

## Using the PowerSolve PS036-10A Micro DC UPS

This micro DC UPS acts as a battery backup for many types of small electronic devices, like routers, switches, cameras and VOIP phone systems. When connected to a compatible device that normally uses an AC/DC adapter it will provide emergency power in the event of a mains 230V power cut

It is designed to be plugged in series between the device and its AC/DC adapter\*\*. Thereby introducing a battery backup with minimal fuss. It includes a voltage sensing circuit that matches the UPS to the AC/DC adapter, the compatible voltages that are auto matched are 12/15/19/24V at up to 36Watts output.

The PS036-10A has two separate outputs. One is permanently wired to a standard 5.5/2.1mm jack, the second available connection is via a rewireable "molex style" 2 pin connector. This allows a second device with a different type of connector to be supplied with power. The auto selected output voltage is common to both connection. Battery capacity is shared between the two outputs. The UPS is supplied with a set of 6 adaptor jacks to allow it to connect to a variety of barrel/pin sizes.

The PS036 contains 4 off 2500mAh lithium-ion cells, arranged in a 2S2P form, with a nominal total capacity of 37Wh. Performance testing on a unit found that the usable capacity when supplying 6 Watts at 12VDC was 25Wh.

**\*\*This approach assumes that the device's AC/DC adapter is capable of supplying both the electronic device and the additional power required to recharge the UPS batteries following a power cut. Testing has shown that the PS036 requires around 6Watts or (0.5Amps at 12V) to recharge its batteries, typical full discharge to recharge time is around 7hours. Due consideration of this power requirement should be made when connecting the PS036 into an existing set up, and the AC/DC adapters power budget managed accordingly. If in doubt you should use an uprated AC/DC supply.**

### **Using the PS036-10A with B4RN supplied routers.**

The Zyxel VMG8825 that was tested was supplied with a 36Watt AC/DC adapter. Analysis of the VMG8825 power usage showed that when operating wifi and ethernet, the actual demand was around 6 watts. This means the supplied AC/DC adapter was easily capable of powering both the router and the UPS recharge power of 6 Watts. If the router is configured to power USB devices and multiple directly connected telephones, the total power of the external devices must not exceed 24 Watts.

When powering a **Zyxel VMG8825** from the PS036 in battery mode, the router ran for **4Hours 10Minutes**. The router had one ethernet link in use along with Wifi active. Neither the router USB or Telephone ports were being operated.

A Genexis DRG 7820 that was tested was supplied with a 24Watt AC/DC Adapter, which is easily capable of supplying both the router nominal operating power demand of 5 Watts and the UPS recharge power of 6 Watts. The DRG 7820's operated by B4RN are not configured to support directly connected telephones. The DRG7820 USB port is capable of delivering 2.5Watts.

When powering a **Genexis DRG 7820** from the PS036 in battery mode, the router ran for **5 Hours**. The router had Wifi active.

The PS036-10A provides an audible warning when a mains input power cut occurs, and the indicator LED changes from green to orange. A further audible warning is generated continuously once the battery power level falls below approx. 20% remaining. The warning tone and volume of the unit tested were hard to ignore and there is no simple method of temporarily muting the warning, this warning tone can run continuously for over an hour depending on the rate of power use.

# DC ONLINE MINI UPS

MODEL: POS36-10A

## Features

- DC On-line UPS / Auto Start
- Auto-Detect Voltage 12V / 15V/ 19V / 24V
- Digital with Microprocessor Control
- Real Time Back Up
- Uses Battery IC Protection
- LED indicator
- Secondary Output - Screw Terminal
- Over Discharge, Overload, Short Circuit, Over Charge & Surge Protection
- Desk Top or Wall Mounting



The POS36-10A can be used with a standard AC-DC desk top power supply to give battery back up in the event of an AC power failure. A 50W AC-DC power supply would be sufficient to charge the batteries and power the output at full load. So if you want 12V output you need a 12V input and so on. Powersolve have a range of suitable AC-DC adaptors for this purpose.



Specification	
Model	POS36-10A
DC Input Voltage	12V, 15V, 19V, 24V auto detect
DC Output Voltage	12V, 15V, 19V or 24V follows DC input voltage
Output Current	12V 3A, 15V 2.4A, 19V 1.89A or 24V 1.5A
Output Power	36 Watts
Battery Type	Lithium Ion 3.7V 18650 battery cells
Battery Voltage/Capacity	7.4V, 4 x 2500mAh cells (2S2P)
Charging Time	75% 2 hours, 90% 4 hours, 100% 8 hours
LED Indication (3)	Power ON & Charging, Function Alarm, Battery Mode
Protection - Input	Fuse for Overload & Short Circuit Protection
Protection - Output	MCU for Over Discharge, Overload, Short Circuit Protection
Protection - Battery	IC for Over Charge, Over Discharge, Overload, Short Circuit Protection
DC Input Connector	5.5mm x 2.1mm power socket
DC Output Lead	300mm 20AWG lead terminated in 5.5mm x 2.1mm power jack plug
Auxiliary Output	2 way screw terminals
Back Up Time (approx)	Continuous: 12V 3A (36W) 25 mins, 12V 1A (12W) 2Hours 10 mins (In real world applications back up time likely to be much longer as operating load usually not continuous)
Accessories	Multi input and output connector pack
Case Material	ABS 94V0 - Black
Weight & Dimensions	N.W 320g / G.W 400g / 105mm x 80mm x 43mm

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<https://powersolve.co.uk/product/pos36-10a/>

Quoted prices Oct2020 £53.50 +Carriage+VAT, Total £81, direct from Powersolve UK