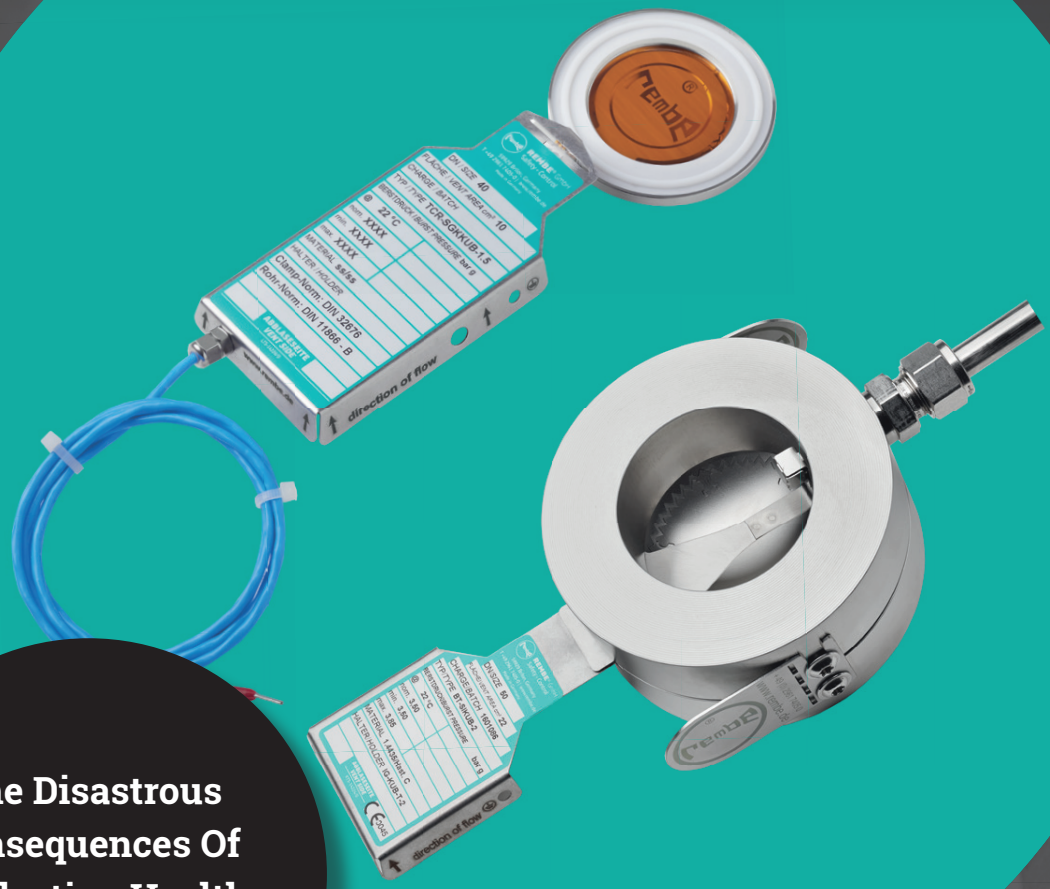
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Avoid Unnecessary Downtimes With Intelligent Signalling Systems



The Disastrous Consequences Of Neglecting Health And Safety

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Avoid Unnecessary Downtimes With Intelligent Signalling Systems

Rupture discs and safety valves have become indispensable for manufacturing companies in the chemical industry. However, there is a need to catch up in terms of signalling. The opportunities offered to operators here are both diverse and economically interesting. With non-invasive signalling that can be integrated into the rupture disc, even processes with critical pressures and demanding media can be reliably monitored.

Processes involving high temperatures and highly corrosive media are widespread throughout the chemical industry. In the past, conventional signalling was not always compatible with such extreme conditions, which is why it is now often overlooked as an additional process monitoring system. The use of modern signalling equipment not only helps to improve productivity and safety but is also helpful in terms of addressing environmental concerns. The German manufacturer REMBE is a European leader in the production of pressure relief devices, explosion protection systems and the associated signalling devices. The company's product range includes some of the most robust rupture discs and signalling systems available on the market. These solutions create significant operational added value in the chemical industry by reliably monitoring safety systems and critical pressure relief devices.

In processes involving potentially harmful media, the risk of leakage can be reduced via a quick and safe shutdown. REMBE's well-designed signalling systems comply with both industry-relevant standards for explosive atmospheres and the intrinsic safety standards. By providing rapid notification of a burst rupture disc, they help to safely control the process while minimising downtime. High-quality signal transmitters can be easily integrated into the existing control systems in order to transmit a visual or acoustic signal when the rupture disc bursts and to shut down the system if necessary.

Avoiding unnecessary downtime through non-invasive signalling

The NIMU (non-invasive rupture disc monitoring) signal transmitter is suitable for systems exposed to harsh operating conditions. This reusable monitoring system is explicitly designed to provide rapid notification of a burst rupture disc. The REMBE NIMU sensor does not come into contact with the process itself, so it is not affected by harsh process conditions or corrosive media and ensures maximum tightness even for systems containing extremely corrosive chemicals.

The NIMU is mounted in a blind tap in the outlet on the rupture disc holder. Thus, the signal transmitter is completely isolated from the process. Potential leakage after the rupture disc has burst is also prevented – this is essential for customers in the chemical industry where leaks cannot be tolerated.

The signal transmitter is fully reusable not only after the rupture disc has burst, but also after scheduled maintenance work. During such maintenance work, the closed circuit of the rupture signalling system makes it easy to perform a function test – the rupture disc can then be reinserted into its holder. Furthermore, the operator can do this without external assistance, which simplifies and speeds up the maintenance process. This is simply a must in the chemical industry due to the demanding productivity requirements.

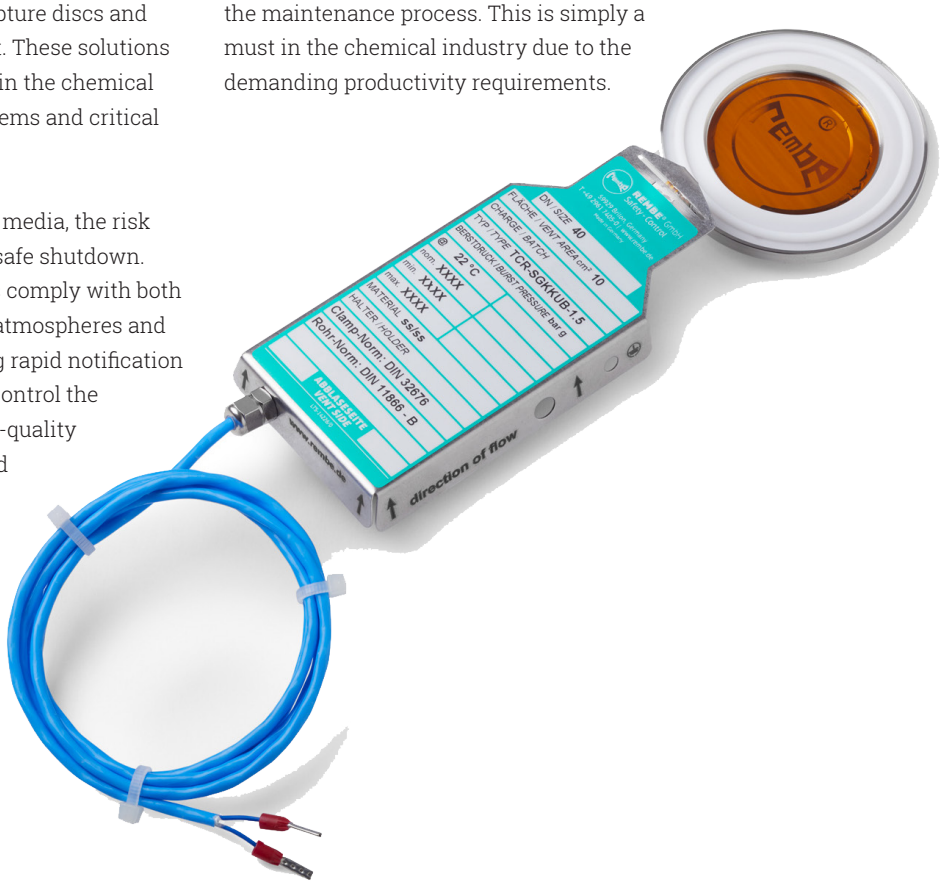


Fig. 1: KUB clean reverse acting rupture disc with integrated signalling and replaceable seal.

Reduce environmental risks

Environmental concerns such as emissions control have become increasingly important for chemical manufacturers. The ability to quickly detect a leak within the process without external support brings significant benefits.

On the one hand, the SBK signal transmitter ensures fast and reliable fault signalling via the bursting of rupture discs and, on the other hand, has the unique ability to monitor leaks from upstream rupture discs. REMBE has specially developed this signal transmitter for processes with high temperatures where alternative signalling systems may no longer be suitable. The combination of leak detection and signalling in one product is a cost-effective solution. The materials used remain stable even at extreme temperatures and ensure high reliability in the long term without the risk of premature failure.

If the SBK signal transmitter is integrated into the process control system, it provides continuous monitoring of the rupture disc and reliable fault indication when the rupture disc bursts. Even marginal leaks within the process are detected. The application of the SBK monitoring system in the chemical industry, where the loss of process media is costly or harmful to health, significantly increases plant efficiency. At the same time, it ensures compliance with safety and environmental standards.

Integrated signalling – reduce installation points, ensure reliable monitoring

Whereas with other signalling systems the rupture disc and signalling devices must be installed and maintained separately, the SGK versions allow the signalling to be integrated directly into the rupture disc. Thanks to their unique design, it is not necessary to run a cable out of the rupture disc holder, thereby eliminating the need to drill a hole for the signal cable. Especially for processes with a low set pressure, where (for example) the non-invasive NIMU signalling may not be suitable, the SGK signalling systems allow continuous monitoring. The SGK versions are available with the KUB and IKB reverse acting rupture discs and the ODV triple-section rupture disc.

About REMBE – the REMBE Alliance introduces itself

Most people associate REMBE with REMBE GmbH Safety + Control, the specialist for explosion safety and pressure relief worldwide. The company offers customers cross-industry safety concepts for plants and equipment. All products are manufactured in Germany and meet the requirements of national and international regulations. REMBE customers include market leaders in various industries, including the food, timber, chemical and pharmaceutical industries.
The company's engineering expertise is based on 50 years of application and project experience. As an independent, owner-managed family business, REMBE combines expertise with the highest quality standards and is involved in various specialist committees worldwide. Short coordination paths allow for quick reactions and customer-specific solutions for all applications, from standard products to high-tech special designs.

In addition to REMBE GmbH Safety+Control (www.rembe.de) with approx. 340 employees worldwide, headquartered in Brilon (Hochsauerland, Germany), and numerous subsidiaries worldwide (Italy, Finland, Brazil, USA, China, Dubai, Singapore, South Africa, Japan), four other companies operate under the REMBE umbrella brand:

- REMBE Research+Technology Center GmbH (www.rembe-rtc.de)
- REMBE Advanced Services+Solutions GmbH (www.rembe-services.de)
- REMBE Kersting GmbH (www.rembe-kersting.de)
- REMBE FibreForce GmbH (www.argusline.de)



Fig. 2 Signalling NIMU (non-invasive rupture disc monitoring)

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https://www.snickersworkwear.com/list/product-guide/trousers-made-to-fit

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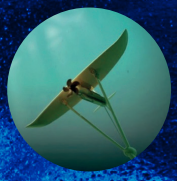
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Visit www.nightstick.com for more information.





Dental lab milling machines and 3D printersbenefit from oil-free compressors

By releasing the new MGF X Line range of oil-free compressors into the UK market, FPS Air Compressors is providing dental labs running CAD/CAM-driven milling machines and 3D printers with a proven way to utilise a continuous and highly reliable source of clean, dry compressed air without risk of contamination.

Computer-Aided Design/Computer-Aided Manufacturing (CAD/CAM) systems are finding growing use in the creation of dental restorations such as crowns, bridges and veneers. The new X Line can supply clean and dry compressed air continuously and reliably to CAD/CAM-driven milling processes, ensuring the precise, reliable and high-integrity production of dental prosthetics.

A further benefit of using innovative MGF X Line compressor technology at dental labs is increased air capacity and, subsequently, lower energy bills. This advantage arrives courtesy of a patented MGF system that reduces the air requirements of the membrane dryer, which in turn increases the available flow of air from the compressor by 20-25% to help optimise dental lab processes such as milling.

The X Line is also ideal for serving 3D printers, which although an additive rather than a subtractive process like milling, still need a compressor that provides continuous, high air quality and low vibration to support the precision and stability demanded by the 3D Printers industry. Notably, as 3D printing technology becomes more widespread, the importance of air quality in the printing process is gaining more and more attention in the process.

Producing consistent air quality is a primary capability of X Line compressors, which house a 0.01 µm filtration system and a high-quality, high-efficiency membrane dryer. The provision of clean, dry, continuous air allows dental labs everywhere to take advantage of uninterrupted workflows. X Line compressors run at a maximum pressure of 10 bar, producing constant air flow at the capacity stated from a broad range of models suitable for multi applications.

Offering yet another advantage, the low vibration of the cabinet-housed X Line air compressors contributes to quiet operation. In addition to the four 'Base' models, a trio of 'Silent' versions are available providing low noise levels that do not exceed 53-56 dB(A). Furthermore, with the robust build quality, X Line compressors offer highly durable operation and a long service life, helping to minimise total cost of ownership (TCO) for dental labs.

Ultimately, the MGF X Line combines efficiency, performance and reliability with extremely quiet operation, providing genuine added value to dental labs running CAD/CAM-driven milling and 3D printing processes.

In addition, FPS extensive range of oil-free and SCROLL compressors are suitable for a myriad of applications in other sectors that demand high air quality. These include: product handling and packaging at food and beverage plants; aseptic processes and cleanrooms in pharmaceutical facilities; circuit board manufacturing and chip production in the electronics market; jet looms and air splicing at textile factories; testing and analytical instruments at research laboratories; and sampling and analysis devices in environmental monitoring processes.

For further information on the X Line range oil-free compressors please visit:

https://www.fps-compressors.co.uk/oil_free_compressors-cadcam_applications.html



E2S Warning Signals, the world's leading manufacturer of safety critical warning signals will return to ADIPEC between October 2nd and 5th 2023 to showcase again its class-leading range of signalling products.

E2S Warning Signals, the world's leading manufacturer of safety critical warning signals will return to ADIPEC between October 2nd and 5th 2023 to showcase again its class-leading range of signalling products.

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E2S Warning Signals modern and efficient products, allow systems designers to employ high performance signalling products whilst reducing the overall power requirement from their control systems; potentially enabling significant system cost savings. E2S Warning Signals also provide flexible, customer focused solutions to best meet end user specific requirements, all with a class-leading 10-year warranty and multiple global approvals with such as ECASEx, ATEX, IECEx, UL, PESO, CCCEx and DNV.

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The Disastrous Consequences of Neglecting Health and Safety: Are Food and Drink Factories Designed with Employee Safety in Mind?

When it comes to health and safety in food and drink factories, many tend focus on hygiene within production and the threat of contamination to products, as well as possible risks for consumers.
However, the health and safety risks to employees working in these factories are an equally important issue.

2022 HSE statistics show a 28% year-on-year rise in non-fatal injuries in the workplace, with slips, trips or falls, handling, lifting or carrying and being struck by a moving object being the leading causes.
And with more and more people now returning to factories post-Covid, the potential for the numbers to continue to rise exponentially is increasing.

Staff injuries can be particularly detrimental, and not just for the individual, slowing down operations and leading to a decrease in profits along with potential reputational damage. This means that for business owners, being aware of how to minimise the risks is invaluable.

Ian Hart, business development director of adi Projects, an engineering company delivering a multitude of projects within food and drink factories, comments: "The issue of employee safety is one that deserves as much attention as that of contamination within these environments.

"It is a topic of utmost importance. Staff health and safety risks in factories can be overlooked for a number of reasons, and it is vital that these are correctly identified and dealt with for the benefit of employees and overall operations."

What are the main hazards within food and drink factories?
There are a number of hazards that are common in food and drink factories and that become difficult to manage if the factors posing a threat are not identified and properly dealt with. "Food factories are inherently full of hazards such as rotating machinery, hot and cold pipes, chemical substances, electrical lines and much more. Humans can become exposed to chemical substances, be required to utilise tools or equipment that are not fit for use, or be subject to slips or falls from height," says Ian.

"There is a clear element of danger for staff working within these environments. But this doesn't mean facility owners can become complacent: there are measures and processes that should be put into place to prevent injuries, which can be highly effective."
According to the HSE, over 30% of food and drink industry injuries are related to manual handling, such as back injuries, causing around 1700 acute injuries each year.

Manual labour including stacking, moving or pushing heavy objects is one of the main causes of injury, and automation of these risky repetitive tasks such as through mechanical handling systems can be instrumental in reducing risks. Yet each individual hazard requires a tailored solution.

Reflecting on the importance of taking a responsible, holistic approach to risk management, Ian comments: "Hazards such as slips, falls and those stemming from workplace transport, moving objects or machinery hazards can't be eliminated altogether: there are certain processes within factories that can't be eradicated yet. But this doesn't mean that these hazards can't be controlled to reduce risks."

Designing factories with safety in mind
"Minimising risks starts with factory design, and has it at its core. There are specific considerations to be taken when designing food factories to maximise safety and increase accessibility.
"Factors include limiting points of contact between hazards and humans, such as having hot or cold pipes in the celling void instead of anywhere near people, or ensuring rotating machinery is adequately guarded, so that risk of injury to those in the factory is minimised," says Ian.
With slips and trips making up for 35% of major injuries in the food and drink sector, being caused by wet floors, uneven surfaces or other obstructions, design factors become particularly important in this context.
Ensuring safe access with proper facility design is equally vital when it comes to falls from height – the third most

common cause of fatal injury in the industry.

"There is often a mentality that dictates that slips, falls and similar accidents are common in these environments, and that there isn't much that can be done. But this mindset can be incredibly detrimental," adds Ian.

"When designing facilities, it's important to give some thought to the overall infrastructure, asking questions such as how do you make the factory as dry as possible? How do you prevent contamination of walkways, or ensure there's enough grip on the floors?

"Something as simple as building factories with the proper flooring or having suitable lighting inside the facility can significantly reduce certain risks.

"Ultimately, it's about alleviating all the sources of danger and reducing staff exposure to hazards. If the risks are adequately addressed at the design stage, achieving continued high levels of safety becomes easier in the long-term."

Maintenance as a priority

Manufacturers in the industry often operate from older facilities with outdated equipment, which can constitute a challenge with regards to health and safety. Regardless of whether certain safety measures were put into place at the design stage when factories were built, it is likely that unless proper maintenance has been carried out, the facility is no longer safe.

"Regular health and safety assessment of the production lines and of the equipment are essential in any facility. Many forget that over time, equipment breaks down, or decide to make significant alterations without carrying out proper risk assessments," says Ian.

"Equipment could be perfectly safe and compliant when it's first introduced, but that doesn't mean it will remain safe after years of continued usage. Maintenance needs to be a continuous priority: in a live factory, things are changing all the time, which means that the reassessment of lines is vital.

"There has to be an adequate awareness as to the risks brought on by a certain type of equipment, what its life span is and what investments are needed to enable this equipment to continue to be safe.

"And overall, it's down to manufacturers to build this vital awareness in order to protect its staff and ensure the smooth running of operations."

As a division of multidisciplinary engineering business adi Group, five-time winners of the Royal Society for the Prevention of Accidents (RoSPA) Health and Safety Awards, being recognised as one of the few businesses from around the world with impeccably high health and safety standards, adi Projects is best positioned to provide expert health and safety advice to manufacturing businesses.

adi Projects has provided innovative solutions for a number of clients dealing with complex facility design and health and safety challenges, solving each problem at hand with a tailored, strategic approach. To learn more about our services, please visit:

https://www.adiltd.co.uk/divisions/adi-projects

About the Author

Ian Hart – adi Projects Business Development Director

As a Director and Chartered Engineer, Ian has 25 years Executive Board experience, successfully establishing and developing customer focussed, engineering-based business and delivering high value investments in both private and public sector organisations throughout the world.



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Intertek revives the CAPCIS brand, recognising 50 years of expertise in corrosion and materials testing and consulting

Intertek, a leading total quality assurance provider to industries worldwide, announces today the revival of the CAPCIS brand, leveraging its global reputation as a leading authority in corrosion and materials assurance and honouring this specialist team's 50-year legacy that started in 1973 at the University of Manchester Institute of Science and Technology (UMIST).

Acquired by Intertek in 2007, Intertek´s Production and Integrity Assurance business has a long-standing reputation for offering independent third-party testing and consultancy services worldwide to businesses in the energy, transport, aerospace, marine, manufacturing and infrastructure sectors.

Corrosion can cost up to 2-4% of a company's total revenue each year. As energy, utilities and infrastructure assets age, and operate in ever more challenging environments, the need for systemic risk-based corrosion monitoring and materials assurance solutions has never been greater. We are, therefore, proud to launch Intertek CAPCIS, a move which strengthens our position as an industry leading expert providing quality services through a trusted, single-source partnership for every stage of the materials and corrosion lifecycle, from prevention through to failure analysis, helping to reduce uncertainty and risk across a wide range of assets.

In addition to corrosion and materials testing, Intertek CAPCIS delivers in-depth expertise worldwide on integrity management across a wide range of services such as failure investigation and material selection, and production chemistry and oilfield microbiology in primarily upstream oil and gas. With a diverse team of highly specialised experts, and state-of-the-art facilities in the UK, UAE and Malaysia, Intertek´s Production and Integrity Assurance is operating at the forefront of corrosion and materials assurance, helping to ensure the safety and integrity of assets around the world.

Tim Walsh, Intertek CAPCIS Director, said: "Bringing back the CAPCIS brand in our 50th year of operation further reinforces Intertek's reputation in the materials and corrosion industry. As Intertek CAPCIS, we will continue to support our customers, giving them confidence that their assets are safe and meet regulatory requirements, even in the most challenging operating environments. In an everchanging market, our specialist expertise is more important than ever, and we will ensure that Intertek CAPCIS continues to exceed our customers' expectations."

Earlier this year, Intertek CAPCIS expanded its corrosion and materials testing capabilities with an investment in the latest technology, implementing a new suite of Instron Electropuls E10000 electrically actuated load frames. This new equipment complements Intertek CAPCIS' existing testing services by introducing torsional force application and enabling uniaxial (tension or compression) or bend testing of lighter weight, lower strength materials.

Mark Luby, Business Development Manager, added: "This is an important milestone for Intertek CAPCIS and recognises our 50 years of expertise as an independently and globally recognised leader in corrosion and materials testing and consultancy. We are delighted to be uniting our industry-leading experts and state-of-the-art technical infrastructure under the CAPCIS brand and to build on its rich legacy. Intertek CAPCIS is here to help our customers assure the integrity of their assets, for both the existing and future energy and infrastructure landscape."

About Intertek

TOTAL QUALITY. ASSURED.
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WELTEC BIOPOWER to Showcase Solutions for Generating Energy from Wastewater and Organic Waste

At this year's IFAT, the world's leading trade fair for environmental technologies in Munich, Germany, WELTEC BIOPOWER will present its efficient digestion procedure for the industry and municipalities. From 30 May to 3 June, the biogas specialist's sales team will be present in hall A4, stand 217, to answer all questions concerning the establishment and upgrade of anaerobic energy plants.

The range includes well-proven procedures from the field of biogas technology. The high savings potential of these procedures is demonstrated by the modernisation of the municipal sewage treatment plant in Bückeburg, Germany, which caters to a population of 33,000. Since the transition to anaerobic sludge stabilisation by WELTEC BIOPOWER in 2021, the plant operation under full load has become much more profitable. As the general contractor, WELTEC was in charge of the setup of the wastewater treatment for the city's sewage treatment plant. Apart from the earthworks, the establishment of the fundament and the electrical wiring, the work comprised the construction of a new static sludge thickener, an engine room for the cogeneration power plant, the control and pump station as well as a stainless-steel digester with a gas storage roof.

Thanks to the anaerobic wastewater treatment, the sludge volume has dropped by 35 percent, resulting in a significant reduction of transport and disposal costs. Furthermore, the produced digester gas can now generate some 465,000 kWh of electricity at full load. The operator is thus able to cover

about 40 percent of the power demand and save two thirds of the electricity costs. „In view of the new greenhouse gas reduction targets and the surge in energy prices, an anaerobic stage is an economically attractive solution for wastewater treatment operations, which also benefits from public funding“, explains Jens Albartus, Director of WELTEC BIOPOWER. He adds: „Ultimately, a combination of wastewater treatment, heat and power generation and climate protection enables more efficient operation, especially of small and medium-sized sewage treatment plants.“

A WELTEC plant in Piddlehinton, South West England, demonstrates how these goals can be reached with organic waste. Here, a mix of food leftovers, expired food from supermarkets and biowaste is fed into the biogas plant. Apart from the substrate mix, the technical approach, too, is special. Prior to the feed-in and shredding, an unpacking machine separates the food from the packaging.

Another efficiency bonus: The exhaust heat from the cogeneration power plant is sold to a nearby feed producer, which also uses most of the power. The biogas plant operator supplies the surplus electricity directly to the power grid, thereby generating further income. The digestate from the process is in conformity with the requirements of UK industry standard PAS-100. Therefore, local farmers are able to use it as fertiliser. Following a capacity expansion in 2014 from 20,000 t of substrate input a year to 30,000 t, WELTEC BIOPOWER installed an additional digester and storage tank as well as GasMix mixing systems and a separation unit. A plant with these features would also support a switch to biomethane production. At the IFAT trade show in Munich (A4.217), the WELTEC experts will be pleased to provide further information on various treatment and biogas technologies.

https://www.weltec-biopower.de/





Pupils Know A+B=See

The human eye allows you to visualize the world by receiving light energy and then processing that information to create images your brain can understand. The iris controls the amount of light entering the eye, which contracts and expands depending on the ambient light conditions. When a traditional flashlight (called torches in many countries) is activated, the sudden increase in available light causes the pupil to contract as it adjusts. This sudden constriction reduces your peripheral vision and decreases your awareness of objects around you. The pupils will expand somewhat as the eye adjusts to the new light levels, but as you continue looking in the direction of the beam, it will remain constricted. This magnifies the odds of a slip or trip occurring in a rugged work environment with sharp tools, pipes, hoses, and other trip hazards scattered along a user's path. According to the National Safety Council (NSC), which has been collecting safety data for 100 years, the third leading cause of nonfatal work-related injuries is the category referred to as "falls, slips, and trips."

In early 2000 Nightstick solved this problem with the invention of the dual-light flashlight. One of the key advantages of a dual light flashlight is that in addition to the traditional forward-facing flashlight beam that illuminates distant objects, a secondary downward floodlight was added to help users regain the lost peripheral vision caused by pupil constriction. This downward-facing floodlight allows users to see the immediate area in front of them and to their sides as they navigate to their project or workspace. A secondary advantage of the floodlight is to provide a soft area light that allows users to work on equipment, take readings, or perform other tasks without having the blinding glare of a traditional focused beam bouncing back and blinding them. Anyone who has used a high lumen flashlight to focus on an object near them knows how uncomfortable this can be.

When it comes to purchasing professional lighting products rather than mixing and matching products from several companies, a single source manufacturer ensures consistent quality and safety across an entire product line. This is especially important when purchasing intrinsically safe lighting, often called explosion-proof or safety lighting.

Nightstick, the original creator of the dual light flashlight, a global manufacturer of over 50+ intrinsically safe professional, portable LED lighting products, exceeds industry standards in performance, quality, and user safety.

Find the certification level you need or locate a dealer near you at www.nightstick.com.



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The Explosive Atmosphere Safety Specialist

The ExVeritas Group provides Product Certification, Management System Certification, CompEx Certification and Site Safety Services. We are a UK Government Appointed Body for UKCA 'Ex', an ATEX Notified Body and an IECEx Certification Body and Test Laboratory

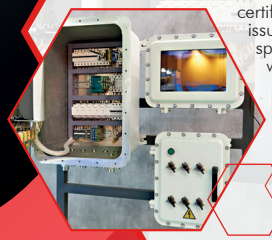
Our Product and System Certification is internationally recognised for global markets, and we can parallel issue UKCA, ATEX, IECEx and UKAS ISO9001 Certifications to save our clients time and money. For sites we offer safety consultancy on explosion safety including equipment risk assessments and Ex inspection. We also qualify people with CompEx certification as well as specialist and bespoke training.

ExVeritas is a multi-award-winning company including the 'Queen's Award', the highest honour that can be bestowed on a UK company. We have a proven track record of delivering word class certification, consultancy and training.

With Certification Bodies in the UK, Mainland Europe and North America and training facilities in the UK, Malta, Italy, Denmark and Ireland, we can offer a global service and a cost effective and efficient service.

PRODUCT CERTIFICATION

ExVeritas offer highly accredited and internationally accepted product certification including UKCA Ex, ATEX, IECEx and North American Listing with award winning 'customer service' levels. Our unique 'CMS' system gives customer 24/7/365 access to their quotes, certification project status, and issued certificates. Whilst we specialise in explosion safety, we also have in house EMC and Electrical Safety testing to offer turnkey global approvals.



TRAINING AND COMPEX CERTIFICATION

ExVeritas are the leading CompEx provider with international practical training centres around the world. We have more experienced lecturers and more benefits than any other Ex training provider, including free software tools and pre-and post e-learning. Our unique speciality courses include 'advance' level Ex Inspector and 'Advanced Intrinsic Safety Circuit Design' Only a company with ExVeritas depth of experience can deliver courses at this level.



SITE SAFETY

ExVeritas conduct electrical and non-electrical 'Ex' Inspections. We also offer explosion risk assessments, fitness for purpose assessments and even 'on site' UKCA, Notified Body or IECEx Certification. All of this makes us uniquely positioned to deliver full compliant explosion safety solutions, including our unique online and tablet based 'iEx Inspection & Management' solution.



MANAGEMENT SYSTEMS CERTIFICATION

ExVeritas are one of only a handful of companies in the world that can offer a time and cost saving combined audit. We can certify UKAS (ILAC) ISO9001 and other QMS systems, UKCA QAN, ATEX QAN and IECEX QAR audit in one visit. In addition, we can combine other audits such as INMETRO, FUS (for North America) and even IECEx Service Facility Certification for further cost savings. We have redefined the 'one stop shop' for QMS Certification with the customer in mind.



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What's All Of The Fuss About Hydrogen?

Having just spent a week at Offshore Europe in Aberdeen and a week at the Global IECEX Conference in Edinburgh there is no doubt 'Hydrogen' is firmly on everyone's agenda.... Apparently, the future is 'Hydrogen'!

People who have been working in or around potentially explosive atmospheres will be aware that Hydrogen is nothing new...its just another 'IIC' Gas and we have been classifying hydrogen zones and certifying equipment for hydrogen environments for 30+ years. The use of Hydrogen isn't new, but the number of areas that will be classified as IIC is increasing dramatically.

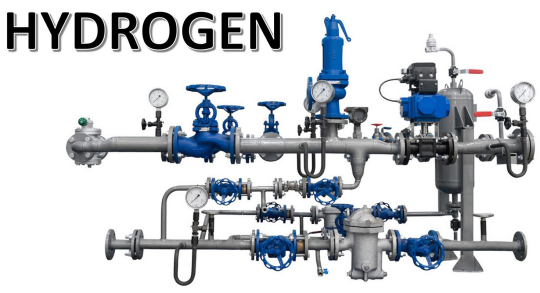
So- what is special about Hydrogen? Below is a very simplified list (I have tried to be as non-technical as possible!) just to make people aware of some of the issues with Hydrogen that may affect risk assessment, area classification or product certication.

• It's very light, can pocket in ceilings and high areas. Gas detection positioning may be affected.
• It can leak more easily than other gases if not properly sealed and may cause embrittlement and other issues
• It is very easy to ignite with energy/sparks (very susceptible to static ignition for example)
• It has a very wide flammable range so mor of the 'leak' will be ignitable.
• It is very volatile (can detonate even in open air, produces very high pressures etc.)

Given this list, it's fair to say that Hydrogen presents more of a 'risk' (in terms of both likelihood of ignition and consequence) than most other gasses, but that existing systems (ATEX, IECEX etc.) already take account of this for IIC Gasses. There are also many new technical working groups working on Hydrogen specific standards, hydrogen fuel cells, hydrogen dispenser for example. In addition to new types of equipment there are many new retrofit issues (hydrogen generators forklift trucks etc.) which will have a knock on effect to the installed equipment.

Sites or processes that introduce Hydrogen as a new gas will need to reconsider the consequence analysis, classification and equipment EPLS as a minimum, even issues such as antistatic PPE may need to be considered.

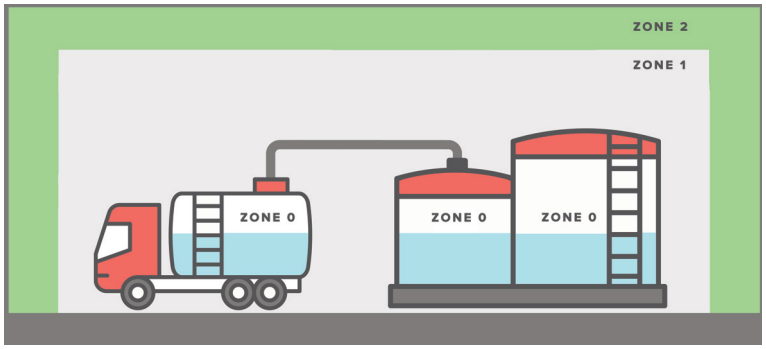
Given that the use of Hydrogen is increasing dramatically, Certification Bodies will no doubt get more requests for IIC Certification. Equipment Manufacturers will need to be aware that in some case (intrinsic safety, flameproof etc.) Hydrogen certication can be far more difficult (or even not possible) for some types of equipment, so start early if you think you will be involved in the Hydrogen boom!



Test Products International Inc.

Condition Monitoring Solutions

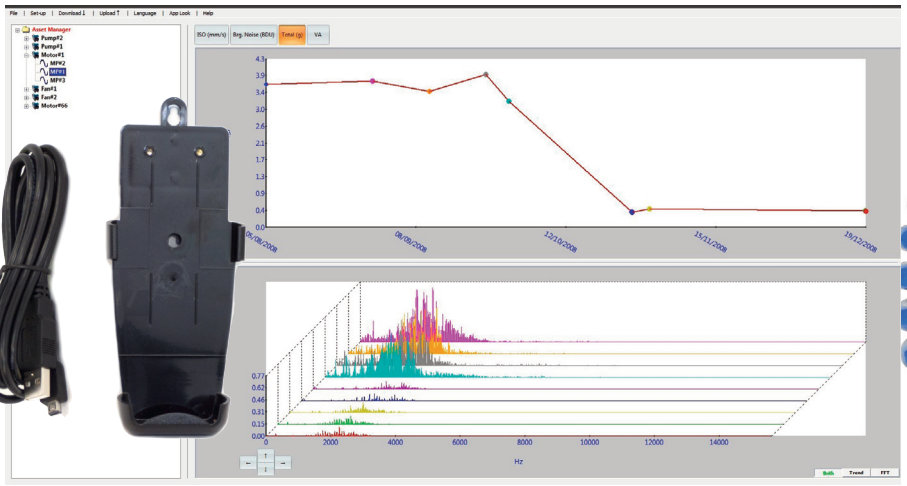
IECEx/ATEX and North American certified Vibration Analyser for use in Zones 1 & 2 hazardous locations anywhere in the World



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9080-Ex Analyse, Interpret & TREND readings.....

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- Measure & Download Unlimited Assets & Test Points
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See the Problem before it becomes the Problem

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What Exactly Does Intrinsically Safe Mean?

It is widely accepted that any electrical equipment for use in Ex hazardous locations needs to be "intrinsically safe" and therefore incapable of igniting an explosive atmosphere. Obvious hazardous locations include flour mills, coal mines, petrochemical plants, fuel transfer facilities etc. However, some not so obvious hazardous locations include wastewater treatment plants or anywhere a build-up of naturally occurring flammable material (such as methane or dust) could occur.

In many of these locations there is a need for condition based monitoring (CBM) equipment, for example to measure the temperature or vibration of rotating machinery. This CBM equipment must therefore be certified as "intrinsically safe". This is where things can become confusing however, as there are various certification routes. The main one is the International Electrotechnical Commission's IECEx, which applies Worldwide. However, some regions also require "local" approval, such as the EU's ATEX (Atmospheres Explosives) certification. Although this is basically an additional layer of bureaucracy on top of IECEx and the two are effectively identical. However, North American approval (USA & Canada) can appear slightly different, as explained below.

The whole concept of intrinsic safety is based on probabilities, including the likelihood of an explosive atmosphere existing in the first place. For IECEx & ATEX this is dealt with by the definition of the following zones, which put very simply, define the probability of an explosive atmosphere existing as: Zone 0: most of the time, Zone 1: occasionally and Zone 2: not very often. The North American system has previously used a classification system known as NEC500 that defines Class 1, Division 1 (equivalent to Zones 0 & 1) and Class 1, Division 2 (equivalent to Zone 2). However, this is gradually being replaced by NEC505 that uses identical zones to IECEx & ATEX.

The concept of intrinsic safety being based on probabilities is taken a stage further whereby equipment suitability for use in hazardous locations is based on the probability of a fault occurring:

Hazardous Area	Intrinsic Safety level	Number of faults tolerated
Zone 0	Ex ia	Safe with up to 2 faults
Zone 1	Ex ib	Safe with up to 1 fault
Zone 2	Ex ic	Safe in normal operation (i.e. there are no faults)

Test Products International (TPI) believes it has greatly simplified things with the triple certification of its very affordable **TPI 9080Ex Smart Vibration Analyser**. The **TPI 9080Ex** is IECEx/ATEX certified for Zone 1 and North American approved for Class 1, Zone 1 and hence certified for use in hazardous locations anywhere in the world.

The **TPI 9080Ex** uses industry standard BNC connected intrinsically safe accelerometers and offers on-meter analysis for detection of machine faults such as unbalance, misalignment, looseness and bearing wear. With full colour OLED display and Bluetooth communications, the TPI 9080Ex features colour coded alarms and zoomable on-screen vibration frequency plots with cursor readout. It can store lists (routes) of up to 1000 machines, each with up to 10 measurement points, with full waveform and frequency spectrum (FFT) capture.

The included free-to-use **VibTrend** PC-based trending and reporting software features high-end benefits such as automatic email notification of alarms and report generation to implement a full CBM strategy. Routes and readings can easily be transferred to/from the **TPI 9080Ex** via Bluetooth using a smart phone or tablet running the free **TPI Cloud Bridge App**. This allows service personnel to receive and return **VibTrend** routes and readings, no matter where they are in the world.

In-line with TPI's philosophy of being the value leader, the TPI 9080Ex is available at the incredibly low list price of only £3,500.

For more information please contact TPI Europe's head office on +44 1293 530196 or take a look on the website at www.tpieurope.com or email sales@tpieurope.com



Explosion Proof ATEX/IECEx Zone 1 / 21 iPad Mini 6

Now CSA Certified for North America / Canada Classes, Divisions and Zones

Atexxo Manufacturing has released the Apple iPad mini 6 which is global certified and suitable for use in Zone 1 and Zone 21 hazardous locations. The explosion proof iPads are originally manufactured by Apple then converted and certified according to the ATEX directives and IECEx standards by Atexxo Manufacturing. This makes the ATEX/IECEx Tablets suited for safe use in gas/vapour Zone 1 and dust Zone 21 hazardous areas. Sim-card can be installed by the end-user themselves. The devices are suited for Apple's DEP (open) Business Manager Program.

All features of the original product are preserved, except for the fingerprint scanner.

The ATEX/IECEx iPad mini of the 6th generation comes with an aluminum case finish. The ATEX/IECEx iPads are suitable for use in extreme demanding environments. They are available in both 64gb and 256gb versions.
Beside safe use as a tablet computer, all versions are excellent for use as an explosion proof camera or RFID scanner.
For Middle East countries, versions with blocked cameras are available.

Explosion safety level:
II 2G; II 2D; II 3D
Ex db IIC T4 Gb
Ex tb IIIA T135°C Db
Ex tc IIIB T135°C Dc
Class I, Zone 1 AEx db IIC T4 Gb
Class I Div 2, Group A, B, C, D T4

Features:
- 64Gb or 256 Gb + Cellular
- Self Sim-Card Installation
- Original Apple IOS software
- Suited for Apple DEP (open) Business Manager Program
- Global certified (ATEX, IECEx, UKCA, CSA, INMETRO)

Typical Applications:

- Connected fieldworker
- Digital twins
- Industry 4.0
- Oil and Gas extraction sites
- Petro Chemical plants
- Offshore platforms

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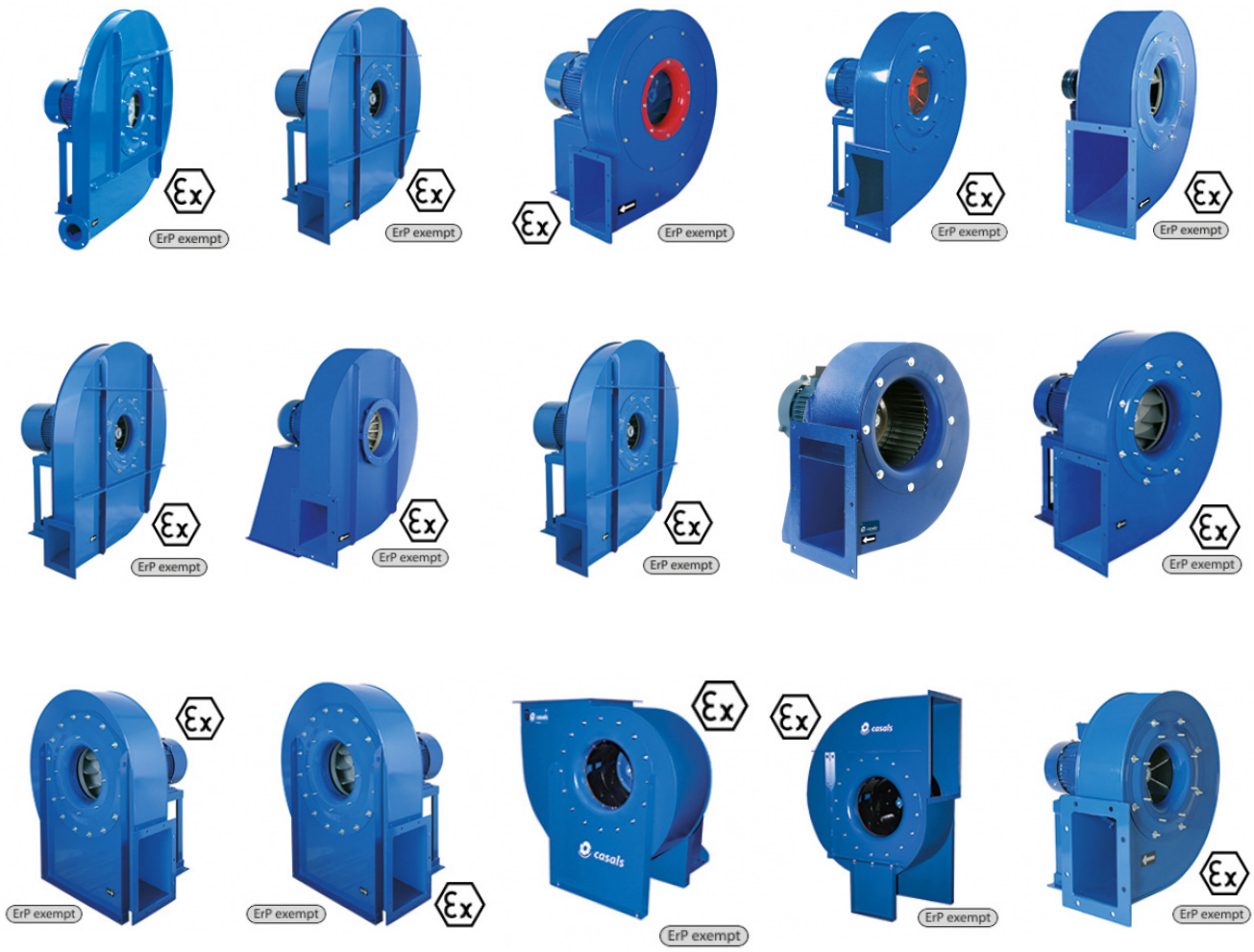
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The UK's leading fan integration experts & independent supplier of industrial fans for OEM, commercial & industrial applications.

Our wide range of award winning ATEX explosion proof fans are suitable for zone 1 and zone 2 gas, or zone 21 or 22 dust ATEX atmospheres where there is a potential for explosive atmospheres in line with relevant ATEX regulations 2014/34/EU.

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The Importance of Auto Ignition
Temperatures in ATEX Fan Selection

ATEX protection is all centred around preventing an explosion from happening when there is a presence of combustible dust or flammable gas, this means considering all potential ignition sources. When looking at sources, most people will look for sparks and flames as an obvious risk, but the gas or dust properties themselves are an important aspect to protect against.

One of these properties is their temperature characteristics. Flammable gases have specific ignition temperatures, known as autoignition temperatures. These temperatures represent the minimum temperatures at which a gas mixture will spontaneously ignite in the absence of an external ignition source such as a spark or a flame. As an example, the auto ignition temperature of hydrogen air or hydrogen-oxygen, is from 510 – around 584'C.

Let's consider the principle of hot surface ignition – lots of processes, such as combustion, will utilise a gases auto ignition temperature to ignite a gas on contact with a hot surface (often a coil, thread, plate etc). This works as the high temperature of the surface transfers heat to the gas, raises the temperature to its auto ignition point, igniting, and sustaining combustion. Great for purposeful processes but when this is not considered when handling potentially hazardous gases, this can be the cause for the explosion.

The principle of hot surface ignition, and the avoidance of auto ignition is handled with surface temperature limitations. ATEX fan selections consider the maximum allowable surface temperature of fan motors that come into contact with these potentially flammable gases and dusts in hazardous ATEX environments. This concept is known as maximum surface temperature. It's important to note that maximum temperature limitations are not in place primarily for the prevention of hot surface ignition, the main principle is to protect the motor components themselves to ensure their safe operation by preventing excessive heat build-up, but will also prevent the fan and motor from becoming a source of potential ignition by keeping temperatures below any auto ignition temperatures.

For those of you who are unfamiliar with the make-up of an industrial fan suitable for potentially hazardous environments, ATEX fans are constructed and classified in two parts, one label that explains the motor classification and protection, and secondly a rating for the overall fan construction including the casing, impeller, and materials. Part of the motor classification shows the end user the maximum surface temperature that the motor is limited to reach to prevent component getting so hot that it initiates the auto-ignition temperature of the surrounding flammable substances.
Your fan supplier should always ask for your hazardous area classification information, this will inform them of the gases or dusts present, their presence to determine the ATEX zone, the temperature limitations that must be considered, the materials required to ensure longevity and safe operation and the level of ATEX protection required from electrical components such as motors. Under DSEAR and ATEX legislation it is the sole responsibility of the end user to conduct or contract a hazardous area classification. Suppliers will not be able to supply equipment for hazardous areas without this information from the end users.

For more information, visit www.axair-fans.co.uk



Rugged, Versatile And Reliable



The Peli™ range of ATEX approved torches was recently on display on the Peli Products (UK) stand at Offshore Europe exhibition in Aberdeen where it proved hugely popular.

Peli torches are renowned for rugged reliability and each torch in the safety range is certified to ATEX requirements, for use in potentially explosive atmospheres such as silos, tanks and chambers where an individual may be exposed to a range of potential hazards.

Right angled, hands-free

The Peli™ 3415 Zone 0 is a versatile, right-angled torch designed specifically for use in hazardous areas. It features a 90° articulating head to angle the light where required. An integrated clip easily attaches to clothing for hands-free light. There is also a heavy-duty magnet; allowing the torch to be attached to steel surfaces, again allowing the user to keep their hands-free.

This model boasts three light modes – Flood for wide light, spot for a focussed beam and flood/spot combined. Available in high vis yellow, the 3415Z0 is waterproof and provides up to 15 hours of runtime with a beam distance up to 135 metres.

Slim and compact

The slimmest safety torches in the range are the Peli 1975 Zone 0 and Zone 1 models.

These compact penlights are rugged and durable for tough work environments. They feature a secure clip to attach to clothing. Small in size and lightweight at only 54 grams yet they output a powerful 117 (Zone 0) and 94 lumens (Zone 1). The 2 AAA batteries last for more than 8 hours (Zone 1) and 2¼ hours (Zone 0).The Zone 0 version is manufactured with an anti-static body and shroud and both versions can be helmet mounted using the clip which is available as an



accessory.

Rugged and powerful

From slim and compact penlights to a rugged hand lamp, the Peli 9415 Zone 0 illustrates the diversity of the range. It packs a powerful beam which cuts through smoke and fog. The ATEX Zone 0 rating ensures the light can be used in hazardous areas and features a sure grip handle for a comfortable and non- slip grip with an extra-large space to accommodate gloved hands.
The 9415 is designed to stand on end and the 120° pivoting head allows the user to angle the beam exactly where required. There are 3 light modes: High, Low & Flashing and a battery charge level indicator (Green, Amber, Red).

Professionals have chosen the Peli brand for many years; trusting in the reliability, performance and durability of the products in the most testing conditions.

For more details telephone 01457 869999 or go to www.peliproducts.co.uk.



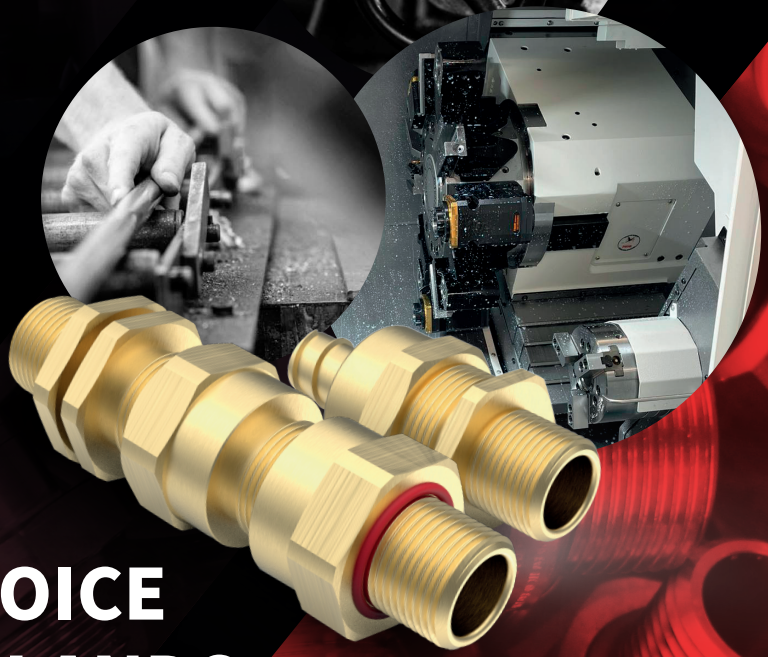


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75 YEARS





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At Peppers, we specialise in the design, manufacture, and supply of what are widely regarded as one of the best cable gland products and enclosure accessories on the market today.

When you want a fully certified, world-class cable gland designed by and for engineers, backed up by a first-class service, the only option is Peppers.

Peppers delivers an extensive product range with multiple international certified approvals and real time responses to an ever changing market place.

Sales Manager, Grayham Churchouse said...

“We take great pride in providing our customers with a confidence and peace of mind when they buy from us, due to the provision of a total cable gland solution. From the design engineers who specify our products, to the fitters at point of installation, to the organisations all over the world that utilise them; our service and product quality is paramount to our success. As a single product manufacturer, we have pooled 75 years’ worth of expertise and resources into making the very best, fit for purpose cable gland and accessory range on the market.”

peppers.co.uk



Cable Glands Designed By, And For Engineers

Peppers Cable Glands is a name synonymous with quality within the industries in which we work. It is a mark recognised as the 'engineers' choice and a name that has a reputation for being the market leader when it comes to not only the product, but the service that comes with it.

Designed by engineers, for engineers. Our research and development department is manned by the highest calibre of experts within our industry and the onus is on producing quality of which they too would be happy to work with, out in the field. Our customers know this, and that is why they trust in our name.

No better example could be the use of our own cable glands in our newest and most significant investment, the QRC. We bought the Quick Response Cell to provide customers with faster lead times on orders and enhance overall delivery. It is a significant investment into our business and one that we needed to know would not let us down. The use of our own cable glands gives us the reassurance that this is a machine that will not fail, ultimately meaning it will not let our customers down.

Not just a cable gland

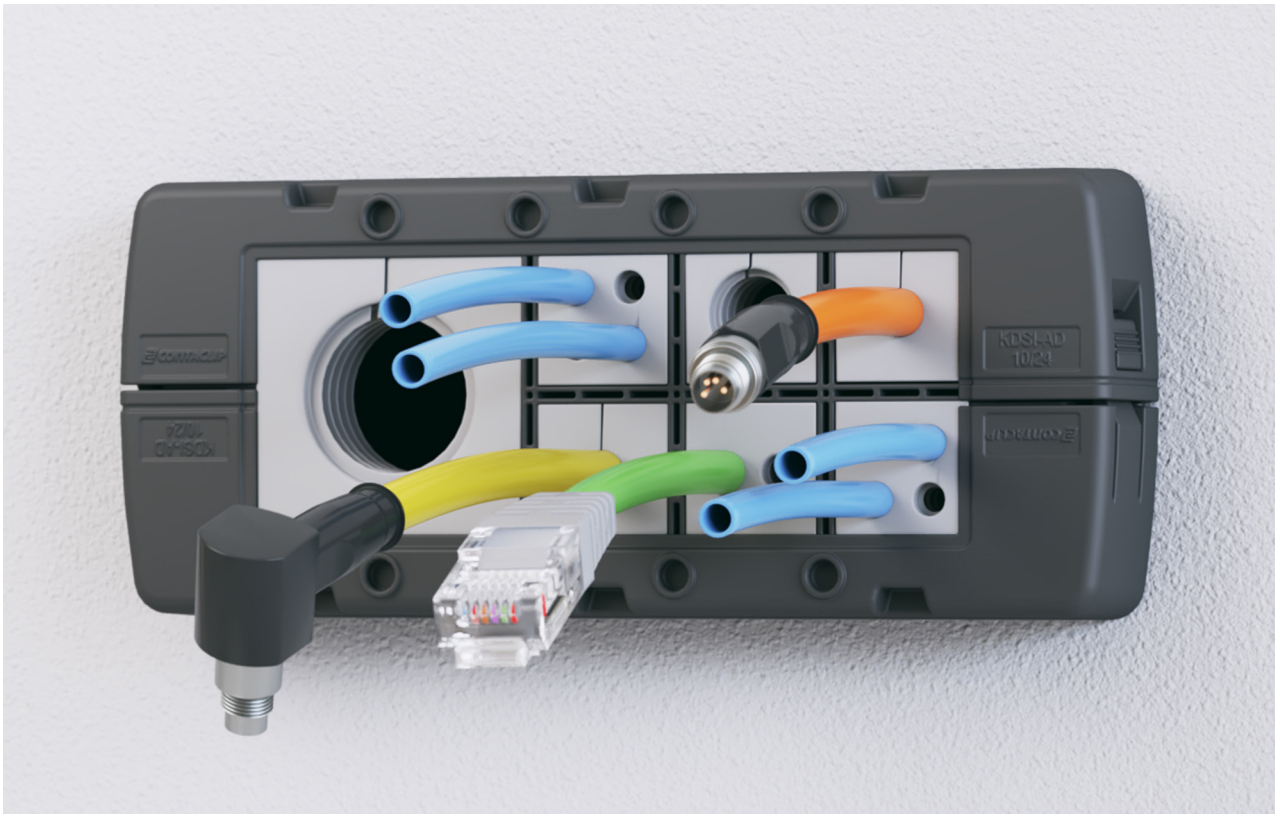
While our engineers design the highest calibre of cable glands, our sales department has the industry knowledge to ensure our customers are ordering the necessary, and vital accessories that will be needed to ensure a prompt start and successful project.

Peppers range of enclosure accessories are the essential components that if missed, could delay the start of your project leading to excess costs and longer lead times.

Whether you need stopping plugs, breather drains, adaptors or reducers, not only will we know what you need and make sure you have it, but these parts will be up to the job in hand because we take as much pride in the manufacturing of our accessories as we do in our cable glands.

Peppers knowledge in terms of what a project needs is indisputable. Over the course of the last 75 years, we have made it our business to work with the very best engineers to ensure we are always the industry choice.





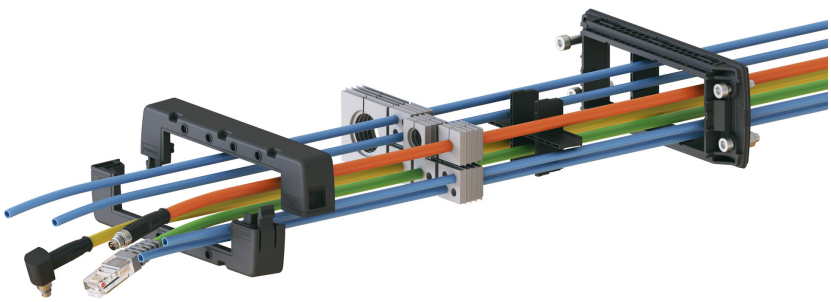
KDSI-SR Modular Cable Entry Installed From The Outside

Conta-Clip introduces the new, inverse and modular KDSI-SR cable entry system for reliable sealing, maximum flexibility and time saving feed-through of cables with and without plugs. The system is designed for installation from the outside of a control cabinet, enclosure or machine where little space is available. Part of the popular KDS Click cable management range, the KDSI-SR system, too, allows for comfortable, flexible reconfiguration of existing installations at any point in time. The components can be easily removed, exchanged and reassembled to fit different numbers of cables and tubes. The clever system concept for the separable insertion of individual sealing elements facilitates customized cable management – since cables with plugs do not have to be disassembled and reconnected for retrofits or servicing, the manufacturer's warranty is retained. The KDSI-SR system is based on the proven modular design and simple assembly concept of

the KDS program, using the same components. It merely features an inverse tapered design of the screw-on frame's opening and includes an additional two-part cover with TPE seals in three levels. This ensures an absolutely tight fit of the sealing elements and thereby IP66 ingress protection and reliable static strain relief compliant with DIN EN 62444. The conically shaped sealing elements with serrated edges are available for one, two or four cables or as blind plugs. The modular cable entry system enables increased packing density compared to cable glands. The halogen- and silicone-free system is suitable for a wide range of requirements and ambient temperatures from -40 °C to 120 °C. KDSI-SR frames are available for 4, 6, 8 or 10 sealing elements in various configurations to match different conductor diameters.

About CONTA-CLIP

CONTA-CLIP is one of Europe's leading manufacturers of electrical and electronic connection elements and cable management solutions. Based in Hövelhof, Germany, the medium-sized, family-run company has been producing electric and electronic connection systems for the process and automation industries since 1978. CONTA-CLIP supplies all industry sectors, focusing on railroad industries, shipbuilding, building automation, conveyor technology, machine and plant engineering and construction, instrumentation and control technology, control panel manufacturing, transformer manufacturing, and environmental technology. The company consists of many specialized branches: CONTA-CONNECT for electric connection technology, CONTA-CABLE for cable management systems, CONTA-ELECTRONICS for electronics and CONTA-CON for PCB edge connectors. Additionally, CONTA-CLIP provides services such as customizing housings and mounting rails, labeling and supplying user-specific electronic components.



Safe & Efficient Drum Handling In Hazardous Areas

Do you have a need to lift or move drums, de-palletise or just generally move drums around a workshop or factory site in Hazardous Areas.

The St Clare Engineering range of Grab-O-Matic ATEX fork attachment and pedestrian drum handlers will provide a safe and efficient solution for you.

The popular and versatile Grab-O-Matic DLR range of rim grip fork attachment drum handlers are suitable for all types of steel drums, plastic 'L' ring drums and most fibre drums.

The extensive drum handling range includes the SC10 for lifting and rotating drums to dispense the contents, scissor grabs, base gripping units and waist grippers, the whole range can also be fitted to pedestrian stackers for use in confined spaces and places where fork trucks are banned. Bespoke units can be manufactured to suit customer specification.

We also have a range of Drum Cages for off-shore use and fork attachment Whiskey/Wine Barrel Base Grippers for use in the drinks industry.

We have also developed a Quick Attach/Release drum handler fork attachment for use in ATEX hazardous areas.
All Grab-O-Matic models can be Quick Attach/Release units and are securely attached to the forks and released without the need for the truck driver to dismount from his cab, saving time and increasing safety!
The drum handlers can be manufactured completely from stainless steel or part stainless steel to suit customer requirements and the spark proof area the units are operating in.

All Grab-O-Matic fork attachments are issued with Test Certificates, CE marked and manufactured entirely in the UK to ISO 9001:2015 and will be certified for use in ATEX spark proof areas.

For more information on our extensive range of drum and materials handling equipment please contact Andy Bow on 02380 643402 or email sales@stclare-engineering.co.uk

GRAB-O-MATIC
St Clare Engineering Ltd.
Drum & Material Handling Fork Truck Attachments



Single Drum Handler (1-DLR-P-St/St) | Waist Gripper (DH-1 St/St) | Drum Rotator (SC10-St/St)

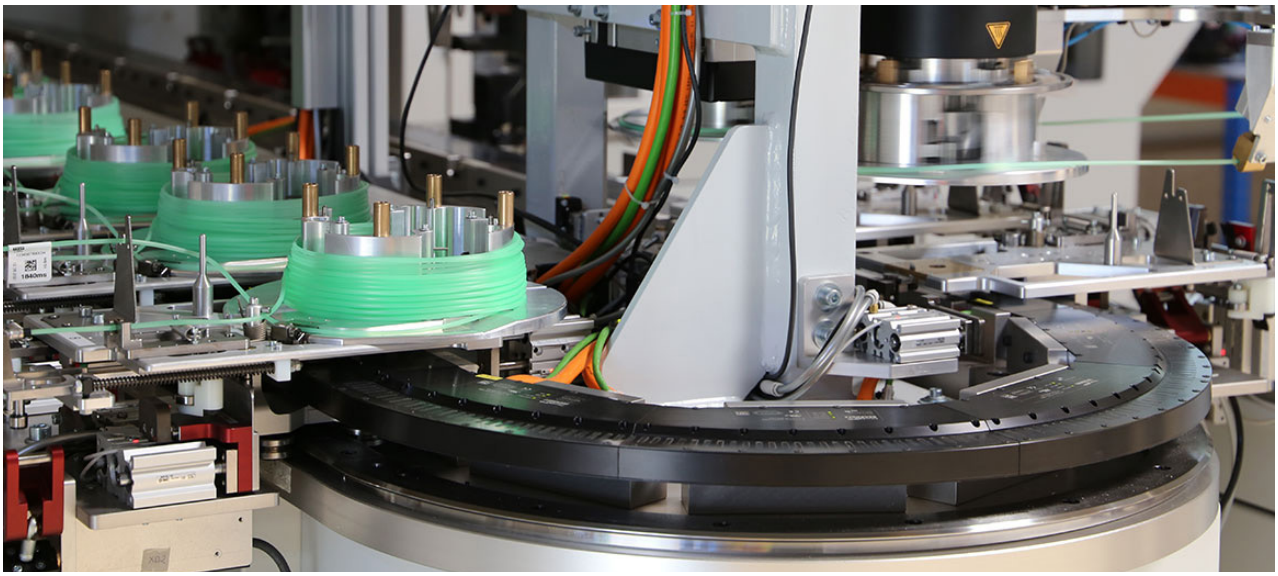
Drum & Material Handling Equipment

Handle your drums Safely, Simply & Efficiently with the Grab-O-Matic Range of Stainless Steel /ATEX Drum Handling Equipment

Our Stainless Steel/ATEX Product Range Includes:

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Promoting Excellence In The Materials Handling Industry

Automation systems expert Beckhoff UK has joined the UK's leading authority on logistics automation, The Automation Materials Handling Systems Association (AMHSA), committing to promoting excellence in solutions, aftersales support, reliability and safety. With over 60 members, AMHSA plays a significant role in the drafting of CEN and ISO standards affecting the automated handling sector.

Since Beckhoff's launch in 1980, the development of innovative products and solutions using PC-based control technology has been the foundation of the company's continued success. Recently, the company announced its new MX-System, a holistic, modular system that supplies electrical power and EtherCAT communication from a slim baseplate to plug-in modules that connect directly to nearby systems at the fraction of the size of a traditional control cabinet.

The AMHSA is the premier trade organisation representing the UK's automation industry. It was founded in 1986, and in 2022 it now counts over 60 members, all of whom are important figures within the UK's automation sector. Among its many other roles and activities, the AMHSA's lobbies both the UK government and several other international bodies on a wide variety of issues.

Beckhoff's AMHSA membership means that it can assist in improving business operations and management practices across an industry that has had more innovation in the last five years, than the last 20 years combined. With its innovative new technologies, which will become standard within the industry, Beckhoff's efforts will help to shape and define the European and national standards and legislation that govern the automated material handling industry.

"The aims of the AMHSA are ones that align with the Beckhoff company values," said Stephen Hayes, managing director of Beckhoff UK. "We are looking forward to strengthening our working relationships with fellow members and using our expertise in automated systems to promote safe and efficient working across the industry.

"With our membership to AMHSA, we can bring to the forefront our innovative new automation and motion solutions and help to spread understanding and best practices throughout the supply chain."

Beckhoff's AMHSA membership means that customers are assured of the highest levels of technical competence and service. To find out more about Beckhoff and its ground-breaking automation technologies, visit the Beckhoff UK website or call +44 (0)1491 410 539.

Fluidwell Introduces The E490 Ex D Multi-Purpose Indicator

Veghel, The Netherlands, September 13th 2023 - The E490 is a versatile, loop powered multi-purpose indicator to display the actual process value, range and loop current. Besides the focus on level, temperature and pressure applications, the E490 can also work with other measuring units, like %, mA, RPM and more.

The input circuit is separated from the backlight circuit and has an ultra low voltage drop < 1.5V DC. The measuring unit to be displayed is simply selected through an alfa-numerical configuration menu. The E490 accepts 4 - 20mA input signals from a wide range of process instruments, including flow (linear or square root), level, pressure and temperature transmitters. Making it the perfect fit for almost any explosion proof application where you want to display an analog process value.

Robust and weatherproof

The robust solid die cast aluminum and the stainless steel 316L E-Series housings are designed to guarantee safety. It takes the E490 Explosion Proof Multi-Purpose Indicator beyond the legal requirements for hazardous areas. In the harshest environmental conditions, as found in deserts and maritime climates with extreme temperature fluctuations, the durable E-Series consistently delivers accurate measurements.

User-friendly

The E490 is extremely practical in use. The touch-through-glass keypad allows for a safe and effortless operation of all functionalities without having to remove the glass cover. The menu, display and navigation structure are designed according to the Fluidwell "know one, know them all" principle, which enhances easy and intuitive control of various Fluidwell totalizers, flow computers and other displays.



Your advantages

- Universal loop powered indicator.
- Input signal: 4 - 20mA with ultra low voltage drop < 1.5V DC.
- Selectable engineering units for many different applications: L- NL- mL - M3- AM3- NM3 - mg - g - Kg - TON- OZ- GAL - USGAL - IGAL - lb - bbL- cf - CUFt - scf - p - rev - °C - °F - °K - % - M - mm - CM - mtr - inch - Ft - SQFt – Yd - PSI - psig - mbar - MbARG - bar - barg – bara – PA - PAG - KPA – KPAG - MPA - INHG – mmHg - mmH2O - MH2O – INH2O- Ph – mV – mA - A - uS – PPM – RPM or no unit.
- Key information at a glance as the display shows the actual value, measuring unit and loop current and a 10 segments bargraph.

More information

Are you interested in learning more about the application possibilities of this robust Ex d Multi-Purpose Indicator? Feel free to contact a Fluidwell expert: sales@fluidwell.com

More information: https://www.fluidwell.com/e490

Fluidwell bv

Our mission is to be the premier supplier for displays and solutions wherever process variables need to be measured, converted, monitored and transmitted. We design, manufacture and sell reliable and safe signal processing equipment. We work in close cooperation with our customers and support them in finding the right product for their applications.

Your success counts!

Further information:

www.fluidwell.com.



E 490: Ex-d Multi-Purpose Indicator

Your success counts

FLUIDWELL



www.fluidwell.com/e490

IEC IECEx

mA

All info at a glance

Easy to install

Easy to program

Know one know them all!

Reliable

User-friendly



PPE Footwear: Smarter Choices are Sustainable Choices

Every year, around 149 million pairs of shoes are thrown into landfills in the UK. As footwear is manufactured, transported, worn and discarded at a rapid pace, the impact spreads far beyond the environment. Fast-paced supply chains often rely on cheaper materials and manufacturing processes that are outsourced overseas, resulting in a commodity-driven process that causes social and environmental damage.

Consumers, non-governmental organisations, governments and other stakeholders are ramping up the pressure for businesses to commit to supply chain transparency and ethical production across a broad spectrum of industries. However, in the world of workwear, there still needs to be a fundamental shift from solely encouraging ethical procurement of well-designed and superior-quality boots to considering both this and the maintenance and repair of the shoes.

Partnerships like the one HAIX has with the Boot Repair Company can generate working relationships that complement both customers and the environment by minimizing workwear's social and environmental impacts.

The Boot Repair Company, formed from two family businesses with over 120 years of experience, specialises in repairing boots made for fire, police, ambulance and other emergency services workers. All HAIX boots are manufactured in Europe which meets socially responsible guidelines, thoroughly designed using considered material choices and construction methods to withstand multiple terrains, environments, and activities that will provide years of protection and use Of the services available, repairs such as a full resole can double the enduring life expectancy of HAIX footwear, further preserving the investment and quality of the PPE.

The Boot Repair Company's Director, Tom Forbes, suggests that, "Regularly inspecting safety boots is particularly important for emergency service workers to avoid unnecessary injury. However, while a sole will become worn with use, a nicely broken-in upper can escape virtually unscathed and have tons of life left in it. We've found that HAIX boots can be re-soled around three times because the thick upper leather is so strong. The timeframe for a repair will depend on occupation, the job hazards encountered, how often the boots are worn, and even the wearer's size and weight.

Ultimately, good boots are like old comrades. We take pride in knowing that we can minimise waste and help more people keep their footwear for longer."

To help achieve a circular footwear economy, we need an industry-wide shift to make ethical workwear maintenance as important as ethical procurement practices. Businesses are required to maintain their premises, equipment and company vehicles, to a high standard, with all of these being highly considered choices. Why does this not extend to their footwear?

For safety boots, there is a business case as well as an environmental case for investing in high quality, durable footwear that wearers will get many years out of, and subsequently be able to access boot repairs to extend the life even further. Footwear that is also made as durable as possible means that wearers can minimise waste and organisations can buy better, not buy more.

Using high-quality materials can extend the life of footwear and encourage prolonged use. HAIX shoes are put through their paces to ensure that they exceed the minimum standards as much as possible, including undergoing a series of over 100 material and quality assurance tests, replicating the day-to-day challenges of wearers, who spend most of their time on their feet. Setting this high standard for footwear results in boots that are higher quality, and last longer.

About HAIX®

Based in Bavaria/Germany, HAIX® is a functional footwear specialist with a worldwide reputation as a "safe brand". Wherever people need high-performance footwear that will not let them down, HAIX® has become the brand of choice – in Europe, North America and Asia. At the company's headquarters and main sales office, HAIX® has established dedicated R&D, design and marketing departments. In the high-tech research and test lab, HAIX® engineers develop new functional features and set new trends and standards for safety footwear. For the production of its top-quality functional boots, HAIX® operates factories in Germany and in Croatia where the company built one of the most modern shoe manufacturing plants in the world. The HAIX® Group has set up a sales office in Lexington, Kentucky (USA) and employs more than 1300 people all over the world. In 2018, the company produced more than 1.2 million pairs of boots, achieving a turnover of € 120 million. For more information, visit

www.haix.co.uk

Working With Ageing And New Industrial Equipment

A key focus for EEMUA is helping owners and operators of industrial assets to avoid damaging and costly incidents – by providing practical resources that support the industrial engineering community as it works with real-life's range of ageing and new plant.

EEMUA's many resources include 'how to' guidance publications, seminars, webinars, e-learning, classroom, live online, in-house and blended training throughout the year. For instance:

Mechanical Integrity Practitioner Certificate

Mechanical Integrity Practitioner Certificate (MIPC®) training keeps practitioner-level engineers on top of the latest industry developments and good practice in primary containment of hazardous substances, including for pressure systems.

https://www.eemua.org/Training-and-competency/MIPC/MIPC-general.aspx

The blended learning (live online classes, 1-1s, e-learning, with mentor support throughout the course) covers on-site application of EEMUA 177, 231 and 232 guidance, and the PSSR ACOP.

Certificated for 5 years via exam and portfolio assessment, the course adapts to the engineering needs of each learner and their site or sites through a 2-hour induction that can be fitted to diaries from September 2023.

The next MIPC course runs from 23 October 2023 for 27 weeks, 4 hours per week. Open to all practitioner-level engineers, the MIPC course is discounted for EEMUA Members and Associates.

SubSea engineering

EEMUA 194 Subsea Engineering Basics blended online learning is for practical design, specification, commissioning, operation, repair, maintenance, and refurbishment of ageing or new underwater energy production equipment.
Course Tutors' incorporate decades of expert materials corrosion experience with the distilled know how of industry captured in the 'how to' guidance of EEMUA Publication 194 to capture reality in online learning.

https://www.eemua.org/tni/Calendar/Subsea/2023/November/SEB-November-2023.aspx

The course's live online classes, e-learning and 1-1 tutorials provide real-time interaction that ensures Learners immediately grasp the correct understanding and make the learning experience time-efficient.

Open to all and discounted for EEMUA Members, the next EEMUA 194 Subsea Engineering Basics course has a 2-hour Induction to fit diaries from October 2023, with learning starting 6 November 2023.

EEMUA TankAssessor course in Rotterdam, NL from 9 October. Given in Dutch, the four-day course provides understanding of: the design, material and fabrication aspects of tank construction with respect to repair or restrictions of use after degradation in service; principles, output and limitations of inspection methods and techniques; making sound assessments of storage tanks and their foundations' integrity; offering guidance on repairs.

With an exam to earn or renew a five-year certificate of competence, the course is open to all with the correct experience and discounted for EEMUA Members.

https://www.eemua.org/tni/Calendar/TankAssessor/2023/ND/Oct/TankAssessor-Oct-2023-ND.aspx

Next Seminar... The EEMUA Storage Tanks Seminar in Rotterdam, NL on 30 November is open to all for a whole day's focus on: Current research projects relating to tank storage; Robotic tank cleaning; EEMUA Publications; Mothballing of storage tanks; Guidance for statistical analysis for tank floor inspection (New EEMUA Publication).

https://www.eemua.org/tni/Calendar/Events/2023/Nov/EEMUA-Storage-Seminar-23.aspx



Free from shareholders and owners, EEMUA is the industrial engineering community's not-for-profit association that invests all its revenue into sharing practical guidance resources, events, training, and more ~ all developed 'for industry, by industry' and proven by engineers in everyday use over more than 70 years.

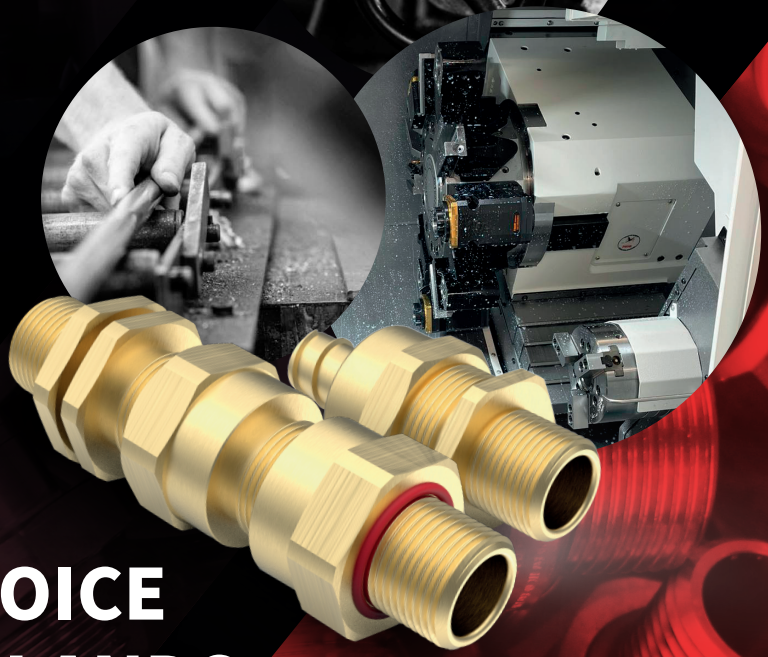
All EEMUA's resources are free or discounted for EEMUA Members, and new corporate Members and Associates are always welcome, so please contact membership@eemua.org to make EEMUA's many resources work best for you and your team.

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END—TO—END PERFORMANCE

75 YEARS





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Peppers delivers an extensive product range with multiple international certified approvals and real time responses to an ever changing market place.

Sales Manager, Grayham Churchouse said...

“We take great pride in providing our customers with a confidence and peace of mind when they buy from us, due to the provision of a total cable gland solution. From the design engineers who specify our products, to the fitters at point of installation, to the organisations all over the world that utilise them; our service and product quality is paramount to our success. As a single product manufacturer, we have pooled 75 years’ worth of expertise and resources into making the very best, fit for purpose cable gland and accessory range on the market.”

peppers.co.uk



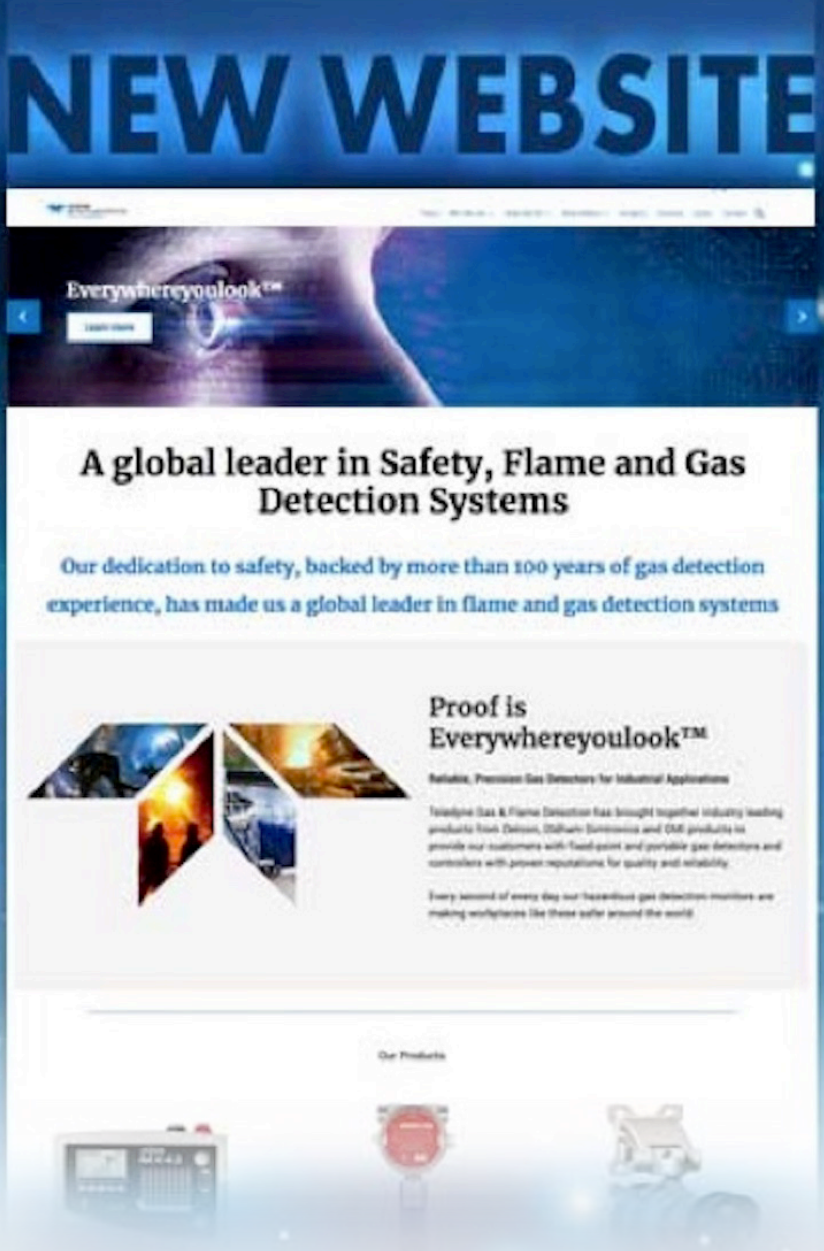
Teledyne Gas and Flame Detection, a global leader in gas and flame detection solutions, is pleased to announce the launch of its new website, featuring updated informational content and a user-friendly interface.

The website is designed to provide an enhanced experience, including improved accessibility and mobile compatibility. It introduces new content on a range of gases, including H_2, CO, O_2, NH_3 and more, helping users understand the potential risks associated with each gas and how to detect them.

In addition, the site includes detailed information on the company's range of gas and flame detection products, such as detectors, controllers and alarms, making it easy for users to find the right product or service for their specific needs.

The new website is designed with a responsive layout, ensuring that it looks and functions seamlessly on all devices, including desktops, laptops, tablets, and smartphones. Moreover, it is further improved with intuitive filtering options, allowing users to easily find the products they need without wasting time scrolling through irrelevant items.

"We are thrilled to launch our website, providing our customers



with efficient navigation. With proven reputations for quality and reliability, our dedication to safety now goes further." said Marion Defasques, Global Digital Communication Developer of Teledyne Gas and Flame Detection.

"With our updated comprehensive content and smart design, we are confident that our users will find the information they need quickly and easily, creating a more pleasant and productive browsing experience."

Visit Teledyne Gas and Flame Detection's new website to learn more about gas and flame detection solutions, and to take advantage of informational content and intuitive filtering options. www.teledynegasandflamedetection.com

About Teledyne Gas and Flame Detection

Every customer scenario demands a different, customized approach, and Teledyne Gas & Flame Detection applies expertise in building the right plan for the right hazards every time. Our complete portfolio and industry-leading of fixed and portable gas and flame detection solutions offer expert perspective and quality products you can rely on in the most critical situations. When it comes to superior value, efficacy, efficiency, and service, the gas and flame detection team from Teledyne delivers like no one else. Always sensing safety, everywhere you look.

www.TeledyneGFD.com.



Is Real-Time Data Important For Gas Detection Programs?

There's been a lot of talk in the world of safety about the need for real-time data with gas detection systems. Although most will agree that real-time data benefits safety programs by providing information that leads to better decision-making, some may wonder if real-time data is as crucial as they've heard.

The short answer is yes, and here's why.

A properly calibrated and bump-tested gas detector is a powerful personal protective device. By itself, however, it's simply not enough to help ensure the highest level of safety.

That's where a connected work platform comes into play.

A connected work platform combines real-time data, connected PPE/gas detection wearables, and advanced software solutions, so you can have the best possible visibility across these areas of concern:

- Workers
- Worksites
- Workflows

In fact, connectivity enables the kind of visibility that can lead to a stronger safety program and improved safety outcomes.

Even better? A strategic connected worker-worksite-workflow platform helps simplify safety, curb risk, and boost productivity all at the same time. Plus, it sets you up for a scalable and adaptable safety program for today – and tomorrow.

Consider these three reasons why real-time data via a connected platform is a must for worker and worksite safety:

1. Real-time data enables real-time visibility for safety teams.

By their very nature, remote workforces leave safety managers disconnected from what's happening on the job. So, what's a disconnected and physically distant safety manager to do in the event of an unsafe incident, especially when

every second counts?

Here's what they can do. They can ensure that lone workers are not alone, thanks to the visibility provided by a connected platform. If workers, worksites, and workflows are not connected, there's likely going to be too much lag time between incident and information – lag time that's costly to both worker safety and infrastructure.

With connectivity-enabled real-time data, safety managers can have continuous situational awareness. That means seeing the state of workers and monitoring their safety behaviours in the field. It means you'll get gas exposure alerts, man-down alarms, panic button presses, and device concern warnings in real-time so you can act as swiftly as possible. Plus, it means simplifying compliance and improving productivity to help reduce risk and costly downtime.

Real-time data gives safety managers real-time visibility and awareness into what's happening, so they can respond to incidents – and help improve safety of workers, worksites, and workflows – much faster.

The key to leveraging critical real-time data is having your hardware or gas detection devices connected to both the right software and to the cloud through a seamlessly integrated solution. While the device does its job of collecting data, the software does its job of empowering safety managers with information and insights that let you drive a more proactive safety culture. Even better is that this creates a more unified and streamlined workflow. No relying on cumbersome file transfers and downloads. No more time spent on the arduous and complicated task of piecing together information for incident reporting.

A comprehensive hardware-plus-software connected gas detection solution gives the entire safety team a single, go-to place (accessible anytime, anywhere with an internet connection) for the data and support required to support operational efficiency and enhanced worker and worksite safety.

2. Real-time data helps improve operational efficiencies.

Gas detector check-ins and check-outs can be extremely slow and inefficient. They are, however, crucial to ensuring that workers use their PPE devices correctly – and that the devices are properly returned to the fleet. Based on our work with clients across a variety of industries around the world, MSA estimates that roughly 20% of gas detection devices never make it back to the fleet. Not only are the devices lost, but in a disconnected program, the data is also gone forever.

Thanks to a connected program, safety managers can assign a device to a worker, enabling real-time, worker-specific data. That, in turn, can lead to significant operational efficiencies, including:

• Automated check-in and check-out for daily, project-specific, and long-term use
• Increased worker accountability for the device and its whereabouts
• Faster understanding of what's happening with the worker, including the type and level of exposure
• Easier identification of noncompliant workers (those that ignore alarms and remain in a hazardous environment) so they can be trained or re-trained on proper safety procedures and protocols

3. Real-time data better safeguards lone workers for better peace of mind.

There are more than 50 million lone workers in the U.S., Canada, and Europe, most of whom are found in the oil & gas, telecommunications, utilities, construction, and industrial industries.1 It's no secret to lone workers or their safety managers that their working conditions are uniquely and inherently fraught with a variety of potential hazards, including accidents, emergencies, and illnesses that require trained, capable, and properly equipped workers to do their jobs under such conditions.2

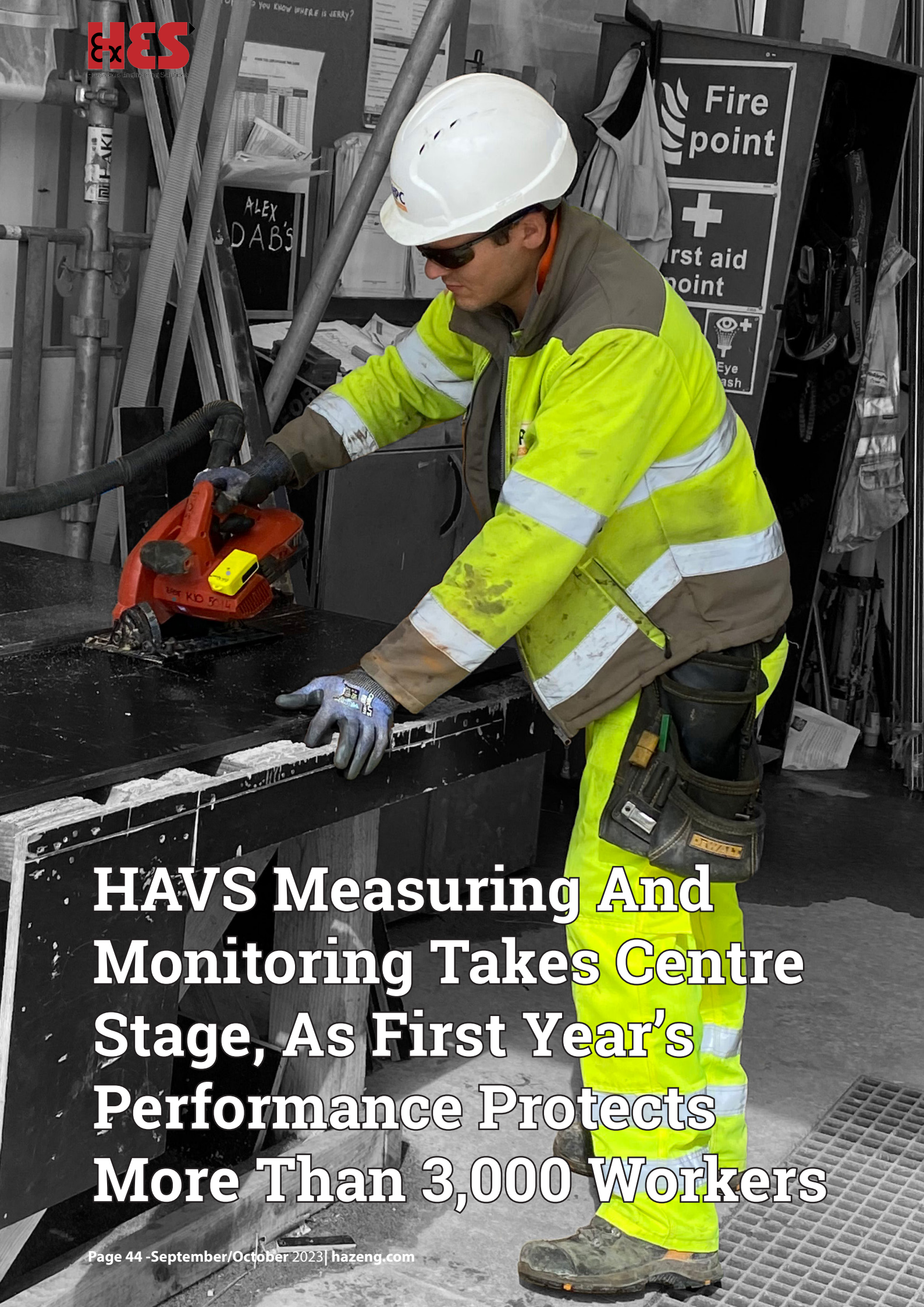
Connected workers, on the other hand, can be better kept free from harm. Compliance, fleet manager, or live monitoring services extend visibility, helping ensure that critical data points are delivered in real-time from on-site workers to off-site safety managers. Not only does this help protect the lone worker from gas exposures, but it also connects them to real and tangible help when needed.

As any lone worker can attest, working alone is not the same as being alone. Thanks to in-the-moment monitoring and real-time data, lone workers can have the peace of mind that comes from knowing their safety team has their back whenever and wherever they're on the job.

What safety teams can do

A connected work platform can seamlessly integrate connected workers, connected workflows, and connected worksites to help you build and maintain a flexible and proactive safety program that only gets better with time. Now that you know the benefits of a connected gas detection program, the next step is to take a deeper dive into understanding where you are on your connected journey and identifying the right partner to help support your organisation's safety, productivity, and compliance goals.

Learn more about connected work, real-time data, and more: https://gb.msasafety.com/connected-work



HAVS Measuring And Monitoring Takes Centre Stage, As First Year's Performance Protects More Than 3,000 Workers

First-year sales at vibration measuring and monitoring specialists, SIXIS Technology, home of the industry-leading HAVSPRO system, have resulted in more than 3,000 workers being protected by the system. This comes hot off the heels of their recent attendance at The Health & Safety Event at the NEC in April resulting in significant new enquiries, from a wide array of affected sectors.

HAVSPRO, the solution for the accurate, real-time measurement and monitoring of workplace vibration, is experiencing significant growth in interest in its industry-leading technology, with firms from a variety of sectors employing their solution to manage the risk of Hand Arm Vibration Syndrome (HAVS) to as low as reasonably practicable, (ALARP).

With over 300 new cases of HAVS reported in 2021, HAVSPRO's real-time measurement system has become the solution of choice for management teams in a growing number of industry sectors, who are seeking accurate, real-time vibration magnitude data to better assess vibration exposure and make confident data-driven decisions when implementing control measures to protect their workers. Russ Langthorne, Managing Director of Derby-based SIXIS Technology, is heartened that so many businesses are now taking steps to eliminate the preventable condition: "As HAVSPRO's accurate technology is rigidly fitted directly onto a worker's tool, it can measure real-time vibration exposure as they experience it. When you combine this with the proactive alerts, employers and operatives can act before over-exposure occurs. The detailed reporting guides managers and team leaders through the process of positively identifying from where the risks are emanating. With the vast amount of accurate information available there is now no reason for companies not to be tackling this pervasive problem. We are pleased to be seeing continued significant interest in addressing the wide-ranging issues HAVS can cause, both to their workforce and potentially to their business."

HAVSPRO's vibration measuring and monitoring system generates proactive alerts, sent live to managers and operatives enabling action to be taken in a timely manner. The in-depth reporting provides unequivocal evidence in the face of litigation claims; evidence which is accurate and speedily accessible.

Russ adds: "The awareness of the severity of over exposure to Hand Arm Vibration in many traditional sectors such as construction and civil engineering is very rewarding. However, as we see more and more tools hitting the market, some with better vibration control than others, we harbour concern that some businesses may not be protecting their employees or businesses as robustly as they think. Helping to get the message out there to every company and every operative who may be affected by HAVS is what drives us on." It is well documented that there are more than two million people at risk from developing HAVS and 300,000 people who suffer from HAVS in the UK alone. HSE Statistics show a significant number of new cases signalling an increase of 375% from 2020 to 2021, which is the last full year of data available from HSE. With companies already feeling the impact of successful worker litigation to the tune of £2.5m in fines alone in the last 7 years, there is clearly still work to be done to protect workers and businesses alike.

As the team at SIXIS Technology enter their second year on the front foot, they strive to turn the tide on the rising number of HAVS cases. With their renowned customer service at the heart of everything they do, SIXIS Technology is continuing to grow its staffing levels, with additional Account Management and installation teams employed to cope with the demand.

For more information, visit the HAVSPRO website.



Dräger Partners With Cloud-Based Software Supplier To Improve Safety In Mining Industry





Dräger partners with cloud-based software supplier to improve safety in mining industry

Dräger, an international leader in the fields of medical and safety technology, is partnering with Focus FS, a cloud-based software platform, that will support better management and responsiveness to safety incidents in the mining industry.

This partnership extends Dräger's reputation as a digital solutions provider, delivering end-to-end, interconnected solutions to further enhance the safety of personnel in the industry and in other safety operations. This follows on from a prior strategic partnership made with Ontario Mine Rescue (OMR) to provide Focus FS' Emergency Response software to over 30 mining sites across the province back in 2022.

Focus FS is an intelligent documentation, communication and emergency response platform. It connects emergency coordinators, team captains and ground personnel through bespoke solutions to modernise daily operations, enhance user safety and mitigate risk in hazardous environments and operations.

Data is collated via automated, real-time reports through digital maps, equipment monitoring, notes and photo sharing. It enables incident commanders to update and alert mine rescue teams to potential hazards as they happen. Focus FS saves valuable time with life-saving decisions by providing the end-user with readily available incident data in one central location. It also creates a documented audit trail for post-incident review to increase incident visibility and mitigate risk during and after an operation that has taken place.

With a customisable and flexible platform, users benefit from a simple, consistent administrative program, enabling automated action plans and a managed workflow that empowers individuals to set, track and create safety goals. It also enables them to maintain and increase emergency readiness of teams, assets and equipment according to their individual and collective needs.

Future developments involve the integration of Focus FS with Dräger gas detection and the BG ProAir breathing apparatus, utilising automation to clear communication channels and create a unified monitoring and control panel for emergency services personnel.

Liz Millward, Marketing Manager, Emergency and Rescue Services at Draeger Safety UK, says the launch of Focus FS recognises the importance of connectivity and data within emergency response planning and operation: "Having an emergency response plan is vital for every mining operation, but obstacles exist that can result in unwanted and unnecessary outcomes.

"With a marked focus on connectivity, we can protect personnel in hazardous environments by auto-logged, data-based solutions to help keep them safe. Next steps for this technology are to integrate existing and future hardware into the Focus FS program. This will create a fully connected user interface, capable of detecting, managing and documenting incident and personal data as it comes in, leaving incident commanders free to provide tailored support as events unfold."

For more information on Dräger or its product offering, please visit www.draeger.com



Kollmorgen expands its line of certified explosion proof products with new ATEX and IECEx/cETLus

For hazardous locations that require use of an explosion proof motor, Kollmorgen's Goldline EB series of ATEX Certified and IECEx/cETLus Listed servo motors now includes the 480 Vac Goldline EBH.

RADFORD, VA., 8/1/2023 — Kollmorgen, a global leader in motion control systems, today announced ATEX certification and IECEx/cETLus listing for the explosion proof Goldline EBH 480 Vac servo motor. These new explosion proof approvals for the high-voltage Goldline EBH servo motor exemplify Kollmorgen's commitment to advancing the state of the art in motion control and meeting the most demanding application requirements.

The high-voltage Goldline EBH servo motor joins a broad selection of Kollmorgen explosion proof motors certified and listed according to UL, ATEX, IECEx and/or CSA standards. Explosion proof motors are required in hazardous locations where flammable gases, mists or vapors may exist in explosive or ignitable concentrations. Such environments are often found in mines, oil & gas refineries, textile mills and industrial paint booths.

For high-voltage applications in hazardous locations, Goldline EBH servo motors offer speeds up to 7,500 rpm with exceptionally high torque density for maximum performance in a minimal installation footprint.

Rugged resolver feedback and a built-in thermostat support reliable operation under harsh environmental conditions. Goldline EBH servo motors in frame sizes 1 – 6 join other explosion proof motors in the Goldline EB family that meet ATEX/IECEx standards, and more specifically CE 0081 Ex II 2 G Ex d IIB T3 Gb −40°C ≤ Ta ≤ 40°C. This classification indicates that the motors are suitable for use in any above-ground industry where easily ignited gases such as ethylene are likely to be present in the atmosphere for 10 to 1,000 hours/year during normal operation (Zones 1 and 2). Kollmorgen applies a flameproof method of protection to the motor so that any internal ignition is contained within the motor housing without the possibility of escape into the external atmosphere. The maximum surface temperature of the motor under fault conditions is 200°C.

For more information about the explosion proof Goldline EBH high-voltage servo motor, visit https://www.kollmorgen.com/ebh



Protecting Flour Mills Against Explosions

The flour milling industry plays a vital role in feeding the population but it hides an often-underestimated danger. Flour explosions are a risk to flour mills and can lead to the destruction of property and serious harm or death for workers. Here Isaac Noble, product manager at electrical connector specialist PEI-Genesis, discusses the hazards in flour mills and how connectors can be used to minimise the risk of explosion.

Flour explosions are typically caused by the build-up of flour particulates over time. The danger lies when airborne flour dust comes into contact with a spark from an ignition source, such as a faulty wiring circuit, which ignites the flour in the air. Flour is also 35 times more combustible than coal-dust. It's mostly made of starch, a highly flammable complex carbohydrate that consists of glucose molecules. Only one to two grams of dust per cubic foot of air makes the mixture ignitable.

How can electrical connectors minimise flour explosions? Preventative maintenance and consistent cleanliness are crucial to stopping dust build-up but plant operators can also take other measures to avoid incidents. Electrical connectors can minimise dust explosions by ensuring there won't be any sparks coming from the connector to ignite the dust. Having a controlled and protected area where the wires go into the connector, or where the contacts mate, can reduce the chance of a spark. Connectors also need to be ingress protected to keep dust out of the connector.

Though the materials used to make the connector are important, it's the way it is designed to seal and protect the electrical elements that is critical in minimising the risk of dust explosions. Potting around the cable wires where they connect with the contacts, for example, can remove the risk of a spark in this area. This can be done inside an equipment enclosure or within a gland on a cable connector.

Understanding ATEX regulations

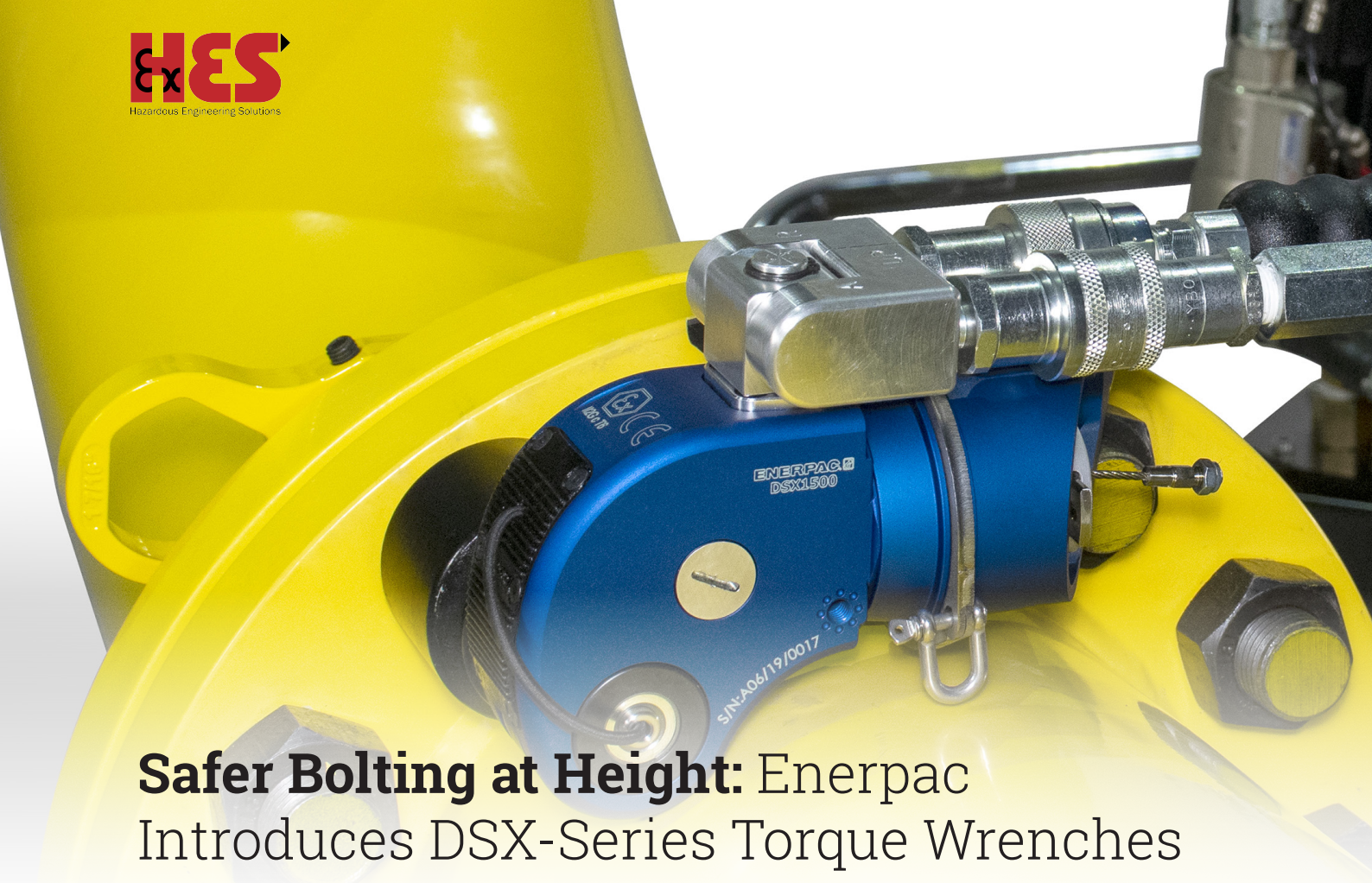
In Europe, hazardous areas must follow ATEX regulations to ensure specific equipment reduces the risks associated with explosive atmospheres. ATEX certification dictates how and where equipment can be used and this is clearly labelled on equipment needed in these areas. ATEX approved connectors, like the Star-line EX and Amphe-EX, are both ATEX certified for Zone 21 hazardous dust environments with an EX tb IIIC rating. Their manufacturing process and rigorous auditing occur in closely controlled conditions and any design changes are also retested and recertified to ensure they are properly approved.

Plant operators should buy connectors from a reputable source that is correctly approved and tested by a recognised ATEX regulator. The traceability of connectors also needs to be maintained for audit. PEI-Genesis sells all EX-style connectors with an ATEX tag that lists information such as where the connector has been manufactured and what temperature it can be used at along with other compliances.

It's important to note that ATEX approval cannot be achieved using two connectors from different manufacturers, even if they are both ATEX approved. ATEX approval is based on a mating pair from the same manufacturer, there is a specific flame path that is designed into the connectors which goes through the mating section. Failure to use the same manufacturer will cause a plant operator to run into problems with audit.

PEI-Genesis is committed to ensuring all information is available to its customers through the ATEX tag. This way customers know who assembled each connector and who manufactured the parts for the connector, the information is also linked into their system to create a clear audit trail.

Though highly explosive, flour is necessary in feeding the population. Choosing the correct electrical connector is one way to reduce the likelihood of an explosion. To find out more about the range of rigorously tested, suitable electrical connectors for ATEX environments, visit the PEI-Genesis website.



Safer Bolting at Height: Enerpac Introduces DSX-Series Torque Wrenches

Carrying out bolting operations at height runs the risk of danger to those working beneath dropped objects. Enerpac introduces a lightweight solution. The Enerpac DSX-Series Aluminium Square Drive Torque Wrenches are safe, easy to use, tools designed for medium duty use when working at height.

To help to reduce dropped-object incidents when working at height, the five models in the series feature a built-in connection point to safely tether the tool to a work belt or bag. A standard ergonomic safety handle also helps to prevent injuries or near misses from loss of tool. When it comes to operator protection, a fully enclosed drive prevents operator contact with moving parts inside the tool.

Made with a high-strength aluminium body, the CE Approved Enerpac DSX-Series Aluminium Torque Wrenches are lightweight and easy to use—important factors when working at height. Another feature that makes the tool simple to use is a multi-direction 360 x 180° high flow aluminium swivel that helps prevent twisted and tangled hydraulic hoses. To help make operators more efficient on-site, the wrenches feature a fine-tooth ratchet that prevents the tool from locking on, a 35-degree rotation angle that assists with repetitive bolt tightening tasks, and a retained push-button quick release.

Additional key features include torque output ranging from 191 to 32.617 Nm, compact nose radius for tight locations, tool accuracy +/- 3% and ATEX approval for bolting projects in in explosive atmospheres.

The Enerpac DSX-Series Aluminium Square Drive Torque Wrenches are now available through Enerpac distributors. For more information visit www.enerpac.com.

About Enerpac

Enerpac is a global market leader in high pressure hydraulic tools, controlled force products, portable machining, on-site services and solutions for precise positioning of heavy loads. As a leading innovator with a 110-year legacy, Enerpac has helped move and maintain some of the largest structures on earth. When safety and precision matters, elite professionals in industries such as aerospace, infrastructure, manufacturing, mining, oil & gas and power generation rely on Enerpac for quality tools, services and solutions. For more information, visit www.enerpac.com.

Control Panels



Zone 0 Certified



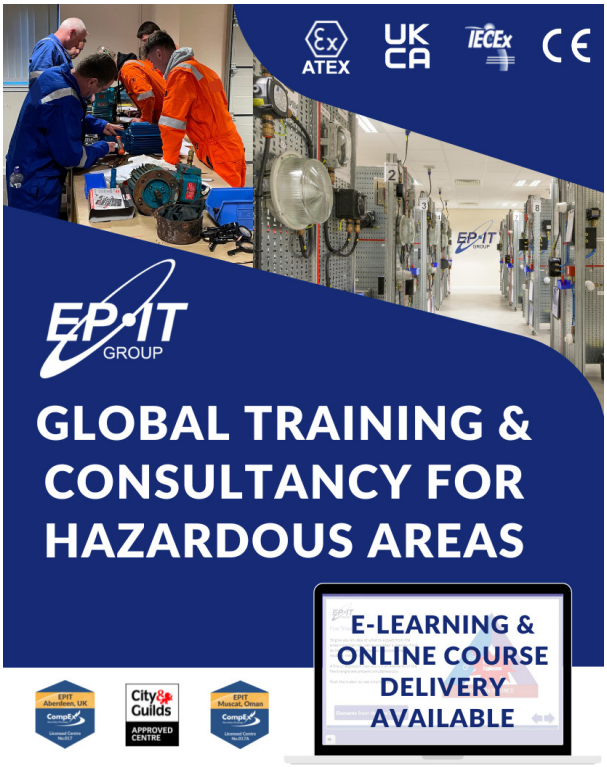
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Multi-purpose Ultrasonic Inspection System with ATEX Certification

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All types of steam traps and on/off valves for steam, gas or hydraulics

BEARING INSPECTION & CONDITION MONITORING

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