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HAZARDOUS Engineering Solutions

September/October 2026 Issue 88

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Hart Doors Reacts To Strong Demand

Newcastle-based Hart Doors reports strong demand for its high-performance industrial doors ranging from its of high-speed Speedor doors to its Typhoon range of high-performance shutters. "Demand is across the board and as a result we have had to increase working shifts. All our brands are attracting significant interest which has prompted us to take positive action," says Hart's managing director Nick Hart.

"We are a global business with a strong base of clients spread across the UK. By increasing shifts we have been able to continue to accommodate demand-driven growth. Further As Britain's original manufacturer of the automatic high speed door "Speedor", we have always led the way with developments in commercial door technology. "We offer a comprehensive range of high speed roller shutter doors to suit a wide range of commercial applications, whether light internal use or heavy industrial use.

The Speedor high speed door is robustly engineered for frequent use in high-traffic situations. Our tried and tested vertical high speed doors can be used internally or externally to optimise traffic flow, improve working conditions and save energy.

Mr Hart adds: "Despite the recent holiday period demand for Speedor high speed doors, Typhoon and high level security doors was high. Such is the level of demand we have now started a two working shift pattern to keep up with client orders.

"Current examples of work include the production of six roller shutters to act as machine guards for a client to protect openings of between 3 and 7 meters in width. In addition we are at the final stages of handing over a High security roller "SR4 security door" being installed in a bank in Kuwait."

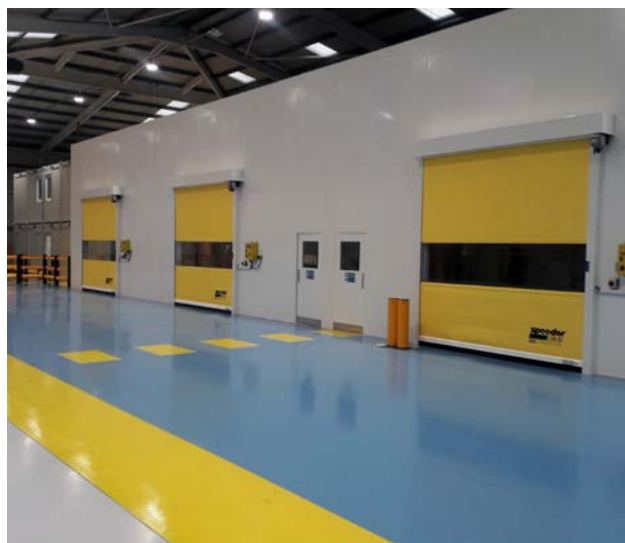
Only recently Hart introduced a demonstration vehicle to accommodate the growing need for installations across the UK. "All in all we are seeing growth on all fronts and have a great team at our Newcastle headquarters," says Mr Hart.

"We continue to emphasize that we are a specialist engineering company that specialises in the design and manufacture of a wide variety of door systems relevant to the challenges of everyday business. We resolve many issues within the built environmental and safety and security issues arising in many global sectors.

"Hart's products are in daily use across over 30 countries world-wide in sectors such as aviation, energy from waste, infrastructure, food and beverage production as well as a host of manufacturing processes.

Of Hart's many brands, it's the internationally recognised Speedor range of high-speed doors that has become so successful in establishing Hart's outstanding reputation. After all, a typical Speedor has on average a life expectancy with existing doors at 30 years plus and 1000,000 operational cycles in normal conditions. This attests to the quality of Hart's engineering.

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Intrinsically Safe Ultrasonic Sensors for Hazardous Environments

In industries such as oil and gas, chemical processing, mining, energy, food and beverage, and material handling, measurement equipment is often required to operate where flammable gases, vapors, or combustible dust may be present. In these environments, selecting the right sensor is not only about measurement performance. It is also part of the overall safety strategy.

Intrinsic safety is an explosion-protection method that limits the electrical and thermal energy available within

a circuit, helping prevent the ignition of a potentially explosive atmosphere. When properly installed with an approved intrinsic safety barrier, an intrinsically safe ultrasonic sensor can provide non-contact level and distance measurement within hazardous areas.

This makes ultrasonic sensing particularly useful for applications

such as monitoring flammable liquid levels in tanks, measuring material levels, detecting objects or equipment position, and monitoring distance on process equipment. Because ultrasonic sensors operate without contacting the target material, they can also reduce exposure of the sensor to corrosive, abrasive, or otherwise difficult materials. Migatron Corporation designs and manufactures intrinsically safe ultrasonic sensors for hazardous area applications. The RPS-409A-IS2 carries ANZEx, ATEX, IECEx, and C-UL-US approvals and is designed for use in mines susceptible to firedamp (Group 1 protection level Ma), and in hazardous gas and dust environments, including Zones 0, 1, 2, 20, 21, and 22 and Class I, II, and III locations when used with an approved intrinsic safety barrier(s). The RPS-429A-IS also offers ATEX, IECEx, and C-UL-US approvals, with 4–20 mA current-loop or 1–5 V analog output options.

As automation expands into hazardous environments, safe and reliable measurement becomes increasingly important. Migatron also works directly with OEMs and engineers to develop customized ultrasonic sensing solutions tailored to specific application and integration requirements.

BuTech Highlights Critical Role of High-Performance Valve Technology in Reliable Deepwater Subsea Operations **Ahead of ONS 2026**

Company to Showcase Advanced Flow-Control Solutions Supporting Asset Integrity, Operational Resilience, and Lifecycle Performance at Stavanger's Premier Offshore Energy Event

As offshore oil and gas developments expand into deeper waters and more technically challenging environments, the industry continues to prioritize equipment reliability, pressure integrity, and lifecycle performance.

In deepwater operations, where maintenance interventions are costly and production downtime can have significant financial and environmental implications, the performance of critical flow-control components has never been more important.

Subsea production systems depend on an extensive network of valves and pressure-control technologies that support hydraulic control, chemical injection, wellhead operations, instrumentation, and emergency isolation functions. These components must deliver dependable performance under extreme pressures, corrosive conditions, and over extended service periods with limited opportunities for maintenance.

"Subsea valve selection is fundamentally a reliability decision," said Scott Reib, BuTech Product Manager. "Operators require solutions that maintain pressure integrity, minimize intervention risk, and contribute to long-term operational success in some of the world's most demanding environments."

The growing complexity of offshore developments is driving demand for valve technologies that combine robust sealing performance, corrosion resistance, qualification to recognized industry standards, and extended service life. As projects increasingly target water depths of up to 14,000 ft (4,200 m), reliable flow-control technologies are essential across subsea infrastructure, control systems, and intervention equipment.

Supporting Critical Offshore Applications

Different valve technologies fulfill specialized roles throughout subsea operations. Ball valves provide rapid and dependable shut-off capabilities, particularly in applications where remotely operated vehicle (ROV) intervention may be required. Needle valves deliver precise flow control for instrumentation and chemical injection systems, while check valves help preserve system integrity by preventing reverse flow.

BuTech has developed a portfolio of subsea-specific ball, needle, and check valves designed to address the unique challenges of high-pressure offshore environments. Engineered with externally sealed designs, corrosion-resistant materials, and qualification pathways aligned with recognized industry standards, these solutions are deployed across subsea control systems, chemical injection packages, wellheads, Christmas trees, and intervention equipment worldwide.

Industry procurement strategies are also evolving. Operators are

increasingly evaluating total lifecycle value rather than focusing solely on initial acquisition costs. Equipment longevity, qualification standards, material performance, and integration efficiency have become key decision factors for both new developments and brownfield upgrades.

"In deepwater applications, the cost of intervention frequently outweighs the initial cost of equipment," Reib added. "Selecting proven technologies that reduce maintenance requirements and support long-term reliability is critical to achieving sustainable asset performance."

Collaboration Delivering Better Outcomes

As subsea projects become more complex, collaboration among manufacturers, distributors, engineering contractors, and operators is playing a greater role in achieving project success. Access to technical expertise early in the design and specification process helps project teams address application requirements, material selection, compliance standards, and system integration challenges more effectively.

This collaborative approach is particularly important in mature offshore markets such as Norway, where operators continue to invest in technologies that improve reliability, reduce intervention requirements, and enhance long-term field performance.

Through its ongoing collaboration with MRC Global, BuTech supports customers with both advanced valve technologies and decades of high-pressure application expertise. The combination of global engi-

neering capability and regional market knowledge enables operators to identify solutions best suited to their specific operational requirements while minimizing project risk.

Industry Focus at ONS 2026

The continued advancement of subsea technology will be a key topic at ONS 2026 in Stavanger, one of the energy industry's premier international events. The exhibition will bring together operators, contractors, suppliers, and technology specialists to explore the latest innovations supporting offshore energy production.

Representatives from MRC Global Norway will be available to discuss BuTech's subsea flow-control solutions and share insights into how advanced valve technologies are helping operators maintain reliability, asset integrity, and operational resilience in increasingly demanding offshore environments.

As the offshore industry continues to focus on lifecycle optimization and reliable production, proven subsea pressure-control and flow-control solutions remain essential to the future of deepwater oil and gas development. Through its specialized valve portfolio and extensive application expertise, BuTech continues to support operators around the world in achieving dependable performance where reliability matters most.

For more information about BuTech high-pressure valve solutions, visit Stand 1080 at ONS 2026 or visit:

<https://www.haskel.com/en/butech/>

INDUSTRY NEWS | 25 SEPTEMBER 2026

ABADAN REFINERY BLAST PUTS PROCESS SAFETY BACK IN FOCUS

An explosion at Iran's Abadan Refinery injured at least three workers and reduced gasoline production, according to initial reports. The precise cause remains subject to reporting and investigation.

THE HAZARDOUS-AREA LESSON

Hydrocarbon incidents reinforce the importance of asset integrity, gas detection, ignition control, effective isolation and competent maintenance.

INITIAL REPORTS

- At least 3 workers injured
- Gasoline output reduced
- Damage reported at Unit 70
- Cause not yet established

Initial reports, 25 Sept 2026.
Editorial illustration.



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SubSea
engineering

INVESTIGATION UPDATE | SEPTEMBER 2026

FURNACE BLAST EXPOSES PROCESS SAFETY RISKS

The US Chemical Safety Board has released its final report into the June 2025 Shell Polymers Monaca ethane cracking furnace explosion and fire in Pennsylvania.

The incident released ethylene cracked gas and combustion products and caused an estimated \$95 million in property damage. The CSB's findings place renewed attention on process hazard analysis and on situations where critical safeguards rely heavily on administrative controls.

WHAT THE FINAL REPORT CONFIRMS

- Explosion in an ethane cracking furnace
- Fire and release of cracked gas
- Estimated property damage: \$95 million
- Final CSB report issued 16 September 2026

ENGINEERING TAKEAWAY

The investigation highlights the importance of identifying process deviations, testing whether safeguards are genuinely independent, and ensuring hazardous operations are protected by effective engineered controls rather than procedures alone.

SOURCE

U.S. Chemical Safety and Hazard Investigation Board

Final report released 16 September 2026

Industrial fire image is an editorial illustration.

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COMPLIANCE UPDATE | SEPTEMBER 2026

ATEX: WHAT'S CHANGING NOW?

Engineers specifying equipment for explosive atmospheres need to track both the underlying ATEX/UK explosive-atmosphere rules and the standards that provide a route to demonstrating conformity.

In Great Britain, the 2016 Equipment and Protective Systems Regulations remain the core product regime. CE-marked goods meeting applicable EU requirements continue to be recognised. UK designated standards were updated in June 2026, and a further ATEX amendment proposal was published on 23 September, with a notice scheduled for 22 October.

BEFORE YOU SPECIFY ATEX / EX EQUIPMENT

- Confirm zone, gas/dust group & temperature class
- Check equipment category / EPL against the hazardous area
- Verify Ex marking, certificate & Declaration of Conformity
- Confirm the applicable standard edition and any conditions of use

EU: NEW SEPTEMBER UPDATE

Commission Implementing Decision (EU) 2026/1967 updates the ATEX harmonised standards framework for protection of equipment and transmission systems using optical radiation.

GB: WATCH 22 OCTOBER

DBT published a proposal on 23 September 2026 to amend designated standards for equipment in explosive atmospheres. The publication notice is scheduled for 22 October 2026.

Sources: GOV.UK / DBT; HSE; European Commission.
Check current official texts before conformity decisions.



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EEMUA 231 Mechanical Integrity Basics

– **blended, online learning – Basic application competency level – flexible 4 hours of learning per week for 3 weeks 12 hours of CPD – certificated via exam – next course starts 1 February 2027.**

EEMUA Hydrogen Damage Mechanisms Basics

blended, live online – for those with at least 1 year of experience – flexible learning 4 hours per week – CPD 21 hours – next course starts 5 April 2027.

EEMUA 231 Mechanical Integrity e-learning

Awareness level – with 1 hour of CPD – online, On-demand.



JCE and TUFF Announce Strategic Partnership to Expand Hazardous Area Engineering Support Across India and South Asia

JCE has entered a new strategic partnership with TUFF Offshore Energy & Engineering (India) Pvt. Ltd., marking an important step in the company's international growth. The alliance brings together JCE's hazardous area products, systems and engineering expertise with TUFF's regional presence, expanding access across India and South Asia, a region with significant activity across oil and gas, energy, petrochemical and wider industrial markets.

Bringing JCE Expertise Closer to Customers

Customers across the region will gain greater access to JCE's portfolio of Ex certified components, electrical control systems, distribution boards, junction boxes, motor control systems and solar/wind installations, backed by TUFF's local market knowledge and engineering capabilities. TUFF will undertake defined mechanical system integration activities for JCE products within the region, while certified Ex assembly remains controlled by JCE.

The partnership also allows JCE to support TUFF with technical expertise, engineering projects, customised facilities, product training and regional enquiries.

A Strategic Partnership for India and South Asia

TUFF brings established experience in the energy and engineering sectors, giving JCE a strong platform to grow its presence across India and South Asia.

Together, the companies combine JCE's specialist knowledge of explosion protection and Ex certified electrical systems with TUFF's regional expertise and customer relationships, supporting customers from initial equipment selection through to delivery and integration.

Martin Craig, Managing Director of JCE, said:

"Forming a strategic alliance with TUFF is an exciting milestone for JCE. We see significant opportunities across the region and look forward to working together to develop long-term customer relationships and deliver high quality Ex equipment and engineered solutions."

Ramesh Paulraj, Managing Director of TUFF Offshore Energy & Engineering (India) Pvt. Ltd., said:

"We are delighted to be entering into this partnership with JCE. It brings together complementary engineering expertise and gives us an excellent opportunity to expand access to JCE's solutions across the region."

For more information, visit www.jcegroup.com

— PARTNERSHIP ANNOUNCEMENT

Strengthening our presence in India & South Asia



OFFSHORE INTEGRITY

BELOW THE SURFACE: SAFETY BY DESIGN

Subsea pipelines, risers, valves and control systems operate where access is difficult and failure can escalate rapidly. Integrity management must design for inspection, isolation, intervention and safe life extension.

UK HSE enforcement in 2026 highlighted corrosion and isolation concerns associated with the SAGE gas pipeline system, warning that loss of containment could result in a sustained release of extremely flammable gas.

SUBSEA SAFETY PRIORITIES

- Corrosion, erosion & wall-loss monitoring
- Verified isolation & emergency shutdown barriers
- ROV, NDT & in-line inspection
- Riser fatigue, free-span & structural assessment

FULL LIFE-CYCLE INTEGRITY

DNV guidance treats subsea integrity as a life-cycle discipline. Inspection evidence, degradation models and risk-based verification should work together to support safe continued operation.

Sources: UK HSE; DNV subsea integrity guidance.
Editorial illustration.



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Hart's Typhoon Shutter Success

The level of demand is high for Hart's Typhoon roller shutter doors brand, where it is being used in exposed areas as diverse as on the Highlands and Islands of Scotland. In Hong Kong, the Typhoon is on Data Centre high rise buildings and the airport.

With a high - performance specification, Hart designed and tested, verified by third party, a roller shutter at much higher levels of wind resistance than the classic maximum BSEN12424:2000 class 5.

We tested an 8M wide door to 5000 pascals and therefor claim 4000 pascals plus 25% safety factor. For comparison class 5 requires 1250 pascals which includes 25% safety factor says Nick Hart, Hart's M.D.

Using wind speed is only an indicator, says Mr Hart, and does not reliably indicate what will happen in the real world. The force transmitted at a given wind velocity is not a reliable measure of the resultant pressure upon a door and of how it will affect the door as the density of air varies, the topography, height above sea level and adjacent structures can all hugely vary the force applied to a given door.

Additional benefits can be using stainless steel in saline conditions

and the door can have security rating up to SR3, at the moment.

Mr Hart adds: "Areas where the Typhoon is the perfect solution includes restriction access, assisting with insurance compliance and in general reducing crime risk. With over 75 years of experience in industrial roller shutter doors, we have used our extensive engineering knowledge to design the Typhoon storm shutter. In summary the Typhoon is strong and long-lasting.

Hart Door Systems high-performance Typhoon storm shutters, designed and manufactured in the UK, are a wind-resistant, robust, electrically-operated roller shutter. This industrial roller shutter is perfect for high security in areas exposed to extreme winds from tropical storms such as Hurricanes, Typhoons and Cyclones.

This high security storm shutter is designed to comply with the current British and EEC safety regulations. Optional specification levels can be varied to meet any special operational requirements.

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**AROUND THE CLOCK,
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Large Ex Ec Motor For Refinery In **Two Weeks**

Menzel Elektromotoren delivered an explosion-proof pump motor rated 1,686 kW for Gas Ex Zone 2 to an English refinery in just two weeks. Thanks to extensive stock and in-house manufacturing, the family-run company prevented a production shutdown that could have lasted months.

Caption: Large industrial motors – explosion-protected ones in particular – typically carry lead times of six months or more. Menzel Elektromotoren delivered a new Ex ec pump motor to a refinery in just two weeks, preventing costly production losses.

Menzel Elektromotoren has supplied an English refinery with an urgently needed replacement for a failed main pump motor in a Gas Explosion Zone 2 hazardous area. The motor manufacturer routinely handles emergency orders. Customers who would otherwise face months of production downtime avoid major financial losses as a result. In the present case, just one day separated initial inquiry, quote and order. Two calendar weeks later, Menzel shipped the finished motor.

The Berlin-based manufacturer is certified for producing large three-phase motors to ignition protection type Ex ec ("increased safety"). It

maintains a large inventory of motors and accessories and can implement many designs, equipment options and cooling types quickly in-house.

The squirrel-cage motor built for the refinery is rated for an output of 1,686 kW at 3,300 V, delivering a speed of 2,964 rpm and a torque of 5,432 Nm at the rated operating point. Menzel's explosion protection specialists labeled the motor II 3G Ex ec IIB T3 Gc. The Ex ec protection type ensures that the motor generates no ignitable sparks during normal operation and surface temperatures remain within safe limits.

The MEBKSL-type motor has a shaft height of 500 mm and weighs 6.6 t. It features protection class IP55 and an air-to-air heat exchanger (cooling type IC 611). Because the oil industry application required reverse rotation, the manufacturer reversed the fan blades – the most time-consuming step in the entire project. Beyond that, Menzel adapted the motor in every mechanical and electrical detail so the customer could install and commission it as a direct drop-in replacement, with no modifications required either to the motor or to the existing installation. The proven MEBKSL motor series design ensures reliable, long-lasting and efficient operation.

More about explosion protection and ATEX certification for electric motors in gas and dust hazardous areas: <https://www.menzel-motors.com/ex-na/>



Caption: Large industrial motors – explosion-protected ones in particular – typically carry lead times of six months or more. Menzel Elektromotoren delivered a new Ex ec pump motor to a refinery in just two weeks, preventing costly production losses.

The Evolution of Explosion Protection: IEC 60079-42 and the New “f” Type of Protection

The global explosion protection industry is entering a new stage of technological development. For decades, safety has relied mainly on proven passive protection methods, such as flameproof enclosures, known as Ex d, and increased safety, known as Ex e. These methods remain essential, but modern industrial environments are becoming more digital, automated, and complex.

Smart equipment, advanced control systems, and dynamic production processes create risks that may change during operation. In some applications, passive barriers alone are no longer sufficient to achieve the required level of protection. This is where IEC 60079-42 becomes strategically important.

The final draft of IEC 60079-42, formerly known as IEC TS 60079-42:2019, introduces a new type of protection: “f”, or Electrical Safety Devices. This represents an important shift in explosion protection philosophy, moving from purely structural protection toward active, function-based safety.

A New Approach to Explosion Protection

The “f” type of protection introduces a functional safety approach to ignition source control. Instead of relying only on physical barriers, it allows safety devices to monitor equipment, detect dangerous conditions, and bring the system into a safe state before an ignition source becomes effective.

In this concept, the equipment under control, referred to as ExEUC, and the safety device operate together as an integrated safety system. This provides a more intelligent and responsive method of explosion protection, especially for complex electrical and electronic equipment

used in hazardous areas.

How the “f” Type of Protection Works

The main purpose of an “f” protection system is to identify a developing ignition risk at an early stage and prevent it from becoming hazardous.

This function may be performed by sensors, logic solvers, programmable controllers, or other electronic safety systems. For example, a temperature sensor may detect abnormal heating, while a controller may process the signal and initiate shutdown or another predefined safe action.

This makes the “f” type of protection especially relevant for modern industrial equipment, where risks are often dynamic, process-dependent, and closely connected to automation systems.

Technical Flexibility and Functional Safety

One of the strengths of IEC 60079-42 is its flexibility. The standard distinguishes between simple safety devices, such as temperature sensors, and more complex devices based on programmable electronics. It also creates a methodological link with functional safety standards such as IEC 61508 and IEC 61511. A key element is Ignition Hazard Assessment, or IHA. During this assessment, residual ignition sources are identified and evaluated, and the required Risk Reduction Factor, or RRF, is determined for each remaining risk. This ensures that the safety function is based on a structured risk reduction process.

Scope of Application

IEC 60079-42 focuses on active ignition source management through electrical safety devices. It does not apply to gas detection systems, fire suppression or explosion mitigation systems, mechanical safety devices, ventilation systems, or inerting systems.

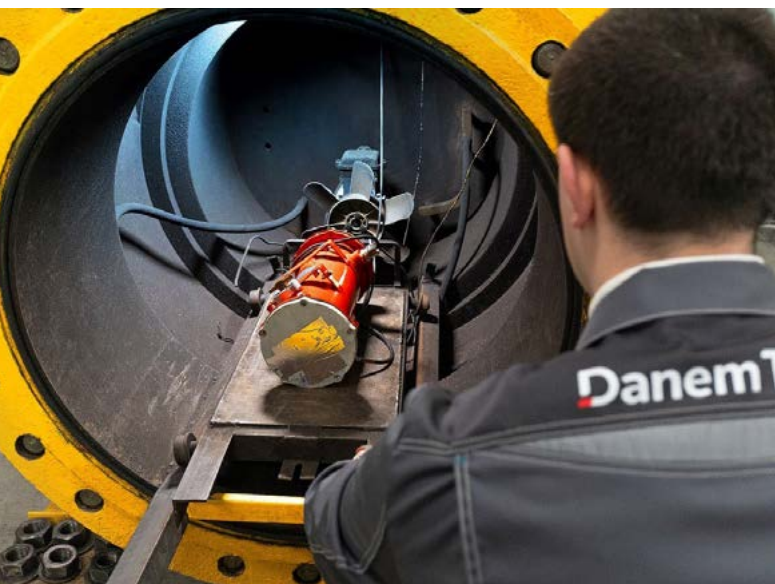
This clear scope positions the “f” type of protection as a dedicated method for controlling ignition risks, not as a universal replacement for other explosion protection techniques.

Conclusion

IEC 60079-42 does not replace existing IEC 60079 standards. Instead, it complements them by introducing a recognized framework for active electronic safety functions.

The new “f” type of protection gives Ex-equipment manufacturers and industrial safety engineers greater design flexibility. It helps achieve the required Equipment Protection Levels, or EPL, where traditional passive methods may be insufficient.

In practical terms, IEC 60079-42 brings explosion protection closer to modern industrial automation. It supports safer, smarter, and more adaptable equipment for hazardous areas and represents a logical step toward a new generation of intelligent and reliable explosion protection systems.



The Overlooked Ignition Risk: Why Effective Housekeeping Is Critical In **Hazardous Areas**

In hazardous area safety, attention naturally focuses on production equipment, fixed machinery and systems processes. But what about the equipment being used to clean and maintain these environments?

Good housekeeping is crucial when managing combustible dust and other hazardous substances. Even with effective extraction at source, dust can escape and settle on machinery, pipework, floors, ledges, lighting and other difficult to reach areas. Solid and liquid spills can also occur during production, material handling and maintenance operations; how that material is removed is vitally important.

Brian Folland, Product Manager for UK manufactured Kerstar industrial vacuum cleaners, elaborates, "As the HSE has highlighted, sweeping or using compressed air can disrupt settled dust and redistribute it into the atmosphere, causing a hazard to health.

"Using an appropriately certified industrial vacuum cleaner in hazardous areas provides a controlled method of dust collection and choosing the right equipment is essential. An ATEX certified vacuum is not automatically suitable for every hazardous environment - equipment must be appropriate for the zone it will operate in and the material being collected.

"For combustible dust this includes Dust Zones 21 & 22, while Gas Zones 1 & 2 apply to atmospheres where potentially explosive gas or vapour are present. The potential ignition sources, frequency of use and characteristics of the dust that needs removing should all be considered when specifying cleaning equipment.

"Static electricity in the atmosphere is another important consideration. Conductive construction, suitable accessories and effective earthing can help provide a controlled path for electrical charges.

"For engineers and operators, the main questions they should be asking when selecting suitable cleaning equipment are simple: What am I collecting? Where am I collecting it? If it's potentially explosive, what ATEX zone will the equipment be used in?

Kerstar, now part of Filtermist Limited, manufactures and supplies a wide range of industrial vacuum cleaners in the UK. Its product portfolio includes ATEX rated vacuums suitable for use in Dust Zones 21 & 22 available as electric or compressed air powered models.

If you need help selecting the best industrial vacuum cleaner for your specific requirement, take a look at www.kerstar.com or contact the Kerstar team by calling 01952 290500.

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New Encapsulation Rules: What Changes for Your **Ex** Design?

Encapsulation protection, or “m”, is a protection technique used to prevent ignition in equipment for explosive atmospheres across oil and gas, mining and other industrial applications.

For over 10 years, manufacturers of encapsulated equipment for explosive atmospheres have worked to IEC 60079-18:2014 and

its subsequent amendment. IEC 60079-18:2025, Edition 5.0, is the first full technical revision of the encapsulation “m” standard since then.

While the fundamental protection concept remains unchanged, Edition 5 introduces four Major Technical Changes. For manufacturers, the important question is not simply what has changed, but which changes could affect existing products, new designs and future certification.

Where are the significant changes?

The following areas deserve attention first because they include the Major Technical Changes and other changes with significant practical impact on the design and certification of encapsulated equipment.

Compound specification and curing

Edition 5 requires the curing method, temperature and duration to be included within the controlled compound specification.

This makes curing conditions an explicitly controlled part of the design and manufacturing process. Manufacturers should consider whether this information is already adequately captured within their controlled documentation. Where curing conditions are recorded elsewhere, documentation updates may be required.

Fault examination for “mc”

Edition 5 expressly applies the relevant separation-distance requirements to “mc”. Compact designs therefore cannot disregard these requirements simply because faults are generally not considered for “mc”.

Component fault treatment is also clarified. A component operating within its manufacturer ratings is treated as a countable fault, while operation outside those ratings is treated as a non-countable fault.

For compact “mc” equipment or designs relying on highly-stressed components, these provisions warrant particular attention.

Encapsulated switching contacts

The rated voltage and current specified by the switching-contact manufacturer must not be exceeded, while the housing around the arcing area is now termed the “arc chamber”.

For Level of Protection “ma”, the 60 V and 6 A limits must also be met under the applicable fault conditions specified by the standard. Manufacturers of “ma” equipment incorporating switching contacts should therefore verify the voltage and current under these conditions, rather than considering normal operating values alone.

Thermal calculations and battery systems

The previous edition included a note giving the thermal conductivity of air as 0.25 W/(m·K). This has been corrected to 0.025 W/(m·K).

Where the previous value was used to determine the hottest component or compound temperature, the calculation should be reviewed and, where necessary, recalculated.

Battery-powered equipment also receives additional attention.

The term “control device” is generally replaced by “safety device”, while Edition 5 introduces more explicit responsibilities where a Battery Management System provides a protection required by IEC 60079-18.

Evidence is required that the BMS remains functional under the expected relevant malfunctions. The equipment manufacturer should retain the appropriate supporting declaration from the BMS manufacturer and include information necessary to maintain the integrity of the protection within the product instructions.

Blocking diodes used to prevent reverse current are also subject to specified rating requirements.

What should manufacturers do now?

A structured gap assessment remains the clearest way to separate substantive technical gaps from changes with little practical impact, particularly for “mc” designs, “ma” switching contacts, and battery systems affected by the BMS provisions.

NMi ExVeritas carries out these assessments for encapsulated equipment manufacturers, mapping Edition 5 requirements against existing designs and documentation ahead of transition and certification deadlines.

<https://www.exveritas.com/>



Priority Action Summary

For many manufacturers, the challenge is not understanding every change, it is identifying which ones require action first. The summary below highlights the changes most likely to affect certification activities, testing programmes, technical documentation and future products.

Area	Change	Priority
Compound / curing	5.2 b) – curing method, temperature and duration mandatory in the compound specification / Schedule Drawings	Action required
“mc” separations	7.2.1 – faults considered for separation distances per 7.2.4 / 7.4.3; distances below “mc” values treated as short-circuits	Action required
Component ratings	7.2.1 – within ratings = countable fault; outside ratings = non-countable fault	Action required
Switching contacts	7.5.1 – manufacturer rated voltage/current shall not be exceeded; “arc chamber” housing	Action required
“ma” contacts	7.5.2 – the voltage and current applied under the conditions specified in 7.2.1, including the applicable countable-fault conditions, shall not exceed 60 V and 6 A	Action required
Thermal calculations	6.3 – thermal conductivity of air corrected to 0.025 W/(m·K)	Review / recalculate
Batteries & BMS	7.8 – safety-device wording, blocking diode rating per 7.2.2, BMS evidence per 7.8.8	Review
Galvanic separation	7.2.3 – for optocouplers and relays using the IEC 61140 double/reinforced-insulation route, the former 60 V threshold is removed and the component shall be rated for the voltage across the segregation	Review
Terminology / marking	4.2, Clause 10 – maximum available short-circuit current; dust-temperature marking via IEC 60079-0	Review
Protective devices	7.9.1 – reset instructions normative; thermal coupling applies to all temperature-monitoring devices	Review
PCB metal coating	7.4.3.2 – minimum coating at board edges/holes reduced from 35 µm to 30 µm	Relaxation
Free space	7.3 – free space within components need not be considered when the component volume is less than 1 cm³	Relaxation
Material data	5.2 / 5.3 – ANSI/UL 746A accepted as an alternative to IEC 60243-1	New option
Segregation route	7.2.3 – IEC 60079-7 Ex “eb” transformer added as an acceptable construction route	New option



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ATEX-Rated Containerised Steam System

Engineered For Hazardous Environments. Designed For Flexibility

Customers across more than 80 industries rely on tailored steam solutions to meet their individual operational requirements. Where steam generation is required within potentially explosive or hazardous areas, specialist engineering is essential.

Our ATEX-rated containerised steam system has been specifically designed and engineered for use within potentially explosive environments, including refinery applications.

The system combines safe, reliable steam generation with a flexible, space-saving design.

Designed for Hazardous Areas

The container has been purpose-built for operation within a potentially explosive environment. The ventilation system has been specially developed and manufactured for the application, while the control system has been custom-designed to meet the requirements of the designated hazardous zones.

By integrating these systems into a single package, the customer receives a complete solution designed around the specific requirements of the installation.

Simple, Automated Operation

A high level of automation makes the system simple and efficient to operate, reducing the need for manual intervention and helping to minimise personnel requirements.

The integrated controls provide greater flexibility and allow the system to respond to changing steam demand, giving customers a highly responsive and straightforward steam-generation solution.

Flexible and Space-Saving

Steam systems are inherently compact, but where space is particularly restricted, a containerised solution provides additional flexibility in terms of location and installation.

Housing the complete steam plant within a purpose-designed container allows the system to be positioned where it is most practical for the customer, making it particularly suitable for existing industrial facilities where space is limited or disruption needs to be minimised.

Rapid Steam Generation

The rapid steam generation technology can be ready to produce steam in approximately 3–5 minutes, allowing the system to respond quickly when steam is required.

The generator supplies only as much steam as is needed at any given

time, providing an efficient and responsive approach to variable steam demand.

Modular Design and Reduced Disruption

The modular design provides significant benefits when maintenance is required. Individual systems or modules can be serviced without necessarily interrupting normal operations, helping customers maintain continuity across their wider production processes.

The containerised plant can be delivered as a complete, factory-assembled package, including pipework, electrical wiring, insulation, controls and ventilation. This reduces the amount of work required on site and can help simplify installation and commissioning.

A Complete Steam Solution

By combining ATEX-rated engineering, advanced automation, rapid steam generation and modular construction, the containerised steam system provides a complete solution for challenging industrial environments.

For refineries and other potentially explosive areas, it offers customers greater flexibility over plant location and installation while providing reliable steam generation with minimal operational complexity.

Specialist engineering. Flexible installation. Reliable steam generation.



4G Radio IS380.1

Familiar feel. Unlimited reach.
This new 4G radio makes the switch effortless.

Built for hazardous environments and certified for Zone 1/21, the IS380.1 runs on ISM-OS 16 and delivers Push-to-Talk over Cellular over existing 4G networks.

It looks and handles like the radio your teams already know – but now your voice travels far beyond the site boundary. No new workflows. No retraining. Just wider, smarter communication.

- › **Android-based 4G radio** – combines telephony and push-to-talk (PTT) in one handy device
- › **Familiar two-way radio design** – enables easy transition from classic radios to the IS380.1
- › **Replaceable battery** – enables continuous operation readiness
- › **Rotary switch for channel selection or volume control** – enables quick and safe handling
- › **System integrated i.safe MOBILE App World** – enables the use of certain applications for PTT & LWP



isafe-mobile.com

One radio, two worlds: How the IS380.1 keeps hazardous-area teams connected

Ask any plant manager what slows down a digital rollout in a hazardous area, and the answer rarely involves the network. It involves the device in someone's hand. Field crews trust their two-way radios the way a pilot trusts a checklist: instinctively, without looking. Swap that tool for an unfamiliar smartphone and adoption stalls, however capable the new hardware might be.

i.safe MOBILE built the IS380.1 to sidestep that problem entirely. Rather than asking hazardous-area workers to relearn their tools, the company put a full 4G LTE device inside a housing that behaves like the radio they already know. Certified for ATEX and IECEx Zone 1/21, the IS380.1 targets exactly the environments where explosion protection is non-negotiable: refineries, offshore platforms, chemical plants, ports and rail infrastructure.

Ergonomics that need no explanation

Pick up the IS380.1 and every control sits where a radio operator expects it. A large, side-mounted PTT button falls naturally under the thumb. A rotary switch handles channel selection or volume without forcing eyes away from the task at hand. A front-facing, amplified loudspeaker cuts through compressor noise or a busy loading bay, and an SOS button next to the antenna offers a direct route to emergency alerting. Existing headsets and remote speaker microphones connect through the familiar 13-pin ISM interface, so accessory budgets and training materials stay valid.

For safety officers, that continuity carries real weight. Every additional training session is a session where attention drifts from the actual hazard. A device that inherits established muscle memory removes a whole category of rollout risk before it starts.

Where PMR meets broadband PTT

Underneath that familiar shell runs a powerful processor with 8 GB of RAM, 128 GB of storage, and i.safe MOBILE's own ISM-OS 16, based on Android. Connected to a 4G network, the IS380.1 opens up Push-to-Talk over Cellular alongside standard telephony, giving teams nationwide or even global reach that conventional VHF/UHF simply cannot offer.

Crucially, this does not mean abandoning existing radio infrastructure. Through third-party RoIP gateways, the IS380.1 bridges cellular PTT platforms with legacy VHF/UHF networks, so a technician carrying the new device can still reach a colleague on an older handset. Sites can migrate site by site, shift by shift, without a forklift replacement of every radio in circulation, and without a gap in coverage during the transition.

Built for the environments where it works

An IP68 rating and MIL-STD 810H certification confirm what the housing already suggests: this is hardware designed for offshore platforms, petrochemical plants and outdoor industrial sites, not for a controlled office environment. The pre-installed i.safe MOBILE App World, hosted on German servers and updated alongside device firmware, adds a further layer of control. IT and safety teams get a curated channel for validated applications, including lone-worker protection and PTT clients, tested specifically on i.safe MOBILE hardware rather than assumed to work.

A practical first step

For operators in oil and gas, chemicals, ports, rail and heavy industry, the IS380.1 offers something rarer than raw specifications: a migration path that respects how field teams actually work. It extends coverage, adds broadband PTT and telephony, and keeps legacy radio users in the conversation, all inside a form factor nobody needs to be retrained on. That combination turns digital transformation from a disruptive event into a gradual, low-risk transition, exactly the kind hazardous-area operations need.

Picture credits: i.safe MOBILE

www.isafe-mobile.com





ATEX EQUIPMENT

LATEST HAZARDOUS-AREA TECHNOLOGY | 2026

HAZARDOUS ENGINEERING SOLUTIONS

PRODUCT & TECHNOLOGY UPDATE

NEW • SEPTEMBER 2026

ABB PFM 20 Ex



ABB's new dust monitoring device extends particulate measurement into hazardous and harsh industrial environments. It offers a certified detection range down to 7.5 mg/m³ and meets ATEX Zone 22 requirements, supporting low-range dust monitoring and emissions control.

ATEX ZONE 22

NEW • 2026

KELLER 23SY-En / H2



KELLER Pressure has added Zone 2 ATEX variants to its pressure transmitter portfolio. The 23SY-En targets industrial applications, while the 23SY-En-H2 is designed for hydrogen systems, both using 3G / Ex ec increased-safety approval.

ZONE 2 • 3G

CONNECTED SAFETY

Litum ATEX Family



The ATEX Gateway and Dualis Tag bring real-time location intelligence into Zone 1 and Zone 2 environments. UWB and Bluetooth Low Energy support sub-metre positioning for assets and personnel, with intrinsically safe options for gas and dust applications.

ZONES 1 & 2

THERMAL INSPECTION

HIKMICRO BX20



A compact intrinsically safe thermal camera for hazardous-area inspection. The BX20 combines a 256 × 192 thermal detector with ATEX and IECEx certification, enabling maintenance teams to identify heat-related faults without taking conventional equipment into explosive atmospheres.

ATEX + IECEx



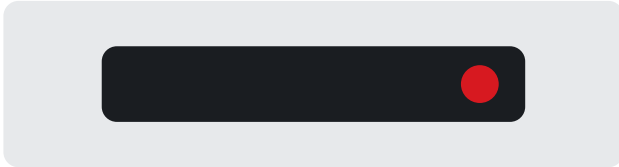
ATEX TECH UPDATE

HES • 2026

HAZARDOUS-AREA INSPECTION & TEMPERATURE MONITORING

NON-CONTACT TEMPERATURE

Calex ExTemp

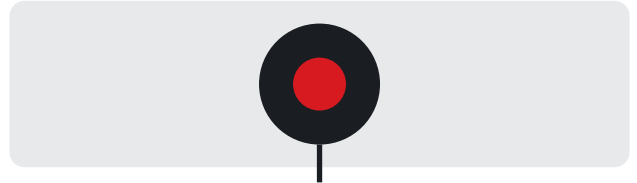


The ExTemp intrinsically safe infrared pyrometer measures surfaces from -20°C to 1000°C and is certified for hazardous areas up to Zone 0 gas and Zone 20 dust. Its 4-20 mA loop-powered design suits remote condition monitoring in demanding process environments.

ZONE 0 / 20

EXPLOSION-PROOF SURVEILLANCE

Eaton Oxalis XP



Eaton's Oxalis XP explosion-proof thermal PTZ range provides continuous 360° pan and -90° to +90° tilt. The 316L stainless-steel platform carries ATEX and IECEx certification and is designed for harsh onshore, offshore, chemical, marine and energy applications.

ATEX / IECEx

Check certification and Ex marking against the specific hazardous-area application before selection.

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Condmaster Ruby 2018
- Measuring techniques:
VIB ISO 10816 + Spectrum

Advanced

- Leonova Diamond handheld instrument
- Charger
- Communication cable
- Shock pulse and tacho/temperature probe
- Vibration transducer
- Magnet foot
- Measuring cable
- Quick connector, DuoTech
- Carrying case, hard
- Analysis and diagnostic software
Condmaster Ruby 2018
- Measuring techniques:
VIB ISO 10816 + Spectrum, Vibration Expert

Expert

- Leonova Diamond handheld instrument
- Balancing equipment
- Charger
- Communication cable
- Shock pulse and tacho/temperature probe
- Three vibration transducers
- Three magnet feet
- Measuring cables including a 3-channel splitter
- Quick connector, DuoTech
- Carrying case, hard
- Headset with microphone
- Analysis and diagnostic software
Condmaster Ruby 2018
- Measuring techniques: VIB ISO 10816 + Spectrum,
3-channel measurement, complete analysis
functionality with HD Analysis and
VIB/SPM HD Expert, Balancing

Packages are fixed but with unlimited possibilities to extend functionality as required.

Evidence Before Engineering Certainty

By Martin James

For forty years I've worked around electrical, instrumentation and control systems, including hazardous areas, ATEX, process environments and industrial automation. One thing has become increasingly obvious to me: the difficult part of using AI in engineering isn't getting an answer. It's knowing whether the evidence actually supports the answer.

AI is becoming remarkably good at finding patterns, generating explanations and producing apparently convincing technical conclusions. But engineering decisions don't happen in a text box. They happen around real assets, real measurements, real operating conditions and real consequences.

That creates a problem. An AI system can look at a dataset and say that a pump is failing. But what does the evidence actually establish? Is the asset correctly identified? Is the measurement relevant? Do we have a trustworthy baseline? Was the equipment operating under comparable conditions? Could there be another explanation? Is the data complete? Has anything been changed since the evidence was collected?

And perhaps most importantly: does the evidence prove the claim, or merely make the claim plausible? These are not the same thing.

Measurement is not proof

I've spent much of my working life dealing with systems where the difference between an indication and a conclusion matters. A transmitter can indicate a condition. A trend can reveal a pattern. An alarm can tell us that something has crossed a threshold. None of those things, by themselves, necessarily establish causation. Yet when AI is introduced, there is a temptation to move rapidly from data pattern explanation decision. I believe we need another discipline in between: evidence challenge contradiction provenance decision.

That is one of the ideas behind a system I have been developing called AVAKIMEXA.

AVAKIMEXA

AVAKIMEXA is being developed around a simple proposition: AI can generate a claim. The evidence must decide whether that claim survives.

The system is deliberately positioned at the boundary between machine intelligence and consequential engineering decisions. It does not replace the engineer. It does not take control of the plant. It does not write to PLCs, SCADA, SIS, DCS or actuators. The human remains the authority.

The purpose is different. AVAKIMEXA asks whether the evidence available is sufficient to support the claim being made. Sometimes the answer may be SUPPORTED. Sometimes CONTRADICTED. Sometimes UNRESOLVED. And sometimes the correct engineering answer is simply: INSUFFICIENT EVIDENCE. STOP.

That last answer is important. In engineering, refusing to manufacture certainty can be more valuable than producing another confident

prediction.

The evidence obligation belongs to the claim

One principle has become central to my thinking: the evidence required to pass is determined by the claim – not by how convincing the existing evidence appears.

If someone claims that a pump is failing because of bearing degradation, for example, the question isn't whether the available trend looks like bearing degradation. The question is what evidence is actually required to establish that claim.

Asset identity, relevant measurements, operating conditions, baseline behaviour, time relationship, alternative explanations, data provenance, and whatever other evidence is material to that particular claim.

If a material obligation is missing, the system should not quietly fill the gap with confidence. It should expose the gap. That changes the conversation from "What does the AI think?" to "What can we actually prove?"

This matters particularly in safety-critical environments. In hazardous-area and process environments, evidence quality is not an academic issue. An incorrect assumption can influence maintenance, inspection, operational decisions and ultimately safety. The same applies as AI moves further into industrial environments. We are likely to see increasingly sophisticated systems recommending actions based on increasingly large quantities of data. More data does not automatically mean more proof, and a more sophisticated model does not automatically make incomplete evidence complete. That is why I think the next stage of industrial AI needs to be less about making machines sound certain and more about making uncertainty visible.

Human authority still matters

There is another boundary I consider non-negotiable. AI should assist engineering judgement. It should not quietly become engineering authority.

The engineer needs to be able to see what evidence was considered; what evidence was missing; what contradictions were found; where provenance matters; what assumptions were made; and why the system stopped or allowed a claim to proceed.

That creates something different from another predictive AI platform. It creates an evidence-adjudication layer between machine intelligence and consequential decisions.

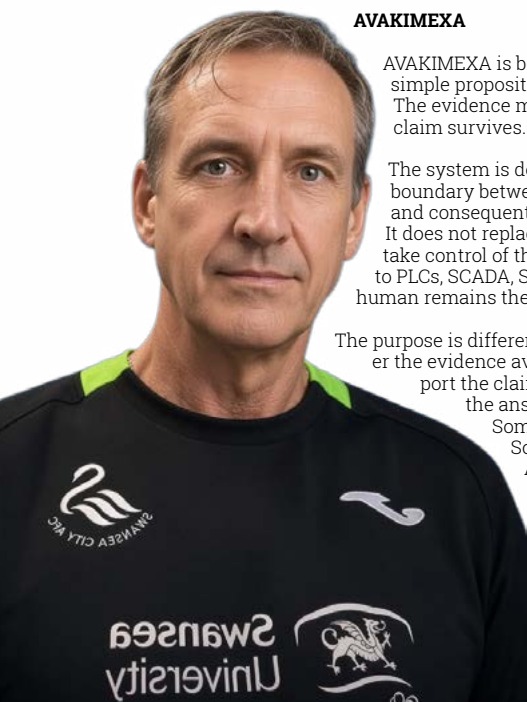
The question I think industry should be asking

We have spent enormous effort asking whether AI can predict, classify, detect and recommend. I think we now need to ask another question: can the AI prove that the evidence it relied upon actually supports the claim it is making?

Because there is a fundamental difference between finding a pattern and proving what caused it. And there is an even bigger difference between generating a recommendation and having sufficient evidence to act on it.

My work on AVAKIMEXA is an attempt to explore that boundary. I am not claiming that AI should replace engineers. Quite the opposite. I am building around the idea that as machine intelligence becomes more capable, human authority becomes more important, not less. The future industrial AI system may not be the one that gives the fastest answer. It may be the one that knows when the evidence says: Stop. We don't know yet.

Evidence. Not Guesswork.





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DESIGNED FOR HAZARDOUS AREAS. ENGINEERED FOR **TOTAL CONFIDENCE.**

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LIGHTING THE SAFER WAY

Latest hazardous-area lighting technology is pushing visibility, reliability and efficiency further.

Industrial lighting is a frontline safety system. In explosive atmospheres, poor visibility can compound risk, while maintenance itself can expose teams to difficult access and hazardous conditions. Recent manufacturer news shows a clear direction: more light from fewer fittings, longer service life, stronger certification and products designed around the realities of harsh sites.

ATEX / IECEx
CERTIFIED

HIGH OUTPUT
LED

LOWER
MAINTENANCE

HARSH SITE
READY

LATEST COMPANY NEWS

DIALIGHT TAKES HAZARDOUS LED EXPERTISE TO PCIC 2026

Dialight announced that it will showcase high-performance LED lighting at PCIC 2026 in Philadelphia, 21–24 September. The company says the event will focus attention on how advanced lighting can support safety, reliability and operational efficiency across petroleum, chemical and mining environments. Its hazardous-area portfolio includes SafeSite area lights certified for IECEx/ATEX Zones 1, 21, 2 and 22, with models delivering up to 13,000 lumens and ingress protection up to IP69.

Source: Dialight company news, 1 September 2026

PRODUCT DEVELOPMENT

INATEX HRT97: UP TO 145,000 LUMENS FOR LARGE HAZARDOUS AREAS

Inatex has released the HRT97 Series explosion-proof LED floodlight for demanding industrial installations. Fully IECEx and ATEX certified, the range is suitable for Zone 2 gas and Zone 21/22 dust environments. Power options run from 200W to 1000W, with output up to 145,000 lumens. Standard 60° optics can be exchanged for 30° narrow-beam lenses where long-throw illumination is required. A copper-free aluminium enclosure, toughened glass, stainless steel fasteners and IP66 protection are intended to support long-term operation in oil and gas, petrochemical, LNG, mining and offshore applications.

WHY SAFETY LIGHTING MATTERS

- 01 CERTIFICATION**
Match the luminaire to the gas or dust zone and the required protection concept.
- 02 OPTICS**
Use beam distribution and mounting height to put useful light where people actually work.
- 03 MAINTENANCE**
Long-life LED systems can reduce interventions in difficult or hazardous locations.
- 04 ENVIRONMENT**
Ingress protection, corrosion resistance and ambient temperature limits remain critical.

Source: Inatex product news, 2026 • Dialight product information

PORTABLE SAFETY LIGHTING

Light where the work takes you

STREAMLIGHT

DUALIE RECHARGEABLE ATEX

Streamlight launched the Dualie Rechargeable ATEX in June 2026. The intrinsically safe light is approved for ATEX Zone 0 and combines a forward spot beam with a side flood beam. The modes can be used separately or together, giving workers task illumination and near-field visibility from one unit. The light uses a corrosion-proof polymer body, an integrated clip with optional magnets for hands-free positioning, and an IP67 enclosure.

230 lm spot • 110 lm flood • 325 lm combined

Spot runtime 10 h • Flood runtime 20 h

Source: Streamlight press release, June 2026

WOLF SAFETY

WAL AREA ATEX LIGHT

Wolf Safety's WAL portable area light is designed to illuminate large hazardous work areas with wide, even coverage. It is ATEX and IECEx certified for Zones 1, 2, 21 and 22, uses a 32-LED array and delivers up to 30,944 lumens at source. A 62° beam and indexed tilt adjustment help direct light across temporary work zones, while the marine-grade aluminium housing is rated IP66 and IP67 for demanding indoor and outdoor use.

31k lm class • 5000K • 270° indexed tilt

Source: Wolf Safety product media

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Teledyne Gas and Flame Detection Helps Maritime Operators Address New IMO Safety Recommendations

Teledyne Gas and Flame Detection (Teledyne GFD), part of Teledyne Technologies Incorporated (NYSE: TDY), is responding to updated International Maritime Organization (IMO) recommendations for entering enclosed spaces aboard ships with gas detection solutions that help operators strengthen atmospheric monitoring and address evolving safety expectations.

IMO Resolution MSC.581(110) broadens recommended gas testing protocols to include carbon dioxide alongside other key atmospheric hazards. Growing demand for these solutions has contributed to multiple related awards year-to-date, reflecting increased focus across the maritime sector on safety readiness and compliance.

"The IMO's revised recommendations represent an important advancement for maritime safety," said Thibault Fourlegnie, Vice President and General Manager, Teledyne GFD. "We provide practical gas detection solutions that help customers improve enclosed-space safety and meet evolving compliance expectations."

Manufactured at Teledyne GFD's facility in Renfrew, Scotland, the company's gas detection solutions draw upon more than 75 years of engineering and manufacturing expertise in industrial safety technologies. Investment at the plant is ongoing in line with growing global demand.

www.teledyne.com



GAS DETECTION

NEW TECHNOLOGY • NEW APPLICATIONS

A snapshot of recent developments extending connected monitoring into confined spaces, energy storage and complex multi-gas environments.

CONNECTED CONFINED-SPACE MONITORING

MSA ALTAIR io 6 expands the connected work platform

MSA Safety is highlighting its ALTAIR io 6 Multigas Detector as a connected solution for confined-space monitoring and sampling. The handheld unit can monitor up to six gases and combines an integrated pump with automatic cellular connectivity, swappable XCell sensors, a large display and a removable rechargeable battery. Through the MSA Grid cloud platform, safety teams can receive real-time alerts, monitor worker status and view fleet-wide information from a central interface. The device was also recognised in the 2026 Occupational Health & Safety New Product of the Year awards.



EARLIER WARNING FOR BATTERY ENERGY STORAGE

Crowcon BESafe targets H₂, CO and CH₄

Battery energy storage systems can release gases before conditions develop into a serious thermal event. Crowcon's BESafe has been engineered for BESS and backup-power installations, offering simultaneous detection of two gases in one compact unit. It can be configured for hydrogen, carbon monoxide or methane and uses pre-calibrated smart sensors designed to reduce routine on-site calibration. Remote sensors can be mounted up to 15 metres from the main unit, while Modbus, relay and 4-20 mA outputs allow integration with wider control and safety systems.

APPLICATION FOCUS

Battery storage • UPS • energy infrastructure

ONE PLATFORM, MULTIPLE HAZARDS

GfG Polytector III G999

Complex sites rarely present a single gas hazard. GfG's configurable Polytector III G999 can monitor up to eight atmospheric hazards simultaneously, with sensor options covering oxygen, toxic and combustible gases and VOCs. Versions with an integrated pump can be used for remote sampling and pre-entry testing before switching to diffusion mode for personal protection. Optional radio connectivity can transmit gas, man-down and manual alarms into a wider connected safety architecture. The approach is particularly relevant to biogas plants, where methane,

APPLICATION FOCUS

Biogas • confined space • lone working

THE DIRECTION OF TRAVEL

The common theme is integration. Gas detectors are no longer isolated instruments that simply sound an alarm. New systems are increasingly designed to communicate, share location and exposure data, support remote supervision and simplify fleet maintenance. At the same time, application-specific instruments are expanding into emerging risk areas such as battery energy storage. For hazardous-industry operators, the opportunity is a more complete picture of risk - but effective gas safety still depends on correct sensor selection, testing, maintenance, training and a clear response plan.

GAS DETECTION

BEYOND THE ALARM

CONNECTED SAFETY

From standalone monitors to intelligent safety networks

Industrial gas detection is moving rapidly beyond the traditional local alarm. Connected instruments now combine real-time hazard visibility, device health, location awareness and centralised analytics, helping safety teams respond faster and manage risk across entire sites.



The detector is becoming part of a wider connected safety ecosystem.

SMARTER, FASTER, MORE VISIBLE

Modern connected gas detection platforms can bring portable and fixed monitoring into a common safety picture. Instead of an alarm being known only to the worker carrying the instrument, events can be transmitted to supervisors and control teams in real time. This can improve situational awareness during confined-space work, maintenance shutdowns and other high-risk activities.

Connectivity also changes how instruments are managed. Central platforms can track calibration, bump-test status, battery condition and sensor performance, reducing dependence on manual records. The result is a shift from reactive gas detection towards a more proactive model in which safety teams can identify developing trends and equipment issues earlier.

Industrial Scientific's newly launched Tectra ecosystem reflects this direction, combining personal monitoring, docking, low-power connectivity and optional indoor location awareness. Its iX5 monitor is designed to share alerts and safety data while integrating with the company's iNet Insights platform.

EDITORIAL BASIS

Recent 2026 reporting from British Safety Council, Industrial Scientific and Occupational Health & Safety.

SENSOR TECHNOLOGY

RELIABILITY IN THE REAL WORLD

INFRARED STEPS FORWARD

Hydrocarbon detection without the traditional pellistor limitations



Honeywell's 4-Series NDIR hydrocarbon sensor uses optical non-dispersive infrared technology to detect flammable gases including methane, propane and butane. The design is intended for both fixed and portable detectors and offers strong resistance to sensor poisoning, lower power demand and condensation management for humid or confined environments.

PROVEN IN HAZARDOUS AREAS

Certification, ruggedness and connected area monitoring

Crowcon's IR Plus dual-waveband infrared hydrocarbon detector has gained FM approval for hazardous-location applications. The instrument continuously detects methane, propane and other hydrocarbon gases and vapours, using heated optics and hydrophobic reflector technology. Crowcon's DetectiveIQ also shows how area monitoring is becoming more connected, linking multiple monitors through long-range mesh networking.

FOUR TRENDS SHAPING GAS DETECTION

01 CONNECTED WORKERS

Peer-to-peer alerts and remote visibility extend protection beyond the individual instrument.

02 OPTICAL SENSING

NDIR technology offers low power use and improved resistance to poisoning in harsh conditions.

03 PREDICTIVE DATA

Analytics can reveal recurring exposure patterns, instrument health issues and maintenance needs.

04 AREA NETWORKS

Mesh-connected monitors can create a live picture of changing gas hazards across temporary work zones.

EDITORIAL BASIS

Recent 2026 product and industry reporting from Honeywell, Crowcon, Industrial Scientific and Hazardous Engineering Solutions.

CABLE GLANDS

SMALL FIT. BIG PROTECTION.

How the latest hazardous area cable gland innovations are delivering safer, more reliable and future-ready installations.

In explosive and hazardous environments, the integrity of a cable entry point is critical. Modern cable glands do far more than simply secure a cable. They provide a vital barrier against flame, dust, gas, moisture and mechanical stress, ensuring equipment remains safe, compliant and operational in the harshest conditions. Here we look at the latest product developments and trends shaping the hazardous area cable gland market in 2026.



ATEX, IECEx
& UKEX



INGRESS
PROTECTION



MECHANICAL
STRENGTH



EXTREME
ENVIRONMENTS

SAFER
PEOPLE
SAFER
PLANTS

SECURE
CONNECT
PROTECT

PRODUCT SPOTLIGHT

Ellis introduces next-generation Ex e and Ex d cable glands

Enhanced safety, easier installation and a wider range for global applications.

Ellis Patents has expanded its range of hazardous area cable glands with a new generation of Ex e and Ex d products designed to simplify installation while delivering outstanding performance in the most demanding environments.

The latest glands feature an enhanced sealing system that maintains ingress protection even under extreme temperature variations, vibration and mechanical stress. Designed for use in Zone 1, Zone 2, Zone 21 and Zone 22 applications, the range is certified to ATEX, IECEx and UKEX standards.

"Our new range has been developed in response to customer demand for faster installation, greater flexibility and uncompromising safety," said a spokesperson for Ellis. "These cable glands are trusted in critical industries worldwide, from oil and gas to chemical processing and renewable energy."

The range includes options in nickel-plated brass, stainless steel and marine-grade aluminium, with armoured and unarmoured variants available.

ELLIS
Patents



ATEX, IECEx
& UKEX certified



Wide cable
range options



High strength
materials



IP66, IP67, IP68
& IP69



Armoured and
unarmoured versions



Suitable for harsh
and corrosive
environments

**ENGINEERED
FOR A SAFER
TOMORROW.**

INDUSTRY NEWS

CMP expands hazardous area cable gland portfolio

New EXIOS X range delivers maximum flexibility and performance.

CMP Products has extended its market-leading EXIOS X range with new hazardous area cable glands designed to meet the evolving needs of global industries operating in explosive atmospheres.

The EXIOS X range is certified to ATEX, IECEx and UKEX standards and is suitable for Ex e, Ex d, Ex tb and Ex nR applications. The updated range features an improved clamping system for faster, more reliable installation and enhanced sealing performance for long-term safety.

"EXIOS X has been developed to give engineers greater choice, without compromising on safety," said David Taylor, Global Product Manager at CMP. "With a wider range of materials, thread options and accessories, it is ideal for demanding offshore, onshore and industrial environments."



CMP
PRODUCTS

ENGINEERED FOR A SAFER TOMORROW



ATEX, IECEx & UKEX certified



Wide material selection



Rapid installation



High ingress protection



Suitable for extreme environments

**TRUSTED
PROTECTION
IN HAZARDOUS
ENVIRONMENTS.**

TECHNICAL FOCUS

Choosing the right cable gland for hazardous areas

Key considerations for safe and compliant installations.

With an increasing range of hazardous area cable glands available, selecting the right solution is essential for long-term safety, reliability and compliance. Here are the key factors engineers should consider:

- 1 Certification** – Ensure the gland is certified for the specific hazardous area (ATEX, IECEx, UKEX) and protection concept (e.g. Ex d, Ex e, Ex tb).
- 2 Material selection** – Choose the right material for the environment, such as nickel-plated brass, stainless steel or marine-grade aluminium.
- 3 Cable type and construction** – Match the gland to the cable type (armoured, unarmoured, braided) and ensure the correct clamping and sealing method.
- 4 Environmental conditions** – Consider ingress protection (IP rating), temperature range and resistance to chemicals, UV and mechanical impact.
- 5 Installation and maintenance** – Look for designs that simplify installation, allow for inspection and maintenance, and ensure long-term durability.

By taking a holistic approach, engineers can ensure safer, more reliable installations and reduce the total cost of ownership.

CASE STUDY



Reliable cable glands for offshore operations

A North Sea operator has upgraded to a new range of hazardous area cable glands to improve safety and reliability across its offshore facilities. The glands were chosen for their robust construction, high ingress protection and compliance with ATEX, IECEx and UKEX standards.

"Reliable cable glands are essential to keeping our operations safe and efficient in the toughest conditions."

Operations Manager
North Sea Production Facility

Safe & Efficient Drum Handling In Hazardous Areas

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

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

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

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

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

We have also developed a Quick Attach/Release drum handler fork attachment for use in ATEX hazardous areas.

All Grab-O-Matic models can be Quick Attach/Release units and are securely attached to the forks and released without the need for the truck driver to dismount from his cab, saving time and increasing safety!

The drum handlers can be manufactured completely from stainless steel or part stainless steel to suit customer requirements and the spark proof area the units are operating in.

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

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



Single Drum Handler (1-DLR-P-St/St)



Waist Gripper (DH-1 St/St)



Drum Rotator (SC10-St/St)

Drum & Material Handling Equipment

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



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Pipe Dreams Become A Lifting Reality With Turnkey Hoist & Winch Package

For a UK-based manufacturer of plastic pipe systems, flexibility is essential when handling large-section pipework and the customised angle and bend connections required by end customers. To support final assembly operations,

Hoist & Winch Ltd has supplied and commissioned a turnkey package of eight aluminium mobile gantry cranes offering 2-ton safe working load (Swl), each equipped with a 110V single-phase electric chain hoist.

The equipment is installed in a dedicated section of the manufacturer's final assembly area, where pipe sections – used to protect electrical cables – are fitted with angle and bend connections.

The company supplies customers across a wide range of industries, including the growing datacentre sector. Flexibility was therefore a key consideration in the specification. Manufactured by Reid Lifting, the aluminium mobile gantries supplied by Hoist & Winch feature adjustable height and span width, allowing the configuration of each crane to suit the available workspace and the dimensions of the pipes that require handling.

With a maximum working hook height of 6 metres and bridge span of 4 metres, the cranes provide sufficient capacity and reach for the largest pipe sections currently processed by the company. They also offer an element of future-proofing should the manufacturer introduce larger sections.

Mobility is another critical feature. Each gantry features large pneumatic-tyred wheels, making the cranes easier to manoeuvre while improving stability when travelling under load. This capability is particularly useful when moving across raised cable ramps or small floor imperfections.

The four wheels incorporate 360-degree swivel action with directional locking at 90-degree intervals, providing operators with further flexibility when positioning the gantries. Once correctly positioned over the workstation assembly jigs, manually operated heavy-duty parking brakes securely hold each crane in place. Here, the lifting systems play a vital role in the assembly process, safely supporting pipe sections while angle or bend connections are fitted and adhesives are allowed to cure.

"It's a deceptively demanding application because the lifting equipment needs to combine substantial capacity with the freedom to move around the assembly area," explains Hoist & Winch Director Andy Allen. "The aluminium gantries give the customer that flexibility, while the 2-ton Swl hoists offer the reliable lifting performance needed for these large and varied pipe sections."

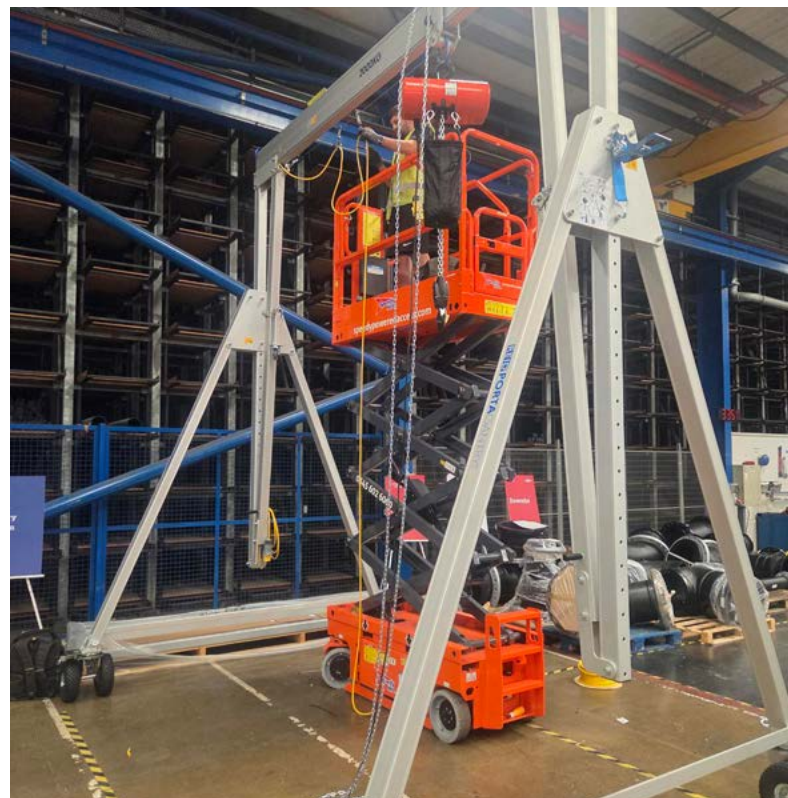
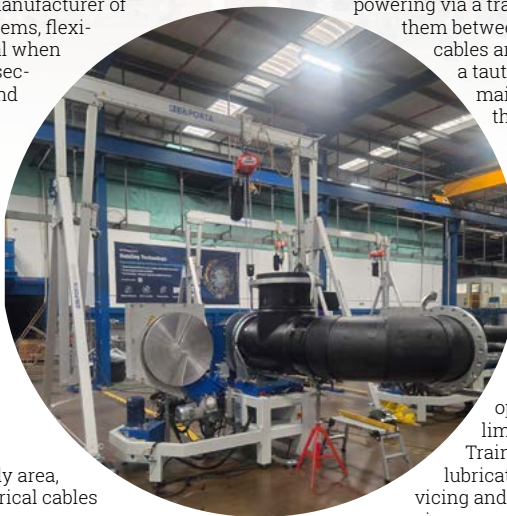
To provide effective and electrically safe lifting within the assembly environment, Hoist & Winch installed heavy-duty 2-ton Swl Yale/Loadstar 110V single-phase electric chain hoists. The low-voltage supply is particularly appropriate because the gantries require

powering via a trailing floor cable as the company moves them between workstations. Hoist and pendant control cables are managed across each crane bridge using a taut-wire festoon catenary system, helping to maintain orderly cable routing while allowing the hoists to travel along the bridge.

Following installation, Hoist & Winch completed LOLER (Lifting Operations and Lifting Equipment Regulations) inspection and testing of each complete lifting system and issued the appropriate LOLER Thorough Examination reports, providing complete peace of mind for the customer.

On-site operator training covered equipment functionality, hoist components and operating controls, including top and bottom limit switches and emergency-stop functions. Training also addressed periodic checks and lubrication, together with annual inspection, servicing and certification requirements. Each operator was given practical experience in using the equipment, ensuring safe and effective operation of the new lifting systems from day one.

Visit www.hoistandwinch.co.uk for further information and to view recent case studies.





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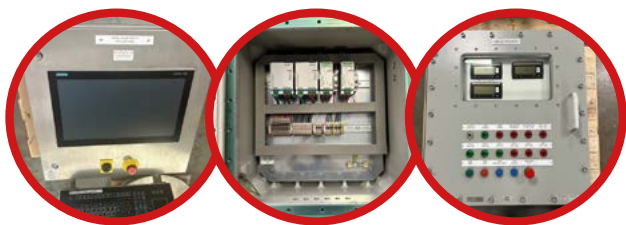




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