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**NORD SK 500E POWERLINK Frequency Converters**

With a new interface, NORD DRIVE-SYSTEMS made their SK 500E range of frequency converters fit for POWERLINK. The advantages of that Industrial Ethernet standards are self-evident: Bandwidth and allowable line length are virtually unlimited, and prices of the required network components are continuing to fall.

The POWERLINK-Gateway is designed in the shape of an external bus technology box with additional I/Os. It can be mounted with ease and versatility directly on the SK 500E converter or set off at the machine frame or elsewhere. Using its integrated system bus, each technology box can connect up to four SK 500E frequency converters to a POWERLINK network.

NORD offers the modular SK 500E frequency converters for in-cabinet use in dimensions 1 to 9 with power ranging from 0,25 to 90 kW. With different housing configurations, a continuous performance ramp and numerous upgrading options, they can be adapted for use in various application areas.

The foundation of all models within the SK 500E range is a generously equipped basic device that can be functionally extended and optimized for the individual application using plug-in modules. Basic equipment includes sensorless current vector regulation, automatic parameter identification for attached motors, an integrated braking chopper for generator operation as well as PID controllers for process control and four parameter sets for online selection. In order to ensure aptness for all communication and application requirements of the SK 500E range of frequency converters, NORD DRIVESYSTEMS continually broadens the available range of compatible field bus and Ethernet interfaces.



The SK 500E range of frequency converters by NORD DRIVESYSTEMS now speaks POWERLINK as well.

**Texas Instruments pushes POWERLINK**

With their AM335x microprocessor family, Texas Instruments has recently announced an important step toward easier design of industrial automation applications, including the integration of the real-time Ethernet solution POWERLINK.

This microprocessor family is cost-effective enough for use in generic I/O devices and has the power and graphics support required in controlling and HMI systems.

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What makes it most attractive for industrial control designs is its integrated support for Industrial Ethernet. It features both master and slave functionality for POWERLINK.

Communication is performed by the integrated Programmable Real-time Unit (PRU). This guarantees POWERLINK's uncompromising real-time properties without charging the CPU with the extra load.

"Integration of the protocol stack with the microprocessor's PRU considerably reduces the effort of designing powerful POWERLINK-compatible automation devices," says Sebastian Sachse, Technology Marketing Manager for POWERLINK.

"As it makes dedicated ASIC designs unnecessary, it also saves time to market, board space and considerable cost."



The AM335x ARM-Cortex A8 microprocessor family by Texas Instruments is the first single chip microcomputer with integrated POWERLINK master and slave functionality, eliminating the need for external circuitry. This makes it a giant step for industrial automation.

**openSAFETY now also for EtherCAT**

At the Nuremberg SPS IPC Drives 2012 show, a safety control unit as well as a wide variety of safe input and output modules enabling openSAFETY for EtherCAT were on display at the EPSG booth. "A persistently strong market demand for the support of other field buses aside of PROFINET, sercos III, EtherNet/IP, Modbus-TCP and of course POWERLINK by the superior openSAFETY technology underlines that openSAFETY is on track to becoming an ultimately supplier-independent standard and, by the same token, the sole global standard", says Stefan Schönegger, Managing Director of the Ethernet POWERLINK Standardization Group.

**POWERLINK Encoders for Cost-Effective Migration**

With redesigned POWERLINK rotary encoders based on an FPGA design, POSITAL offers users a cost-efficient way to perform migration from CAN-open to the Ethernet-based successor standard. Mounting depth of the new generation of encoders was greatly reduced. All outer dimensions are now identical to those of the field bus models. They allow cycle times as short as 400 µs or, with low asynchronous data communication, 240 µs.

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In addition to the classic polling mode, during which the master or managing node polls each Slave or controlled node, the "Poll Response Chaining" and "Poll Multiplexing" modes are also supported. This extension of operation modes makes it more efficient for customers to implement their own time-critical applications and raise system bandwidth using the new interface design.

Rugged M12 connectors certified to protection class IP67 bring another advantage for connectivity. Pre-assembled custom cables reduce installation work while helping to avoid installation errors. The connection hood is equipped with two rotary switches. While it was detachable in previous versions, it is integrated in the new encoders.

Two hex-coded address switches accessible from the outside are also rated IP67 and allow setting of the host ID within the net ID in an easy way. This greatly reduces the efforts required by network administrators for maintenance and integration. With an integrated hub and thanks to extremely short propagation delays, lengthy line structures can be implemented as well. Diagnostic LEDs show traffic intensity and link conditions at each port connection as well as the condition of the device from the network's point of view.

With an implementation of the C2 rotary encoder profile according to DS-406 (CANopen), the POWERLINK encoders use a time-tested opto-electronic measurement principle providing fail-safe sampling. Their single-turn sensor system provides a 16-bit per turn resolution. Up to 16,384 revolutions can additionally be recorded in multi-turn mode (14 Bit), so that the effective measurement range covered is 30 bit.

Like all other optical rotary encoders by POSITAL, the POWERLINK encoders do not require a back-up battery. Even after movement in powerless conditions and without reference motion, they supply effective, absolute position values. Various models are available with solid or hollow shafts and optionally in stainless steel.



At the Nuremberg SPS IPC Drives 2012 show, Klaus Matzker presented the cost-effective and compact POWERLINK Rotary Encoder by POSITAL.

## Hilscher Low Profile PCI Express POWERLINK Cards

With cifX 70E, Hilscher has enhanced its PC-Card family by the format "Low Profile PCI Express". The cards have a reduced height to be used in compact IPC or HMI terminals. In addition to the POWERLINK model, versions for PROFIBUS, CANopen, DeviceNet as well as other real-time-Ethernet standards are available.

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Due to loadable firmware and software licenses, the same hardware can alternatively be used as Master or Slave. For Real-Time-Ethernet, 11 different protocol variants can be used on the same PC-Card.

Common to all boards are the dimensions of 119,0 x 69,0 x 18,5 mm according to MD1 standard as well as an easy and reliable PCI slot assignment via rotary switch.

More information about Low Profile PCI Express cards can be found at [www.hilscher.com](http://www.hilscher.com) in the product section PC-Cards.

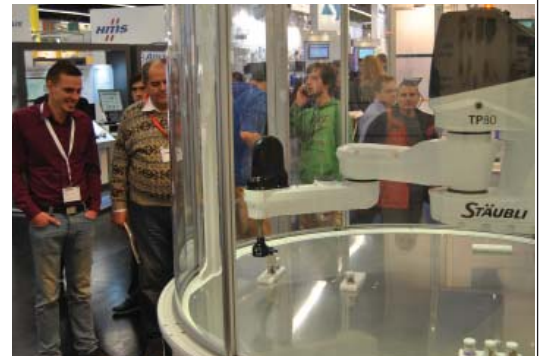


The cifX 70E by Hilscher makes POWERLINK available for Low Profile PCI Express

## SPS IPC Drives 2012: Successful Show for EPSG

The EPSG appearance at the SPS IPC Drives 2012 show in Nuremberg last November met a strong growth in visitor numbers.

This was to a great extent due to another remarkable growth spurt of the POWERLINK-Community, in terms of users as well as technology partners. During a few weeks prior to the show alone, with Danfoss, Getriebbau Nord, Indel, Infranor, Sick, Softing, Texas Instruments and the robot manufacturers Stäubli, Comau and Sepro no less than ten companies joined the POWERLINK and openSAFETY user organization. As this technology is considered superior particularly for fast, synchronous motion with numerous axes, no less than three robot manufacturers were represented at EPSG booth for the first time, one showcasing their latest development with a live demo.



One of the stars on the EPSG booth during the SPS IPC Drives 2012 show was the TP80 pick-and-place robot by STÄUBLI doing up to 200 picks per second.