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Innovative Wireless Retrofit Solution For Smart Meter Range Extension

Texas Metering & Device Company (TMD), a premier provider of Advanced Metering Infrastructure (AMI) and services for electric, water and gas utilities and The Antenna Company, a pioneer in the design of high-performance antennas and provider of industry-proven RF coupler/external antenna isolator solutions, are pleased to announce a robust solution for improved wireless connectivity of off-network smart meters for electric utilities.

This collaboration combines TMD's AMI expertise and industry knowledge with The Antenna Company's innovative high-efficiency LTE antennas (AC94541-01) and RF Coupler solution (AC20424-01) to solve the connectivity problem of off-network utility smart meters. TMD will serve as a US distributor for The Antenna Company's products included in the smart meter retrofit kit.

"As utilities increasingly enforce 100% meter read rates, the demand for reliable utility smart meter wireless connectivity continues to rise. TMD and The Antenna Company have combined their strengths to deliver a proven wireless range extension retrofit solution for the smart meter market," stated Steve Swenke, President of TMD.

Key benefits of the solution include:

1. Immediate availability: The smart meter retrofit kit is available now. Installation will result in improved meter read rates for cellular 4G LTE/P-LTE, including Anterix™ 900MHz spectrum, and short-range/mesh networking connectivity, reducing the need for expensive, time-consuming manual meter reads.
 2. Fast return on investment: Eliminate the high cost of truck rolls for manual meter reading by deploying this innovative range-extension solution.
 3. Comprehensive support: Customers can expect comprehensive technical support and expertise from TMD, ensuring successful implementation of the smart meter wireless range-extension solution.
- Norm Smith, Vice President of Sales for The Antenna Company added, "We are delighted to partner with TMD as our integration expert and distributor for the US utility smart meter market. Today's joint announcement by TMD and The Antenna Company marks a strategic alignment and immediate availability of this retrofit solution that will drive a much-needed improvement in

smart meter remote-read rates."

About The Antenna Company

The Antenna Company is an antenna systems provider that delivers high-performance solutions based on proprietary design principles, advanced materials and RF system expertise. Our patented technology results in clearly differentiated performance over conventional antenna solutions in the market. The company's mission is to enable its IoT, Consumer and Enterprise customers to offer the best end-user experience, by providing innovative and novel antenna system solutions. The Antenna Company provides standard and customized solutions to OEM and ODM customers worldwide for LTE, Wi-Fi, GNSS, UWB, and 5G technologies. The Antenna Company is headquartered in the Netherlands with sales offices in the US and Asia.

About Texas Meter and Device Company LLC

TMD, headquartered in Waco, Texas, has been a leading provider of quality technical products and services to the utility industry for more than 87 years. TMD specializes in metering related products and services, AMI/smart meter system solutions and utility services, complex metering, original equipment manufacturing of instrument rated equipment, high voltage tools and safety equipment, testing services and maintenance services for electric, water and gas infrastructure. TMD is committed to excellence and delivering high value creative solutions through partnership with and dedication to customers and suppliers.

Email: sales@texasmeter.com

Website: <https://texasmeter.com/index.html>



World First For ATEX Particle Counting Company

Reynolds Contamination Control (RCC) has announced the launch of a new sister company – along with a world first that's set to underpin a new market focus.

The ATEX Particle Counting Company (APCC) was formed earlier this year to coincide with the unveiling of the first ever - commercially available - ISO11171:2022 particle counter certified for use in explosive atmospheres.

RCC, along with APCC, will now fall under the umbrella of newly-formed parent company Labtec Consultancy Ltd.

The new equipment is the culmination of many years' in-house experience in particle counting and several months of exhaustive testing and certification procedures. As a result, ATEX now offers the only calibrated particle counter on the market – for both oil and fuels – that meets standards for hazardous locations (ATEX, IECEx, UKEX).

It will give ATEX access to previously untapped markets - including oil & gas, shipbuilding, green energy, chemical & pharmaceutical, food, mining and traditional energy.

Up to now, particle counting in these areas has required samples to be collected on-site and then physically taken away for analysis in a laboratory due to the risks presented by using electrical equipment in the area classified as Zone 1 explosive atmospheres – such as airport refuelling areas and offshore applications.

Technical Director Wayne Hubball said: "For many years now, customers have been asking us for kit that can be used in these situations. But the challenges of complying with exacting standards, sourcing the right components and producing something that's portable and reliable have been difficult to overcome."

However, ATEX's recently forged links with Italian specialists MAM,

combined with research and development by its own Engineering Director Peter Remmert, has helped to create an explosion-proof aluminium and AISI 316L, enclosure, that houses a state-of-the-art S50-P-Z1-** particle counter. Data can be retrieved 'live' or via the Cloud.

"The product is already creating a lot of interest," said Wayne. "We've signed exclusive distribution agreements in Australia, Brazil, UK and Ireland for the S50-P-Z1-** and have had project discussions with OEM manufacturers in the offshore and hydrogen markets involving a specially developed stainless-steel variant (with offshore paint specification). We've also signed an agreement with a distributor for the African market."

"The Reynolds name has served us well over the last seven years or so, with its links to Osborne Reynolds, the 19th century pioneer in the field of fluid dynamics. But the time has come to move on with a new identity that, while holding true to those early breakthroughs, reflects our own innovative – and more specialised - approach to fluid cleanliness."



Hart's Speedors Meet Requirements

Four Speedor high-speed doors have been installed by Hart Door Systems at a major frozen and cooked meat manufacturing in northern England. The doors, at just 1.5m wide and 1.95m high, are the second smallest Speedors ever manufactured by Hart.

"The contract demonstrates two things," says Gordon Kipling, regional sales manager for Hart. "Not only is our Speedor range available in distinctly different types of doors but where applicable the doors can be available in reduced sizes for precise requirements.

"In this case there was a need to protect the production environment against drafts, humidity, dust and dirt by installing our Speedor Cleanroom with its fast opening and closing speed. Our pharmaceutical standard Cleanroom Speedors control airflow thus reducing contaminants."

Designed specifically for manufacturing and research facilities, Speedor Cleanroom works in strictly controlled environments where hygiene standards are high, such as pharmaceuticals, food processing, electronics and micro-mechanics industries.

The main features of Speedor Cleanroom include maintaining strict air leakage requirements over specified pressure differentials. Complete with an intelligent control panel with digital display each Cleanroom has a reliable and clean in-line drive system complete with an integral safety brake and a non-touch safety light curtain ensures maximum protection to personnel.

Seals minimise pressure drops and protect the manufacturing environment against drafts, humidity, dust and dirt.

www.hartdoors.com



Two Teachers Become Specialist Trainers To Support Growth At Hydrogen Safe

Hydrogen Safe, the hydrogen safety training specialist that acts as a conduit between industry and education, has announced the appointment of two former teachers, Neil Minshall and Leah Dyke, who will join the business as Specialist Trainers.

Neil, a science teacher for almost a decade; and Leah, a head of department in a sixth form college with five years teaching experience, will both take responsibility for developing and delivering hydrogen training courses to colleges and businesses throughout the country. Both will bring with them an extensive knowledge of the education sector, along with the skills to engage and interact with delegates that join the growing number of courses that are now available from Hydrogen Safe.

Neil comments: "I'm really excited to join Hydrogen Safe and to redirect my career to the green energy sector. As a new and emerging industry, I'm looking forward to using the transferable skills I have from nearly a decade in teaching to pass on my experiences and knowledge, while also continuing to learn."

"As the business continues to add courses and to review what training businesses require as they transition to more sustainable ways of working, it provides us with an evolving roadmap. I certainly can't see any two days ever being the same."

Leah comments: "During my teaching career, I was responsible for developing materials, managing the departmental quality assurance cycle, coaching other teachers and also assessing and developing early career teachers. I believe all of this provides me with a good foundation for my new role at Hydrogen Safe."

"Putting my TLA experience and skills to use in a completely new industry, I am excited to develop my knowledge and to work with a team that all have different insights and skills. Bringing all of this together is really very powerful and I'm excited to be a part of it."

CEO and Founder of Hydrogen Safe, Andy Lord, comments: "We would like to welcome Neil and Leah to the team. It's great that we can attract top talent and that as former teachers, they have a lot of the transferable skills that we require from our Specialist Training Instructors."

"As we have continued to expand as a business, we now have one of the largest specialist teams that are dedicated to hydrogen safety in the country. It's exciting times for us and we look forward to seeing where this journey will take us as we continue to work with colleges and businesses throughout the UK."

Members of Hydrogen UK; the Hydrogen Energy Association; the Hydrogen Skills Alliance; and NPTC Group of Colleges, Net Zero Skills Advisory Board, as well as being a corporate partner of the Greater Manchester Mayor's charity, Hydrogen Safe works with businesses, education providers and individuals to deliver courses that meet with their specific objectives and sustainability goals.

For more information, please visit:

www.hydrogensafe.org

and for regular updates follow: @Hydrogen Safe on LinkedIn.



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Development approval.

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Enerpac E-Pulse Pump Delivers Higher Flow, Convenience And Durability



Leaded high-pressure hydraulic tools maker, Enerpac, announces the E-Pulse electric hydraulic pump with 'Smart Controls' that raise the standard for portable pump performance, precision and durability. In addition to maintaining constant motor power across the pressure range, the E-Pulse provides higher flow than traditional one-half horsepower pumps, and adjustable speed control for precise operation.

The E-Pulse's high-efficiency .85hp direct-drive motor offers a six-piston block design that provides even flow and smooth operation for a wide range of tools and torque wrenches. Easily configurable with a choice of valve configurations to operate single or double-acting cylinders and tools, the two-stage pump has high by-pass pressure: 2,13 l/min up to 175 bar, and 0,52 l/min up to 700 bar. When configured as a Torque Wrench Pump, users can set pressure and operate in manual or auto-cycle mode. Intelligent Auto Cycle enables press and release actuation to cycle wrench until final torque is achieved. Precise speed control for tools and cylinders is facilitated by motor speed adjustment on the back of the pump.

New Interactive Pendant Control

Other E-Pulse features include a 24V DC power regulator to minimise the effects of poor power supply, built-in thermal protection, a 6 metre pendant cord for the torque wrench pump and a 3 metre pendant cord

on the other four pump configurations. All models come with a convenient cord management system.

Designed to be used either horizontally or vertically to suit the working conditions, the E-Pulse Hydraulic Pumps feature a new interactive pendant that delivers visual and tactile feedback, programming and diagnostic status to the operator. The innovative, IP 67-rated pendant can be stored in the handle of the pump and is secured via magnet.

Long Lasting Durability

The E-Pulse's integrated roll-cage design features an IP 54-rated durable aluminium housing enclosing the system components for maximum protection and easy service accessibility. The torque wrench pump comes with a pre-calibrated, 10cm gauge and features an integrated heat exchanger that cools the pump during operation.

For more information on the E-Series E-Pulse hydraulic pump, visit www.enerpac.com.



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www.airbench.com



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TankInspector courses*

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28-30 October 2024 – in **English** – classroom – London, UK



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External Corrosion Seminar

by EEMUA and AMPP Benelux
10 October 2024 – Haarlem, NL.



More choices, information and registration at www.eemua.org



NSMP Invests In Move To New City Centre Base

The UK's leading independent midstream operator, North Sea Midstream Partners (NSMP) has signed a lease for Aberdeen's prestigious Marischal Square development.

The company has relocated into the city centre from Balmoral business park where it will be closer to customers and stakeholders, signalling NSMP's long-term commitment

to the region.

The new office will initially be home to NSMP's Aberdeen team, with space to regularly host colleagues from London and Norway and enable future growth.

Sayma Cox, NSMP CEO said: "Investing in our new flagship home at Marischal Square will provide a collaborative space for our team, customers and partners as we continue to provide the critical infrastructure that supports the UK's energy security and bring forward energy transition projects. We are committed to supporting economic growth in Aberdeen and the North East of Scotland and are excited for our move into the city centre."

NSMP owns nearly 600km of gas pipelines in the North Sea capable of supplying up to a quarter of UK gas demand, making it the largest and most diversified gas transportation and processing system in the UK. The organisation supports the employment of over 1,000 people at its sites at St Fergus, Teesside and in Norway.

NSMP provides a critical link in the energy supply chain by safely transporting and processing gas to heat homes and power the economy. The firm is also bringing forward a diverse energy transition project portfolio including a 10% interest in the Acorn carbon capture storage (CCS) project at St Fergus.

Aberdeen City Council Finance and Resources Convener Councillor Alex McLellan said: "We are delighted that NSMP, a company which is renowned for its high standards as well as being a critical link in the energy supply chain, has relocated its Aberdeen office to Marischal Square.

"The development provides high quality office space with strong environmental credentials and is helping to regenerate the east end of the city centre."



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World-wide supplier chooses Hart

A

major global provider of blast booths and blast rooms for important industrial sectors has chosen Hart Door Systems to supply its steel shutters as an important part of future installations.

Carl Crossman, project manager at Hart Door Systems, says the recent order demonstrates Hart's ability to deliver a wide range of industrial doors and shutters globally.

"In this case," explains Mr Crossman, "Hart's industrial shutters are required for blast rooms where safety is paramount for abrasive blasting procedures.

"Complying with the Machinery Directive 2008, all Hart custom metal entry doors are designed and manufactured to the highest quality and safety standards," says Mr Crossman.

"Our Custom stainless steel doors feature a standard specification but we can work with a client to design doors to meet specific needs."

Mr Crossman says its Hart's flexibility which delivers solutions for industrial door requirements. "We have to be hugely flexible as industry has such a range of activities which demand tailor-made solutions.

"We have a long track record of developing steel exterior and interior doors for major companies, airports, manufacturers, and as a specialist partner on Original Equipment Manufacturers' projects.

"Hart's custom commercial doors and shutters are available in sizes up to 10m, light or heavy-duty wind resistance, low use or high volume operation, standard or high speed, plastisol or powder coat in a variety of colours and automatic or manual electric operation.

"Complying with the Machinery Directive 2008, all Hart custom metal entry doors are designed and manufactured in Hart's Tyneside factory to the highest quality and safety standards," says Mr Crossman. "We can work with a client to design a door to meet specific needs."

www.hartdoors.com

Strategic Collaboration Agreement

— 23 May 2024 —

Immensa's Existing Customers To Have Immediate Access To The Maritime Vertical

Immensa ("the Company"), MENA's largest digital manufacturer, announces it has signed a Strategic Collaboration Agreement ("the Partnership") with Pelagus 3D – an on-demand digital manufacturing partner for the maritime and offshore industry.

The Partnership will see Immensa and Pelagus 3D combine their respective strengths in additive manufacturing and digital inventory solutions to enhance service offerings and expand their market presence in the MENA region.

Immensa anticipates its core markets of the UAE, KSA, and Kuwait to serve as initial launch countries, followed by a rapid expansion to its wider MENA region operations. Immensa's existing customers will now be able to seamlessly tap into the maritime vertical.

Leveraging its network, Immensa will serve as the exclusive distributor within the maritime and offshore sectors for Pelagus 3D's products in the region. Immensa will also act as the exclusive service provider for projects initiated through Pelagus 3D's platform in the territory. The ultimate aims are to (i) streamline supply chain processes (ii) expand OEM networks and (iii) deliver significant improvements in service provision to end MENA region users.

The Partnership is mutually exclusive for both parties within the designated territories – providing a strong foundation to align efforts – and to maximize the reach and efficiency of the partners' combined services.

The market environment is ideal for a partnership between two global leaders: Immensa – the leader in digitizing spare parts and additive manufacturing for the energy sector and Pelagus 3D – the leader of digital inventory in the maritime and offshore industry.

The global energy sector spare parts market is estimated to be worth over US\$90 billion, of which \$18 billion is immediately ripe for digitizing and converting to a digital supply chain. The MENA region accounts for over \$4 billion. Immensa and Pelagus 3D conservatively estimate the Partnership will open up at least \$2 billion of new, incremental potential revenues – a increase in the region of over 50%.

Fahmi Al Shawwa, CEO of Immensa, said:

"Immensa seeks to be world-class in everything it does: technology, strategy, execution, talent, and its partners. Today's news brings two world-class partners together and we look forward to working closely with Pelagus 3D – which is developing the largest database of spare parts for additive manufacturing in the maritime and offshore industry - to transform inventory management across sectors."

Haakon Ellekjaer, Chief Commercial Officer of Pelagus 3D, commented:

"This marks a significant milestone in our mission to drive adoption of on-demand spare parts in the MENA region. Through this partnership, we are offering enhanced additive manufacturing services and technologies for our OEMs and end users, fostering technological advancement in the industry. We look forward to working together with Immensa to further AM innovation and accelerate adoption."

Immensa also reveals the new brand name for its AI-enabled software. Formerly known as DIS-RT, the Company's first-of-a-kind platform which is an end-to-end solution to assess and digitize inventories – will now be known as Immensa360.

Today's announcement is the latest example of Immensa's world-class talent and partnership base. It follows the Company's recent senior Board appointment of Nabil Habayeb, who joined as an independent Non-Executive Director, after 41 years at GE - where most recently (2020-23) he was President & CEO of GE International Markets.

Pelagus 3D is a joint venture of thyssenkrupp and Wilhelmsen. Pelagus serves over 4,000 assets globally from 25 end user partners and 21 OEM partners. With over 80 manufacturing suppliers worldwide, Pelagus 3D is developing the largest database of spare parts available for additive manufacturing in the maritime and offshore industry.

The maritime sector involves capital-intensive assets with a heavy use of equipment in highly corrosive environments. Shipping depends on a well-functioning maintenance organization to ensure safe operations. Unexpected maritime asset downtime can cause material revenue losses, and safety issues. With assets changing locations constantly, expediting spare parts is difficult to plan for.

Additive manufacturing technology in the maritime sector is growing rapidly. A 2022 report by the Maritime Port Authority of Singapore noted several market drivers including: (i) a reduced need to keep large numbers of spare parts onboard vessels, creating a more efficient inventory (ii) addressing parts obsolescence; in 2020 - the average age of the world merchant fleet was over 20 years with older vessels facing spare part delivery delays (iii) shorter turnaround times - vessels can obtain spare parts more quickly, without the need for long layovers in ports.



Shell Awards Wood Major Engineering Contract

Wood, a global leader in consulting and engineering, has secured a six-year contract to provide brownfield engineering, procurement, and construction management (EPCm) solutions for Shell's Prelude Floating Liquefied Natural Gas (FLNG) facility in Western Australia.

Ken Gilmartin, CEO at Wood said "LNG is a key transition fuel as industry balances the need for global energy security with the importance of urgent reduction in carbon emissions. We are delighted to build on our 70-year global relationship with Shell to deliver integrated brownfield engineering solutions for Prelude, the world's largest floating offshore gas facility.

"The contract will draw on our global LNG expertise and underlines our position as a market leader for brownfield engineering across Australia."

About Wood

Wood is a global leader in consulting and engineering, delivering solu-

tions to critical challenges in energy and materials markets. We provide consulting, projects and operations solutions in 60 countries, employing around 35,000 people.

www.woodplc.com





EEMUA 194 Subsea Engineering Basics

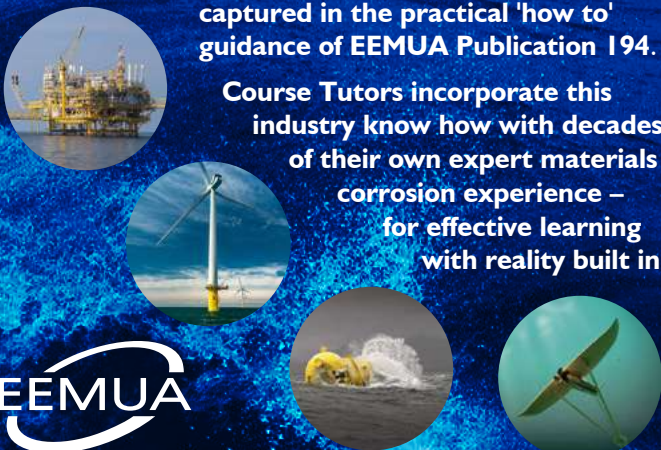
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Subsea Demand Drives Growth



Global demand in subsea markets for oil and gas continues to help drive growth at manufacturing, assembly and testing specialist Express Engineering, which is investing in capital equipment and its workforce.

The international business, based in Gateshead in the North of England, has been enjoying buoyant growth during the last 12-18 months – growing its workforce while building a record pipeline of new work.

With buoyant oil and gas prices and optimistic five-year forecasts from energy specialists like Westwood, Express

Engineering is seeing a strong upturn in sales for its key products and services.

Chris Thompson, chair of Express Engineering Group said: "The subsea sector is in a strong position for the next five years. I am delighted to say our orderbook has reached record levels, the highest in our 50-year history, and it's only expected to increase further across the remainder of 2024.

"With demand for product high, we hope to invest further in our capability this year, which will include a new CMM machine and a new horizontal borer to be situated in our Gateshead factories."

The current order book stands at around £70m for the next 12-18 months – with the group receiving an intake of £10m in new orders in the last month alone.

Express Engineering has seen sales in the oil and gas sector grow significantly in recent years resulting in a jump in revenues from £20m in 2019 to more than £60m in 2024/25

Mr Thompson added that the acquisition of QA Weld Tech, based on Riverside Industrial Park, Middlesbrough, in 2023 had made a positive contribution to the overall group. QA Weld Tech is a leading provider of integrated welding and engineering services.

He said: "Since acquiring QA Weld Tech we have integrated the business into the group and invested in new processes, shift patterns and capital equipment while also building the team in Middlesbrough.

"We have doubled turnover and are securing work from overseas, breaking into new international markets. The future bodes well for all our sites on Teesside and Tyneside."

Building and strengthening the workforce and skill levels has been a major priority during the last year or more. Around 260 people work across multiple Team Valley sites for Express Engineering, while the headcount at QA Weld Tech has risen to 46.

Gary Thirlwell, MD of Express Engineering, said: "Our overall order book is so strong that we expect to increase our shift patterns and grow our head count even further during 2024, both in Gateshead and Middlesbrough. We are looking to take on a lot more apprentices."

The group is looking to recruit fitters, assembly and test operators and CNC machinists at Express Engineering. Welders, platers and technical support staff are required at QA Weld Tech.

Internationally, Express Engineering has become a renowned global supply specialist for actuator assemblies, connection systems and tooling for wellheads, drilling and subsea tree structures. The company is also getting involved in subsea carbon capture projects.

Collaborating with customers like TechnipFMC, Baker Hughes, OneSubsea and Aker Solutions, Express Engineering is a significant exporter of products, operating within various geographical areas, including the North Sea, Gulf of Mexico, east coast of Brazil, east and west coasts of Africa, Malaysia and Australasia.





Pioneer Safety Group Expands Its Ex Offering

The Pioneer Safety Group, which is a worldwide leader for explosion protection solutions, Ex products and industrial safety solutions and part of the Longacre Group, has acquired Petrel Limited, a UK based manufacturer of explosion proof lighting solutions.

Petrel, based in Birmingham, has over 40 years' experience in the de-

sign and manufacture of Ex lighting products suitable for a range of industries and hazardous area classifications. Petrel also provides bespoke lighting solutions through its lighting design service which optimises the layout for the users and minimises costs for the facility. Petrel sells through distributors and strategic partners to provide end users, system integrators and OEMs their high-quality lighting solutions which proudly bear the "Designed and Made In Britain" marking. Steve Noakes, Pioneer Safety Group's MD said, "The Pioneer Safety Group has a long history in supplying trusted explosion protection solutions across a wide industry base, and the addition of Petrel broadens



the complementary product portfolio to our customers. Its long history in Ex lighting further strengthens the brand pedigree of the Group and marks another milestone in the exciting growth strategy for the Group."

Mark Pemberton, Petrel's MD said, "Joining Pioneer Safety Group is an exciting opportunity for Petrel. Our products complement the existing brands to provide a comprehensive range of solutions to our customers. We have common values and the Group's technical and operational experience, the ability to access and expand our global distribution network, and the Group's commitment to people development will help Petrel achieve its exciting growth ambitions."

Kevin Price, Chamberlins CEO said "The Petrel team have made huge progress over the last 2 years, implementing its new strategy and delivering record profitable growth. The Chamberlin Board now believe the time is right for Petrel to continue that journey as part of a Group that has the resources and strategic fit to deliver on its true potential. We believe that the Pioneer Safety Group is the ideal new owner for the business and are well positioned to support Petrel and the ongoing development of its strategy."

Visit the Petrel website - <https://www.petrel-ex.co.uk/>

Visit the Pioneer Safety Group website - <https://pioneersafetygroup.com/>





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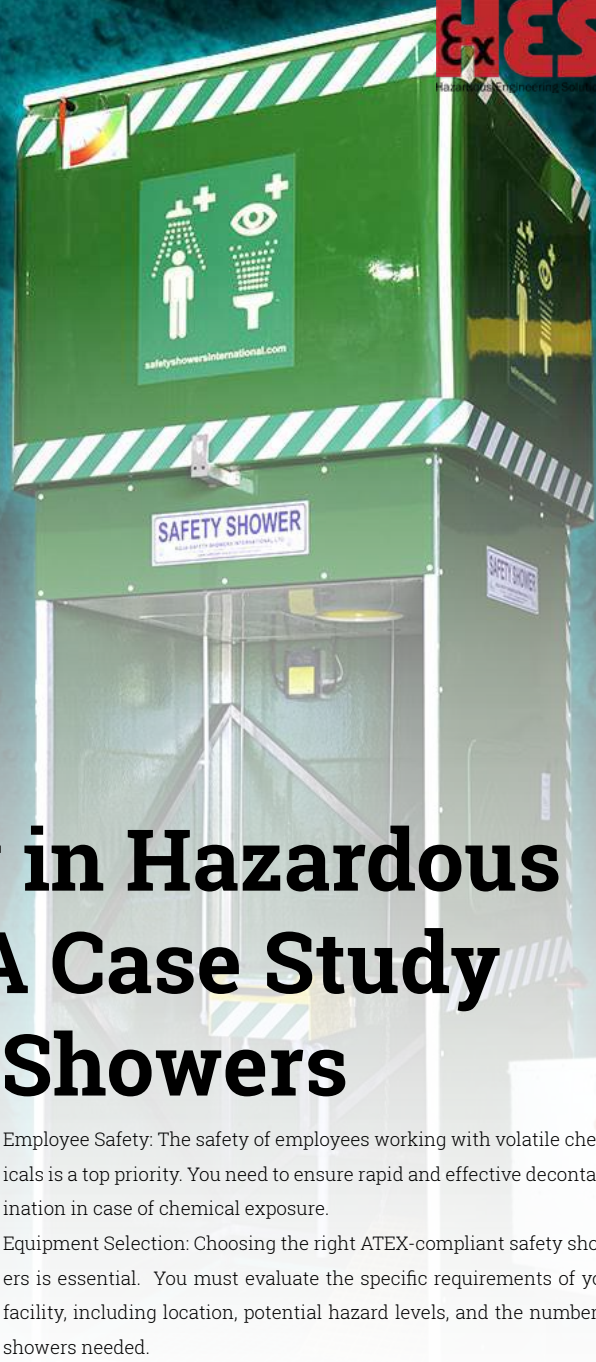
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Ensuring Safety in Hazardous Environments: A Case Study on ATEX Safety Showers

In industries where flammable gases, vapours, and dust are present, ensuring the safety of employees is of paramount importance. The European Union's ATEX Directive 2014/34/EU, aim to regulate equipment used in potentially explosive atmospheres, requiring companies to implement safety measures that mitigate the risk of ignition and protect personnel. This blog examines a company's implementation of ATEX safety showers to enhance workplace safety and meet regulatory compliance.

All chemical manufacturing facilities that handle or specialise in the production of volatile chemicals, it is imperative to adhere to ATEX regulations to protect employees from potential hazards. One of the key aspects of ATEX compliance is the provision of safety equipment, including safety showers and eye wash stations, to ensure the safety of workers in the event of chemical spills or exposure.

The Challenge and Solution

Compliance with ATEX Regulations: The company needs to comply with ATEX Directive 2014/34/EU, which required the implementation of safety measures to prevent explosions in areas with potentially explosive atmospheres. This includes providing ATEX-compliant safety showers.

Employee Safety: The safety of employees working with volatile chemicals is a top priority. You need to ensure rapid and effective decontamination in case of chemical exposure.

Equipment Selection: Choosing the right ATEX-compliant safety showers is essential. You must evaluate the specific requirements of your facility, including location, potential hazard levels, and the number of showers needed.

This is something Aqua Safety Showers can help with. We manufacture a full range of safety showers designed to meet the specific needs of sites and provide optimal protection.

Get peace of mind knowing that safety showers from Aqua Safety Showers will be manufactured from corrosion resistant materials and come with a two-year warranty, further promoting a safety-conscious workplace culture.





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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 world 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.

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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.



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.



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Ex Non-Electrical Certification

It is well known that more explosions are traced to non-electrical sources of ignition than electrical sources. Despite this, for Zone 1 (CAT2) Certification under ATEX non-electrical equipment could be 'self-certified' (with the resulting file lodged with a Notified Body but not checked) Since the introduction of IECEx non-electrical assessment this has changed, and all IECEx Certification is conducted by qualified and IECEx accredited Certification Bodies.

Non-electrical equipment can cause explosion by friction, impact, static, hot surfaces and many other methods; all equipment designed to be used in Explosive Atmospheres should have been risk assessed to assure that this cannot happen, but in Europe it is the law that this must be done (under the ATEX Directive) and the methodology for doing the assessment and protecting ignition capable parts has been well defined in the form of 'Standards'.

Typical Information required to conduct an Ex non-electrical assessment.

A document would be required to confirm the global specification & environment for where the equipment will be used and in what environments (E.g. Zone, Gas Group, T Class, and Ambient Temperature).

Information required	Example
External Zone Requirement	II A, B, C – or IIIA, B C Temperature and Zone etc.
Internal Zone* (POE)	Material, % - Classification
Environmental Contamination risk	Ingress, chemical attack, corrosion
Ambient Range of Environment	Low and high temperatures expected, icing etc.
Vibration	Undue vibration
Operating Conditions	Type of facility
Level of maintenance available	Skill level and frequency
Level of supervision available	Skill level and frequency
Monitoring of Ex Non-Electrical parts	Continuous, automatic or intermittent
Other	Other relevant information

The assessment must be made for any part that can become an effective ignition source (through for example heat, friction, static etc) under specified condition (for example, normal operation for Zone 2, under a malfunction for Zone 1 and under a rare malfunction for Zone 0, so for any Zone other than Zone 2, failure mode analysis is required.

Methods of protection for non-electrical equipment (all referred to as 'Ex h') include constructional safety, liquid immersion and control of ignition sources (use of protective systems such as monitoring temperature and having some form of shut down system).

Simple Example ATEX Non-Electrical Assessment of a 'bearing' using constructional safety for Zone 1 or Zone 2

Bearings are selected based on the equipment's intended duty and the following items would need to have been considered as a minimum.

- Static load
- Dynamic Load
- Speed

From this you can calculate bearing life (many bearing manufacturers have online tools for this with further derating) a suitable replacement time (replace before failure) with an appropriate safety factor can be determined and specified in the user instructions and/or certification.

Other assessments such as the effect of temperature on lubricants etc. will also need to be considered. It should be noted that it is quite common to find lubricants that are not suitable for the normal ATEX/IECEx Ambient Range of -20°C to +40°C

The same assessment would be required for each bearing for Zone 2, as the bearing must be proven to be rated correctly even in normal operation.

For Certification or Training on Ex Non-Electrical Equipment and Assemblies you can contact ExVeritas at www.exveritas.com

The ExVeritas Group provides Product Certification, Management System Certification, Training and CompEx Certification and Site Safety Services. We have fully accredited test laboratories offering explosion safety, electrical safety and environmental testing.

ExVeritas are a UK Government Appointed Body for UKCA 'Ex', an ATEX Notified Body and an IECEx Certification Body and Test Laboratory with offices and test facilities in UK, Denmark and North America.





Ensuring Safe And Reliable Pressure Measurement In Hazardous Environments

Operating in environments with hazardous dust and gas poses significant risks, and these dangers are compounded when dealing with very high pressures. Industries such as oil and gas extraction, chemical processing, and pharmaceuticals often work under these extreme conditions, where even minor lapses can lead to catastrophic events. The key challenges in such settings include the risk of explosions, equipment failure, and maintaining accurate measurements under pressure fluctuations. The high pressure HP1000 transmitter from ESI Technology is designed to address these challenges, ensuring safe and reliable pressure measurement in hazardous environments.

Dangers of High Pressures in Hazardous Environments

- 1. Explosion Risk:** High-pressure systems in environments with flammable gases or combustible dusts are particularly prone to explosions. A small leak or a failure in the pressure containment system can introduce high-pressure streams of gas or dust into the surrounding area, which can ignite upon contact with a spark or heat source.
- 2. Equipment Failure:** High-pressure systems exert immense stress on equipment. Valves, seals, and pipes must withstand these pressures without deforming or failing. In hazardous environments, any failure can lead to the release of dangerous substances, creating a significant safety hazard.
- 3. Measurement Accuracy:** Maintaining accurate pressure measurements at such high levels is challenging. Inaccurate readings can lead to improper handling of pressure systems, which may result in over-pressurization or under-pressurization, both of which pose safety risks.

Ensuring Safety with the 5000 bar HP1000 Pressure Transmitter

The HP1000 from ESI Technology is specifically designed to operate safely and reliably in these high-pressure hazardous environments.

Several features make this device an ideal choice for such demanding applications:

- 1. Robust Construction:** The HP1000 is built with high-strength materials that can withstand pressures up to 5000 bar. This robust construction ensures that the transmitter maintains its integrity even under extreme conditions, minimizing the risk of equipment failure.
- 2. ATEX and IECEx Certification:** These certifications are critical for equipment used in hazardous environments. The HP1000's compliance with ATEX and IECEx standards means it has undergone rigorous testing to ensure it does not ignite explosive atmospheres, either through sparks or heat. This certification provides confidence that the device can be safely used in environments with explosive dust and gas.
- 3. Accurate and Reliable Measurements:** The HP1000 offers precise pressure measurements, essential for maintaining safe operating conditions. Its advanced sensing technology ensures that even at extremely high pressures, the readings are accurate and reliable. This accuracy is crucial for operators to make informed decisions and maintain safe pressure levels.
- 4. Durability and Long Life:** Designed for longevity, the HP1000 can endure the harsh conditions typical of hazardous environments. Its durability reduces the frequency of maintenance and replacements, which is particularly important in environments where equipment downtime can be dangerous and costly.
- 5. Integrated Safety Features:** The HP1000 incorporates features that enhance its safety profile. These include overpressure protection, which prevents the transmitter from being damaged by unexpected pressure spikes.

The high-pressure HP1000 pressure transmitter from ESI Technology is an essential tool for industries operating in hazardous dust and gas environments. By combining robust construction, advanced safety certifications, precise measurement capabilities, and durable design, the HP1000 addresses the unique challenges posed by high-pressure operations in such settings. Its ability to provide reliable and accurate pressure readings while ensuring safety helps prevent accidents and maintain efficient and secure industrial processes.

HIGH PRESSURE TRANSMITTERS^{FOR} HAZARDOUS AREAS



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Machine Condition Monitoring In Hazardous Locations

Diagnosing bearing faults on rotating equipment (pumps and motors) in hazardous locations can be fraught with difficulty. Firstly, there is the problem of deciding what instrumentation can be used. This can be difficult, particularly if the exact hazard is difficult to assess. For example, instruments used in hazardous locations such as flour mills, coal mines, petrochemical plants and fuel transfer facilities, need to be "intrinsically safe" and incapable of igniting an explosive atmosphere. However, some not so obvious hazardous locations include water treatment plants, tunnels and underground passageways or any location where a build-up of naturally occurring flammable material (such as methane or dust) could occur.

Secondly, a shut down in a hazardous location can be costly, particularly if a whole process must be stopped to allow the use of power tools for example. Consequently, before stripping down a pump, you need to be sure you really do have a worn bearing and you are not picking up some other source of pump noise, such as cavitation.

This is where smart trend meters like the TPI 9085-Ex come to our aid. The "go anywhere" 9085-Ex is certified for Zone 0 IECEx/ATEX with North American approval. This means you simply don't have to think what potentially explosive gases you might encounter, as the 9085-Ex is certified to be intrinsically safe for ANY atmosphere worldwide.

The 9085-Ex measures "bearing noise" and displays it in bearing damage units (BDU), which is roughly equivalent to "percentage wear". In other words, 100 BDU is indicative of a worn bearing. In addition, the 9085-Ex uniquely incorporates a directly contacting temperature sensor within its vibration probe. This gives a highly accurate, virtually instantaneous, surface temperature reading for the bearing simultaneously as the vibration reading is being taken. With a high BDU reading and high temperature you can be reassured that what you are seeing really is a worn bearing!

Another difficulty is that a lot of machinery is remotely located (e.g. pumping stations), often in the "middle of nowhere", requiring highly mobile teams of operatives to access them. However, the compact handheld TPI 9085-Ex is extremely affordable and simple to use. It can, and indeed should, be included in every operative's basic tool kit. Additionally, by using the FREE TPI Bridge App, "routes" and readings can be transferred to and from the 9085-Ex anywhere in the world. The TPI Bridge App transfers routes and readings between computer-based trending software and mobile devices (Android or iOS) and then via Bluetooth to and from the 9085-Ex.

"Routes" are simply lists of machines showing exactly what readings need to be taken and where to take them. The readings are then automatically time and date stamped and saved in the route for later transfer to computer-based trending software.

Trending is the cornerstone of condition based maintenance (CBM). By

looking at trends of bearing noise and temperature readings, you can determine well in advance when a bearing will likely need replacing. The TPI 9085-Ex comes with powerful, yet simple to use, subscription free trending software, which includes automatic email notification of alarms and report generation, giving you everything you need for a full CBM strategy.

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





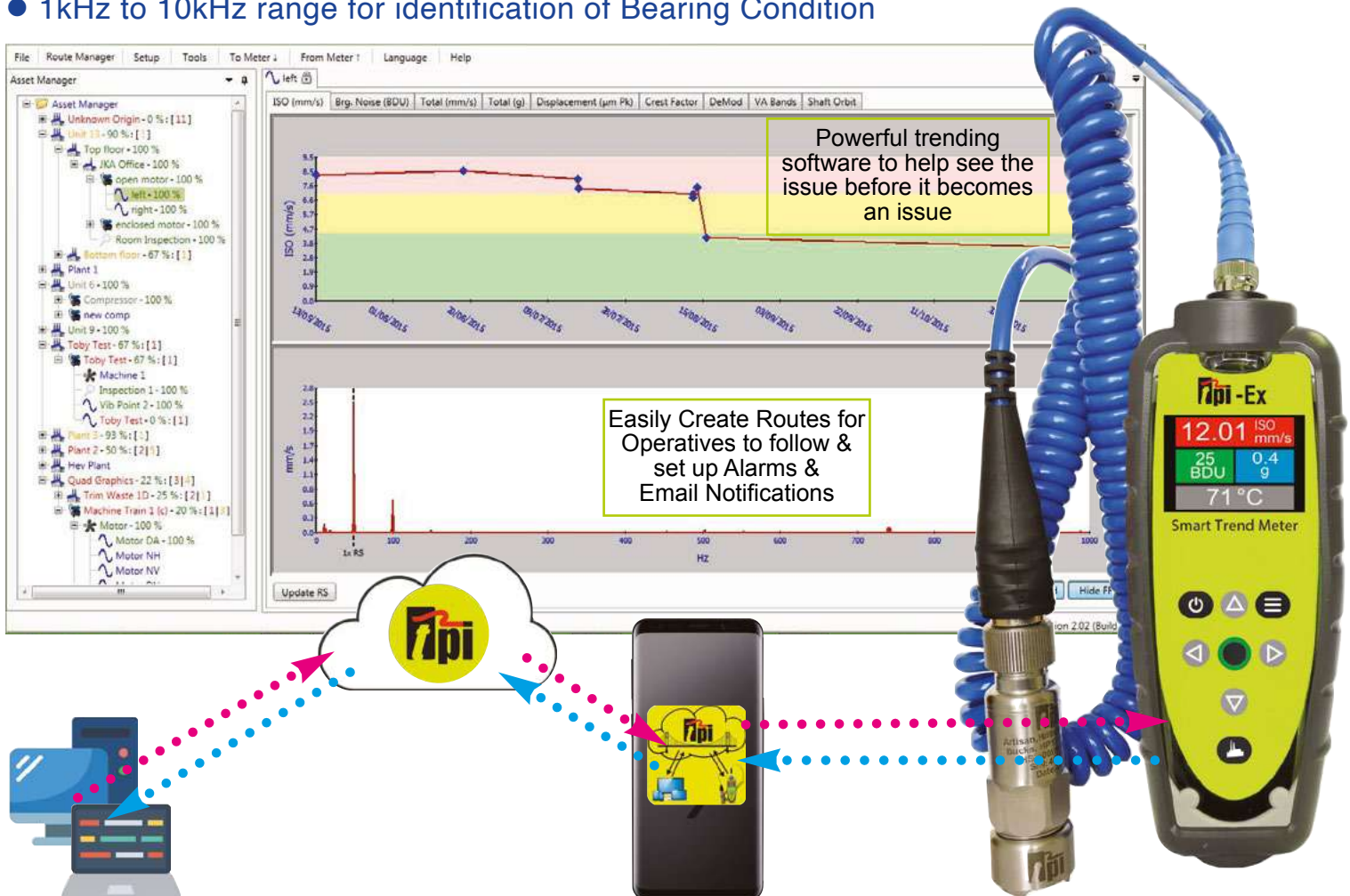
Test Products International Inc.

Do you need to monitor the condition of your machinery in Hazardous environments, including ZONE 0?



Then let TPI's 9085-Ex Vibration, Bearing Wear & Instantaneous Temperature Analyser HELP!!!

- Use the 9085-Ex literally anywhere in the world, so eliminating the need to question; Do I have the right instrument for the right Zone?
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- 2/10Hz to 1kHz ISO standard for assessing Unbalance, Misalignment or Looseness
- 1kHz to 10kHz range for identification of Bearing Condition



For technical information, solution range, applications, prices and where to buy - Contact TPI Europe on: -

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Specialist Industrial Vacuum for Spillage Cleanup

In the workplace spillages cause hazards; inadvertent release of materials in inappropriate places must be cleaned up as soon as possible. The potential hazard depends, of course, on the nature of the material. Even if the material itself is harmless, the risk of contamination or slip-risk to personnel must be contained. If the materials are potentially hazardous to health, then the risk is higher and prompt containment and clean-up is essential.

One method of cleaning up is to use a vacuum cleaner, but invariably this means finding an appropriate local power-source to plug in and potentially trailing cables across operational areas, thereby introducing additional hazards.

The new British Vacuum Cleaners BVC IV60 eGX Industrial Vacuum Cleaner can be an essential tool to assist in rapid clean-up of spilled product. The IV60 eGX uses the unique Honda eGX electric engine. The on-board battery may be swapped and charged just like any cordless tool, thereby totally eliminating trip hazards from trailing cables.

BVC IV60 eGX uses the powerful BVC YP3 industrial turbine, which when powered by the Honda eGX engine delivers 1.5kW of vacuuming power; more than enough for cleaning up spillages of most bulk materials. At full power the on-board battery provides about ½ hour of run-time. The variable speed control allows run-time to be increased by reducing the power; at half power, run time is around 1 hour.

BVC IV60 eGX is part of the configurable IV60 range of Industrial Vacuum Cleaners manufactured by Quirepace in the UK, and hence is available with a choice of collection tanks. For example, it can be supplied with an M-Class or H-Class dry-product tank for hazardous materials, or a wet tank with or without a strainer. A full range of hoses and tools is available.

Quirepace Ltd

bvcsales@quirepace.co.uk www.bvc.co.uk

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For Hazardous Dust & ATEX Zones**



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Plug in. Switch on.
Dust and fumes? *All gone.*
Really, it's that simple.



The VertEx modular booth system. Dust issues solved...

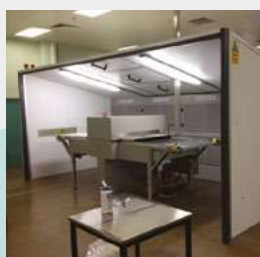
- **Modular** system for fast installation and assembly.
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Really, it's that simple.



If we could solve your dust and fume problem in minutes...



- **AirBench** takes dust and fumes away from your breathing zone
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- **AirBench** is plug and go - only needing unwrapping and plugging in to a 13 amp socket
- You get extraction and work bench in one compact unit

...would you be interested?



Doubt it can be that simple? Contact us for an on-site demonstration.



Norwegians Rely On Vacuum Pumps From Atlas Copco For Fish Packaging

Norway has a long tradition of catching and processing fish. The country ranks second in the world for exports behind China. To ensure the high quality of their freshly caught products, Norwegians pay particular attention to an unbroken cold chain. One company that contributes to a high level of food safety is Atlantic Styro.

The manufacturer, based on the Atlantic island of Lovund, just outside the Arctic Circle, produces containers made from expanded polystyrene (EPS). The polystyrene boxes keep fish and seafood fresh during transport and storage. Modern liquid ring vacuum pumps In addition to high quality, efficient production is more important than ever. In order to produce as sustainably as possible, the box manufacturer relies on a modern vacuum supply. The vacuum is used to extract the process vapor that is produced when the foam expands.

"Atlantic Styro achieves this very effectively thanks to our modern vacuum solution," reports Roy Mikalsen, the responsible sales manager at Atlas Copco. "Three liquid ring vacuum pumps from the LRP VSD+ series are used on Lovund, which are very well integrated into the overall process," explains Roy Mikalsen. Designed for energy and water efficiency In addition to the high, stable vacuum performance, the liquid ring pumps are energy efficient and ensure low operating and maintenance costs. Equipped with two variable speed drives – VSD: Variable Speed Drive Technology – the vacuum system saves energy and water: the first of the VSD twins maintains the required vacuum level by precisely controlling the operating speed of the pump, which ultimately reduces power consumption. The second drive controls the water circulation pump and thus optimizes the water flow in the pump.

Atlas Copco Vacuum Solutions Bonner Str. 498 D-50968 Köln www.atlascopco.com

atlascopco.com 2 (4) Recovery mode secures the water supply "The closed water circuit means that leaking seal water is collected in a tank and recirculated," continues Roy Mikalsen. This recovery secures the water supply. An additional energy recovery also reduces production costs. To achieve this, the LRP VSD+ series is equipped with the powerful, user-friendly Elektronikon™ vacuum controller from Atlas Copco, among other things.

This enabled Atlantic Styro to integrate the vacuum solution into its system and control the entire system. Uncomplicated plug-and-play product With its compact design, the LRP VSD+ installation saves space. What's more, a soundproof bonnet insulates the background noise in the immediate working environment to a pleasant level of 65 dB(a). The ease of operation rounds off the ergonomic advantages: Inlet, outlet and power cable connections are located on the top of the pump for easy installation.

These easily accessible features make the solution as a whole an uncomplicated plug-and-play product. Energy savings of up to fifty per cent For Atlantic Styro, the LRP VSD+ pumps combine high functionality with significant savings: Overall, the Norwegian company can calculate with fifty per cent less energy consumption. Its user-friendliness and centralization options make the vacuum solution from Atlas Copco the ideal system for the production of EPS boxes. This allows the full range of benefits of the raw material to be realized: a lightweight, cost-effective material that is perfect for packaging, insulating and transporting frozen fish and seafood. This means that seafood and fish retain their temperature and consistency over a long period of time and develop their full flavor when eaten later.

Atlas Copco LRP VSD+ intelligent liquid ring vacuum pump brings energy savings to Atlantic Styro

YouTube link: <https://youtu.be/nk-e0IFxSZc?si=1B9z1pDv8-ltwtXm>

Kerstar Introduces New Continuous Duty Vacuum Range

K

erstar is excited to announce the launch of its new cutting-edge Continuous Duty vacuum cleaner range which have been engineered to meet the most demanding cleaning needs. This new range includes two models: the DGF Twin Venturi Wet or Dry and the ESS 5.2KW High Suction 400v 50l Type H.

Find out more about Kerstar's new Continuous Duty vacuum cleaners as well as the entire ATEX certified and Type H (suitable for use with hazardous dusts) vacuum cleaners' range by visiting

www.kerstar.com

The DGF Twin Venturi Wet or Dry is an air powered vacuum cleaner designed for both wet and dry applications, offering unmatched versatility and reliability. Complementing this, the ESS 5.2KW High Suction 400v 50l Type H is a three-phase electric vacuum cleaner that provides exceptional suction power, making it an ideal choice for heavy duty tasks. Both models are ATEX rated vacuum cleaners for continuous usage, designed to operate for extended periods, even 24/7 if necessary. There are options available for use in ATEX Gas Zones 1 & 2 and Dust Zones 21 & 22, ensuring safety and compliance in hazardous environments.

These vacuums are fully mobile, allowing them to be easily moved or used as static fixed units. Their design makes them perfect for extracting debris alongside production lines and cleaning hard-to-reach areas - significantly enhancing operational efficiency. Kerstar's Continuous Duty vacuum cleaners boast three stages of filtration, achieving a filtration efficiency of 99.995%, which is made possible through the incorporation of an H14 HEPA filter.

"We are delighted to introduce these robust and versatile vacuum cleaners", said Kerstar's Industrial Vacuum Specialist, Brian Folland. "Our new range is specifically designed to meet the rigorous demands of continuous operation in challenging environments, offering our customers unparalleled performance and reliability."



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Compressed air and electric vacuums



For use in Gas Zones 1 & 2, and Dust Zones 21 & 22



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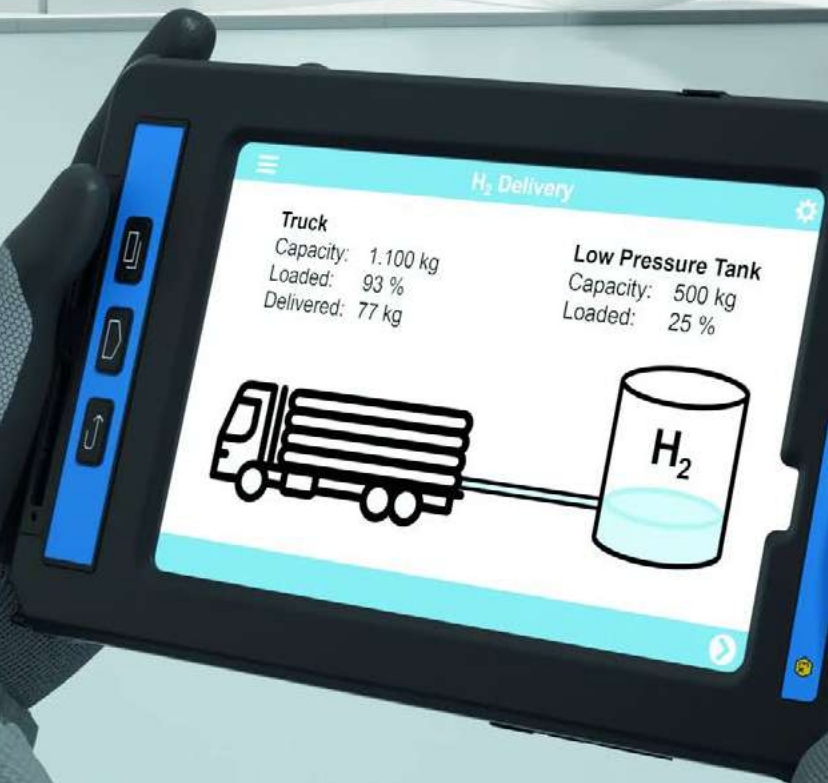
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Update For Intrinsically Safe Tablet Series





Users of Tab-Ex® 03 from the Pepperl+Fuchs brand ECOM Instruments can now update their intrinsically safe tablets to Android 13 independently, quickly and easily. With the update to the latest version of the operating system, current users benefit from numerous advantages and new features. New customers will receive their tablet directly with Android 13.

Android 13 improvements include optimisations in security, productivity, personalisation and Samsung DeX. To increase the security, the status of the tablet can now be checked immediately. For this purpose, the new security dashboard shows whether there are security problems on the tablet and how they can be quickly fixed. The protection of the user's privacy is also further increased with Android 13, for example if another person is using the tablet.

Tablet for digital workflows in explosion-proof areas

ECOM Instruments offers the Tab-Ex® 03 tablet in the variants DZ1 for use in Zone 1/21 and Division 1, DZ2 for Zone 2/22 and Division 2, and D2 for Division 2. Based on the Samsung Galaxy Tab Active 3, the Tab-Ex® 03 combines state-of-the-art technology for harsh environments and use in hazardous areas. Samsung Knox ensures high data and device security. The Samsung DeX mode supports a quick switch to the desktop version. In addition, the tablet has more RAM and external storage than the previous models.

With the Tab-Ex® 03, mobile workers get a tablet which enables significant time and cost savings in the completion of their daily work. On the large screen with a resolution of 1,920 x 1,200 pixels, complex images such as construction drawings, manuals, maintenance or repair instructions can be viewed with more detail and in a larger size compared to smartphones. For taking photos and videos, the tablet is equipped with a 13-megapixel camera with autofocus and LED flash on the back as well as a 5-megapixel camera in the front. An optional camera-free version is also available.

Despite its slim and lightweight design, the Tab-Ex® 03 delivers industry-leading performance in mobile devices for hazardous areas. It is easy to operate with gloves or the S Pen stylus. Desktop version as well as suitable peripherals and accessories especially for industrial use make the Tab-Ex® 03 the perfect companion for the modern mobile worker.

ECOM's Digital Products & Services division completes the all-round solution. The Tab-Ex® 03 can be fully adapted to individual requirements, pre-configured or integrated into an existing MDM and thus offers optimal support in everyday work.





Expert Reveals Issues Causing Uncertainty In The Oil & Gas Sector

A

According to the statistics released by the UK government, the total revenues from UK oil and gas production between 2022 to 2023 increased by £7.6 billion versus 2021 to 2022. While this outlines the strength and importance of oil and gas as both a fuel and an industry to the economy, there are trends that are posing serious concerns to the supply chain and the wider health of the sector.

Scott Gilmour, Account Manager, from HTL Group, the leading supplier

of handheld hydraulic cutters for several industries, has offered insight into the issues facing the sector, and how best to strengthen to mitigate potential threats to its success.

The impact of geopolitical conflicts

One of the most significant disruptors to the oil and gas industry is geopolitical concerns creating uncertainty. Geopolitical tension can have a huge impact on the supply and distribution of oil and gas. We only need to look as far as Eastern Europe, where Russia is ranked in the top ten oil-producing countries in the world for 2024. However, when the conflict between Russia and Ukraine began, the sanction placed on Russia

by other global powers caused a notable surge in the price of WTI crude oil to \$133.46 (£106.89) per barrel and Brent crude oil to \$139.10 (£111.43) per barrel, which is the highest price since July 2008.

Conflicts in the Middle East, for instance, have historically roiled oil markets, causing spikes in prices and supply disruptions. Shifting alliances, trade disputes, and sanctions regimes further complicate the operating environment for oil and gas companies, forcing them to navigate a geopolitical minefield fraught with risks and uncertainties.

Renewable energy

The emergence of renewable energy technologies presents a huge challenge to the traditional dominance of fossil fuels. The growing concerns about being sustainable, coupled with advancements in solar, wind, and battery storage technologies, are reshaping the energy landscape.

As governments worldwide ramp up efforts to combat climate change, renewable energy sources are gaining momentum, posing a threat to the long-term viability of the oil and gas industry. Companies are thus confronted with the urgent need to diversify their portfolios and embrace cleaner, more sustainable energy alternatives or risk obsolescence in a rapidly evolving market.

Inflating costs and macroeconomics

The sector also sees considerable uncertainties because of the wider macroeconomic fluctuations being seen, with inflation significantly threatening the progression of activity. In fact, a poll by GlobalData found that as many as 34% of respondents believe there's a high chance of projects being stalled or completely cancelled due to cost inflation.

Costs will become an even greater consideration for businesses within the industry going forward, particularly in wider macroeconomics. Fluctuations in global economic growth, inflation rates, and currency values can send ripples through the industry. Events can show the sector's vulnerability to external economic forces, leaving companies scrambling to adapt to rapidly changing market conditions.

Emerging technologies and the supply chain

In addition to renewable energy, technological innovation is disrupting traditional processes within the oil and gas sector itself. The emergence of automation, artificial intelligence, and data analytics

is streamlining operations, enhancing efficiency, and reducing costs. However, many established players in the industry find themselves with legacy systems and entrenched in outdated practices, hindering their ability to fully capitalise on these technologies. Failure to adapt to this technological revolution could leave companies vulnerable to more agile competitors and erode their competitive edge in an increasingly digitised marketplace.

One thing remains clear, which is that adaptability is paramount for survival in the oil and gas sector. Companies must embrace agility and innovation, proactively addressing macroeconomic shifts, geopolitical risks, and technological disruptions. This entails diversifying energy portfolios, investing in renewable energy initiatives, and leveraging cutting-edge technologies to optimise operations and drive sustainable growth.





TÜV Certification For Ex p Motors

M

enzel Elektromotoren has been certified for the production of large squirrel-cage motors in ignition protection type Ex p pressurization for operation in zone 1 hazardous

areas where an explosive gas/air mixture is likely to occur in normal operation. The test specimen, a compressor motor for the petroleum industry, underwent a gas displacement test (test of the air purge system),

leak test and pressure test.

The German technical inspection service TÜV Nord comprehensively tested and certified the construction method.

To win the approval, the manufacturer had to prove its ability to control the purging air flow for all its relevant motor series in such a way that no gas pockets remain inside the motor casing. Menzel can apply this manufacturing procedure to stock motors in a wide output range and



is thus able to flexibly and quickly provide competitively priced Ex p motors featuring the product categories 2G and 3G.

Pressurized motor construction is typically suitable for squirrel-cage motors from 400 mm shaft height. It is available for all voltage ranges and with air-to-air or air-to-water heat exchangers (cooling types IC 611, IC 616 or IC 81W).

An air-purge system allows potentially flammable gases to be removed

from the motor frame before the motor is started and to maintain a constant positive pressure during operation to prevent the ingress of explosive gases. The terminal boxes feature the ignition protection type Ex eb increased safety.

Plant operators often face the challenge that they cannot find suitable replacements for obsolete motors. The choice of explosion-proof drive systems in particular is limited. Up until now, the only alternative was to buy a standard motor with the required explosion-protection rating and adapt the installation site and/or driven machine, sometimes at considerable time and expense. Menzel's certification for the construction and manufacture of protected motors now gives customers more freedom of choice and flexibility.

The German manufacturer specializing in large electric motors always configures motors for the individual application and installation conditions. Likewise, the air purge system for pressurized motors is individually calculated and implemented, ensuring that the finished systems meet the highest safety standards.

For a petrochemical company, Menzel has recently manufactured an Ex p compressor motor based on its MEBKSL series, which matches the original motor in all mechanical and electrical interfaces. The compressor motor for an oil refinery is labeled II 3G Ex pzc ec ic IIC T3 Gc for zone 2.

It has a rated voltage of 6000 V and a rated output of 1635 kW. Before shipping, the motor was rigorously tested in the company's inhouse test facility, including load and type testing.

Menzel's Ex p motors were named the Product of the Year in the 2023 AEMT Awards.

<https://www.menzel-motors.com/pressurized-exp-motors-zone1-operation/>



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HPRRD - The Rupture Disk For Pulsating High-Pressure Applications

Working pressure tolerances of 90% - now also for high-pressure applications > 400 bar g.

The HPRRD reverse rupture disk offers a durable and sustainable solution for high-pressure applications with pulsating process conditions. The new design dispenses with predetermined breaking notches or other mechanisms that impair fatigue strength. The compact design requires no additional support structures and guarantees direct installation in the on-site installation system. Independent and flexible machining of the outer contour allows unlimited freedom for the connections and sealing surfaces.

Burst pressures from 400 to 4000 bar g with a tolerance of up to $\pm 2\%$ of the nominal burst pressure can be realized thanks to consistently precise manufacturing and guarantee a reliable safety function from -5 to $350\text{ }^{\circ}\text{C}$.

When triggered, the bursting diaphragm ruptures as a whole and releases the entire relief cross-section. This enables the process pressure to be relieved safely and quickly. The unnotched design of the new ST-HPR high-pressure reverse rupture disc enables high pulsating working pressure tolerances of 90 %. As the first reverse rupture disc in the REMBE® universe, no mechanical weakening by blades, for example, is required for opening. The compact design and machining from solid material guarantee almost limitless freedom of shape of the outer contour - whether conical or flat sealing.

Burst pressures of 400 to 4000 bar g with a tolerance of up to $\pm 2\%$ of the nominal burst pressure can be achieved through consistently precise manufacturing and guarantee reliable opening behavior from -5 to $350\text{ }^{\circ}\text{C}$. When triggered, the bursting diaphragm ruptures as a whole and releases the entire cross-section. This enables the process pressure to be relieved safely and quickly.



Fig. 1: REMBE rupture disk for pulsating high-pressure applications



Fig 2: REMBE_HPRD_BS-ST-HPR

www.rembe.com

Keep Emergency Communication Out of the “Dead Zone”

First responders such as fire, EMS and police depend on reliable two-way radio communication when lives and property are at risk. That's not always an easy task in many buildings. In-building radio signals are often absorbed or blocked by structures that are larger, underground or constructed of concrete or metal. Additionally, building features designed to create more sustainable facilities such as low-E glass windows can attenuate the signal from public safety radio systems. When this occurs, weak or non-existent signals result in radio communication “dead zones” within commercial structures that can jeopardize coordination among and the safety of first responders during an emergency.

As a result, most fire codes now mandate the installation of Emergency Responder Communication Enhancement Systems (ERCES) for both new and existing commercial buildings. These advanced systems boost the signal inside the building, providing clear, two-way radio communication without dead spots.

“The challenge is that first responders operate on many different frequencies which vary significantly from city to city, so the ERCES equipment must be designed to amplify only the specific assigned channels,” says Trevor Mathews, Wireless Division Manager at Cosco Fire Protection, a provider of business fire suppression and life safety systems for more than 60 years. The company has offered dedicated in-building ra-

dio communication system installation services for the past four years.

Mathews adds that this design usually involves tuning the ERCES to prevent signal interference with other frequencies and avoid running afoul of the FCC, which can levy significant fines when violations occur. In addition, companies often must install the entire system before the certificate of occupancy is issued. To meet the tight deadlines, installers rely on ERCES OEMs to quickly deliver the system components.

State-of-the-art ERCES are available that arrive “custom-tuned” by the OEM to the specific required UHF and/or VHF channel. The contractor can then further optimize the device onsite to the actual band frequencies with channel selective adjustments. The approach facilitates meeting all codes and requirements while reducing overall installation cost and complexity.

Effective ERCES Equipment

ERCES were first introduced in the 2009 International Building Code. The latest codes – such as IBC 2021 Section 916, IFC 2021 Section 510, 2019 NFPA 1221 Section 9.6, NFPA 1 2021 Section 11.10, and 2022 NFPA 1225 Chapter 18 – require all buildings to have an approved level of emergency communication coverage for first responders.

ERCES systems function by connecting through an over-the-air link that the installer optimizes to the public safety radio communications tower network, using a rooftop directional antenna. This antenna is then connected via coaxial cable to a bi-directional amplifier (BDA),

which increases the signal level to provide sufficient coverage within the building, based on life safety standards. The BDA is connected to a distributed antenna system (DAS), a network of relatively small antennas installed throughout the building that serve as repeaters to improve the signal coverage in any isolated areas.

In larger buildings of 350,000 square feet or more, multiple amplifiers may be required to drive an adequate signal level across the system. Besides the building's square footage, other criteria can also affect the number of amplifiers required, such as the building design, type of construction materials used, and the density of construction.

In a recent application, Cosco Fire Protection was tasked with installing an ERCES along with a comprehensive fire and life safety system at a large distribution center in Washington. To meet municipal requirements, Cosco Fire needed to install an ERCES tuned to VHF 150-170 MHz for the fire department and UHF 450-512 for police. The building was due to receive its certificate of occupancy in several weeks, so installation needed to be completed quickly.

To streamline the process, Cosco Fire selected the Fiplex by Honeywell BDA and fiber DAS system, from a leading manufacturer of commercial building fire and life safety systems.

The compliant and certified system was developed to reliably provide superior RF amplification and coverage without noise, enhancing two-way radio signal strength inside buildings, tunnels and other structures. The system is specifically designed to meet NFPA and IBC/IFC code compliance with the UL2524 Second Edition listing.

According to Mathews, one vital aspect that sets the ERCES apart is the ability of the OEM to "tune" the device to the channels used before shipping. The contractor can then further optimize the BDA's RF tuning onsite to the precise frequency required with channel selective, software programmable or adjustable bandwidths. This eliminates the issue of wideband transmission in highly congested RF environments, which can otherwise cause outside interference and potentially lead to FCC fines.

Mathews points out another aspect that distinguishes Fiplex BDAs from other digital signal boosters: the availability of a dual-band option for dedicated UHF or VHF models.

"Combining the UHF and VHF amplifiers simplifies installation because you have one panel instead of two. It also reduces the necessary wall space, the power requirements, and potential points of failure. Annual testing is also easier," says Mathews.

With conventional ERCES systems, fire and life safety companies must often source third party components to supplement the OEM's package.

For a previous application, Mathews found it "difficult to get conventional ERCES equipment to work. We ultimately had to turn to a third party for the [signal] filters needed because the OEM wouldn't provide them." Mathews also said the lead time to receive the equipment was several months when he needed it in weeks.

In contrast, the Fiplex by Honeywell equipment was delivered in only a few weeks.

"With other suppliers, it could take 8-14 weeks to receive an amplifier," explains Mathews. "Now we can get a custom tuned amplifier and install it with the DAS in 5-6 weeks. That is a game changer for contractors, particularly when there is a tight window for the installation," says Mathews.

For building developers, architects or engineering firms wondering if an ERCES will be required in a new or existing building, the first step is to consult with a fire protection/life safety company that can conduct an RF survey of the space.

The RF Survey is accomplished by measuring the downlink/uplink signal strengths in decibels-milliwatts (dBm) using special measuring devices. Results are submitted to the authority with jurisdiction to determine if an ERCES system is required or if a waiver is appropriate.

"Testing early is preferable to reduce cost, complexity and simplify installation if an ERCES is required. If the building fails an RF survey at any point in time, whether completed construction is at 50%, 80% or 100%, the ERCES system will have to be installed, so testing earlier is better before installation becomes more difficult," says Mathews.

He notes there can be additional challenges when conducting RF testing in structures like warehouses. An empty warehouse may not require an ERCES, but the signal strength can change dramatically in areas of the facility after racking and other equipment is installed, and merchandise is added. If a system is installed once a warehouse is already operational, the fire and life safety company must work around the existing infrastructure and any personnel.

"It is much harder to install ERCES components in an occupied building versus an empty warehouse. Installers may need to use lifts to reach the ceiling, fix cable or place antennas, which is difficult to do at in a fully operational structure," says Mathews.

If installation of the system interferes with the issuance of a certificate of occupancy, this bottleneck can significantly delay a project.

To avoid delays and technical challenges, commercial building developers, architects and engineering firms can benefit from an expert contractor's familiarity with the ERCES requirements.

With quick shipment of an advanced ERCES tuned by the OEM to the required RF channel, a skilled contractor can install and further optimize the device to the specific local band frequencies used with channel selective adjustments. The approach expedites the project and compliance, enhancing safety during an emergency.

For more information, contact Megan McGovern, Director of External Communications at Honeywell Building Technologies: email: mcgovern@honeywell.com; or call: 404-216-6186





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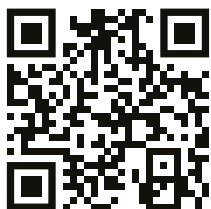
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