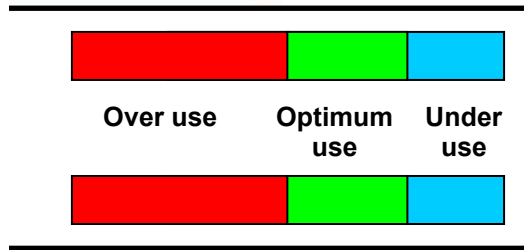
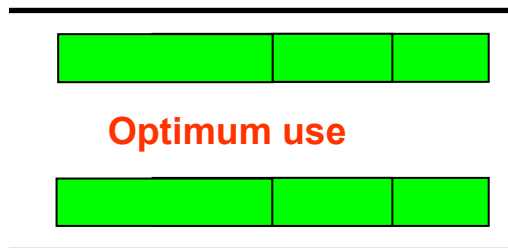


## Battery Allocation System.



Without BAS, batteries are unevenly used



With BAS, batteries are evenly used.

BAS ensures that batteries are used equally, are charged when taken for use and detects and records equipment and operator faults.

BAS ensures that the battery that has been fully charged first is always at the front of the queue and if there is no fully charged battery available BAS puts the one that has been on charge the longest at the front so the best battery is always allocated.

A high intensity scrolling LED display advises the operator of the battery to be taken and the battery status is displayed in green if fully charged and in red if no full charged batteries are available.

Alarms sound if the wrong battery is taken, the new charging cycle fails to start or there is an equipment fault.

Plain language messages identify the fault condition and the location of the charger they relates to and these messages can be given in most languages.

BAS has a comprehensive data base which records all events and alarms for each charger and this data can be exported to analyse fleet performance, faulty chargers and operator performance and errors.

BAS can also be used to monitor the mains supply and ancillary equipment and sound alarms where required.

BAS can also be used for remote control of battery changing equipment to ensure operators take the battery specified for use by the system,

### Application.

On sites where trucks do not have dedicated batteries and batteries are pooled for use, significant saving can be made on space and in the cost of equipment and installation.

Managing this type of regime can however prove difficult and if not correctly controlled can result in unequal use of the battery fleet and premature battery failure.

This is particularly relevant in installations similar to the layout shown where batteries near the entrance to the charging bay get over used.

### Principles of operation.

BAS monitors the charging of the batteries and places them in a queue, allocating them for use based on the charge returned and showing the location of the battery to be used on an LED display.

Until fully charged batteries become available BAS works on a FIFO basis hence ensuring the battery allocated has the most power.

As soon as a fully charged batteries become available they leap frog to the front of the queue.

BAS has verbal alarm messages that sound if the wrong battery is disconnected or a battery that's has been connected is not charging.

All data is stored and can be exported to provide detailed reports on battery use, changing patterns, fleet availability and driver errors.

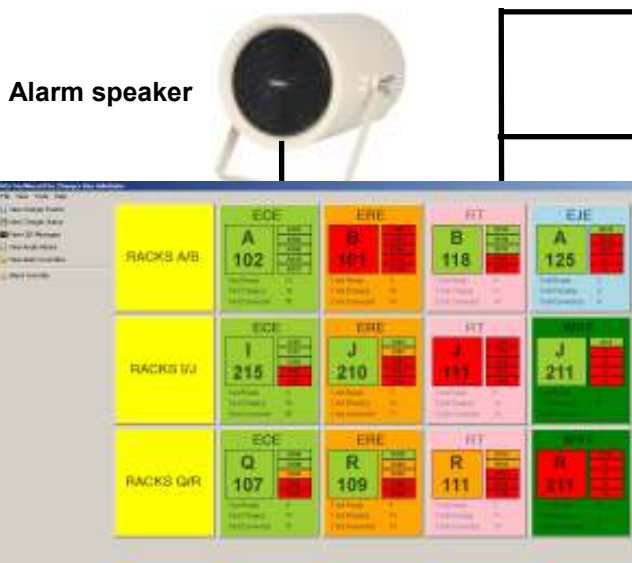
This powerful management tool allows for informed decision making relating to fleet levels to ensure optimum performance.

### BAS features.

- LED shows, fully charged batteries in Green or in RED if no fully charged batteries are available. As charged batteries become available they leap frog to the front of the queue.
- Verbal alarm messages are available in all MS windows supported languages and give the charger location and fault.
- The quantity of active alarms and the location of most recent alarm is also shown on the LED.
- The PC screen shows the first six batteries in each queue, their charge status and the number of batteries connected, charging and ready for use.
- Viewers show detailed information for the last 3 days of fleet status, individual charger activity, alarm activity and corrective action.
- Wireless connection between BAS sensors and the PC.
- User interface for deactivated or relocated of BAS sensors to different battery queues or battery rack positions.
- Auto restart of system in the event of a mains failure, fleet status established automatically within 30 minutes.
- Lifetime history of charging activity for reporting.
- **Optional Features**
  - Remote data access via LAN or GPRS.
  - Remote alarm messages via SMS
  - Control of battery changing machine to ensure correct battery use.
  - UPS backup
  - Mains supply and ancillary equipment monitoring and failure alarms.
  - Battery level monitor and topping alert at end of charge.

# Technical specification.

- Suitable for use with all makes of battery charger and charging profiles.
- No electrical connection to charger controller.
- Programmable to suit different makes and models of charger to optimise alarm features.
- No wiring between BAS sensors and computer.
- Verbal alarm messages available in all Microsoft Windows supported languages.
- Information on one queue or all queues can be directed to one or multiple LEDs.
- Colour coded battery status on LED gives immediate indication of low fleet availability. (RED no charged batteries available.)
- Historic data on individual charger activity, alarms and fleet status viewable on PC.
- Virtually unlimited number of trucks and batteries on one BAS system.
- Computer link via network or remote via GPRS modem.
- Wireless control of battery changing machines to ensure correct battery pick. (Optional)
- SMS alarm notification (optional)
- Mains failure and ancillary equipment monitoring. (Optional)
- Wireless LED connection for use on battery charger or remote from bay. (Optional)
- Reporting software showing battery availability, charging and changing times, number of changes over time period, alarms by type and quantity and fleet level changes. All reports can be filtered by date and time and charging position. (Optional)



Polish language. Other languages available on request

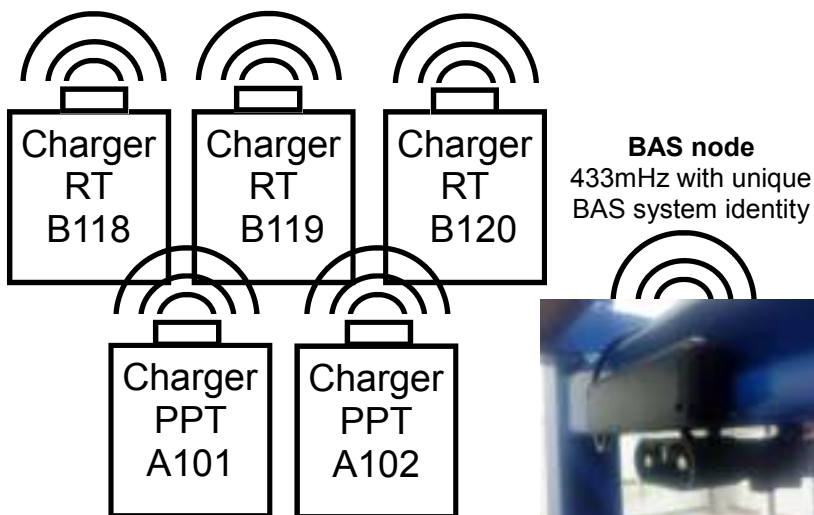
### LED

First charged battery to be used shown in GREEN

If no charged batteries are available, the battery that has been charging the longest is put at the front of the queue in RED.

Number of alarms per truck type displayed and the location of the most recent alarm.

Remote viewing and reporting data downloaded via LAN cable or GPRS modem.



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