

Better Backup Power for Outdoor Equipment Power a DC Load with AC Primary Power

Available power supply is paramount for system networks such as microwave and cell repeaters, Wi-Fi and WiMax networks, and RTU/SCADA. Critical loads must remain operational during power outages and when utility power is not available 24 hours, 7 days per week.

To address this reliability requirement, SunWize developed a utility-based solution with battery backup for outdoor equipment.

How does this solution differ from traditional uninterruptible power supply (UPS) systems?

The SunWize® Power Online System is:

- Outdoor rated for environmental extremes.
- Not a parallel power source to the utility —power is always derived from the battery, so there is zero transfer time upon loss of utility power.
- Temperature compensated - batteries maintain longer life through a charging algorithm that adjusts for temperature fluctuations.
- Equipped with a low voltage disconnect (LVD) — the battery is protected from over discharging.

What does the system provide?

Power Online Systems provide continuous DC power with battery backup from an AC source. The weatherproof units convert AC primary power to charge a 12, 24 or 48 volts DC sealed



battery bank while powering the DC load or an AC load with an inverter.

These systems are ideal for applications using bank switched street lighting where utility power is only available while the lights are on at night and not at all during blackouts. The daily blackout cycle can be as long as 14 hours in summer months due to extended daylight hours.

Power Online Systems ensure power is available 24 hours each day and provide up to 5 days backup power during power outages.



A SunWize Power Online System powering a radio for monitoring.

How does the system work?

Upon loss of AC primary power, the battery powers the load with zero transfer time since the loads are connected to the battery bank 100% of the time.

A Power Online System uses a grid-powered battery charger to charge a battery bank. The battery can be 12, 24 or 48 volts DC. The charger is sized to operate the load and maintain enough reserve power to ensure the battery can be fully recharged from complete discharge within 24 hours.

Since load and battery sizes vary, systems can be configured from as little as 45 watts to as much as 2 kilowatts of charging power. Backup time can be as little as 1 hour to as much as five days depending on the critical nature of the load. Standard configurations are 8, 24 and 48 hours.

Since the components used are common to our solar electric power systems, they are field proven for reliable operation in rugged outdoor conditions.

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