

The 2020 Packaging and Processing Experience

Virtual Pack Expo offers reimagined digital platform

Matthew Jaster, Senior Editor

Pack Expo Connects takes place November 9-13, 2020 offering virtual chats, educational content, live machine demonstrations and more. Daily Jumpstart sessions will examine topics such as sustainability, workforce development, and robotics. Trend chats will cover everything from food processing and pharma to digital printing and cannabis packaging. The Solution Room will offer a variety of helpful programs on asset reliability, the supply chain, and the social media vale of LinkedIn. The Innovation Stage will dig deeper into automation requirements, seal integrity, AI, the Digital Twin and manufacturing pivots in a post-COVID environment.

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Beckhoff

OFFERS MECHATRONICS AND AUTOMATION TECHNOLOGIES

Beckhoff Automation will showcase innovative mechatronics and PC-based automation technologies during Pack Expo Connects. Flying motion with XPlanar, a stainless steel version of the eXtended Transport System (XTS) and other hardware, software and networking innovations will be on display in virtual booth #213. Beckhoff USA Product Managers will host multiple educational sessions to discuss core packaging technology topics during the weeklong digital event from November 9-13, 2020.

The eXtended Planar Motor system, XPlanar, will demonstrate flying motion during its debut trade show appearance in North America. The system uses planar motor tiles as a base to levitate passive movers at speeds of 4 m/s and acceleration up to 20 m/s². Path planning and collision avoidance software produce extremely efficient and maintenance-free motion control for complex packaging, inspection and material handling applications.



Anti-sloshing functionality based in TwinCAT 3 software optimizes XPlanar's transport capabilities in applications involving liquids, such as filling of beverages, cosmetics and other goods. Wear-free movement and the ability to cover planar motor tiles with stainless steel, glass or another surface ensure XPlanar is a sanitary, wash-down-capable solution. With these capabilities, the innovative system enables ultimate flexibility and allows machines to achieve lot size 1 production.

XTS, the paradigm-shifting linear transport technology from Beckhoff, returns to Pack Expo with new hardware and software expansions. XTS Hygienic, a stainless steel, IP69K version, is ideal for wash-down production environments in packaging, pharma, food and beverage. In addition, new Track Management functionality allows individual movers to transfer between multiple XTS systems, enabling further customization, quality inspection, automatic defect ejection and more. These features, along with the system's high speeds, dynamics, small footprint, instant recipe changeovers and real-time integration with robotics, further revolutionize possibilities in packaging.

Beckhoff drive technology updates at Pack Expo Connects will include new AL80xx Linear Servomotors, additional capabilities from the space-saving, high-performance AX8000 servo system and the U.S. launch of the AA2518 Tubular Motor. With high dynamics and precision, the AA2518 replaces mechanical components, such as spindles, while delivering a maximum force of 1,050 N and acceleration rates of 8 m/s.

Among the other PC-based automation, motion control, IoT and EtherCAT solutions suited to packaging will be TwinCAT Vision and TwinSAFE functional safety. TwinCAT Vision offers comprehensive, real-time image processing to reduce latency and engineering effort using standard PLC languages and GigE cameras. Using the proven EtherCAT industrial Ethernet system, Beckhoff offers a scalable, modular and fully integrated safety system in TwinSAFE, which expands design flexibility, diagnostics and data insights for packaging machines.

“Beckhoff views Pack Expo Connects as an important opportunity for packaging machine builders and CPG manufacturers to connect virtually and continue learning about key technology advances during this unprecedented time,” said Mark Ruberg, packaging industry manager for Beckhoff Automation LLC. “With the market facing new challenges constantly, innovative technologies like XPlanar and XTS Hygienic provide opportunities to future-proof packaging machine designs and enable lot size 1 production. These build on the proven foundation of PC-based automation from Beckhoff, TwinCAT software and EtherCAT, and together they empower new IoT and Industrie 4.0 concepts for packaging.”

(www.beckhoffautomation.com)

Omron

SHOWCASES COMPLETE AUTOMATION SOLUTION FOR ROBOTICS PACKAGING LINE

Omron will be showcasing several exciting new technologies and solutions at Pack Expo Connects, including a pick-and-place demo that incorporates AI-enhanced vision. The recent addition of AI capabilities to the FH vision system is designed to help packaging companies sort out real defects from noise and varying product patterns.

Collaborative robots will also be front and center with a bin picking demo that features the TM Series cobot and FH Series 3D imaging technology that supports flexible production by quickly and precisely locating parts in a bin.



Another key solution for flexible manufacturing is the AnyFeeder flexible feeding system, which will be combined with an integrated controller PLC programmed using Sysmac Studio and running on an EtherCAT as part of a robotic cell demo.

AnyFeeder is designed for flexibility and rapid changeovers. With automatic vision, conveyor and robot calibration, the demo will show attendees how to achieve faster setup and reduced complexity. With integrated vision enhancing its capabilities, you can eliminate mechanical barriers and increase speed and accuracy.

The collaborative robot, when equipped with the new 3D vision camera, is able to pick up known objects with random overlapping positions out of a bin. Traditionally, this

was difficult to automate due to varying weights, shapes and orientations of objects that require 3D location and different forces during picking. The 3D camera locates objects and sends their coordinates to the robot, while the software makes the advanced calculations required for optimized trajectory and force to pick up objects. The mobile LD robot then transports the sorted goods.

Omron offers a complete automation solution for the robotics packaging line. A multi-robot pick-and-place demo will present multiple integrated technologies designed to enable customization, including three high-speed delta robots working on four conveyors. Robotics and other technologies including vision, motion and control show how intelligent, modular design can create reusable functions and subsystems that improve application flexibility.

(automation.omron.com)

Festo

OFFERS ELECTRIC DRIVES FOR SIMPLE MOTION



The Festo Simplified Motion Series electric drives combines the simplicity of pneumatics with the benefits of electric automation. These new electric drives equipped with Digital I/O and IO-Link enable a range of operational and productivity benefits and deliver intelligent IIoT communication.

The actuators in this series are built for simple motion between two mechanical end positions. The drives offer optimized motion characteristics, including gentle cushioning, while advancing and retracting into the end positions and pressing and clamping functionality. Units in the initial release include toothed belt axis, spindle and toothed belt axis, mini slide, electric cylinder, and rotary drive.

The drives are plug and play for fast startup. No additional software or specific know-how is required. The parameters for advancing and retracting speed, as well as pressing and clamping force, are set directly on the drive. End position, cushioning path, and manual operation are also set on the drive.

Each drive in this series is controlled via Digital I/O. End position feedback, which is similar to feedback from a standard proximity sensor, provides information about the completion of the motion task. IO-Link enables remote control, parameter copy, backup function, and read functions for process parameters.

For those machines and lab instrumentation where compressed air for pneumatics is simply not feasible, the Simplified Motion Series provides a cost effective, easy to apply, and well-featured electric solution. (www.festo.us)

NORD

OFFERS A VARIETY OF PRODUCT DEMOS DURING PACK EXPO CONNECTS

Condition Monitoring for Predictive Maintenance

For condition monitoring, drive and status data are recorded periodically or continuously to optimize the operational safety and efficiency of machines and plants. Condition monitoring provides valuable information for predictive maintenance with the goal to service equipment proactively including avoidance of unplanned downtimes, early detection and avoidance of undesired operating conditions, time-based maintenance replaced by status-based maintenance and more. On November 9 from 12:15 - 12:30 pm Central Time, NORD experts will walk attendees through the core concepts of condition monitoring and the cost-saving benefits of this technology. Q&A to follow.

LogiDrive with IE5+ Motor Technology

The NORD LogiDrive solution is a complete decentralized drive package that greatly reduces engineering and commissioning efforts. With this modular system, the number of variants can be minimized, making it easier to maintain and saving Total Cost of Ownership (TCO) costs for the operator. LogiDrive systems include: a high efficiency NORD gearbox, IE4 or IE5+ permanent magnet synchronous motor (PMSM), Decentralized variable frequency drive (VFD), Power plug connector, M12 signal connectors, Incremental encoder, Pre-assembled cable, high overload capacity, standardized hollow bore or solid shaft diameters, efficiency at partial load and low speeds. On November 10 from 2:45 - 3:00 pm Central Time, NORD experts will provide an overview of this solution with Q&A to follow.



Nsd tupH Stainless Steel Alternative

Need the protection of stainless steel, but want a more cost-effective solution for your washdown or other extreme environment applications? NORD's patented nsd tupH sealed surface conversion system gives you the protection of stainless at a fraction of the price. This process conforms to FDA Title 21 CFR 175.300 and is ideal for the food and beverage, dairy, pharmaceutical, and chemical industries. NORD puts a solid, one-piece aluminum case through a chemical process that converts the surface and becomes 6-7 times

harder than the original aluminum alloy. This converted outer layer is extremely durable and will not propagate damage or scratches. Paired with the company's stainless steel hardware and shafting, a unit treated with nsd tupH is comparable to the durability of an all stainless steel unit, but is considerably lighter in weight and is able to dissipate more heat during operation. On November 11 from 2:30 - 2:45 pm Central Time, NORD experts will walk attendees through the benefits of the nsd tupH surface conversion system with a Q&A to follow. (www.nord.com)

Regal Beloit

ANNOUNCES MODSORT TRIDENT THREE-WAY SORTATION SYSTEM

Regal Beloit Corporation has announced the introduction of its Modsort Trident three-way sortation system. The company will showcase this newest edition of its modular transfer and divert station at the Pack Expo Connects virtual conference beginning on Monday, Nov. 9.

Part of the Modsort suite of products, the Modsort Trident has a four-zone infeed that gaps a product, reads the package, and sends it down a belt, where it then diverts left, right or straight on a 30-degree spur-curve to one of three sorting locations.



The Modsort Trident is a Regal concept and a continuation of its Modsort technologies, which is known for its quiet operation. Modsort technologies include the Modsort Station (individual transfer), Modsort Derivatives (with expanded sort capacity) and Flat Sorter Systems (with a complete mobile and expandable solution). The Modsort Trident three-way sortation system includes additional mechanical variations to this turnkey solution.

"The Modsort Trident is ideal as a secondary sortation station in a fulfillment center and works well with parcel post, e-commerce and warehouse distribution applications," said Jeremy Fryman, SystemPlast product manager, Regal. "This sortation system can accommodate up to 50 cartons per minute on average, with a weight limit of 50 pounds. It utilizes a 34-inch wide (between frame) x 66 inch long triple-belt divert for polybags, boxes, flats and some types of totes. Modsort Trident technology uses 24-volt DC power and requires only a simple power drop and Ethernet connection to

customer warehouse management solution. Designed to be mobile (the unit comes on heavy duty casters) and can be redeployed if needed to another location.” (regalbeloit.com)

Bosch Rexroth

FEATURES NEW CTRLX AUTOMATION PLATFORM

Bosch Rexroth will showcase a new world of automation with its ctrlX AUTOMATION platform, making automation as easy as using a smartphone. Packaging machine builders and end users can virtually eliminate the boundaries between machine controls, the IT world and the Internet of Things with the flexibility to add new automation functions and updates via app to create complete Industry 4.0 automation solutions. The heart of the ctrlX AUTOMATION platform is the ctrlX CORE, the most consistent, open and flexible control platform in the industry. With a Linux real-time operating system, open standards, app programming technology and web-based engineering, ctrlX AUTOMATION reduces components and engineering costs by 30 to 50 percent.



The new platform is ready for standardized and manufacturer-neutral interfaces. In addition to EtherCAT, the system also supports PROFINET and IO-Link. The ctrlX CORE supports more than 30 interfaces to IT systems such as OPC UA and MQTT, ensuring seamless communication and connectivity – from field level up to the cloud. With ctrlX WORKS, the Bosch Rexroth software toolbox, users can also easily assign ctrlX AUTOMATION apps or their own apps to the control.

Join Bosch Rexroth at the PACK EXPO Connects 2020 virtual event to learn how you can automate your Factory of the Future with scalable, connected solutions from Bosch Rexroth. Company experts will give live presentations and technology demos to show you how to implement a fully connected shop floor using ctrlX AUTOMATION. (pe.show/364)

Emerson

HIGHLIGHTS FLOW SENSOR AND INDUSTRIAL PC

The Emerson AVENTICS Series AF2 flow sensor monitors air consumption in pneumatic systems, enabling actionable insight around air consumption and leakage. The leakage rate can be monitored by looking at the used air volume, so leaks can be diagnosed early and addressed before they become a major issue. By giving customers actionable insight on machine data such as flow, pressure and temperature, the AF2 helps to optimize energy consumption, prevent machine downtime and reduce costs. The AF2 is a highly flexible flow sensor that can be directly interpreted by many controllers, and offers multiple communications options, including an IO-Link connection, Ethernet connectivity, OPC-UA server, MQTT communication and on-board webserver. The sensor can be fitted on new installations and its seamless IoT integration makes it perfect for retrofitting existing machines.



The RXi2-LP industrial PC (IPC) edge computer delivers compact, rugged, low power and cost-effective performance computing capabilities to run HMI, historian and analytics applications right at the machine. This enables improved real-time control of operations and better integration into plant-wide systems. Combining strong computing and graphical capability with a low-profile small form factor, the RXi2-LP IPC is ideal for a wide range of industrial applications. (www.emerson.com/en-us/catalog/aventics-af2, www.emerson.com/en-us/catalog/emerson-r2l0n1b1c) **PTE**

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