



BSC Introduces Innovative Development Kit for Dielectric Elastomer Actuators with Battery-Free EnOcean Control

Allendorf, 16. November 2023 - BSC Computer, based in Allendorf, is pleased to announce its latest offering, the BSCiDEA Development Kit for Dielectric Elastomer Actuators (DEA). This innovative kit, set to debut at the upcoming Consumer Electronics Show CES in Las Vegas (January 2024), is designed to empower innovation managers and developers, enabling them to assess the mechatronic capabilities of DEA stack actuators and initiate their own developments for integrating these actuators.

Discovering the Potential of Dielectric Elastomer Actuators

Dielectric elastomers, known for their capacity to transform electrical energy into linear motion, represent a potential game-changer in the realm of IoT actuators. Unlike conventional electric motors, these elastomers operate with minimal energy consumption and exhibit remarkable resilience to environmental factors like temperature and vibration. The BSCiDEA Development Kit is poised to provide not only the linear actuator but also an electronic control unit equipped with a web interface and IoT connectivity. Additionally, it includes a battery-free EnOcean wireless switch for effortless, "plug and play" operation. The BSCiDEA development kit will be unveiled at CES in Las Vegas in January 2024, marking the dawn of a new era in mechatronics. This kit allows comprehensive evaluation and quick prototyping of innovative mechatronic solutions.

Key Features of the BSCiDEA Development Kit

- Core component: DEA stack actuators (10 x 10 x 20mm) from Daetwyler capable of up to 2mm movement with a force of up to 20N.
- Evaluation board with real-time movement display at a 5:1 scale and adjustable external force application for easy testing.
- Electronic control unit with integrated Wi-Fi and EnOcean radio interface and a separate high-voltage power supply.
- Battery-free EnOcean radio switch for seamless actuation of the Development Kit.
- Web interface for convenient control and parameter adjustment via smartphone, tablet, or PC, including end positions, dynamic movement, and waypoint control (0-100%).

A Paradigm Shift in IoT Actuation

The world of IoT is increasingly focused on data collection, storage, and processing. With advancements in communication technology and energy harvesting methods, AI is making its presence felt in a wide range of applications. However, when it comes to actuators, conventional designs involving electric motors and complex gears remain energy-intensive and complex. BSC Computer's BSCiDEA Development Kit is set to transform this landscape by



providing a low-energy alternative that doubles as a sensor, making it an ideal choice for innovative mechatronic IoT solutions such as locks, wearables, valves, and robotics. BSC Computer has collaborated with the Swiss industrialization partner Daetwyler for the series production of DEA stack actuators and materials manufacturer Momentive Performance Materials to explore low-power electronics solutions for dielectric elastomer actuators.

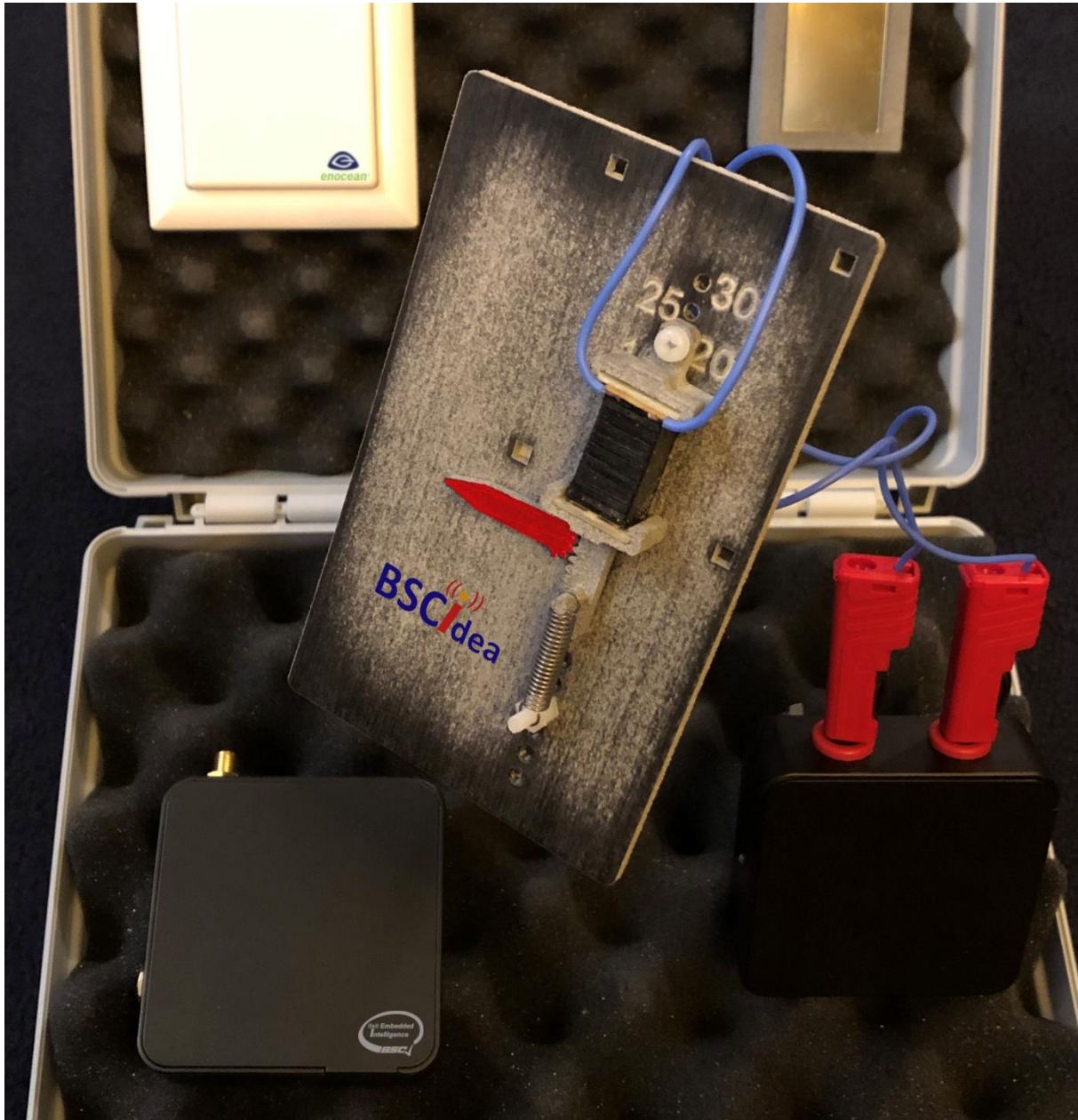
Jörg Hofmann, Managing Partner of BSC Computer, expressed his enthusiasm for the BSCiDEA Development Kit, saying, "With our BSCiDEA Development Kit, we are bringing dielectric elastomers into real-world IoT projects. We are excited about the possibilities of battery-free IoT systems and are expanding the ecosystem with maintenance-free actuator technology. With Daetwyler as manufacturer of stack actuators in unique patented stacking design and Momentive as supplier of innovative silicone elastomer materials, we are well-equipped to support product manufacturers in implementing their innovations with sustainable motion."

About BSC

Since 2004, Allendorf-based BSC Computer GmbH has been digitizing innovative products and services of its customers and partners based on highly energy-efficient electronics and IoT solutions. With mechatronic development and integration of energy converters, smart materials and microprocessor wireless boards in sensors and actuators as well as cloud integration and integration of data into customer-specific management systems via easily scalable and encrypted IoT edge gateways, an all-round worry-free package based on standard components is offered. In the partner network with Momentive Performance Materials, EnOcean Alliance, Aruba, universities, manufacturing partners and last but not least the solution provider itself, innovative, battery-free and secure digitalization solutions for industry, smart buildings, smart cities and consumer applications are created quickly and in a resource-optimized manner, making a significant contribution to the implementation of many UN Sustainability Development Goals.

www.bsc-idea.com

Press photo



[The BSCiDEA Development Kit contains all components to integrate DEA stack actuators into mechatronic IoT solutions]

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