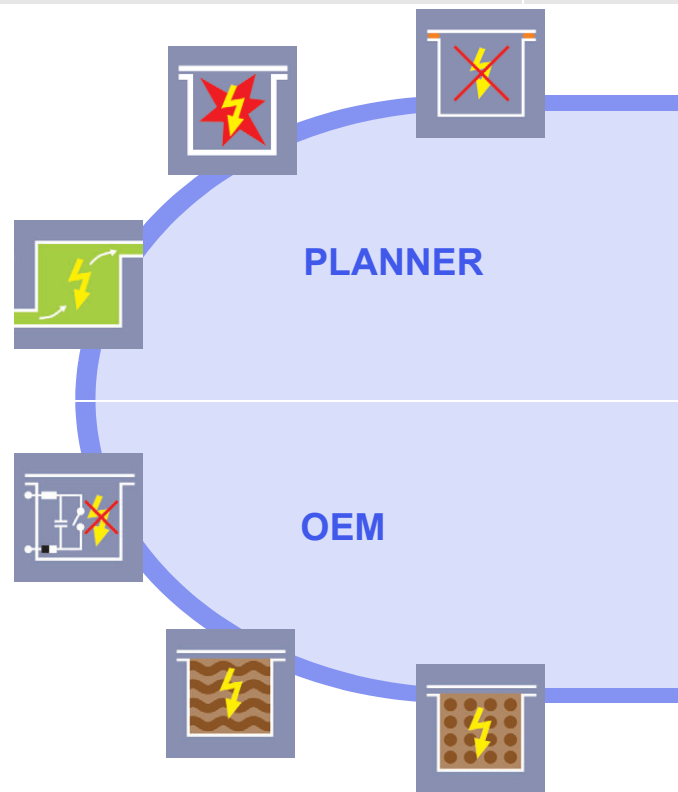


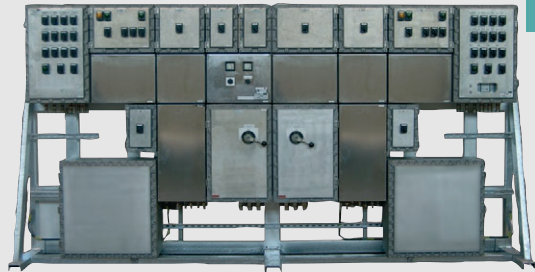
System Solutions on Explosion Protection





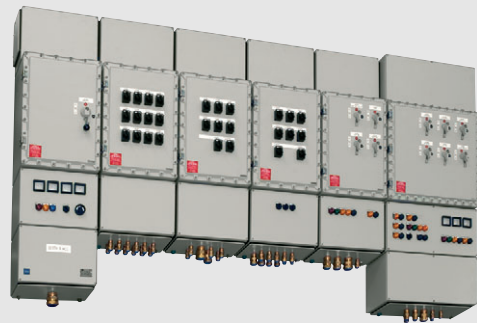
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10508E00



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11198E00



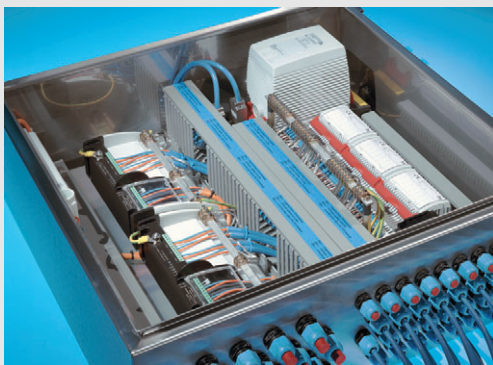
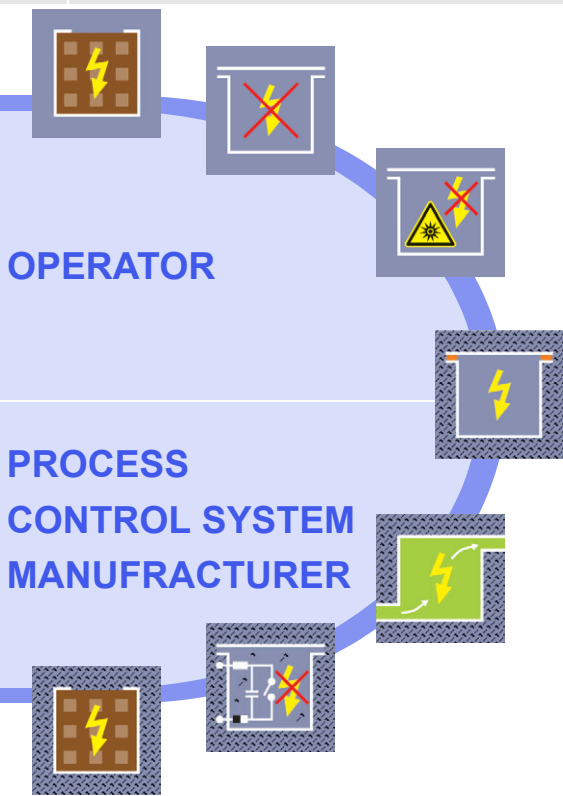
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11150E00



6

11153E00



4

10690E00



4

11152E00

Your System Partner for Finding the Solution that Fits Your Needs



10932E00

Energy distribution panels with and without busbar systems

- Outgoing circuits for:
 - Lightning and heating
 - Motor starters

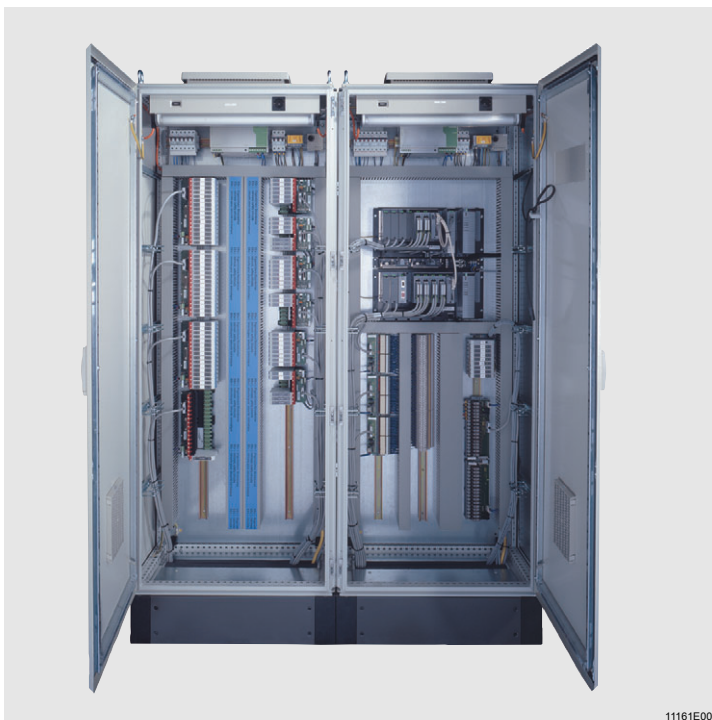


11112E00

Control unit for integration in machines

- Combination with components from process control + instrumentation technology, installation and lighting systems as well as display systems
- Experience in combining all types of protection
- Selection of protection types in accordance with the requirements

STAHL



11161E00

System cabinets for Zone 2 and the nonhazardous area with components from the automation system manufacturer

Additional solutions:

- Complete control system solutions in Ex-p containers
- Complete solutions for specific applications such as loading gantry control systems and compressor controls
- Branch solutions such as tank farm management systems

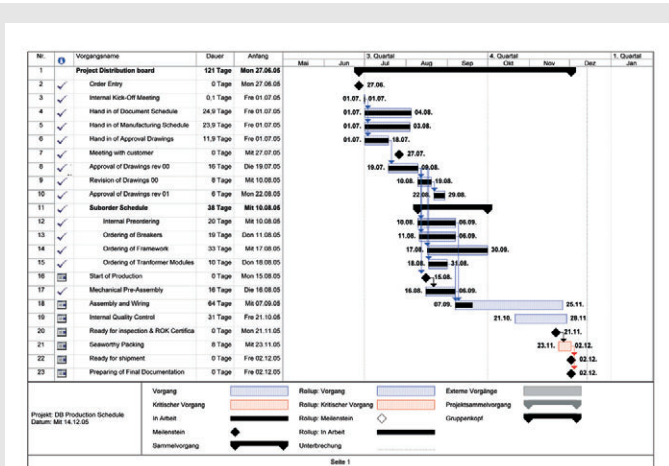
Project Management from Allocation to Delivery



11179E00

Organisation in competence centres

- Complete order processing in project organisation
- Consultation partner for the project procedure
- Flexibility right through to just before sales order completion
- Specific information available on the sales order status at all times



11126E00

Production plans and project monitoring for punctual delivery

- Continuous planning starting from the time of the incoming order through the scheduling and purchasing up to production



11137E00

Tight-knit teamwork regarding: Project planning - materials planning - procurement - production quality inspection - shipping

- Direct communication and short paths - from the customer to the workbench

STAHL

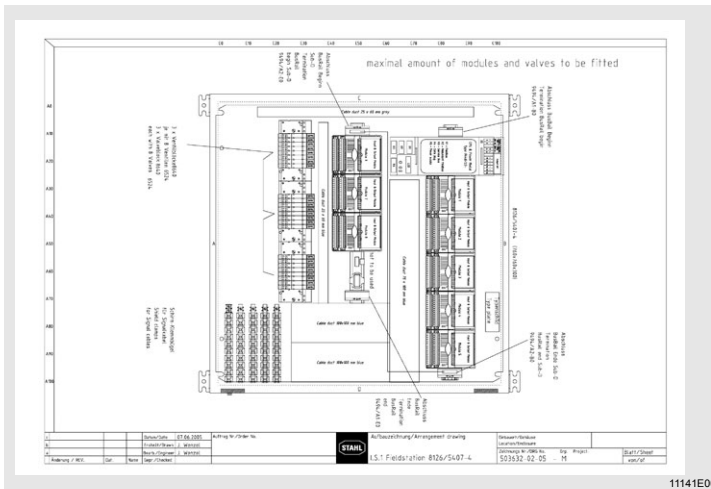
Competent Engineering



11113E00

The customer requirements

- Detailed technical proposed solutions with alternatives are already provided during the quotation phase
- System planning performed by experienced engineers and technicians
- Calculating power loss and determining the temperature class
- Engineering of the thermal design of control cabinets
- Planning and engineering of central-battery systems for safety lighting in accordance with VDE0108
- Engineering and installation of wireless LAN solutions in EX-area
- Creating project-specific applications for display systems



11141E00

The implementation

- Creating production documents and the customer documentation
- Producing mechanical assembly drawings
- Electrical planning with CAE systems
- Producing documents for validated systems in accordance with FDA and GAMP
- Developing and creating PLC programs
- Planning lighting systems using our own software tools



11140E00

The solution

- Integration of remote I/O and fieldbus
- Combination remote I/O with pneumatic equipment
- Control cabinets with safety barriers and isolators
- Pressurised enclosure
- Emergency lighting systems and lighting systems
- Power distribution panels
- Control panels
- Control cabinets for process control systems
- Operating and monitoring systems

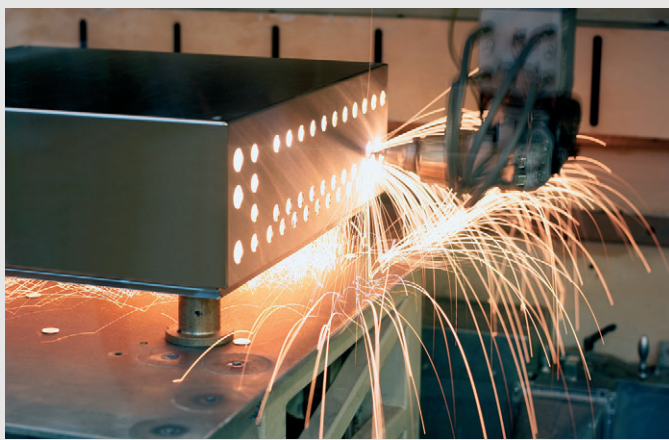
State-of-the-Art Production Facilities



11114E00

Optimised production areas for individual items, small and large-scale series

- Parallel processing structures in competence centres
 - Large-scale control system assembly
 - Control panel construction
 - Control cabinet construction
 - Assembly lines for terminal boxes and control devices
- Production approval in accordance with UL 698-A and B
- Flexible capacity during peak workload periods and large-scale projects
- Efficient workplace design
- Coordinated material planning and personnel planning for punctual deliveries



11123E00

Customer-specific production Single enclosures and enclosure combinations

- Precise, fast and flexible mechanical enclosure processing
- Coupling of CAE programs to CNC processing machines
- A multitude of enclosure variations in stock available for immediate processing



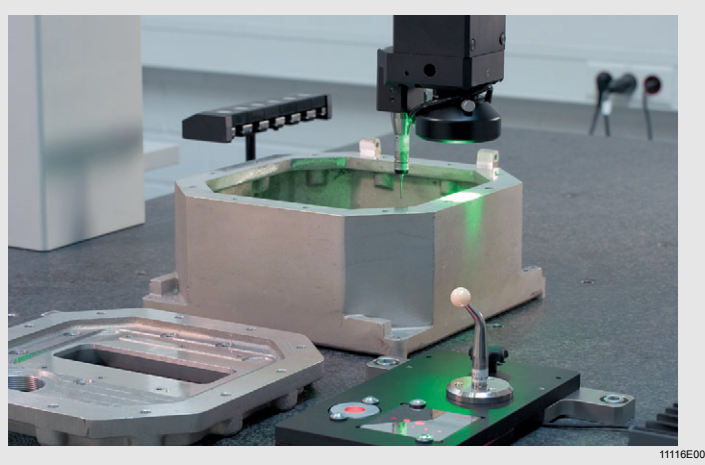
11115E00

Solvent-free power coating system

- Variable coating thickness depending on the requirements
- A wide variety of colours for metal enclosures

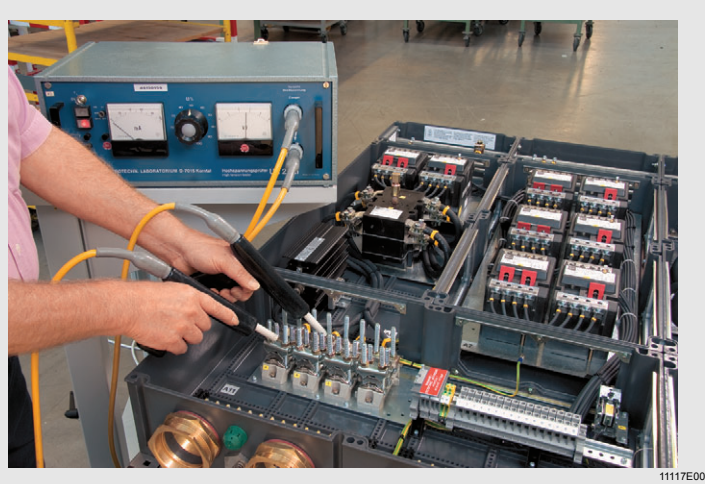
STAHL

Quality Assurance



Qualified personnel with extensive knowledge in electrical explosion protection

- Over 3000 mechanical measuring tools and over 700 electrical measuring instruments in use
- Our own calibration laboratory for regular equipment monitoring



System testing integrated into production

- 100% routine testing of all components
- Structured inspection schedules and checklists for verifying standard conformity

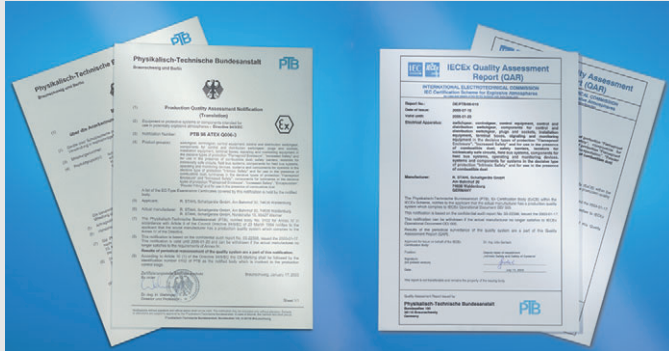
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Factory acceptance tests are performed with the customer prior to delivery, if required

- Realisation of signal tests of the input and output circuits together with the process control system (possible upon customer request)

Quality Management



11111E00

Quality assurance is monitored by a designated testing facility in accordance with 94/9/EC /ATEX) and IECEx

- Regular inspections of the specific special technical know-how on explosion protection conducted by independent third parties
- Continuous updates in line with new and modified standards and norms
- ISO 9001 certified since 1993
- Experience since 1996; one of the first 94/9/EC (ATEX) certified companies
- Since the beginning of 2004, ISO 9001:2000 certified for developing, manufacturing and selling explosion protected equipment
- Since 2004 Health and Safety Management system
- Since 2005 production facility for VdS-recognised products (fire alarm systems, smoke and heat detectors)
- World-wide approvals of applied components



09022E00

All products, including customer-specific products, are delivered with system certificates from R. STAHL Schaltgeräte GmbH:

Switchgear, control units, control and indicating devices, switchgear and distribution equipment, plugs and sockets, installation equipment, junction and terminal boxes, signal and monitoring equipment, lights, safety barriers, isolators with galvanic isolation, fieldbus systems, operating and observation devices

Production approval for types of protection:

- Flameproof enclosure
- Increased safety
- Moulding
- Intrinsic safety
- Pressurised enclosure
- Powder filling

STAHL

After Sales Services - We accompany You all the way and continue to do so

**Test site for recreating problem situations**

- Telephone hotline and e-mail for application consulting
- Process control systems and programmable logic controllers for testing the coupling of remote I/O and display systems

**On-site services:**

- Commissioning of central battery systems and control and instrumentation systems
- Instruction and training of system users
- System expansion of installed systems
- WLAN site survey
- Maintenance and servicing
- Inspection of all fieldbus, profibus or modbus installations using copper or fibre optic technology
- Troubleshooting
- Repair



- Trained and qualified personnel available for offshore platforms
- On-call service for control and Instrumentation system (in accordance with contractual agreement)

Additional services:

- World-wide sale network with local know-how
- Fast delivery service for components and spare parts
- Express repair department for rush-order deliveries

Seminars and Training Courses



11022E00

Seminars on explosion protection

- Electrical and mechanical explosion protection
- Gas and dust explosion protection
- From the fundamentals through to installation and maintenance
- Implementation of ATEX guidelines and the German Operating Safety Directive
- Legal structure (rights and duties of the operator)
- Fieldbus installation, construction, functionality, troubleshooting for profibus or modbus networks.
- Safety lighting and the usage of central battery systems



11142E00

Our instructors have a background of practical experience This ensures that information is conveyed in an easily understandable manner.

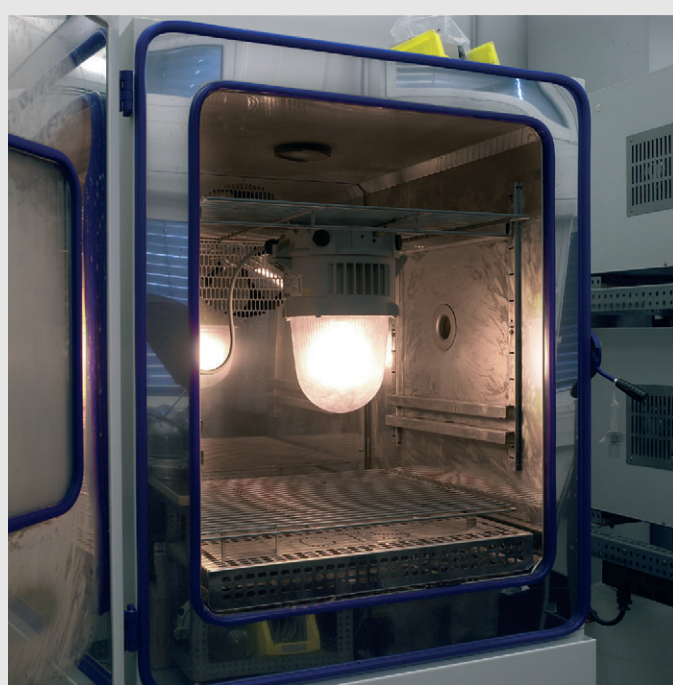
We also gladly hold on-site seminars.



11170E00

For more information on our current seminar program, please visit our homepage at www.stahl.de.

Additional Services for Zone 2 and 22

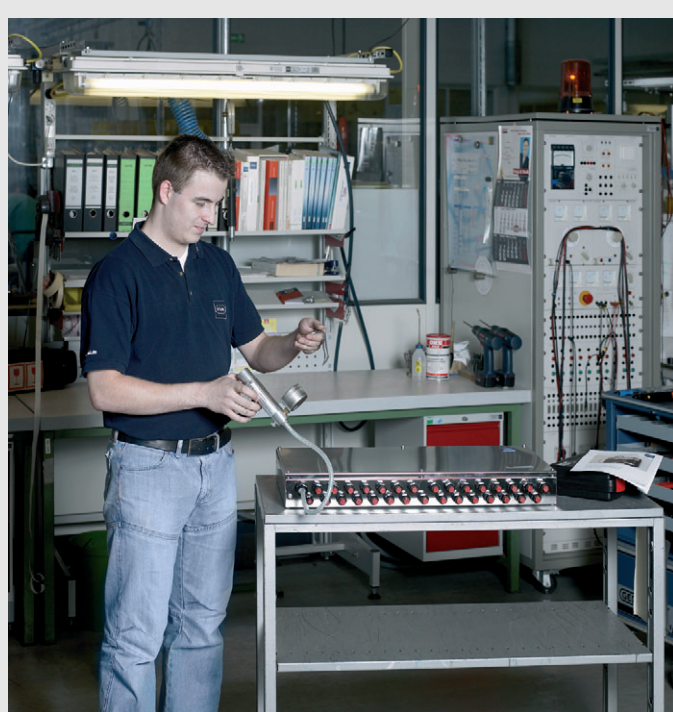


11133E00

Manufacturer's declaration according to EN 60079-15

- Standardisation research for checking the applicability
- Defining the required inspection contents according to ATEX and IEC
 - Surface resistance
 - Impact test
 - Restricted breathing
 - Heat resistance test
 - Clearance and creepage distances
 - IP protection type

Archiving the manufacturer's documentation according to 94/9/EC



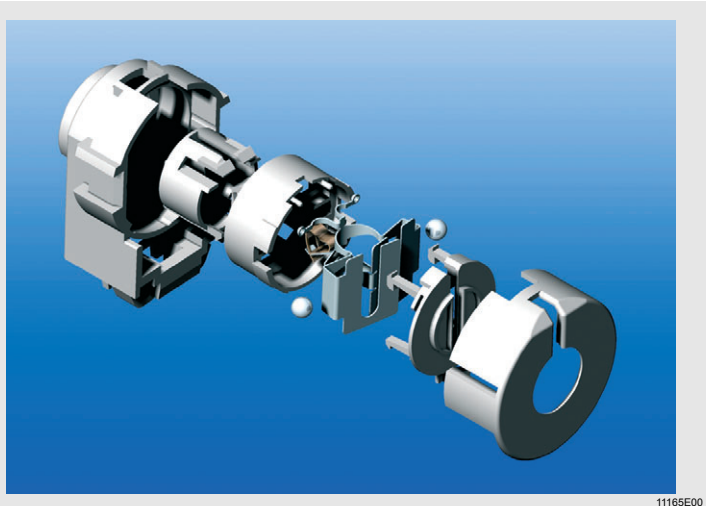
11148E00

Testing products and systems for suitability for Zone 2 and 22

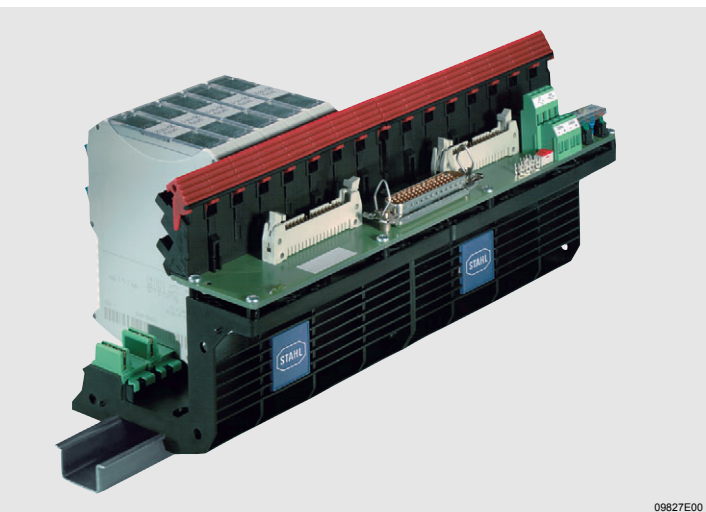
- Type testing or individual testing

Development Services**Advanced developments**

- IEC 61508 (SIL) compliant hard and software developments
- Development of efficient and economical products
- Innovative circuit design combined with tried-and-proven solutions
- Continuous optimisation of existing products
- Contract development concerning electrical explosion protection conducted in close coordination with customer



- Development of special component enclosures for explosion protection
- Development of special enclosure systems in Ex d, Ex e, Ex p technology also in combinations thereof



- Developments and modifications for adapting standard devices to the entire system

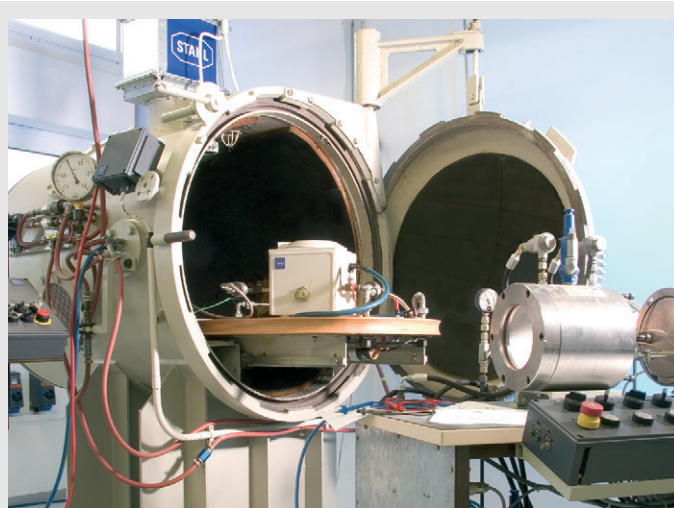
Services in the Testing Laboratory



11154E00

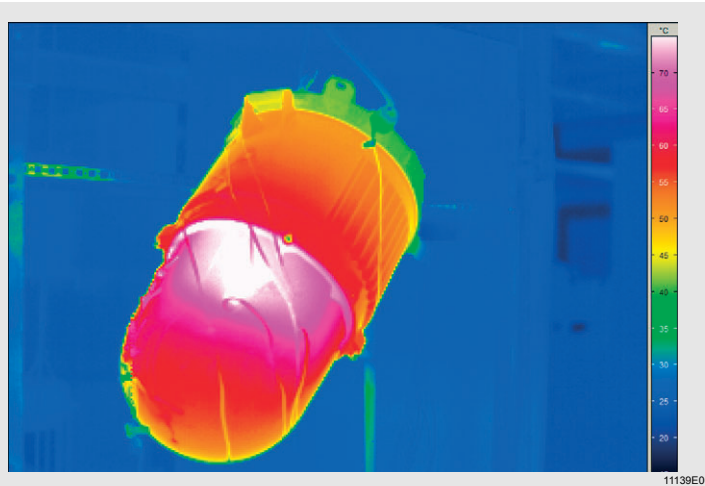
Implementation of all in-house tests relevant for approval using state-of-the-art testing equipment

- (IP protection) water protection testing



11156E00

- Spark ignition testing



11139E00

- Heat resistance test

Additional tests:

- Climatic storage
- Proof of intrinsic safety of a fieldbus device
- Impact test
- Switching capacity test

World of Approvals



Competent knowledge of explosion protection and related subjects



World-wide network of certified and audited sales partners with on-site contact persons

- Cooperation with national testing authorities
- Participation in international standardisation work
- Knowledge and implementation of country-specific requirements and regulations
- Regular auditing performed by testing authorities

STAHL