ZX Super Capacitor

Graphene-based Battery Backup System (BBS)

Econolite's ZX1000 and ZX2000 Graphene-based Super Capacitor battery modules are an innovative and extremely durable approach to providing battery backup power for traffic intersections. Paired with Econolite's DBLMXU 24V, 36V, or 48V series double conversion Uninterrupted Power Supply (UPS) system, ZX Super Capacitors provide scalable "green" battery energy that will last years beyond lead-acid batteries in the same application. ZX Super Capacitors do not contain any chemical batteries, so they are virtually unaffected in their capacity at extremely low or high temperatures unlike lead-acid batteries. They also cannot be damaged by storage at low charge and can take hundreds of thousands of charge/discharge cycles. Therefore, ZX Super Capacitors cannot be worn out by frequent outages.

The ZX1000-36 battery module works with other 36V systems and holds 1000Whr of energy at full charge. This is enough to provide a typical sized intersection with approximately two to three hours of backup power. The ZX2000-24, -36, and -48 is a 24V, 36V, or 48V battery with the same characteristics for 24V/36V/48V systems. However, they have double the capacity at 2000Whr providing longer run times.

Key features

- Zero environmental impact
- Zero maintenance
- 100,000's of discharge cycles
- Connect multiple units in parallel for scalable capacity
- Up to 30 years of service life
- Long shelf life without cell damage
- No cooling or heating pads needed
- Operating range -30°C to +65°C without derating or energy loss
- 10-year replacement warranty

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ZX Series Super Capacitors: Storage Modules

The ingenuity of the system's design is its scalability and reliability. ZX Super Capacitor battery modules can connect in parallel, allowing the user to deploy as many batteries as required for the application (up to 10). Since they are connected in parallel, it is easy to add or subtract batteries without powering down the system. By adding the optional Hot Swap Switch to the system, users can swap out depleted battery modules for fresh ones during a power outage.

Modules[1]	ZX2000-24	ZX1000-36	ZX2000-36	ZX2000-48
Rating	2000wHr	1000wHr	2000wHr	2000wHr
VDC Nominal	24V	36V	36V	48V
AH Rating C3[2]	105	34	58	60
Max VDC	28.5	42	42	57.6
Minimum VDC	20.0	31.0	31.0	41.2
Max Discharge Amp[3]	105	66	66	66
Max Charge Current	100A	60A	60A	100A
Display	• LCD: Capacity, VDC, & AH • Charge and discharge amp • Cell: VDC cell temp, alarm, and parallel status	• LCD: Capacity, VDC, & AH • Charge and discharge amp • Cell: VDC cell temp, alarm, and parallel status	• LCD: Capacity, VDC, & AH • Charge and discharge amp • Cell: VDC cell temp, alarm, and parallel status	• LCD: Capacity, VDC, & AH • Charge and discharge amp • Cell: VDC cell temp, alarm, and parallel status
Indicators	LED: 25%, 50%, 75%, & 100% charge/discharge, run, alarm	LED: 25%, 50%, 75%, & 100% charge/discharge, run, alarm	LED: 25%, 50%, 75%, & 100% charge/discharge, run, alarm	LED: 25%, 50%, 75%, & 100% charge/discharge, run, alarm
Control Buttons	Menu, enter, down, esc.	Menu, enter, down, esc.	Menu, enter, down, esc.	Menu, enter, down, esc.
Communication	Parallel RS485 x 2	Parallel RS485 x 2	Parallel RS485 x 2	Parallel RS485 x 2
Parallel Dip Switch	6x on/off setting	6x on/off setting	6x on/off setting	6x on/off setting
On/Off Control	Push button with DC breaker 2 pole	Push button with DC breaker 2 pole	Push button with DC breaker 2 pole	Push button with DC breaker 2 pole
DC Connections	Anderson 2 x SB series black or grey	Anderson 2 x SB series black or grey	Anderson 2 x SB series black or grey	Anderson 2 x SB series black or grey
Dimensions (in.) [4]	17.25W x 5.25H x 14.25D	12.20W x 5.25H x 10.5D	17.25W x5.25H x 14.5D	17.25W x 5.25H x 14.25D
Weight[4]	23kG/50.6lbs	16kG/32lbs	22.27kG/49lbs	22.2kG/48lbs

[1] Modules may be installed in a vertical position.

[2] AH Ratings are based on a C3 rate. Final numbers will be adjusted based on the final back up testing.

[3] Max Discharge is continuous with the circuit breaker. Max without CB is Continuous Rating x 2.

[4] Dimensions and weight are the maximums during preparation of this document. Dimensions and weight may be reduced during production.

[5] Back-up time is based on load divided into the actual rating. Back-up time will not derate during temperature variations of -30c to +65c. Back-up times will be published when the final documentation is available.