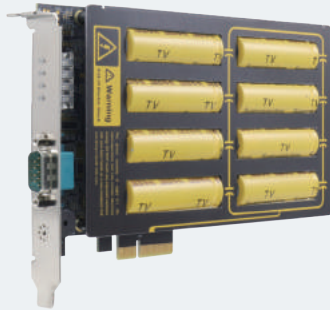


PB-2500J Series

Industrial-Grade Intelligent Ultracapacitor-based Power Backup Module



CE FC

Key Features

- Ultracapacitor-based, -25 to 65°C wide temperature operation
- 2500 watt-second energy capacity
- Up to 10 years lifespan and 500,000 charging/ discharging cycles
- Patented CAP energy management technology*
 - Maximizes back-up time in an event of unforeseen power outage
 - Monitors energy consumed and estimates the time required for system shutdown
- User-configurable operating parameters
 - Auto/ manual shutdown control
 - High/ low voltage protection
 - UltraCAP energy/ lifespan configuration

*R.O.C Patent No. 1598820

Introduction

Neosys' PB-2500J series is an innovative power backup solution for demanding industrial applications. Utilizing ultracapacitor technology, it features -25°C to 65°C operating temperature range and extremely high durability. Compared to traditional battery-based UPS systems, PB-2500J series can sustain superb reliability in extreme temperature environments and eliminates the drawback of battery performance degradation over time.

PB-2500J series is composed of eight 100F ultracapacitors to provide 2500 watt-second stored energy to sustain your computer during power outage and depending on your system's power consumption, it could be from seconds to minutes. But what makes PB-2500J novel is its patented CAP energy management technology, an on-board processor that constantly monitors power consumption and evolves with the system. During a power outage, it maximizes the system operation time by estimating the perfect time to initiate system shutdown to prevent data loss.

PB-2500J series is available in two form-factors; PB-2500J-PCle is a plug-and-play PCIe card specifically designed for Neosys Nuvo-6000 (except Nuvo-6108GC/IGN) while PB-2500J-CSM is designed for Nuvo-5000E/ P and Nuvo-7000E/ P series.

When it comes to industrial embedded controllers, stability and data loss prevention during power outages are just as important. Neosys' PB-2500J series aims to do the latter by redefining reliability and taking it to another level. With PB-2500J series, unexpected power loss and unstable power lines are a thing in the past!

Specifications

	PB-2500J-PCle	PB-2500J-CSM
Ultracapacitor configuration	8x 100F, 3.0V ultracapacitors	
Capacity	2500 watt-second	
Expected lifespan	>10 years @ 25°C with 2500 w-s capacity* 76,000 hours @ 35°C with 2500 w-s capacity* 34,000 hours @ 45°C with 2500 w-s capacity* 15,000 hours @ 55°C with 2500 w-s capacity* 7,200 hours @ 65°C with 2500 w-s capacity*	
	Expected lifespan is 2.2x when configured as 2100 watt-second energy capacity, or 4.8x when configured as 1750 watt-second energy capacity.	
Cycle life	500,000 charging/ discharging cycles*	
Communication interface	3-wire RS-232	
Dimension	Half-length PCIe card 167 mm (W) x 111 mm (H)	-
Mounting	N/A	DIN-rail mounting or wall-mounting
Operating Temperature	-25°C ~ 65°C	
Storage Temperature	-40 °C~ 70°C	
EMC	CE/FCC Class A, according to EN 55022 & EN 55024	

*Once the rated lifespan or cycle life has been reached, the capacity of ultracapacitor may decrease up to 30% and ESR may increase up to 100% from initial values.

Ordering Information

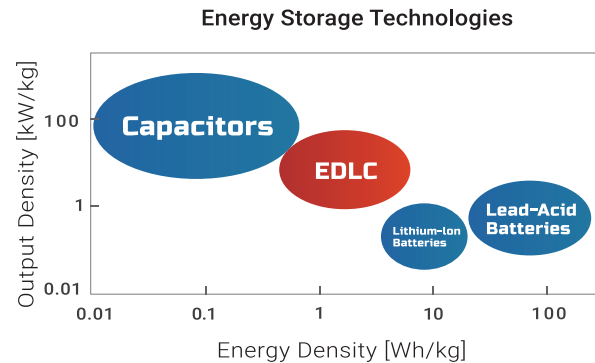
Model No.	Product Description
PB-2500J-PCle	Intelligent ultracapacitor-based power backup PCIe card with 2500 w-s energy capacity
PB-2500J-CSM5	Intelligent ultracapacitor-based power backup Cassette module with 2500 w-s energy capacity, for Nuvo-5000 series
PB-2500J-CSM7	Intelligent ultracapacitor-based power backup Cassette module with 2500 w-s energy capacity, for Nuvo-7000 series

*Note: NOT compatible with Nuvo-6108GC and Nuvo-6108GC-IGN

Ultracapacitor-based Power Backup Solution

Battery vs. Ultracapacitor

For decades, battery has been the preferred form of energy storage as it has high energy density (10~100 Wh/kg). However, limited by operating temperature (typically 0°C~40°C) and cycle life (2 years or 500 charge-discharge cycles), battery is neither rugged nor durable enough for industrial applications. Ultracapacitor, also called electric double-layer capacitor (EDLC) or supercapacitor, is an emerging category of capacitor offering 10~100 times more energy density than electrolytic capacitor (1~10 Wh/kg). In addition to its impressive energy density, ultracapacitor also has a wide operating temperature range (-40°C~85°C) and long operating life (10 years or 500,000 charge-discharge cycles). These two traits help make a reliable industrial power backup solution come true.

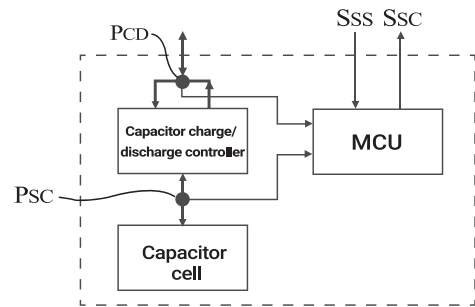


Neusys' Patented CAP Energy Management Technology

To design and create a reliable ultracapacitor-based power backup system requires fundamental techniques such as charge/ discharge control, active load balance and DC/ DC regulation. But the real challenge is how to get the most out of the capacitor energy while ensuring the system shuts down safely during the blackout.

At Neusys Technology, we have patented an architecture (R.O.C. Patent No. I598820) that incorporates a microprocessor along with ultracapacitors and charge/ discharge controller. The proprietary firmware embedded in the MCU not only monitors energy level continuously, it also automatically initiates soft-shutdown to prevent data loss/ corruption.

The patented architecture provides sophisticated features such as real-time energy monitoring, high/low voltage protection and auto/ manual shutdown control. Users can also extend the lifespan of ultracapacitors up to 4.8x via the parameter configuration utility.



- Real-time input voltage & CAP energy monitoring
- Auto or user-configurable shutdown control
- High/ low voltage protection. Shutdown the system when input voltage exceeds/ below thresholds
- Extend superCAP lifespan by reducing energy capacity

Ultracapacitor-based Power Backup Solution vs. UPS

Combing ultracapacitors and our patented architecture, Neusys introduces a revolutionary ultracapacitor-based power backup solution for industrial applications. Compared to battery-based UPS, it has wider operating temperature, extended operating life, adequate backup time to secure your embedded controller against unforeseen power outages.

	PB-2500J	Off-line UPS	Interactive UPS	On-line UPS
Energy storage technology	Ultracapacitor	Battery	Battery	Battery
Backup time	1 ~ 3 mins	> 30 mins	> 30 mins	> 30 mins
Operating temperature	-25°C ~ 65°C	0°C ~ 40°C	0°C ~ 40°C	0°C ~ 40°C
Lifespan	> 10 yrs @ 25°C	2 yrs @ 25°C	2 yrs @ 25°C	2 yrs @ 25°C
Regulated power output	Yes	No	No	Yes
Shutdown control	Automatic, plug and play	Via RS-232 and software	Via RS-232 and software	Via RS-232 and software