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 that are compatible with DVCC (all except the older 'vertical' shaped CANBus units)
- Any GX unit running current firmware with DVCC enabled and using the CANBus interface.

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

- Clusters of multiple Redflow 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.
- Interface to the GX from the Redflow BMS using CANBus just like any other modern 'smart' battery
- Always turn on DVCC mode in the GX to allow voltage and current settings to be controlled via CANBus by the BMS (no need to set any battery voltage or current limits in VE.Configure)

For on-grid sites using ESS (ESS is not required off-grid)

- Select the Redflow ZCell battery type in the ESS Assistant when setting it up (available in ESS Assistant versions since April 2020)
- Use the ESS mode “Optimised (without BatteryLife)” to allow full-depth discharge of the battery regularly
- On single battery setups the ESS 'MinSoC' must be set to 0% to avoid stalling the ZCell maintenance cycle.

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