

Drives & Controls

#1 ENGINEERING MAGAZINE FOR AUTOMATION,
POWER TRANSMISSION AND MOTION CONTROL

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www.drivesncontrols.com

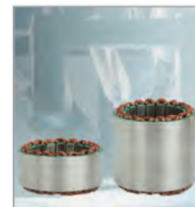
Danfoss

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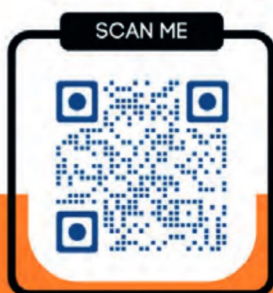
INSIDE **MACHINE BUILDING:**
Cabinet-free confectionery machine slashes on-site work
PRECISION ENGINEERING:
How to specify motors for precision applications
WATER INDUSTRY:
Motor upgrade helps secure London's water supplies



NOW WITH SAFE PHASE SEQUENCE & DIRECTION OF ROTATION DETECTION



The sensorless speed and frequency monitor **UH 6937** of the **SAFEMASTER S Series** now offers safe monitoring of the phase sequence and direction of rotation of motors with 3-phase AC voltages.



- ▶ Ideal for all applications where a safe direction of rotation is essential, such as automation processes, compressors, machine tools and wind turbines
- ▶ Direction of rotation monitoring fulfils Cat. 2 / PLd while retaining Cat. 4 / PLe for frequency monitoring
- ▶ Simple and time-saving start-up without PC



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- Software
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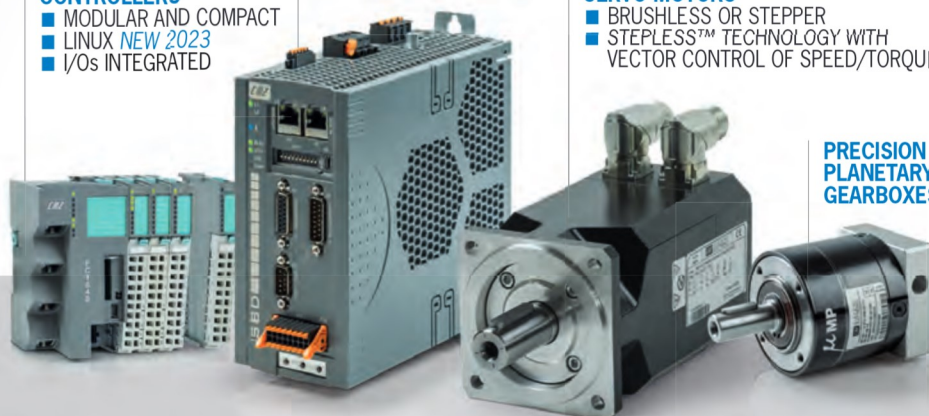
COMPLETE SYSTEMS FOR INDUSTRIAL MOTION CONTROL

- SERVO DRIVES**
- 400VAC OR 230VAC
 - PLC SMARTDRIVE *NEW2023*
 - ALL BUILT-IN

- CONTROLLERS**
- MODULAR AND COMPACT
 - LINUX *NEW 2023*
 - I/Os INTEGRATED

- SERVO MOTORS**
- BRUSHLESS OR STEPPER
 - STEPLESS™ TECHNOLOGY WITH VECTOR CONTROL OF SPEED/TORQUE

PRECISION PLANETARY GEARBOXES



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In automation, speed is everything. CMZ engineers and produces hardware and software complete systems with turnkey configurations reducing the time to market for OEMs of automatic machines. Our solutions are flexible, open to connectivity and customizable upon your project. The result: high performing multi-axis control with unique and special features. cmz.it



Brushless drives with built-in PLCs can automate complete machines

The Italian drives manufacturer **CMZ Sistemi Elettronici** has launched a standalone servodrive for brushless motors from 800W to 7kW, in 230V and 400V AC versions, for currents from 5–20A. The SBD drive, available in the UK from Energy Efficient Drive Systems, has a built-in IEC-61131 PLC that can manage local axes and I/Os, as well as remote axes in decentralised applications. The drive can be used to automate multi-axis machines of any complexity

The PLC functions include: jog mode; absolute/relative positioning; homing; electronic gearing; and a touch probe function. Function blocks can be defined and event code

executed. HMI's can be connected via an RS-485 serial port, using the Modbus RTU protocol, allowing the drive to become a main machine controller, without needing a separate controller or a dedicated PLC.

The drives can be used with CMZ's FCT640 controller (and other Codesys-based controllers), as well as I/O peripherals such as the CMZ's RP064 I/O. They support EtherCat, Profinet and CANopen communications. CANopen can be used to expand the number of I/Os with remote modules such as the CMZ's RP64IO, as well as connecting to other SBD drives. Bluetooth support allows: new tools for mobile



diagnostics; non-invasive diagnostics without opening the cabinet or on carousel machines; as well as new HMI interfaces.

The drives can be programmed, configured, tuned and monitored using CMZ's PC-based SDSetup software.

Energy Efficient Drive Systems
01205 368898
www.cmz.it/en

Educational robot will help students to learn new skills



ABB Robotics has launched a six-axis robot aimed at the education sector. The 21kg IRB 1090 robot offers a reach of 580mm and a payload of 3.5kg. It is 20% lighter than its predecessor and has a 10%

smaller footprint, making it easier to move and install.

The robot, authenticated by the stem.org educational institute, is designed to upskill students and help them to secure future employment.

Coupled with ABB's OmniCore E10 controller, the robot offers functions including motion control, TrueMove, QuickMove, externally-guided motion, and energy-saving grid feedback. It can be used to demonstrate applications such as assembly, material handling,

arc welding and dispensing, and can work with accessories including machine vision cameras, grippers and moveable carts.

Purchasers of the new robot will get 100 free premium licenses for ABB's RobotStudio virtual tool, allowing students to learn the fundamentals of robot programming before having to buy a physical robot.

ABB Robotics
<https://new.abb.com/products/robotics/robots/articulated-robots/irb-1090>

IO-Link master cuts costs and future-proofs pneumatic valve systems

Emerson has launched a Class A IO-Link master for connecting smart and analogue sensors to its Aventics Series G3 fieldbus platform. The G3 IO-Link Master is suitable for machine architectures with many sensors and pneumatic valves, and where reliable communications are needed between field devices such as

sensors and the machine controller.

The IO-Link master offers pneumatic valve control via digital communication with the machine controller. It provides event-based and I/O-



mapped diagnostics.

By adding the IO-Link to valve systems, users can include multiple IO-Link masters on one G3 Fieldbus platform, cutting hardware costs. They can also reduce the number of communications nodes.

The IO-Link master has eight Class A ports per module that support multiple IO-Link smart and analogue sensors. The master can be located up to 30m away from a G3. Sensors can be located up to 50m away.

Emerson
www.emerson.com/en-us/catalog/aventics-g3

Nord Drivesystems has extended the power range of its decentralised Nordac ON 300P frequency inverters for conveyors. The Nordac ON versions for use with asynchronous motors now extend to 2.6kW, while the Nordac ON+ for IE5+ synchronous motors now go up to 3kW. The drives, which have built-in PLCs, have interfaces that support Profinet, EtherNet/IP or EtherCat. There is also a diagnostics interface, M12 connections for sensors and actuators and, with the Nordac ON+, a protocol-based encoder interface.
www.nord.com/en/home-uk.jsp

Micro-Epsilon has extended its true-colour recognition CFO series with a new controller model – the colorSensor CFO250 – which offers a faster raw measurement data output of up to 500Hz. The controller is suitable for high-speed processes such as monitoring mixing processes (granulates and powders) and quality inspection in filling plants. It performs colour evaluations at up to 30kHz, comparing current measurements with taught colours, and outputs results via digital switching outputs. The data can be transferred to a PLC for further processing.
www.micro-epsilon.co.uk

Interroll has enhanced its Modular Pallet Platform (MPP) to increase its load capacity, enhance its energy efficiency, reduce its design complexity and improve storage options for warehouses. The configurable MPP system can transport pallets weighing up to 1.5 tonnes (up from 1.2 tonnes). Tested for 1.5 million cycles, the system has been proven to operate without failure for the equivalent of three years of average use.
www.interroll.com

igus has launched an energy supply system for Scara robots used in cleanrooms. The Clean Scara Cable Solution uses tribologically optimised high-performance plastics and works in almost particle-free conditions specified to ISO class 2, even in high-speed applications. The system is stable and user-friendly compared to corrugated hoses. An e-skin soft modular energy chain guides cables and hoses in an arc from the vertical arm of the robot to the end-effector. Its flexible upper and lower shells can be joined to form a closed, dustproof, and waterproof tube – ensuring that particles do not enter the ambient air.
www.igus.co.uk