ELECTROMACH STAHL

THE STRONGEST LINK.

SYSTEM SOLUTIONS

Customized explosion-proof solutions
for worldwide use in hazardous areas

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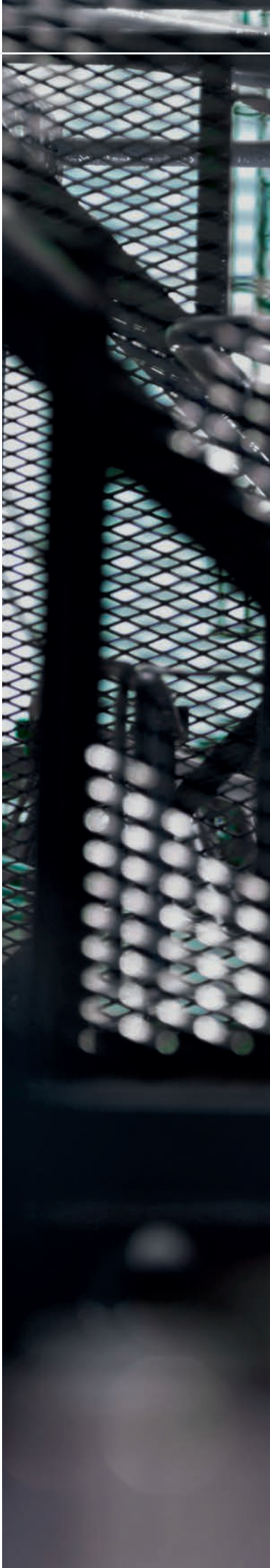


THE SOLUTION PROVIDER

Welcome to the demanding world of explosion-protection technology, in which we at R. STAHL Electromach consider your safety our reality. Oil, gas and petrochemical companies around the world benefit from our 55 years of experience. As an independent company not linked to a specific brand, we can offer the best possible system solutions to meet every international standard. R. STAHL Electromach is a true system design house that understands our customer's requirements.

As a contributing member of the R. STAHL Technology Group, Electromach is part of a financially strong global market player with more than 2000 employees worldwide. At our premises in Hengelo, with a workforce of almost 200 employees, we work every day to meet our customer's needs.

R. STAHL Electromach is an international leading design company with experienced engineering and manufacturing expertise in explosion-proof components and control systems. These components or systems can be applied in areas where gas and dust explosions may occur. Therefore, we are the obvious partner for oil, gas, petrochemical and offshore applications such as refineries and oil rigs. R. STAHL Electromach serves customers directly all over the world.

All solutions are customer-based and include the development of application software, manufacturing, assembly, testing and on-site commissioning. R. STAHL Electromach offers solutions as full-service packages, from conceptual design to operation.

AREAS OF EXPERTISE

R. STAHL Electromach manufactures integrated systems tailored to your requirements. We use high-performance and high-quality products from our product range and modify them to meet your specific needs. This way the solution will be optimally suited to your processes. Resulting in unique and clever solutions that are cost-effective, user-friendly and safe.

Our specialized range of system solutions consists of containerized solutions, climate control equipment, control systems and conduit installations. These applications can be found in pump systems, compressor systems, loading arm systems, control panels for rotating equipment, distribution systems, analyser houses, etc.

Explosion protection for system solutions requires clear responsibility when it comes to functionality and relevant safety aspects. We have been well acquainted with the constantly changing specifications and continually increasing environmental requirements for many decades.

Explosion protection and the safety of people, systems and machinery are our highest priorities. System solutions from R. STAHL Electromach meet the applicable requirements of the IEC, NEC, EN and ATEX certifications. In addition to producing efficient and cost-effective designs, we do not compromise on the hardware, software and safety standards we use.

CONTAINERIZED SOLUTIONS

No matter what your requirements are, we offer you a solution, be it a container system or a RIB (Remote Instrument Building); transportable ventilated container (TVC); equipment shelter; FAR (= field auxiliary room); service module; LER (local equipment room); analyser house or other applications.

Our key expertise consists of designing solutions for the oil and gas industry by taking specific environmental challenges into account. With our engineering services, from prototyping through to commissioning, we will implement your specifications to provide an efficient, explosion-protected solution.

CLIMATE CONTROL

The goal of climate control is to create a perfect environment for electrical equipment, shelters and cabins. Our range of climate control equipment for cooling and heating of applications is designed to meet the highest standards in the industry.

The selection of the right equipment for your project depends on several factors including the required classification and the environmental conditions on site. When the requirements are clarified, R. STAHL Electromach can select or design the climate control solution that perfectly fits your project.

CONTROL SYSTEMS

Control systems by R. STAHL Electromach are designed to meet our customers' specific requirements. We provide control systems for applications including loading arm equipment, pumps, rotating machinery and other machinery.

R. STAHL Electromach's product range including various design-related explosion protection such as flame-proof enclosures, intrinsic safety, pressurised enclosures and corresponding software. You can expect a customised control system, which is precisely designed for your specific needs thanks to our flexible range of enclosures and our expertise in software.

CONDUIT INSTALLATIONS

Conduit installations are used as a wiring method to route electrical wiring in an application to protect it from impact, moisture and vapours. This alternative method for cabling is often used for applications intended for the United States or Middle-East. Conduit is made of galvanized steel, optionally coated with PVC and can consist of rigid or flexible parts.
R. STAHL Electromach is an expert in customized conduit systems. By using the customer's 3D model we can design, order and install the conduit system on-site. Our specially equipped container enables us to transport the equipment and to create a workshop on-site.

FUNCTIONAL SAFETY

Functional safety is the part of safety that depends on a system or equipment operating correctly in response to its inputs, including the safe management of likely operator errors, hardware failures and environmental changes.
The intention of functional safety is to reduce risk to a tolerable level and to keep it at that level for the lifetime of the installation. Our team of TÜV certified Functional Safety Engineers is available for the guidance, execution and verification of projects that have to comply with EN-IEC 61511/61508 or EN-IEC 62061. This includes the calculation of SIL and its corresponding assessment.

SERVICE

Our experienced Service and Support team provide complementary worldwide site assistance to ensure short system downtimes, optimal integration and adjustment of the solution.

After creating your solution, one of our field commissioners will start-up the system and make sure everything runs smoothly.
In addition, we offer you services such as an extended factory acceptance test (FAT) as well as a global on-site service for site acceptance tests (SAT), explosion inspection, modification, repair, training and maintenance.

COMPETENCES AND SERVICES

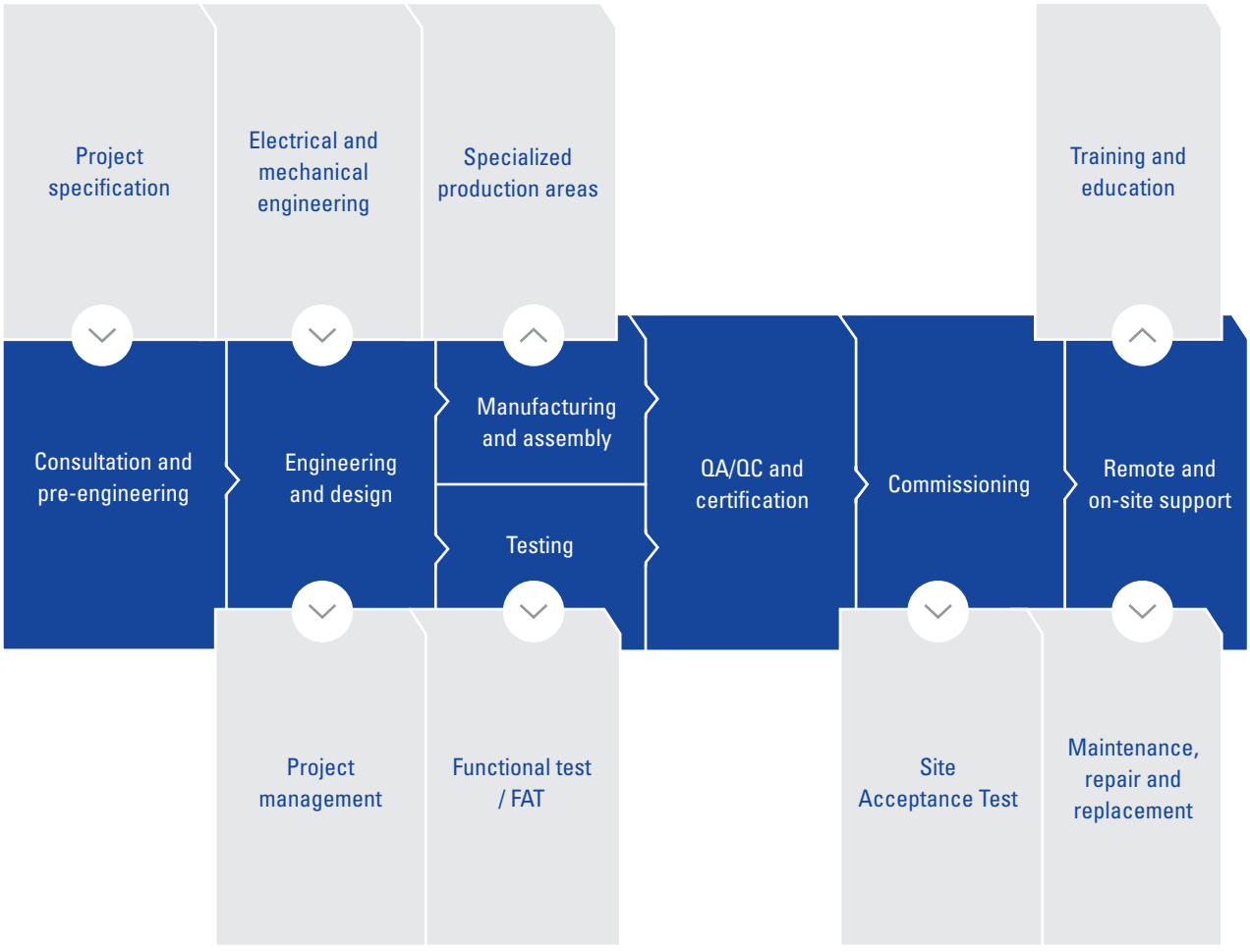
Especially when it comes to large-scale projects, it is very convenient to have one supplier for the entire solution. This is where R. STAHL Electromach comes in: we have precisely the expertise and experience you need.

We offer system solutions as full-service packages, from design to operation. Our modular approach has benefits for the control and distribution of stationary, mobile or temporary applications for offshore and onshore environments. Our cost-effective "fit for purpose" philosophy enables us to be an ideal explosion protection partner who understands your application and the challenges you face.

As a one-stop shop, we provide you with all the necessary steps to achieve the perfect solution for your project. In adherence to our "fit for purpose" philosophy, we start the process by gaining insight into the project's requirements and specifications.

Our team of experienced engineers design the solution using their expertise in mechanical and electrical engineering. Following approval, the solution will be realized and tested in our large production facility. After completing quality control and certification, we will install and start-up the system on site.

We can still make changes to your specific explosion protection solution during the process. If you wish, various project components such as building control systems can be implemented to increase the added value on site. R. STAHL Electromach can offer you on-site support at any time anywhere in the world.



OUR COMPETENCE AND SERVICE LANDSCAPE

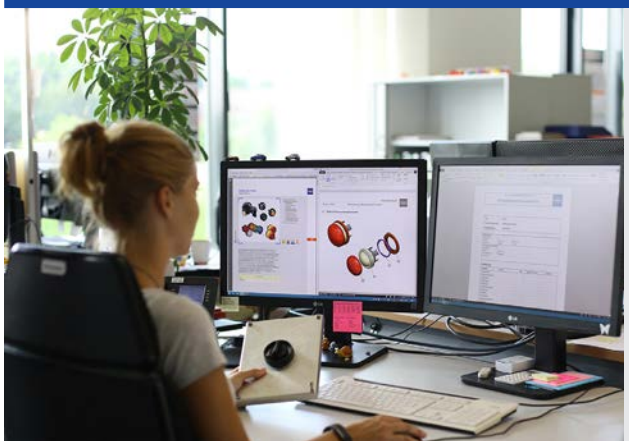
COMPETENCES AND SERVICES

Consultation and pre-engineering

A smart solution is lightweight, mobile and energy-efficient. To achieve this, we combine over twenty explosion protection methods. With innovative designs, we overcome conventional component-based limitations on equipment size, thermal load and space requirements.

Our multi-disciplinary project team will help you choose the right explosion protection combinations by taking function, environment, energy efficiency and project requirements into consideration. Starting early on in the design phase, we particularly focus on sustainability in the production and selection of preferred materials.

Engineering and design



By using the information supplied by the customer, R. STAHL Electromach's experts engineer the perfect solution based on our modular system – one that precisely meets your requirements and, at the same time, works with your budget.

Whether you prefer pressurisation by means of ventilation (Exp) or other common protection methods, we realise the impact of early design decisions and the influence on practical usability and cost aspects. We will speed up your project lead time using 3D mechanical design methods combined with experienced multi-disciplinary engineering teams for electrical design, software development and full local production.

Manufacturing, assembly and testing

Our production facility of over 5000 square metres enables us to produce large quantities and to make no compromises on the size of the solution. From field enclosures to explosion-protected containers, our production team manufactures your solution reliably, quickly and with certified quality in accordance with ATEX, IECEx or NEC.

Depending on project requirements, your system will be tested to the full, from software simulations to full hardware simulation. Our test facilities support full Factory Acceptance Testing according to required specifications.

QA/QC and certification

Safety cannot be based on individual component certificates only. For project certification from simple assembly to complex buildings, we work with renowned globally accredited notified bodies. Full IEC, NEC, EN and ATEX compliance is no special offering, but our standard. Therefore, an efficient cost-driven design still means no compromise on applicable hardware, software and safety standards.

Our well-respected QA/QC department ensures that the final product will reflect the required (functional) safety level, redundancy and availability as per project requirements with respect to international and national installation standards.

Commissioning

Any system is only a solution when it operates to full satisfaction of you, our client, during the complete lifetime of the installation. Therefore, we provide complementary worldwide site assistance with a dedicated service team to help you with testing and commissioning of your system.

Our experienced commissioning team is qualified to perform on-site acceptance tests, so there is no need to enlist the services of expensive specialists to conduct additional acceptance testing. This saves time thanks to short system downtimes and optimal integration of your solution. In addition, we can provide you with training on how to use our solutions.

Remote and on-site support

Our expertise doesn't stop at producing and delivering your product or system solution. We also offer you additional services such as an extended factory acceptance test (FAT) as well as a global on-site service for site acceptance tests (SAT), explosion safety inspection, modification, repair, training and maintenance.

This means that, if any modifications to the products and systems are needed later on, we will come to you and make them. Having integrated these, we then readjust your settings to the optimal values and get your processes up and running again in no time at all.

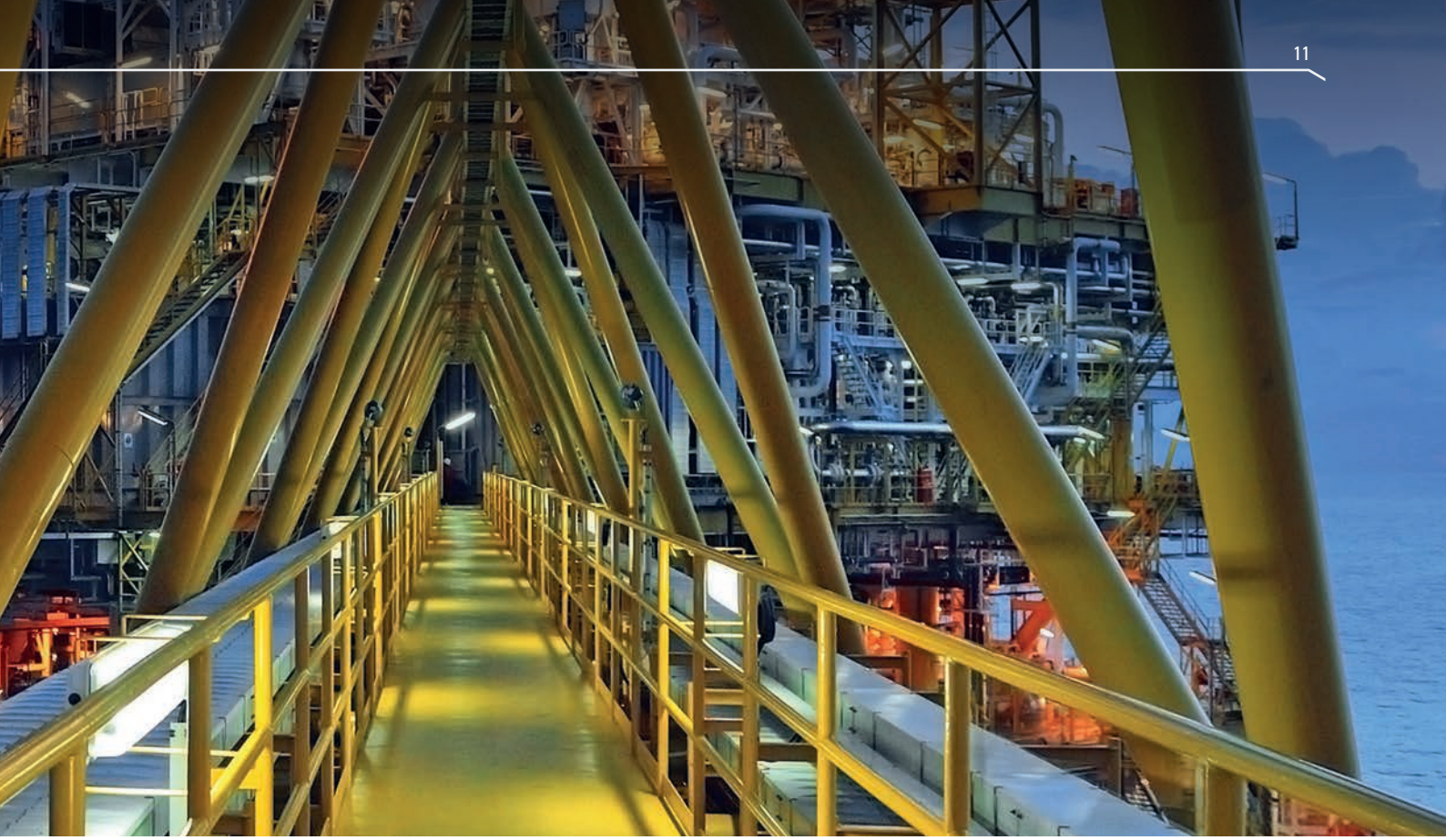
WORLDWIDE APPLICATIONS

OIL AND GAS INDUSTRY:
LOCAL EQUIPMENT ROOM FOR PROPANE COMPRESSOR

- Two containers for ATEX Zone 2 IIB T3 with a single room and separate HVAC room.
- Certified according to CU TR.
- Supplied with a packaged HVAC unit, pre-heating system and fire extinguishing system Novec 1230.
- Suitable for heavy industrial and polar conditions with ambient temperatures between -46°C and +30°C.

PETROCHEMICAL INDUSTRY:
CONTROL PANEL FOR LOADING ARM EQUIPMENT

- Control panel for worldwide applications.
- Used for loading and unloading of naphtha, natural gas and crude oil to and of ships.
- Suitable for hazardous onshore and offshore areas.



OIL AND GAS INDUSTRY:
HVAC SYSTEM FOR ANALYSER SHELTER

- Two packaged HVAC systems, each existing of a 7 kW air conditioning unit, heat pump, dual fan box and HVAC control panel.
- The HVAC system is suitable for IECEx Zone 1 IIB T3 internally and IECEx Zone 2 IIB T3 externally.
- Installed in a heavy industrial environment with coastal conditions and ambient temperatures between 0 °C and +50 °C.

OIL AND GAS INDUSTRY:
WORK OVER CONTROL SYSTEM FOR OFFSHORE USE

- Containerized solution with an air lock, control room, hydraulic room and battery compartment.
- Supplied with a packaged 10 kW HVAC system, HMI system and camera system.
- The inside is made non-hazardous using purge and pressurisation according to EN 50381.
- Suitable for offshore conditions with ambient temperatures between -10 °C and +25 °C.

RESEARCH AND DEVELOPMENT

R. STAHL Electromach is an established player in the world of explosion protection. Our customers in a wide variety of markets appreciate our commitment to innovation, lasting value and long-term relationships.

Our core business consists of making components, systems and applications for use in a hazardous locations. Electrical equipment installed in these areas must be specially designed and tested to prevent explosions.

Constructive feedback from the market and our customers has enabled R. STAHL Electromach to become an expert in creating numerous "Ex system solutions". These solutions are engineered products or applications designed and built in-house, which primarily consist of a combination of hardware and software.

As an experienced system integrator, we provide the full range of services required for a system solution. The total package of Ex System solution principles include consulting, electrical engineering, software engineering, programming, prototyping, mechanical design, documenting, manufacturing, testing, certification and commissioning.

Our skilled team of employees are always searching for new solutions to improve safety for personnel and equipment in industrial environments. Our comprehensive understanding of explosion protection principles allows us to create and develop new innovations including software, control systems and enclosure methods. These innovations enable us to meet the growing demands in the market to be innovative, flexible and cost-effective.

Product development and safety knowledge often go hand in hand. As a knowledge provider, R. STAHL Electromach helps with the calculation of safety integrity levels and other risk-reduction methods.

In addition to participation in several regulation committees, we possess extensive experience working with various certification organisations around the world including: IECEx, ATEX, UL, CSA, FM, Norske Veritas, TR-CU (Gost) and others. Furthermore, R. STAHL Electromach is ISO9001, IECEx and ATEX certified, a NEC CEC Competence Centre and, since the 1970s, listed as approved Aramco supplier.

R. STAHL Electromach's never-ending challenge is to be an innovative, creative and flexible third-party supplier to our customers by creating high-end system solutions for use in hazardous areas.

EXAMPLES OF INNOVATIONS BY R. STAHL ELECTROMACH

ExSys Module
A safe zone can be established by placing the patented module in a standard shipping container. This seals the container and enables overpressure. The ExSys Module is installed within hours and fits any size shipping container. It is optimized for transport and withstands extreme weather conditions.

The module is provided with a fanbox, outlet station, entrance door and control box. It can easily be extended with add-ons like an air lock system and air conditioning unit. The ExSys Module is the solution that fits the standard!

ExOlution
ExOlution is a liquid-filled enclosure, in which electrical equipment can be placed to make it explosion-proof. The non-conductive liquid prevents hazardous materials from contacting the equipment.

One of the main challenges for explosion-proof power electronics is managing heat dissipation. The protective liquid also functions as a coolant, thus increasing heat transfer from the electronics to the outside of the enclosure. Being able to cool the liquid allows us to reduce the size and to make the equipment suitable for hotter environments.

Scarecrow
Bird guano on helicopter landing zones causes major health and safety problems for the personnel working on offshore platforms. Therefore, frequent cleaning and maintenance is required but proves to be both costly and hazardous.

Together with our partner Kubiko, we solve this problem by creating an effect similar to natural predators. The Scarecrow system determines a bird's exact location and fires a targeted laser projection to scare the bird away. This solution results in a safer, healthier platform and a significant reduction of maintenance costs.

YOUR GLOBAL PARTNER

FOR THE SAFETY OF YOUR EMPLOYEES AND YOUR GLOBAL PROJECTS

We are at your service around the globe: with seven production sites, subsidiaries in 23 countries and more than 50 agencies. Our international employees understand your needs and offer you R. STAHL Electromach quality – no matter where you need it.

Thanks to this global presence, we realise international joint projects that include customers, planners, installation companies and operators from various countries. We take care of the needs of everyone involved in the project right on-site. At the same time, we ensure compliance with the various legal stipulations relevant for each project based on our international certifications and approvals.

R. STAHL

STAHL Headquarters
Production site
Distribution site
Agency

OUR
PRODUCTION SITES :

Germany – Waldenburg

Germany – Weimar


Germany – Cologne

Netherlands

Norway

India

USA

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