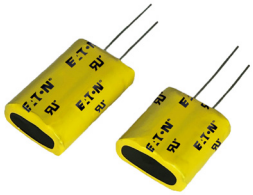

Eaton supercapacitors provide brownout protection in embedded and industrial process control circuits

Brownouts are a fairly common occurrence where there is a voltage deficiency in an electrical power supply system (even for a few milliseconds). It may be due to disruption of power supply from the grid, a problen internal to a device, or high power consumption due to intermittent loads coming online. Voltage fluctuations caused by brownouts can hugely impact the stability of equipment, leading to system malfunction, component failures, and downtime.

In embedded and industrial systems, brownouts typically occur at the board level. Control circuits, signal lines, and more are often affected by intermittent voltage drops. An essential requirement for industrial electronics is components having excellent tolerance for ultra-low or high operating temperatures with high current handling capacity.

Using energy storage devices is an effective way to protect equipment against brownouts and maximize productivity. These devices work by automatically maintaining the voltage to safe levels during brownout conditions. With millions of charge/discharge cycles over extended lifetimes and zero thermal runaway risk, supercapacitors offer significant benefits over secondary batteries for brownout protection.

Eaton PTV supercapacitors are affordable solutions for brownout protection at the board level in embedded and industrial process control systems. PTV supercapacitors are ultra-high capacitance and high-reliability energy storage devices utilizing an electric double-layer capacitor (EDLC) construction that comprises proprietary processes and materials. Eaton PTV supercapacitors provide backup, pulse, and hybrid power (when connected to a battery) for a host of applications in industrial process control systems, automotive electronics, and utility smart meters. Examples include ATMs, gambling machines, ticket terminals, dashboards, and airport LED displays.

PTV supercapacitors integrate two TV family cells with passive voltage management to reduce cell count, simplify designs and provide extremely long lifetimes. They can be used as sole energy storage or combined with Li-ion batteries to optimize the lifetime, runtime, and cost of existing energy systems. The combined power output can range from as little as a few microwatts up to several watts. Each supercapacitor offers 3 – 5 Farads of capacitance with a tolerance of -10% to +20% (+20° C).

With a working voltage of 6.0 V and operating temperatures ranging from -40° C to +85° C (derated voltage from 65 to 85° C), Eaton PTV supercapacitors meet the higher voltage and temperature requirements of most industrial applications. For designers of brownout protection, Eaton provides passive voltage balancing with ultra-low ESR and high-power density.

Eaton PTV supercapacitors are maintenance-free with zero thermal runaway risk and are designed using eco-friendly materials to reduce carbon waste. Each product is halogen and lead-free and RoHS and REACH compliant. PTV supercapacitors support thousands of charge/discharge cycles and can achieve operating lifetimes up to 20 years.*

*Operating lifetimes depend on charge voltage and temperature conditions.

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