ENGINEERING (PTY) LTD

# Battery Management System™

**Silicon Engineering's very own battery management technology saves you time and money by delivering your charger reports to you, online.**

# Be mindful of your battery power,

## no matter where you are

Electricity is the lifeblood of your business. You rely on the dependability of your Battery Switch Tripping Units to keep your organization running smoothly and productively, come power cuts or power struggles. But having to monitor and inspect each and every Battery Switch Tripping Unit manually for faults or trips, can cost you greatly in terms of time, labour and logistics.

Silicon Engineering has the solution. Our specially designed and developed Battery Management System, the Silicon Engineering Battery Management System™ is versatile, user-friendly and fully programmable. Thanks to its cutting-edge micro processor technology and BMS Studio App, you will be able to monitor and report on the operational status of your batteries and chargers remotely via the internet, no matter where you may be at the time. Keep your finger on the pulse of your business' operations from the most complex functions to the most mundane tasks. Currently battery technologies available on the market today (such as Plante, Tubular and VRLA) could let you down with higher maintenance requirements, lower service life and a much greater danger of degradation, due to the higher risk of incorrect charger setting.

The first systems were installed in 1989. The Silicon Engineering Battery Management System™ has been updated with all new technology, and is fully automatic, making it ideal for the monitoring and maintenance of local and remote battery sites, where expertise is limited and the correct personnel are unable to make an on-site inspection. For your organisation's comprehensive battery monitoring, testing and diagnostic needs, look no further than Silicon Engineering!

# Silicon Engineering Battery Management System™:

## How it Works

The Silicon Engineering Battery Management System™ is a control and monitoring system for battery chargers, and has been specifically designed to ensure that the correct battery manufacturer's settings are applied to the battery charger when installed. The system sounds the alarm whenever any condition is abnormal or outside of the correct specification parameters. The Silicon Engineering Battery Management System™ improves DC system reliability and optimises battery service life, whilst reducing maintenance to a minimum. Because it is fully automatic and delivers your reports remotely via the internet, you will be able to monitor your batteries and chargers remotely, at any time. This is especially ideal for keeping track of sites that are out of the way, inconvenient to manage directly or sites that require your constant attention.

### Features: System

- Built-in manufacturer-approved settings, calibrated according to most stationary battery technologies
- Complete System status is displayed on the LCD screen, as well as DC & AC voltages, currents, timers and alarms
- The battery can be reconfigured in 60 seconds
- Charging protocol is set for each battery type - auto-boost (Y/N), alarm values and timers
- The menu is password protected - no unauthorised tampering of your settings
- The Event Recorder stores up to 2000 events on a FIFO basis. You can now check battery test results on a monthly basis
- Plug-in universal module for all units 5a to 1000a, 24v to 220v DC
- Hardware equipped for remote communication and SCADA.
- Suitable for driving most single & three- phase analogue SCR control cards and upgrades
- LCD display backlit for easy reading in poor light. (Auto turnoff after 10 minutes of inactivity.)

### Features: Alarms

- Up to 23 types of Alarms included
- Alarms displayed locally on LCD, remote isolated C/O relays, audio beeper and RS232
- Intelligent alarm analysis: the BMS decides whether the fault is Major or Minor
- Alarms digitally set for alarm value and reset value. (E.g. Mains fail set=180V Reset=198V)
- Load tests are halted during mains failures or after test circuit failures
- Earth fault alarm indicates polarity and leakage impedance values
- Boost timer override & load test fail alarms are latched until manual reset.
- Alarm settings may be customer adjusted (with password access).
- Alarm relay operating time delay adjustable (default 30 seconds).
- Local LED indication warning for non-skilled staff.
- Keypad testing facility of alarm relays - fast & safe.

### Features: Self-Test & Protection

- Self-test on power up
- Integrated watchdog timer to prevent system latch-up
- Battery automatic periodic load test- turns off the charger and applies a dummy load
- Load test circuit components are self-tested. Any internal fault is alarmed
- Intelligent application of additional loads
- Automatic return to Float from Boost in the shortest possible time - extended battery life
- Manual LED test

# Silicon Engineering Battery Management System™:

## Key Benefits

- It controls the charging of any type of battery, and can be fitted to almost any charging system
- It automatically sets the chargers to ensure correct Float and Boost voltages for a specific battery
- It features a user-friendly, door-mounted digital display with backlighting and an easy-to-follow menu
- Settings are password protected
- It saves you money by conserving power: the digital display switches off 10 minutes after the last key is pressed
- It's bilingual – get your reports and diagnostics in English or Afrikaans

## BMS features MS reports on

- Ambient Temperature
- Ground Resistance Value (in kΩ)
- Charge, Mains and Control failures
- Recorded Events

## BMS features

- An 8-hour automatic load test function
- A 28-day Boost Timer (for certain batteries)
- Password protection
- An event recorder with which to analyse charger history and auto battery test results
- All settings can be customer adjusted (within limits)


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