



Manufacturing Engineering Process Control Automation

July 2018

[www.mepca-engineering.com](http://www.mepca-engineering.com)



New Automation Technology **BECKHOFF**

# SIEMENS

*Ingenuity for life*

## SIMATIC ET200

### The perfect solution for any application

With the SIMATIC ET 200, the widest range of IO systems is available – for solutions in the control panel or mounted directly on the machine. The modular design allows the ET 200 system to be scaled up and expanded in small and easy steps: digital and analog inputs/outputs, intelligent modules with CPU functionality, safety technology, motor starters, frequency converters, and diverse technology modules.

Flexible, distributed solutions are an essential part of modern automation – solutions that are tailored to your requirements and offer significant cost savings. With SIMATIC ET 200, we offer you a multifunctional, modular, finely scalable system for distributed automation. Communication over PROFINET or PROFIBUS, uniform engineering, transparent diagnostic options as well as ideal interfacing to SIMATIC controllers and HMI units are just some of the benefits of ET200 and Totally Integrated Automation.

[siemens.com/et200sp](http://siemens.com/et200sp)

One stop. Smart shop.



## Shop relaunch – Modern design, reliable service

Greatest shopping convenience in your Online-Shop for automation technology

- ✓ User-friendly navigation
- ✓ Optimized for laptops, tablets and smartphones
- ✓ Clear One Page checkout
- ✓ More accurate search – even faster to the right product
- ✓ Great features for business customers



» Get to know the new features today!



Welcome Code: **NEW2018-24**

Order now with the code and receive a welcome discount of £10 as well as a small Automation24 surprise gift.

Valid until 31/07/2018 from a value of £100. Cannot be combined with other offers.

[www.automation24.co.uk](http://www.automation24.co.uk)

Strong brands:



We are happy to advise you personally!

00800 24 2011 24 (free)  
+44 178 489 5006

@ info@automation24.co.uk

www.automation24.co.uk



Brandon Hobusch  
Technical support



Manufacturing Engineering Process Control Automation

**Editor**

Ella Childs  
editor@mepca.com

**Publication Manager**

Jon McIntosh  
jon@cimltd.co.uk  
01795 509105

**Design & Production**

Grant Waters  
grant@cimltd.co.uk

James Taylor  
james@cimltd.co.uk

Lisa Humphrey  
lisa@cimltd.co.uk  
01795 509108

**Credit Facilities Manager**

Natalie Murray  
creditcontrol@cimltd.co.uk  
01795 509103

**Sales Director**

Tom Woollin  
tom@cimltd.co.uk

**Chief Executive**

John Denning  
jdenning@cimltd.co.uk

**www.mepca-engineering.com**

© 2018 CIM Online Limited, The Goods Shed, Jubilee Way, Whitstable Road, Faversham, Kent, ME13 8GD. No part of this magazine may be reproduced or stored in a retrieval system or transmitted in any form – electronic, mechanical or physical – without express prior permission and written consent of the publisher. Contributions are invited and when not accepted will be returned only if accompanied by a fully stamped and addressed envelope. Manuscripts should be typewritten. No responsibility can be taken for drawings, photographs or literary contributions during transmission or in the editor's hands. In the absence of an agreement the copyright of all contributions, literary, photographic or artistic, belongs to CIM Online Limited. The publisher accepts no responsibility in respect of advertisements appearing in the magazine and the opinions expressed do not necessarily represent the views of the publisher. The publisher cannot accept liability for any loss arising from the late appearance or non-publication of any advertisement.



This product is from sustainably managed forests and controlled sources  
www.pefc.co.uk

To subscribe to MEPCA visit our website  
[www.mepca-engineering.com/subscribe/](http://www.mepca-engineering.com/subscribe/) or simply scan the QR code.



26

# July 2018

**W**e all had a fantastic time at the UKIVA Machine Vision Conference, it was great to meet a few of you and host a seminar hall! With more exciting exhibitions coming up, there is lots to look

forward to over the next few months. The Manufacturing & Engineering Exhibition and Conference, returns to Newcastle on 4th – 5th July and if you turn to page 18 you will find the show preview and what to expect. You'll find out more about the different shows and events coming up on pages 16 & 17 where we have our monthly "must-see exhibitions". We have all the latest industry news from page 6, and this month's cover story is from Beckhoff, giving us a detailed insight into the new series of ultra-compact Industrial PCs. Turn to page 14 to find out more. Regular guest columnists, the BPMA, are back on page 50 as they explain why they are supporting an 'industry friendly' Brexit. IOSH are also back this month on page 48 informing us about their new life saving course which should help save thousands of people from injury through work. Turn to page 36 for a futuristic read about driverless cars and what the future may potentially hold and Albion Valves are also back on page 52 helping us to optimise our safety measures. The official countdown has begun for the UK's leading processing & packaging machinery event. The PPMA show is returning to Birmingham 25th -27th September 2018 and we have the some information on page 62, we are looking forward to that and hope everyone has a great month.



**Ella Childs, Editor**

@Mepcamagazine

Industry Partners:



The manufacturers' organisation



GAMBICA



UK Industrial Vision Association



Processing & Packaging Machinery Association



British Automation & Robot Association

FEATURES

**6 INDUSTRY NEWS**

All the latest news and goings on

**14 COVER STORY**

Beckhoff

**16 MUST SEE EXHIBITIONS**

**24 SENSORS & VISION**

UKIVA, Kistler Instruments, SensoPart

**36 AUTOMATION & ROBOTICS**

KUKA Robotics, Lenze, Control Techniques

**42 CABLES & CONNECTORS**

FS Cables, Hitaltech

**48 HEALTH & SAFETY**

IOSH

**50 PUMPS & VALVES**

BPMA, Albion Valves, Bifold, SEEPEX

**60 EXHIBITIONS & TRADESHOWS**

IMTS 2018, PPMA Show, Advanced Engineering 2018



46



# Miniaturised IGBT power interfaces

HARTING has developed a range of miniaturised power interfaces with integrated electro-optical conversion, enabling customers to save time and money by combining electrical connectivity and optical transmission in the same module.

**T**he new interfaces are designed for use with powerful electric drives controlled by IGBT (insulated gate bipolar transistor) semiconductor elements. In order to achieve the necessary galvanic isolation between the controller and driver board, data is transferred via fibre-optic cable. Electric motors with more than 500 kW output, such as those used in ships, trains or pumping stations, use IGBT semiconductors for speed regulation. These can switch large loads using very low control power.

Since insulation and voltage requirements are very high, plastic optical fibres (POF) transmit the signals required for IGBT control. The POF fibres ensure interference-free and galvanically isolated signal transmission.

In order to simplify the connection of POF fibres, as well as saving space on the controller board and reducing downtime during service, HARTING has integrated the electro-optical conversion process into application-specific connectors.

For traction control on trains, a solution for up to 16 optical channels is available in a DIN D20 metal housing. In harsh industrial



environments, a Han 10A housing variant with IP 65/67 protection offers up to eight channels. The range is completed by a pluggable 8-channel module for direct connection to the circuit board in the switch cabinet.

In all variants, the fibres are connected by means of a metal clip which attaches them

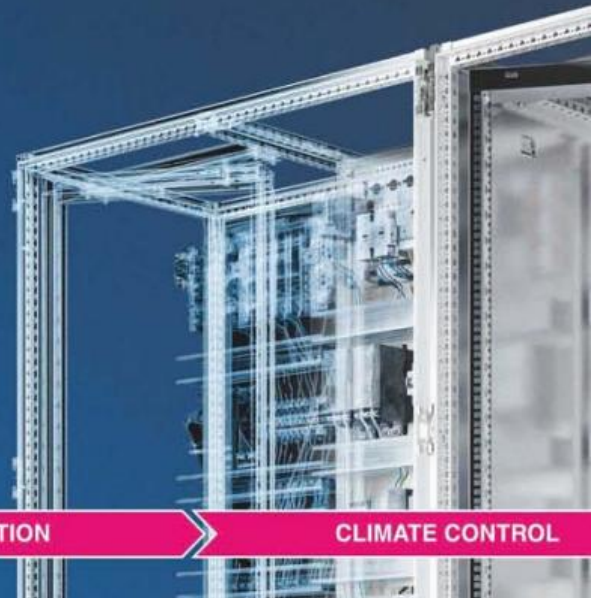
without any additional optical contact. In addition to the possibility of field assembly, HARTING offers the modules as ready-to-use and tested cable assemblies – a compact, robust and service-friendly solution that provides the user with security and cost advantages.

[www.HARTING.co.uk](http://www.HARTING.co.uk)

## Rittal – The System.

Faster – better – everywhere.

# QUICK DATA FLOW. EASY WORKFLOW.



ENCLOSURES

POWER DISTRIBUTION

CLIMATE CONTROL

# New Red Engineering clamps for TechnipFMC

New clamp technology has been developed by RED Engineering to improve subsea well intervention operations.

**T**he two, first of a kind modular subsea clamps have been delivered to energy industry leader TechnipFMC for operation from the specialist well intervention vessel, Island Constructor.

The modular design will allow the capacity of the clamps to be adjusted for both shallow and deep-water operations, providing TechnipFMC with a highly flexible solution for use across a range of well intervention projects.

RED Engineering has been working with TechnipFMC for over 10 years and completed this latest project in under six months.

This included the design, build and testing of the clamps on a turnkey basis, with RED's in-house test facility being used for rapid proof of concept and factory testing prior to delivery.

The project offered a challenge to produce a pair of adaptable clamps that would safely retain two side-by-side umbilical cables, said RED's engineer, Mike Stobbart.

He added: "As with previous clamps, these new ones feature spring applied

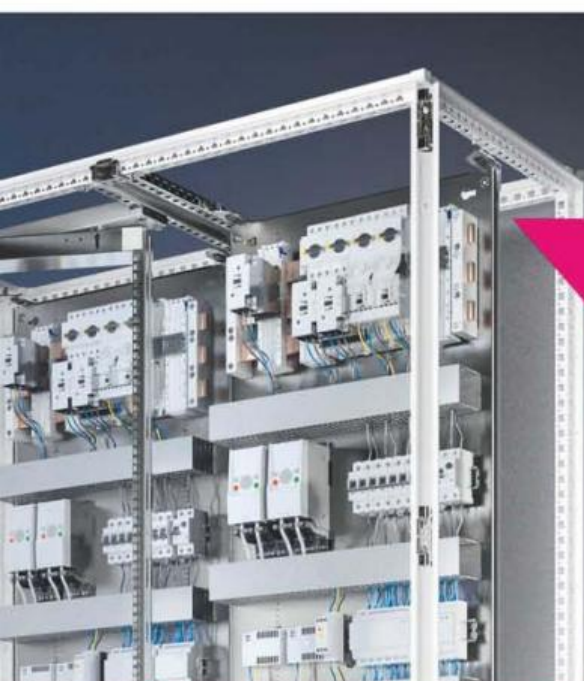
pads to ensure a consistent and reliable clamping force is applied to the umbilicals. However, we have now added a hydraulic actuation system to improve the efficiency of deployment."

Joe Orrell, RED Engineering's managing director, said: "Having worked closely with TechnipFMC for a number of years, we have gained an in-depth understanding of their offshore operations and business drivers. This allows us to optimise our designs to meet their specific requirements and include the learning from previous projects.

"The result, as demonstrated by these new clamps, is the capability to rapidly develop and deliver effective new equipment that will be key to successful operations, both now, and in the future."

RED engineering delivers engineering solutions for challenging installation, maintenance and decommissioning projects. Core expertise spans the design, build and testing of specialist handling equipment, bespoke tooling and remote intervention solutions for the oil and gas, renewables and nuclear decommissioning sectors.

[www.redengineers.co.uk](http://www.redengineers.co.uk)



VX25.  
SYSTEM  
PERFECTION.

## VX25. SYSTEM PERFECTION.

There are always two versions of this enclosure - real and digital. The maximum data quality of the VX25 ensures greater flexibility for configuration, manufacturing and assembly. And with the "digital twin", the person who knows your company best - you yourself - can plan, order, process and do much more besides.

IT INFRASTRUCTURE

SOFTWARE & SERVICES



[www.rittal.co.uk](http://www.rittal.co.uk)

# Data and workflows for Industry 4.0

The new Rittal VX25 large enclosure system supports the control and switchgear engineering industry on the path toward Industry 4.0.

**T**he new system combines a physical enclosure with its digital twin, ensuring it will meet all future digital needs – from online configuration and engineering to assembly, automation and tracking.

Rittal has created a system capable of merging real and physical workflows – delivering significant improvements in efficiency for panel builders and switchgear manufacturers.

The VX25 ensures 3D data is available in consistent maximum quality. The digital element supports control and switchgear manufacturers across every process along their value chain. This means electrical planning, mechanical design, purchasing, cost calculation and manufacturing, as well as every other area of switchgear construction, can always access complete, high-quality data. That capability then opens up new ways for end-users to digitise their processes in accordance with Industry 4.0.

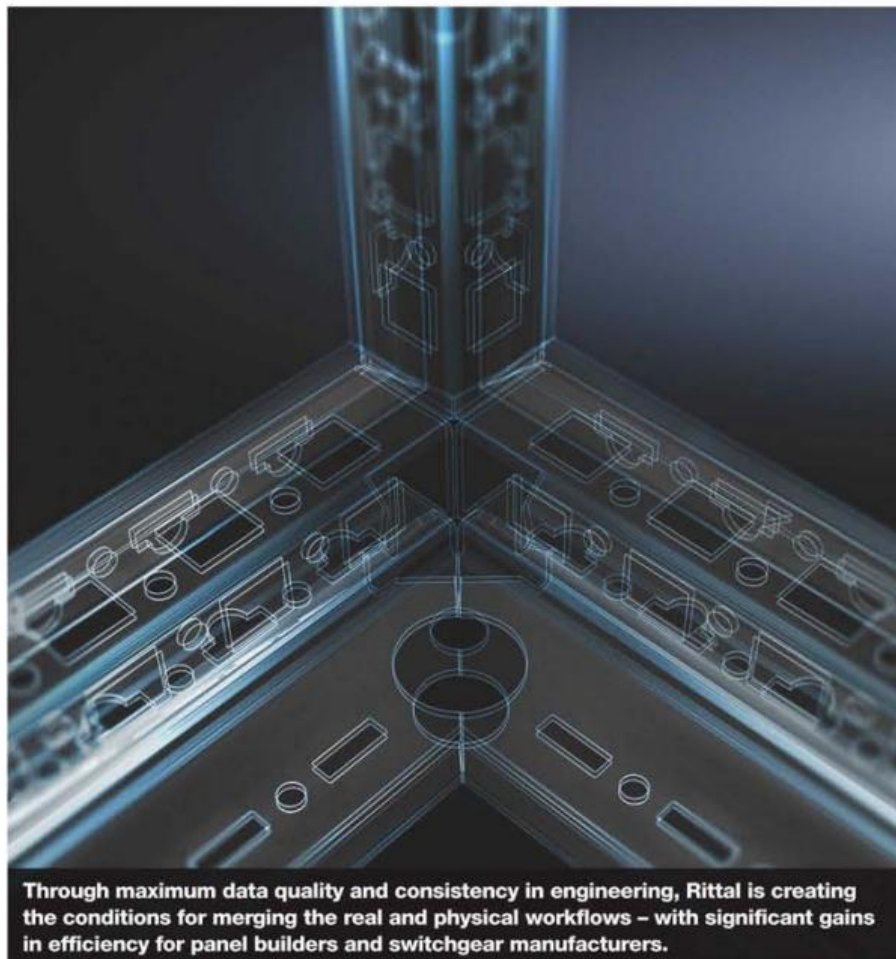
## Maximum data quality

Efficient designing and planning is supported through the easy download of detailed, validated 3D CAD data (Rittal website or EPLAN data portal), the flexible data transmission in all common CAD systems (a total of 70 formats), the mechatronic engineering with CAE/CAD, the generation of enclosure layouts with EPLAN Pro Panel, as well as data classification according to eClass and ETIM, all.

## Error-free configuration

The web-based Rittal Configuration System (RiCS) enables simple and error-free configuration of the VX25 and the desired installation components – even without any knowledge of CAD.

The required planning security is ensured by integrated plausibility checks that provide



**Through maximum data quality and consistency in engineering, Rittal is creating the conditions for merging the real and physical workflows – with significant gains in efficiency for panel builders and switchgear manufacturers.**

direct feedback, ensuring that the solution has a high level of reliability. Rittal has also simplified the ordering processes by linking it to the online shop, as well as with web-based conversion tools to support a changeover from the TS 8 to the VX25 large enclosure system.

## Easy tracking

Validated configuration and engineering results then provide the basis for the automatic controlling of machines at plant construction production facilities. The VX25 panels are equipped with a QR code

to optimise the value creation processes within control and switchgear engineering. Production control and traceability is conceivable in future within control and switchgear engineering. Using the QR code, it will be possible to align the components of the enclosure to a specific order or customer project. This will allow the components to be tracked through the complete workflow, to be assigned to the correct editing programs and for the processing times to be recorded.

**Further information at [www.rittal.co.uk](http://www.rittal.co.uk) and [www.friedhelm-loh-group.com](http://www.friedhelm-loh-group.com)**



# ECO-RAIL-2

## FOCUS ON THE ESSENTIALS



## ECO-RAIL-2

by Murrelektronik

These units provide basic functionality and help to monitor the overall costs in the control cabinet

Eco-Rail-2 power supplies offer manufacturers of machinery and control cabinets the possibility to supply power to their consumers flexibly and economically.

- Cost efficiency through an excellent price-performance ratio
- Flexibility due to the range of versions and adjustable output voltage
- Excellent mains failure bridging time up to 130 milliseconds
- Practical handling during installation and commissioning

## SMES urged to harness technology or risk falling behind

**S**mall-scale manufacturers are in 'critical danger' of losing out to their competitors unless they adapt quickly to the changes sweeping their industries, a supply chain expert has warned.



Lucy Pamment, product manager at supply chain technology specialist Access Group, has branded many of the discussions around Industry 4.0 'unhelpful' for SMEs, who have yet to get on board with the digital revolution.

To counteract this, Access Group has launched a new guide to dispel the misconceptions around Industry 4.0 entitled, Industry 4.0 User Manual for SME. vLucy explains,

"In this guide, we want to show that the latest innovations, including supply chain software, are affordable, scalable and can be rolled out quickly.

"Using down-to-earth language, it's important for production managers to see their factories won't suddenly look like something from a sci-fi film, or that the systems are difficult to master – in fact, most require the same skills you'd use with Microsoft or Facebook."

To download a free copy of Industry 4.0 User Manual for SMEs visit [www.theaccessgroup.com](http://www.theaccessgroup.com)

## TGF600 Thermal Mass Flow Meters for Syngas

**B**ell Flow Systems offers the new Comate TGF600 Series of air/gas flow meters suitable for Syngas. Combining state-of-the-art technology with application-proven precision flow sensors.



Designed for extremely demanding environments.

TGF600 meters are being fitted to environmentally sound UK manufactured Syngas engines - generating substantially less noise and emissions than equivalent diesel engines. Accurately measuring Syngas consumption by the generators, creating clean, on-demand electricity.

Incorporating Comate's latest sensor filming technology, the TGF600 measures flow rate down to 0.3m/s, in pipe sizes DN25 to DN6000. Designed to provide temperature-compensated direct mass flow measurement of air and gases. Suitable for use in stacks and ducts in power generation, gas and air supply and in compressed air monitoring.

Featuring the TPA600 circuit board offering faster, more powerful processing than its predecessors. Two-line LCD readouts show comprehensive process information, with analogue/digital outputs of flow rate and sensor status diagnostics.

For more information please email [sales@bellflowsystems.co.uk](mailto:sales@bellflowsystems.co.uk) and our web address is [www.bellflowsystems.co.uk](http://www.bellflowsystems.co.uk)

## Beekeeper brings manufacturing teams together

**B**eekeeper empowers manufacturers to go beyond bulletin boards and email to communicate and interact with all employees within a powerful, secure, and mobile team app. Companies using Beekeeper effectively foster real-time collaboration, employee engagement, and operational insights through:

- **Mobile group messaging:** Instant exchange of images, texts, and documents for faster decisions, responses, and operational communication—no text or email needed.
- **Team communication streams:** Celebrate success, foster employee recognition, post product news, and share health and safety information instantly across departments and locations.
- **Digital employee surveys:** Listen and gather structured feedback from

frontline staff to improve operations processes and products, as well as gain new understanding of employees' concerns and overall satisfaction.

- **Advanced analytics dashboard:** Use actionable business intelligence to identify and involve influential employees, optimise content, and raise HR effectiveness.
- **Automated team communication tools:** Automate recurring communication flows for new hire onboarding with a flexible, trigger-based workflow system, or send automated campaigns to selected segments of your employees to promote process updates.

Cristian Grossmann, CEO of Beekeeper, comments: "We realised that within the manufacturing industry workers are often



split across multiple sites with no access to email.

Since the majority of workers have smart phones—and check them frequently—we realised that management could tap into this by providing an inclusive team communication tool, regardless of worker location or role. Beekeeper is an employee app that creates a space where everyone can interact, voice concerns, celebrate successes, be social and stay notified of company updates."

[www.beekeeper.io/en](http://www.beekeeper.io/en)

# the little red book

**FS**  
cables

## FS Cables Cabling Guide Issue 11



Extended to 182 pages and A5 in size, issue 11 of 'The Little Red Book' features technical data for over 8,000 cables and connectors.

Stock items are delivered next working-day as standard to most of mainland UK, in standard pack sizes or cut to the length required.

If the cable you need is not listed we can also manufacture cables to meet your specification, often with short lead times and low minimum order quantities.

**Please contact us for your free copy or call and speak to a member of the FS Cables team.**

DATA CABLES

BUS CABLES

HOME AUTOMATION HD CABLES

FIRE & SECURITY CABLES

TELEPHONE CABLES

COAXIAL CABLES

MARINE GRADE CABLES

LSHF CABLES

SIGNAL & CONTROL CABLES

POWER CABLES

RUBBER & CRANE CABLES

HIGH TEMPERATURE CABLES

SPECIAL MANUFACTURE

GLANDS

TECHNICAL TABLES

COLOUR CODES



[www.fscables.com/littleredbook](http://www.fscables.com/littleredbook)

## flexible and specialist cables

Tel: 01727 840 841 | [www.fscables.com](http://www.fscables.com) | [sales@fscables.com](mailto:sales@fscables.com)

## EBE Engineering launches ECOFLOW

**E**BE Engineering, a leading developer and supplier of Venturi orifice steam traps, has launched ECOFLOW, a market-leading steam trap that incorporates the flange into the main casting. The EFK-F and EFG-F versions are both cast in one piece, using CF8 Stainless Steel, which provide the traps with consistent strength, resilience and dimensional accuracy.

The new trap's body comprises of a modular design to incorporate low and high flow in the same housing. Due to a unique and innovative Venturi concept, the new design extends the trap's performance over variable condensate loads. Welding has been eliminated, resulting in a totally homogenous design that makes the trap physically stronger and safer. It also simplifies certification; thereby speeding up production and ensuring consistently high quality. The streamlined manufacturing process enables EBE Engineering to pass on the benefits of economies of scale to its customers.

[www.ebe-eng.com](http://www.ebe-eng.com)



## TE Connectivity celebrates 7 billion PLASTI-GRIP terminals

**T**E Connectivity (TE), a world leader in connectivity

and sensors, is proud to announce the seven billionth (7,000,000,000) shipment of PLASTI-GRIP terminals since the inception of the company.

TE can trace its experience in the development of solderless terminals and crimp technology back to 1948, when Uncas A. Whitaker, the founder of AMP (Aero-Marine Products) invented PLASTI-GRIP – one of the first ever insulated solderless terminals. Since these early days, PLASTI-GRIP has become an industry standard RBY terminal for commercial applications.

"To reach the 7 billion milestone is an amazing achievement for our PLASTI-GRIP products," says Callum Luff, product manager. "The fact that these terminals and splices have stood the test of time in a wide variety of applications shows the staying power of the product. Our customers know PLASTI-GRIP products are high quality, easy to use and reliable."

[www.te.com](http://www.te.com)



## Advance unveils new website

**L**eading UK conveyor manufacturer, Advance Automated Systems, has launched a new website featuring updated content and an easy to navigate user-friendly feel.

The new and completely redesigned website outlines the diversity of Advance's conveying solutions, including their increasingly popular modular solution, Advance SmartLine™.

Fully optimised to work on PC, tablet and mobile, the site provides visitors with options to browse a range of case studies, as well as view extensive photography and video of conveying applications in situ.

Advance's Shaun Graham commented: "The new website provides visitors with a site that is easy to navigate, allowing them to quickly assimilate the range of our products and services. A key focus for us was providing a case study facility where visitors can see the bespoke solutions that we've designed and installed for our customers - this also enables us to fully showcase the depth of our experience and quality of workmanship."

[www.advanceautomation.co.uk](http://www.advanceautomation.co.uk)



## Rotech coding solutions

**R**otech coding solutions boost packing operations at The English

Cheesecake Company. An offline RF2 feeding system fitted with an iJet thermal inkjet coding system from Rotech has helped The English Cheesecake Company boost

the speed and efficiency of its packing operations, allowing the company to date code a pallet's worth of cheesecakes in less than 2 minutes.

The English Cheesecake Company, based in West London, makes a wide range of luxury cakes. Most of the products are supplied blast frozen, with an outer sleeve and best before date applied before they enter the freezer. Rather than printing best before dates onto the filled cheesecake boxes, the new RF2 system prints them onto the flattened sleeves before they are erected.

The RF2 feeding system takes a stack of flat sleeves and separates and feeds them rapidly through a compact, mess-free i-Jet thermal ink jet coder before re-stacking them on the other side. This enables the system to position the date codes precisely and virtually eliminates smudges and errors to deliver a high-quality result.

[www.rotechmachines.com](http://www.rotechmachines.com)





Are you happy your health and safety protects **YOU?**

## THSP Business Safe

- Free interactive Risk Assessment Builder
- Two visits to your premise each year
- Bespoke health and safety policy, documents and guidance
- 12 month contracts, no five-year tie-ins
- MyTHSP online resource portal
- 24 hour emergency helpline

Call 03456 122144 to claim your free no-obligation Business Safe assessment.

# The new series of ultra-compact Industrial PCs

Beckhoff has developed a new series of ultra-compact Industrial PCs (IPCs) – starting with the C6015 and the high-end C6030.

**A**s machines and systems are becoming more modular and control cabinets smaller, the space requirements of control components are increasingly scrutinized. At the same time, ever more complex and sophisticated machines require more computing performance. However, there are also more cost pressures in the field of automation. In order to meet all these requirements, Beckhoff has developed a new series of ultra-compact Industrial PCs (IPCs) – starting with the C6015 and the high-end C6030. These devices are ideal for a broad range of applications, including environments with decentralized architectures and today's Internet of Things (IoT) and Industrie 4.0 applications.

The new series of ultra-compact Industrial PCs premiered with the C6015 at the 2016 SPS IPC Drives trade show in Nuremberg, Germany. Equipped with an Intel® Atom™ CPU, it is well-suited for all kinds of automation, visualization and communication tasks in the medium performance range. Measuring only 82 x 82 x 40 millimetres, the ultra-compact and industrially-suited multi-core IPC is only one-third the size of the C6905, previously the smallest control cabinet IPC in the Beckhoff portfolio. With price savings of approximately 25 percent, the C6015 ranks far below the previously lowest-cost x86 IPCs from Beckhoff. With exceptional installation flexibility, it also opens the door to application areas that were previously unattainable for IPC technology due to cost or space limitations.

## The four factors of a true success story.

The ultra-compact C6015 IPC was a true success from the very start. It has already been deployed in a wide range of applications in high volumes, including many



large-scale projects in Germany and abroad. The concept of the new IPC generation impressed users for several reasons:

- The most important and obvious feature of the C6015 is the extremely compact size that does not compromise suitability for industrial applications. This is underscored by a design with passive cooling and long-term availability in a robust aluminium and zinc die-cast housing. It also meets all other industrial requirements, such as an expanded temperature range from 0 to 55 °C (32 to 131 °F) and exceptional vibration and shock resistance.
- Combining high computing power with low energy consumption, the C6015 leverages Intel® Atom™ CPUs with up to four cores, providing the ideal basis to handle all applications in the low to medium

performance range. – The exceptionally flexible installation concept permits vertical or horizontal back wall installation in control cabinets. Moreover, with its symmetrical cooling fins, the C6015 can be positioned freely within the mounting frame. Features like these and the free orientation of the connector level, with all connectors on a single side, allow a wide range of installation scenarios that accommodate all incoming cable feeds in even the smallest spaces. In the past, this was often impossible, precluding the use of an Industrial PC in certain machine designs.

- The features and interfaces of the C6015 are also designed for a wide range of applications with a 30 GB M.2 SSD, 2 GB of DDR3L RAM (expandable to 4 GB), one DisplayPort, one on-board dual

Ethernet adapter with 2 x 100/1000Base-T connectors, one USB 3.0 port, and one USB 2.0 port. Overall, the C6015 is likely the first Industrial PC on the market to offer such a high performance density paired with all the interfaces needed in a machine design

Now the brand new C6030 Industrial PC expands the ultra-compact series with maximum processing power and up to 3.6 GHz per core.

With highly flexible application options, the new series of ultra-compact Beckhoff Industrial PCs that first launched with the C6015 has proven to be extremely successful. With the addition of the new, ultra-compact C6030 Industrial PC (IPC), the advantages of small space requirements, universal applicability and flexible installation are now also available for complex applications with the highest performance requirements. The multi-core computer, with a size of only 132 x 132 x 67 mm, integrates Intel® Core™ i-series processors of the 6th and 7th Generation to provide ample computing power and offer maximum performance with up to 3.6 GHz per core.

The ultra-compact C6030 IPC is only half the size of the closest comparable control cabinet PC, the C6930, yet it offers more interfaces even in its basic configuration. Depending on the features included, the C6030 IPC offers price savings of up to 34 % over comparable IPCs in the C69xx series. Despite its small size, the C6030 uses – besides the Intel® dual-core CPUs Celeron® and Pentium® – advanced Intel® Core™ i-series processors of the 6th and 7th Generation with up to four cores, and with an optimal ventilation concept, it boasts clock rates of up to 3.6 GHz.

This means that enormous computing power and a comprehensive range of features is available in the space-saving form factor of the C6030. The C6030 is able to accommodate almost any automation and visualisation task, including highly complex axis control, demanding HMI applications, large-volume data handling, and applications with extremely short cycle times. The onboard Ethernet adapter with four 100/1000Base-T connectors, four USB 3.0 ports and two DisplayPort connectors make the C6030 ideal for networking and

high-performance Ethernet-based control tasks.

Both the new ultra-compact motherboard and the robust die-cast zinc and aluminium housing have been newly developed, taking into account all the typical Beckhoff design considerations such as: industrial suitability, Made in Germany manufacturing quality as well as dependable reliability and high-quality look and feel. Due to an extremely long-lasting, speed-monitored and controlled fan with double ball bearings, the C6030 is able to accommodate an operating temperature range of up to +55 °C, depending on the selected CPU.

As the newest addition to the ultra-compact Industrial PC series, the new C6030 also proves to be extremely flexible in terms of installation. It can be attached at its rear or side panel, vertically or horizontally as required, with free orientation of the connector level. This permits a wide variety of installation scenarios and efficient cable management, even in extremely confined spaces.

[www.beckhoff.com](http://www.beckhoff.com)



# Exhibitions & Events coming up in 2018

If you're looking to update your skillset, find a new supplier, or just enjoy networking with your colleagues from your sector, here's a great selection of upcoming events this year.



## Manufacturing & Engineering

4th – 5th July 2018 – Metro Radio Arena, Newcastle, UK

Manufacturing & Engineering will bring together more than 1500 people for the leading showcase of innovation and technological developments in design engineering and manufacturing for the North of England.

[www.mfgengineershow.co.uk](http://www.mfgengineershow.co.uk)



## MTS - International Manufacturing Technology Show

10th – 15th September 2018, McCormick Place, Chicago, IL

IMTS 2018 will be the 32nd edition of the premier manufacturing technology show in North America. IMTS 2016 hosted the highest number of exhibiting companies ever (2,407) and was the third largest in number of registrations (115,612) and in net square feet of exhibit space (1,370,256) at the McCormick Place complex. [www.imts.com](http://www.imts.com)



## PPMA Show

25th – 27th September 2018 – NEC, Birmingham, UK

Serving manufacturers within the food and beverage, pharmaceutical, personal care and FMCG industries to contract packers and more, the show offers visitors a chance to see new machinery in action, find inspiration, new ideas and solutions, gain access to potential new suppliers and evaluate and purchase the latest technology as well as talk face-to-face with the industry's leading technical experts.

[www.ppmashow.co.uk](http://www.ppmashow.co.uk)



## TCT Show

25th – 27th September 2018 – NEC, Birmingham, UK

One of the world's leading 3D manufacturing technology events. For over 20 years, TCT Show has set the industry agenda, bringing together dozens of inspirational speakers, 300+ exhibiting companies and more than 10,000 visitors from over 40 countries.

[www.tctshow.com](http://www.tctshow.com)



# Total Hardware Solutions for Electric Vehicle Charging Units

## Our website



## What we supply

Standard Fasteners  
Fasteners for Plastics  
Fasteners for Sheet Metal  
Plastic Hardware  
Enclosure Hardware  
Security Hardware  
and many more

## How we do it

- Technical knowledge
- Experience
- Extensive product range
- Customer support; through design, development and manufacture



# Ready to hit the north

The award-winning Manufacturing & Engineering exhibition and conference, returns to Newcastle on 4th – 5th July, and remains the place for industry professionals in the North of England to see new products and services, obtain high quality business advice, and try out the latest machines, production equipment or design tools.



**A**n exciting development for Manufacturing & Engineering in 2018 is that the event will be participating in the Great Exhibition of the North's "Inspired By" programme of events, celebrating manufacturing technology and design engineering and their importance to the economy of the Northern Powerhouse.

Manufacturing & Engineering comprises three key elements: keynote conference sessions from industry leaders, practical workshops and an exhibition of leading suppliers – and is delivered in association with Eureka, Machinery and Manufacturing Management magazines.

Nissan will open day-one of the conference with Ian Green discussing how employers can champion careers in manufacturing for the benefit of the whole UK economy. Ian will discuss Nissan's strategy and how it has developed to a point where Nissan now employs the first staff who first engaged with them through school outreach programmes. Day-two opens with Stuart Reilly of Toyota Material Handling, looking at materials handling technology and

innovation, where we are now and what the future holds.

Further highlights include the HypED team from the University of Edinburgh, who will demonstrate the design challenges behind Hyperloop technology developed for the SpaceX project. Rowan Crozier, Chairman of Manufacturing Assembly Network (MAN) discusses how collaboration has been the key to success for members of the MAN group. The Advanced Propulsion Centre's Philippa Oldham will discuss maintaining the UK's leading position as an automotive manufacturer alongside the challenge of zero emission vehicle development.

This year's show will also bring together even more local suppliers alongside global organisations. Exhibiting companies cover a wide range of technologies and services such as visual management tools from Clarity Visual Management, metrology technologies from Zeiss and GOM UK, design & manufacturing software from Autodesk and virtual & augmented reality technologies from Theorem Solutions, to name a few. Visitors will be able to source suppliers, benchmark capabilities and secure

contracts that will help their businesses remain competitive on a global scale.

Alongside the exhibition and conference, there will be several new feature exhibits to inspire and enthuse visitors. Features include the UK's first Hyperloop prototype pod, Nissan's dissected all-electric Leaf car and Sunderland University's Formula Student 2018 car. The Hyperloop pod has been developed by the award-winning Hyped, University of Edinburgh Hyperloop team. The fully-working first generation half-LEAF cross-section, on loan from MAKE it Sunderland, was presented to the city as a symbol of Nissan's gratitude following its workforce being honoured with Freedom of the city. The Formula Student single seater has been developed by engineering students at Sunderland University to race in this year's competition a Silverstone.

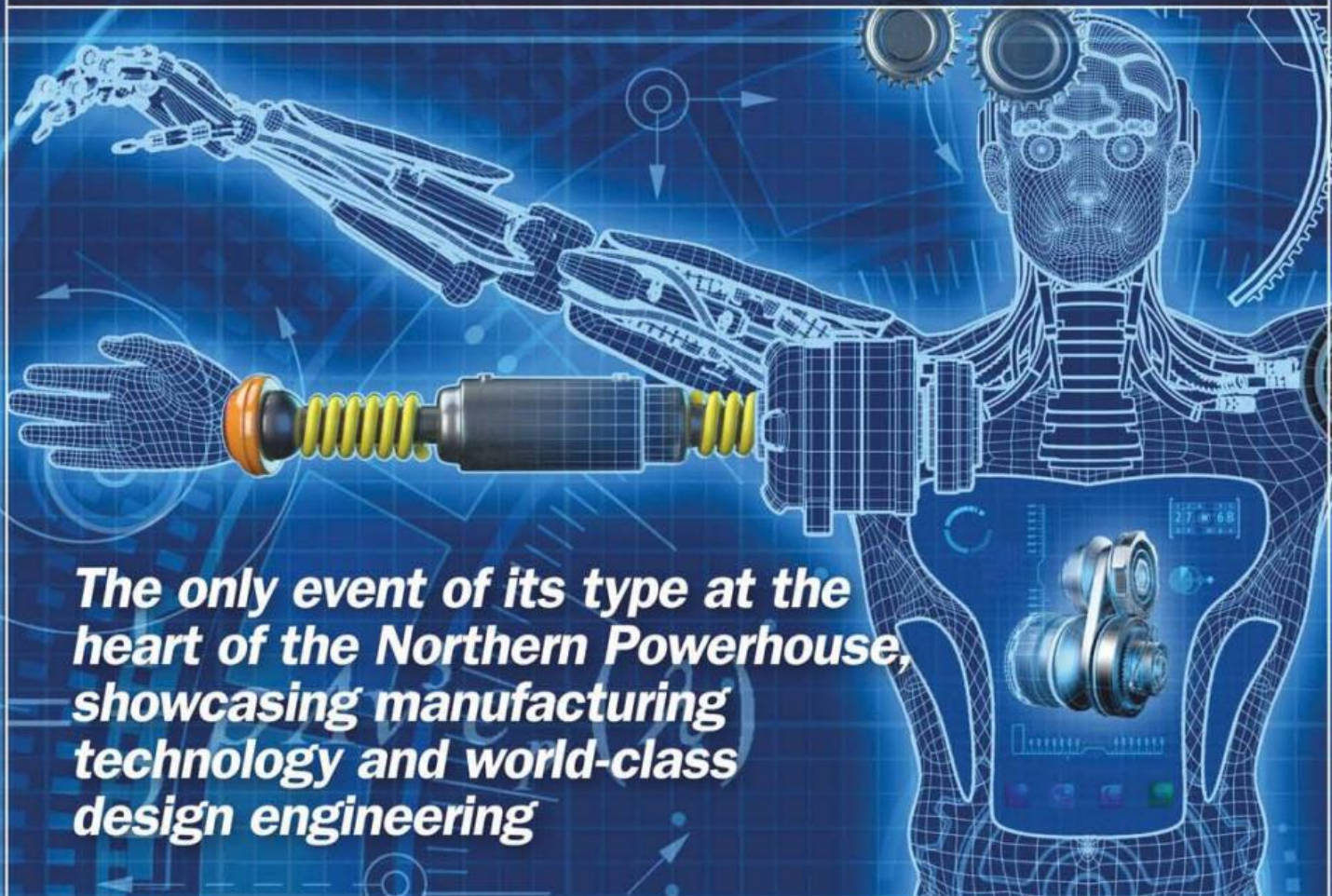
This free, two-day event allows visitors to tailor their agenda to suit their own specific interests and learning requirements. It's quick and easy to register. Just visit our website to book your free place and select the sessions you would like to participate in. [www.mfgengineeringshow.co.uk](http://www.mfgengineeringshow.co.uk)

# MANUFACTURING & ENGINEERING 2018

# ME

MANUFACTURING & ENGINEERING

REGISTER NOW 4-5 JULY 2018  
METRO RADIO ARENA NEWCASTLE



*The only event of its type at the heart of the Northern Powerhouse, showcasing manufacturing technology and world-class design engineering*



Secure your free ticket today at:  
[www.mfgengineeringshow.co.uk](http://www.mfgengineeringshow.co.uk)

Inspired by  
GREAT  
EXHIBITION  
OF THE NORTH

## Peli UK Group - Stand B16

**P**eli UK will exhibit for the first time at Manufacturing and Engineering 2018. Peli Protector Cases will be on display on stand B16; these rugged corrosion proof cases offer watertight, dustproof and crushproof equipment protection, essential when transporting vital equipment.



A bespoke foam insert service is provided by MSA Foams, part of the Peli UK Group.

MSA offer a full design and manufacturing service with a wide range of specialised foams, designed for individual requirements, ideal for sensitive equipment.

### Tool Control

Designing case inserts that are cut to size for individual collections of tools has been part of the business for over 20 years. In combination with branding services, MSA design tool inserts that organise tools efficiently and ensure missing items are easily identified, eliminating the risk of Foreign Object Damage (F.O.D.). Durable custom foam inserts ensure tools are secured in position and fully protected in transit.

For more details on Peli products go to [www.peliproducts.co.uk](http://www.peliproducts.co.uk)

## Media Redundancy Protocol added to amGardpro proNET module

**F**ortress Interlocks' proNET safety and communications module adds industrial Ethernet



communications to its amGardpro range of safety interlocks. This enables the amGardpro's features to be distributed IO (input-output) on a PROFINET network, with safety information exchanged using PROFIsafe extensions.

The company has now added Media Redundancy Protocol (MRP) capability to the amGardpro proNET module. MRP is an open standard for ring topologies in industrial networks such as PROFINET, enabling recovery times of up to 200ms in switch loop scenarios.

With MRP, a 'ring manager' switch drops (blocks) all packet forwarding on one of its two designated ring ports, so all the traffic from devices connected to all the switches in the loop still have a path to each other, with redundant links, but without the harmful switch loop. This means that down-time after a fault in communication wiring is significantly reduced and wiring repairs can be postponed if necessary.

[www.fortressinterlocks.com](http://www.fortressinterlocks.com)

## IndySoft latest release for Subcon 2018

**I**ndySoft - a leader in calibration and asset management software,

announces a new release of IndySoft Version 11. Version

11 adds over 70 new features, a faster interface, Unicode and multi-lingual support, and uncertainty and tooling features included in every client license. With this, they also announced a simplified pricing structure with perpetual license, monthly cloud hosting and self-hosted subscription-based options.

Cloud-based software offers many advantages over on-premise software. Operational agility is frequently noted as a key driver of going to the cloud; flexibility to quickly and easily scale based on business needs is built in. Going to the cloud may also have financial benefits. Perpetual licenses require a lot of capital on the frontend, where cloud subscriptions provide cheaper monthly options and include support. Additionally, it allows businesses to focus on what they are in business to do. Because there is no on-premise hardware required and set-up and management is much simpler, an expensive IT department or outsourced IT services are not needed.

[www.indysoft.co.uk](http://www.indysoft.co.uk)



## Clarke Inverter Generators

**T**his superb range is ideal for providing a ready source of electrical power

for camping, caravanning, motor homes, market stalls, boats, etc.

These models use 'Sine Wave Technology' ensuring the delivery of clean and stable power, vital when running sensitive electrical/electronic equipment such as TV's, Computers and Laptops.

Max power options available are 800W, 1100W and 1800W and all feature easy start, efficient 4 stroke engines that include an Eco throttle system and low oil/overload shutdown for greater fuel efficiency and reduced running costs.

They are compact, super light (from only 9.3kg) and housed in a stylish case with rubber feet designed for portability, with the added benefit of reducing noise levels to an absolute minimum as low as 69dBA at 7m (¼ load) and a running time of up to 5½ hours at ¾ load. All models include a 12V DC battery charging facility with single or twin sockets.

Prices in this range start from only £215.98 Inc. VAT.

[www.machinemart.co.uk](http://www.machinemart.co.uk)





# Calibration and Asset Management Software

- ✓ Cloud and Subscription based options
- ✓ Unicode & Multi-lingual support
- ✓ Fluke MET/CAL integration
- ✓ Fully customizable interface, processes, and reports

IndySoft Europe  
500 Avebury Boulevard, Milton Keynes,  
Buckinghamshire, MK9 2BE, United Kingdom

+44 (0) 1908 540 638

sales@indysoft.co.uk

www.indysoft.co.uk



Latest version now available! **IndySoft version 11**



## CUSTOMISED PROTECTION

COME AND SEE US ON STAND B16  
4-5 JULY 2018  
METRO RADIO ARENA NEWCASTLE

**ME 2018**  
MANUFACTURING & ENGINEERING

- ▶ Peli Cases – waterproof, crushproof, dustproof protection
- ▶ Foam designed for optimum protection (components, tools etc.)
- ▶ Tool control using coloured foam eliminates risk of FOD
- ▶ MPAS Military Packaging approved designer and manufacturer
- ▶ Experienced in-house design team



NOTHING PROTECTS LIKE PELI – GUARANTEED FOR LIFE

**PELI**Products.co.uk

# New soft-touch Brillopak 'Glove' cradles foods

Brillopak revolutionises the longstanding challenge of automating the gentle placement of heavier food items, including pre-packed potatoes, vegetables, fruit and larger VFFS wrapped meat joints, in addition to netted and boxed products.

Using a soft, food-grade material, the Glove end effector can be fitted to any dexterous single-pick case loading robot. Unlike grippers, which can pierce packaging, bruise fresh produce or affect vacuum seals causing faster spoilage and discolouration, Brillopak's Glove delicately picks up and release items with precision and control. By cradling products that cannot be lifted by suction due to weight, for example melons, or certain types of packaging materials, including nets, the Glove scoops up items individually and gently lowers each product into retail crates. Brillopak believes it to be the first single pick end effector of its kind in Europe.

Aside from handling root vegetables like potatoes, carrots and parsnips in VFFS plastic packaging, the Glove is ideal for tops fruits like apples and pears where bags may sag and drop causing production to stall while operative clear the line. It also solves the challenge of packing larger fruits such as melons and pomelos, joints of high value meat, netted nuts, shellfish and citrus fruits, and even seasonal items such as cheeseboards and hampers.

With Mintel's most recent Global Packaging Trends Report (2018) indicating that most retailers and brands will get on board with eco-friendly packaging materials, the Glove also helps packers to consider the importance of having a multifunctional end-effector that can handle a range of packaging formats. Among them, netted bags, card, recyclable wood casings, like those used by some soft cheese brands, and even fragile biodegradable formats. Brillopak director David Jahn explains: "As the war on plastic continues, we are anticipating lots of revolutionary approaches where conventional grippers, collation



**Brillopak's innovative Glove revolutionises how heavy fresh foods, including potatoes, melons, meat joints and netted produce is packed into retail crates and trays using automation.**

tables and even vacuum may not be the most efficient automated product handling technique."

Following a set presentation format, which changes constantly depending on the retailer being supplied and product SKUs, the Unipick Glove effortlessly handles in excess of 85 packs per minute. Designed initially for a leading UK supermarket that wanted the flexibility to load different sized potato packs into crates without impacting line speed, the 'Glove' overcomes the issue of complex reprogramming, as it's much easier to change the coordinates for a single pack placement than an intricate collation pattern.

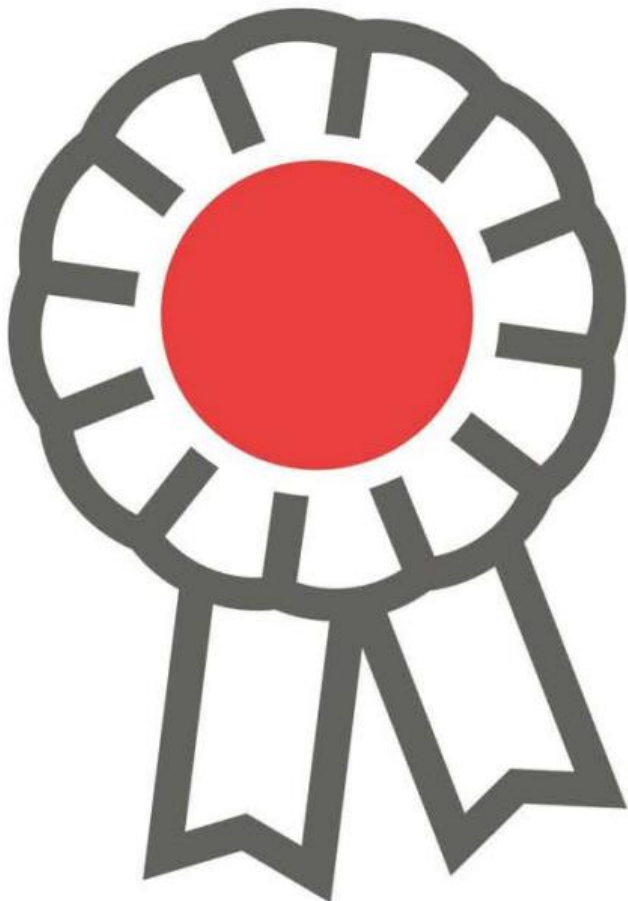
By using a four-axis Delta robot, with a reach of 1130mm (30% more than similar sized robots), Brillopak's Unipick system fitted with the Glove end effector can tilt

the load. "It means that packs can top loaded into a container in a different angle to how they are picked up, resulting in better presentation. It also places packs gently in tight spaces or containers with inverted lips," explains David.

Packers can even extend their portfolio to loading punnets individually into trays, switching over to specialist vacuum end effectors in a matter of minutes. "Flawless loading with minimal line interruptions is best achieved with a single product pick – it's the safest way to load a wide range of retail crates accurately and why we developed the Unipick system," adds David. The choice of using a three or four arm Delta robot with the Glove is determined by the application and product weight.

[www.brillopak.co.uk](http://www.brillopak.co.uk)

# WE'RE N°1 BECAUSE WE PUT YOU FIRST.



At Albion, we've been putting our customers and end-users first for 30 years. And today we are proud to be recognised as their first choice for ball valves. Perhaps it's no surprise, as we were the first supplier in the UK to have a ball valve certified for use with gas and since then our reputation and popularity have continued to grow.

But that's just part of the story. From that single item our range has expanded to over 5,000 lines and Albion products are now used in thousands of process and building services installations across the UK and, most recently, abroad.



The secret to our success? An unwavering commitment to provide outstanding customer service, expert technical advice and comprehensive after-sales support, as well as the best value products.

We've still got a long way to go, because we want all of our specialist valves and fittings to be your first choice. Until then, thank you to everyone who has put us first. You will always be our number one.

• It's **all** at Albion

Available exclusively from your local independent distributor

# New weighing indicators from Variohm

Full featured weighing indicators have OIML and CE approval: Variohm offers new comprehensively equipped weighing indicator models.



Complementing its existing range of sensors for monitoring load, Variohm EuroSensor has added two new weighing indicators that offer OIML and CE approval plus a host of features and options for commercial and industrial weighing applications.

Suiting both scale and process weighing tasks, the new 20i & 22i series can be configured with a choice of 6-digit LCD or LED displays. And, with an auto-switching AC supply or optional battery power for mobile equipment use, maximum durability is ensured with an IP67 rated stainless steel housing and mounting fixtures. A menu driven user interface includes a membrane keypad with 12 numeric keys + 7 functional keys that allow straightforward selection of built-in weighing and counting modes where an Alibi memory retains the last 100k transactions.

As standard, the units offer selectable digital I/O, four dry-relay outputs and two opto-isolated inputs for setpoints and batching. PC or PLC connectivity includes an RS 485 full duplex interface or an optional Ethernet TCP/IP and USB 2.0 board can be specified. Two serial ports also provide printing, networking and other various serial streaming formats. A 20 mA serial port is available for a remote display. The indicators will drive up to 10 x 350  $\Omega$  load cells (4 to 6 wires) or up to 20 units of 700  $\Omega$ .

The many application configuration possibilities for the 20i and 22i include but are not limited to the following: Custom ticket printing with gross, net and setpoint in a customisable format that can include print time and date, unit ID, and consecutive ticket number; Accumulation where weights are totalled with an armed print function; Batching with up to eight batch steps with latched or continuous outputs for gross, net

and delay setpoint. Actions include trip high or low, wait for standstill, print, accumulate and tare; Keyed tare—pre-set tare value can be entered when the gross weight is at zero; Configuration for local/remote where the remote unit displays weight and transmits key press commands to the local unit; User and operator password protection; Audit trail tracking; Time and date.

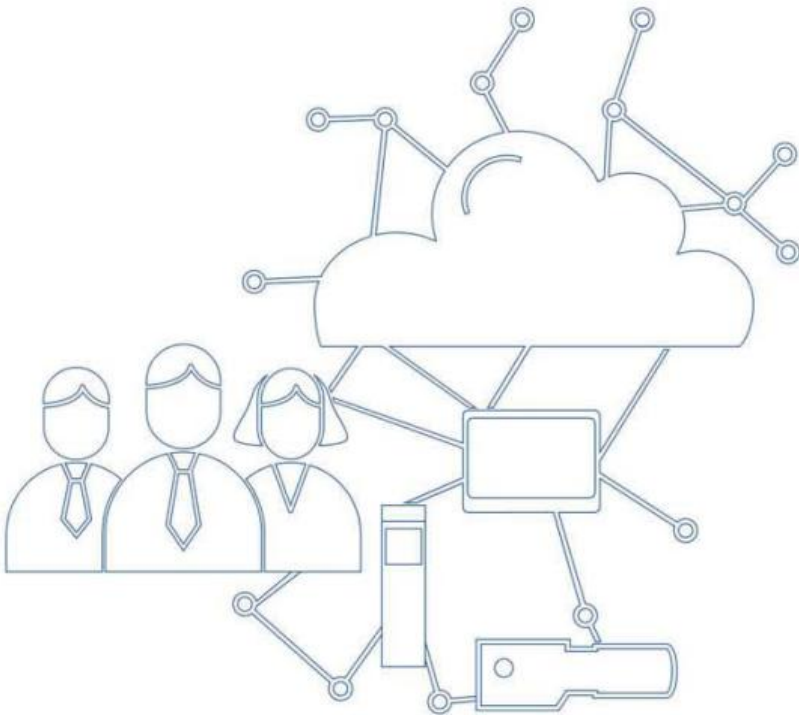
A comprehensive datasheet is available from Variohm EuroSensor. The UK designer, manufacturer and distribution partner for leading global sensor component suppliers covers a comprehensive range of sensor technologies including linear and rotary position, load, force, vibration and temperature. Variohm provides complete pre-sale and post-sale application support for demanding measurement applications throughout industry, agriculture, construction, autosports and research.

[www.variohm.com](http://www.variohm.com)



# Automation goes blue.

And your machine is ready for the smart factory.



Scalable hardware. Modular software.  
And plenty of brainware: the people at Lenze.

How can we make your machine automation flexible,  
networked and secure?  
Get in touch today to learn more.

T +44 (0)1234 753200 E [sales.uk@lenze.com](mailto:sales.uk@lenze.com) W [www.lenze.com](http://www.lenze.com)

**Lenze**

As easy as that.

# UKIVA event goes from strength to strength

With attendance figures up by more than 17% compared to 2017, the UKIVA Machine Vision Conference and Exhibition held recently in Milton Keynes is going from strength to strength.

**T**he Conference was really well attended throughout the day while exhibitors reported a steady stream of visitors who showed real interest in the products and services on show with a real desire to find ways of solving their application needs. In addition, the two keynote presentations highlighted how vision has made a significant contribution to the development of two very different types of autonomous vehicle. Professor Tony Pipe, Deputy Director at Bristol Robotics Laboratory, UWE talked about the Venturer autonomous car project, while Henry Harris-Burland, VP Marketing at Starship Technologies, concentrated on the development and deployment of small, self-driving personal delivery robot vehicles (two of which were in action during the show).

## Creating a learning environment

The major focus of this event is to create a learning environment. The comprehensive Conference program was designed to provide a diverse range of content which would meet the needs of visitors new to vision through to highly experienced practitioners in the subject. The program was divided into 7 different themes in individual presentation theatres and all of these attracted a good level of attendance throughout the day. With business being an important part of the event, there was still plenty of time to explore the exhibition which was located in the same hall. More than 50 exhibitors put on an impressive display of the latest vision technologies and services currently available. Perhaps most importantly, visitors, presenters and exhibitors came together to create an environment where knowledge could be shared, real world needs could be properly discussed, solution ideas proposed and



business relationships begun and reinforced. For visitors it was the chance to see a host of manufacturers, distributors and systems integrators under one roof.

## Significant interest in deep learning

Deep learning and machine learning have been major topics of discussion recently in the world of industrial vision. This event provided a platform for visitors to find out much more about how they work, what they work best for and to see some actual applications. It therefore came as no surprise that the deep learning and machine learning presentations enjoyed the highest attendances of the day apart from the Keynote talks. The presentations explained some of the different algorithms available for these methods of object feature recognition and classification and there was the chance

to investigate their commercial availability in the exhibition.

## Success breeds success

UKIVA is delighted with the outcome of the meeting. Event organiser, Chris Valdes, said: "We feel that the event is going from strength to strength and has established itself as a platform for business. Visitor numbers were up compared to last year and people from many different market sectors came along. We attracted exhibitors from all over the world who are keen to tap into the UK vision market. Everybody we have spoken to has commented on the vibrancy and 'feel' of the event and that the visitors clearly really wanted to be there and make the most of everything that was on offer. We plan to carry this 'feel good' factor through to the next UKIVA event."

[www.machinevisionconference.co.uk](http://www.machinevisionconference.co.uk)



**SCORPION**  
3D STINGER™

## FROM FOOD TO FOUNDRY

Scorpion 2D and 3D Stinger products offer reliable inspection, verification and traceability solutions for any product size, shape and speed of line.

***World class 3D Vision robot picking solutions for the real world***



***Real Solutions for Real World Applications***

[www.scorpionvision.co.uk](http://www.scorpionvision.co.uk)

**Quality assurance is  
not a matter of luck.**

Get Better. With Kistler.



To ensure that series production is not just a poker party, our sensors and systems deliver 100% quality assurance to your production. Not only that, but automatic documentation of your production enables reliable, traceable process data analysis and collection without a single gap. No matter where your production site is: We offer you complete, customized solutions and comprehensive service support worldwide.

[www.kistler.com](http://www.kistler.com)

**KISTLER**  
measure. analyze. innovate.

# 5 force sensors from Kistler Instruments

Simple to install force sensors for press-fit processes.

**T**he range of five force sensors from Kistler Instruments has been developed specifically for use in production environments, especially for quality assurance monitoring in press-fit assembly applications.

The combination of compact size, simple installation, wide measuring range, overload tolerance and value for money make the new sensors ideal for use in manufacturing applications.

The sensors cover measuring ranges from 5kN to 120kN and are supplied as standard with 1%, 10% and 100% measuring range calibrations. In most applications, the sensors may be fitted directly into presses, punches and rams but, where this is not possible, a variety of flanges and adapters are available. Where high precision coaxial installation is required, such as in presses, a double sided centering seat is available. Three of the sensors have a longitudinal,



central bore for use with ejector tools and the standard accessories kit includes mounting adapters, threaded bushes and a steel screw-on cap, to protect the radial cable outlet.

Kistler force sensors provide precision process monitoring that is easy to install, robust and virtually maintenance free throughout a long working life.

[www.kistler.com/en/](http://www.kistler.com/en/)

# New Fluke Ti400 PRO and Ti300 PRO Infrared Cameras

Fluke has introduced upgraded versions of two of its best-selling infrared cameras.

**T**he new Fluke Ti400 PRO and Ti300 PRO Infrared Cameras feature a more intuitive touch screen interface with a higher contrast display and compatibility with optional smart telephoto, wide-angle and macro lenses which can be interchanged without calibration. The cameras provide fast, one-handed operation to perform multiple inspections quickly and accurately – ideal for predictive/preventive maintenance, for industrial, commercial and HVAC electricians, facilities managers and energy auditors.

Both the Fluke Ti400 PRO, with 320 x 240 resolution, and the Ti300 PRO, with 240 x 180 resolution, feature LaserSharp™ Auto Focus, which, with the touch of a button, uses a built-in laser distance meter to calculate and display the distance to target and snaps the image into focus. An

alternative advanced manual focus mode can be used.

They also feature Fluke IR-Fusion® technology, which captures a visible light image in addition to the infrared image and combines them with three different operating modes (Picture-in-Picture, full visible light, and AutoBlend™), and are provided with Fluke Connect SmartView® Desktop Software, for optimising and analysing thermal images, generating customisable reports and exporting images in multiple formats to the Fluke Connect Cloud.

The new infrared cameras integrate into Fluke



Connect® - the company's full-feature platform that permits Fluke tool users to receive, store, visualise, and report electronic measurement data from more than 40 Fluke Connect wireless test tools. This allows technicians to record and share thermal images, along with electrical and other measurements, in real time via their smartphones or tablets and automatically upload them to the cloud.

[www.fluke.co.uk/ti](http://www.fluke.co.uk/ti)

ifm electronic



# Ultrasonic Sensors

for reliable detection



Ultrasonic sensors from ifm electronic.  
Sensing ranges up to 2200mm

M18 thread with length options and  
choice of plastic or stainless steel.

Digital and analogue outputs with easy  
setting.



ifm electronic – *close to you!*

[www.ifm.com/uk/ultrasonic](http://www.ifm.com/uk/ultrasonic)  
(020) 8213 2222

# A new hygienic pressure sensor

Hygienic pressure sensor PP20H with condensate-resistant measuring cell for increased operating safety.

**W**ith a new generation of hygienic pressure sensors in the PP20H family, Baumer closes a gap in its portfolio and also offers an attractively-priced solution for demanding hygienic applications. The sensor has a robust, IP69K-rated stainless steel housing which is designed to handle a variety of applications and is equipped with a condensate-proof silicon measuring cell. Its scaled pressure range from -1 to 40 bar and wide range of process connections make it extremely versatile. It is available with 4 ... 20 mA signal and IO-Link. It complies with the strict hygiene requirements in the food and pharmaceutical industries and is CIP and SIP-capable.

Thanks to the hermetically-sealed measuring element, the measuring cell is completely insensitive to condensate, even with extreme temperature fluctuations in

damp environments. Together with its excellent temperature and long-term stability and high accuracy, the sensor guarantees demanding hygienic processes are monitored, controlled and regulated safely.

This compact pressure sensor covers the wide media temperature range from -20°C to 125°C without requiring a cooling line, providing space-savings in installation. Additionally, a variety of applications can be covered by just one sensor model. This saves on storage and reduces costs.

Several sensors can be simultaneously configured via IO-Link. This simplifies switching point adjustment for different process stages at start-up or batch changes



and saves time. Diagnostic data can be instantly called up and evaluated, which increases system availability.

The modular sensor structure enables shipment within 48 hours after receipt of order (ARO).

[www.baumer.com/PP20H](http://www.baumer.com/PP20H)

# Ewag's five-axis profile line

A new answer for high-precision grinding of indexable inserts.

**E**wag's Profile Line – a new five-axis grinding centre that sets new standards in the high precision machining of indexable carbide inserts – is now available in the UK from Walter Ewag UK, a member of the United Grinding Group.

Developed jointly by Ewag AG and sister company Walter Maschinenbau GmbH, and incorporating Ewag's world-leading software and tooling expertise, which includes Ewag's Smart chuck, a host of additional innovative features are provided on a machine having a rapid traverse rate of 15 m/min and with X, Y and Z axis travels of 330 mm, 200 mm, 470 mm, respectively:

- Integrated six-station wheel changer
- The use of customer-specific pallets
- Vision system for part recognition
- Innovative ProGrind and Helitronic Tool Studio software

The six-station robot changer for grinding

wheel sets and coolant supply manifolds ensures optimum wheel selection, thereby maximising the machining volume for sintered blanks.

Another outstanding feature for autonomous multi-shift operation is the use of an integrated six-axis Fanuc robot cell where customer-specific pallets can be held and a high-resolution CCD-HD vision system is available for loading/unloading using magnetic grippers. Cleaning, re-clamping and centring stations can also be integrated and adapted to customer-specific demands.


In addition, Profile Line for the first time combines Ewag's renowned ProGrind software with Walter's market-leading Helitronic Tool Studio software in the user-friendly Fanuc CNC system for the fast and effective 3-D simulation of production routines.

The result is a dramatic expansion in the



range of applications that can be performed on a wide variety of interchangeable inserts. Indeed, even the most complex insert geometries – such as those used for drilling or milling applications - can be ground in one set-up with resulting benefits in both precision and productivity.

[www.walter-machines.com](http://www.walter-machines.com)



Analyzing needs.  
Reinventing technology.  
Simplifying solutions.

SmartRunner Matcher  
Light Section Sensor for Profile  
Comparison

- Unique combination of light section technology and 2D vision sensor with integrated LEDs opens up a variety of new applications
- Application-specific sensors: pre-configured and calibrated based on the application
- Transformation of complex measuring data into simple digital signals for fast and easy integration
- Easy installation due to parameterization via Data Matrix control codes or teach-in

[www.pepperl-fuchs.com/smartrunner](http://www.pepperl-fuchs.com/smartrunner)

Your automation, our passion.

 **PEPPERL+FUCHS**



## TALK TO THE GAS ANALYSIS EXPERTS.



Cambridge Sensotec has been supplying gas analysis solutions for 20 years. Based in the UK, the company has an established worldwide distribution network and ISO 9001 accreditation. Specialists in oxygen analysis, we also offer a range of biogas, syngas, multigas and SF<sub>6</sub> gas analysis instruments. Contact us today to discuss your requirements.

[www.cambridge-sensotec.co.uk](http://www.cambridge-sensotec.co.uk)

[sales@cambridge-sensotec.co.uk](mailto:sales@cambridge-sensotec.co.uk)

+44 (0)1480 462142

# Ultrasonic Update

Ultrasonic sensors from ifm now feature IO-Link.

**N**ot long ago ifm electronic made their first foray into the world of ultrasonic sensors and not surprisingly, this move was well received. So expectations are running high with the news that customers can now benefit from the advantages of IO-Link in ifm's ultrasonics, too.

The ifm ultrasonic range is a natural and perfect complement to the company's market leading sensor offering of inductive, magnetic, capacitive and photoelectric sensors. As one of the main innovators and motive forces behind IO-Link, it is also natural for ifm electronic to incorporate this technology into ultrasonic sensors.

Added value though IO-Link: the now well-established EN61131-9 IO-Link standard offers many recognised benefits, from virtual teach-button setting of the switch point to secure transmission of the distance value in millimetres. The IO-Link signal is a digital 0 or 24V, and therefore less susceptible to interference than an analogue 4 to 20 milliamps, and as the digital value is the real measured distance, there are no conversion losses. Other useful aspects of the IO-Link inclusion cover switch-on delay and switch-off delay and diagnostics. If need be, an IO-Link sensor can easily be replaced as the transfer of parameters is automatic, because the settings are saved locally.

The versions with IO-Link are produced in an industry-standard M18 body, with long and short housings in both plastic and stainless steel. A more compact housing is also part of the range, featuring an M18 threaded at the front, but electronics housed in a rectangular section, offering a space-saving installation. Importantly, sensor market leader ifm electronic also understands significance of connectivity, so has equipped the ultrasonic range with standard M12 connectors and supplies a vast range of suitable moulded cables for different applications.

ifm supplies two different sensing principles in Ultrasonics: the UGT series consists of diffuse sensors, i.e. the sensor detects pulses of sound reflected from



a target object or level, while the UGR types detect when the reflected sound from a surface is interrupted by an object. Five different sensing ranges cover up to a maximum of 2.2m, or shorter spans of 300mm with more in between.

The bigger picture of solving applications is not lost on ifm; they know that the device alone may not be perfect. To resolve further sensing issues, ifm electronic supply accessories to aid sensing in difficult situations.

One of the accessories is a simple deflector; fitted in front of the sensor the deflector allow the device to effectively see around corners. To put it another way, it redirects the beam, so that the footprint of the unit is transferred to another axis, preventing it from obstructing movement or being damaged.

Other accessories, the 'sound tube' attaches to the M18-threaded body quite simply and reduces the spread of the sound waves. By doing so, the sensor can be used to detect levels of substances inside small containers, by looking down the neck of a bottle, for example.

ifm is committed to working closely with its customers to develop products which precisely match their needs, and the company provides expert, readily accessible technical support to help users maximise the benefits they gain from ifm products.

For further information, contact Gemma Anderson, ifm electronic Ltd., efector House, Kingsway Business Park, Oldfield Road, Hampton, Middlesex, TW12 2HD. Telephone: 020 8213-2234. E-mail – gemma.anderson@ifm.com.

[www.ifm.com](http://www.ifm.com)

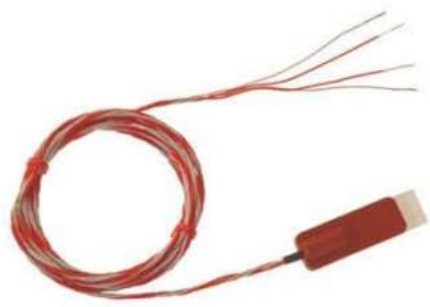


**Temperature Sensors**  
 In Stock For Immediate Worldwide Despatch

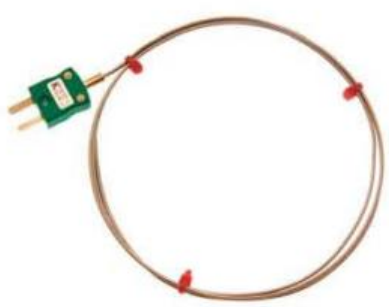
- Manufactured by Labfacility
- IEC and ANSI options available
- Mineral Insulated Thermocouples with various termination options
- Platinum Resistance Thermometers Pt100
- Industrial Style Thermocouple with Terminal Head
- Environmental Sensors
- Flat Film and Wire Wound Detectors
- Handheld Sensors
- Fabricated and Specialist Thermocouples



XE - 3249 - 001  
**INDUSTRIAL STYLE THERMOCOUPLE WITH  
 TERMINAL HEAD - TYPE K**



XE - 3660 - 001  
**SELF ADHESIVE PATCH PT100 SENSOR**



XE - 3223 - 001  
**MINERAL INSULATED THERMOCOUPLE WITH  
 MINI PLUG - TYPE K**



XE - 3470 - 001  
**MAGNET THERMOCOUPLE - TYPE K**



XE - 3534 - 001  
**FINE WIRE EXPOSED JUNCTION THERMOCOUPLE  
 PFA INSULATED - TYPE K**



XE - 3630 - 001  
**GENERAL PURPOSE PT100 SILICONE  
 RUBBER LEAD**



XE - 3663 - 001  
**PT100 CLASS B SENSORS WITH TEFLON®  
 INSULATED LEAD**

Buy On-Line at [www.labfacility.com](http://www.labfacility.com)

# SensoPart's NEW Visor

SensoPart's VISOR® vision sensor series can read embossed digits and characters on multi-colored surfaces that were previously unreadable.



**R**aised or recessed object details – such as embossed digits and characters on a credit card – are difficult to detect with standard image processing methods. Even use of lateral lighting generally results in poorly identifiable contours due to overexposure and shadows. The solution comes in the shape of SensoPart's VISOR® vision sensor series with the new multishot function.

Contours now stand out clearly so that raised or recessed letters and digits can be easily read, e.g. using the vision sensor's OCR function. Other application examples for VISOR® Multishot include the reading of data matrix codes moulded directly into plastic surfaces, detection of damage such as dents or scratches, or the recognition of raised adhesive beads on the same colored background.

This technology can even be used exclusively with the VISOR®'s internal

lighting system – a feature which makes the sensor unique on the market. External lighting can be dispensed with altogether when detecting small details, particularly from a short distance. This reduces complex cabling and saves time, space and of course money.

Changing background colors – a frequent occurrence in the packaging industry – can be eliminated entirely from image processing thanks to multishot technology. Analysis is then based solely on detected height differences.

Finally, a VISOR® equipped with the multishot function can also take and analyze a picture with a standard lighting configuration, in addition to a height image, as it is possible to simply switch between multishot and standard lighting at any time. This therefore also enables part inspection with traditional image processing tools, such as pattern matching, contour detection, distance measurement or code reading.

Optional lighting accessories are available; the multishot function is available in all new VISOR® devices in the version 'Allround Professional'.

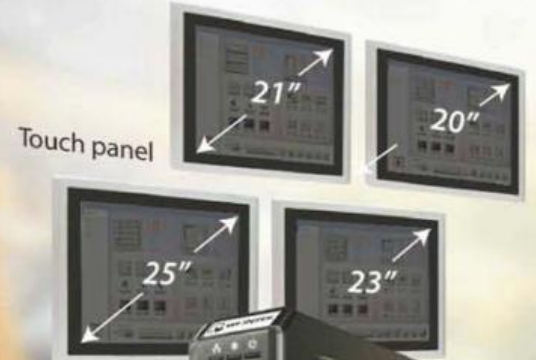
The VISOR® vision sensor with Multishot function was recognized by the judges of the annual Vision Systems Design Innovators Awards program. The judging panel consisted of esteemed experts from system integrator and end-user companies.

SensoPart was honored with a silver level award. "Using Multishot, you can find scratches on smooth surfaces, and read embossed codes on multi-colored surfaces that were unreadable with conventional tools. SensoPart is dedicated to helping our customers solve their inspection problems. Multishot is the first algorithm of this kind available in an easily configurable Vision Sensor.", said Dan Simmons, sales director of SensoPart Inc.

[www.sensopart.com](http://www.sensopart.com)



HDTV



Touch panel

HDMI Cable



# ITIT-HDMI

- Over 300 Industrial Protocols -

- HDMI Output -

- Customisable Output Resolution -

- Support For Industrial Touchscreens -



**lamonde.com**  
for Automation

Lamonde Automation Ltd

The Officers' Mess | Coldstream Road | Caterham | Surrey CR3 5QX  
+44 (0)203 026 2670 | sales@lamonde.com

# Straight ahead for driverless cars

The race to be a leader in autonomous or 'driverless' cars is hotting up – and designers will need to ensure that the next generation of cameras, sensors, drives and automation systems fits together seamlessly as Neil Beaumont of Lenze explains:

**M**any futuristic sci-fi ideas of the past have 'made it' to fruition – including video phones and space flight. Now, the next one is on the verge of adoption: self-driving cars.

Such vehicles are no longer a far-off dream and have been prototyped and tested worldwide. The UK government has stated its aim to become a world leader in the technology while the EU is drawing up rules to govern such vehicles – in an attempt to compete with China and the USA.

Self-driving cars have two potential models to follow – and may end up adopting both: one is to use the technology as 'back up' for a human driver; the second is to move straight to a 'driverless' model – in which the human passenger has no way of controlling the vehicle.

The latter is more radical, in that it will dispense with familiar components – such as steering wheels – that will now be unnecessary. It is also likely that these cars will be electrically driven.

## Five ways to success

A huge leap will be required in cameras and sensing systems, to ensure that self-driving cars do not cause mayhem on the roads. This will need to be married with a system brain, meaning that the design of automation systems will be crucial. Gathering data from multiple sensors is one thing; taking that data – and making appropriate decisions, for instance – takes things to a new level.

The route from product concept to a working machine is fraught with uncertainty, so whenever attempting such a challenge – especially in an emerging field like autonomous cars – it makes sense to come up with a clear, workable roadmap.

Lenze has a five-point plan to help original equipment manufacturers (OEMs) take each step as it comes, ensuring a smooth journey



towards the final product. It relies on the OEM using Lenze's automation expertise in everything from idea generation through to finished product.

## The five steps are:

- Developing ideas;
- Drafting concepts;
- Implementing solutions;
- Manufacturing machines; and,
- Ensuring productivity.

The method could be particularly useful when developing new designs of automation systems. These have no precedent, so will need to be designed from the ground up. For instance, designing the interface between the sensors and automation system will be no easy task, requiring a seamless marriage of advanced sensor technology and electric drive systems – and ensuring that they work under fail-safe conditions.

## Automation assistance

While major car manufacturers are competing in this field, there is some more fundamental research happening too. For instance, Formula Student has now

introduced a 'driverless' category.

In the German version of the scheme, which pits undergraduate design engineers against one another, cars have raced over 10 laps of the track at Hockenheimring – with not a driver in sight.

The contest was won by Academic Motorsports Zurich (AMZ), with a car using Lenze inverters to power the AC drive motors from DC batteries. Cars were converted to autonomous control using actuators for steering, vision systems and intelligent control. The track was marked with coloured cones, which the autonomous car used for guidance.

Although the start and stop functions were manually controlled – and speeds were much slower than traditional Formula Student events – the organisers were confident that this may change in future, as the control systems become more advanced.

Applying the five-step process to autonomous cars should help designers and manufacturers come up with workable concepts that perform at maximum efficiency – helping to ensure success in this emerging field of engineering.

[www.lenze.com](http://www.lenze.com)



## \_Technology

### Rotary friction welding

Rotational friction welding from KUKA meets the expectations of modern production processes and ensures that you can industrially join a wide range of different material combinations, cost-effectively.

With forge capacities from 3 to 150 tons, a wide variety of components can be joined for many different applications, whether one-off parts or prototype production, to small and large scale production runs.

In addition to our subcontract friction welding, services also include; component development, weld trials and fatigue testing to specialist metallurgical analysis - you are opting for a production process in which every component is validated.

With KUKA's advanced welding solutions, you are able to weld even challenging and safety-relevant material combinations, for any market and with the highest quality guaranteed.

**Call us on 0121 585 0888**  
**Or email [subcontract@kuka-systems.co.uk](mailto:subcontract@kuka-systems.co.uk)**  
**We are happy to advise you.**

Thompson machines, made by KUKA  
in The Black Country, England.

# KUKA expands friction welding facility

Renowned inventor and product designer Sir James Dyson once described manufacturing as more than just putting parts together: "It's coming up with ideas, testing principles and perfecting the engineering." It's a view shared by advanced welding systems supplier, KUKA, who recognises the growing demands placed on engineering capabilities by manufacturers keen to fully exploit the potential of the smart factory.

**S**marter manufacturing solutions need to be developed to match the expectation from producers that high-quality products can be made faster with less materials and manpower. The analysis and selection of materials are critical in avoiding product failure and repeating mistakes, it believes. If a quality problem is only determined at the end of the process, it's often too late to remedy. All the value has been added by this point and the cost of rework or scrap is very high.

As part of a new investment programme to underline its recognition of the important role of materials science in the specification and design of products, KUKA has expanded its established, sub contract friction welding facility with the addition of an on-site metallurgy consultancy.

Experienced metallurgist Professor Kameel Sawalha has moved his independent laboratory business, Aston Microscopy & Engineering, from Aston University to KUKA's premises at Halesowen where it joins a wide variety of components using the friction welding method. He is a fellow and chartered engineer and holds a BSc degree in mechanical and production engineering (Napier University), MSc in manufacturing system engineering (Warwick) and a PhD in materials engineering (Aston). In addition, Prof. Sawalha has published numerous scientific papers and has been a visiting professor of material at a number of academic institutions.

He examines and reports on the integrity of welds performed by the friction welding technique, a cost-effective, accurate and repeatable joining method that achieves parent material bonds with no requirement

for third-party consumables such as filler, wire or gas. His metallurgical investigations range from straightforward elemental analysis to in-depth studies of failure or fracture mechanisms. He also offers materials selection advice, assessing their suitability for friction welding and recommending improvements where appropriate.

In fact, more component makers in industries as diverse as aerospace, automotive, construction machine and mineral exploration are turning to friction welding to help combat rising raw material costs.

"Some of our smarter manufacturing solutions involve the development of new weld parameters for the joining process. This generally results in significant savings as we're able to reduce the amount of material consumed," explained Jayne Shimwell, KUKA's technical services manager.

The facility's many success stories include the achievement of a £175,000 annual saving for a customer who produced 200,000 steel tubes a year. KUKA's sub contract team created new weld parameters that used 10mm less steel per component.

"Extending our array of sub contract services with an on-site metallurgy consultancy ensures we can provide a comprehensive resource for manufacturers on all aspects of friction welding metallurgy and weldability," said Jayne.

For more information about KUKA's services or to discuss requirements, email [subcontract@kuka-systems.co.uk](mailto:subcontract@kuka-systems.co.uk) or phone 0121 585 0888.

[www.kuka.com/en-de](http://www.kuka.com/en-de)



**CONTROL<sup>TM</sup>  
TECHNIQUES**

# MEET EDDIE...

...Eddie is the world's strongest man. Eddie understands the importance of dedicating yourself to the pursuit of excellence in one area. The importance of being a specialist. **Just like Control Techniques.** Our British-made drives have been leading the way on the global stage since 1973. Our strength lies in our specialism. **Just like Eddie.**

**DRIVE SPECIALISTS SINCE 1973**

*Eddie Hall*  
The World's Strongest Man

Nidec Industrial Automation UK Limited | Stafford Park 4 | Telford | TF3 3BA  
Tel : 01952 213700 | Email: info.gb@mail.nidec.com

[www.controltechniques.com](http://www.controltechniques.com)

**Nidec**  
All for dreams

# How drives and motors thrive in steelmaking

By Chris Corfield, PR & multimedia manager, Control Techniques.

**S**teelmaking arguably poses one of the most challenging operating environments for motor and drive technologies. Vibration, heat and contamination are among the forces working against the reliable and efficient operation of motion control products. Indeed, maintenance-free motors and drives are an increasingly important requirement for steelwork engineers under pressure to minimise both scheduled and unscheduled downtime to achieve demanding productivity levels to meet delivery schedules.

Among the trends, particularly for those producing popular steel products such as spiral welded pipe and tubes, is the move from DC motors to the latest induction motors. Due to the cost of maintaining and running some DC motors, many plant engineers in the steelmaking sector are seeking alternative, more cost-effective solutions, which is where variable frequency induction motors and inverter drives, preferably from a single source, come into play.

In such a scenario, a key factor is identifying induction motors that can be easily exchanged for DC technology without any loss of performance. As a point of note, check the rated torque and speed for work at constant power.

## Motor performance

Always opt for a drive that facilitates class-leading induction motor performance. The drive should also offer flexible speed and a positional feedback interface that supports a wide range of feedback technologies, from robust resolvers to high-resolution encoders. Here, the latest AC variable speed drives used in closed-loop control can deliver the same performance as DC regulators.

This type of inverter drive is proving popular for example, at steelmakers producing tracks for the railway industry. Here, cut-to-length production lines, which

are paramount in meeting growing throughput demands, process rails that can measure from 30 to 120m in length.

The latest inverter drives and gearbox technologies offer combined solutions for two types of principal mechanisms on cut-to-length lines: chain conveyors and roller tables. Again, a single source is preferable as this strategy can provide a performance level way beyond that attainable from separate suppliers.

## Equipment

Of course, much steel today is produced in a coil, which in turn demands the manufacture of efficient coil-processing equipment featuring correctly specified drive and motor technologies that are able to maximise reliability, productivity and precision.

Variable speed drives must provide the necessary speed and response, which in turn allow high dynamic applications control with repeatable precision. The latest drive technologies feature intelligent modules that permit users to manage comprehensive programs requiring motion in several axes and profiles, synchronised with high precision. This involves fast and accurate movements that serve to minimise reject rates and maximise production uptime, all without inducing stress on the mechanical parts.

## Solutions

A typical solution for a transversal cutting line featuring an uncoiler, levellers, flying shear, conveyors and stackers, for example, would comprise a control cabinet housing circa 20 AC drives, often in a DC bus configuration that ensures good stability and optimised energy consumption. Networking configurations will of course vary, but it is commonplace to see Profinet connect the



PLC with drives, encoders and remote I/O, while Ethernet allows the checking and changing of system parameters via a remote PC, including the parameters of the drives. This capability makes for easy fault-finding and element replacement.

Variable frequency drives can also boost the uptime of finishing mill operations at aluminium manufacturing facilities. Such mills offer acceleration and deceleration in the region of 1.5 seconds per 1000 rpm. Furthermore, many of these mills have to run in closed-loop configuration and stop and start in 1 to 1.5 seconds. Casting houses around the world which produce aluminium wire-rod coil and billets for the global automotive and consumer goods markets demand high levels of reliability that often require AC VFD standby drives systems working with liquid-cooled induction motors, which are particularly suited to variable-speed operation. Such solutions are used increasingly to help eradicate downtime on production mills.

[acim.nidec.com/drives/control-techniques](http://acim.nidec.com/drives/control-techniques)

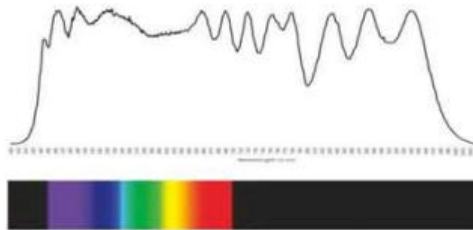


## CVRL Matrix **Hyperspectral** LED Illumination.

CVR Lighting have launched the Matrix LED Hyperspectral illumination! It is now possible with the Matrix to replace the typical high temperature halogen illumination with a tuneable LED illumination. If high resolution and high speed imaging is required, the Matrix can be tuned to provide Reciprocal Illumination.

- 440 to 970 nm
- Fully modulable in sections of 30 nm
- Allows for excellent spectral uniformity after correction of the camera sensitivity curve
- Versatile format from linear to area lighting
- High brightness

At the UKIVA trade show, CVR Lighting will present its Matrix technology when used for hyperspectral imaging.



CVR Lighting Ltd, Hoffmann Park, Inchera, Little Island, Cork, Ireland  
www.cvrlighting.com - sales@cvrlighting.com - +353 21 4510232  
Germany +49 172 3652253

## EVIDAS DAQ Software

In 2 Clicks to Your Measurement Results

EVIDAS is based on the future-proof 64bit .NET technology, and offers modern and open software interfaces. With an outstanding usability, it turns your test and measurement tasks into fun.

It gets you to your measurement results in two simple steps. And with this powerful software, you can upload your acquired data to the HBM Cloud and share it with your colleagues around the globe.

- Fast to Reliable Data
- Speaking Design
- Cloud Integration
- Application Experts

More information:  
[www.hbm.com/evidas](http://www.hbm.com/evidas)



HBM United Kingdom Ltd. ■ Tel. +44 1525 304980 ■ info@uk.hbm.com ■ www.hbm.com

# Robust Surface Mount 3-Point PCB Series

High-reliability connector supplier Harwin has announced further additions to its Sycamore Contact product offering.



**W**hile this series was initially capable of accommodating 1mm and 1.5mm diameter contact pins, it now covers pin sizes from 0.80 to 1.90mm.

There are a wide variety of scenarios where electronic devices/modules will require replacement over time (such as depleted gas sensors or worn-out energy harvesting transducers). In addition, initial exposure of these modules to soldering temperatures can introduce the risk of early failure due to heat damage. Both these risks show that direct soldering onto the PCB is clearly inadvisable. Removal of a failed or damaged

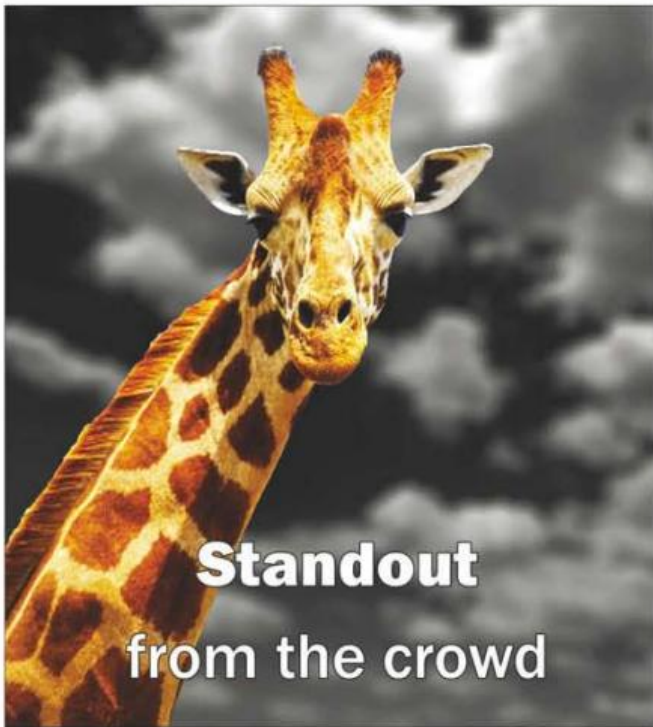
module will prove difficult and could result in scraggage of the whole board.

The Sycamore Contact series of surface mount PCB sockets allow odd-form devices/modules that are not suited to regularly-spaced socket strip arrangements to be attached without any future inconvenience, should removal be required at a later stage. Whereas other contact solutions of this kind only comprise 2 points of contact to the mating pin, making them vulnerable to exposure from vibrational forces, the patent pending design of the Sycamore Contact gives engineers access to 3 contact points. This markedly improves operational stability, as well as delivering stronger pin retention

and heightened levels of signal integrity.

Available in both top-entry and bottom-entry configurations, these sockets have a current rating of 6A and a 15mΩ (maximum) contact resistance. Their sturdy construction, which uses beryllium copper with gold plating, means that they support 500 mating cycles and exhibit an operational temperature range spanning from -50°C to +125°C. As these components can be supplied in a tape-and-reel format, they are highly suited to automated production processes, with the surface mount placement feet also serving as the pickup areas for pick-and-place machinery.

[www.harwin.com](http://www.harwin.com)



## Standout from the crowd

Multipix Imaging empowers its customers to create outstanding inspection solutions, ranging from high speed barcode reading to 3D object analysis.

**Not all systems are created equal**  
– take your vision to greater heights!

Multipix Imaging, your machine vision specialist since 1997. Committed to excellence & superior support ensures our customers maintain their competitive advantage.



[multipix.com/standout](http://multipix.com/standout) 01730 233332



### State-of-the-art cable handling and machine protection.



- cable drag chain
- cable entry systems
- emc solutions
- protective conduit
- machine protection



[buttkereit.co.uk](http://buttkereit.co.uk)  
[info@buttkereit.co.uk](mailto:info@buttkereit.co.uk)  
0161 969 5418

# The key to vibration resistant interconnectivity

How Hitaltech solved the problem of vibration in PCB interconnectivity using connections of a different kind.

**V**ibration is the nemesis of the PCB. From machine tools to washing machines to the automotive sector (including Formula One), if the connections between PCBs can't withstand heat and vibration, they won't stay reliably connected for long.

Appropriately enough for a connecting technologies company, solving the vibration problem has relied on connections of a rather different sort.

## Collaboration the key

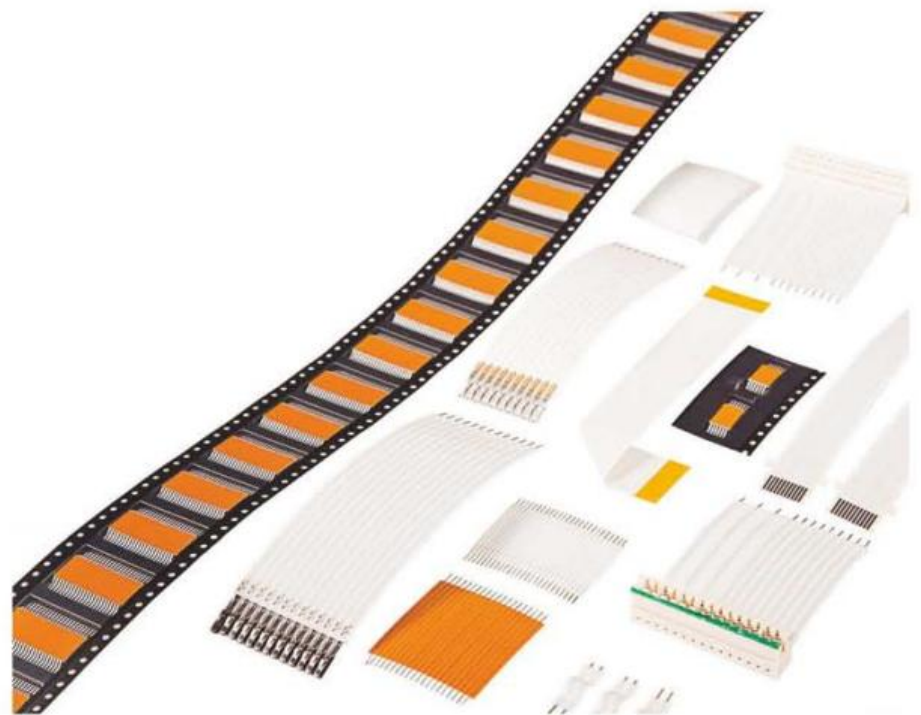
Hitaltech has been a major European force in connecting technologies for more than three decades, and when the company launched its UK arm in 1996 (Hitaltech UK is still based in Poulton-le-Fylde, Lancashire) it quickly became an acknowledged hub of expert knowledge and experience in the industry.

Yet it's not simply expertise that leads manufacturers to contact Hitaltech. The company has built its reputation on designing for and with clients, creating products in close collaboration to create end results that are better tailored, more effective and (crucially) more cost effective.

Developing products takes time. In the automotive sector, for example, development times can be as long as three years, so the earlier our engineers are involved in product discussions the more complete and comprehensive the solution can be.

The development of our latest vibration resistant connectors, for example, involved analysis, development and testing across a wide range of factors including:

- Pitch of cable
- Signal/ power
- Operating environment
- Soldering processes
- Board orientation
- Manufacturing environment



- Voltage and current ratings

## Flat flexibility

The result is a 'round-flat-round' connector which takes a copper conductor and flattens the central portion. Leaving the ends rounded removes stress from the solder joint, ensuring connection points remain secure, but the flattened central part of the conductor improves flexibility and vibration-dampening characteristics.

The resulting flexible cables are ideal for board to board and wire to board connectivity where bridging gaps can range from a few millimetres to a few metres. Because the cables are soldered directly onto the PCB, the technique is a reliable, permanent solution for non-modular systems. Where the board needs to be capable of plugging and unplugging, the company has also developed an option for conductor ends to be plugged into FPC

connectors or onto pin headers. There are also SMD options available for automatic assembly processes.

## Wider production benefits

In collaborating with our clients to develop vibration resistant connectors we've also boosted production efficiency. The new, flexible cables enable greater PCB flexibility - and when you can produce multiple PCBs as one large flat panel, then break out, fold up to 90 degrees or even stack sections one above the other, you enjoy many more assembly options.

That gives product designers much greater design freedom, and it 'bakes in' cost effectiveness, ensuring that the time and cost of development and collaboration are repaid in many more ways than you might initially anticipate.

[www.hitaltech.co.uk](http://www.hitaltech.co.uk)



# Pressure Measurement

Standard and Custom Transducers



BAROMETRIC



HYDRAULIC



PNEUMATIC



DIFFERENTIAL



CLEAN-IN-PLACE



DEPTH

At OMEGA, we can provide customised solutions or standard products for all of your pressure needs.

To learn more visit [omega.co.uk/pressure](http://omega.co.uk/pressure) or email [sales@omega.co.uk](mailto:sales@omega.co.uk)

# Steel Cable Drag Chains

Cable drag chains, sometimes referred to as cable chains, cable carriers, energy chains or cable track, are essential for the management and protection of moving cables in a multitude of applications.

**C**able drag chains are used in machine tools, process and automation machinery, vehicle transporters, vehicle washing systems, cranes and in many other ways. These products come in an extremely large variety of sizes and configurations, and in two main material types - plastic or steel.

In this article Martin Buttkeireit discusses the significant benefits that the steel variety, often unduly overlooked by designers and specifiers, can offer over their plastic counterparts.

Historically all cable drag chains were manufactured from steel, however as for many other products, plastic alternatives have grown in popularity over time. Although now prolific in some application areas, plastic cable drag chains are not always the most appropriate solution, and their steel cousins can often be a more robust and effective choice.

Other than the lightest duty applications, where there are no adverse environmental considerations, and where plastic cable drag chain is likely to be more cost effective, steel cable chain remains a highly viable option across the medium to heavy-duty application sectors. This is especially the case in areas where conditions are harsh. For example, where hot swarf or chips are present, an enclosed steel cable chain will provide the



**Steel cable drag chains remain a highly viable option across the medium to heavy-duty application sectors.**

ultimate protection and deliver a long service life.

Available in both enclosed and open versions, Buttkeireit's range of steel cable chain products can also be supplied in stainless steel or even hardened steel if required. In

addition, there are versions available for long travel and rotary applications if necessary.

A further benefit of the steel variety is its greater strength and resistance to the effects of operators or maintenance personnel who can often inadvertently step on the chain. The steel chain will not bend or break and continue to protect the cables, and / or hoses within the chain. In addition, where the maximum continuous operating temperatures of some plastic cable chain systems is around 1000C, steel cable chain can easily withstand temperatures of up to 6000C, with no adverse effects.

Plastic cable chains can sometimes be susceptible to wear when used in machine tool applications, or in areas where the chain may come into contact with materials of an abrasive nature. Steel on the other hand is much more resilient and will have a much longer service life in almost all applications. Steel cable chains are easy to lengthen or shorten to suit specific applications and with spares readily available, any maintenance required can be achieved quickly.

Steel cable chains definitely come into their own, and remain first choice, for heavy-duty applications, where they will generally always out-perform plastic types in terms of strength to weight ratio and un-supported length or span.

With their extended longevity, strength, resistance to high temperatures and harsh environments, steel cable chains will continue to be the first choice for many new applications and are definitely worthy of serious consideration as replacements for damaged or broken plastic types.

**[www.buttkeireit.co.uk](http://www.buttkeireit.co.uk)**



Info@ecopacpower.co.uk | www.ecopacpower.co.uk  
Sales: 01844 20 44 20 | Technical: 01844 20 44 30

## Power Supplies

### LED Drivers



### External



### Enclosed



### IP Rated



### Din Rail



### Open Frame

Distributor of



Power Supplies

# IOSH's new course will save lives

IOSH introduces new course to help stop some of the thousands of deaths caused through work.

**T**here are an estimated 7,500 occupational deaths every day. 86% of these are the result of work-related diseases rather than accidents. The financial

cost to business, and the devastating emotional cost to friends and families, is huge. So, what can be done to change this?

IOSH, the Institution of Occupational Safety and Health, has developed a course which is suitable for all managers to help them to look after the physical and mental wellbeing of their workers, providing them with the knowledge and tools to identify the health risks in their organisation, and learn how to protect the workforce and maintain optimal health.

The new course will be launched at the Safety and Health Expo (SHE) at ExCel London 19-21 June. The course has been developed with input from experienced occupational health nursing professionals and has been condensed into a one-day course to make it widely accessible to managers across all industries and sectors.

Bev Messinger, IOSH Chief Executive, said; "I'm proud to be part of bringing this course to all business managers, reaching beyond the network of occupational safety and health professionals.

"By equipping all managers with the tools to recognise health and wellbeing risks in their environments and how to deal with them, this course forms part of IOSH's WORK 2022 strategy to make the world of work a safer place."

In a 2017 survey of medium sized businesses (undertaken for IOSH by Opinium) four in 10 leaders of medium-sized businesses surveyed said sickness absence had a significant, detrimental impact on their organisation's productivity in the last five years.

Absenteeism due to sickness also has a significant impact on the economy, the



organisation and the individual. In the UK alone sickness absence costs the economy £100bn each year. Sickness absence due to mental ill health costs the UK economy more than £8bn per year, with presenteeism (working when unfit to do so) estimated to cost a further £15bn.

Costain's Chief Financial Officer, Tony Bickerstaff said; "An important part of any manager's job is looking after the health of their employees. If they can do that I am absolutely sure the employees will perform better, their teams will perform better, and so businesses will perform better.

"The course sets the right tone at the right time. There are a lot of people talking about health and wellbeing in the workplace, but I think some businesses are struggling with how they go about addressing it. I think

the positioning of this course, to help line-managers gain competence in this area, has got to be a good thing for them and a good thing for their companies."

The one-day course will be delivered by a network of IOSH approved training providers and is for anyone who manages activities of employees. The course covers four key areas:

1. A healthy company – what it means to commit to the health of the workforce
2. Health risk management – how to protect the workforce from health risks
3. Fitness for work – how to manage the effects of health on work
4. Wellbeing – giving information and tools to maintain optimal health

[www.iosh.co.uk/ManagingOHW](http://www.iosh.co.uk/ManagingOHW)



# POWER FROM ABOVE.



From standard "plug and play" crane kits & components, to bespoke lifting solutions, the Street range of products combines the latest innovations & modern design with high performance, availability and low cost of ownership.

With hoist capacities from 0.25t to 200t, give your cranes "Power from Above".

[www.streetcrane.com](http://www.streetcrane.com)

**Street**

+44 (0) 1298 812456 sales@streetcrane.co.uk



# BPMA supports 'Industry Friendly' Brexit

As part of its membership of EURIS (European Union Relationship and Industrial Strategy), the BPMA recently attended the organisation's first summit on Brexit.

**R**epresenting industrial product supply sectors, which collectively account for over 25% of the UK's total goods imports and exports, this important event saw industry associations from across Europe come together to discuss and agree a joint UK-EU industry working plan to ensure a successful Brexit for product manufacturers.

Held on the 23rd floor of the iconic Shard building, the 'high-level' gathering involved contributions from Government advisers and CEOs of trade bodies from across Europe, including Germany, Portugal and Sweden, as well as contributions from the UK product supply sector.

Presented in a spirit of great openness and cooperation, the interactive nature of the meeting helped to identify and cement a great deal of common ground. It also paved the way for the creation of a EURIS European Network to help deliver the best possible Brexit outcome for the industrial product supply sector across the single market.

This newly created European 'industrial product supply' Network will be an advisory body for the potential impacts of the changing relationship between the UK and EU; for Governments, manufacturers and the media and will be offering real solutions to the challenges presented by Brexit for the sector as well as ideas on how to maximise the opportunities that Brexit presents.

Dr Howard Porter, EURIS Chair, said, "We are delighted to be able to announce the creation of this EURIS European Network. The industrial product supply sector has come together in a constructive manner to establish a working party to deliver the best Brexit for our industry. This is an important time for our sector and we look forward to announcing the outputs of our network in the coming months".



Steve Brambley, EURIS Vice-Chair, said "There are many areas where UK and EU industry can work together to achieve the best outcome for all of us and the EURIS European summit has been an excellent starting point for this discussion. The announcement of the creation of a European EURIS Network is an exciting development and one which EURIS members will be working closely on moving forward".

The BPMA was represented at the event by its President, Duncan Lewis (MD of Xylem Water Solutions), its immediate Past President, Peter Reynolds (MD of Grundfos Pumps) and its CEO, Steve Schofield.

Commenting immediately after the summit, Duncan Lewis said, "I was pleased to have attended the meeting and represent the interests of the pump sector, in what is a crucial subject area for all companies, large and small. The discussions were extremely positive and seemed to be conducted without a hint of politics". I feel sure this first event will enable some traction to be gained and enable EURIS and its European Network to make a positive contribution to the post-Brexit landscape".

EURIS is an advisory body for the potential impacts of the changing relationship between the UK and EU for

the UK Government, manufacturers and media. EURIS members are industry trade associations

EURIS members are industry trade associations BEAMA, representing manufacturers of electrical infrastructure products and systems, GAMBICA, representing instrumentation, control, automation and laboratory technologies, the Engineering and Machinery Alliance, an umbrella association of associations representing SME manufacturers, the Renewable Energy Association, the Catering Equipment Suppliers Association, the Federation of Environmental Trade Associations, the Manufacturing Technologies Association, the British Fluid Power Association, the Lighting Industry Association, the British Plastics Federation and the British Pump Manufacturers Association.

EURIS has a focus on product manufacturers covered by the Single Market and the supporting regulations and standards. The member associations have extensive relationships with equivalent European trade bodies, and parts of the European Commission.

[www.euristaskforce.org](http://www.euristaskforce.org)  
[www.bpma.org.uk](http://www.bpma.org.uk)



# Bifold®

The manufacturer  
may use the mark:



## **EHPC210** SIL 3 Certification Partial Stroke Function

- ✓ **Essential component in the control of electro-hydraulic and pneumatic valve actuators**
- ✓ **Provides an accurate and flexible positioning system**
- ✓ **Provides a unique digital partial stroke test solution suitable for SIL applications**
- ✓ **4-20mA Isolated intrinsically safe command and retransmission signals with HART 7 protocol**
- ✓ **Integral linear and rotary feedback sensors**
- ✓ **SIL 3 Third Party Certified**
- ✓ **Worldwide Approvals**  
ATEX IEC c US
- ✓ **High resolution colour display**
- ✓ **Configurable for all control logic requirements, e.g. ESD, PST, modulating, multiple solenoid valves**
- ✓ **Hydraulic pump control, on-demand or pressure**
- ✓ **Low power - normal operation is less than 1W**
- ✓ **Suitable for Diagnostic and Modulating Controllers**



Bifold Fluidpower Ltd, Bifold Group,  
Broadgate, Oldham Broadway Business Park, Chadderton,  
Greater Manchester, OL9 9XA. UK.  
Tel: +44 (0) 161 345 4777 Email: [marketing@bifold.co.uk](mailto:marketing@bifold.co.uk)

**[bifold.co.uk](http://bifold.co.uk)**

# Optimising safety measures

Albion Valves (UK) Ltd, an increasingly popular UK valves supplier is advising distributors to ensure they check for type test approvals and certification of the EU's Pressure Equipment Directive (PED) conformity, when specifying safety valves, as opposed to relief valves in a pressurized system.

**B**oth safety valves and pressure relief valves are used as the last safety device in a pressure system, however engineers and specifiers need to be mindful that requirements can vary significantly from system to system.

In applications where PED is applicable, it is mandatory to use safety valves with the appropriate approvals. If a valve without type test approval is installed there is no guarantee that required blow-off at 10% would be reached, which poses a big safety risk.

In a system that doesn't fall into this directive, it is at the discretion of the engineer whether or not to use a type test approved safety valve. In this instance, generally a relief valve designed with proportional opening characteristics and therefore a lower blow-off capacity can be safely specified.

However, it is important to realize that the liability for using a non-conforming product rests with the installer, which is why Albion recommends using a certified safety valve wherever possible.

In order to help take the headache out of complex EU legislation compliance away from their distributors, Albion has introduced an extensive range of PED compliant safety products.

Safety valves are all either set, sealed and certified by the factory, or onsite at Albion on a test rig prior to dispatch. Each valve is laser etched with its own unique serial number to allow certification to be traced.

Les Littlewood, Albion Valves (UK) Ltd, Sales Director commented:

"Ensuring that products and systems meet the requirements of the EU Directive can be a complex and time consuming

process. We have taken this headache away from our distributors by doing the research and securing approvals to ensure that the pressure equipment we supply is legally compliant and fit for purpose."

Albion currently stocks over 5000 lines of commercial valves, suitable for applications predominantly within the process, water, building services and HVAC industries, all available from its distributor network. For further information call 01226 729900 or go on our website:

[www.albionvalvesuk.com](http://www.albionvalvesuk.com)



# BenchVent

The Bench Ventilation Company

www.benchvent.com | 01423 790039 | info@benchvent.com



All our units are designed and manufactured in the UK. All BenchVent products are independently tested and are proven to be 99% effective in the removal of, fumes, odours, paint and glue overspray and dust. Call today to have an expert help for your workplace solution!

\*All our units are CoSHH compliant and are in line with British standards.

# Fluid Carrying Flexibility Swivel Joints

- Torsion In Hoses
- Articulated Pipework
- Subsea Oil & Gas
- Rotating Cylinders

- Swivel joints allow pipework to rotate whilst carrying fluid under pressure 1/4" to 40" and beyond.
- Vacuum to over 20,000psi.
- Stock and bespoke production.
- Unique bearing/seal design for longer life.
- ISO 9001 CE marked where applicable.
- Hyperbaric testing.

**Rotaflow**  
the swivel joint specialists

Tel: +44(0)1663 735003  
E-mail: sales@rotaflow.com  
www.rotaflow.com

Rotaflow FV Limited | Rotec House  
Bingswood Trading Estate  
Whaley Bridge | High Peak | SK23 7LY | UK

## SEEPEX. ALL THINGS FLOW



CONVEYING CAPACITY  
**UP TO 130 M<sup>3</sup>/H**

PRESSURE  
**UP TO 8 BAR**

## SCT REDUCES OPERATING COSTS

SEEPEX progressive cavity pumps fitted with Smart Conveying Technology (SCT):

- Can be adjusted to extend the stator's life by up to 200%
- Use up to 25% less energy than conventional progressive cavity pumps
- Enable planned predictive maintenance without unexpected downtime

- Reduce maintenance time by up to 85%
- Improve health and safety by reducing spare component weight

The end result; productivity is improved by reduced downtime and faster maintenance.

SEEPEX UK Ltd.  
sales.uk@seepex.com  
www.seepex.com

# EHPC210 Diagnostic Controller

The EHPC210 Diagnostic Controller is now SIL3 Certification.



**B**ifold is pleased to announce that the Partial Stroke Function of the EHPC210 Diagnostic Controller is now SIL3 Certified according to IEC 61508 : 2010 Parts 1-7 and meets requirements providing a level of integrity to: Systematic Integrity: SIL3 Capable.

In obtaining the SIL3 certification, Bifold Orange partnered with Exida, a global supplier of functional safety products, services and certifications, which has performed more process control safety certifications than any other company worldwide. Exida certified the product reliability, design and engineering processes for the Bifold Orange EHPC210 Universal Controller as SIL3 capable per International Electrotechnical Commission (IEC) 61508.

The EHPC210 is a smart controller solution operating a single solenoid for partial stroke testing in pneumatic and hydraulic

valve actuation. It is designed to meet the basic legislation requirements to perform a partial stroke test and to record the results.

The controller can interface with a valve switch box or has the added benefit of integral position feedback. The EHPC210 can be retrofitted onto existing systems to allow partial stroke testing to be performed.

The controller incorporates graphic display integrated rotary feedback measurement, low power modes, ESD monitoring and control. The enclosure assembly allows installation in zone 1 or zone 2 hazardous areas.

The controller features HART and Modbus communication as well as fully configurable control logic allowing hard wired interface to a local control panel or the clients control system.

The controller records the time, valve position and pressure at the actuator (separate pressure transmitter required).

It uses this data to provide a graph for local visual indication, actual safety factor calculation and alarm status.

Using the controller in association with Bifold zero bleed (in steady state position) solenoid technology can improve valve control, system power efficiency and reliability.

[bifold.co.uk](http://bifold.co.uk)

# The Right Valve For Your Process Equipment



- Ball
- Butterfly
- Custom Actuated\*
- Seat
- Mix Proof
- Check
- Diaphragm

\*24 Hour Shipping available on most valve automation including fabricated specials.

For further information  
please contact us now on:  
**01772 323 529**



Real **solutions** for real challenges.

01772 323 529 • [dixoneurope.co.uk](http://dixoneurope.co.uk) •

©2018 Dixon Group Europe Limited



The Right Connection®

• CUSTOMER SERVICE • INNOVATION • MANUFACTURING • QUALITY • TECHNICAL EXPERTISE • UNCOMMON EXCELLENCE • DESIGN •

# FIBET GROUP

## MANUFACTURER OF HIGH QUALITY ANTI VIBRATION PRODUCTS

WIDE RANGE  
OF STOCK  
AVAILABLE FOR  
NEXT DAY  
DELIVERY

Contact Us Today

**01282 878200**

[sales@fibet.co.uk](mailto:sales@fibet.co.uk)

[www.fibet.co.uk](http://www.fibet.co.uk)

Fibet Rubber Bonding (UK) Ltd  
Unit 9 Dale Mill, Hallam Road, Nelson, Lancashire, BB9 8AN

# Smart pump selection equals increased

By Lesley Eaton, Business Development and Marketing Manager, SEEPEX.



Before specifying a pump, it's crucial to understand the product to be treated.

**P**umps are critical to a range of industries, from chemical production and food processing, to wastewater treatment and biogas production. There are a number of different pump types on the market and choosing the right one for your process can seem like a daunting task. However, in today's squeezed economy, maximising productivity is essential if companies are to remain competitive – and correct pump selection is key to this.

Productivity is measured by the ratio of output per unit of input. Many companies see it as a balancing act – how can they increase their output without increasing their costs? It is closely linked to efficiency, ensuring that every piece of equipment and every part of the process is optimised, delivering greater value for money to the operator.

### Knowledge is power

The most important criteria when specifying a pump is to ensure that it will be fit for

purpose. To do this, it is important to understand the product to be pumped, and the process involved. Is the product liquid or semi-solid? Is it viscous? Will it need to be transferred over a long distance, or pumped to height, for example to storage vessels and silos?

Other information must be provided, too. For example, does the product contain solid particles? Consider also whether it is shear sensitive, if the process needs a self-priming pump, or whether a suction lift is needed. Also bear in mind the length of the discharge





**Lesley Eaton, Business Development and Marketing Manager for SEEPEX.**

pipework and the configuration regarding bends and lifts. The more information an operator can provide, the more likely it is that they will get the right pump for the job.

After thoroughly researching the options available, it may transpire that more than one pump design is fit for purpose. In order to ensure optimum productivity, operators must then consider the total cost of ownership (TCO). The lifecycle cost of a progressive cavity (PC) pump, for example, is typically ten per cent capital purchase cost, ten per cent maintenance/spare parts, and eighty per cent energy costs (based on £0.10p per kW/hr over a 20-year period, using WIMES calculations).

### Energy efficiency

With such a high percentage of a pump's TCO coming from its running costs, selecting a pump which is energy efficient is key to enhancing productivity. Unlike piston, diaphragm and peristaltic pumps, PC pumps produce low pulsation flow and require smaller drives and motors for the same duty. And unlike air-operated pumps, they run on a direct energy source, without the conversion of electricity to compressed air. This all helps to reduce the energy required to run the pump. Some of the more intelligent pumping solutions on the market, such as SEEPEX's Smart Conveying Technology (SCT), deliver even greater energy savings. By optimising the clamp between the rotor and stator, and using a variable speed drive, the SCT pump can be up to 20 per cent more energy efficient than



**With 80 per cent of a pump's TCO attributed to running costs, energy-efficient Smart Conveying Technology pumps can save operators money.**

traditional PC pump designs.

### Maintenance matters

As maintenance and spare parts are responsible for 10 per cent of the TCO of a pump, finding a solution that is easy to monitor and maintain is also important. SEEPEX's SCT range of progressive cavity pumps significantly improves whole life costs due to the ease of replacing parts and clearing blockages. The fact that these pumps can be remotely monitored also makes it easier to anticipate problems, enabling predictive maintenance. In addition, the use of variable frequency drives (VFD) means that speed can also be controlled. As pump performance drops over time, its speed will increase to maintain flow; the SCT pump can be quickly adjusted to regain its original capacity, keeping efficiency high and providing more time to plan for maintenance, resulting in less downtime. The use of level controls with VFD to speed and slow pumps, and the regular, laminar flow created, also helps to deliver a higher quality, more uniform pumped product and reduces the wear rate of the pump.

### Beware hidden costs

Another cost consideration is whether a pump will require ancillary equipment. Many traditional pump designs require pulsation dampeners and check valves, all of which come at a cost to the operator, as well as being liable to blockages. In contrast, due to their constant, virtually pulse-free action PC pumps do not require dampeners, and

the interference fit between rotor and stator negates the need for check valves, saving operators money and reducing downtime.

As well as keeping down the running, maintenance and system costs of a pump, operators can also reduce their initial purchase price by talking to their supplier about the different options available. For example, could a smaller, smarter pump do the same job as a larger, more expensive solution?

Is it worth integrating a boundary layer injection system to reduce pipework friction losses further downstream? Could labour costs be cut by specifying a pump with excellent suction lift capabilities? A responsible pump supplier will work with an operator to specify the most cost effective solution for their needs.

### A balancing act

While a low pump purchase price may appear attractive, with 80 per cent of the TCO coming from its running costs, keeping these lower over the lifetime of the pump will provide a greater return on investment. Whatever solution you choose, take into account its energy efficiency, maintenance requirements and the costs of any ancillary equipment before signing on the dotted line. Put simply, specifying the wrong pump could decrease your productivity – choosing the right pump will almost certainly increase it.

[www.seepex.com](http://www.seepex.com)

# The Rotaflow Swivel Joint

Rotaflow is here to help with over 34+ years of experience why go anywhere else?

**A** rotary union, or 'Swivel Joint' is used to transfer fluid across a rotating interface. At Rotaflow we have over 34+ years of experience and we have produced Swivel Joints for many bespoke applications within all areas of engineering and all over the world: From Brewery, Food and Drink, Process, Drilling & Mining, Oil & Gas to Nuclear, Chemical and Subsea... so if you need fluids, including air, steam, gases to be transferred without leakage our design team can help.

The Rotaflow Swivel Joint shown here is being tested at 22,500psi it has 8 flows which carry hydraulic fluid to operate 8 valves on the sea bed. We are very proud that the swivel is onboard ship allowing the hose reel to pay out up to 2km of hose to the sea bed. Rotaflow also manufacture Subsea Swivels with the capacity to resist ingress of sea water at depth and with the strength to carry pipe lengths of steel which



in turn can impart high bending loads.

When required we comply to PED, API 17D, ASME and DNV OS E101, E201, ABS CDS. We are regularly audited and have ISO

and PED certification ISO9001:2008 and Pressure Equipment Directive 2014/68/EU.  
[www.rotaflow.com](http://www.rotaflow.com)

# The new BTL7-T500 from Balluff

Magnetostrictive linear position sensor for explosion hazard areas.

**C**ontrol and shut-off valves are used for oil and gas transmission in refineries and petrochemical plants. The valve position is regulated using the position measuring systems, because they are extremely reliable, especially in very harsh environments. When explosion protection has the highest priority, the new, certified position measuring system BTL7-T500 from Balluff is the right choice.

With its many international approvals, such as ATEX and IECEx, the BTL7-T500 offers a broad range of applications, high reliability and safe operation in explosion hazard areas of Zone 0 and Zone 1. This means for example it can be used as well for continuous level measurement in refinery tanks.

The Profibus interface offers great flexibility. The position measuring system can be quickly adapted, saves time in installation and means rapid diagnostics of possible

errors. This shortens commissioning time of systems and maintenance when service calls are needed. A single cable suffices for hookup (BUS-in-out, power).

The non-contact and thereby wear-free magnetostrictive measuring system in the stainless steel housing with IP 67 protection is not only extremely insensitive to contamination, but also shock rated to 100 g. It also withstands vibration up to 12 g. With a resolution of 1µm and repeat accuracy of 10µm it operates with extreme precision and is also the ideal solution when position and speed measurement needs to be performed simultaneously in a system.

[www.balluff.co.uk](http://www.balluff.co.uk)



# THE EVENT FOR DESIGN-TO-MANUFACTURING INNOVATION

3D PRINTING | ADDITIVE MANUFACTURING | INSPECTION  
MACHINE TOOLS | CAD/CAE/CAM/PLM SOFTWARE | MATERIALS  
METROLOGY | MOULDING AND TOOLING | POST PROCESSING

25

26

27

SEPTEMBER 2018  
NEC, Birmingham, UK



Being recognised as a world-class company is only achieved by constantly improving every part of your design-to-manufacturing process chain.

The pace of development in technology, materials and software is incredible and with over 300 cutting edge exhibitors that CAN help you enhance your design and manufacturing process, it is no surprise that more than 10,000 professionals from product development, engineering and manufacturing functions choose to attend the TCT Show every year. Join them this September.

## WHATEVER YOUR MISSION,

Find your insights, intelligence  
and inspiration at TCT Show.

Register today at  
[WWW.TCTSHOW.COM](http://WWW.TCTSHOW.COM)



# The International Manufacturing

Manufacturing professionals across the globe will gather at Chicago's McCormick Place, from September 10 to 15, 2018, seeking technologies and innovations to give their organisation a competitive edge.

**I**MTS – The International Manufacturing Technology Show 2018 promises to be this year's leading industrial manufacturing event with over 1,800 exhibitors displaying their products over more than 1.3 million square feet of exhibition space.

With so many things to see and do while you are at IMTS, it can be quite daunting when trying to plan your time. Here are some of the 'must see' exhibits:

## Emerging Technology Center

AMT's Emerging Technology Center (ETC) has become renowned for showcasing technologies and concepts that shape the future of manufacturing. It has become the "must visit" at IMTS and is internationally renowned for presenting state-of-the-art and disruptive technologies that will impact manufacturing in the future. For the first time in 2018, IMTS will feature two Emerging Technology Centers:

### • ETC Digital Transformation (North Building)

Digital technology has revolutionized every aspect of our lives and is just beginning to transform the advanced manufacturing industry. In the ETC Digital Transformation you will see this revolution in action and how businesses in aerospace, automotive, medical and energy sectors are implementing leading-edge innovations.

### • ETC Additive Manufacturing (West Building)

Innovations in additive manufacturing continue to headline IMTS. This year its dedicated ETC. Additive Manufacturing has expanded into all markets to become a valuable component for every manufacturing facility, small and large.



A variety of multi-media including video, live manufacturing, and state-of-the-art design will showcase innovations in materials and methods offering insights into where additive manufacturing is going, and how it can better serve all.

The Emerging Technology Centers is at Booth #236800 and Booth #431609

### • MMS Top Shops

MMS Top Shops Showcase is where leading manufacturers connect to technology and trends, to colleagues and industry leaders, and ultimately, to the tools and strategies that move manufacturing forward.

Top Shops introduces new concepts and leading technologies that are redefining how a modern machine shop operates. This is the place to learn business development and management strategies that will help your company run more productively and profitably.

Innovations and innovators take center stage in the MMS Top Shops Showcase. Top Shops features a combination of technology utilisation and modernisation

that have helped manufacturing facilities be competitive, innovative and profitable.

MMS is at Booth #236600

## Today's Technology Center

Today's Technology Center (TTC) features the latest advancements in manufacturing technology being implemented by businesses. The TTC features technology from the aerospace, automotive, medical and energy sectors. TTC displays the end results of the latest manufacturing technology in the motor vehicle, aerospace and medical industries.

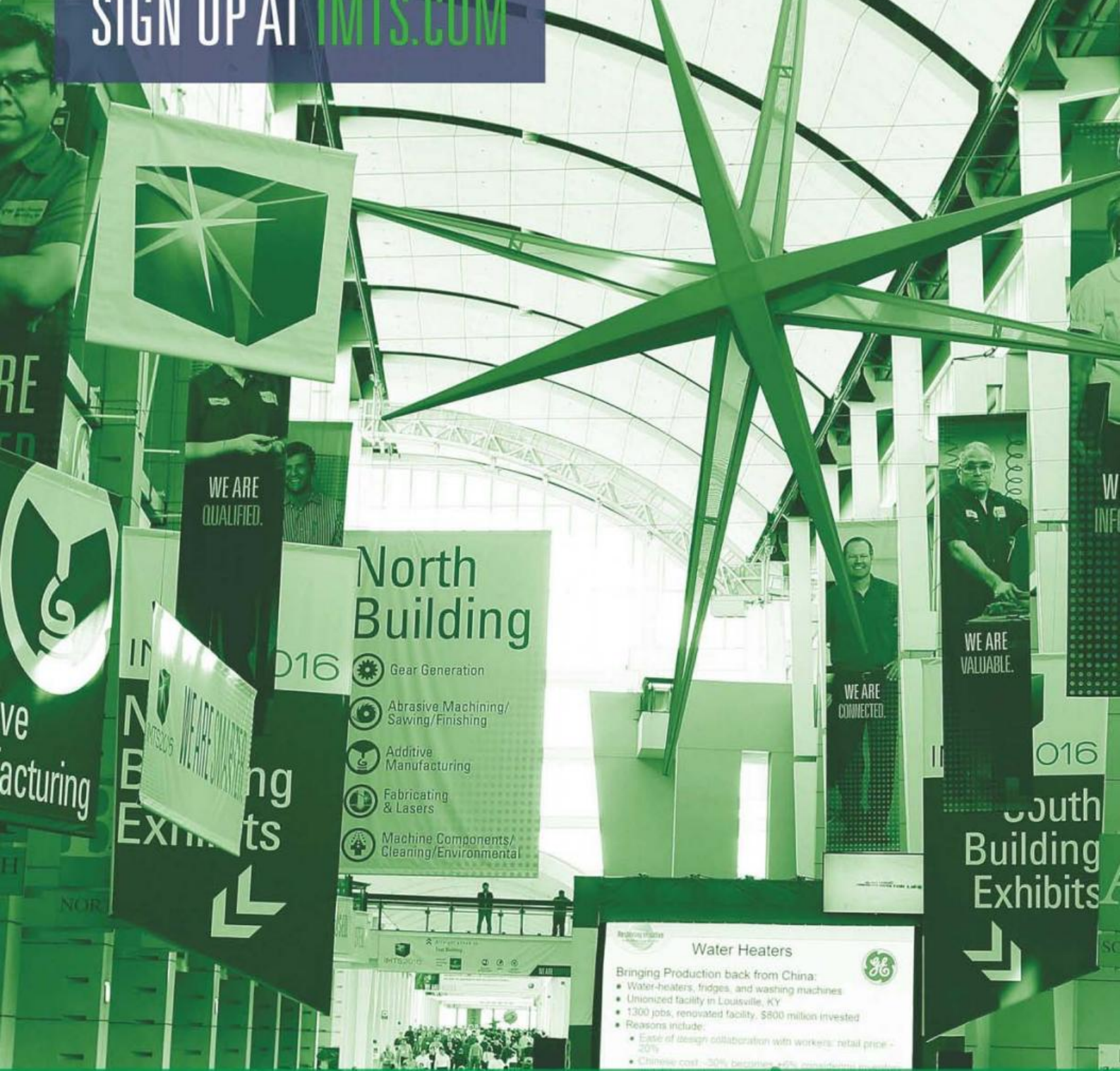
Get a close look at leading-edge innovations from manufacturing's four hottest markets brought to you by Today's Medical Developments, Today's Motor Vehicles, Aerospace Manufacturing and Design, and Today's Energy Solutions.

TTC is at Booth #236900

For more information contact Elaine Brook at [brook@tema.de](mailto:brook@tema.de). If you haven't registered for the show yet, you can do so at [www.imts.com](http://www.imts.com).

REGISTRATION FOR INTERNATIONAL  
ATTENDEES IS FREE.

SIGN UP AT [IMTS.COM](http://IMTS.COM)



## North Building

- 016 Gear Generation
- Abrasive Machining/  
Sawing/Finishing
- Additive  
Manufacturing
- Fabricating  
& Lasers
- Machine Components/  
Cleaning/Environmental

## South Building Exhibits

**Water Heaters**

Bringing Production back from China:

- Water-heaters, fridges, and washing machines
- Unionized facility in Louisville, KY
- 1300 jobs, renovated facility, \$800 million invested
- Reasons include:
  - Ease of design collaboration with workers: retail price - 20%
  - Chinese cost -30% becomes 40% manufacturing cost



# IMTS 2018

International Manufacturing Technology Show September 10 - 15, 2018 | McCormick Place | Chicago, IL

# Countdown begins to the PPMA Show 2018

The UK's leading processing & packaging machinery Show - NEC Birmingham  
25-27 September.

**C**elebrating its 30th anniversary this year, the PPMA Show will return to the NEC Birmingham from 25-27 September 2018 to showcase the latest innovations in smart manufacturing, processing technology and packaging machinery, aimed to increase production line efficiencies and enhance business performance and profitability. New to the show this year will be the Enterprise Zone, which will offer visitors a focal point for learning, networking, discovery and live debate.

Presenting the biggest and most comprehensive line-up of production technologies and solutions for the food and beverage, pharmaceutical, toiletries and FMCG sectors, visitors to the show will see 350 exhibitors representing 1,500 brands, all under one roof. Leading players already confirmed include Schneider Electric, Ishida Europe, Bosch, ABB and Omron Electronics UK, creating an unrivalled platform to connect, engage and network with suppliers and industry peers.

Commenting on the forthcoming show, Dr. Andrew Mint, Chief Executive Officer, PPMA Group of Associations said, "Our 30th anniversary show comes at a time when UK manufacturing is enjoying its longest period of expansion since 1968 and these positive signs will undoubtedly boost confidence throughout our sector. Against this future optimism, the PPMA Show 2018 looks set to be one of the biggest and best to date, where visitors can benefit from an unsurpassed skill set of experience, expertise and industry knowledge and witness the latest processing and packaging technologies in real-time demonstrations."

## The Enterprise Zone

The Enterprise Zone will include a series of educational features including live workshops, presentations, interactive



discussions, question and answer sessions and panel debate covering key topical issues and industry trends. The keynote address will be delivered by Lord Mark Price, Minister of State for Trade and Investment who will bring his years of experience as Managing Director of Waitrose and Deputy Chairman of The John Lewis Partnership to the podium.

The morning of day two will focus on 'The Future of Food Manufacturing' hosted by Craig Leadley of scientific, technical and advisory services organisation Campden BRI. With presentations from the National Centre for Food Manufacturing (NFCM), the Manufacturing Technology Centre (MTC), and Campden BRI, the session will cover robotics and automation, augmented reality and the virtual factory, as well as preservation technologies, food safety management and culture, and conclude with an interactive discussion.

The Enterprise Zone will also feature a helpdesk and a free advice service for small start-up ventures and entrepreneurs as part of the PPMA's new Start-up Ambassador Programme. Visitors will be matched and introduced to specialist knowledge

experts according to specific requirements, who will be available during the show to offer advice, guidance and assistance. Also present in the zone will be the British Plastics Federation (BPF) to discuss its latest developments in materials and handling technology.

## PPMA Group Industry Awards 2018

Celebrating industry excellence and recognising innovation and smart manufacturing, the prestigious PPMA Group Industry Awards ceremony and three-course gala dinner will move to the Hilton Birmingham Metropole Hotel at the NEC. This year, the event, which will take place on the evening of the 25 September, the first day of the PPMA Show 2018, will be hosted by TV presenter and comedian Brian Conley and include two new award categories; 'Customer Service' and 'PPMA Best'.

Registration for the PPMA Show 2018 is now open.

To register for your FREE visitor badge, visit the PPMA Show website at: [www.ppmashow.co.uk](http://www.ppmashow.co.uk).

# PPMA

SHOW 2018

25-27 SEPT 2018  
NEC, BIRMINGHAM

**FREE  
TO ATTEND  
REGISTER  
NOW!**

## THE UK'S LEADING PRODUCTION LINE EVENT

See the latest **processing  
and packaging machinery**  
in action

## NEW FOR 2018

### ENTERPRISE ZONE SEMINARS | NETWORKING

Join an influential line-up of key note  
speakers at our must attend seminars

Network with industry peers

**30<sup>th</sup>**  
ANNIVERSARY



PROCESSING & PACKAGING MACHINERY  
MATERIALS | ROBOTS | INDUSTRIAL VISION

ppmashow.co.uk



ORGANISED BY  
**PPMA** GROUP OF  
ASSOCIATIONS

# 200+ presentations at Advanced Engineering

OEMs, industry experts and government representatives will deliver over 200 presentations and case studies at Advanced Engineering 2018, the UK's largest annual gathering of advanced engineering professionals.

**T**hey will highlight the latest developments in key industries - aerospace, automotive, composites, connected and, digital manufacturing, advanced materials and new for the show this year – civil nuclear new-build engineering.

Alison Willis, Industrial Divisional Director at Easyfairs, organisers of the show, said: "The Open Forum programme is a unique opportunity to see research and case studies from a very select audience. The programme keeps our show at the cutting edge of advanced engineering innovations. We're very excited about this year's exhibition when we will bring together the latest innovations in engineering which will help the UK's manufacturers to continue competing and growing in the global market-place. Come and join us."

Advanced Engineering is celebrating 10 years of enabling the UK supply chain to meet face-to-face with engineering management, spanning: process, control and plant industries; R & D; design; test; production & procurement from OEMs, integrators and top tier industry players. This year's show is building on the success of last year's event where attendance increased by 15%.

The exhibition brings together OEMs and SMEs, visitors and exhibitors to meet and do business, not only within their own industries, but in those less familiar areas they would not otherwise discover at a single exhibition.

Attendees come from a range of engineering specialisms, including; measurements & monitoring, process control, drives and controls, sensors and systems, automation, fluid handling, food processing, machining and many more. And all industrial sectors will be represented,



including: motorsport; defence; oil, gas and energy; marine; and rail.

Whether you are a visitor or an exhibitor, Advanced Engineering will not only provide a business forum and supply chain showcase for your own sector, but will also introduce new opportunities in industries using related technologies and services.

## Co-locating as part of Advanced Engineering 2018 are:

- Aero Engineering
- Composites Engineering
- Automotive Engineering
- Performance Metals Engineering
- Connected Manufacturing
- Nuclear Engineering – new for 2018.

Advanced Engineering 2018 takes place on the 31 October and 1 November in halls 3 and 3a at the NEC. It connects the entire supply chain.

Bringing together over 650 firms, the show will have huge numbers of visitors, more than 13,000 engineers, procurement



managers and senior decision makers - all looking to source, specify and invest in the most up-to-date products and explore the latest industry innovations.

The two-day open conference, which is accredited by the CPD Accreditation Service 'Continuing Professional Development (CPD)', will have a raft of high profile speakers and topics. Visitors will see a variety of cutting edge technology and materials from exhibitors as well as show floor features.

For more information on Advanced Engineering, or to secure your free ticket for the show, visit:

[www.advancedengineeringuk.com](http://www.advancedengineeringuk.com)



# ADVANCED ENGINEERING 2018

31 Oct & 1 Nov 2018, NEC, Birmingham



## The UK's largest annual gathering of OEMs and engineering supply chain professionals



**AERO  
ENGINEERING**



**COMPOSITES  
ENGINEERING**



**AUTOMOTIVE  
ENGINEERING**



**PERFORMANCE METALS  
ENGINEERING**



**CONNECTED  
MANUFACTURING**



**NUCLEAR  
ENGINEERING**

NEW FOR 2018

**REGISTER  
FOR FREE  
TODAY**

Register your interest to visit the UK's largest  
engineering event, giving you access to:

- ✓ 600+ exhibiting suppliers and partners
- ✓ 200+ Continuing Professional Development certified presentations and case studies from OEMs, industry experts and government
- ✓ Innovative and exciting feature exhibits showing the latest technologies in action
- ✓ Enabling Innovation zone for SMEs and start-ups to present new inventions and ideas

Register your interest to attend at:

[www.advancedengineeringuk.com](http://www.advancedengineeringuk.com)

by EASYFAIRS

## Calibration



**Beamex Ltd**  
Beamex Ltd, Newtown  
Grange Farm Business  
Park, Desford Road,  
Newtown Untham,  
Leicestershire, LE9 9FL  
**T:** +44 (0) 1455  
821920  
**E:** beamex.ltd@  
beamex.com  
**W:** www.beamex.com

## Chain



**Donghua Limited**  
Units 9-10, Sidings  
Close, Wednesfield  
Way, Wolverhampton  
West Midlands, WV11  
3DR  
**T:** 01902 866 200  
**E:** sales@donghua.  
co.uk

## Circuit Protection



**SCHURTER Group**  
**T:** +41 41 369 31 11  
**F:** +41 41 369 33 33  
**E:** contact@schurter.  
ch  
**W:** schurter.com

## Drives & Controls



**AllDrives &  
Controls Ltd**  
**T:** 01543 271899  
**E:** sales@alldrivesand  
controls.co.uk  
**W:** www.alldrivesand  
controls.co.uk



**Lumberg  
Automation**  
Im Gewerbepark 2  
58579 Schalksmühle  
Germany  
**T:** +49-2355-5044-  
000

## Electronic Filters



**Kemo Limited**  
Unit 1, Dene Yard  
Green Street Green  
Road, Dartford, Kent,  
DA2 8DH  
United Kingdom  
**T:** +44 (0)1474 705168  
**F:** +44 (0)1474 705366  
**E:** uk@kemo.com

## Fasteners and Components



**TR Fastenings Ltd**  
**T:** 08454 811 800  
**E:** sales@trfastenings.  
com  
**W:** www.trfastenings.  
com

## Industrial Fasteners & Components



**SD Products Ltd**  
Unit 1, Fulwood Road  
South, Fulwood  
Industrial Estate,  
Sutton-In-Ashfield,  
Nottinghamshire,  
NG17 2JZ  
**T:** +44 (0)1623 655  
265  
**E:** sales@sdproducts.  
co.uk  
**W:** www.sdproducts.  
co.uk

## Level & Flow Instrumentation



**Magnetrol  
International UK**  
Regent Business  
Centre, Jubilee Road,  
Burgess Hill, West  
Sussex, RH15 9TL  
**T:** 01444 871313  
**E:** sales@magnetrol.  
co.uk

## Maintenance Software



**Cayman Venture  
Limited**  
Coble Dene, Royal  
Quays, North Shields,  
Tyne & Wear,  
NE29 6DE  
**T:** 0191 296 3816  
**F:** 0191 296 3856  
**E:** info@cayman.co.uk  
**W:** www.cayman.co.uk

## Manufacturing Planning & Data Collection Software



**Seiki Systems Ltd**  
Olivier House, 18  
Marine Parade,  
Brighton, BN2 1TL  
**T:** 01273 666999  
**E:** sales@seikisystems.  
co.uk  
**W:** www.seikisystems.  
co.uk

## Measurement Instrumentation



**Castle Group Ltd**  
**T:** +44 1723 584250  
**E:** enquiries@  
castlegroup.co.uk  
**W:** www.castlegroup.  
co.uk

## Mixers & Agitators



**Euromixers**  
**T:** + 44 (0) 161 449  
8559  
**E:** sales@euromixers.  
co.uk  
**W:** www.euromixers.  
co.uk

## Resin Flooring



**Resdev Limited**  
**T:** +44(0)1422 379131  
**E:** info@resdev.co.uk  
**W:** www.resdev.co.uk

## Solutions For Temperature Measurement & Calibration



**Isothermal  
Technology Ltd**  
Pine Grove, Southport,  
Merseyside, PR9 9AG  
**T:** 01704 543830  
**E:** info@isotech.co.uk  
**W:** www.isotech.co.uk

## Sensors



**Monitran**  
Monitor House, 33  
Hazlemere Road,  
Penn, HP10 8AD  
**T:** 01494 816569  
**E:** info@monitran.com  
**W:** www.monitran.com

## Stainless Steel Fittings



**Nero**  
**T:** 0121 665 3900  
**F:** 0121 665 3903  
**W:** www.nero.co.uk

## Thermal Imaging Cameras



**FLIR Systems  
Limited,**  
2 Kings Hill Avenue,  
Kings Hill, West  
Malling, Kent, United  
Kingdom ME19 4AQ.  
**T:** +44 1732 220011  
**E:** flir@flir.com  
**W:** www.flir.com

## Valves - Actuated & Manual



**Albion Valves  
(UK) Ltd**  
**T:** 01226 729900  
**E:** sales@  
albionvalvesuk.com



**Dixon**  
**T:** +44 (0)1772 323529  
**E:** sales@dixoneurope.  
co.uk  
**W:** www.dixoneurope.  
co.uk

## Water & Chemical Storage



**Drayton Tank &  
Accessories Ltd**  
**T:** 0871 288 4213  
**E:** enquiries@  
draytontank.co.uk  
**W:** www.draytontank.  
co.uk

# Fast|lane

■ M12 X-Coded 10 GB ■ 8 Contacts ■ Shielded metal housing ■ IDT Connection ■ Ethernet cable



The Mazak logo is displayed in a bold, orange, sans-serif font.

Your Partner for Innovation



# automatiON

19th - 21st June 2018

## Switch ON to lights-out manufacturing

The automated factory of the future is here. See for yourself how accessible automation technology can achieve instant productivity gains and cut indirect labour costs at the AutomatiON event, held at Mazak's European HQ in Worcester.

From initial set-up and integration of machine tending and gantry loading solutions, through to a fully-connected smart factory seamlessly sharing real-time production data between management and the shop floor, a series of experts will be on hand to walk you through every step of the process.

Register to visit at: [www.mazakeu.co.uk/on](http://www.mazakeu.co.uk/on)



**Yamazaki Mazak U.K. Ltd.**

Badgeworth Drive,  
Worcester WR4 9NF

T: +44 (0)1905 755755

F: +44 (0)1905 755542

W: [www.mazakeu.co.uk](http://www.mazakeu.co.uk)

E: [sales@mazak.co.uk](mailto:sales@mazak.co.uk)

It's all about you