CCTV SYSTEMS AND CAMERAS
For hazardous and safe industrial areas
CAMERAS AND CCTV SYSTEMS FOR HAZARDOUS AREAS

From the compact camera, the all-round camera, the autofocus zoom (AFZ), the pan-tilt-zoom (PTZ), the thermal imaging camera to the dome camera – R. STAHL offers a comprehensive portfolio of explosion-protected cameras for Zone 1, 2, 21, 22 and Division 2. Many of our cameras are certified according to ATEX, IECEx, NEC, CEC, EAC and Lloyd’s.

R. STAHL cameras and CCTV components can be installed worldwide, even under extreme conditions. Various camera types are even suitable for use in ambient temperatures ranging from -55 °C to +65 °C.
CONTINUED DEVELOPMENT OF OUR PORTFOLIO

R. STAHL is constantly enhancing its product portfolio: our latest PTZ camera sets new standards for explosion-protected cameras with dynamic masking, electronic image stabilisation and direct FO connection.

The new EC-840S thermal imaging camera now features detailed temperature measurement and the separate detection of flame ignition. This reduces the number of false alarms to almost zero.

Thanks to ONVIF Q, S, T, both new product developments can be integrated into CCTV networks worldwide.
OPEN CCTV SYSTEM FOR INDIVIDUAL CCTV SYSTEM SOLUTIONS

The OPEN CCTV SYSTEM is our hardware and software platform from which we configure your individual CCTV system solutions. Every component of this system has been comprehensively tested, including for extreme temperatures and temperature fluctuations.

All our cameras can be combined with switches, servers, clients as well as professional video management software packages.
As a ONE-STOP CCTV SUPPLIER we offer the full spectrum of services: from the system design, project planning and configuration to commissioning.

We also offer documentation and training, FAT/SAT, and a service and maintenance plan. With the exception of providing individual on-site installation services, our project managers will be at your side all the way.

In addition to new CCTV system designs, our cameras and software components can easily be integrated into existing CCTV systems, enabling you to modernise and extend your systems.

Our project engineers also carry out site inspections in order to customise the CCTV system design to perfectly fit with your system.

<table>
<thead>
<tr>
<th>CCTV SYSTEM DESIGN</th>
<th>As a ONE-STOP CCTV SUPPLIER we offer the full spectrum of services: from the system design, project planning and configuration to commissioning.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROJECT ENGINEERING</td>
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<tr>
<td>SYSTEM CONFIGURATION</td>
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<tr>
<td>DOCUMENTATION</td>
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<td>FACTORY ACCEPTANCE TEST (FAT)</td>
<td></td>
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<td>SITE ACCEPTANCE TEST (SAT)</td>
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<td>COMMISSIONING/TRAINING</td>
<td></td>
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<tr>
<td>SERVICE/MAINTENANCE</td>
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</tbody>
</table>
The EC-940-AFZ features one of the most modern camera designs for hazardous areas. The integrated Ex e connection box considerably simplifies both commissioning and maintenance – “INSTALLATION MADE EASY”.

The PoE++ function enables the camera to be connected quickly and easily, since only one cable is required for data transmission and power supply. The enclosure contains state-of-the-art camera technology including full HD, WDR (Wide Dynamic Range), defog and ONVIF S function. Its suitability for extreme ambient temperatures ranging from -55 °C to +65 °C makes the camera ideally suited for oil and gas applications.
**CCTV REQUIREMENTS:**
This CCTV system was specifically designed to withstand the extreme temperature fluctuations and ambient conditions on a drilling rig in Zone 1. The client required three different areas on the drilling rig to be monitored with a separate station each, but connected to each other for flexible access. A video matrix tailored to this system ensures that all video data can be stored and retrieved at any time.

**R. STAHL CAMERA SYSTEM SOLUTION:**
To ensure optimum results, a different camera type was chosen for each task in Zone 1: high-resolution thermal imaging cameras with temperature measurement in any point of the image for man overboard detection, and fast revolving PTZ cameras with dynamic masking, electronic image stabilisation and direct FO connection for monitoring the drill pipes. Fixed AFZ cameras with PoE++ were used for indoor monitoring. Via various cable types and switches, the cameras’ video data is stored on a server matrix for flexible access.
**CCTV REQUIREMENTS:**
The client required this CCTV system to monitor in parallel on two screens and in real time the stand of the drill pipe as well as the surrounding rig area, in ambient temperatures ranging from -40 °C to +60 °C.

**R. STAHL CAMERA SYSTEM SOLUTION:**
Two analogue AFZ cameras were used for real-time monitoring the drill pipe, and particularly light-sensitive PTZ cameras with dynamic masking and image stabilisation were used for indoor surveillance. Data was transmitted via a server matrix inside a weatherproof enclosure to two control screens.

**EC-941 NEW PTZ IP CAMERA**

The new PTZ camera now integrates state-of-the-art camera functions: dynamic masking, electronic image stabilisation and direct fibre optic connection. Below an overview of all functions:

- Complies with data protection requirements via dynamic masking.
- Electronic image stabilisation.
- FO connection, directly above SFP slot.
- Extremely high repetition accuracy (+/- 0.02°).
- 100% corrosion-proof – shot-peened, electropolished surface.
- ONVIF Q, S, T, can be integrated worldwide.
- Temperature range -40 °C … +60 °C.
- ATEX, IECEx, NEC, CEC, EAC, Lloyd’s.
- IP66.

**EXAMPLE OF A SYSTEM SOLUTION**
**COMBINED DRILLING PROCESS AND AREA MONITORING**

**DYNAMIC MASKING**

**NEW**
EC-910
MODERN AND COMPACT

The new all-round EC-910 camera has an excellent price-performance ratio: the camera comes in a compact, small size and incorporates a 3x/10x zoom.

The EC-910’s functions include full HD, WDR, defog, and PoE+, and it has a number of international explosion-protection certificates.

- Efficient high-tech camera.
- ONVIF Q, S, T, can be integrated worldwide.
- Temperature range -40 °C … +65 °C.
- ATEX, IECEx, NEC, CEC, EAC, Lloyd’s.
- IP66, IP67, IP68, IP69.

EXAMPLE OF A SYSTEM SOLUTION
DETAILED CRANE MONITORING

CCTV REQUIREMENTS:
The client required constant, detailed crane monitoring of all horizontal and lifting movements, as well as a combination of analogue and IP cameras, including real-time visualisation on a 12” screen.

R. STAHL CAMERA SYSTEM SOLUTION:
This system consisted of an EC-910 full HD zoom camera with autofocus for the continuous monitoring of the crane movements, and two EC-710 compact cameras with fixed focus for the real-time visualisation of the surrounding area.
The EC-840C features extended radiometry functions to measure the temperature in any point of the image, resulting in unambiguous, safer and more effective temperature control of processes.

The thermal imaging camera can also distinguish between flame ignition and temperature, which reduces the number of false alarms to almost zero. These features make the new EC-840S one of the most modern thermal imaging cameras for hazardous areas.

- IP camera with temperature measurement in any point of the image.
- Distinction between flame ignition and temperature.
- ONVIF Q, S, T, can be integrated worldwide.
- Temperature range -50 °C … +65 °C.
- ATEX, IECEx, NEC, CEC, EAC, Lloyd’s.
- IP66, IP67, IP68, IP69.
EXAMPLE OF A SYSTEM SOLUTION
PROCESS AND DETAILED SURVEILLANCE
IN ZONE 1 WITH REDUNDANT CONTROL

CCTV REQUIREMENTS:
The client required parallel (redundant) monitoring at two control stations and simultaneous monitoring and control via one HMI in the hazardous area. The CCTV system should be able to exclude certain production areas from surveillance, and the thermal imaging cameras should be able to provide detailed temperature measurement in any point of the image of a specific area.

R. STAHL CAMERA SYSTEM SOLUTION:
These requirements were met with a combination of high-resolution thermal imaging cameras and high-precision PTZ cameras in the hazardous areas. The latest EC-941 PTZ cameras feature dynamic masking, where certain areas are blacked out during panning. Its WDR function and the user-friendly SFP slot make the camera ideal even for difficult light conditions and long transmission distances. The new EC-840 thermal imaging camera features detailed temperature measurement in any point of the image. All data is transmitted via fibre optic, media converter and switch to two control stations, for parallel data access and storage.
EC-910-AFZ
IDEAL FOR SIGHT GLASS MONITORING

The 90° viewing angle and an adaptive sight glass mount provide excellent images of the process inside the batch reactor.

The compact EC-910 AFZ camera with 3x/10x zoom combines state-of-the-art functions such as full HD, day/night mode, WDR and backlight compensation, making it ideally suited for sight glass monitoring.

- Highly light-sensitive.
- Requires little space.
- PoE+.
- ONVIF Q, S, T, can be integrated worldwide.
- Temperature range -40 °C … +65 °C.
- ATEX, IECEx, NEC, CEC, EAC, Lloyd’s.
- IP66, IP67, IP68, IP69.
CCTV REQUIREMENTS:
To be able to react swiftly to any abrupt changes in a batch reactor (e.g. foaming), sight glass monitoring was required for this CCTV project. In addition, a universally applicable camera was required for the safe areas.

R. STAHL CAMERA SYSTEM SOLUTION:
For the optimum control of any foaming that might occur in Zone 1, the EC-910 full HD AFZ camera is the ideal solution – its brilliant image quality and light sensitivity provide excellent images of the production medium inside the batch reactor. The safe area is monitored with an IC-930. HMIs as Panel PCs at various locations in Zone 1 are used for visualisation.
The EC-940S AFZ camera is a universally applicable zoom camera with certifications for operation in nearly every country across the globe. The camera comes in various IP versions.

The powerful IP version features full HD, ONVIF S and Q, a wide ambient temperature range of -50 °C to +65 °C, and 30x zoom.

- Universal application.
- Low-light technology.
- ONVIF Q, S, can be integrated worldwide.
- Temperature range -50 °C … +65 °C.
- ATEX, IECEx, NEC, CEC, EAC, Lloyd’s.
- IP66, IP68, IP69.
CCTV REQUIREMENTS:
For this CCTV system the client required explosion-protected cameras to monitor two large production halls and several batch reactor sight glasses. In addition, a safe outdoor area also needed to be monitored. For simultaneous control at different screen stations, all video data had to be collected in a server-client matrix.

R. STAHL CAMERA SYSTEM SOLUTION:
For monitoring the area outside Hall B we used the EC-940S AFZ camera as a fast zoom camera, certified for installation in ambient temperatures ranging from -50 °C to +65 °C and, due to its inbuilt wash & wiper system, ensuring a clear view. The EC-710 is used as a fixed camera for sight glass monitoring in Zone 1, whilst the safe areas are monitored with the IC-930 full HD camera.
Our comprehensive portfolio of explosion-protected and industrial cameras includes the smallest Ex-camera in the world, full HD, IP, and dome cameras as well as highly sensitive thermal imaging cameras.

Together with other hardware and software components, these cameras are an integral part of any individual CCTV system tailored to meet specific system requirements.

Camera versions certified for ambient temperatures from -40 °C to +75 °C or from -55 °C to +65 °C are available for use in extreme environments.

<table>
<thead>
<tr>
<th>EC-710 Compact Camera</th>
<th>All-round EC-910-AFZ Camera</th>
<th>EC-940-AFZ Camera</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter of only 55 mm.</td>
<td>3x or 10x optical zoom.</td>
<td>IP camera, full HD (1920 x 1080).</td>
</tr>
<tr>
<td>7 versions with different fixed focal lengths.</td>
<td>PoE+, 24 VDC or 24 VAC.</td>
<td>Ex e connection box for simple installation.</td>
</tr>
<tr>
<td>Temperature range -40 °C … +75 °C.</td>
<td>Including wall- and ceiling-mount bracket.</td>
<td>ONVIF Q, S, T, can be integrated worldwide.</td>
</tr>
<tr>
<td>Zone 1/2/21/22</td>
<td>Optional sight glass mount.</td>
<td>Temperature range: -55 °C … +65 °C (Standard IP, PoE++), -25 °C … +55 °C (F0).</td>
</tr>
<tr>
<td>IP68, IP69K</td>
<td>ONVIF Q, S, T, can be integrated worldwide.</td>
<td>Zone 1/2/21/22</td>
</tr>
<tr>
<td>ATEX</td>
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<td>IP66, IP67, IP68, IP69</td>
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<td>IECEx</td>
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<td>ATEX</td>
</tr>
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<td>NEC, CEC</td>
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<td>IECEx</td>
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<tr>
<td>EAC</td>
<td></td>
<td>NEC, CEC</td>
</tr>
<tr>
<td>Lloyd’s</td>
<td></td>
<td>EAC</td>
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</tr>
</tbody>
</table>
EC-940S-AFZ Camera

- IP camera, full HD (1920 x 1080).
- High-quality stainless-steel enclosure, electropolished.
- 30x optical zoom (IP version), 36x optical zoom (analogue version).
- ONVIF Q, S, T, can be integrated worldwide.
- Temperature range -50 °C … +65 °C.
- Zone 1/21/22
- IP66, IP68, IP69
- ATEX
- IECEx
- NEC, CEC
- EAC
- Lloyd’s

EC-940-PTZ/EC-941-PTZ Camera

- IP camera, full HD (1920 x 1080).
- Dynamic masking.
- Electronic image stabilisation.
- Stainless-steel enclosure SS316L, shot-peened and electropolished.
- ONVIF Q, S, T, can be integrated worldwide.
- Temperature range -40 °C … +60 °C.
- Zone 1/21/22
- IP66
- ATEX
- IECEx
- NEC, CEC
- EAC
- Lloyd’s

EC-840S-TIC Thermal Imaging Camera

- IP camera.
- Pixel accurate temperature measurement.
- Distinction between flame and temperature.
- Stainless-steel enclosure SS316L, shot-peened and electropolished.
- Resolution: 640 x 512 or 336 x 256.
- ONVIF Q, S, T, can be integrated worldwide.
- Temperature range -50 °C … +65 °C.
- Zone 1/21/22
- IP66, IP68, IP69
- ATEX
- IECEx
- NEC, CEC
- EAC
- Lloyd’s

EC-750 Dome Camera

- Analogue or IP version.
- High-quality stainless-steel enclosure.
- 360° endless.
- 18x optical zoom (analogue version), 18x or 40x optical zoom (IP version).
- Temperature range -20 °C … +60 °C.
- Zone 1/21/22
- IP68
- ATEX
- IECEx

IC-930 Compact Camera

- IP camera, full HD (1920 x 1080).
- Stainless-steel enclosure, electropolished.
- Low-light technology, 30x optical zoom.
- PoE+, 24 VDC or 24 VAC.
- Wash & wiper system, optional.
- Including wall- and ceiling-mount bracket.
- ONVIF Q, S, can be integrated worldwide.
- Temperature range -40 °C … +65 °C.
- IP66, IP67, IP68, IP69
### Our Cameras in Detail

#### Compact Camera

<table>
<thead>
<tr>
<th>Product code</th>
<th>Certificates</th>
<th>SAP no</th>
<th>Product type</th>
<th>Connection</th>
<th>IP rating</th>
<th>Wash &amp; Wiper</th>
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</thead>
<tbody>
<tr>
<td>EC-710-0XX</td>
<td>ATEX, IECEx, NEC, CEC, EAC</td>
<td></td>
<td>Fixed-focus analogue camera, 7 focal lengths available. see <a href="http://www.r-stahl.com">www.r-stahl.com</a> for details.</td>
<td></td>
<td>IP68, IP6K</td>
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</table>

#### All-Round Cameras

<table>
<thead>
<tr>
<th>Product code</th>
<th>Certificates</th>
<th>SAP no</th>
<th>Product type</th>
<th>Connection</th>
<th>IP rating</th>
<th>Wash &amp; Wiper</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC-910-AFZ-I03-P00</td>
<td>ATEX, IECEx, NEC, CEC, EAC, Lloyd's</td>
<td>264963</td>
<td>Autofocus Zoom IP Camera, Full HD</td>
<td>IP66, IP67, IP68, IP69</td>
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<tr>
<td>EC-910-AFZ-I03-P04</td>
<td>ATEX, IECEx, EAC, Lloyd's</td>
<td>265087</td>
<td>Autofocus Zoom IP Camera, Full HD</td>
<td>IP66, IP67, IP68, IP69</td>
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<tr>
<td>EC-910-AFZ-I03-P10</td>
<td>ATEX, IECEx, EAC, Lloyd's</td>
<td>265688</td>
<td>Autofocus Zoom IP Camera, Full HD</td>
<td>IP66, IP67, IP68, IP69</td>
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<td>EC-910-AFZ-I10-P00</td>
<td>ATEX, IECEx, NEC, CEC, EAC, Lloyd's</td>
<td>264964</td>
<td>Autofocus Zoom IP Camera, Full HD</td>
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<td>EC-910-AFZ-I10-P04</td>
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<td>265900</td>
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<td>IP66, IP67, IP68, IP69</td>
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<td>EC-910-AFZ-I10-P10</td>
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<td>265921</td>
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<td>IP66, IP67, IP68, IP69</td>
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#### AFZ/AutoFocus Zoom Cameras

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<th>Product type</th>
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<tr>
<td>EC-940-AFZ-HDI-04H</td>
<td>ATEX, IECEx</td>
<td>265895</td>
<td>Autofocus Zoom IP Camera</td>
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<tr>
<td>EC-940-AFZ-HDI-05H</td>
<td>ATEX, IECEx</td>
<td>265897</td>
<td>Autofocus Zoom IP Camera</td>
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<td>EC-940-AFZ-HDI-06H</td>
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<td>EC-940-AFZ-HDF-04H</td>
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<td>EC-940-AFZ-HDF-05I</td>
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<td>Autofocus Zoom IP Camera</td>
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<td>EC-9405-AFZ-HFI-W24-56-B</td>
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<td>Autofocus Zoom IP Camera</td>
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<td>EC-9405-AFZ-HFI-W25-55-B</td>
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#### New PTZ/Pan/Tilt/Zoom Cameras – New: With Dynamic Masking

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<th>Product type</th>
<th>Connection</th>
<th>IP rating</th>
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<td>EC-941-V1C02T0M000</td>
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<td>Pan/Tilt/Zoom IP Camera</td>
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<td>278701</td>
<td>Pan/Tilt/Zoom IP Camera</td>
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<td>EC-941-V3C02T0M000</td>
<td>ATEX, IECEx, NEC, CEC, EAC, Lloyd's</td>
<td>278702</td>
<td>Pan/Tilt/Zoom IP Camera</td>
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#### New Thermal Imaging Cameras – New: Now All Cameras with Radiometry Functions

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<th>Product type</th>
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<td>EC-9405-TIC-35I-IR2-F55-B</td>
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<td>Thermal Imaging IP Camera</td>
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<td>EC-9405-TIC-35I-IR2-456-B</td>
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<td>EC-9405-TIC-08I-HR2-F55-B</td>
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<td>Thermal Imaging IP Camera</td>
<td>IP68, IP68, IP69</td>
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<tr>
<td>Low-light technology</td>
<td>Cable</td>
<td>Temperature range</td>
<td>Power input</td>
<td>Optical zoom</td>
<td>Viewing angle (°)</td>
</tr>
<tr>
<td>---------------------</td>
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<tr>
<td></td>
<td>5 m multicable</td>
<td>-40 °C … +75 °C</td>
<td>12 VDC</td>
<td>--</td>
<td>7 camera variants: 12°, 23°, 33°, 44°, 52°, 70°, 81°</td>
</tr>
<tr>
<td></td>
<td>10 m cable</td>
<td>-40 °C … +65 °C</td>
<td>24 VDC/24 VAC or PoE+</td>
<td>3x</td>
<td>90° (W) – 32° (T)</td>
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<tr>
<td></td>
<td>4 m cable</td>
<td>-40 °C … +65 °C</td>
<td>24 VDC/24 VAC or PoE+</td>
<td>3x</td>
<td>90° (W) – 32° (T)</td>
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<tr>
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<td>10 m cable</td>
<td>-40 °C … +65 °C</td>
<td>24 VDC/24 VAC or PoE+</td>
<td>3x</td>
<td>90° (W) – 32° (T)</td>
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<tr>
<td></td>
<td>4 m cable</td>
<td>-40 °C … +65 °C</td>
<td>24 VDC/24 VAC or PoE+</td>
<td>10x</td>
<td>67° (W) – 7.6° (T)</td>
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<td>10 m cable</td>
<td>-40 °C … +65 °C</td>
<td>24 VDC/24 VAC or PoE+</td>
<td>10x</td>
<td>67° (W) – 7.6° (T)</td>
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<tr>
<td></td>
<td>4 m cable</td>
<td>-40 °C … +65 °C</td>
<td>230 VAC</td>
<td>32x</td>
<td>62.8° (W) – 2.23° (T)</td>
</tr>
<tr>
<td></td>
<td>4 m cable</td>
<td>-55 °C … +60 °C</td>
<td>24 VDC</td>
<td>32x</td>
<td>62.8° (W) – 2.23° (T)</td>
</tr>
<tr>
<td></td>
<td>4 m cable</td>
<td>-55 °C … +60 °C</td>
<td>230 VAC</td>
<td>32x</td>
<td>62.8° (W) – 2.23° (T)</td>
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<tr>
<td></td>
<td>4 m cable</td>
<td>-25 °C … +55 °C</td>
<td>24 VDC</td>
<td>32x</td>
<td>62.8° (W) – 2.23° (T)</td>
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<tr>
<td></td>
<td>4 m armoured cable</td>
<td>-50 °C … +65 °C</td>
<td>12 – 24 VDC/24 VAC</td>
<td>30x</td>
<td>61.6° (W) – 2.50° (T)</td>
</tr>
<tr>
<td></td>
<td>4 m cable set</td>
<td>-50 °C … +65 °C</td>
<td>12 – 24 VDC/24 VAC</td>
<td>30x</td>
<td>61.6° (W) – 2.50° (T)</td>
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<td>4 m armoured cable</td>
<td>-40 °C … +60 °C</td>
<td>230 VAC</td>
<td>30x</td>
<td>61.6° (W) – 2.50° (T)</td>
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<td>4 m armoured cable</td>
<td>-40 °C … +60 °C</td>
<td>24 VAC</td>
<td>30x</td>
<td>61.6° (W) – 2.50° (T)</td>
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<td>-40 °C … +60 °C</td>
<td>120 VAC</td>
<td>30x</td>
<td>61.6° (W) – 2.50° (T)</td>
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<td>4 m armoured cable</td>
<td>-50 °C … +65 °C</td>
<td>12 – 24 VDC/24 VAC</td>
<td>--</td>
<td>9.3° (H) x 7.1° (V)</td>
</tr>
<tr>
<td></td>
<td>4 m cable set</td>
<td>-50 °C … +65 °C</td>
<td>12 – 24 VDC/24 VAC</td>
<td>--</td>
<td>9.3° (H) x 7.1° (V)</td>
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<tr>
<td></td>
<td>4 m armoured cable</td>
<td>-50 °C … +65 °C</td>
<td>12 – 24 VDC/24 VAC</td>
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<td>9.3° (H) x 7.1° (V)</td>
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<td>-50 °C … +65 °C</td>
<td>12 – 24 VDC/24 VAC</td>
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<td>9.3° (H) x 7.1° (V)</td>
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<td>4 m armoured cable</td>
<td>-50 °C … +65 °C</td>
<td>12 – 24 VDC/24 VAC</td>
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<td>17° (H) x 13° (V)</td>
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<td>-50 °C … +65 °C</td>
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<td>17° (H) x 13° (V)</td>
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<td>4 m armoured cable</td>
<td>-50 °C … +65 °C</td>
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<td>12 – 24 VDC/24 VAC</td>
<td>--</td>
<td>17° (H) x 13° (V)</td>
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* Cold start temperature -40 °C
## OUR CAMERAS IN DETAIL

<table>
<thead>
<tr>
<th>Product code</th>
<th>Certificates</th>
<th>SAP no</th>
<th>Product type</th>
<th>Connection box</th>
<th>IP rating</th>
<th>Wash &amp; Wiper</th>
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<tbody>
<tr>
<td><strong>DOME CAMERAS</strong></td>
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<td>EC-750-PA-VI-PE</td>
<td>ATEX, IECEx</td>
<td>168166</td>
<td>Dome Analogue Camera</td>
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<td>IP66</td>
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<td>IP66</td>
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<td>Dome IP Camera</td>
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<td>ATEX, IECEx</td>
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<td>Dome IP Camera</td>
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<td>IP66</td>
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<td><strong>COMPACT CAMERAS FOR SAFE INDUSTRIAL AREAS</strong></td>
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<tr>
<td>IC-800-AFZ-W00</td>
<td></td>
<td>271549</td>
<td>Autofocus Zoom IP camera, Full HD</td>
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<td>IP66, IP67, IP68, IP69</td>
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<td>IC-800-AFZ-W01</td>
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<td>271550</td>
<td>Autofocus Zoom IP camera, Full HD</td>
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<td>IP66, IP67, IP68, IP69</td>
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</table>

• Management of all video feeds.
• On-site or remote operation via Clients.
• Multi-vendor capability.
• Integration of existing and new systems.
The Cayuga software is our standard software. It can be used in a great variety of applications that go beyond the classic security field, and is thus one of our preferred video management systems.

A great many modules and interfaces result in highly professional individual and scaleable video management solutions for every conceivable area of application. Our project team will be happy to assist you with further software solutions.

Other ONVIF video management systems can be installed on request.

- Open design, unlimited compatibility.
- Variable and scaleable.
- Integration of third-party and existing devices.
- Intuitive, without the need for extensive training.
- Video analysis with intelligent analysis routines.
- Clearly structured user interface.
- Live, archive and configuration modes.
- Native Client, Web Client, Mobile Client.
- Citrix-/Remote Desktop and Multi Installation Login.
ACCESSORIES

Wash & Wiper system

- Permanently clear view even during rain (e.g. on drilling rigs) thanks to the optional wash & wiper system.
- Including spray can and water tank for Zone 1.
- Designed for the EC-940/941-PTZ and EC-940S-AFZ camera versions.

Sight glass mount

- Sight glass mount made of high-quality stainless steel for batch reactors in the process industry.
- Including folding mechanism, designed according to standard.
- For the EC-910 all-round camera and the EC-710 compact camera.

Camera mounts

- Simple, sturdy camera mounts made of electropolished stainless steel (AISI 316L).
- Different wall and ceiling mounts, depending on type and model.
- Various mounting accessories for pole and corner mounts.

Ex d enclosures

- Explosion-protected enclosures for installation of non-explosion-protected components.
- Large selection of stainless-steel or aluminium enclosures.
- Customised enclosures possible where technically feasible.

Ex e terminal boxes

- Ex e terminal boxes for connecting cables in hazardous areas.
- Direct connection at the Ex d enclosure for connecting individual components inside the enclosure.
- Large selection of stainless-steel or glass fibre reinforced plastic enclosures.
Video surveillance even under extreme conditions – xx8 SHARK Panel PCs (15”/21.5”)

- Powerful 15”/21.5” Panel PCs with Intel® Core™ i7 dual-core processors.
- Developed for network-based video surveillance.
- Featuring high-brightness display, multi-touch functions, brightness sensor, Bluetooth® and camera interfaces.
- IP66, can be operated in temperatures from -40 °C to +65 °C.

SHARK KVM systems in drilling rig surveillance – xx8 (15”/21.5”)

- 15”/21.5” KVM systems with access to separate, data-providing PCs for video surveillance.
- SHARK HMIs are shock-, vibration-, seawater- and salt-spray-proof.
- IP66, can be operated in temperatures from -40 °C to +65 °C.

9721 Media converter

- For the conversion of electric signals into explosion-protected “op is” signals.
- Allows installation and maintenance work on fibre optics without the need for downtime (hot swap/hot work).
- Especially suitable for the Ethernet-Remote I/O system IS1+.

9721 Unmanaged switch

- For linking electrical Ethernet networks with optical 100 Mbit/s Ethernet networks.
- 4 FO ports in “op is” for operation in hazardous areas.
- Conventional fibre optic cables can be used in hazardous areas (hot swap).

Multicable – armoured or standard

- Wide range of cable types, from armoured Ethernet multicable for full HD IP cameras to standard multicable for analogue cameras.
- The ideal cable type from a combination of insulation, shielding and coating for every area of application.
R. STAHLE AUTOMATION – MORE THAN YOU EXPECT

SAFETY BARRIERS

ISOLATORS

REMOTE I/O

FIELDBUS

NETWORK PRODUCTS

ZONE 2

ZONE 1

FIELD DEVICE

SAFETY

BARRIERS

ISOLATORS

REMOTE I/O

FIELDBUS

NETWORK PRODUCTS

ZONE 2

ZONE 1

FIELD DEVICE

ISA100.11a
LEVEL

SYSTEMS & SOLUTIONS

HMI

EXICOM

CAMERA SYSTEMS

CONTROL STATION

GROUNDING MONITOR

WirelessHART
EtherCAT
Modbus TCP
Modbus RTU
OnVIF
YOUR PARTNER FOR EXPLOSION PROTECTION WORLDWIDE

**CCTV planning**

In addition to individual components, R. STAHL offers specific CCTV solutions. Our experienced engineers cooperate with you to design the ideal solution for your application in a timely manner.

**Project engineering and on-site training**

From a new CCTV plan to production, quality control and on-site training, you will be talking to one R. STAHL project manager who will advise you competently on all questions concerning the project.

**Factory Acceptance Test (FAT) / Site Acceptance Test (SAT)**

Do you wish to conduct the tests at our production sites or on-site at your factory? Whichever option you choose, our experts will be available to answer any questions and take note of any change requests.

**Support**

Our support will continue beyond the delivery of your system. Our support team is available during the initial on-site commissioning and over the entire operating life.
R. STAHL was founded as a family-run German company in 1876 and has been actively involved in explosion protection since the 1940s.

AUTOMATION has been firmly established in the company for 50 years, and has resulted in significant pioneering work, for example, in explosion-protected remote I/O systems and intrinsically safe fieldbus solutions.

We actively cooperate in future topics, such as NAMUR Open Architecture (NOA), the Open Process Automation Forum (OPAF), Ethernet APL (Advanced Physical Layer), and Cyber Security, so that our customers can digitalise their process plant of the future.

Nowadays, R. STAHL is one of the world’s three largest providers of components and solutions for electrical explosion protection.

We are the number one company for system solutions, including for the most extreme ambient conditions. R. STAHL actively supports standardisation in accordance with ATEX, IECEx and NEC/CEC for its customers in order to ensure a high safety standard within Germany and internationally.

From development through to production and operation in systems, we act true to the "Made in Germany" seal.

R. STAHL places great importance on the safety, quality and durability of its products. This is why we have been certified since 1993 in accordance with ISO 9001 and are one of the first manufacturers to be certified in explosion protection in accordance with IEC EN 80079-34.