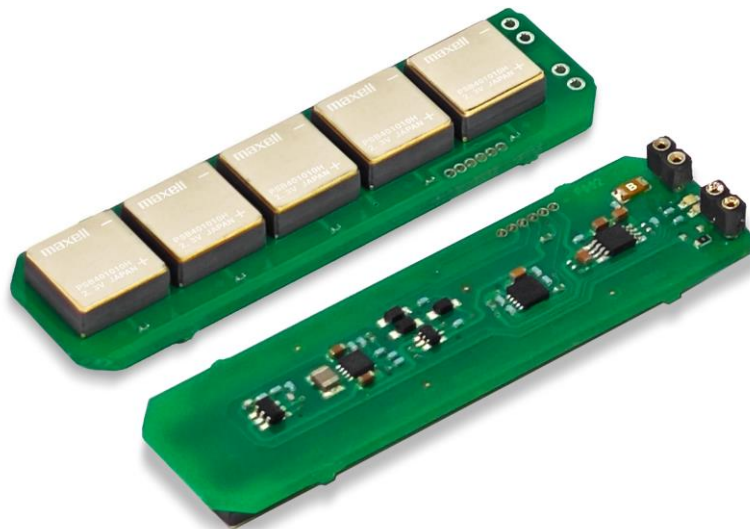


November 28, 2024

Maxell, Ltd

Maxell Developed All-Solid-State-Battery-based Power Backup Module for Industrial Equipment

Replaceable with primary batteries used for power backup in industrial equipment by incorporating charging circuit and voltage booster circuit



Power backup module for industrial equipment using all-solid-state batteries (left: top view, right: bottom view)

Maxell, Ltd. (President and Representative Director: Keiji Nakamura / hereinafter “Maxell”) has developed an all-solid-state-battery-based module applicable to power backup for industry equipment, using the ceramic-packaged all-solid-state battery “PSB401010H” that has been mass-produced since 2023, as a power source.

Industrial equipment that enables factory automation, such as industrial robots and PLCs (programmable logic controllers), widely uses primary batteries (single-use) for power backup of memories and RTCs (real-time clocks) in the event of during power failures.

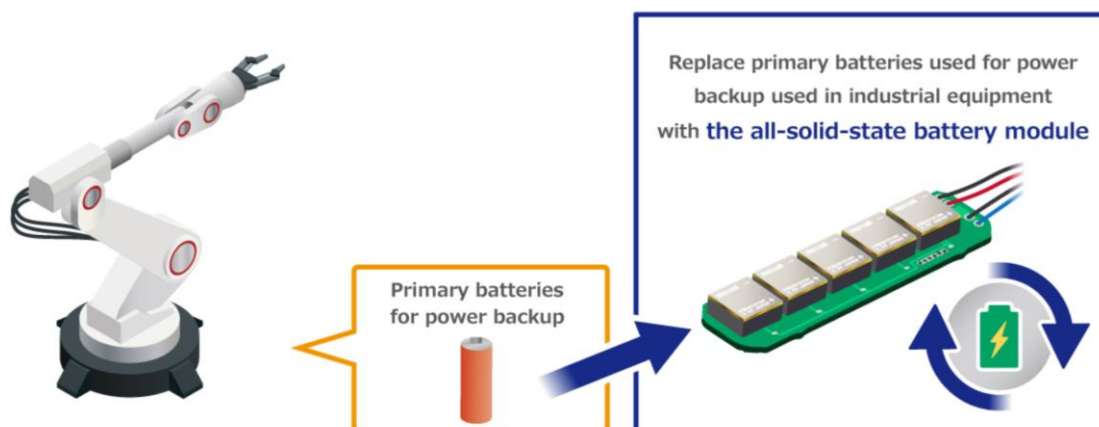
In general, industrial equipment that uses primary batteries for backup requires regular battery replacement, which can lead to a decrease in the operating rate of the manufacturing line due to the need to temporarily stop the equipment. In addition, depending on the operating environment, there may be cases where the battery life runs out earlier than expected and some production sites are periodically checking the remaining battery level much earlier than the expected battery life.

In response to the feedback from customers facing these issues, we have developed a battery module that incorporates up to five “PSB401010H” ceramic-packaged all-solid-state rechargeable batteries, that can be used repeatedly, as the power source.

This module is equipped with a charging circuit and a voltage boosting circuit, and it also takes advantage of the safety and long lifespan*¹ of all-solid-state batteries. Additionally, it takes advantage of the heat resistance of ceramic-packaged all-solid-state batteries, enabling the replacement of primary batteries used in existing industrial equipment as well as installations in newly designed industrial equipment.

By installing the all-solid-state battery modules with an expected lifespan of over 10 years in industrial robots and PLCs, users of industrial equipment can expect to reduce the time and effort required to replace batteries and the resulting loss of productivity caused by such battery replacement work.

Outline drawing of replacing primary batteries used for power backup in industrial equipment



In order to solve as many social issues as possible, utilizing its analog core technologies, Maxell will continue to develop reliable, high-performance all-solid-state batteries and modules that can be used in areas where existing batteries cannot be used by focusing on the following four features: long lifetime, high temperature resistance, high output, and high capacity.

*1 Please see Maxell's all-solid-state battery web page for details.

https://biz.maxell.com/en/rechargeable_batteries/allsolidstate.html

Trademarks

All company and product names mentioned herein are trademarks or registered trademarks of their respective companies.

All-solid-state battery webpage

https://biz.maxell.com/en/rechargeable_batteries/allsolidstate.html

Contacts

Sales & Marketing Div., Maxell, Ltd.

Inquiry form: https://biz.maxell.com/en/rechargeable_batteries/inquiry_form_input1.html

Appendix

Outline Specifications

Input Voltage	DC 4.0 ~ 24.0V
Output Voltage	DC 3.6V (*)
Output Current	10 μ A ~ 10mA
Batteries installed	All-solid-state batteries of total nominal capacity 8 ~ 40mAh (reference) (depending on the number of batteries installed)
Operating Temperature	-10 ~ 85 degree C (*)

*Output voltage and operating temperature range can be set according to customer requirements, so please consult us.