VDC        | 1500mA         |                                 | 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. Meets DOE efficiency level VI and CoC V5 tier 1, not tier 2.

## 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       |                            |         | 0.8     | 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           | 12  |         | 24      | VDC         | See models & ratings   |
| Minimum load             | No minimum load required                                      |         |         |             |  |
| Start up delay           |   |         | 4       | s           |  |
| Start up rise time       |   | 30      |         | ms          |  |
| Hold up time             | 10  |         |         | 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           |   |         | 150     | 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                    |          | 151 (0.33) |         | g (lb) | Body only  |

## 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

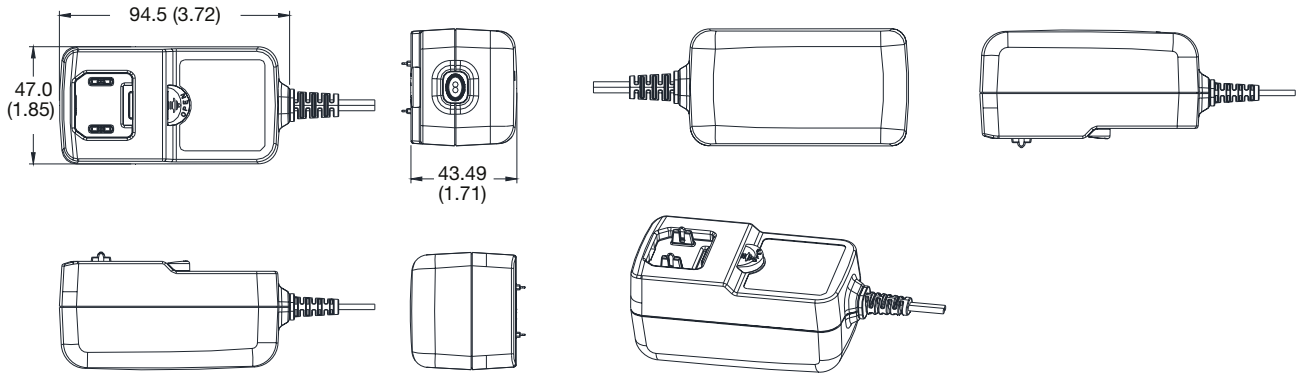
| Phenomenon             | Standard  | Test level             | Criteria | Notes & conditions |
|------------------------|---|------------------------|----------|--------------------|
| ESD immunity           | EN61000-4-2   | ±4kV contact, ±8kV air | A        |                    |
| Radiated immunity      | 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 | EN55035 100% 10 ms, 30% 500ms, 100% 5000ms, Perf Criteria A, A, B |                        |          |                    |

## Safety approvals

| Certification | Standard                               | Notes & conditions                     |
|---------------|--|--|
| UL            | UL/cUL62368-1                          | Approved as limited power source (LPS) |
| EN            | EN60950-1, EN62368-1                   |  |
| CB            | IEC60950-1, IEC62368-1                 |  |
| CCC           | China Compulsory Certification, GB4943 |  |
| AU/NZ         | AU/NZS62368.1, AU/NZS3112              |  |
| CE            | Meets all applicable directives        |  |
| UKCA          | Meets all applicable legislation       |  |

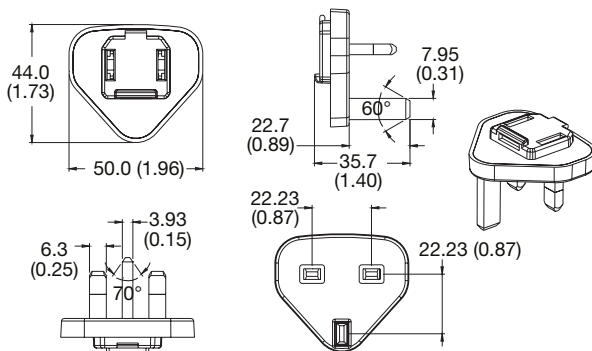
## Mechanical details

### VER36US

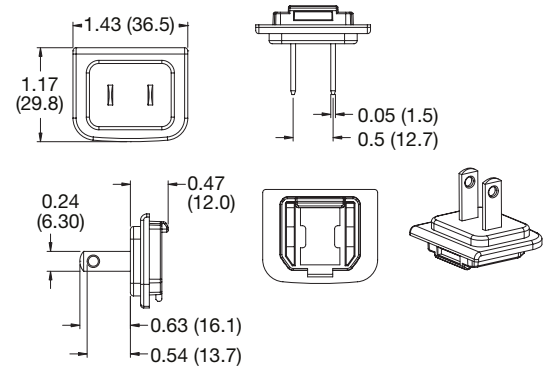


### AC input plugs

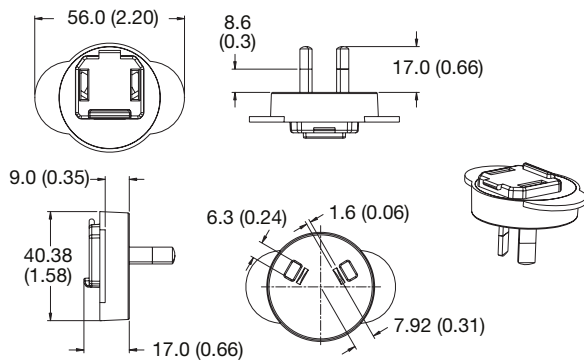
#### UK plug



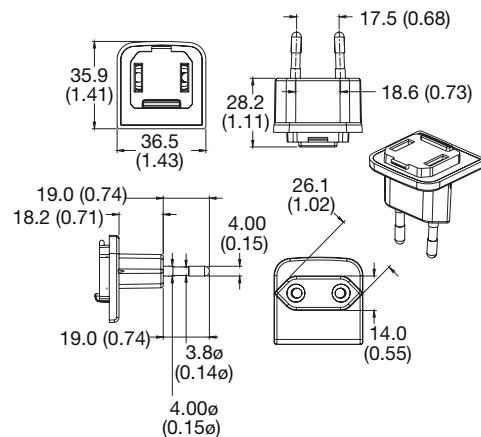
#### US plug



#### AU plug



#### EU plug

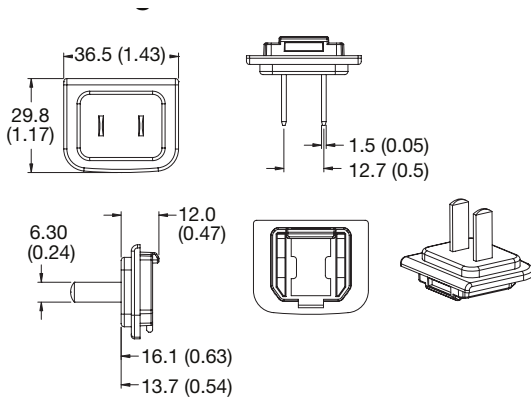


### Notes:

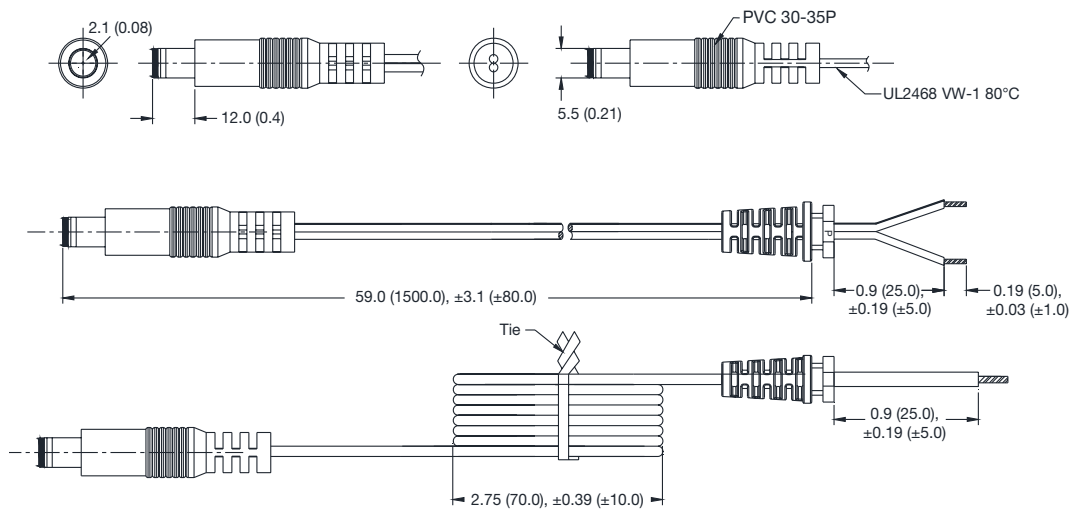
1. Dimensions in mm (inches).

## Mechanical details

### CN plug



### Output lead and connection



Wire type: VW-1 80°C 300V L=1500 mm 2468 18AWG for 12V output, 20AWG for 15V output, 22AWG for 18 and 24V output, 2C Black and White. Black - Negative, White - Positive

Polarity  $\ominus$   $\oplus$

### Notes:

1. Dimensions in mm (inches).

Specifications subject to change without notice.