

**EX 4.0**

*THE NEXT LEVEL OF  
EXPLOSION PROTECTION.*



THE STRONGEST LINK.

**STAHL**

## **MODULAR PLANTS**

Explosion-protected products and solutions for  
the process industry

# R. STAHL – YOUR COMPETENT PARTNER FOR MODULAR PLANT DESIGN AND PACKAGE UNITS

FLEXIBLE AUTOMATION IN HAZARDOUS AREAS



Modular manufacturing concepts in the process industry are heralding a new milestone on the way to greater efficiency in production.

The industry aims to use these to tackle the challenges of today:

- Being highly flexible in order to respond to changing needs rapidly.
- Bringing new products out of the research lab and onto the market more quickly.
- Global manufacturing, close to customers.

The ultimate aim is to increase competitiveness. The concept centres on using modules to model individual or multiple parts of the manufacturing process. These modules vary greatly in size, from one cubic metre to individual containers or units that fill the majority of a manufacturing facility. Once constructed these modules can be used multiple times, which significantly reduces the amount of engineering and integration work required.

Production capacity can be adopted quickly to volatile market demand by easily adding or removing modules.

The challenges faced by machinery and equipment manufacturers are increasing with the development of modular manufacturing techniques. Their sphere of activity and specific expertise lies in professionally designing the individual modules or parts of a system for the application they are intended to be used for.

Another aspect that often has to be kept in mind in the process industry is use in hazardous areas. The explosion protection methods take into account numerous aspects of the module, from automation, operation and monitoring to power distribution boards and even lighting. This is why R. STAHL offers not only an extensive range of explosion-protected products, but also custom solutions that are fully tailored to your particular application – so you can take care of your process application while leaving explosion protection to us.

R. STAHL has been providing machinery and systems manufacturers with innovative solutions for several decades now.



### **IS1+ REMOTE I/O FOR EFFICIENT SIGNAL TRANSMISSION**

Our remote I/O system is perfect for transmitting signals between a control system and a module/package unit. The remote I/O aggregates the communication of numerous field devices such as transmitters, proximity sensors and solenoid valves, and transmits this communication via PROFIBUS or various Ethernet protocols. The comprehensive diagnostics functions make it possible to use status monitoring as the basis for predictive maintenance.



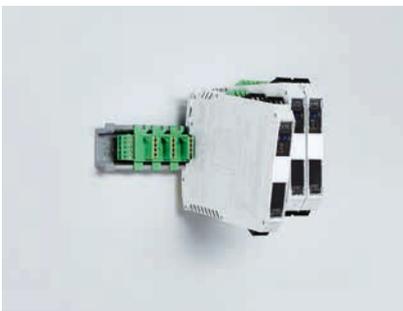
### **OPERATOR INTERFACE FOR CONVENIENT ON-SITE OPERATION**

Series 300 operator interfaces are fully configured with operating and visualising systems and ready for use with machine control systems or small-scale automation processes. Our PLCPlus software permits low-cost project planning and recipe management, including export/import functions. The 10.4"/15" displays are equipped with a multitude of function keys for custom assignment and are internationally certified for Zones 1, 2, 21 and 22.



### **COMPACT CONTROLLER SOLUTION FOR HAZARDOUS AREAS**

The modularisation of process-relevant manufacturing is stimulating increasing demand for decentralised control in modules/package units. The more flexible the processes to be automated in the module are, the more employing this structure makes sense. For implementation in Zone 1, an approach combining a panel PC, Soft SPS and the remote I/O is recommended. The advantage of this solution is that it takes up little space and is easy to operate.



### **EX I ISOLATORS FOR SAFETY APPLICATIONS**

The ISpac Ex i isolator is a proven solution for intrinsically safe signal separation, especially in situations where additional functional safety (SIL) is required. The unique concept focuses on compactness, a long service life, and easy installation.

# OUR PRODUCTS AND SYSTEMS FOR MODULAR PLANT DESIGN

Compact, lightweight, pluggable, easy to integrate: R. STAHL offers a multitude of products that can meet these demands, although we see ourselves far more as a partner for module and machine building. We work in close cooperation with our customers to provide them with complete system solutions that are perfectly tailored to their needs.

## Automation interface



## HMI systems



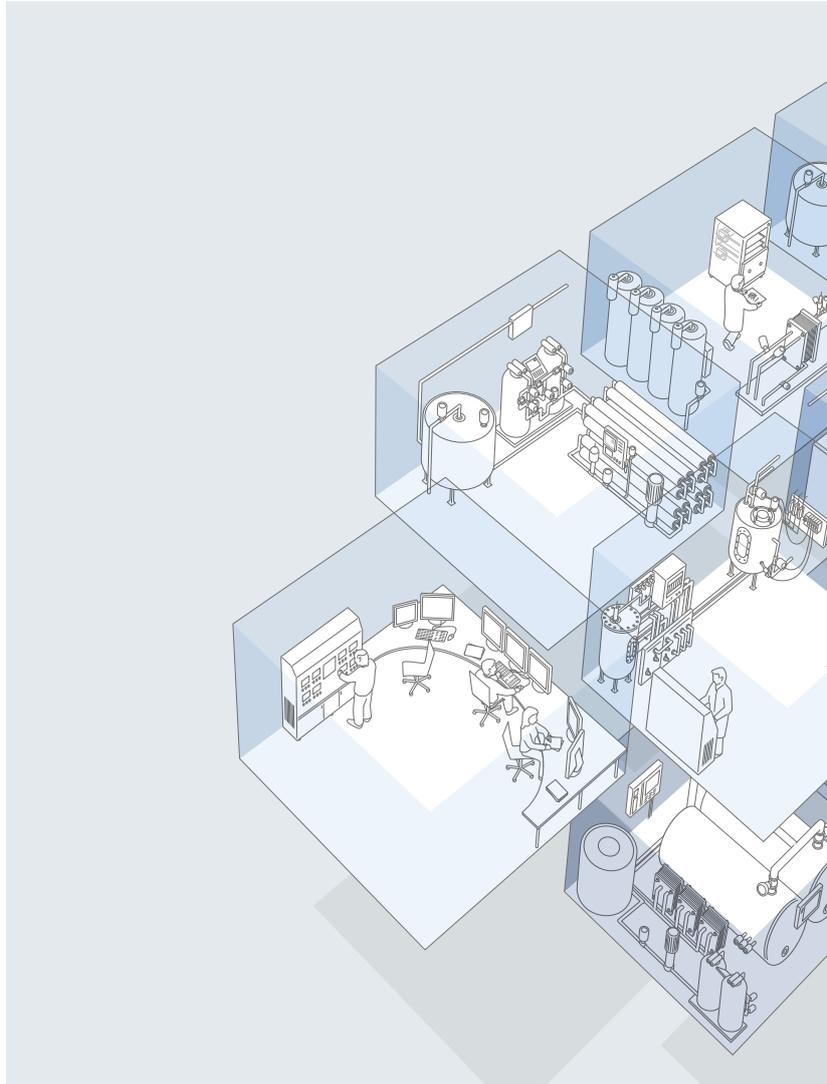
## Compact cameras / CCTV systems

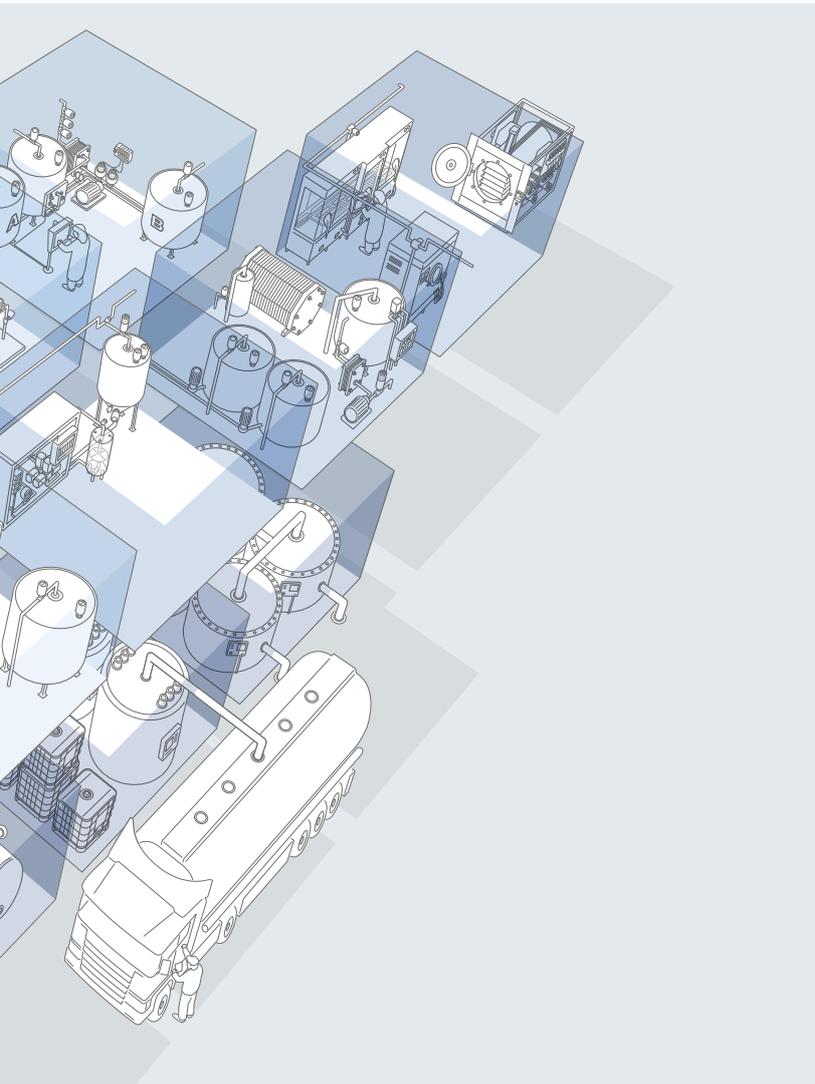


## Lighting and signalling



## Installation and





control



Plugs and sockets



## SYSTEM SOLUTIONS

- Integrated engineering
- More than 50 years' experience
- Global expertise
- Optimised protection solutions
- High quality

### Consulting and training



### Engineering



### Production and Factory Acceptance Tests (FAT)



### Customised system solution



# R. STAHL TAKES YOUR APPLICATION INTO HAZARDOUS AREAS



## MACHINE CONTROL UNIT – EX P

Whether you need a motor control unit, frequency converter or local controller, our Ex p control systems can take your industrial application into hazardous areas. Ex p solutions are especially suited to protecting large numbers of devices and therefore large volumes, making them perfect for use in hazardous areas around the world. The size of the housing can be adapted to suit the specific application.



## MACHINE CONTROL UNIT – EX DE

Ex de control systems are the most versatile explosion protection concept there is, ranging from a simple operating panel to complete control systems for a module in a container structure. The picture shows a typical solution for a machine control unit including a VFD up to 7.5 kW with the small footprint of only 480 x 340 mm. The design allows for extreme ambient temperatures up to 55 °C without derating and allows optional PLC functionality – simply “plug and play”!



## NEC/CEC SOLUTIONS FOR THE USA AND CANADA

R. STAHL supplies products and solutions for using machinery and systems in North America. R. STAHL's inclusion on UL's list of approved panel shops provides assurance of our wide-ranging expertise, which also incorporates custom solutions. We produce UL 508A-certified panels for use in ordinary locations and UL-certified panels for use in hazardous locations.



## TRANSPORTABLE CONTAINER SOLUTIONS

R. STAHL is a leading provider of container solutions for ATEX and IECEx applications that has brought innumerable projects to a successful conclusion. Typical applications include analysis stations, power supplies and prefabricated control stations. The fact that these modules are prefabricated reduces the time it takes to integrate them and lowers the project risks involved in systems engineering.

Talk to us. We will find the perfect solution for every application – yours included.



#### RAPID SET UP WITH PLUG AND SOCKET CONNECTIONS

Modular solutions would not be possible without plug and socket connections, yet the space inside manufacturing modules is very limited. The plugs and couplers in the SolConeX series are highly compact, while still enabling the devices to be remarkably resistant to damage and aggressive chemicals. With IP66 protection and the ability to be used at temperatures between -60 °C and 55 °C, they are fully suitable for outdoor use.



#### THE FASTEST, EASIEST WAY TO YOUR DISTRIBUTION BOARD

The modular concept of ModibEx leverages R. STAHL's expert knowledge. We offer you the easiest, most efficient way to get a distribution board that directly meets your requirements. You only need to specify your load list. That is enough for us to determine exactly which internal distribution system you need. Your load list lets us identify the perfect incoming assembly for your purposes. Create your order and we will do the rest.



#### LOCAL UPS ENSURES HIGH DECENTRALISED AVAILABILITY

Process manufacturing and high availability go hand in hand, which is why most systems are protected against external power supply failure by UPS systems. Specific functions such as the ability to communicate are designed to remain available even in the event of a power outage. It is difficult to combine a central UPS with the flexible concept of modular manufacturing, however, thus making a local UPS the perfect solution.



#### INTEGRATED ENGINEERING

Right from the planning phase, we communicate with our customers' systems and use the information they store. You will see your solution at work in your own system, and have the corresponding data at your disposal, ready for further use.

- No duplication of effort
- No transmission errors
- Reduced documentation work
- Early detection of logical errors



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