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Teledyne Flir Introduces Premium E8 Pro Edition For Point-And-Shoot Thermography Inspection



New
Benzene-Specific
Monitor For Tighter
International
Regulations - 15

تحت رعاية صاحب السمو الشيخ محمد بن زايد آل نهيان، رئيس دولة الإمارات العربية المتحدة
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Teledyne Flir Introduces Premium E8 Pro Edition For Point-And-Shoot Thermography Inspection

Improved Optics, a Touchscreen, and FLIR Ignite Cloud Connectivity Helps Inspectors Locate Electrical, Building, and Mechanical Problems Quickly

Teledyne FLIR, part of Teledyne Technologies Incorporated, announced the FLIR E8 Pro, providing a larger 3.5-inch touchscreen with FLIR Ignite Cloud connectivity within the same pistol-grip form factor as legacy E8 series thermal cameras. Through the touchscreen, users can share captured images with colleagues, partners, and clients over Wi-Fi, including with on-screen annotations to highlight findings. Images can then be loaded straight to the FLIR Ignite Cloud for improved efficiency and a smoother workflow.

"As part of effective predictive maintenance and condition

monitoring programs, thermography inspectors require easy-to-use and cloud-connected handheld thermal cameras to quickly locate issues and effortlessly share that data with colleagues and clients for further analysis," said Rob Milner, global business development director, Teledyne FLIR. "The FLIR E8 Pro answers the call with a larger touchscreen and improved 640 × 480 screen resolution. It also features FLIR Ignite cloud connectivity for instant documentation to provide inspectors with a familiar, yet superior, handheld thermal imaging camera to get the job done quickly and efficiently."

The FLIR E8 Pro offers crisp thermal and visual detail at an affordable price by pairing a 5 MP digital camera with a powerful thermal camera via the FLIR patented Multi-Spectral Dynamic Imaging (MSX®) capability.

MSX overlays the edge detail of the visible camera upon the thermal image, providing significantly greater detail and contextual awareness without sacrificing any thermal data. The tool also includes a built-in LED lamp to capture critical details via MSX in low-light scenarios for improved decision support.

When connected to Wi-Fi, the FLIR E8 Pro can automatically sync with the FLIR Ignite application (now available with an additional 10 GB storage for only \$30 USD per year), accessible from anywhere on mobile devices, a web browser, or a desktop, eliminating the need to carry extra USB flash drives, card storage, or cables. Images and videos shared via FLIR Ignite can then be accessed through FLIR Thermal Studio software so inspectors, colleagues, and clients can instantly review, edit, analyze, and report findings.

Built to handle the harshest of industrial and outdoor environments, the FLIR E8 Pro is drop-tested up to two meters (6.5 ft). The ruggedized design also features a 25G-shock and 2G vibration test rating along with built-in lens protection. The FLIR E8 Pro also offers up to 4 hours of continuous operation on one battery,

which can be quickly swapped out and recharged for all-day use.

The FLIR E8 Pro is available today to buy globally from Teledyne FLIR and its authorized dealers. The purchase also includes two removable and rechargeable batteries, a hard-carrying case, a battery charger, a USB cable power supply, and printed documentation. To learn more or to purchase, visit www.flir.com/E8-Pro.

About Teledyne FLIR

Teledyne FLIR, a Teledyne Technologies company, is a world leader in intelligent sensing solutions for defense and industrial applications with approximately 4,000 employees worldwide. Founded in 1978, the company creates advanced technologies to help professionals make better, faster decisions that save lives and livelihoods.

For more information, please visit www.teledyneflir.com or follow @flir.





Hazardous Environments

Intrinsically safe torches are rated and certified for use in explosive atmospheres and hazardous environments where even the slightest spark can result in an explosion. Standard torches have no consideration for limiting sparks and are extremely dangerous to use in a potentially explosive atmosphere.

Body Materials

Standard torches are generally made from a low-cost ABS (acrylonitrile butadiene styrene) plastic. In contrast, intrinsically safe torches are made from very costly materials like Polycarbonate/ABS Alloy with permanently static dissipative UV stabilized additives. These additives dissipate static electricity that can build up on the surface of the light to prevent sparks and cost twice as much as standard ABS

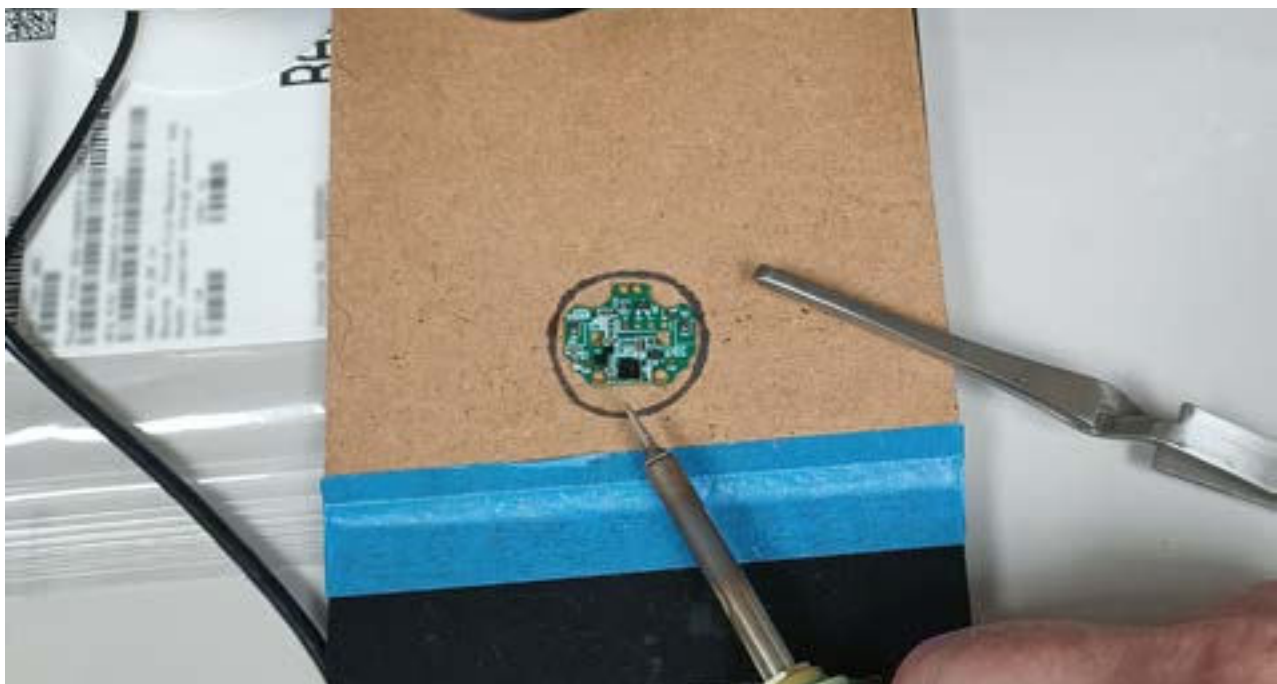
plastic. Additionally, IS torches must possess unique design features to contain battery leakage and venting for gases produced in the event of a battery malfunction.

Lens Materials

Standard torches are traditionally made out of transparent polycarbonate plastic. Intrinsically safe torches also use transparent polycarbonate but require an additional (and costly) special coating that dissipates static electricity.

Circuitry

Intrinsically safe torches require professional electrical engineers to design and develop circuits specifically created to meet the requirements necessary to pass the strict certification levels for an intrinsically safe rating. This is achieved by designing circuits that prevent or limit spark



energy through the use of fuses, redundant circuit paths, diodes, and other components. Standard torches have an on/off switch.

Special Fasteners

Because intrinsically safe torches are rated for use in hazardous and explosive environments, they must remain sealed in and around those areas. This requires that torches not be opened to change batteries even by accident while in a hazardous environment, and thus, a special retention screw or "special fastener" is used to keep the light from being opened. A standard torch is easily opened, usually by unscrewing one end of the light.

Because of the knowledge and expense required to engineer IS-certified products, a limited number of companies can achieve this. Nightstick is a global manufacturer of over 50+ Intrinsically Safe professional, portable LED lighting products.

Locate a dealer near you at www.nightstick.com



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Aqua Safety Showers Keep Workers Safe

Wherever eyes are exposed to injurious material in the workplace we provide the emergency equipment necessary to keep workers safe. As leaders in the designing and manufacturing of products for the management of flammable liquids and hazardous materials, our goal is to create essential pieces of equipment that become the standard in every laboratory and facility that uses harmful substances. Our equipment meets the highest ANSI standard design and never compromises on safety or efficiency. We create products at such a high standard so our clients enjoy hassle-free protection.

Whilst we hope there is never the need for your safety showers to be used, having one is imperative on site should be working around harmful substances.

Our tank-fed ranges are designed to be positioned in easily accessible areas and are easily activated even if vision is compromised. The tray firmly shuts off water flow and keeps nozzles free of airborne pollutants when it is upright. Filling, inspection, and cleaning are all made easier with the wide rear aperture. The FDA-approved tanks are self-contained and do not require a water source. Drain pipes and wall/shelf mounting bracket are included, and we always strive for superior build quality.

Keeping up with current ANSI standards can be a challenging task. Our main feed washes can be conveniently located in open areas and are constructed at an ANSI-compliant height. Suitable for all areas. A specifically constructed valve with an inbuilt, heavy-duty stainless steel stop-plate is included in the system to handle harsh operation without failure. Low

operating torque ensures consistent and simple on/off operation and is especially appreciated in emergency situations.

Many clients choose Aqua's products due to their superior reliability and longevity. Built from corrosion-resistant materials, these assets deliver tepid water to even the most remote locations.

Aqua Safety Showers can keep your workers safe with our wide range of products and units available. For a bespoke quotation, please get in touch with our sales team today who will generate a quote specific to your needs with our best possible pricing.

We are on hand to help in any situation, big or small.







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Vertical Farming: Overcoming the Engineering Challenges to Maximise the Benefits

The need to streamline production and more effectively use resources is at the heart of the rise in popularity of vertical farming, an industry that has been growing at a staggering pace in recent years, and that is widely regarded as the future of sustainable food production.

The increase in demand for organic, fresh, locally grown produce, coupled with the urgent need to reduce our carbon footprint, has driven more and more businesses to explore vertical farming, an innovative way to grow crops that requires less land and reduces our reliance on natural resources.

The use of technology in a controlled indoor environment has the ability to significantly optimise growth, allowing farmers to grow produce in every season regardless of weather conditions, increasing reliability as well as profits.

In spite of its numerous advantages, the practice of vertical farming presents specific challenges, which businesses need to be adequately prepared for in order to better exploit its benefits and maximise their success.

Here, Ian Hart, business development director at adi Projects, a division of leading engineering firm adi Group, gives expert advice on the engineering solutions businesses need to adopt in order to successfully navigate the vertical farming field.

What makes vertical farming more future-proof than traditional and greenhouse farming?

It is a well-known fact intensive traditional farming techniques and the use of pesticides can significantly damage ecosystems and affect the growth of crops, and with rising temperatures increasingly threatening the extinction of a large number of edible crops, change is nothing short of necessary.

When compared to other sectors' total emissions, agricultural greenhouse gas emissions alone accounted for 11% of total emissions in the UK in 2020, and environmentally friendly farming practices such as vertical farming offer a clear course of action to help bring this figure down.

With more and more businesses focussing on operating sustainably, and consequentially, on the way they make use of precious natural resources such as water, the role of vertical farming becomes even more prominent.

Vertical farming allows manufacturers to produce crops with 70-95% less water than is required in traditional farming, making it a vital resource in our battle to safeguard our natural environments.

And with monitoring land usage being another crucial factor in increasing our sustainability efforts, being able to harvest 80% more produce per area unit while taking up 90% less land is a particularly valuable achievement.

Greenhouse farming – sometimes confused with vertical farming – harnesses the advantages of a semi-controlled environment, also giving farmers the ability to grow fresh, pesticide-free crops year-round.

However, vertical farming uses less water when compared to greenhouse farming, too, with this usually being fed down the stacked towers from the top. This means nutrients in the water can be recycled, and less compost and fertiliser are needed.

Ultimately, vertical farming allows for much higher crop yield than any other farming methods – just one acre of a vertical farm can grow roughly the same amount of product as 10 to 20 soil-based acres.

These complex indoor environments also allow for more control over the quality of produce, with a larger number of controllable factors such as temperature, humidity and lighting, ultimately making them significantly more future-proof.

Controlling vertical farming environments effectively Though vertical farming is the answer to a number of concerns surrounding traditional farming practices, not being equipped with the right knowledge and systems can result in a significant waste of money and resources.

When it comes to vertical farming, improved quality is an added benefit, meaning plants can be grown in accordance with strict manufacturing standards. The purified air present within these environments allows crops to grow without being contaminated by pests, spores and yeast. However, these delicate indoor environments need to satisfy particular conditions, requiring specialist watering and de-watering systems, and the right knowledge to operate them.

As they grow, plants themselves release large quantities of water, and controlling that water within a closed loop air change system inside the room can often be difficult.

Air should be treated first to remove the contaminants that are present in the air stream, with the added challenge that the air itself becomes wet due to the water evaporating from the plants.

Maintaining the purity of these environments and avoiding contamination means this air can't simply be let out through a window. Reducing waste and the added costs of cleaning air to a high standard more times than what is strictly necessary requires technology that can de-water the clean air and feed it back into the overall system.

The most cost-effective and efficient solution long-term is relying on systems that can exploit the air's dew points and allow the water to condense back out again, as well as effectively deal with pressurisation and temperature.

Ultimately, there are multiple process elements that come into this, but getting the overall design correct is crucial.

However, controlling vertical farming environments comes with individual challenges depending on the type of facility and the type of crops being grown, meaning that businesses would get the most benefit from investing in bespoke engineering solutions.

What about pharmaceutical crops?

Though the majority of vertical farming facilities are dedicated to cultivating food crops, the practice of producing pharmaceutical grade plants such as cannabis in vertical farms is becoming increasingly

popular.

Being able to produce pharmaceutical grade plants in a controlled environment similarly reduces the risk of any contamination, theoretically producing a better and safer product. And growing products of a consistently high standard is particularly important in the context of medicinal plants. When it comes to the pharmaceutical and medical industry, higher standards need to be upheld in order to comply with FDA, MHRA and EMA regulations, with product quality being a factor of utmost importance for industrial buyers.

This is where design factors become even more relevant, as even minor miscalculations can cause producers to fail quality standards and be unable to sell their product. Suitable control procedures also minimise the risk of bio-crops being released into the environment.

Overcoming the engineering challenges

Removing risk during the planning and construction stages and for the duration of a vertical farming facility's lifecycle requires being mindful from the onset, to ensure continuity throughout and prevent waste of energy and product.

Vertical farming provides a substantial opportunity to help brands forge solid reputations as innovators and help create circular economies. However, there are obstacles to overcome if vertical farming is to fulfil its potential, and relying on first-class, bespoke engineering systems and solutions holds the key.

With years of experience in developing tailor-made

solutions for clients to help them cater to emerging marketplaces, adi Group takes a 360 approach to engineering projects, addressing clients' needs and integrating quality every step of the way.

For more information on vertical farming solutions and how adi can help, please visit:
<https://www.adiltd.co.uk/>

About the Author

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



Look Cool, Stay Cool with Snickers Workwear Summer Topwear

These lightweight, functional tops are designed for work in warmer weather and come in a range of over 50 T- and Polo shirt styles.

From the new Khaki to Class 1,2 and 3 High-Vis options, Snickers Workwear has tops and colour choices for those professional tradesmen and women who want to look and stay cool on site this summer.

Look out for the LiteWork tops, all made from a functional and quick-drying polyester fabric that delivers everyday comfort and UPF40+ protection in sunny weather. They also have a bio based anti-odour finish for cool, ventilating comfort when it's warm on site.

Whatever style option you choose, every Snickers Workwear

summer top has a street-smart body-mapping design for a great fit, outstanding functionality and long-lasting comfort – all day, every day.

Getting more information on the Snickers Workwear clothing

range is easy. You can call the Helpline on 01484 854788;

check out www.snickersworkwear.co.uk and or email

sales@hultaforsgroup.co.uk





Seized Nut? Enerpac Has A Splitter For That

The new Hydraulic Nut Splitters from Enerpac are ideal for removing seized and corroded nuts, eradicating the need for unsafe grinding and flame cutting. With 21 tools in all, the efficiency, durability, and ergonomic design of the nut splitters gives maintenance engineers the ability to remove the toughest seized nuts.

The Enerpac nut splitter portfolio includes: NC Series Nut Cutter, NSH Series Nut Splitter and NSPH Series Nut Splitter Power Head tools. When it comes to efficiency, the tools have an optimised cutting head geometry ideal for the industry application. For example, the Enerpac NSH and NSPH Series tools are designed for the oil and gas market and the cutting heads specially designed to tackle bolted pipeline flange joints. Another efficient feature is the dual blade design found on several models. As nuts can be split from two sides in one action, this saves the operator valuable time.

For enhanced durability, the tools are heat treated and shock resistant to withstand minor impacts without damage. Durability includes features such as heavy duty, steel chisels that can be reground as needed, models with a drop-tested revolving anchor point, and models that can tackle nuts with

up to a max HRC 44 hardness.

Operators will appreciate the ergonomic design. An angled head and ergonomically designed and positioned handle makes the tool easy to work with and manoeuvre. Several models also feature an easy-to-use compact design.

To learn more about the latest Enerpac Nut Splitting tools, visit www.enerpac.com.



EtW Energietechnik Builds Biomethane Plant In Rittershoffen, Alsace

ETW Energietechnik from Moers has built a biomethane plant in Rittershoffen, in Alsace, in cooperation with the planning office Rytec from Baden Baden. The processing capacity of the plant, which went into operation in February 2023, is about 700 normal cubic meters of raw biogas per hour. This means that up to 350 normal cubic meters of biomethane are fed into the natural gas grid every hour. This is roughly equivalent to the average fuel consumption of 20,000 passenger cars.

Use of substrates from the region

The project was initiated by three young, visionary farmers from Alsace who are committed to environmental protection and regenerative energies and want to promote sustainable agricultural use in the region. Only agricultural residues from the immediate surroundings are used as substrates.

Especially the very low power consumption of 137.6 kilowatts electric makes ETW's plant state of the art for biomethane plants of this size class. This significantly reduces the risk of future electricity price increases. Even with a downstream high-pressure compression plant, which compresses the processed biomethane to 67.7 barg (bar gauge) and feeds it into the natural gas grid, the power consumption of the entire plant is less than 202 kilowatts electrically, significantly lower than comparable products on the market. This means that the entire plant consumes less than 7 per cent of the energy provided by the biomethane.

Interface reduction ensured rapid construction progress. As early as 2016, the first considerations were made to realise the project. In 2019, the concrete design and planning work began. The approval, application for funding, construction financing and earthworks were all carried out by the Rytec company from a single source. The maximally reduced interfaces allowed the construction work to progress quickly and effectively. The biogas plant will create three jobs in the region. The residents of the neighbouring village of Rittershoffen initially expressed concerns during the project

development. In response, however, the entrepreneurs invested a lot of work and money to ensure that the plant was well integrated into the landscape.

Green added value for the entire region

„As a family business that has traditionally specialised in growing fine crops such as asparagus and horseradish, the sustainable development of our region is an important concern for us. Therefore, it was particularly important to us that the integration of the biogas plant is not only in line with our company philosophy, but also offers a green added value for the entire region,” reports Denis Scharrenberger, Managing Director of FERME SCHARRENBARGER.

The location of the biomethane plant is now off the road at a sufficient distance from the adjacent village – planted with a wall around the property as well as high-quality native trees and hedges. To accommodate the local residents, extensive earthworks as well as longer power lines and pipelines were invested in here.

Focus on highest quality

When designing the plant technology for the fermentation of the diverse residual materials, a lot of emphasis was placed on the highest quality. The ETW SmartCycle® biomethane plant from ETW Energietechnik GmbH is correspondingly high-quality, reliable and low-maintenance. Thanks to the use of oil-free screw compressors and an intelligent plant control system, the plant has the lowest energy consumption on the market.

Prefabricated parts from Drössler Umwelttechnik with factory-concreted installation parts such as FF pieces and agitator frames were also used for the concrete. All built-in parts have additional sealing flanges. The sandwich construction of the tank walls is optimally thermally insulated and already fitted in the factory with integrated heating pipes protected by the concrete.

<http://www.etw-energie.de/>



BenQ Group Became the World's First Company to Pass International ISO Sustainability Certification at COMPUTEX Taipei 2023

All ESG goals have passed verification, including the implementation of zero-waste upholstery and the promotion of green transformation plans. BenQ Group, a global leader of smart solutions, has announced that it was the only participating manufacturer at COMPUTEX Taipei 2023 to have obtained international ISO sustainability certification with its green booth. In compliance with the international standard ISO20121 Sustainability Event Management, 15 goals in BenQ Group's three environmental, social, governance (ESG) domains have passed verification with a 100% rating. The "ISO20121 Sustainability Event Management" was first adopted by the London Olympics in 2012 to provide a global management standard for event sustainability, and assistance in event management and execution, with sustainability as the primary consideration.

BenQ Group is committed to expanding performance, establishing energy efficiency, and alleviating the negative environmental and social impacts. "COMPUTEX is the world's premier technology exhibition," says President Joe Huang of the BenQ Group. "We were committed to assisting clients in green sustainability transformation and implementing sustainable practices locally during the exhibition. Our gratitude is extended toward 30 clients, suppliers, and affiliated company partners for their participation in the sustainability initiatives and displays. I look forward to us continuing to exert a sustainable influence in the future and creating a green value chain together." All 15 sustainable goals in the three ESG domains passed verification. COMPUTEX Taipei is a crucial avenue for businesses to expand their opportunities and understand market dynamics. Exhibition decorations and event maintenance usually involve the use of single-use building materials and dining utensils for appearance, convenience, and speed of construction, resulting in a 1/3 substantial amount of event waste. BenQ Group has established 15 green, sustainable goals in its three ESG domains, all of which have been attained and verified by an impartial third party.

Regarding environmental considerations, BenQ Group requests that the exhibition venue adhere strictly to the 3R principles of reduce, reuse, recycle. Simple green building materials with long-lasting vitality were used to construct a sustainable booth with zero-waste upholstery. The BenQ Group booth also used 100% recycled dining utensils and staff used their own green cups, while Chingpiao recycled cups were provided for visitors to drink tea. What's more, customers could complete an online satisfaction survey, interact with a robot, and download digital versions of printed materials, of which 90% were available online and not printed out

this year. Regarding the social aspect, BenQ Group endeavors to promote a sustainable mindset and implement green transformation plans, integrating the group's grand fleet that spans 22 partners and clients, especially Formosa Chang and Tea Top, to display nearly 100 products and services together.

More than 50% are related to promoting green transformation plans, such as enterprise cloudification, carbon inventory, energy consumption reduction, and decision-making accuracy improvement to reduce resource waste. In collaboration with Teach For Taiwan, the digital gap in education has also been addressed, along with promoting digital education popularization, and modernizing rural education. Booth visitors were asked to rate the sustainability advocacy at the exhibition venue and the satisfaction level reached 4.82 out of 5 points. This demonstrates the visitors' identification of sustainable design. On the governance side, green procurement and economic value objectives have been established, while green and low-carbon procedures have been facilitated, and direct economic benefits have been actively created. Throughout the booth, online and offline connections, as well as client influence, were strengthened, and all objectives were met. BenQ Group manufactures 100% recycled dining utensils, 80% domestically produced green building materials, and 70% locally manufactured high-quality gifts. It also collaborated with Tea Top, a well-known Taiwanese tea beverage store, to ensure that all guests can enjoy the superior flavor of Taiwanese teas. 30 Sustainable Partners Collaborate to Create a Green Miracle by Integrating Smart Business Opportunities. BenQ Group continues to implement the truth, goodness, and beauty of technological life in accordance with its long-term vision. Conventions, which are committed to innovative technology and the implementation of green sustainability, are not only business activities but also platforms for ESG.

This time around, the company has integrated savvy business opportunities and co-created a green miracle with its thirty sustainable partners. 2/3 The BenQ Group companies that participated at COMPUTEX Taipei 2023 include: BenQ, Qisda, ACE PILLAR, AEWIN Technologies, Alpha Networks, APLEX Technology, DATA IMAGE, DFI, DSIGroup, D8ai, Epic Cloud, Epont Systems, Grandsys, Hitron Technologies, Interactive Digital Technologies(IDT), LaFresh, Mace Digital, MetaAge, MetaGuru, Partner Tech, PowerWalker, and WEBEST Solution. In addition, BenQ Group has also jointly cooperated with clients, suppliers and other sustainable partners including: Formosa Chang, Tea Top, Teach For Taiwan, KY-Post Design, Cunext, Chingpiao, and Unity Sustainability Services. The sustainable influence of companies has been exerted in collaborative efforts, continuing to simmer in the hearts of participants and co-create a vision for sustainability.

New Benzene-Specific Monitor For Tighter International Regulations



ION Science has launched a new, dramatically upgraded version of Titan, maintaining its position as the only fixed benzene-specific monitor in the world; Titan 2. In accordance with recent legislation changes, Titan 2 offers enhanced stability and sensitivity, supporting ION's continued mission of protecting lives and preserving the environment.

"Benzene is a toxic, carcinogenic gas representing a serious threat to many workers, as well as the environment," explains ION Science Group Managing Director, Duncan Johns. "It is therefore vital that staff are protected by monitors that can continuously measure benzene at the low levels required by increasingly stringent international regulations. Titan 2 is the only commercially available, truly selective, fixed continuous benzene monitor worldwide that can meet this requirement."

Titan 2 delivers unrivalled accuracy and sensitivity in benzene detection and is ideal for use in a variety of sectors, such as oil & gas, bulk storage facilities, chemical manufacturing and processing, and asphalt production.

Users of the original Titan will be familiar with the instrument's accuracy and performance, however, within the new Titan 2 they will see core enhancements, such as a new rugged manifold, a piezoelectric micro pump for enhanced stability, a lower limit of detection, and updated PC software for easier management and control.

An occupational exposure limit (OEL) for benzene of 100 ppm was originally recommended in 1946. Following further associations with leukaemia, the OEL was reduced to 50 ppm and then to 1 ppm as the 8-hour time weighted average (TWA) exposure limit (U.S. OSHA, 1987). However, further health problems have been reported at levels below 1ppm so there is pressure in many countries to lower the limit further. For example, NIOSH recommended airborne exposure limit (REL) is 0.1 ppm (10-hr TWA) and 1 ppm during any 15-minute work period. Similarly, the current EU 8-hour TWA for benzene is 1 ppm (3.25 mg/m³). However, from 5th April 2024, the long-term exposure limit will be reduced to 0.5 ppm – and will be cut again from April 2026 to just 0.2 ppm. – Directive (EU) 2022/431 of the European parliament of the council, March 2022.

Regulatory requirements are therefore driving the need for greater sensitivity, and these needs are met by Titan 2. Thanks to innovative technology in conjunction with industry-leading PID sensor technology, the Titan 2 has a reduced likelihood of cross-sensitivity and can detect benzene rapidly at levels as low as 0.02 parts per million (20 parts per billion). At the other end of the scale, it can detect benzene at up to 20 ppm, delivering high speed and high sensitivity.

Titan 2 captures a gas sample once every 60 seconds. The sample is then conditioned within a further 60 seconds to allow precise benzene measurement, ensuring a consistent flow of real-time data. The piezoelectric micro pump in the latest version delivers enhanced pressure and flow accuracy to ensure a rapid response and unrivalled reliability.

Titan 2 also features visible alarm capability, triggering an alert when benzene concentrations reach either of two operator-configurable levels. Twin relay outputs enable the

user to integrate the unit with existing site alarm systems, while easy-to-use firmware allows a simplified calibration procedure. For analysis of readings captured by Titan 2, both 4-20mA and RS485 MODBUS communication protocols can be utilised.

A proven, robust separation method ensures specific readings for benzene, with an easy-to-read display. An internally regulated heating system ensures stable operation even at extremes of temperatures, and the new robust housing reduces contamination risk and allows for extended use in the harshest environments.

Titan 2 has been designed to comply with international safety standards, including ATEX and IECEx, making it safe for use in any environment, as well as featuring an IP65 Ingress Protection rating. ION Science's photoionisation detection (PID) technology has been independently verified as the best-performing on the market, providing reliable, accurate solutions backed by outstanding product support. Importantly, the new, unique to Titan 2, MiniPID T2 10.0 eV Sensor features a patented design to nullify potential humidity interference, whilst ensuring a fast response, the highest levels of sensitivity and market-leading reliability.

The Titan 2 service module is designed to be backwards compatible, so in conjunction with a simple firmware upgrade now provides existing Titan customers with a quick and convenient upgrade opportunity.

Summarising, Duncan Johns says: "Benzene is one of the more dangerous VOCs so the Titan 2's ability to reliably speciate this gas is extremely important in the protection of lives, and with lowering regulatory limits, the instrument's enhanced sensitivity is a major advantage."

Further details can be found at: <https://bit.ly/44tqfDz>



Bentley Systems Announces New Capabilities For Carbon Assessment In Itwin Experience

Bentley Systems, Incorporated (Nasdaq: BSY), the infrastructure engineering software company, is announcing at the Environment Analyst Global Business Summit, the availability of new carbon assessment capabilities in iTwin Experience to enable infrastructure professionals to seamlessly quantify carbon reduction opportunities in their projects. The Summit takes place June 27 and 28 in Chicago.

With the new capabilities, infrastructure professionals can fully automate embodied carbon calculation reports and impact analyses by taking advantage of iTwin Experience, enabling them to explore multiple design choices faster and eliminate manual data exports and normalization.

In 2022, Bentley developed an integration service in the iTwin Platform to automate the process of generating embodied carbon reports for infrastructure projects via One Click LCA and EC3. Reports are initiated using the iTwin Platform and then viewed in One Click LCA or EC3. Now, iTwin Experience provides a ready-to-go, bi-directional integration with EC3, enabling carbon assessments to be visualized in a digital twin without the need to write code. iTwin Experience exports a data model to EC3, a free tool for which users need to be separately registered, which performs the embodied carbon calculations and returns results that iTwin Experience seamlessly reads and visualizes.

Organizations that want to include carbon assessment workflows in their infrastructure projects without developing proprietary iTwin-powered apps will benefit from the newly available carbon calculation capabilities in iTwin Experience.

The capabilities also unlock the integration of carbon assessment workflows with other Bentley products and solutions for designing and managing infrastructure projects.

The capabilities are being released in Preview and will be available for a restricted number of partners and early adopters.

Kaustubh Page, Director of Product Management with Bentley Systems, said, "Lifecycle assessments, environmental footprint analyses, and reports are becoming standard requirements for infrastructure projects worldwide. Designers and environmental engineers spend critical time generating environmental assessments or reports. Because the required data needed to be manually exported from multiple design authoring tools and then aggregated and verified, generating these environmental assessments has been a time-consuming and potentially error-prone process. With these new capabilities built into iTwin Experience, it is feasible to transform what is typically a six-month process into a six-minute workflow. Our goal is for iTwin Experience users to spend their valuable time on designing, optimizing, and making better decisions, faster – not exporting, aggregating, and validating data."

Rodrigo Fernandes, Director of ES(D)G with Bentley Systems, said, "We want to enable users to implement carbon analysis and optimization as a natural, repeatable, and standardized procedure, as part of managing every type of infrastructure project, anywhere in the world. The sooner that carbon assessment is integrated into an infrastructure project, the bigger the carbon reduction opportunities will be. This announcement is focused on embodied carbon, particularly relevant in the early project stages, but iTwin Experience unleashes opportunities for telling the whole 'carbon story' of an infrastructure project and asset. We are genuinely unlocking environmental footprint assessments powered by

infrastructure digital twins.”

Mark Tablante, Design Technology Director with Burns & MacDonnell, said, “Electrification is a critical component to meeting the world’s decarbonization goals. There is a tremendous amount of capital investment needed in electric T&D infrastructure and a carbon-efficient design makes the most of every dollar spent to further decarbonization. Tracking and reporting on progress toward utilities’ net zero goals is important to not only their shareholders, but for the future of our world. Burns & McDonnell is working with Bentley to test their new iTwin-powered carbon reporting capabilities for the electric utility industry. Our sustainability engineers and environmental group are proud to work with our clients and technology partners to help develop vendor agnostic solutions for a brighter future. We look forward to integrating these services and continuing helping our clients track carbon and reach their net zero goals.”



Image 1:

Embodied carbon impact calculation from EC3 visualized in iTwin Experience. Design elements are color coded based on the severity of realized embodied carbon. Image courtesy of Bentley Systems.

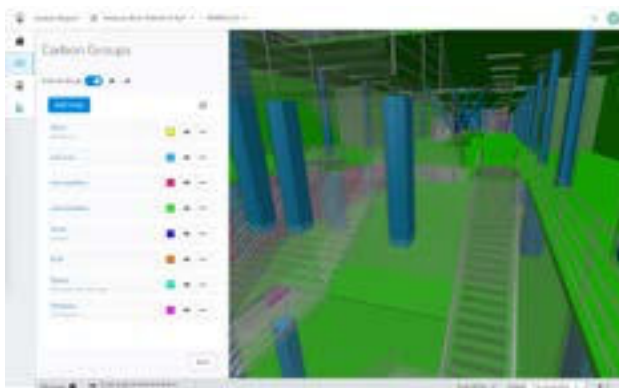


Image 2:

Design elements in logical groups for embodied carbon impact calculation. Image courtesy of Bentley Systems.

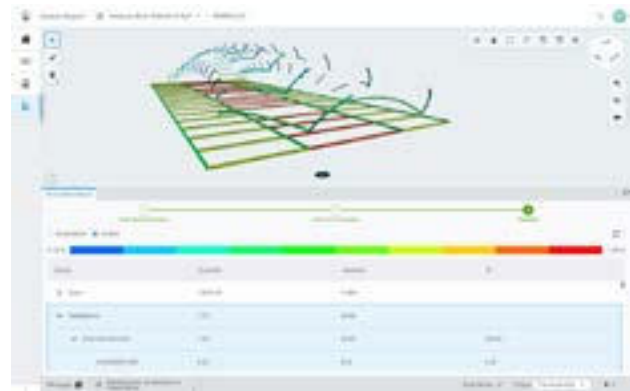


Image 3:

The new capabilities in iTwin Experience transform what is typically a six-month process into a six-minute workflow.

Image courtesy of Bentley Systems.

About Bentley Systems

Bentley Systems (Nasdaq: BSY) is the infrastructure engineering software company. We provide innovative software to advance the world’s infrastructure – sustaining both the global economy and environment. Our industry-leading software solutions are used by professionals, and organizations of every size, for the design, construction, and operations of roads and bridges, rail and transit, water and wastewater, public works and utilities, buildings and campuses, mining, and industrial facilities. Our offerings, powered by the iTwin Platform for infrastructure digital twins, include MicroStation and Bentley Open applications for modeling and simulation, Seequent’s software for geoprofessionals, and Bentley Infrastructure Cloud encompassing ProjectWise for project delivery, SYNCHRO for construction management, and AssetWise for asset operations. Bentley Systems’ 5,000 colleagues generate annual revenues of more than \$1 billion in 194 countries.

www.bentley.com





Iciss Hydrogen Market Watch To Help Accelerate Market Growth

ICIS, a global source of commodity intelligence, today announced the launch of a new, free weekly hydrogen market overview, "ICIS Hydrogen Market Watch". The ICIS Hydrogen Market Watch acts as a central resource for market participants to monitor key developments in the nascent hydrogen market. The overview presents market participants with pricing information and coverage of core developments across policy, regulations and more, supporting them in making investment decisions in this important commodity for the future.

Jake Stones, Hydrogen Specialist at ICIS, said, "Hydrogen is one of the key enablers for the energy transition. However, although there is already large hydrogen usage, there is not enough clarity to establish a global market on the level needed for the future. ICIS is therefore producing this free weekly overview to support both price and information transparency to support market growth."

The hydrogen market is currently opaque, which hinders new entrants as they cannot gauge return on investment. Although there is a lot of disparate information available, this weekly summary focuses on essential developments, giving market participants clear, actionable insights across policy, regulation and pricing.

"Supporting investment decisions with a reliable insight

about the market and pricing transparency will help bring clarity to the hydrogen market," continues Stones. "This new intelligence service will feature ICIS' hydrogen assessment information for unabated Steam Methane Reforming (SMR), commonly referred to as "grey" hydrogen, low-carbon SMR and low-carbon Autothermal Reforming (ATR) and wholesale power market electrolysis. The overview will also show the cost premium between low-carbon hydrogen and grey hydrogen."

ICIS Hydrogen Market Watch will include an ammonia-to-hydrogen assessment, providing the cost of hydrogen from imported ammonia, which represents a large proportion of hydrogen production. This is a market-based assessment based on the pricing of ammonia. It will also include insights from across the hydrogen economy, such as articles and whitepapers, and will feature the ICIS Hydrogen Insights podcast series.

"While the future energy mix will be diverse, hydrogen has a big role to play. If we are going to meet our decarbonisation targets, it is essential that we have transparency in this developing market. ICIS helped to create the European Gas market, through its forerunner Heren Energy, hence the Heren Index and ICIS TTF, and we are confident that the ICIS Hydrogen Market Watch will help move the Hydrogen market a big step forward," concludes Stones.



ATEX Explosion Protection & Ignition Properties of Hydrogen Gas

Hydrogen technologies are undergoing a significant period of growth as widespread use is planned in the energy generation and production industries. Any structure that contains hydrogen components should be ventilated adequately to avoid ignition. Since hydrogen is lighter than air, it collects under roofs and overhangs.

The avoidance of ignition sources is one of the three basic measures for explosion protection: containment, segregation, and prevention.

The prevention of an explosion through limiting ignition sources is implemented using explosion-protected equipment. The design reduces the potential for the component to contribute as a source of ignition. Non-electrical equipment such as ATEX industrial fans with Ex H certified constructions are important components that must be selected correctly according to accurate hazardous area classifications.

Mechanically generated sparks or hot friction surfaces resulting from mechanical impacts caused by the rotating and stationary parts meeting for prolonged time periods, are considered in the prevention concept. This aspect is stated in ATEX legislation, requiring the safe and effective construction of components in permissible material pairings to reduce this ignition source.

Whether ignition of explosive gas mixtures can be caused by mechanical impact depends on many parameters. In addition to the materials involved in the impact, the ignition sensitivity of the fuel gases is important. Hydrogen is very sensitive to ignition with a very low MIE of only 0.017mJ.

Therefore, Hydrogen is assigned to explosion group IIC in accordance with the low minimum ignition energy.

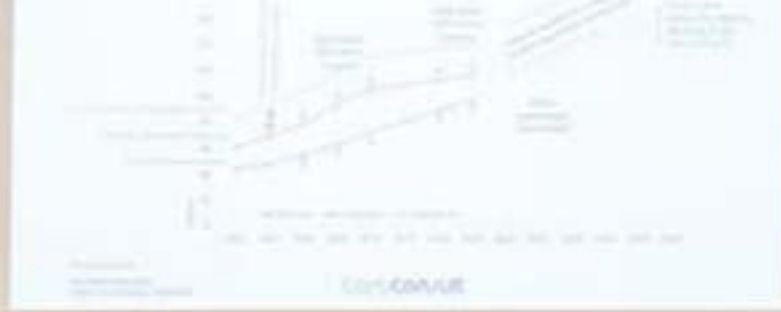
Hydrogen is less likely to cause a fire or explosion hazard in an open or well-ventilated space, but a problem arises when hydrogen gas is allowed to accumulate. If this is allowed to happen, there will be a risk of a flammable mixture building up. When a large amount of accumulated hydrogen rises and mixes readily with air, it creates an ignitable mixture that can result in flames or explosions. Hydrogen is flammable in air at a volume of 4-75% by volume.

The best practice to avoid accumulation is to determine where hydrogen leaks are likely to occur and how they may disperse, then ventilate accordingly to manage the airflows sufficiently to keep hydrogen concentrations below the lower flammability level (LFL).

Hydrogen has an auto ignition temperature of over 1000°F. The auto ignition temperature of a substance is the lowest temperature at which it will spontaneously ignite without the presence of a flame or spark. Hydrogens flammability range is very wide when compared to other fuels, but under the optimal combustion condition of 29% hydrogen: air ratio, the energy required to initiate hydrogen combustion is much lower than required by other fuels.

Hydrogen is a very small molecule with low viscosity; therefore, it is prone to leakage. Natural ventilation with vents at high levels in confined spaces will allow hydrogen to escape and quickly disperse into atmosphere safely.

For more information on how our range of IIC T1 hydrogen compatible industrial fans are suitable for explosive atmospheres contact our team on sales@axair-fans.co.uk or say hello to our technical team on the website chat.



Gocarbonfibre 2023 Programme To Feature Leading Experts From Across The Supply Chain

Smithers has been organizing the world renowned Global Outlook for Carbon Fibre conference for over 20 years, and as Europe's only conference dedicated solely to carbon fibre, it is truly unmissable for anyone working within this sector.

More than 100 key stakeholders from the carbon fibre industry will convene online on the 11-12 October 2023.

By joining us at GoCarbon Fibre 2023, delegates will benefit from:

- Expert presentations delivered by key industry players and global experts from across the carbon fibre supply chain
- Networking with senior level, innovative, forward thinking industry professionals
- An inspiring environment where you can speak with your competitors and take away information to help boost your business

A fantastic line-up of speakers are expected to present; these expert speakers will present on a range of topics from new developments and demands, design and manufacturing challenges and technological developments through to end use applications, recycling and sustainable solutions, innovative projects and much more.

Just some of the presentation's attendees will hear this May:

"GoCarbonFibre continues to excel at providing a highly-focused event for the carbon fibre & carbon composites industry" – Carbon Nexus

"Great overview of the entire market. It allows companies like us to take a look at what is going on in the outside world on an international scale" – Voith

"GoCarbonFibre improves every year. Very good speakers, networking and excellent presentations on relevant topics" – Gen 2 Carbon

For more information on GOCarbonFibre 2023, visit

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

Sponsorship and exhibition opportunities are still available.

For more information about sponsorship and exhibition opportunities, please contact Ellie Baker at ebaker@smithers.com or on +44 (0) 1372 802 291 for more details.

About Smithers

Smithers is a global leader in rubber, plastics and polymer testing, consulting services, conferences, training, publications and market reports, focused mainly on the medical, industrial, automotive and consumer industries. Smithers also runs the successful Extractables and Leachables conference series.





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System Project Leader
Volvo Car Group





Clean Energy Technology Set To Decarbonise The World

Wins UK's Top Award For Engineering Innovation

Ceres Power's pioneering clean energy technology has won the 2023 MacRobert Award. Honouring the UK's top engineering innovations, the MacRobert Award was presented to Ceres in recognition of a groundbreaking fuel cell technology that promises to make a major contribution to decarbonising the world at the scale and pace required to save the planet.

The Academy's Royal Fellow, HRH The Princess Royal, presented the winning team behind the Ceres SteelCell with the MacRobert Award gold medal and a £50,000 prize at the Royal Academy of Engineering Awards Dinner in London on 13 July.

Run by the Royal Academy of Engineering, the MacRobert Award is the UK's longest running and most prestigious award for UK engineering innovation. Ceres joins an illustrious list of previous MacRobert Award winners, many of which have transformed the world we live in. From the CT scanner to the first television graphics system and the Raspberry Pi mini-computer, MacRobert Award winners have demonstrated the sheer capability of UK innovators to develop world-leading, commercially viable products across all sectors of engineering. The 2022 winner, Quanta Dialysis Technologies, has made portable, high-performance dialysis a reality.

To win the MacRobert Award, innovations must demonstrate outstanding engineering ingenuity, commercial success and tangible social benefit. Ceres' pioneering clean energy technology includes fuel cells for power generation and electrolyzers for green hydrogen. The judging panel was impressed with the solid oxide cell based on common low-cost materials, which is combined with an innovative deposition technique and a highly differentiated stack technology. This technology means that just one cell is enough to light a room but the 250 megawatts of capacity set to come on stream in 2024 could power half a million homes.

Ceres has pioneered the use of commonly found materials: a gadolinium-doped ceria ceramic membrane as an electrolyte that operates at temperatures in the range of 500–600C. This is a 'Goldilocks' temperature for performance, fuel flexibility, cost and robustness. Ceres' licensing model has enabled it to establish partnerships with companies such as Bosch, Doosan, and Weichai, to deliver systems and products at the

scale and pace needed to decarbonise power generation, transportation, industry, and everyday living.

The judges were also impressed by the truly reversible technology. Running in one direction it can use multiple fuels to generate electricity highly efficiently when and where it is needed. Run in reverse, it generates green hydrogen at high efficiencies and low cost, an innovation the MacRobert Award judges praised as a huge breakthrough in the clean energy revolution.

Professor Sir Richard Friend FREng FRS, Chair of the Royal Academy of Engineering MacRobert Award judging panel, said: "Engineering innovation is the driving force behind economic growth and a sustainable future. It is impressive to see what Ceres Power has achieved with its SteelCell technology. The innovation promises to be a huge game changer for hydrogen generation and marks a significant breakthrough in clean energy technology, providing the tools for companies to reach net zero, even in the most hard-to-abate sectors.

"The engineering heroes behind the UK's world-changing engineering innovations deserve to be celebrated. Ceres' spectacular work continues the UK's proud tradition of world-leading engineering innovation and highlights the important contribution the UK can make in tackling the ongoing climate crisis."

Dr Caroline Hargrove CBE FREng, Chief Technology Officer at Ceres, said: "As a UK technology business, Ceres is playing an important role in decarbonising the global energy system, and we are thrilled to gain the recognition of the Royal Academy of Engineering as the winner of the 2023 MacRobert Award.

"The UK is a science and technology powerhouse; as a nation we have invented some of the world's best technology that we see all around us today. At Ceres, we believe the same can be true of hydrogen and fuel cell technology.

"We have an incredibly talented team of nearly 500 scientists and engineers, pioneering electrochemical technologies that are enabling the world's most progressive companies to deliver clean energy at scale and pace. And we need to succeed, to ensure that we can deliver a net zero future for our families, for society and for all our benefit."

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Making Packaging That Doesn't Cost The Earth

Globally, companies are seeking opportunities to reduce waste and the carbon footprint of their products. This has increased demand for environmentally responsible packaging, and the manufacturing company Futamura has become the world's largest producer of sustainable cellulose packaging films, including their leading NatureFlex™ range.

The production of sustainable films requires precise monitoring and control of process conditions. Highly accurate temperature and humidity measurement is therefore essential, particularly during the film drying process and when finished products are stored.

Futamura UK uses Vaisala measurement equipment across their site, including Vaisala HUMICAP® humidity and temperature transmitters HMT360 in their coating towers inside their conditioners. The coating towers contain solvents which are flammable, so the products used in these areas must be certified for the Ex environment. The Vaisala HMT360 transmitters, now superseded by the ATEX-certified HMT370EX, are intrinsically safe, making them ideal for use in hazardous areas such as these.

Vaisala measurement instruments can also be found on Futamura UK's casting machines, installed in the dryer ducting, measuring humidity and temperature. The Vaisala humidity and temperature meter Series HMT330 is designed to provide highly accurate measurements in demanding industrial applications. These transmitters control a valve which manages the amount of steam that goes into the dryers, allowing the humidity to be maintained at the drying set-point needed for each type of film. Moisture content is a significant factor in the properties of the final film, so accurate control is important to ensure product quality and minimise waste. The HMT330 is an older model, so, seeking to future-proof their measurement instrumentation, Futamura contacted Vaisala for advice.

A member of Vaisala's technical sales team therefore visited Futamura's UK site in Wigton, Cumbria to demonstrate the benefits of switching to Vaisala's Indigo platform, and to discuss the options with Electrical Engineering Chargehand, David Carr, and Technical Engineers David Mansergh and Chris Reid.

"We described the applications for the HMT330 series instruments and the Vaisala representative suggested we try the Indigo520 display with a relative humidity and temperature probe HMP5," explains David Carr. "We were more than happy with the suggestion. His vast product knowledge and expertise in engineering and

process systems was a huge benefit in the decision-making process. He also went through the calibration process and explained how to set up the equipment with our electrical engineers. Vaisala's service and support have been first class – they have gone above and beyond to help us." The Indigo520 can connect with two separate probes simultaneously and has a simple, clear, intuitive touchscreen display. Futamura particularly appreciates the screen size and easy-to-read graphs, as well as the ability to swap out probes for calibration. It has also been advantageous that the new HMP5 probes work mechanically in the same way as the previous devices, with which they were already very familiar.

The key benefit of using Vaisala's measurement instruments in Futamura's manufacturing process is that they enable accurate control of the production process, which ensures consistent product quality and reduces waste.

Summarising David Carr said: "Futamura has been using Vaisala measurement instruments for many years helping us ensure the quality of our sustainable packaging films, and we will continue to do so in the future. When you find products, and a company, that you can trust, it makes good business sense to continue the relationship. As a plant we like to standardise because it makes spares management and equipment replacement simpler. It's safe to say that Vaisala is our brand of choice because of product reliability and ease of installation and operation."

www.futamuragroup.com



New Housing Enclosures From AMETEK Land Are Approved For Operation In Hazardous Areas

A METEK Land, the world's leading manufacturer of monitors and analysers for industrial non-contact temperature measurement, has increased its support for customer applications in hazardous areas with two new housing enclosures.

The new EXSH1 flameproof housings have been developed for use with the EX SPOT pyrometer range and LWIR-640 thermal imager and are approved for operation in hazardous areas.

Manufactured from 316/316L stainless steel and highly resistant to corrosion, both enclosures have a certified temperature range of -40 to +70 °C (-40 to 158 °F).

Ingress protection to IP66 and IP68 means that they can be exposed to dust, water immersion and high-pressure water jets, making them suitable for use in almost any application in the harshest of environmental conditions, including those where explosive mixtures are present.

The housing has a gridless design, allowing an unobstructed field of view, and is certified for use in areas with dust and gas hazards. Additionally, the enclosure does not require purge air for safety.

The EXSH1 EX SPOT housing is designed for use with the EX SPOT range, a family of fully-featured, high-performance pyrometers for fixed, non-contact, infrared spot temperature measurements.

EX SPOT pyrometers are available in a range of operating wavelengths, temperatures, and process requirements, and the new housing will enhance their capabilities in continuous annealing lines, semiconductor growth, and applications in the hydrocarbon processing and chemical industries.

The EXSH1 LWIR housing has been created specifically for

the LWIR-640 thermal imager, a long-wavelength instrument providing measurements between -20 and 1000 °C (-4 and 1832 °F) in three ranges with a choice of different optics and lenses.

The LWIR-640 measures and streams live true-temperature images at up to 60 frames per second, providing high-precision temperature measurements and thermal profiles to continuously control, document, and visualise industrial processes.

The new housing protects the LWIR-640 in applications including flare stack monitoring, critical vessel monitoring, storage pile monitoring, and operations within the hydrocarbon processing and chemical industries.

With ATEX, IECEx and UKEX certifications, the housings comply with multiple international standards. This means that a common specification can be used for worldwide applications, greatly simplifying the task of specifying and quoting the product.

A range of accessories is available for the housings, including various mounting brackets with pan and tilt adjustment, a sun shield for outdoor applications, and a spoolpiece adaptor. An environmental protection tube is offered for the LWIR housing, for flare stack applications, while further accessories for the EX SPOT housing include purges and a vertical mounting stand.

Derek Stuart, Product Manager, said: "The EXSH1 housing allows customers in many new industries, including hydrocarbons and semiconductors, to benefit from the accuracy and reliability of AMETEK Land's thermometers and thermal imagers."

For more information, and to download the EXSH1 brochures, go to: ametek-land.com.

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Monitoring the world

Why Is ATEX Certification Needed In Water Treatment?



It is generally understood that all equipment for use in hazardous locations such as flour mills, coal mines, petrochemical plants and fuel transfer facilities, needs to be “intrinsically safe”. In other words, incapable of igniting an explosive atmosphere. However, some not so obvious hazardous locations include water treatment plants, tunnels and underground passageways or any location where a build-up of naturally occurring flammable material (such as methane or dust) could occur.

Wastewater pumping and treatment facilities, for example, emit flammable gases and vapours. These emissions come from substances that the wastewater could be carrying (e.g. oils, solvents or fuels from accidental spills) and from anaerobic digestion of organic matter (producing methane and hydrogen sulphide). According to NFPA 820 (Standard for Fire Protection in Wastewater Treatment and Collection Facilities) most pumping stations, spaces and buildings that make up a wastewater treatment plant must be considered hazardous locations.

In many of these hazardous locations there is a requirement for condition based monitoring (CBM), for example by monitoring the vibration of rotating machinery to predict failure. Particularly in the water treatment industry, the consequences of an unexpected breakdown can be catastrophic. In the event of pump failure, wastewater can back-up and overflow, resulting in accidental discharge of untreated sewage into water courses (rivers, lakes and oceans). This has led to water treatment companies being fined literally millions, to say nothing of the environmental damage!

The Dangerous Substances and Explosive Atmospheres Regulations (DSEAR) require employers to control the risks to safety from fire, explosions and substances corrosive to metals. This entails compliance with BS EN 1127 (Explosive atmospheres - explosion prevention and protection), which in turn requires that any electrical equipment used is

intrinsically safe and complies with BS EN IEC 60079. Hence any CBM equipment needs to be IECEx/ATEX certified for use in hazardous locations.

Affordable intrinsically safe CBM

Intrinsically safe devices typically cost many times more than their non-intrinsically safe counterparts. This is mainly due to the increased manufacturing costs (e.g. additional safety components and encapsulation) but also due to the high cost of the required testing and certification. Test Products International (TPI) believes it has broken the ATEX cost barrier with the TPI 9080Ex vibration analyser, priced at a very affordable £3,500. IECEx and ATEX certified for use in Zone 1 and with North American approval for Class I, Zone 1, the TPI 9080Ex is certified for use in hazardous locations anywhere in the world.

The TPI 9080Ex is supplied with an industry standard (IEPE) intrinsically safe accelerometer and offers on-meter analysis for the detection of machine faults such as unbalance, misalignment, looseness and bearing wear. The TPI 9080Ex features colour coded alarm levels and zoomable on-screen vibration frequency plots with cursor readout. It can store lists (routes) of machines (up to 1000), each with up to 10 measurement points, all with full vibration waveform and frequency spectrum (FFT) capture.

Routes and readings can be transferred between the TPI 9080Ex and the packaged free, subscription free, PC based trending and reporting software in a variety of different ways. Via the included USB docking cradle, wirelessly via Bluetooth or remotely via a Bluetooth link with a smart phone or tablet, running the free TPI Bridge App. This allows service personnel to receive and return routes and readings, no matter where they are in the world. The PC software, includes automatic email notification of alarms and report generation, allowing you to implement a full CBM solution.

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

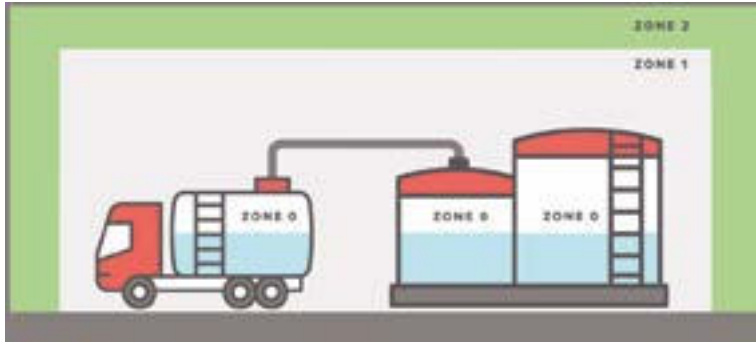




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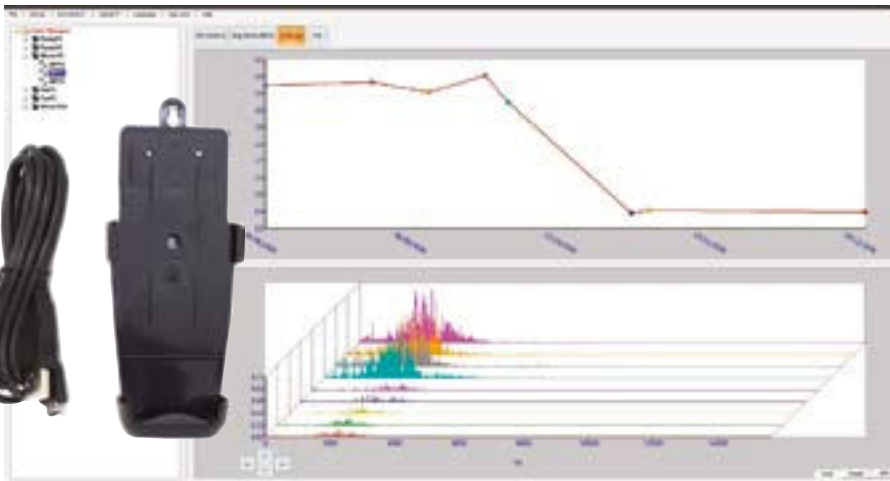
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Gemmak Certified To Execution Class 3

Rope and Sling Specialists Ltd.'s (RSS) Gemmak Engineering Ltd. fabrication facility has received a UKCA Certificate of Conformity of the Factory Production Control, up to and including EXC 3.

The certificate, to designated standard EN 1090-1:2009 + A1:2011, covers structures and structural components, including manufacture of structural steelwork components. EXC 3, or execution class 3, relates to supporting structures made of steel up to strength class S700 and structural components made of aluminium alloys. Typical examples include buildings with more than 15 floors; pedestrian, bicycle, road, and railway bridges; and crane tracks.

Gemmak is one of 10 RSS facilities, situated near the company's de facto headquarters in Pyle, South Wales. It serves as the manufacturing division within the firm's engineering services department. It is principally used to design, manufacture, fabricate and repair a range of lifting beams, swing jibs, lifting platforms, pipework, runway beams, and lifting brackets, in addition to bespoke equipment, for the steel, shipbuilding, petrochemical, and other heavy industries. Dŵr Cymru Welsh Water is one of a number of high-profile companies that utilise these services.

Alan Varney, engineering services director, said: "Our customers benefit in having the confidence that the products that we manufacture will have full traceability and NDT [non-destructive testing] inspection with certification. In turn, it will create broader opportunities for us, which, in the past, we have had to turn down due to not having suitable certification [to EXC 3]."

Gemmak will fabricate anything metal, using the latest design, cutting, and welding technology. At the centre of a suite of design systems is SolidWorks, a solid modelling computer-aided design and computer-aided engineering computer programme. Tooling includes various guillotines, a plasma cutter, radial drills, magnetic drills, pillar drills, a centre lathe, an iron worker / press, an abrasive wheel, a band saw, and a circular saw. Gemmak delivers one-off projects plus batch orders and even maintains ongoing production lines for customers.

In addition to EXC 3 projects, Gemmak continues to manufacture to EXC 1 and EXC 2 standards. The first covers structural components made of steel up to strength class S275 and structural components made of aluminium alloys. This includes buildings with up to two floors (four floors if detached), bending beams up to 5m in length, projection beams up to 2m in length, and stair railings in residential buildings. It also covers agricultural buildings such as barns. The second class, meanwhile, comprises all supporting structures made of steel up to strength class S700 and structural components made of aluminium alloys. This typically includes buildings with between two and 15 floors.

Varney added: "Our fab shop has been getting busier over time and this latest certification will position us to enter our next phase of growth."

Gemmak is also certified to ISO 9001, ISO 14001, ISO 45001, and Safe Contractor.

The UKCA Certificate of Conformity of the Factory Production Control was presented by Centre for Assessment Ltd., of Manchester, UK.



A coded welder welds supports to an I-beam at Gemmak Engineering, the manufacturing division within Rope and Sling Specialists' engineering services department. A coded welder welds supports to an I-beam at Gemmak Engineering, the manufacturing division within Rope and Sling Specialists' engineering services department.



For this water industry project, Gemmak removed existing pumps and temporary bagging, replacing them with a bespoke set of platforms and pipework with new pumps. It also erected an in-house designed, tested, and certified gantry for future maintenance. For this water industry project, Gemmak removed existing pumps and temporary bagging, replacing them with a bespoke set of platforms and pipework with new pumps. It also erected an in-house designed, tested, and certified gantry for future maintenance.

Mark Bridger
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Can You 'Self Certify' Or Do You Need A Certification Body?

One of the most misunderstood aspects of ATEX and UKCA Ex Certification is the 'blend' of Self Certification and Notified/Approved Body Certification. There are many routes to certification, and this is explained in legislative documents, but for end users and manufacturers it can be very confusing. An example of the routes to conformity is shown below....

So what exactly does this mean?

- Electrical equipment that is CAT 1 and CAT 2 (normally for use in Zone 0 or 1) requires Notified Body Certification for the EU and UK Approved Body Certification for the UK (no self-certification is allowed unless the equipment is Simple Apparatus*)
- Non-electrical equipment for CAT 1 (Zone 0) requires Notified/Approved Body Certification.
- Equipment that is purely non-electrical requires a 'technical file lodging' with a Notified/Approved Body for CAT 2 (Zone 1) and the Notified/Approved Body will normally issue proof or receipt.
- All 'Protective Systems' (mitigation) require Notified/Approved Body Certification
- Associated Apparatus (even in the safe area) may require Notified/Approved Body Certification
- Simple Apparatus can be self-declared even for Zone 0 if you are competent (e.g. CompEx EX12) and produce a DSD (the DSD is effectively the Certification). Simple Apparatus must still be assessed against the appropriate Standards and appropriately marked for inspection.

It is also worth noting that electrical products which are certified as a 'component' (a 'U' on the end of the certificate number) requires recertification by a Notified/Approved body before they can be used in a potentially explosive atmosphere for CAT 1 and CAT 2.

Equipment Manufacturers Self Declaration (commonly referred to as 'Self Certification')

Manufacturers 'Self Declaration' under CE or UKCA Marking makes the person who signs the 'declaration' legally responsible for the equipment compliance as there is no legal requirements for 3rd party certification and no quality control over what is produced other than internal control of production. Regulatory Authorities may request the evidence (for example clause by clause standards assessment and test reports) for the standards claimed on the Declaration.

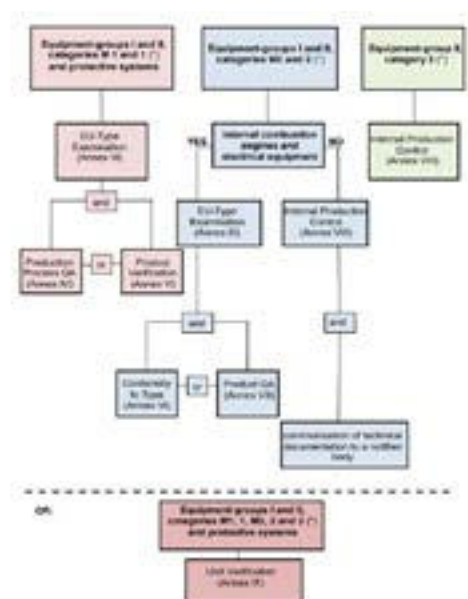
Category 3 Electrical and Category 2 and 3 Non-electrical can be voluntarily certified (and this is sometimes required by end users/buyers) in the following ways...

- A Conformity Certificate from a Certification Body but with no Quality Control on production (so there can be no Notified/Approved Body number under the CE/UKCA Marking)
- A Unit Verification Certificate where the Certification Body inspects the equipment for compliance and lists it on the Certificate by serial number (this can be a full Notified/Approved Body Certification with the Body number under the CE/UKCA Marking)

The Requirements for IECEX

IECEX always requires a fully accredited and regulated 'IECEX Certification Body' to issue the certification, there is no self certification route. All IECEX Certificates also control the manufacturing quality related aspects via an IECEX QAR. It's easy to see why IECEX has become the 'international' scheme and why many end users prefer the simplicity and control of an IECEX Certificate. It should be noted however that although IECEX is the 'baseline' for most international schemes (including UKCA and ATEX), National Certification is normally required 'in addition' to the IECEX Certification, but the process should be far simpler than achieving multiple National Certification that may not be accepted in other countries...

Sean Clarke CEng MSc FIET is the Managing Director of ExVeritas who a UKCA Approved 'Ex' Body, an ATEX Notified Body and IECEX Test and Certification Body. With 'Ex' test laboratories in the UK and USA. www.exveritas.com





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.



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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.

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MANAGEMENT SYSTEMS CERTIFICATION

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



SITE SAFETY

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



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Explosion Vents To Protect The Bulk Materials From Environmental Influences

Certified Weather Resistance Of Explosion Vents

Once again, REMBE GmbH Safety+Control is challenging the status quo of autonomous protective systems. Thus, the globally increasing environmental influences and weather extremes prompted REMBE engineers to test the protective effect of REMBE explosion vents also against weather-related water and air permeability.

Particularly in plants and processes with high demands on water and air tightness, explosion vents that are directly exposed to weather conditions due to their installation position often represent a potential point of entry and thus a hazard for the bulk materials themselves. REMBE therefore applies what is legally required for construction elements such as windows and doors to the various explosion vents in the explosion protection area. Within the framework of large-scale weather simulations, the REMBE explosion vent types ODV, EDP,

EGV-HYP, as well as the new vent duct cover KAD-LIC

have been tested for their properties of air permeability, watertightness and their resistance to wind load. BS EN 14351-1, the product standard for windows and doors, served as the basis and classification.

The results of the weathering test are extremely impressive. A comparison of the test results with real weather conditions shows that storms with wind forces of up to 14 on the so-called Beaufort scale (bft) - this corresponds to wind speeds of up to 166 km/h - have no influence on the protective effect of the explosion vents. Even in heavy rain in conjunction with wind speeds approaching 120 km/h, the explosion vents exhibit a high degree of tightness.

A comparison with the windows used in the construction industry illustrates the high weather resistance: The REMBE



Fig.1 Explosion vent EDP

explosion vents achieved the same and in some cases significantly better test results than the currently available windows for residential buildings.

What is the added value of weathering testing?

The REMBE explosion vents thus not only protect the plant in the event of an explosion through targeted explosion venting, but also ensure effective protection of the bulk materials themselves from external environmental influences during normal operation. The risk of contamination by water, dust and air as well as collateral damage due to swelling or excess weight is thus minimised.

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 50 years of application and project experience. As an independent, owner-managed family business, REMBE combines expertise

with the highest quality standards and is involved in various specialist committees worldwide. Short coordination paths allow for quick reactions and customer-specific solutions for all applications, from standard products to high-tech special designs.

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

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

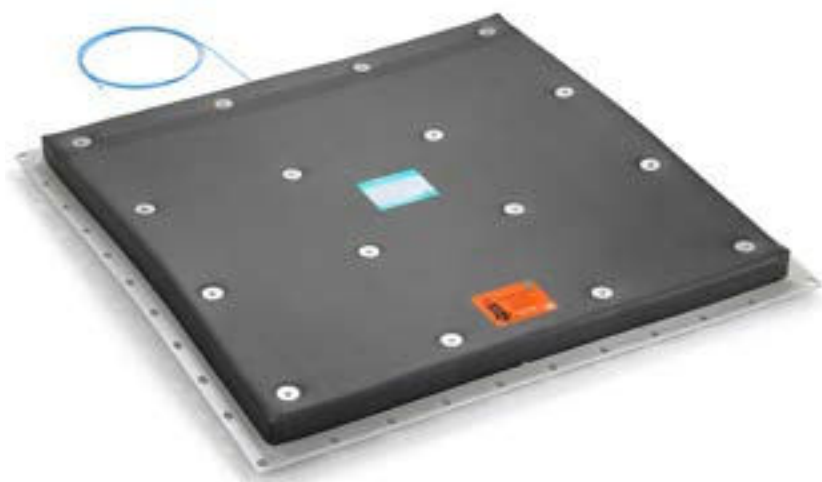


Fig. 2 Explosion vent EGV HYP)



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UPGRADE android 13



Android 13 Update Announced For The Third Quarter Of 2023

The current IS530.x smartphone and IS930.x tablet series from i.safe MOBILE will soon be able to run with Android 13. This update option provides more features and increased security for end-users. Lauda-Koenigshofen, 27 April 2023.

i.safe MOBILE is proud to announce that their IS530.x smartphone and IS930.x tablet series will continue to be available in the product portfolio and can be updated from Android 10 to Android 13 starting in third quarter of 2023.

Qualcomm Technologies, Inc. assisted in the upgrading of the Qualcomm® SDM660 System-on-Chip (SoC) devices to the latest Android version. i.safe MOBILE GmbH is innovation and world market leader for explosion-proof mobile devices and solutions. i.safe MOBILE is based in Lauda-Koenigshofen (Germany) and one of the most innovative developers of mobile communication devices such as mobile phones, smartphones and tablets for safe use in hazardous areas. Engineers and specialists develop practical products and customer specific software solutions based on legal regulations such as ATEX, IECEx and NEC 500.

Not only the IS930.x tablet series, but also the IS530.x smartphone series will soon be available with ANDROID 13. The update option is provided free of charge and can thus be requested and downloaded remotely from all connected devices at any time. Our industrial smartphone IS530.1 combines the important ATEX and IECEx standards for explosion protection with high performance and communication requirements for use in networked industries.

Automation, industry 4.0 and the Internet of Things (IoT)

constantly present users of industrial communication devices with new challenges that can be easily mastered with the smart and innovative IS530.1. Equipped with Bluetooth® 5.0, a multifunctional ISM interface, huge internal 64 GB memory and the highest camera resolution in its class (13 MP main camera and 5 MP front camera), it enables users to deploy it without any difficulties in critical environments.

The smartphone IS530.1 from i.safe MOBILE is ATEX and IECEx certified for zone 1/21 and can therefore also be used in potentially explosive areas. The device is also available for zone 2/22 as IS530.2. Under its i.safe MOBILE brand, the company has developed an extremely robust device for use in harsh industrial environments in non-hazardous areas. This rugged version is available under the name IS530.RG. Android 13 update announced for the third quarter of 2023
Page 2/3 A high working speed is one important requirement in industrial environments. This is ensured the powerful Qualcomm SDM660 SoC inside the IS530.x and IS930.x series devices and a large internal memory capacity of 64 GB (expandable to 128 GB via microSD) and a 4 GB RAM.

To act even more flexible, secure and adjusted to customers' requirements, updating to Android 13 provides more features and improved security. Some of the new Android 13 features are customizable apps, improved privacy controls and cross device features, enhanced audio features, new media controls, pre-app language preferences for fluid moving between languages. All new devices of the IS530.x smartphone and IS930.x tablet series will be shipped with Android 13 from the third quarter of 2023. "We are glad to announce that the Android 13 version will be soon available to our customers. With this new software update, we meet the requirements of our customers who constantly asked for high-level communication devices with state-of-the-art software features", summarizes Martin Haaf, CEO of i.safe MOBILE.

SELECT Announces New Associate Members As Schneider Electric, Robus And Compex Join Scotland's Largest Construction Trade Association

SELECT, Scotland's largest construction trade association, has welcomed three major new enterprises to its growing Associate Membership Scheme as it continues to attract an impressive line-up of market-leading manufacturers and organisations.

Schneider Electric, Robus LED Group and CompEx have all joined the 25 existing Associates who have built mutually beneficial relationships with SELECT's member businesses over the past 18 months.

The three new Associate Members will now be able to engage with SELECT's experts and members, enjoy access to a wealth of services and benefits and work with the organisation to share the latest ideas and in-depth knowledge to the advantage of the wider industry.

Iain Mason, Director of Membership and Communications at SELECT, said: "Everyone at SELECT is delighted that enterprises of the size and stature of Schneider Electric, Robus and CompEx have joined our Associate Membership scheme.

"Becoming an Associate is an opportunity for partner organisations to build stronger relationships with key players in the electrical contracting industry, and also to ally themselves with an established and successful trade body."

SELECT, which represents around 1,250 electrical firms and 15,000 contractors across the country, launched the scheme early in 2022 to help develop a mutually complementary network of industry-specific partners.

Mr Mason added: "Since its launch, the scheme has proved extremely popular and has allowed Associates to speak to our members both through our print and digital channels and also face-to-face at the many events we run across Scotland throughout the year.

"It has also strengthened our own relationship with some of the industry's most renowned names and allowed us to develop and grow events such as our Toolbox Talks, President's Cup and President's Lunch."

Schneider Electric, which traces its history back to 1838, drives digital transformation by integrating world-leading process and energy technologies to help businesses make efficiency and sustainability gains across their organisations.

David Pownall, Vice President of Services at Schneider Electric UK & Ireland, said: "We have had a long and fruitful association with SELECT over the years, including sponsoring organisation awards, and we are proud to be included in an Associate Membership scheme which brings so many benefits to the electrical industry."

Robus is a Dublin-headquartered global lighting wholesaler with customers in more than 40 countries around the world. Established in 1984, it is now the biggest lighting company in Ireland.

Mick G Slein, Chief Executive of Robus, said: "Becoming an Associate Member of SELECT completely aligns with our

best-in-class mindset and our vision of being our customers' most trusted LED lighting brand. We look forward to building strong and trusted relationships with SELECT members as we continue to grow internationally."

CompEx is the international scheme for competency validation and certification of people who work in explosive atmospheres. First established 30 years ago with the support of industry, its suite of training and assessment modules are delivered through a network of independent training and assessment centres to support electrotechnical practitioners in sectors including oil and gas, chemicals, pharmaceuticals, food and beverage manufacturing and utilities.

Huw Bement, Managing Director of CompEx, said: "Our international safety and competency scheme is rooted in certifying electrotechnical technicians and engineers operating in hazardous areas – so becoming a SELECT Associate Member is hugely important for us. It's a fantastic opportunity for CompEx to establish new industry connections and to continue building our existing relationships."

The trio's arrival follows the announcement of Legrand UK & Ireland as SELECT's 25th Associate Member earlier this year. The electrical and digital infrastructure specialist is part of Legrand Group, which has a presence in nearly 90 countries and employs more than 38,000 people.

Other SELECT Associate Members include Hispec, V-Tac, Aico, Aurora, Electrium, Hager, Luceco, Megger, Scolmore and Thorn Lighting.

SELECT has just completed its annual Toolbox Talks roadshows and is now involved in the organisation of the second Green Home Festival as a leading member of the Construction Industry Collective Voice (CICV).

The organisation also continues to spearhead a long-running and high-profile campaign for regulation of the electrical industry, with the submission to Scottish Parliament of a Members' Bill calling for Protection of Title.

For more information, please contact:

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TACKLING EXPOSURE TO AIRBORNE CONTAMINANTS THROUGH LOCAL EXHAUST VENTILATION (LEV)

We spoke to Daniel Frith, Operations Manager at UK's leading safety company, Arco, about the dangers of exposure to airborne contaminants and how to mitigate the risks.

How can workers be exposed to airborne contaminants?

Daniel Frith: Airborne contaminants can occur from a variety of outputs depending on the occupational setting via substances such as dust, gases, fumes, mists, or vapours present in the air. As a result, some industries are more susceptible to the presence of harmful substances such as construction, manufacturing and mining. Manufacturing roles such as brick and tile manufacture, ceramics and stone working, foundry work are particularly prone to harmful effects, even dusts created by foodstuffs that we consider to be safe can be hazardous, if there is continuous exposure. Output is often invisible to the naked eye, and workers are not aware that they are exposed.

What are the dangers of being exposed to these kind of hazardous substances?

Daniel Frith: Every year, thousands of workers in the UK experience damaging lung-related effects from airborne contaminants such as lung cancer, asthma or lung scarring because of airborne contaminants they have breathed in at work. In 2022, there was an estimated 19,000 new cases of breathing or lung problems made worse by work, according to the HSE. The severity of harmful effects will ultimately depend on duration, frequency and degree of exposure to the substances.

Is it difficult to control exposure to airborne contaminants?

Daniel Frith: As a result of the variety of airborne contaminant transmission and the often-imperceptible output, the HSE has identified a concerning trend: that employers are often unaware that their workers are being exposed to hazardous substances or that their existing controls may be insufficient. This lack of awareness gives rise to several issues including the sources of exposure being missed, the deterioration of existing controls and incorrect utilisation of the implemented safeguards.

What is the law on protecting workers from harmful exposure?

Daniel Frith: The UK has a strong framework and reputation when it comes to health and safety and the approach towards airborne contaminants is no exception. The primary legislation that addresses harmful airborne contaminants in the workplace is the Control of Substances Hazardous to Health Regulations (COSHH) which outlines that employers have a legal duty to assess risks associated with hazardous substances and make decisions on what measures to use to protect the health of their employees. It is important that employers are engaged with airborne hazard safety not only for the health of their employees but to also avoid enforcement action.

What do employers need to do to eliminate the risk and protect workers?

Daniel Frith: Employers can use the Hierarchy of Control as a way to determine which actions are most necessary to control hazards in the workplace. The first level of control is the elimination of the hazard entirely - removing a toxic chemical for example. The second level is substitution and involves offering a safer alternative to the hazardous substance. The first two actions can be the most difficult to adopt for reasons such as cost and design and so the third level - local exhaust ventilation systems (LEV) - is the level of control used most often. The use of LEV isolates workers from the hazard by removing the substance at the source. The fourth level is administrative controls such as reducing the frequency of exposure to hazards. The fifth and final level is the use of personal protection equipment (PPE) such as gloves and masks to minimise exposure to hazards. Levels four and five are useful actions but should be combined with other control methods to offer the most protection.

What is the process for installing LEV into the workplace?

Daniel Frith: There is a systematic approach to installing LEV in the workplace to make sure that it is fit for purpose and effective. The first step is a risk assessment - anticipating, recognising, evaluating and controlling the hazards. It is advisable to engage with an expert throughout this process so that the most suitable methods are chosen - installing an ineffective system can be very costly. Arco Professional Safety Services can offer risk assessment guidance and support businesses to identify workplace hazards and implement practical measures to eliminate or reduce them. Undertaking a comprehensive COSHH assessment and workplace air monitoring can help you to identify your hazardous substance/s, evaluate the usage risks, determine the required control measures and ensure they are working effectively.

How often do LEV systems need to be monitored and checked?

Daniel Frith: Regular inspections of LEV systems should take place to ensure the smooth running of the device. A Periodic Test Examination (TExT) should be conducted at least every 14 months with records kept for at least five years. This requires a competent examiner who has the correct knowledge, skills and practical experience and can be conducted by a trained employee or an outside contractor. Detailed information from the examination should be kept for the lifespan of the LEV system. Business owners should work with an expert safety partner to ensure systems are compliant. At Arco we have a dedicated team with the knowledge and experience to produce a 14-monthly TExT Report to ensure you remain compliant to COSHH Regulations and that equipment is in good working order and provides the necessary protection.

To read more on LEV, please visit Arco's advice page: <https://www.arco.co.uk/expert-advice/hose/LEV> or contact us on: 01482 383288 or email hose.support@arco.co.uk

DSEAR Compliance FAQs: Ensuring Safety and Compliance for Your Business

Whether you're seeking guidance on the Dangerous Substances and Explosive Atmosphere Regulations (DSEAR) applicability to your business or information on conducting a risk assessment, we are here to assist you every step of the way.

As a provider of DSEAR compliance services, we are dedicated to ensuring the safety and compliance of your operations. Our team of experts is well-versed in the intricacies of DSEAR and can provide you with the guidance and expertise you need.

In the following FAQs, we provide answers to your questions about DSEAR, ensuring you have the knowledge you need to make informed decisions and maintain a safe workplace.

What is DSEAR?

DSEAR aims to prevent or limit the harmful effects of fires, explosions, and similar energy-releasing events, as well as corrosion to metals. These regulations specifically focus on controlling and managing the risks associated with dangerous substances in the workplace. By implementing the necessary measures, businesses can ensure the safety of their employees, prevent accidents and mitigate the potential damage caused by such incidents.

What is ATEX?

ATEX is short for "Atmospheres Explosibles" and is the name commonly given to the two European directives for controlling explosive atmospheres: directive 99/92/EC (also known as 'ATEX 137' or the 'ATEX workplace directive') and directive 94/9/EC (also known as 'ATEX 95' or 'the ATEX equipment directive'). They aim to improve health and safety in workplaces with explosive atmospheres. In the UK, these directives are implemented through DSEAR.

Is DSEAR compliance a legal requirement?

Yes, compliance with DSEAR is not just a recommendation, but a legal requirement under the Health and Safety at Work etc. Act 1974 (HASWA). This regulation places responsibilities on employers and the self-employed to ensure the safety of individuals in the workplace and protect the public from any risks arising from work activities. With the potential hazards of dangerous substances, such as fire, explosion, and corrosion of metal, compliance with DSEAR is essential to safeguarding people's safety. DSEAR operates as an enabling act under the HASWA, emphasising the legal obligation for your organisations to adhere to its guidelines and take proactive measures to mitigate risks associated with dangerous substances.

Is a DSEAR risk assessment a legal requirement?

Yes, a DSEAR risk assessment is a legal requirement for most workplaces that deal with hazardous substances. It is important to identify the hazards associated with your work, assess the risks involved, and implement appropriate control measures to ensure the safety of your employees and the public.

Who enforces non-compliance with DSEAR?

Non-compliance with DSEAR is enforced by the Health and Safety Executive (HSE) or Local Authorities, depending on premises allocation under the Health and Safety (Enforcing Authority) Regulations 1998. Further information on non-compliance with DSEAR enforcement can be found [here](#).

What are the potential penalties for not completing a DSEAR risk assessment?

Compliance can sometimes feel like a burden, but it is crucial to emphasise the potential penalties for not completing a DSEAR risk assessment. Non-compliance with DSEAR carries significant consequences, both legally and ethically. The penalties can range from civil to criminal repercussions, underscoring the seriousness of the matter. However, the consequences extend beyond legal implications. Failing to prioritise DSEAR compliance puts people's safety at risk, which can lead to injuries, and in the worst cases, even fatalities. Furthermore, non-compliance can have detrimental effects on the environment, causing lasting damage and impacting the trust and confidence that customers and stakeholders place in your business. Can anyone undertake a DSEAR risk assessment?

DSEAR requires employers or self-employed individuals to conduct a risk assessment before starting any new work involving dangerous substances. If your business has five or more employees, you should record the significant findings of the assessment as soon as possible. DSEAR assessors must have suitable knowledge, experience, instruction and training to be considered a 'competent person'.

Does having a CompEx qualification qualify me to undertake a DSEAR risk assessment?

While the CompEx scheme is beneficial for a DSEAR assessor, it does not measure competence specifically for DSEAR risk assessments. The CompEx scheme has various competency modules and is recognised globally for validating the competency of electrical technicians and engineers in hazardous explosive atmospheres. More recently, CompEx has evolved to include other industry-specific competency assessments.

What level of competence is required to undertake a DSEAR risk assessment?

Currently, there is no internationally recognised body that certifies an individual's competence in conducting DSEAR assessments. The concept of a competent person does not have a fixed definition or a specific licensing requirement. However, it is crucial to ensure that these assessments are conducted by qualified professionals who possess the necessary expertise and specialist knowledge of the regulations.

Assessing competence in this area is challenging, as it involves a combination of knowledge and experience. An ideal DSEAR assessor would have a well-rounded background, encompassing experience from various industries and commercial sectors. They should possess the ability to identify hazards and risks associated with the handling, storage and use of potentially flammable or explosive materials. Furthermore, they need to be proficient in recommending and documenting suitable and sufficient solutions to effectively reduce risks to a responsible and practical level.

While quantifying competence in this field is difficult, it is important that you engage a competent person for DSEAR assessments to ensure accurate and thorough evaluations of the risks associated with dangerous substances. By relying on experienced and knowledgeable individuals, businesses can confidently fulfil their obligations and maintain a safe working environment.

How frequently should a DSEAR risk assessment be reviewed?

While there is no specific timeframe mandated for conducting a DSEAR assessment, it is recommended by the Fire Protection Association (FPA) that you complete a review at intervals not exceeding three years. However, it's important to consider that the frequency of review may vary depending on different factors and the specific circumstances of your workplace. Regular reviews are crucial, especially when there are changes in your work environment. If your facility deals with hazardous substances or if there are outstanding recommendations from a previous DSEAR assessment, it is advisable to conduct more frequent reviews, such as annually. Additionally, any significant changes in your business operations should trigger a review of your DSEAR risk assessment.

The primary goal is to ensure that your assessment remains up-to-date and relevant to effectively manage risks related to dangerous substances in your workplace.

How do I know if my DSEAR risk assessment is suitable and sufficient? If you employ five or more people, it is essential to maintain a written record of the significant findings. This record can be kept separately or integrated into the overall assessment under the Management of Health and Safety at Work Regulations 1999. The HSE's Approved Code of Practice (ACOP) 138, specifically Sections 5 (2) and 5 (3), provides valuable information on what considerations should be included in a suitable assessment.

By following these guidelines and documenting the key findings, you can ensure that your DSEAR risk assessment meets the necessary requirements and covers the important aspects to effectively manage the risks associated with dangerous substances in your workplace. How do I know if DSEAR applies to my business?

Dangerous substances are any substances used or present at work that could, if not properly controlled, cause harm to people as a result of a fire or explosion or corrosion of metal.

These substances can be found in almost all workplaces, including solvents, paints, varnishes, flammable gases like liquid petroleum gas (LPG), dust from machining and sanding operations, dust from foodstuffs, pressurised gases, and substances corrosive to metal. It's important to consider other energetic events like runaway exothermic reactions involving chemicals or decomposition of unstable substances, which are also covered by DSEAR.

Whether it's a factory, construction site, railway, or any other workplace, it's essential to comply with the relevant DSEAR requirements to ensure the safety of individuals and minimise risks associated with dangerous substances.

As an employer, you have a responsibility to implement control measures to eliminate or reduce risks associated with dangerous substances to the extent reasonably practicable. Where it is not possible to eliminate the risk completely, you must take measures to control risks and mitigate the effects of any harmful event.

The EU CLP Regulation has also introduced changes, classifying more substances as flammable due to increased flashpoint thresholds. This is partly because the upper flashpoint for classification as a flammable liquid has been increased from 55 °C to 60 °C. The changes mean that for example, diesel, gas oil and light heating oils are now classified as flammable liquids.

What are the important factors to consider for ensuring compliance with DSEAR and maintaining workplace safety?

When considering DSEAR, there are several common factors to consider to ensure safety and compliance these are outlined below:

- Assess whether a flammable atmosphere can exist in your workplace, as this can pose significant risks
 - Identify potential ignition sources that could ignite the flammable atmosphere
 - Review existing control measures in place to prevent or minimise the risks associated with dangerous substances
 - Consider area classification requirements to properly define hazardous zones and implement appropriate safety measures
 - Conduct a risk rating to help evaluate the severity of potential hazards and prioritise necessary actions
 - Carefully review recommendations provided by experts or regulatory guidelines to ensure the implementation of suitable control measures.
- By considering these factors, you can proactively address the risks associated with dangerous substances and promote a safe working environment.

Should area/zonal drawings be prepared for explosive environments? ATEX hazardous areas, as defined in DSEAR, refer to 'any place in which an explosive atmosphere may occur in quantities such as to require special precautions to protect the safety of workers'. Area classification is a method used to analyse and classify environments where explosive gas atmospheres can potentially occur. Its main purpose is to ensure the proper selection and installation of equipment that can be safely used in such environments, considering the properties of flammable materials present.

Having drawings can be highly beneficial in identifying these zones, documenting and maintaining equipment and promoting awareness among individuals interacting with these areas. Ideally, copies of the drawings should be readily available, even posted at the entry points to hazardous areas, along with appropriate signage to reinforce the understanding of the area classifications.

Can a DSEAR risk assessment for installing new equipment on-site be completed without visiting the site?

If you're installing new equipment on-site, you might wonder if a DSEAR risk assessment can be completed as a desktop exercise without visiting the site. It is highly recommended that organisations seeking assistance with areas or equipment covered by DSEAR engage as early as possible. While pre-installation project reports and advice can provide valuable support in terms of planning and purchasing new equipment, it is important to note that these are complementary to the risk assessment process. Conducting a thorough DSEAR risk assessment always requires a site visit to properly evaluate the

specific conditions and hazards present on-site.

Can a DSEAR risk assessment for changing a process on-site be completed without visiting the site?

Engaging with a competent consultant at the earliest opportunity can potentially result in significant savings. However, it is important to understand that a suitable and sufficient DSEAR assessment cannot be conducted without a site visit. The on-site visit is crucial to assess the specific changes to the process and evaluate the associated risks in order to ensure compliance and safety.

Should a new DSEAR risk assessment be completed when changing a process on-site?

Any significant changes to equipment or processes require a revised DSEAR risk assessment to ensure ongoing compliance and safety. Is it acceptable to have multiple companies complete DSEAR risk assessments for different equipment/processes?

While DSEAR assessments can be conducted on different equipment in isolation, it is important to have an overall assessment of combined risks. Your business should consider the impact of activities or machinery/plant on each other and have a comprehensive DSEAR assessment.

What are some common misconceptions about DSEAR?

There are several common misconceptions regarding DSEAR:

- Many people are unaware of the regulation and believe it does not apply to the majority of workplaces
- It is mistakenly believed that high-risk activities or equipment must involve large volumes of hazardous materials, which is not the case
- Some assume that DSEAR only covers large facilities, but in fact, it includes risk assessments for staff handling even the smallest quantities of flammable liquids
- There is a misconception that DSEAR does not cover natural gas installations, pipe networks, and boiler rooms, whereas it does
- Some are unaware that DSEAR also covers the risks associated with fire and explosion of all batteries on-site
- It is wrongly assumed that it is solely the employer's responsibility to ensure their contractors are competent in DSEAR if applicable
- Having a DSEAR assessment does not automatically imply compliance with DSEAR. Compliance entails taking action on the recommendations provided in the assessment report.

What information is required to carry out a DSEAR risk assessment?

To conduct a DSEAR risk assessment, the assessor will typically need the following information:

- The nature of your business and any site-specific hazards or personal protective equipment (PPE) requirements
 - The size of the site and the number of buildings within it
 - Access to previous DSEAR and Fire Risk Assessment reports
 - Access to process diagrams and Piping and Instrumentation Diagrams (PIDs)
 - The layout of the site, including the arrangement of processes and services
 - Access to employee training records related to DSEAR, as well as risk assessments, Safe Systems of Work (SSOW), and Standard Operating Procedures (SOPs)
 - Access to all areas of the site, including plant rooms and boiler houses
 - A knowledgeable site contact and guide who is familiar with the site's health and safety arrangements (ideally the site health and safety manager)
 - A knowledgeable site contact and guide who has information about the site's assets and maintenance arrangements (ideally the site maintenance or engineering manager)
 - A knowledgeable site contact and guide who understands the site's processes (ideally the site process engineer and/or production manager)
 - A list of the quantities of each flammable material stored on-site, a location map of the materials, and any segregation requirements, as well as Safety Data Sheets (SDS) for the materials.
- Please note that the information required to carry out a DSEAR risk assessment will vary from site to site and the information above is a general guideline.

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New WJA Course Give Drainage Operatives Dual Skills

Water jetting operatives working in the drainage industry are beginning to benefit from a new training course that helps develop essential knowledge and skills for when using water jetting for surface cleaning.

The Drain, Sewer and Surface Preparation practical module, or DSP for short, developed by the Water Jetting Association (WJA), includes new instruction on surface preparation using water jetting guns.

It develops skills that discourage the use of washdown nozzles attached to jetting hoses, which have no mechanism for instantly shutting off the water supply in an emergency.

The WJA is the UK member organisation for the water jetting industry. It sets standards for high and ultra high pressure water jetting and drain and sewer jetting, in the UK and internationally, through two codes of practice.

WJA Training and Safety Committee Chairman Steve Williams said: "We have developed this course in consultation with our drainage contractor members so their operatives have the skills needed to deliver the best service for customers safely and effectively.

"Drainage operatives often use water jetting to clean contaminated surfaces, for example to deal with sewage spills, or clean access chambers and open channels.

"We want to eradicate the use of washdown nozzles for these tasks. Water jets from guns can be instantly stopped by releasing the trigger. This provides a built-in safety

mechanism to control water delivery.

"By adopting the DSP course, drainage contractors can align their operational procedures with the WJA's red code of practice for the safe use of water jetting equipment in drains and sewers, which has just been updated, and which incorporates this new thinking on surface preparation."

During the DSP module, which has been accredited by City & Guilds, operatives undergo two practical assessments: water jetting in drains and sewer pipes; and jetting for surface preparation with a jetting gun up to 275 bar (4,000 psi) that an operative can comfortably control.

The pressure limit has been set because drainage operatives commonly use lower pressures for washdown activities. Operatives who need to carry out surface preparation tasks at higher pressures must pass the standard WJA surface preparation module.

Topics include safe use of jetting equipment, water jetting techniques, jetting gun and nozzle types, risk assessment, use of protective clothing and equipment, site set-up, and emergency first aid.

Drainage operatives can still take the standard Drain and Sewer (DS) course, which does not have the surface preparation component.

Drainage operatives must pass the class-based WJA Safety Awareness course, which is also City & Guilds accredited, and either the DSP or the DS practical module to receive their WJA training card, which must be renewed every three years by attending the Safety Awareness Refresher course.

www.waterjetting.org.uk

Enclosure Hardware From FDB Panel Fittings For Electronic Equipment

The team at FDB Panel Fittings have noticed that in the past thirty years or so electronic devices have almost completely replaced electrical controls and yet the type and style of housing have remained remarkably constant through that time. From small boxes, desktop cases, and wall-mounted enclosures to complete suites of cabinets primarily in steel and stainless steel they have all required locks, hinges, fasteners, gaskets. For research, development, pharmaceutical production, instrumentation and controls for motors, machines and systems, all our weighing, sorting, processing, controls for other machines and equipment is done with electronics housed in purpose-designed enclosures of some kind.

Looking at housings for these electronic assemblies the trend has been that security needs have grown to accommodate the more sophisticated controls and their associated risk of data theft, which has become a factor with digital equipment that simply was not there in the past. In addition, the internal equipment itself is more vulnerable to physical damage from unauthorised access, so that today there is a greater need than ever for small quarter turns, special coded locks or keys, concealed hinges, gasket profiles in small sections for boxes and small enclosures, or in large sections for bigger cabinets.

Standard hardware for boxes, cases, desktop equipment, wall mount enclosures, free-standing and desk mounted

control panels has been developed over time to meet these needs, and a whole marketplace of quite specialist but yet standard and ex-stock hardware has grown up. This is a marketplace that adjusts quickly to panel manufacturer/installer needs to facilitate the production of equipment such as graphic instrumentation panels, electronic pump controls, specialist panels for industrial controls and motor control centres. Often this adaptation is accomplished with simple modifications to established designs to create a custom variant that can readily be achieved through your supplier/manufacturer.

It is especially in the area of large 19in data racks and cabinets where Mechatronic locking swinghandles are growing in popularity and where sophisticated simple components like ¼ turn pop up fasteners are called for e.g., on removable front panels to make installation and removal so much quicker than previously.

Electronic systems are found everywhere and each installation calls for a protective housing with suitable hardware – from stainless steel oil rig panels to railway rolling stock and locomotive or line-side control boxes. There are rugged specialist standard products available ex-stock designed for the purpose. Likewise, specialist vehicles for recycling, or emergency services such as police, fire, ambulances, chemical plants, sewage processing systems, controls for stores, warehouses and distribution centres for things like chillers and H&V installations, gas heating controls.



Simple locking systems include IP65 three-digit combination quarter-turn lock or IP65 cylinder quarter-turn locks with finger pull or dust cover. Common in computer-related applications is the key-operated or push-button snap lock with cylinder style key for small housings while quarter-turn wing handles in black or chrome with or without cylinder lock are a common sight on small enclosures and housings.

Push-fit pin hinges like the concealed 120-degree SNAP-LINE are suitable for side panels of 19in racks and light-

duty cabinets. Their compact clip-in design allows for an easy and quick installation and removal of the door. Larger weld-on/bolt-on concealed 120-degree hinges are offered for surface mounted doors. For larger doors and more arduous environments, there are AISI 316 Stainless steel external hinges with reverse stud fixing which offer 180 degree opening and are suitable for nested doors.

IP65 swinghandles in zinc die (black or chrome) or reinforced polyamide – suit 5 or 7 pin profile cylinders, combination lock or inserts. We are looking forward to the new E-LINE vandal-resistant electronic swinghandle range for the security of larger electronic cabinets in outdoor/public environments.

For easy lifting and manual transport, there are simple low-cost black polyamide bridge handles with through fixing - handles in moulded reinforced plastic or in steel to enable stainless steel (AISI 303) carry/bridge style handles with reverse fixings. IP65 recessed side mounting handles with positive grip D-SNAP technology allow easy lifting of electronic equipment.

An extensive range of gaskets is available on the market, along with customized sections based on a customer's unique application needs. Depending on a customer's requirements,

manufacturers can provide gaskets made of PVC, EPDM, Neoprene, NBR, or a combination of foam rubber and PVC.

For example, many of the EPDM seals by FDB Panel Fittings sales partner DIRAK adhere to UL (Underwriters Laboratories) safety standards. This certification constitutes the basis for a final UL approval for the entire enclosure/cabinet and is increasingly useful as the UK gears up for growth in worldwide export markets.

In addition to standard self-locking door sealing profiles, insert profiles and rectangular self-adhesive sections, FDB offer edge protection designs and window glazing gasket. Where electromagnetic compatibility is necessary, they can also supply special profiles with EMC/RFI shielding in combination with water and dust sealing.

FDB Panel Fittings and sister company FDB Electrical share their online shopping website at www.fdbonline.co.uk.

Further information on FDB products and services may be found at: www.fdb.co.uk. Find the latest information and news on the FDB blog – www.fdbnews.co.uk, or follow them on twitter: [www.twitter.com/fdbpanelfitting](https://twitter.com/fdbpanelfitting) - also see

www.youtube.com/fdbpanelfittings.



Working At Height With Wind Energy



Working at height is a risky business, and the wind energy sector is no exception. In 2021/22 there were 29 work-related fatalities due to falls from a height in the UK – representing almost 24% of all worker deaths. While total industry deaths are falling year-on-year, the people behind these statistics remind us that there is still a long way to go.

For those responsible for the safety of their workers, choosing appropriate systems is a huge responsibility when there is so much to consider. Here, Tim Bissett, Technical Manager at MSA Safety, explores the importance of adhering to the latest safety standards and explains some important considerations users and installers should be looking out for when it comes to choosing an appropriate vertical fall protection system for wind turbines.

Being proactive about safety

In 2020, over 500 safety incidents were reported at the UK's onshore wind farms. Maintaining turbines can see workers having to climb as high as 30m at a time, which along with the often-limited access and frequent requirement to work in a confined space can contribute to workers' risks. Therefore, being proactive about safety includes getting all relevant teams fully trained, competent, and comfortable working in these conditions, as well as knowledgeable about the chosen fall protection system and how it operates. Doing this will help to minimise the risk to workers.

Complying with safety standards

Safety standards vary across different locations and legislations, so it's important to be aware of which standards you should be paying attention to. For example, for fall protection equipment certifications in Europe it's EN standards. The EN standard used to apply in the UK as well but, following Brexit, the UKCA mark is now required as of 1 January 2023.

Even after initial selection consider regular checks of your fall protection systems for elements that could include:

- The compliance certificates of your equipment and systems for expiry dates and that the life of your system is still in date.
- You have regular inspections scheduled, including to check wear and tear.

Having simple checks like these in place will help you to increase your control over the systems used by your workforce.

And if you're in the UK and Europe, to enhance the health and safety of your wind turbine workers, consider whether your safety equipment adheres to EN 353-1:2018 (EN 353-1:2014+A1:2017) - the newest update to fall protection system requirements.

- Some key features of EN 353-1:2018 that companies can check, depending on their circumstances, are:
- Dynamic performance testing – to check the maximum arrest force
- Cold condition testing – checking locking function in cold conditions
- Minimum distance testing – to replicate the user falling close to the anchor line

- Fall back testing – which replicates the user falling back and down
- Guide bracket testing – looking at the strength of the bracket and anchor line and the locking function of a fall arrester in the event of a fall
- Sideways fall testing – to replicate the user falling in a sideways direction
- Leaning angle testing – considering the locking function of the fall arrester with the anchor line leaning forward and sideways
- Static strength requirements - testing to check the overall strength of the system.

As this list shows, the EU type-examination process for EN 353-1:2018 is rigorous and it incorporates several dynamic tests that covered many scenarios. Updating to this standard can help give your workers added confidence that their safety at height is a top priority.

Ease of use

Another element to consider when choosing fall protection systems for wind turbines, is how simple it is for workers to use. After all, there are advantages to systems that workers understand fully and will use. These fall protections systems should balance the users' accessibility with their needs for relevant applications, such as considering whether a restriction or complex process reduces users' risk. At MSA Safety, We Know What's At Stake

Keeping workers safe is a top priority and as safety professionals, it's our mission to help make sure that workers go home to their family at the end of the working day. That's why compliance and product testing are at the core of what we do.

For more information and resources on fall protection systems, please visit MSA Safety.

<https://www.msasafety.com/global>



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www.eemua.org

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