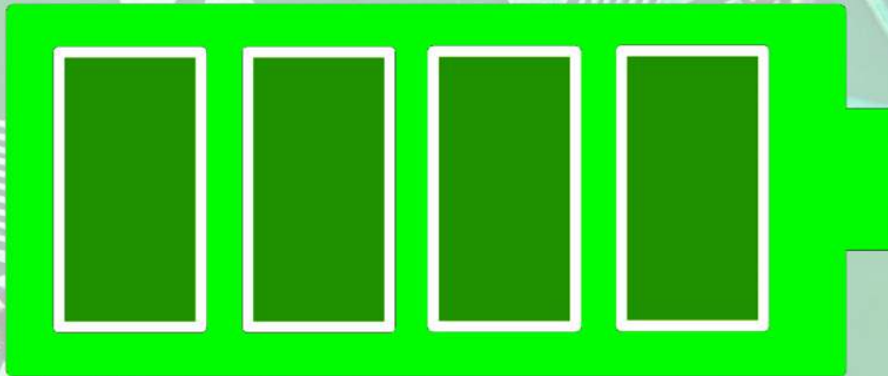


## Configurable Battery Charger



### Background

Finding a solution for a manufacturer of robust battery powered systems for use in the civil engineering sector, ensuring greater detail on the battery charge state during charging.

Our customer, a manufacturer of robust battery powered systems for use in the civil engineering sector, wanted to provide greater detail on the battery charge state during charging. The reason for this was due to the fact that the product application meant that the battery was used for either a long term or in multiple short term periods.

They had tried a number of different chargers and whilst they provided efficient battery charging they normally used a 3 stage charging system and displayed the status on LED's according to the stage that they were in. Unfortunately this type of charger did not meet their requirement, they wanted a simple LED status display but they wanted more information and the ability to change this information for different products.

In addition to the display requirements the customer also wanted to be able to modify the charge function to enable different battery types to be catered for simply by programming the charger to behave differently.

The customer approached us to find a solution for this whilst still ensuring that the product cost was kept to a minimum.

## Our involvement

We needed to define a solution that provided two separate functions -

- The ability to provide a customer specified charge status display
- The ability for the charging characteristics of the charger to be changed to cater for different battery types.

In looking at the solution we agreed with the customer that the configuration of the charger would be carried out at the time of manufacture and that no facility for pre-despatch configuration would be offered.

In respect to the charge status display the customer specifically wanted to provide indications for -

- Power on (battery dis-connected)
- Charging (constant current)
- Charging (constant voltage)
- Charged (80%)
- Ending charge
- Fully charged

Each charging status indication had a specific voltage range requirement and colour or colour combination made up of either static or flashing modes.

To achieve the status display requirements we introduced a new circuit to the charger with a microcontroller which could be programmed to provide the functionality required. The customer was able to be very specific in terms of their status display requirements and this was easily achieved.

In respect to the ability to provide different charging characteristics this was also achieved using the microcontroller circuit which was programmed with the required charge characteristics depending on the battery type.

## Outcomes

The customer now has a battery charger platform that can be tailored for both charge function and charge status display requirements without the need to find multiple charger solutions.

It is now as simple as the customer specifying their requirements at the point of order so that we can program the required parameters, adjust the labelling and deliver the chargers.

## Further development

The fact that the battery charging parameters are programmable means that we can apply this technology to our charger range for different power ratings and therefore enhance product capability.

To find out more or to discuss your requirements, please get in touch

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