An uninterruptible power supply (UPS) is a backup power source that activates automatically when the primary source (typically commercial AC) fails. Although technically complex, a UPS has a very simple overall design. Every uninterruptible has power inputs (for intake of commercial power during normal operation), power outputs (to connect protected equipment), backup batteries (to prevent interruption of power to protected equipment when commercial power is lost), and a control system that quickly switches to backup battery power when the main source of electricity becomes unavailable.

The word "uninterruptible" indicates that the power supply will activate quickly enough to prevent the connected equipment from ever losing power when the primary power source goes dark. This typically means that a UPS system must be capable of automatically activating backup power within 25ms of a power loss.

An uninterruptible power supply, which by its very nature is redundant, provides an important protective barrier against data loss and expensive hardware damage.

Unfortunately, many network managers fail to properly monitor their uninterruptible power supply systems.

This is primarily because most modern UPS systems for use in industrial applications include a built-in web interface for performance tracking. Although this obviously would be considered "monitoring," one critical flop prevents it from being "proper monitoring." Using an uninterruptible power supply’s own interface for performance and uptime monitoring defeats the purpose of such monitoring. If the UPS fails, so too will the monitoring interface that you have relied on.

Instead, the industry best practice is to deploy relatively low-cost external monitoring devices. Small monitoring devices (1 RU or less) are available to collect important status information from virtually any UPS backup system.

These monitoring devices, commonly known as "RTUs" (Remote Terminal Units or Remote Telemetry Units), will send alerts back to critical personnel via LAN, phone voice message, serial connection, T1, fiber, or other available transport.
When using RTU's to monitor an uninterruptible power supply, it's also very important to remember that an RTU also needs electric power to report alarms back to you. Because your monitoring system should always be the last thing to fail, you should resist the temptation to power your RTU using your UPS system. If you do this and the UPS fails, he will have no way of knowing until the site goes completely dark.

DPS Telecom has seen clients roll out uninterruptible power supply monitoring systems at dozens of sites to protect the battery cells there from expensive damage. The battery monitoring systems that they deploy cover both VRLA ("Valve-Regulated Lead-Acid") batteries and flooded batteries.

Overcharging, at a level of 20 amps per 100 amps of battery capacity, is monitored carefully.

Monitoring voltage to prevent deep discharge is perhaps the most important role of the uninterruptible power source battery monitoring solution. As an example, if you discharge batteries at 44 V and they drop to 42 V, you have damaged the batteries.
UPS Monitoring Tutorial

An introduction to Uninterruptible Power Supply monitoring essentials:

• UPS definitions
• Why you must monitor your UPS
• How to monitor a UPS
• Real-World Examples
What is a UPS?

- Backup Power Source
- Automatic activation on power failure
- Fast (<25ms) activation
- Short-to-medium-term battery life
- Telecom, IT, & consumer designs
Why You Must Monitor Your UPS

- Running out of battery charge
- High temperature damages cells
- Deep discharge damages cells
- Bad float voltage causes drying out and sulfate deposits
How to Monitor Your UPS

1-800-693-0351 www.dpstele.com
How to Monitor Your UPS

1. Don’t let UPS gear monitor itself
2. Use a small monitoring device (1 RU or less)
3. Get the alert format you need: SNMP/LAN to alarm master, phone voice message, text message, etc.
4. RTU with built-in UPS can be helpful
UPS Monitoring Device: BVM 48

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UPS Monitoring Device: BVM 48

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For UPS Monitoring Advice:

DPS Telecom

- Monitoring reference site: www.dpstele.com
- Search: “BVM 48”
- Discuss your project: 1-800-693-0351