



The UBMS 1-4S Battery Management System: Entirely developed by Dynamis

Dynamis Batterien GmbH has developed a universal battery management system (UBMS), specially equipped for the safe use of powerful batteries in demanding medical applications and based on the Texas Instruments BQ40Z50-R2 chipset.

The UBMS can monitor and balance from one to four battery cells in series whilst providing precise current measurement, overcurrent shutdown, overvoltage and undervoltage shutdown, temperature measurement and a fuel gauge function. The secondary protection of the UBMS offers enhanced safety, protecting against possible occurrence of overvoltage or overcurrent in case the primary protection circuit fails.

The rated current can be up to 20A and the UBMS can be customised and configured in a wide range, so that an adaptation of different types of cells (Li-Ion, Li-Polymer, Li-Phosphates, ...), capacities and number of serial cells are possible.

For a fast evaluation, configuration or testing of TI Battery Management products, the manufacturer provides a complete software tool - Battery Management Studio (bqStudio).

Over the SMBus the user gets full access to the data registers, and can program the chipset for different pack configurations or log cycling data for further evaluation and graphic analysis. For the application of custom-specific developed software, special SBS commands on the lowest level of communication are possible.

The UBMS can drive 3 to 5 segment LED displays for remaining capacity indication and/or a permanent fail error code indication. Existing customer displays can be implemented with the use of "charliepexing". At difficult accessible and sensible areas (dust, humidity), a mechanic and contactless activation of the display is viable.

The UBMS supports authentication by the host using SHA-1. Alternatively an electronic registration number can be implemented to provide an absolutely unique identity that can be determined with the communication interface.