

Around the world and within every IT establishment around Australia, we place our trust in the UPSs that drive the power to our critical computer equipment. UPS failures are common. One of the main causes of a UPS failure is the batteries. Yet failures caused by batteries can be avoided by diligent regular maintenance and replacement planning.

UPS battery banks typically consist of a large number of single cells connected in series and parallel to achieve the power density required. This increases the propensity of a single cell failure or degradation. This single cell failure becomes the weakest link in the battery chain and hence the limiting factor of your UPS being able to provide the energy to your critical load resulting in insufficient or non-existent bridging time.

The result of neglecting or not regularly maintaining your batteries can be far more catastrophic than inconvenience, loss of output power and costly processing inability. It can also be the cause of permanent damage through explosion and fire.

It is possible to manually monitor each battery using multimeters and special impedance measuring devices as well as undertaking periodic performance discharge tests. This method was used in the past but required a lot of time to take measurements and analyse the results.

With the number of parallel and series connected batteries in most large UPS installations, this method no longer becomes a practical approach and produces inconsistent and difficult to analyse results.

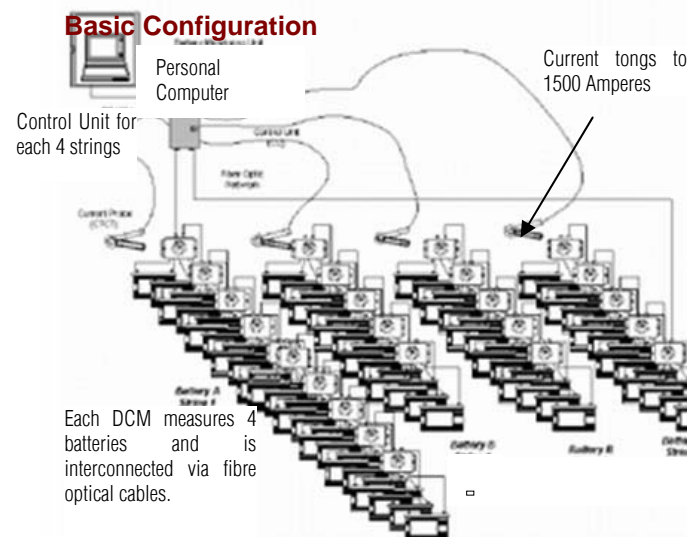
There is a better way. There are now a number of Battery Monitoring Systems on the market aimed at taking the hassles out of this difficult process and end up being cheaper in the long term than the manual solution.

Most Battery Monitoring Systems undertake continuous DC measurements of each battery and compare the readings against pre-set limits. DC measurement is useful during discharge testing when it is possible to witness the collapse of a battery during the discharge, however, it's usually too late by then resulting in premature and often unexpected short fall in battery autonomy time. Too often the failed battery or batteries in the bank become over-discharged and suffer permanent damage but go unnoticed as they recover to nominal float voltage readings. Unfortunately, **DC float measurements seldom inform of faulty cells or batteries with internal faults, dried up electrolyte and loss of capacity.** For this, you need to be able to take ohmic (impedance) measurements as well.

The proven CELLWATCH Battery Monitoring System by NDSL provides all of the features desired to ensure that a battery which is not capable of performing is identified and reported prior to it causing your site any unplanned disruption. The NDSL CELLWATCH Battery Monitoring Solution is now available in Australia via **Static Power Pty. Ltd.** Don't leave it to chance – use CELLWATCH.

Benefits

- Reduce your maintenance costs and improve your site's availability.
- Fully automatic battery monitoring system - 24 hrs a day, every day of the year.
- Monitors individual battery, string and bank voltages, battery impedance, current and temperature.
- Readings in float condition are performed automatically multiple times a day for accurate immediate warning and trending.
- Tracks discharge, (all voltages, currents and temperatures) automatically for instant record and identification of failure or weakness. Provides a detailed history of events and data.
- Web browser monitoring through LAN, WAN or Modem and email alerts.
- Fits any infrastructure from 48V DC to over 1000 batteries.



CellWatch (By NDSL) Technical Specifications

The Personal Computer (PC)
Control Unit (CU)

Industrial (230/240 V AC 50Hz) from UPS supply, connects to CUs via RS485 capacity 31,000 batteries
230/240 V AC from UPS supply, connects to PC via RS485 & DCMs via fiber
Monitors up to 4 current tongs (± 3 to 1500 Amperes ± 2 Amps, powered from CU)
Monitors up to 4 Strings of batteries (up to 124 batteries per string)
Monitors up to 4 temperatures (0 – 99 °C ± 0.5 °C)
4 User Relay Outputs (C/O contacts 30 V DC, 8 Amps)
1016 batteries per CU
Size (300 x 300 x 120 mm)

Data Collection Module (DCM)

Colour RAL7035 Pebble Grey
Max per CU -> 254
Range 0 – 60 Volts
Accuracy @ 2 Volts $\pm 1\%$
@ 6 Volts $\pm 0.5\%$
@ 12 Volts $\pm 0.25\%$
Protection Reverse Polarity
Impedance measuring range 0.25 to 38 m Ω with 100 $\mu\Omega$ resolution
Operating Range 0 – 40 °C
DCM-DCM-CU Fiber 1 mm plastic (minimum bend 150 mm / max length 50 M)
Measurement Range / Power Supply Min 6.5 V DC Max 60 V DC
Size 117 x 64 x 45 mm
Mounting 3M Dual Lock & Velcro
Material ABS / Black
Lead lengths 7 x 1000 mm
Connection 6.3 mm spade receptacle
Tags 6.3 mm spade wirth with 6 or 8 mm terminal holes

Subject to change without notice.

Static Power Pty Ltd (Static Power are a certified NDSL re-seller, installer and support agent)

✚ STS Manufacturing is a subsidiary of

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ABN 42 101 765 913

Post to:

Box 2003
Research Delivery Centre
Research VIC 3095
Australia

Manufactured at:

5/39-45 Susan Street
Eltham VIC 3095
Australia

Phone: +613 9431 0494
Fax : +613 9431 0939
Email : sales@i-sts.com.au
Web : www.i-sts.com.au