3D-Micromac AG relies on automation solution from Rexroth

Printed electronics: On the way to mass production

Printed electronic circuits on flexible substrates will shape our daily life in a few years. The high-tech company 3D-Micromac AG from Chemnitz, Germany, has developed the modular production line microFLEX. 3D-Micromac has worked closely with Rexroth for the machine automation, including web transport with high-precision tension control.

Dedicated to the manufacture of printed electronics, the company has developed the modular microFLEX system. The roll-to-roll process reduces the cost of manufacturing electronic circuits. Rexroth here contributes many years of experience as the market leader in the automation of web presses.

Modular software: start up without programming

The microFLEX system consists of a variety of processing modules for gravure, inkjet, screen-printing, and Slot Die Coating, as well as a station for the laser processing. It allows users to print and coat on a variety of flexible substrates, from plastic foils to textiles, and structure a wide variety of electronics. “Our concept is extremely modular and upgradeable - that must also mirror the system software,” said Jan Schumann, COO at 3D-Micromac. Each module and the corresponding motion for the web transport are saved as software function blocks in the control software of the IndraMotion MLC. All these requirements are already pre-programmed in the Open Core Engineering technology function “multi-zone web tension control”. It precisely controls the tension in each zone to within ± 1 Newton.

As technology for printed electronics is evolving rapidly, 3D-Micromac relies on maximal scalability in their machine concepts. “The question is not whether printed electronics will become a mass product, but only when,” said Schumann. The requirements for mass production of printed electronics are already satisfied by the machine concept of 3D-Micromac.

Contact: www.boschrexroth.com/plastic-electronics