

The International Magazine For Hazardous Area Professionals

# HAZARDOUS ENGINEERING Solutions

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## 'Largest Liner' Expands Options For Uk Sewer Maintenance

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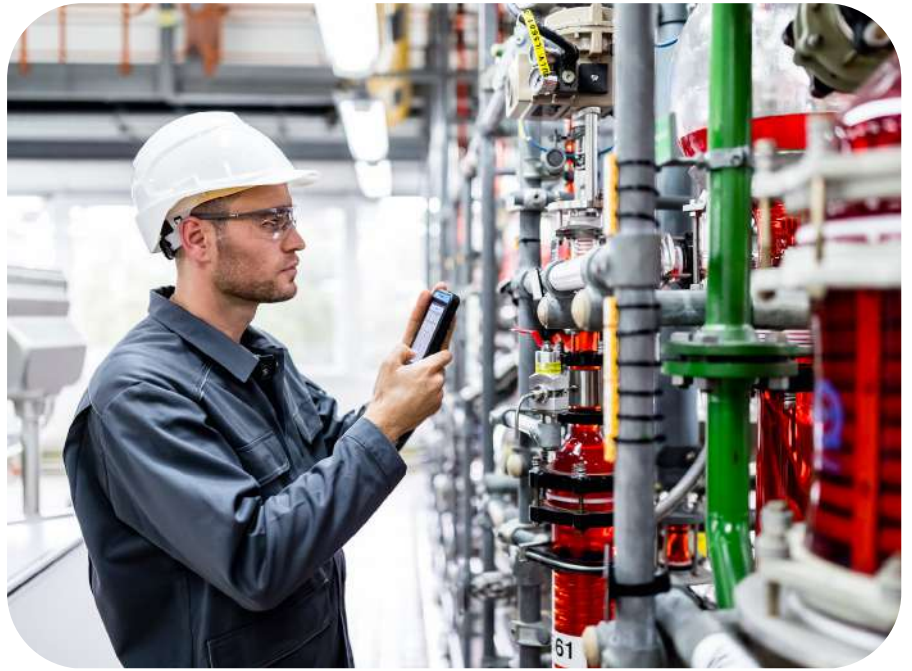


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# 'Largest Liner' Expands Options For Uk Sewer Maintenance

**N**ational drainage and wastewater maintenance specialist Lanes Group plc has installed its largest ever ultraviolet liner – and one that could be the largest to have been installed in the UK.

The UV cured in place pipe (CIPP) liner was 1800mm in diameter, tall enough for a man of average height to walk along without having to stoop.

It is first 1800mm UV liner installed by Lanes, and the first to be supplied in the UK by its German manufacturer, IMPREG.

In a significant development, Lanes selected a new type of liner that can be more easily controlled in hot weather, which gave its lining team greater flexibility in carrying out the installation.

Lanes installed the 42-metre-long liner to strengthen a storm drain in Corby, Northamptonshire, before it was adopted into the public sewer system.

Sue Kenyon, Lanes Reline Division Manager, said: "The technical challenges created by the size of the liner make this one of the most complex lining projects we've ever undertaken.

"It shows we can deliver cutting edge, no-dig technologies, at the biggest possible scale, giving clients a highly sustainable, cost effective and much safer method for rehabilitating culverts, sewers and industrial pipes."

IMPREG UK Technical Manager Jack Talbott said: "This is the largest diameter UV liner we've supplied to a UK contractor and we haven't heard of any as big as this being installed in the UK before. "The project demonstrates an expansion of what can be achieved by UV CIPP by matching advances in manufacturing and UV lining systems with the installation expertise of Lanes as a contractor." Lanes, the UK's largest independent drainage and wastewater maintenance service specialist, has more than 25 years of experience lining of sewers and industrial pipe systems.

To provide the 100-year design life required, the IMPREG GL15 liner had to be 15.5mm thick, contributing to its 9.5-tonne weight.

The power of the UV light train was also supercharged. Its three mega light cores had a combined power output of 36,000 watts, three times higher than a standard light train used to cure a 1200mm liner.

A key reason this extra power was needed was Lanes' decision to install one of IMPREG's latest non-thermal liners, which do not contain a curing accelerant, peroxide.

Gary Carey, the Lanes Lining Supervisor, who led the project, explained: "Peroxide makes the resins more reactive to heat from the UV bulbs, speeding up the curing process.

"The disadvantage is that peroxide liners have to be transported in refrigerated trucks which can add to installation costs.

"Liners containing peroxide must be installed more quickly than conventional ones, especially in hot weather. Given the heatwaves we've experienced this summer, using the new non-thermal resin was a wise choice.

"The technology's been developed to extend the use of UV lining in countries with hotter climates. This project demonstrates how, thanks to climate change, it'll have advantages in the UK as well."

A Lanes civils team exposed two 3-metre-diameter concrete chambers beneath the road, between which the liner would be installed.

In an 18-hour operation, a 10-person Lanes team carried out the installation on 17 August 2022, pulling the liner

though the storm drain with a 10-tonne winch.

The liner was inflated with compressed air to a pressure of 250 millibars. Then the UV light train was sent through at a speed of between 50cm and 70cm a minute, curing the liner in 70 minutes. The following day, six lateral connections were reopened. Finally, the Lanes civils team returned to reinstate the road surface to its original standard.

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# The Snickers Workwear 'Head To Toe' Layering System.

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**You can call the Snickers Helpline on 01484 854788, checkout the website at [www.snickersworkwear.co.uk](http://www.snickersworkwear.co.uk) or email [sales@hultaforsgroup.co.uk](mailto:sales@hultaforsgroup.co.uk)**

They not only allow craftsmen and craftswomen to quickly adjust to changing weather conditions, but also give them the opportunity to make sustainable choices about the clothes they wear on site.

This winter's new Jackets, Trousers and Topwear feature high-tech, breathable fabrics that not only deliver dryness and warmth but also advanced ventilation for controlling body heat - so you can always work effectively, whatever the weather.



## Great Value Waterproof Safety Footwear from Toe Guard.



**T**oe Guard delivers great value for money as well as comfort and protection – affordably.

The timeless designs of Toe Guard safety shoes are complimented by their uncompromising focus on safety and wearer-wellbeing.

The new Toe Guard Wild Mid WR is a waterproof, metal free S3 safety boot made of PU coated, rip-stop leather upper. It has a wide fit for optimal comfort plus a reinforced toe area for extra safety.

The boot is designed with minimal seams in critical areas for longer-lasting durability, while the waterproof membrane will keep your feet comfortably dry. It comes with a lightweight anti-slip rubber outsole with soft nail protection that's also heat and oil resistant with a certified ESD function.

Starting at the mid £30 mark and available from Snickers Workwear stockists, the Toe Guard range of safety shoes and boots is probably the best value for money footwear in the UK with features that keep them one step ahead of the competition to boot.

**To get more information on Toe Guard Safety Footwear range, check out [www.toeguard.com](http://www.toeguard.com) or you can call the Helpline on 01484 854788 or email [sales@hultaforsgroup.co.uk](mailto:sales@hultaforsgroup.co.uk)**

# Preventing Fire and Explosions Aboard Commercial Ships

**F**ire and explosions are among the most significant dangers aboard any sizeable vessel. This is true for all seafarers, including military, commercial, and privately owned ships.

All crew members should be well trained in fire fighting, but the best training is on how to prevent fires from happening in the first place. The proper choice of portable LED lighting can reduce the risk of fire and explosions.

Three elements are needed for a fire to occur: a fuel source, oxygen, and an ignition source. The ignition source is the easiest part of this equation to remove using Intrinsically Safe (IS) lighting. So what does IS actually mean? Generally speaking, an IS-rated portable light is

carefully designed and manufactured so that it cannot release enough electrical and thermal energy to ignite combustible gases or vapors.

One of the many IS rating requirements is that lighting must be constructed of a non-sparking substance. Engineered polymer is the most commonly used material. Because of its saltwater and chemical corrosion resistance properties, this makes polymer ideal for maritime use.

Additionally, IS lights must be completely waterproof, another feature sailors appreciate. Innovative Manufacturers that create lighting specifically for use aboard commercial ships also add useful features such as rare-earth magnets and dual lights.

In smoke-filled environments, dual

lights allows the user to activate the spotlight and downward-facing floodlight simultaneously, navigating around trip hazards while also lighting the path ahead.

The combination of magnets and a floodlight gives the ability to attach IS portable lighting to the bulkhead to operate equipment hands-free without the intense glare of a spotlight.

Because of the knowledge, time, and expense required to engineer and produce IS-certified lighting, few companies achieve this. Nightstick is a global manufacturer of over 50+ Intrinsically Safe LED lighting products used worldwide in 70+ countries.

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# SICK Develops PLe/SIL3 RFID-Monitored Safety Lock with 180° Actuator

**S**ICK has developed the flexLock, an RFID-monitored safety lock with an innovative 180° actuation radius, creating a versatile protective device for safe locking of doors, flaps and gates. The SICK flexLock has been designed with a high locking force to achieve a performance level up to PLe/SIL3, all in a rounded, slim, and rugged housing.

The SICK flexLock is a Type 4 safety locking device (according to EN ISO 14119) providing PLe (EN ISO 13849) and SIL3 (EN IEC 62061) protection for personnel and processes through physical locking of moveable safety equipment such as doors, guards and screens to prevent access to, or interference with, machinery in a hazardous area.

## Flexible Machine Integration

The SICK flexLock has an open locking head, together with an infinitely-variable actuation radius of 180° which makes for easy and flexible machine integration. This unique innovation provides a flexible entry point for the actuator, useful, for example, for sliding doors, or doors with small radii. It allows a high tolerance to misalignment, even when a door or gate is sagging. There is a choice of either a flexible actuator with a spring-loaded tongue for when the door guidance is imprecise, or a rigid actuator which allows a side approach to the locking head.

The SICK flexLock's open locking head and rounded housing make cleaning easy. With its IP67/IP69K housing, the flexLock is resistant to dust and water, making it suitable for tough environments. The three LED status indicators are clearly visible from three sides, enabling maximum machine availability and quick trouble shooting.

## RFID Transponder Technology

The safe locking RFID transponder in the actuator offers the highest level of prevention against tampering, saving the time and expense of installing additional measures for manipulation protection. With low and high coded variants available, devices can be selected such that defeating in a reasonably foreseeable manner is prevented (EN ISO 14119). Thanks to a high locking force of up to 3150 N, the door remains safely and reliably locked until there is no more risk to

humans or the production process.

Rapid machine integration is also aided by the ability to mount multiple flexLock devices at short distances from each other without interference. The flexLock devices can be safely cascaded either using simple T-connectors or used in combination with a SICK controller utilising Flexi Loop safe series connection, which also provides complete diagnostics. A safe cascade can contain up to 30 devices in large installations with mini-

mal cabling and connection costs.

An optional escape release function is available to protect personnel in whole body applications, allowing the device to be unlocked from the inside and stopping the machine, should a person be accidentally located in the hazardous area.

**For more information, please contact Andrea Hornby on 01727 831121 or email [andrea.hornby@sick.co.uk](mailto:andrea.hornby@sick.co.uk).**



## Leading UK PPE Manufacturer Globus Group Launches New Reusable Respiratory Range For Protection Against Workplace Hazards

**The new Alpha Sentinel range protects against some of the most dangerous respiratory hazards found in the workplace**

**T**he UK's largest PPE manufacturer, Globus Group, has launched a new range of face masks to protect workers against extremely hazardous substances found in the workplace. The new design provides improved comfort and fit to help encourage good PPE compliance.

Prolonged exposure to hazardous substances over an extended period is known to be extremely harmful, with workers in the manufacturing industry at particularly high risk. It is estimated that each year an average of 33,000 workers suffer from illness caused or made worse by their current or most recent job in manufacturing[i].

The Alpha Sentinel range has been designed for superior fit and comfort for workers, especially those wearing the masks for long periods of time. Lead Product Designer Josh Moffat said, "When it came to designing the Alpha Sentinel range we really tried to prioritise the end-user. We know that workers are often wearing these masks for long periods of time, and so focusing on comfort and fit means that they are more likely to be worn correctly and workers can be confident that they are getting the right protection.

He continued, "Looking beyond fit and comfort, we know that another big reason for PPE non-compliance is masks getting too hot, so we have designed our unique large exhalation valve to minimise heat and moisture build-up. We really believe that the

design innovations we have been able to make with the Alpha Sentinel masks are going to make a huge difference to the workers using these products every day."

The Alpha Sentinel range comes with a range of changeable filters to protect against solid particulates, liquid particulates, gases, and vapours, and are suitable for use in a wide variety of industry settings.

The Alpha Sentinel full and half face masks are the first Globus product range to be designed and manufactured entirely in the UK. Globus has committed to manufacturing as many of its products as possible in the UK.

### About Globus Group

Globus Group is the UK's largest PPE manufacturer and a leading European provider of innovative protection technology solutions. With over 25 years' heritage Globus is leading the way in manufacturing resilience and sustainability.

The company is dedicated to developing innovative, high-performing and resilient PPE solution for Industry and healthcare providers across the globe. We drive manufacturing innovation and

excellence, providing an unrivalled pipeline of NPD safety solutions.

As a leader in the manufacturing sector, we have a responsibility to set the highest sustainability standards while maintaining outstanding levels of safety. We are committed to a sustainable future, driving energy efficiency, recycling and re-use through our robust sustainability plan and a commitment to reach net-zero by 2027.



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# Cygnus launched a brand new Ex Certified Thickness Gauge!

**T**he wait is finally over. Lucky visitors to our stand at The Materials Testing Exhibition in September, were first to see the much anticipated, new Cygnus Ex-certified product in the flesh. Now, it's time to reveal what the new Cygnus 1 Ex Ultrasonic Thickness Gauge is all about!

This rugged, IP67-rated, intrinsically-safe instrument is specially designed to take reliable thickness measurements in Zone 0 Explosive Atmospheres, including;

- Oil and Gas
- Mines
- Chemical Plants
- Fuel Depots
- Road Tankers
- Oil and Gas Tankers
- Explosive Atmospheres
- Hazardous Storage Tanks

## What is special about this launch?

Like its predecessor, the Cygnus 1 Ex is the only one of its kind in the world certified Intrinsically Safe to ATEX, IECEx, UKEX for Zone 0 and NRTL for Class 1, Division 1. But the Ex takes a giant leap forward, offering impressive new selectable features including live A-Scan, comprehensive data-logging and manual measurement mode, which brings Cygnus' Intrinsically Safe offering up to speed with Cygnus' most advanced gauges.

First of all, the 3 measuring modes that we are familiar with amongst Cygnus' surface range, designed for varying levels of corrosion, multiple materials and through-coat measurement capability, are now built into this new gauge and available to hazardous and explosive environments.

Measurement verification and recording are also far more advanced. The addition of Live A-Scan and B-Scan allows precise measurement verification with on-screen visuals via the large 3.5" outdoor-readable display, and the comprehensive data-logging feature ensures seamless data analysis and report generation.

You'll find the entire gauge, from how it sits in your hand, to collecting and storing measurements, is entirely geared towards the best user experience, making inspection quick and easy, despite the challenging environment. Four new

function keys are purposely integrated to maximise ease and speed of control, four dynamic screen views aimed to suit user requirements, and a user access feature to prevent access to protected features.

## Why are Intrinsic Safety and Ex certification significant?

Carrying out inspections with testing equipment certified to a suitable protection level is vital to ensuring the testing operation does not jeopardise the safety of hazardous environments. It is important to understand which is the correct equipment, and where to use it.

For equipment that contains electronic components including batteries, the intrinsically safe protection concept ensures that under both normal uses and with applied fault conditions, no arc or spark can be generated, and no component can heat up enough to cause an explosion.

Some intrinsically safe design criteria,

- The output energy at the terminals is limited so a spark cannot ignite an explosive atmosphere.
- The equipment must be anti-static and not be able to hold a static electricity charge.

• Voltages must be electrically 'clamped' to safe levels.

• The use of redundant safety components.

• If a battery or component fails, it should not produce high temperatures that could be incendiary.

In both IECEx, ATEX and North American NRTL systems, intrinsically safe equipment can be used in any Zone or Division with the correct equipment protection level. Under the IECEx and ATEX systems, explosion-proof/flame-proof equipment cannot be used in Zone 0 areas, regardless of equipment protection level.

Most importantly, only equipment that has an Ex Certificate (ATEX/IECEx/UKEX/NRTL) can be considered for use in Zone 0/1/2 areas.

In the USA, equipment that only has a MIL-STD-810G, Method 511.5, Procedure I test pass CANNOT be used in Zone 0/1/2 areas.

**The Cygnus 1 Ex, like all Cygnus products, is manufactured in the UK and is the only Zone 0 (Ga, Ma) Certified UTG available today (for ATEX/IECEx/UKEX/NRTL). To GET A QUOTE, simply visit [www.cygnus-instruments.com](http://www.cygnus-instruments.com)**



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## RHEINTACHO

### Expands Sales Team *Stefan Lenz Appointed New Branchmanager*

**M**r. Stefan Lenz has been the new business manager at the Freiburg family company RHEINTACHO Messtechnik GmbH since October 2022. This increases the capacity and competence in sales around Wolfgang Sexauer's team.

In order to increase RHEINTACHO's markets and to take care for the growing customer portfolio, Stefan Lenz will strengthen the RHEINTACHO branch management alongside his colleagues Thomas Distel and Jörn Strasser.

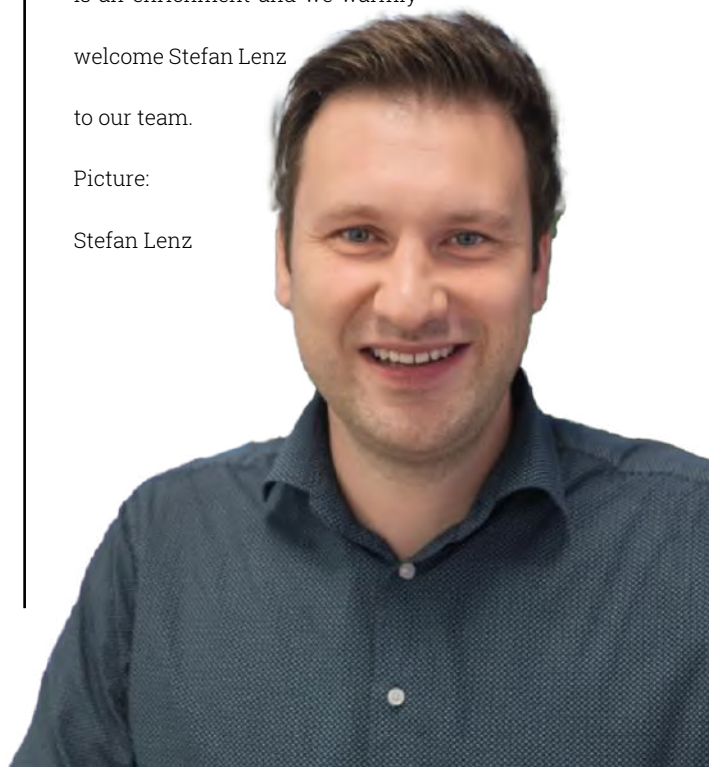
In the last 12 years, Stefan Lenz has worked successfully in the field sales force and has gotten to know and gained a lot of experience from groups to family businesses. He will now be able to use the knowledge he has acquired in technical sales when dealing with our customers. Through various commercial, technical and sales training courses in sales, he is an enrichment and we warmly

welcome Stefan Lenz

to our team.

Picture:

Stefan Lenz



# Southern Manufacturing & Electronics 2023 Beckons

**S**outhern Manufacturing & Electronics is one of the most important and popular engineering shows in the UK calendar. Held at the £35 million Farnborough International Exhibition and Conference Centre, a 20,000 square metre complex offering world-class facilities, easy access and free onsite parking, the event is no longer just regional but one that attracts exhibitors and visitors from throughout Britain, Ireland, continental Europe, the Americas and Asia.

Next year's show, which opens from 7th to 9th February, marks its 25th anniversary. A large proportion of participants have exhibited at the show since the very beginning and the percentage of returnees is extremely high. The organisers have recently announced that online registration is live at: <https://www.industrysouth.co.uk/register>

With its diversity of supplier companies, the show rises above any particular sector of engineering, attracting big-name manufacturers and SMEs alike. As well as giving the event its unique character, it makes visiting an effective way to address multiple sourcing requirements under one roof in a time-efficient manner. Many regular participants are already signed up for 2023, which is on course to be a sell-out again. Hundreds of firms will present every aspect of engineering, from machine tools and mechanical engineering through electromechanical, electrical and electronic equipment and components to business software, workshop essentials and a wide range of subcontract services.

Manufacturing industry is beset not only by the damage caused by Covid-19 but by more recent challenges as well, such as the impact of Brexit, supply chain disruption, soaring energy costs,

skills shortages and most recently the prospect of higher taxation. Solutions to help ameliorate some of these negatives are emerging strongly from exhibitors at next year's show.

Although it is split roughly 50:50 between mechanical and electronic engineering, the diversity does not prevent the event from being a cohesive whole. There are no barriers between the areas, allowing visitors to roam unhindered between the different engineering disciplines. People frequently say this is one of the show's principal attractions, as it leads to their discovering companies and technologies that they would otherwise miss. Technology Trails guide visitors around the event, grouping together firms with expertise in similar areas.

There will be much at the exhibition to interest readers. For example, Ecotile will show its UK-made interlocking floor tiles that solve damaged industrial flooring problems in manufacturing facilities, warehouses and environments where there is heavy forklift use. 100% recyclable and fire retardant, the tiles enhance workplace safety and can be fitted easily over any hard sub-floor. Ecotiles are also available as an electrostatic discharge solution to protect electrical and electronic products and personnel.

Health, safety and sustainability guidance is offered by machining coolants, oils, lubricants and greases supplier Oemeta UK, which is always seeking to place itself in the forefront of meeting regulatory requirements and is constantly developing new technologies in response to customer requests. In the area of training, Advanced Rework Technology is one of the longest-running IPC certification centres in Europe, offering all levels of IPC training that plays a key role in bringing safety as well as value to the electronics industry.

Leighton Buzzard-based JPT is one of the UK's premier protective case and foam specialists, manufacturing instrument and transit cases to multi-national commercial standards, with an astonishing 3,800 different case and foam designs to date. The company will be introducing at the show its new Vivax case for protecting tablets and laptops.

Co-located with Southern Manufacturing & Electronics is AutoAero, a specialised event focusing on suppliers to the aerospace and automotive engineering sectors. Admission to the exhibitions is free of charge.

**[www.industrysouth.co.uk](https://www.industrysouth.co.uk)**



# Double Contract Success

**A**N INDEPENDENT engineering firm is celebrating winning two major nuclear contracts. Cumbria-based Forth has secured two separate contracts to carry out work on behalf of governmental nuclear decommissioning company Magnox.

The team at Forth has successfully tendered to design, manufacture and provide waste retrieval solutions in Magnox wet vaults at Hinkley Point, and has also earned a separate contract to design and install active effluent pumping facilities at Magnox's SGHWR and Dragon reactors in Winfrith.

Chris Downham, Forth's operations manager, said: "Winning these contracts is a major deal for an SME like Forth, and we are delighted to have been selected for the work after a rigorous tendering process.

"Forth has proven over two decades that it can provide working solutions to industry problems across the world, and we will again showcase the capabilities of our fantastic team through this work with Magnox.

"We have demonstrated our expertise in coming up with answers to industry challenges, and we are excited to put the theory into practice and prevent persistent problems occurring.

"The work Magnox carries out is of global significance, and we're thankful for the opportunity to assist with such groundbreaking projects."

Linda Sapsford, Head of Procurement at Magnox, added: "We're delighted to be collaborating with Forth as we safely decommission our sites at Hinkley and Winfrith.

"One of our goals at Magnox is to add social value by creating employment and supply chain opportunities around

our sites and across the UK, so it's great to be working with an innovative home-grown company."

The wet vault retrieval project has been split into two areas: one to concentrate on HAI waste management and the other focused on water management.

The HAI management work will see the team supply a number of skips in the wet vaults with unique lifting arrangements as well as chutes to help segregate waste in the vault. Further to this, the team will produce a specially designed fuel box which can be controlled with a remotely operated vehicle or a long reach tool.

Forth will also be provided lighting rigs and live camera feeds to improve the usability of all equipment.

The water management element of the contract has been divided into three sub-projects:

To design extra pre-filtration units to support the existing systems;

To produce a water recirculation system as an additional means of pumping vault water;

To design and create a turbidity abatement system to remove contaminated water from the sorting tray in a controlled and timely manner.

For the active affluent pumping facilities contract, Forth will create a process where active liquor can be transferred from the SGHWR and Dragon reactors in the Winfrith plant to 1,250-litre intermediate bulk containers and taken off site to be safely disposed of.

Chris said: "The work to be carried out is complex but our expert teams have come up with great concepts, and they will rise to

the challenges posed through these contracts."

Forth has worked with Magnox a number of times in the past 12 months which included devising a robotic arm to sift through debris in hazardous environments and the creation of a remotely operated machine which could also remove waste from hazardous environments on a larger scale.

[www.forth.uk.com](http://www.forth.uk.com)

**Photo: Forth's operations manager**

**Chris Downham.**



## HAZARDOUS AREA HEATING.

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# Hi-Line: Supporting The Local Community Through Sport

**A**s part of its environmental, social and corporate governance (ESG) agenda, Hi-line Industries, a UK-based leader in the design, manufacture and installation of energy-efficient compressed air purification equipment, provides extensive support for the sporting community in the Burton upon Trent area. The company is a main sponsor at both Burton Albion Football Club and Burton Rugby Football Club.

Hi-line Industries, which has its headquarters in Burton's Green Street, is a member of the British Compressed Air Society and also supports the 'Made in Britain' campaign, highlighting the passion around British brands and UK manufacturing. The company's broad range of energy-efficient compressed air equipment includes air dryers, nitrogen/oxygen generators and filtration equipment.

A local and national success story, Hi-line showed 27% growth in like-for-like sales at its recent year-end (31 July 2022), underpinned by a record 12 months for the company's N2 nitrogen generator systems and HPSA desiccant dryers. Hi line feels it has a responsibility to return some of its profits to the local community, and what brings people together more than sport?

At Burton Albion Football Club, Hi-line is currently sponsoring defender Tom Hamer, the club's highly popular 22-year-old right back, for the second season in a row. The company also provides match sponsorships at Burton Albion, which was formed in 1950 and currently plays in League One of the Football League. In addition, Hi-line regularly sponsors the 'man of the match' and takes an executive hospitality box at the club's

Pirelli Stadium, providing yet more income for the club.

Hi-line's extensive sponsorship and support programme is similar for Burton Rugby Football Club, which has origins dating back to 1870 and is currently Staffordshire and Derbyshire's highest ranked senior rugby club, playing in the Midlands Premier division. The company is the main shirt sponsor for the first team, a Patron member and has an advertising board at the club's Battlestead Croft ground.

"We take our corporate and social responsibilities very seriously at Hi-line," states Managing Director Steve Smith. "The company is very proud to be based here in Burton, which has been the perfect location to grow our flourishing business. It's only right, therefore, to show our gratitude and commitment to the town by supporting some of its community treasures. The town's football and rugby clubs provide pleasure to thousands of local people on a

weekly basis, but they need funds. Hopefully our support goes some way to ensuring that our local sporting heritage is maintained for many years to come."

To keep pace with growing order levels, Hi-line is currently in the process of expanding its Burton production facility with a new building extension. The company has several six-figure projects to complete before year-end. They also participate in the BCAS apprenticeship scheme and are currently looking to take on more apprentices from the local area, with positions available immediately.

**Further information is available from:**  
**Hi-line Industries Ltd,**  
**Green Street, Burton on Trent,**  
**Staffordshire DE14 3RT**  
**Telephone: 01283 533377**  
**Fax: 01283 533367**  
**e-mail:**

[enquiries@hilineindustries.com](mailto:enquiries@hilineindustries.com)

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



# ATEX Certified Fans for Gas Group IIC: Hydrogen

A wide range of ATEX compliant axial, centrifugal and roof fans suitable for Gas Group IIC to ensure the adequate and safe removal of Hydrogen gas. Request a quote online at [www.axair-fans.co.uk](http://www.axair-fans.co.uk) or talk to one of our fan integration experts on **01782 349430**



# ATEX Fans For Petrochemical Explosion Protection

**P**etrochemicals are chemicals obtained from refining petroleum, crude oil and natural gas, the primary and raw material sources that enable numerous aspects of modern daily life. Several high-tech separation processes are undertaken in petrochemical plants to convert these raw materials into chemical products such as propylene, xylene, methanol and ethylene. The chemicals are then used to produce everyday products such as plastics, cosmetics, tyres, resins, rubbers, adhesives, and even embalming substances.

During these high temperature and intensive processes of separation the exhaust streams produce potentially hazardous and corrosive chemical and gas residues. It is crucial that exhaust systems are of the highest corrosion proof quality to ensure safe operation.

Industrial exhaust fans suitable for this industry are designed for corrosion protection, explosion protection and protection against other elements such as heat, moisture, and salty air. Explosion proof ATEX exhaust fans safely remove and transport the hazardous gases away from personnel and prevent these gases from mixing with other elements to avoid explosions.

## What is ATEX

ATEX stands for atmospheres explosible and refers to an area where there is a potential for an explosion if there is the presence of combustible dust or gases. The potential for the explosion is separated by what is known as gas and dust zones. The more likely an explosion the lower the number related to the zone. For example, zone 0 gas area classification means that an explosion potential is continuously present, zone 2 would mean the explosion potential may occur abnormally and with zone 1 it would occasionally be present. This dictates the type of equipment and the protection rating required to ensure continual safety. The same idea is in place for combustible dusts with zone 20, 21 and 22.

## Choosing a Suitable Petrochemical Exhaust Fan

304 stainless steel ATEX fans are the ideal choice due to their ability to handle the extreme temperatures of the fracking process whilst also resisting any corrosive gases that may destroy internal or whole fan components.

304 stainless steel fans are available in two constructions. Either only the internal components are manufactured using stainless steel, if it is only these parts that will be present in the corrosive air, or alternatively, if the entire fan is situated in a corrosive environment and is at risk of rusting as a result, then the entire outer casing and internal components can be manufactured from corrosion resistant materials while still having explosion protection up to zone 1 gases.

## ATEX Temperature Classes in Petrochemical

There's a huge number of processes involved in petrochemical production. The distillation of crude oil which contains a mixture of hundreds of hydrocarbons involves heating in a furnace and the resulting mixture is fed as a vapour into a distillation tower. The chemicals produced have different temperatures that separate them during the fractional distillation stage creating a temperature gradient in the tower <350°C to 25°C. Following the distillation step, cracking is the main process that breaks these mixtures down into hydrocarbons by means of high temperatures and pressure. Hydrocarbons are generally flammable, so it's compulsory that ATEX fans are used. Wherever air is contaminated with flammable substances then there is a need for protection.

Industrial fans are temperature rated to ensure that they're not used in an environment that would exceed the highest acceptable surface temperature on the fan motors surface. If the temperature exceeds this level, ignition of either the gas or dust is possible. This is a required indication that the customer should communicate before any industrial fan selection for an explosive environment. Temperature charts are useful in determining the correct T class based on chemicals in the air stream. For example, Hydrogen is a IIC Gas group with a T temp class making it one of the hottest, most dangerous gases.

Learn more at [www.axair-fans.co.uk](http://www.axair-fans.co.uk)

# Hi-Plex Hybrid Technology From Hi-Line Provides Cost-Effective, Energy-Efficient Compressed-Air Drying

**E**stimates suggest that Class 4 moisture content according to ISO 8573-1 is acceptable in the majority of compressed air system applications, thus supporting the use of refrigeration dryer technology. However, where applications demand higher levels of moisture removal, desiccant tends to be the go-to technology.

The long-standing problem here is the higher cost associated with desiccant dryers, which is why Hi-line Industries, a UK-based leader in the design, manufacture and installation of energy-efficient compressed air purification equipment, is addressing this issue with its new Hi-Plex dual technology dryers. This hybrid solution combines Hi-line's established refrigeration and PSA (Pressure Swing Adsorption) air treatment technologies, creating an energy-efficient system at low capital cost compared with standard heat-regeneration desiccant air dryers.

So how does Hi-Plex work? Well, a Hi-line Tundra refrigeration system first removes bulk moisture via zero loss auto-drains, after which it chills the air to +1°C in the heat exchanger, condensing out all water to a +3°C PDP (Pressure Dewpoint). From here, the pre-dried air passes into an energy-efficient HPSA (Hi-line Pressure Swing Adsorption) dryer where it is further dried via adsorption to lower dewpoints of between -20°C PDP and -70°C PDP depending on end-user requirements, meeting Class

2 moisture content in accordance with ISO8573.1. As a point of note, Hi-line can add an Activated Carbon Tower for Class 0 applications.

Hi-Plex regeneration takes place by deploying a vacuumed-assisted fan, which uses a reduced amount of purge air to cause a desorption effect within the desiccant beds. A side-channel vacuum pump removes the small amount of remaining water (via exhaust silencers) back to the atmosphere from where it came. This plug and play system is fully automatic: wet air in – dry air out.

Importantly, Hi-Plex high-performance dual technology dryers typically run at only 1-2% purge in comparison with 13-15% on a standard desiccant air dryer. Even more savings are achievable following the specification of Hi-line's optional AEMS (Automatic Energy Management System) for dewpoint control.

AEMS features a digital dewpoint read-out, high-humidity alarm, and set and demand regeneration function. As a result, customers can ensure they only use a minimal amount of energy to achieve dewpoints at any given time. In total, energy savings of over 70% are achievable compared with a conventional desiccant dryer, offering far quicker return on investment (ROI).

Every Hi-Plex dual technology dryer is application-specific, but built from standard off-the-shelf Hi-line products. The company adds all the components,

stainless steel pipework and filtration to a compact skid at its UK headquarters and manufacturing facility in Burton-upon-Trent. Hi-line will happily cater for any special requirements, such as even smaller footprint or lower height dimension to fit inside a low-ceiling compressor house, for example. The company can also facilitate connection to customer software or a BMS (Building Management System).

Hi-Plex systems are available from 165 to 1700 Scfm, and from 3.1 to 10.8 kW installed power. A five-year warranty is standard subject to service criteria.

**Further information is available from:**

**Hi-line Industries Ltd,**

**Green Street, Burton on Trent, Staffordshire DE14 3RT**

**Telephone: 01283 533377**

**Fax: 01283 533367**

**e-mail: [enquiries@hilineindustries.com](mailto:enquiries@hilineindustries.com)**

**[www.hilineindustries.com](http://www.hilineindustries.com)**



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Air-intake

Exhaust  
silencers

Stainless Steel  
3-way valve –  
minimum moving parts



## Wolf recommends ATEX certified lighting for safe use in potentially explosive hydrogen atmospheres

Using ATEX or IECEx certified lighting in atmospheres where hydrogen may be present is strongly recommended as a safety precaution by technical experts at Wolf Safety.

While acknowledging that hydrogen's 'green' credentials are highly encouraging, Wolf Safety believe the risks of explosion in atmospheres where hydrogen is present should not be underestimated.

As world leaders in the design and manufacture of portable and temporary lighting for use in hazardous areas, Wolf Safety are well aware of hydrogen related risks and offer safe, certified lighting solutions for use in hydrogen atmospheres.

Says Michael Morley, the company's Technical

Director: "Engineers and technicians working where hydrogen or other explosive gases or vapours could be present can be confident that Wolf has a safe, ATEX certified and cost-effective portable and temporary lighting solution which can be tailored to meet their specific needs."

The company's range of portable lighting, temporary lighting and power distribution solutions includes products already certified for safe use in workplaces where hydrogen gas could be present.

They include Wolf's robust yet highly portable WF-300@XL and WF-250XL LED floodlights which are used worldwide, especially by engineers inspecting, repairing and maintaining storage tanks in the oil and gas industry.

The robust WF-250XL, easy to carry and more

economical than comparable units, produces over 3,000 lumens of white light, more than enough to illuminate a 5m square tank or similar space without dazzling.

It effectively illuminates smaller work areas when using a limited power supply, providing the optimum level of light for working in confined spaces at lower cost. It's also lighter and more compact than similar products, is easily carried and consumes less electrical power."

Mains and low voltage versions of floodlights and luminaires, battery powered LED work lights, torches, handlamps, head torches and warning lights are also available from Wolf Safety.

**For technical information visit:**

**[www.wolfsafety.com](http://www.wolfsafety.com)**

## TOUGH & RELIABLE IN HAZARDOUS AREAS

- ATEX/IECEx ZONE 1/21
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- FULLY LINKABLE (UP TO 20 LIGHTS CAN BE STRUNG TOGETHER WITH THE HV VERSION)
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- CERTIFIED SAFE TO 0 VOLTS
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- TOUGH, RELIABLE, PROVEN MATERIALS FOR LONG LIFE



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**WF-250XL**  
LED FLOODLIGHT



# Wolf®



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# Cobic-Ex: New Supplier Specialized In Explosion Proof Lighting And Equipment

**C**obic-Ex was born from ATEX equipment manufacturers Armadex & Ex-Machinery, based in the Netherlands.

Whereas the latter companies are known for modifying state of the art equipment to comply with ATEX regulations, Cobic-Ex is a company focused on supplying a broad spectrum of third-party products. An extensive product range

To better serve customers and fulfill more needs, Cobic-Ex works with known manufacturers within the explosion protection industry. Cobic-Ex offers a much broader product range in terms of equipment type and certifications to existing customers and new parties. The emphasis here is on providing customers with different lighting solutions dependent on the type of hazardous area. Cobic-Ex offers lighting solutions for every different ATEX zone.

## Specialized in explosion proof lighting

Cobic-Ex is specialized in explosion proof lighting, an essential part of any hazardous area. Collaborations with renowned brands such as NightSearcher (based in the United Kingdom) and Underwater Kinetics (based in Germany) ensure that the best ATEX equipment is offered.

Both portable and fixed lighting solutions are available, certified for ATEX zones 0/20, 1/21 & 2/22, IECEx, UL, Mining, UKCA, et cetera. The explosion lighting solutions are divided into the following categories:

- Explosion proof flashlights
- Explosion proof flood lights
- Explosion proof headlamps
- Explosion proof search lights
- Explosion proof work lights

Of course, we also supply equipment offered by Armadex and Ex-Machinery such as explosion proof cameras and air

conditioners.

## Worldwide shipping

Cobic-Ex offers worldwide shipping, leaning on the logistics experience of both Armadex & Ex-Machinery. Land freight is available to European companies and the United Kingdom. Customers from other continents can choose between transport by air or sea. Transport by air is usually faster, whereas sea freight is often the cheaper alternative. In both cases Cobic-Ex ensures that the products are transported smoothly by taking international regulations into account.

## For further information please visit:

<https://cobic-ex.com/product-category/explosion-proof-lighting/explosion-proof-flood-lights/>



## Factors To Consider When Choosing Lighting For Offshore Wind Energy Applications

**W**hen selecting lighting for an offshore wind farm, a number of important factors should be considered, including maintenance, energy costs and quality of light to minimise downtime, says Gordon Low of Glamox.

Marine lighting and light management systems from Glamox are beneficial choices for offshore wind farm operators, maintenance contractors, installers and consultants. Glamox has decades of experience in the design and manufacture of lighting solutions for harsh operating environments. Offshore wind installations require state of the art lighting products that meet regulations and are tested and certified to meet the challenging conditions. Lighting solutions from Glamox are based on the best technology available on the market and are easy to plan, install, commission and use.

### Nacelle/Control Room

Safe access to the nacelle is required for most maintenance activities. Although

ladders are always required, larger wind turbines also have an elevator. To protect all nacelle components from corrosion, the nacelle is well sealed. The nacelle cover provides weatherproof protection to the nacelle components, as well as support and access to external components. Reliable, high quality lighting is required to facilitate safe personnel access and exit from the nacelle and tower.

### Turbines/Towers

The design life of an offshore turbine is around 25 years. The trend for longer design life on all turbines is due to the maturing of the industry – asset owners now expect to operate wind farms for such periods without the technology becoming obsolete or unsupported by suppliers. Extreme loads due to storms, abnormal events and faults during operation can also be critical. Typically, an offshore turbine will turn for over 90% of the time, so it is important to choose a lighting supplier that has plenty of experience of marine and offshore environments and luminaires that will achieve the intended lifetime of the turbines.

### Foundations/Transition Piece

The floating or fixed foundations provide support for the wind turbine, transferring the loads from the turbine at the tower interface level to the sea bed where the loads react. The foundation also provides access for personnel from vessels. Unregulated vibrations result in excessive material wear, which in turn can (and does) cause component failure. A lighting supplier should therefore offer vibration testing of the light fixtures. Glamox, for example, performs three types of test: Sinusoidal vibration, various shock/impact tests, and random testing.

### Substation topsides AC and HVDC

The substation is the most important structure in an offshore wind farm. This is where all the energy produced by the wind turbines is brought together and converted by transformers to a high voltage transmission. This is necessary to ensure that as little energy as possible is lost during transmission over long distances to the next grid node.

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



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**Multi-purpose Ultrasonic Inspection  
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#### 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.



#### 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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+45 7734 4638

#### NORTH AMERICA

3000 Forest Ln, Suite 400,  
Garland, TX 75042

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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.



[www.exveritas.com](http://www.exveritas.com)  
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# MOVING GOAL POSTS



## UKCA Ex Deadlines shift...Again!

BEIS has once again issued new guidance as the UKCA Requirements as they continue to change just weeks before the mandatory implementation date.

**L**egislation has again been prepared to extend the date on which UKCA Marking becomes mandatory. UKCA Ex marking still the official mark for the UK, but manufacturers can use ATEX Certification or UKCA Ex Certification in the UK if the legislation passes for an extended period.

- ATEX equipment permitted into GB until 31 December 2024. During the period the EU will unilaterally decide what the ATEX rule are for the UK and what Standards are accepted in the UK.

- ATEX Notified Body assessment performed before 31 December 2024, can be used as the basis for UKCA marking until 31 December 2027 (it is assumed at this stage that any variation or QAN ex-

piry will require UKCA before 2027 and that UK Designated Standards will be required)

- Importer's name and address should be added to the product. It can be on a sticky or removable label until 31 December 2027

Requirements are changing on an almost monthly basis, so please check directly with the UK Government before deciding what you need (or just get UKCA and ATEX to be sure!). This new legislation must still be passed by parliament (so it could change again) but it has left UK Manufacturers (most of whom have already have the UKCA Marking Certification as the deadline was weeks away) and UKCA Appointed Bodies for issuing UKCA Certification totally bemused.

Since BREXIT it is the EU now decides what countries can issue Notified Body

Certificates such as ATEX that will be accepted in the UK. It does not have to be countries in the EU- It is entirely the EU's decision where Notified Bodies can be- Turkey, Canada...everywhere but the UK!

The United Kingdom are now accepting a scheme we are not part of, have no input into and no influence over...we have 'handed full control to the EU' in a one-way agreement with no mutual acceptance or formal agreement.

**Sean Clarke CEng MSc FIET is the Managing Director of ExVeritas Limited.**

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

# ECOM Instruments And Librestream

## Join Forces To Transform Collaboration In Industrial Environments

**P**epperl+Fuchs brand ECOM Instruments announces its recent partnership with #1-rated workforce transformation platform for the industrial deskless workforce. A joint solution consisting of the Visor-Ex® rugged smart glasses, the Smart-Ex® intrinsically safe smartphone, and the Onsight

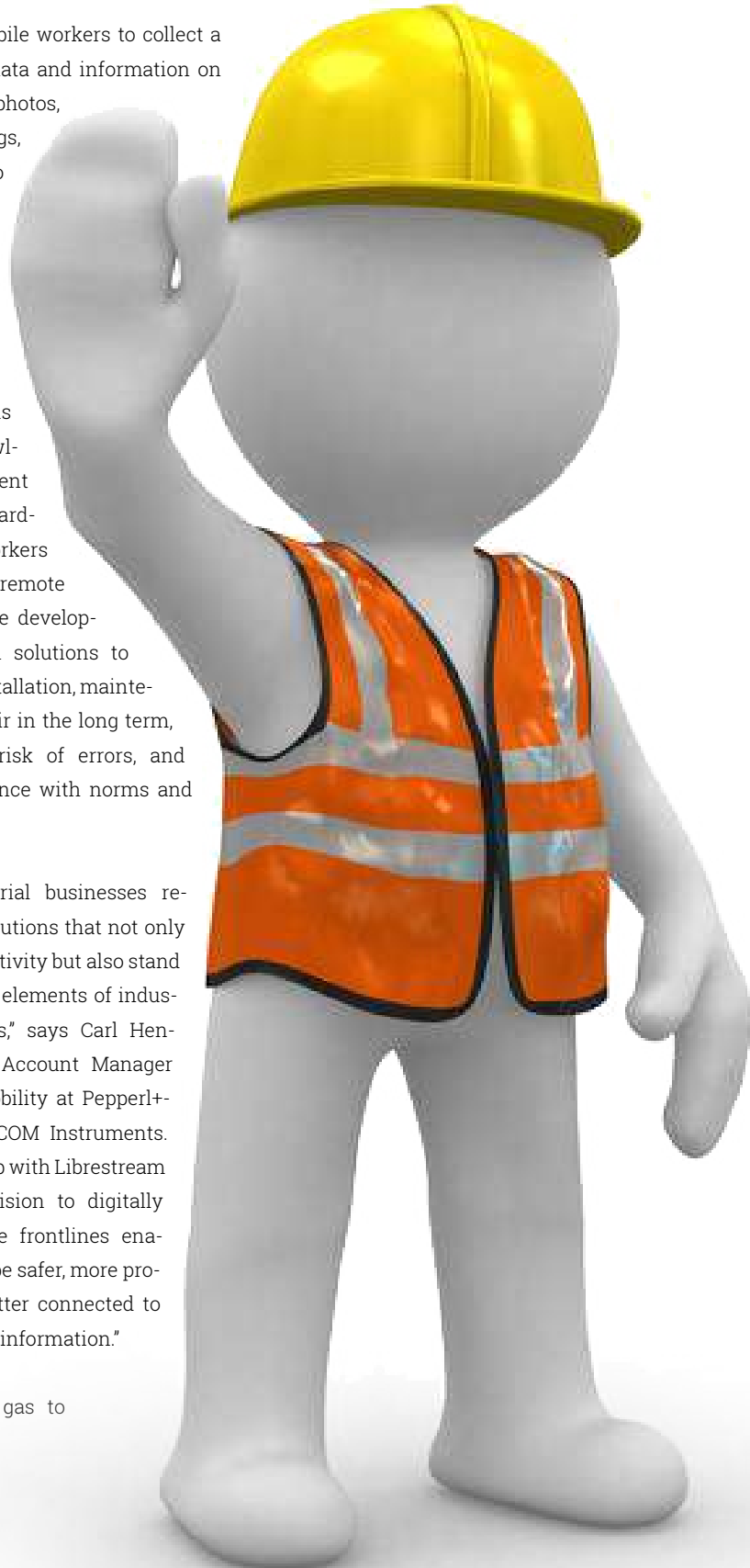
Connect platform opens up a whole new way of collaboration in harsh industrial environments, with remote access to all the needed data as well as real-time support, even in hazardous areas. With the rampant shortage of skilled workers in many industries, plant operators need more powerful communication and knowledge transfer tools to maintain expertise and ensure process quality. Advanced solutions for collaboration in the field

ECOM Instruments' Visor-Ex® smart glasses support Librestream's Onsight platform thanks to the partnership. This powerful combination of intrinsically safe hardware, advanced software, and a next-generation collaboration platform allows mobile workers to work hands-free in harsh environments while accessing all the data, information, and communication features they need to safely navigate complex mission scenarios. At the touch of a button, they can call in experts via Onsight without the need for time-consuming travel to the scene of the incident and stream the current situation via the integrated camera of the smart glasses. Moreover, the joint solution from ECOM and Librestream

enables the mobile workers to collect a wide range of data and information on their missions: photos, audio recordings, as well as video recordings of the missions in the field for documentation, analysis and training purposes. This real-time knowledge management facilitates onboarding of new workers in the field, remote support, and the development of digital solutions to save time in installation, maintenance and repair in the long term, minimize the risk of errors, and ensure compliance with norms and standards.

"Today's industrial businesses require mobile solutions that not only increase productivity but also stand up to the harsh elements of industrial workplaces," says Carl Henderson, Global Account Manager - Enterprise Mobility at Pepperl+Fuchs brand ECOM Instruments. "The partnership with Librestream supports our vision to digitally supercharge the frontlines enabling people to be safer, more productive, and better connected to co-workers and information."

"From oil and gas to chemical processing,



field workers demand rugged hardware and reliable software that can endure and perform in extreme weather, terrains, and challenging network conditions," says Marieke Wijtkamp, SVP of Product at Librestream. "With this new integration of our remote connectivity capabilities and ECOM Instruments' advanced ex-certified wearable solution, we are able to provide workers in potentially hazardous environments with a full toolset that supports their unique needs."

#### **Short portrait ECOM Instruments**

The Pepperl+Fuchs brand ECOM Instruments is one of the top addresses internationally for holistic solutions for mobile computing and industrial com-

munication in potentially explosive atmospheres. As an industry pioneer, ECOM has played a key role in the development of explosion protection for mobile devices since 1986 and has demonstrated its technological expertise with a large number of innovations. ECOM is the preferred brand for explosion-protected mobile phones, smartphones, tablets, wearables as well as peripherals that meet the highest requirements in industrial use. As part of the Pepperl+Fuchs Group, technology leader for industrial sensor technology and intrinsically safe explosion protection, customers benefit from a seamless portfolio with technologies for conventional and Industry 4.0 applications.

In the five core disciplines of mobile

computing, communication, digital products and services, measurement and calibration technology and mobile luminaires, ECOM offers an enormous variety of innovative and field-proven mobile solutions, peripherals, services and intelligent software. Each individual solution combines uncompromising safety with maximum functionality - with all the necessary approvals and certificates for the specific application. Worldwide support, with service centres in Germany, the USA, Singapore and the United Arab Emirates, rounds off the range.

**For more information on ECOM, please visit:**

**[www.ecom-ex.com](http://www.ecom-ex.com) and  
[www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)**



# ATEX ZONES

Explosive atmospheres in the workplace can be caused by flammable gases or by combustible dusts.

Explosions can cause loss of life as well as significant damage.



## GAS

explosive atmosphere



## DUST

explosive atmosphere

## RISK TYPES



Three elements are required to cause an explosion: Fuel (gas or dust), Oxygen and an Ignition source such as electric sparks or a short-circuit.

The risk of an explosion is based on the probability of a fuel and oxygen mixture occurring over time.

## CAUSES OF EXPLOSIONS

## EXPLOSION PREVENTIVE DEVICES



Model 507  
Temperature Switch



ULM-70 Ultrasonic  
Level Meter



Flow Meter  
Flow 33 Exh



GWG Overfill  
Prevention Sensor

# Early Detection Of Explosions + Fires

With the GSME and HOTSPOT detectors from REMBE, an artificial intelligence has been created that detects fire and explosion events at an early stage. The GSME detector is an artificial nose, "trained" for pyrolysis - popularly known as smoldering gases, while the HOTSPOT detector represents an artificial eye that already detects surface temperature changes of 1 ° C.

**R**EMBE's HOTSPOT X20 measures surface temperatures using an intelligent evaluation system, which divides the field of view into detection zones. A separate temperature threshold value can be set for each individual zone in order to tailor the detection to the process as far as possible.

The HOTSPOT X20 can even identify small temperature increases (1°C) and enables to warn the operator of a fire or glowing embers at extremely early stages. The HOTSPOT X20 can also be used in explosion atmosphere up to zone 20 and under high dust loads and monitors a temperature range in the standard version of 0-200°C (higher temperatures possible, but typically not required).

Mainly hydrocarbon compounds are released when many substances thermally decompose. If there is incomplete burning without a flame and a low oxygen supply, carbon monoxide is created as well. The GSME X20 pyrolysis gas detector, for instance, has been designed for detecting these gases, even as they develop.

Alongside carbon monoxide and hydrocarbon compounds, nitrogen oxide and hydrogen compounds (CO, HC, H<sub>2</sub> and NO<sub>x</sub>) are also monitored. With the aid of an intelligent evaluation algorithm, a process behaviour can be ideally mapped and normal off-gasing be adopted.

If a concentration increases above the usual level, the GSME X20 immediately

triggers an alarm. The detector is also suitable for explosion atmospheres up to zone 20, monitors concentration ranges from 0-100ppm.

When the location and mounting position are ideally designed in an explosion protection concept, HOTSPOT X20 and GSME X20 allow explosions and fires to be prevented through early detection.

## About REMBE – the REMBE Alliance introduces itself

Most people associate REMBE with REMBE GmbH Safety+Control, the specialist for explosion safety and explosion venting 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 almost 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](http://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](http://www.rembe-rtc.de))
- REMBE Advanced Services+Solutions GmbH ([www.rembe-services.de](http://www.rembe-services.de))
- REMBE Kersting GmbH ([www.rembe-kersting.de](http://www.rembe-kersting.de))
- REMBE FibreForce GmbH ([www.argusline.de](http://www.argusline.de))

**Fig. 1: GSME und HOTSPOT detector**





# Intrinsically Safe Smartphone Smart-Ex® 02 - The Turbo For Digitalisation In Hazardous Areas

**T**o prevent plant downtimes or failures in areas where an explosive mixture of air with flammable substances can arise, technicians must react flexibly and safely to all requirements in production. To do this, they need technical expertise and decision-making powers on the one hand, and mobile devices on the other, which support all digital workflows such as data harvesting, predictive maintenance or remote support even in harsh industrial environments and also ensure the safety of the mobile workers. Mobile toolkit für the smart factory

With the Smart-Ex® 02 smartphone, the Pepperl+Fuchs brand ECOM Instruments offers an equally versatile and robust mobile device with IP68 protection.

The Smart-Ex® 02 not only represents a proven generation of robust, intrinsically safe smartphones for ATEX/IECEX Zone 1/21, but also the generation of the Android Enterprise Recommended Standard. In addition to a wide range of global and country-specific safety certificates, the Smart-Ex® 02 has a large 5-inch multi-touch display and numerous innovative and powerful features. The future-proof device with

a long-term service concept and three-year warranty masters even the most demanding digitisation tasks.

With reliable connectivity and powerful features, the intrinsically safe Android smartphone gives mobile workers unlimited flexibility on their missions - even in hazardous areas like Division 1. Reliable connectivity is guaranteed with 21 LTE frequency bands, Wi-Fi with 2.4 and 5 GHz support and Bluetooth even in remote areas. This facilitates sharing fields directly in the field, as well as live-streaming videos, e. g. in remote assistance scenarios. With a 12-megapixel back camera with LED flash and a 5-megapixel front camera, technicians can enrich the digital documentation of their mission with high-resolution image and video material. They can also access plant data via the barcode reading function. This digital knowledge management helps to shorten the time of maintenance operations in the smart factory and to eliminate sources of error.

## **Safety and ease of use in hazardous areas**

With the smartphone, ECOM Instruments aims to ensure the safety of the mobile worker as well as IT security. With programmable buttons, an alarm

button and push-to-talk (PTT), mobile workers can quickly request assistance in an emergency. Samsung Knox with regular security updates protects the system and keeps it up to date.

The Smart-Ex® 02 is also physically protected all around and designed to make even tricky operations as comfortable as possible. The shock- and scratch-resistant, high-resolution 5-inch touch display made of Gorilla Glass can be operated intuitively even when wearing gloves.

Thanks to a replaceable battery with 4,400 mAh and a runtime of up to 24 hours, the smartphone can easily cope with "overtime". Through a wide range of mounting accessories as well as peripherals, industrial companies can individually adapt the Smart-Ex® 02 to their specific application scenarios.

Smart-Ex® 02 and Visor-Ex® 01 - unbeatable duo for Industry 4.0 applications

As convenient as the smartphone is to use, mobile workers often need free hands in addition to digital support during complex operations. That's why the tried-and-tested Smart-Ex® 02 serves as an optional computing unit for the intrinsically safe Visor-Ex® 01 smart glasses. The intelligent new ecosystem



of smart glasses, a smartphone and a pocket power supply unit is the first of its kind to be certified according to ATEX and IECEx.

The modular combination of smartphone and smart glasses gives employees the greatest possible flexibility in their assignments. They can switch seamlessly between tasks on the smartphone display and hands-free work. For example, the mobile worker can view mission-relevant documents such as checklists via the proven Smart-Ex® 02 and then switch to hands-free mode. The OLED display of the Visor-Ex® 01 shows the information required for the task directly in the field of vision. Via the integrated microphone, the mobile worker can send commands to the device or communicate in real time with remote support experts. If necessary, the display of the ergonomic Visor-Ex® 01 can be folded completely out of the field of vision.

At any time, the technician can carry out the associated documentation directly on the smartphone and supplement this with photo or video recordings. For this purpose, two 16-megapixel cameras are centrally positioned in the Visor-Ex® 01 to depict the wearer's natural field of vision - particularly important for "see what I see" video streams for the remote

support. A secondary camera with 6x optical zoom allows for the scanning of barcodes and QR codes, for example to harvest identification or diagnostic data of individual machines.

As part of the overall Smart-Glasses concept, the Smart-Ex® 02 underlines the versatility of a true all-rounder for demanding industrial use. Thanks to this powerful smart device, digitalisation does not have to end at the threshold of a hazardous area.

#### Short portrait ECOM Instruments

The Pepperl+Fuchs brand ECOM Instruments is one of the top addresses internationally for holistic solutions for mobile computing and industrial communication in potentially explosive atmospheres. As an industry pioneer, ECOM has played a key role in the development of explosion protection for mobile devices since 1986 and has demonstrated its technological expertise with a large number of innovations. ECOM is the preferred brand for explosion-protected mobile phones, smartphones, tablets, wearables as well as peripherals that meet the highest requirements in industrial use. As part of the Pepperl+Fuchs Group, technology leader for industrial sensor technology and intrinsically

safe explosion protection, customers benefit from a seamless portfolio with technologies for conventional and Industry 4.0 applications.

In the five core disciplines of mobile computing, communication, digital products and services, measurement and calibration technology and mobile luminaires, ECOM offers an enormous variety of innovative and field-proven mobile solutions, peripherals, services and intelligent software. Each individual solution combines uncompromising safety with maximum functionality - with all the necessary approvals and certificates for the specific application. Worldwide support, with service centres in Germany, the USA, Singapore and the United Arab Emirates, rounds off the range.

**For more information on ECOM, please visit: [www.ecom-ex.com](http://www.ecom-ex.com) and [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)**



# What Are Pmax And Kst? A Quick Guide To Dust Explosion Data

**C**ombustible dusts have the potential to present serious hazards across many process industries. This can be in the form of flash fires or explosions. Many industries handle combustible dusts as their main product and still more generate combustible dusts as a by-product of a manufacturing process that uses combustible materials. Organisations must be aware of the dangers posed by dust (explosions) and must undertake rigorous dust testing.

Dust explosions occur because of a release of fine dust particles into the air (oxygen), which are then ignited by a source of ignition (hot surface, flame, or spark etc.). The sensitivity of such ignition can be determined by the Minimum Ignition Energy (MIE), Minimum Ignition Temperature (MIT) and Layer Ignition Temperature (LIT) tests.

These explosions are a hazard in industrial and commercial settings where the presence of a flammable atmosphere and an ignition source is present. Combustible dust and powders may include wood, agricultural products, metals, spices and pharmaceutical APIs and excipients. It is recommended that dust or powders be professionally tested before system designs are finalised, or when looking to change aspects of a process.

As potentially combustible dust or powder can gather in areas of a process where they may not be easily detected or accessible, organisations must take preventative action to maintain safety in the workplace. Proper housekeeping, the undertaking of risk assessments and ensuring that correct equipment and effective safety precautions are in place to prevent dust explosions are just a few examples of a thorough process safety strategy.

Multiple parameters can be used to characterise dust and powder combustibility. Pmax and Kst are two important measurements for characterising explosion severity, and an understanding of these measurements and their relationship with dust safety will aid in the creation and maintenance of holistic process safety mitigation strategies.

What is combustible dust?

Before looking into Pmax and Kst as explosion characteristic values, we must first seek to understand what dust explosions are. Dust in the work environment can be created when materials are:

Transported

Handled

Processed

Polished

Ground

Shaped

Abrasive blasted

Cut

Crushed

Mixed

Sifted

Screened (dry materials)

What are combustible dust hazards?

Flash fires occur when dust is lofted into a cloud and ignited, and explosions occur when combustible dust particles are lofted into a cloud and ignited in an enclosed space.

When these particles are mixed with oxygen (air), combustible particles, and placed in contact with an ignition source, rapid combustion occurs

A source of ignition can be described as an object, process or event that can ignite or transmit combustion. A few examples of ignition sources could be the result of flame or hot surface, spontaneous ignition, friction, or electrostatic discharge.

Developing prevention measures to eliminate combustible dust hazards starts with the identification of combustible dust in the workplace.

Defining dust hazards

Although the technical definitions for combustible dust vary from country to country, having a basic understanding of what could be a combustible dust will help. We have listed a few descriptions below, but if you are unsure if your materials could be classified as combustible

dust, please get in contact.

The Occupational Safety and Health Administration (OSHA) in the United States define combustible dusts as 'a solid material composed of distinct particles or pieces, regardless of size, shape, or chemical composition, which presents a fire or deflagration hazard when suspended in air or some other oxidizing medium over a range of concentrations.'

The National Fire Protection Agency (NFPA) (also in the United States) define combustible dust as 'a finely divided combustible particulate solid that presents a flash-fire hazard or explosion hazard when suspended in air or the process-specific oxidizing medium over a range of concentrations.' This can be found in Standard 652-2019, The Fundamentals of Combustible Dust.

The Health and Safety Executive (HSE) in the United Kingdom state that "Quite generally, the advice applies to anything which can burn, and which exists in a fine powdered form, unless tests show that particular hazards are not present."

Although most dust/powders that may form a cloud in the air have the potential to explode, not all materials will do so. Controlling the hazard presented in handling combustible dust requires both a thorough understanding of, and reliable data on, the physical properties of each material. It is therefore recommended that all materials be professionally tested.

What is Pmax?

Pmax (a brief overview) – Maximum pressure, the greatest amount of pressure and maximum amount of damage that your dust can cause in an enclosed space.

Dust and powder particles transfer heat to adjoining particles creating a chain reaction during the combustion phase. Following this, and during the primary stages of an explosion, the heat and gases produced by combustion can lead to an increase in pressure.

Pmax, therefore, provides data on the maximum achievable pressure that can be generated during an explosion. If an explosion begins in a closed vessel that is strong enough to contain the combustion phase, then the dust cloud will continue to burn until there is not enough fuel or air left.

Pmax is measured by dispersing a material in a 20-Litre spherical testing chamber whilst initiating ignition using strong ignition sources, such as a chemical ignitor. Data created via the 20-Litre demonstrates what the maximum explosion pressure would be under optimum concentration. The test is conducted by increasing the concentration of dust inside the closed chamber and measuring the pressure of the explosion until a maximum is reached.

Pmax measurement is usually independent of vessel size. So, when testing materials and their hazardous properties in a 20-Litre testing vessel, the same pressure will usually occur in a similar real-world environment. The results of this test can be used to design deflagration containment, venting and suppression systems.

The maximum rate of pressure rise (dP/dt) max – Maximum rate of pressure rise, before an explosion runs out of oxygen and fuel

The maximum rate of explosion pressure rise seeks to understand the result of pressure combustion acceleration inside a vessel, and the rapid increase after an explosion has occurred. As the rate of pressure rise reduces after an explosion runs out of oxygen or fuel, the maximum rate of pressure rise analyses the point just before the explosion reduces. When looking at the test data via a graph, the maximum rate of pressure is the point at which an increasing gradient is at its highest.

The measured dP/dtmax is a function of the vessel size used in dust testing.

What is Kst?

Kst (a brief overview) = (dP/dt)max x V<sup>1/3</sup> is a dust constant, therefore normalising the maximum rate of pressure rise in a 1m cubic vessel. Kst is characteristic of the material not the test vessel size.

Although maximum explosion pressure can be independent of vessel size, the rate of explosion pressure is not. Therefore, the larger the volume of a vessel, the lower the maximum rate of pressure rise will be. Within Kst, there are specific categories from which powders can be grouped:

Kst Classes:

St0 0 bar.m.s<sup>-1</sup> – Does not explode

St1 1 to 200 bar.m.s<sup>-1</sup> – Weak explosion

St2 201 to 300 bar.m.s<sup>-1</sup> – Strong explosion

St3 > 300 bar.m.s<sup>-1</sup> – Very strong explosion

These categorised groups easily signal the level of explosion severity. A material that has zero risk will be grouped as (Kst = 0) and will therefore be an St 0 dust. All other materials will have an explosion hazard attached. Even though a higher Kst value demonstrates that a dust has a more 'active' danger than those associated with having a lower Kst, 'Kst value strength' should not be overlooked. Many well-known explosions can be directly attributed to St 1 class dust groups.

An St 1 dust will generate enough power to cause a flash fire or explosion, which may result in the creation of a sequence

of further damage to people, the workplace, and the environment. Businesses must be aware of, and should develop effective dust hazard mitigation strategies to prevent such accidents from occurring. This can be accomplished by testing dusts and powders to determine 'Pmax' and 'Kst' values, to allow characterisation of the hazard risk of materials being handled.

If the Kst of dusts or powders is tested in a 20-Litre sphere laboratory test chamber, it would be possible to work out what the maximum rate of pressure rise would be for a process.

The explosion severity test

All three of these parameters are generated from the explosion severity test. This test is conducted to determine the maximum pressure (Pmax), maximum rate of pressure rise (dP/dt)max and the dust constant Kst value of an ignited powder, dispersed in the air, as a dust cloud.

Working through a range of powder concentrations, a powder is dispersed into a 20L explosion vessel (sphere) using dry compressed air. These suspended dust clouds are then exposed to a large 10 kJ chemical ignition source and the following explosion is monitored, measured, and recorded, using high-accuracy piezoelectric transducers. Testing is conducted over a wide range of powder concentrations which enables flammability curves of Pmax, dP/dt & Kst to be generated, alongside peak values.

Data generated by the explosion severity test is predominantly used for either the design of explosion protection systems (venting, containment, or suppression) or to confirm if a material is appropriate for processes within an established explosion protection system.

At Sigma-HSE, we can complete the explosion severity test to the following standards: BS EN 14034 parts 1 & 2 / ASTM E1226. You can download our schedule of accreditation here.

How to use Kst and Pmax data

Organisations across multiple industries have their combustible dust and powders tested to ensure regulatory compliance and to guarantee that the equipment in their processes can be installed and/or modified to ensure safety and business continuity.

Effective Kst and Pmax dust testing data will support the creation of explosion hazard mitigation strategies. As risk levels can vary between processes, ongoing attentiveness, and effective management of change strategies are required to identify conditions in your plant that might cause a potential safety problem. Therefore, it is essential to ensure that your dust testing strategy and maintenance plans are consistently reviewed and kept up to date.

The impact of Kst and Pmax data  
Kst and Pmax are powder characteristic data rather than 'vessel-related' data. Any facility or place of work that generates or handles dust should seek to test materials and ensure that they have been categorised correctly. Data from dust testing should be used to aid in the design of or for upgrading existing dust collection systems, dust control processes or general processes that may involve dust.

In many countries, there are regulatory

compliance laws for businesses that handle dust in their processes. Any UK site that manages a significant quantity of flammable gas, vapour, dust or powders that have the potential to form an explosive atmosphere will fall under the Dangerous Substances and Explosive Atmospheres Regulations (DSEAR). In the US, owners or operators of facilities that handle combustible dusts, are required to comply with NFPA 652, Standard on the Fundamentals of Combustible Dust, and other industry-specific standards.

To develop effective mitigation strategies to prevent such dust hazard accidents or near misses from occurring, it is imperative to characterize hazardous materials that are handled in the process. Dust and powder testing to determine the Kst & Pmax values will validate the design of protective measures including proper housekeeping, spark detection, explosion venting, explosion suppression and explosion containment.

Conclusion

Protecting your people, workplace, business, and the environment depends on the awareness and maintenance of combustible dust and powder hazards across entire processes. A thorough understanding of how to manage or eliminate these dangers and avoid catastrophe is therefore required.

Sigma-HSE's combustible dust and powder testing lab offer comprehensive standard and custom dust & powder testing packages to aid you in identifying these hazardous materials and their related risks.

Sigma-HSE are recognised experts in the field of explosion severity testing. Our team of engineers and technical experts are on hand to discuss your requirements and will collaborate with you to provide actionable Pmax and Kst safety solutions that are both cost and time effective. Sigma-HSE's accredited dust testing laboratory can undertake a full range of further testing, according to the relevant standards with a quick turnaround service.

If you are unsure about any potentially flammable or combustible dusts and how to mitigate related hazards at your facility, please get in touch with Sigma-HSE, as our team of global engineers and technical experts can work with you to create actionable dust testing and consultancy solutions to protect people, the workplace, environment and your business.

We offer a wide range of fire and explosion dust testing solutions for a range of materials and their potentially hazardous properties:

Dust Combustibility (Group A/B)

Minimum Ignition Energy (MIE)

Minimum Ignition Temperature (MIT)

Layer Ignition Temperature (LIT)

(Pmax/Kst) ST Classification

Minimum Explosive Concentration (MEC)

Limiting Oxygen Concentration (LOC)

Burning Behaviour

[www.sigma-hse.com](http://www.sigma-hse.com)



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- Petro (chemical) plants
- Offshore environments
- Ex safe camera
- Connected worker / Industry 4.0
- Digital twins at hazardous locations



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# Modular Design For Maximum Flexibility

**T**he modular platforms of the HMI portfolio from Pepperl+Fuchs offer individual solutions for applications ranging from non-hazardous areas to Zone 1.

## Modular design of VisuNet FLX

The VisuNet GXP and VisuNet FLX HMI device families enable maximum flexibility for use in the process industry. The modular design allows HMI systems to be configured to meet precise individual needs, providing extremely quick, simple service options in the field. This means that a comprehensive range of technologies, installation options, and peripherals is available for customers. Each HMI system consists of at least one computer unit and one display unit, each of which can be individually configured. The operator workstations from Pepperl+Fuchs are designed and certified for use in ATEX/IECEX Zone 1/21, Zone 2/22, and Div 1 applications. In addition, all products can be used in non-hazardous areas.

The VisuNet RM Shell 5 firmware developed by Pepperl+Fuchs for VisuNet thin clients is based on Windows 10 IOT 2019 LTSC and offers a simple way to make individual adjustments. The highest safety standards and flexible configuration options allow connection to numerous virtualized and conventional process control systems.

## End-to-end thin client portfolio up to Zone 1/21

The product range is rounded off by rugged box thin clients for use in control rooms and switch cabinets. In addition,

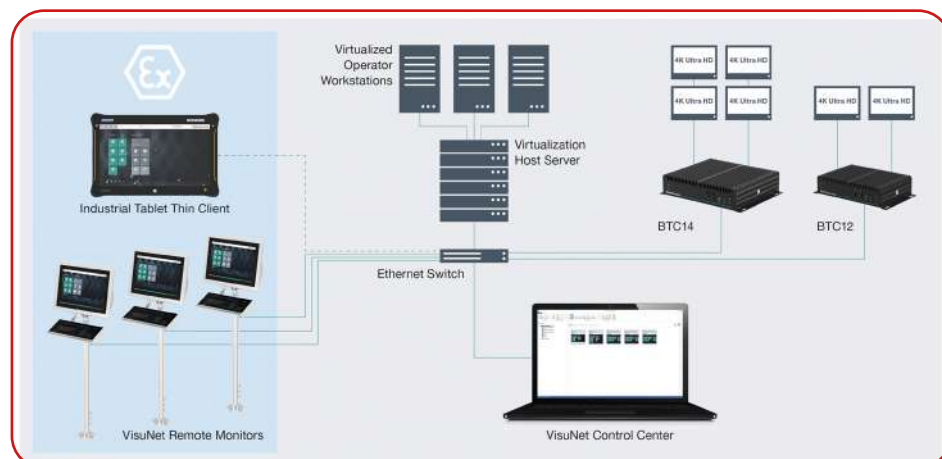
mobile tablet thin clients from Pepperl+Fuchs ensure a complete portfolio for virtualized and conventional process control systems. With the VisuNet Control Center software, the thin clients can be managed seamlessly and centrally – from Zone 1 to the control room.

## About Pepperl+Fuchs

With 6600 employees worldwide, Pepperl+Fuchs recorded sales of EUR 790 million in 2021. The Pepperl+Fuchs Group is one of the leading companies for industrial sensor technology and explosion protection. The headquarters in Mannheim, Germany, represent the core of the company's technical expertise, where engineers and specialists research and develop the latest technologies and products. Originally a

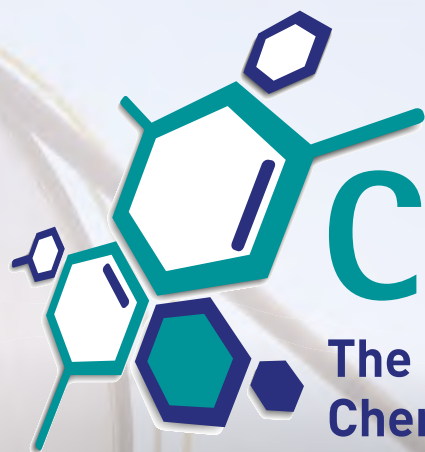
small family business founded in 1945, Pepperl+Fuchs is now represented on all continents by more than 40 subsidiaries on 6 continents. Our global presence gives us the best of both worlds: the highest technical standards plus efficient, cost-effective production facilities. Pepperl+Fuchs has developed into a partner for worldwide users of automation technology, and offers the most comprehensive portfolio of tried-and-tested components for the demands of manufacturing automation and process automation.

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# Electric Car Fires – A Reality And The Solution

**E**cotarp from the Czech Republic have come up with the solution to the nightmare scenario of dealing with the ever-growing problem of electric car fires. With increasing consumer demand and greater availability of electric vehicles, electric car sales have been growing strongly and there are well over 590,000 battery electric cars as well as 430,000 plug-in hybrids on UK roads, according to 2002 statistics.

The use of the folding container is primarily to ensure that the car in question does not reignite after the initial fire has been put out. Electric vehicle fires are known to reignite hours, days or even weeks after the initial event, and they can do so many times. Therefore, to stop any future fire risk to the car in question, the car is then placed in the folding container to ensure that the cooling process is completed eliminating any further issues. See the following video link demonstrating the

The folding cooling container is manufactured using a reinforced polyethylene fabric that is resistant to dangerous substances. The outer 3-part folding side supports are made of galvanized, alternatively stainless steel. The whole construction process takes no more than 5 minutes to assemble. To construct the container, the supports in the lower part are anchored with a special lock. The upright position of the support is ensured by sliding its upper part under the stabilizing tape located at the appropriate places around the perimeter of the container. The collapsible structure enables transport in a fire engine or trailer and subsequent quick assembly of the container in the field. The container can also be available in a disassembled state at special places designated for the storage of discarded electric cars, where it can be immediately assembled, filled with water, and used if necessary.

**See the following video link demonstrating the construction and cooling process.**

**<https://vimeo.com/771607402>**

**Please also find the following link to enable you access further details from our website product page.**

**<https://industrysuperstore.co.uk/products/cooling-container>**

The temperature range of use of the container is from -30 °C to +70 °C. Containers can be supplied in various sizes and volumes. The standard size of the tank is 6 000 × 3 000 × 850 mm. The container is equipped with a drain hole B75 as standard. To ensure the longevity of the product, always use a protective pad under the bottom of the container and inner pad, which are a necessary part of the product.

## About Industry Superstore:

ISS, a subsidiary of PVL Ltd, is an online store offering industrial and commercial customers the largest range of industrial valves, seals, absorbent booms, pillows, socks, surface wipes, sanitation products, tools, handheld instruments and much more.

For more information on the Ecotarp cooling container please call ISS on (+44) 01892 664499, email [sales@industrysuperstore.co.uk](mailto:sales@industrysuperstore.co.uk) or visit <https://industrysuperstore.co.uk/>

ISS is an online source for adhesives, sealants, technical sprays, hoses and fittings, flood prevention, spill kits and containment products, tools, hand sanitisers, disinfectants, industrial surface wipes, hand driers, dispensers and more.

PVL has been established for more than 25 years and has grown into the premier UK distributor for major manufacturers worldwide of pressure switches,

vacuum switches, flow switches, level switches, level sensors, pressure transducers, pressure gauges, flow meters, float valves, level sensors, temperature switches and handheld instruments. The company also offers a full range of ATEX products.

**Industry Superstore  
Unit 9,  
Lexden Lodge Industrial Estate  
Jarvis Brook  
Crowborough  
TN6 2NQ**

**Phone: (+44) 01892 664499  
Email: [sales@industrysuperstore.co.uk](mailto:sales@industrysuperstore.co.uk)**



**BEKA associates have introduced Pageant, a new intrinsically safe combined Operator Panel and Programmable Logic Controller with plug-in input and output modules allowing direct connection to hazardous area sensors. Its optional Modbus RTU port can transmit data to other equipment in the safe or hazardous area and also enables it to be used as a remote Modbus RTU display.**

**P**ageant's state of the art, low power technology simplifies design and reduces the cost of providing operator displays and controls in a hazardous area. Multiple variables can be displayed simultaneously, plus eight touch switches with tricolour LED indicators significantly reduce panel space requirements. Intrinsic safety protection provides maximum safety and allows installation in almost any flammable gas or combustible dust atmosphere or Zone.

Featuring a 7 inch backlit trans-reflective display which can be read in all lighting conditions, the panel and all of the plug-in modules have Ex ia certification allowing installation in Zones 1, 2, 21 and 22. The IECEx, ATEX and UKCA certifications permit any combination of plug-in input and output modules to be fitted to the display without the

need for additional certification. Plug-in input and output modules for interfacing 4/20mA currents, switch contacts, proximity detectors and pulse sources are already available and more are being developed for other sensors.

The PLC employs industry standard CODESYS® runtime software which complies with IEC 61131 allowing programming in five different languages. The software includes a wealth of features and function blocks such as PID control and is supplied with a lifetime licence. CODESYS runtime software is already installed in more than 1,500 different products worldwide. It is supported by extensive documentation, including video presentations, and will therefore already be familiar to many users.

The display, eight programmable touch buttons and eight programmable tricolour

LEDs are mounted behind a 4mm thick toughened glass panel with a 316 stainless steel surround. The IP66 front is totally flat and easy to clean, making the Operator Panel ideal for petrochemical, pharmaceutical and distilling applications. The Operator Panel is lightweight and dissipates less than 5W making it easy to mount in instrument panels and enclosures.

Pageant Operator Panels have been designed to be powered by a BEKA Power Isolator which may be mounted in a safe area or in Zone 2. Two models are available, the BA212 for applications in IIA, IIB gases and dust atmospheres and the BA243 for IIC gas applications.

**For further information please visit <https://www.beka.co.uk/pageant> or phone the BEKA sales office on +44 (0) 1462 438301**

## NEW PAGEANT

ZONE 1 INTRINSICALLY SAFE OPERATOR PANEL  
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- IEC 61131 compliant PLC
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- IP66 toughened glass and stainless steel front panel
- 3 year guarantee



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# New Peli™ Rf G5 Field Wallet – Now In Stock

**P**eli Products (UK) Ltd celebrate their 30th anniversary year in 2022. The company is based in Glossop, Derbyshire and is the largest stockist of the Peli™ range in the UK.

Peli Products (UK) launch the Peli™ RF G5 Field Wallet, featuring a solid aluminum RFID-blocking shell. It is one of the only submersible aluminum wallets that protects the user's credit card information from being stolen by hackers that use RFID (Radio Frequency Identification) scanners.

This sleek, lightweight, and tough aluminum case fits comfortably in a pocket and features a silicon o-ring and sturdy snap latch, it is rated IP67.

These unrivaled features make the Peli RF G5 Field Wallet the perfect everyday carry wallet or travel wallet. Additional features include:



- Flexible internal webbing that secures ID, credit cards and cash for easy access.
- A removable lanyard to protect against possible drops, loss and/or theft.
- An external strap for carrying cash or cards and instant retrieval.

Ross Carter, Sales Director for Packaging Products commented "This compact case is a fantastic addition to the ever-growing range of Peli Products, and we're delighted to be able to offer this to our customers at a very reasonable price point.

The combination of military-grade tough build quality with technology that protects personal information from RFID reader theft, aligns perfectly with the Peli brand values and offers the customer complete piece of mind when protecting their valuables."

The Peli G5 Field Wallet is covered by the legendary "You break it, we replace it" Lifetime Guarantee.

**For more details ring 01457 869999 or go to**

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



# Lone Worker Protection: Alarm Notifications With Minimal Effort

**C**ompanies that employ lone workers must ensure their safety at all times. In case of an emergency it must be ensured that help can be called quickly and that the exact location of the worker is known. Therefore, the experts at ECOM Instruments, a Pepperl+Fuchs brand, have developed the eSENTINEL app. With this app, safety for employees can be significantly increased with little effort. The aim in designing eSENTINEL was to provide users with basic security measures for day-to-day use. It is the ideal tool for lone workers or people working in high-risk situations. A mobile device and the app are all the worker needs. Thanks to low installation effort and acquisition costs, eSENTINEL can be easily integrated into existing company infrastructures.

## Alarm at the touch of a button – or automatically

In case of an emergency, things must happen quickly. The handling of the eSENTINEL app is simple but effective. This way, no valuable time is lost when a digital call for help is sent. With ECOM terminal devices such as Smart-Ex 02 or Tab-Ex 02 the app is linked to the red emergency button on the hardware. With third-party hardware, a red emergency button is shown on the display. This enables the worker to send an alarm notification in a dangerous situation in a flash.

Some work assignments take place in environments where workers are only allowed to stay for a limited period of time for safety reasons. If, for example, extreme temperatures prevail or toxic gases are present in the room, a longer stay can be life-threatening. For these cases, the eSENTINEL app provides a

timer function. The worker sets the preset time before entering the area. When the time has elapsed, the application notifies the user before the alarm is triggered. The worker can now deactivate this so-called “pre-alarm” notification by pressing a button. If he does not do so, the app will trigger a real alarm.

Even without a time limit, the app automatically processes various data provided by special sensors on the hardware. If an anomaly is detected by one of them, the app also triggers a pre-alarm. For example, this happens if the gyroscope detects a change of the tilt angle to a predefined position. A pre-alarm is also triggered if the terminal device does not register any movement for a certain period, which could mean that the worker is immobilized or unconscious. If the worker does not react to the alarm, the app automatically informs a pre-defined contact by e-mail, SMS, or call.

## Receiver and localization

If an alarm notification is triggered, the app automatically determines the device's location via GPS and submits it to the contact points, which must be alarmed. The location is transmitted either by e-mail or SMS. However, the localization function can be switched off at any time. During normal operation, eSENTINEL does not col-

lect and store GPS or any other personal data.

One method of alerting the company's switchboard, a colleague working nearby, or the emergency service is the automatic call function. The call continues until it is answered. For this purpose, several contact numbers are stored and hierarchically organized within the app. If a contact cannot be reached, the next person is



alerted and so on. With SMS alerting, the app sends a message directly to all stored numbers. This ensures that the alarm notification is seen.

#### **Automatic start and password protection**

To ensure the operation of the eSENTINEL app and there for the protection of the lone worker, it can be configured to run automatically at system start-up. To prevent the user from accidentally misplacing contact numbers or similar the app is equipped with password protection.

eSENTINEL can be pre-installed on selected ECOM terminals, such as the Smart-Ex 02 and Tab-Ex 02, on request. For other smart devices, the app can be licensed online via the ECOM Digital Products division to be implemented on the end devices. To get to know the

advantages of the App, ECOM offers a four-week free test phase. During the test phase all functions are available. After the test phase the app can be easily licensed for further usage.

#### **About ECOM**

The Pepperl+Fuchs brand ECOM is internationally one of the first addresses for mobile computing and communication devices for use in potentially hazardous areas. As an industry pioneer, ECOM has decisively developed explosion protection for mobile devices since 1986 and has proven its technological expertise with a multitude of innovations. ECOM is the preferred brand for explosion-protected mobile phones, 4G smartphones, tablets, and peripherals that meet the highest requirements in industrial use. As part of the Pepperl+Fuchs Group, a

leader in industrial sensor technology and explosion protection, customers benefit from a complete portfolio of technologies designed for conventional and Industry 4.0 applications.

In its five core disciplines Mobile Computing, Communication, Digital Products and Services, Measurement and Calibration Technology and Portable Lighting, ECOM offers reliable intrinsically-safe and explosion-proof products, wireless peripheral devices, and smart software applications – all backed up with worldwide assistance from service centers in Germany, USA, UAE and Singapore and from ECOM subsidiary offices to reduce your risk.

**For more information, please visit ecom's website:**

**[www.ecom-ex.com](http://www.ecom-ex.com) and [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)**





# ECOM Instruments Hardware Solutions For Hazardous Areas Tested With Ericsson Industry 4.0 Ecosystem

**T**he ultra-rugged devices and accessories from the Pepperl+Fuchs brand ECOM Instruments enable a seamless connected worker concept, securing safety and efficiency of workers in Industry 4.0. Any device or equipment deployed in oil and gas, petrochemical and process industries, requires explosion protection. This will meet maximum safety requirements for workplaces and equipment used in explosive environments with relevant approval for the region (IECEX, ATEX, NEC) working in a professional cellular Push-to-talk (PTT) ecosystem. Smartphones, tablets in combination with smart glasses, wired or Bluetooth Radio Speaker Mic along with lone worker protection capabilities enable beneficial applications to drive mobile worker's safety, productivity and efficiency.

ECOM Instruments is a brand of Pepperl+Fuchs and is a hardware and services specialist for use cases using mobile, intrinsically safe communication equipment for hazardous environments.

Ericsson is a leader in cellular communication and is accelerating adoption

of private networks in verticals like offshore, process industries and mining with a portfolio of pre-integrated private cellular network solutions. Through their cooperation, the two global market leaders ECOM and Ericsson guarantee and accelerate the transformation towards Industry 4.0.

## **The business case for private cellular networks in Industry 4.0**

The fifth-generation of cellular technology 5G, is often touted as a key enabler for the digital transformation of industrial sectors, notably manufacturing, with specific Industry 4.0 use cases built around ubiquitous coverage of business process operations that may span across a large geographical area. In this case, the inability of public 5G or 4G LTE (an advanced form of 4G) networks to cover all the sites of large corporations is driving private cellular networks. These also allow the secure connection of remote Industrial Internet of Things (IIoT) devices and computing found at the edge (perimeter of a 5G coverage area) to central data centers.

Traditional wireless technologies, like

Wi-Fi, often struggle to support business- and mission-critical applications. Businesses and their operations are demanding faster, more secure, and more reliable connectivity that can scale as you grow, while supporting innovative applications through open APIs. Ericsson Private 5G is Ericsson's next generation private network product providing secure and reliable 4G and 5G connectivity through its single server dual mode core.

Built for business operations, the product comes pre-integrated to ensure rapid time to use and turning on advanced and intelligent operations in any environment. Together, ECOM Instruments and Ericsson are creating a better understanding of the concept of the seamlessly connected mobile worker and improving its practical implementation. In doing so, they ensure maximum safety and efficiency of the workforce in Industry 4.0.

**For more information on ECOM, please visit:**

**[www.ecom-ex.com](http://www.ecom-ex.com) and  
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# SOUTHERN 23 Manufacturing & Electronics

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7<sup>th</sup> | 8<sup>th</sup> | 9<sup>th</sup> FEBRUARY

9.30am - 4.30pm  
(3.30pm close Thurs)

## Where Industry and Innovation converge

Over 600 national and international suppliers come together to exhibit at Farnborough International Exhibition and Conference Centre this February for Southern Manufacturing and Electronics (inc AutoAero) 2023. Meet the power behind UK manufacturing industry and see live demonstrations and new product launches of machine tools & tooling, electronics, factory & process automation, packaging & handling, labelling & marking, 3D print technology, test & measurement, materials, composites & adhesives, rapid prototyping, ICT, drives & controls and laboratory equipment.

Free industry seminar programme online @  
[www.industrysouth.co.uk](http://www.industrysouth.co.uk)

The exhibition is **free** to attend, **free** to park and easy to get to. Doors open at 9.30am on Tuesday 7th February.

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