Victron & Redflow ZBM2 / ZCell

ZCell is a packaged bundle of the Redflow ZBM2 battery inside an external-rated enclosure, supplied with the Redflow CANbus BMS.

The Redflow ZBM2 battery is a 48V 10kWh DC Zinc-Bromide hybrid flow battery that is installed in parallel-wired DC clusters. It is the worlds smallest commercial flow battery. It uses the Redflow CANbus BMS as the control and communications interface for the battery system.

An overview of the technical specifications of this battery are provided here:
https://redflow.zendesk.com/hc/en-us/articles/360025493531-Technical-specification-overview-for-the-Redflow-ZCell-ZBM2-battery

Important information about installing and configuring ZBM2 systems with Victron Energy products is provided here:
https://redflow.zendesk.com/hc/en-us/articles/360025202052-Installation-guide-to-connecting-a-Redflow-battery-array-to-a-Victron-Energy-system

Compatible Victron products

- All 48V Multis and Quattros.
- All 48V solar chargers
- A Color Control GX or Venus GX running DVCC and using the CANBus interface. Interfacing using MODBUS-TCP is also possible (but deprecated for most situations in favour of CANBus).

ZBM2 / ZCell Characteristics

- Low fire risk: No exothermic reaction if exposed to fire, and with water-based fluid electrolyte that is intrinsically fire-retardant
- Designed to be charged up to 100% SOC and discharged right down to 0% SOC (and zero volts) on a daily basis with no damage and while maintaining full energy cycle output capacity over the battery lifetime

ZBM2 / ZCell Configuration

- Interface using CANBus into a CCGX just like any other 'smart' (canbus based) battery
- Set any SoC MinSOC limit in ESS to 0% to use the full energy in the battery (single battery setups). Higher values of MinSoC can be used in multiple-ZCell installations if desired
- Use the ESS mode “Optimised (without BatteryLife)” to allow full-depth discharge of the battery regularly.
- Configure the disconnect voltage on a Multi or Quattro right down to a minimum level to get all the energy out of each discharge cycle.
- Clusters of multiple ZBM2 batteries are automatically controlled using the Redflow BMS to orchestrate their discharge cycles and maintenance cycles for maximum energy availability and maximum operating efficiency and effectiveness.

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