ConnectionRail series

Network Servers for Camera and Communication Systems in Explosion Risk Zones

The **Connection Rail series** converts video audio and I/O signals into Ethernet network streams and therefore makes them available across long distances regardless of media.

As part of the **Connection Rail series**, both ATEX-certified devices for use in explosion risk zones and non-ATEX devices for cabinet rooms are available. Thanks to the diversity of the interfaces, our **Connection Rails** can solve any digitalisation task. Cameras from all the renowned manufacturers can be controlled based on the network using an RS232/RS422 or RS485 interface. Loudspeakers and room microphones, as well as DECT base stations, can be connected. Network integrations can be implemented via fibre optic cables, copper-bonded Ethernet or WLAN.

SAMCON
Prozessleittechnik GmbH

ConnectionRail series

Analogue Cameras – Digital Networks.

Camera and communication systems can be established in analogue or digitally. We speak of analogue camera systems when the image signal is transferred in analogue. The most important standard formats are PAL and NTSC. High-performance cameras, like our **ExCam miniZoom**, can be controlled. This does not function in analogue, but via digital bit-serial interfaces.

We speak of digital camera systems when the image information and, if necessary, sound information is transferred using the TCP/IP protocol (Video over IP, Voice over IP).

Even when planning camera and communication systems in explosion risk zones, it is often impossible to do without the benefits of both systems (analogue camera systems **AND** digital networks).

In the field, analogue camera systems often have benefits compared with digital, so-called IP cameras. It is therefore possible, for instance, for supply cables to analogue cameras, such as the ExCam miniZoom, to easily be up to 200 metres long, even in EMC-critical zones. Network cables to IP cameras should not exceed a length of 100 metres. Furthermore, analogue cameras can be built in a much more compact manner than IP cameras. This saves pressure-resistant encapsulated space and makes analogue camera systems more efficient, too.

Nevertheless, the future lies in digital networks. IP-based camera networks will establish themselves, apart from a few special applications, in the long term compared with analogue camera networks. Only by incorporating video and audio signals in the Ethernet are these available to other network participants. Installation distances play no role when it comes to digital camera networks – information can, if necessary, be transferred all over the world via the Internet. Conventional Ethernet PCs can be used to visualise the camera images. Software solutions are becoming important tools and replace expensive additional hardware. Real integration in process control systems can be implemented.

ExConnectionRail
im Ex-d Enclosure

ConnectionRail
im stainless steel enclosure

Missing Link.

The **Connection Rail series** converts audio and video streams into digital network streams. The Connection Rails therefore turn every camera into an IP one. Interface drivers for the **Connection Rails**, which enable control of dome or zoom cameras via the Ethernet, are available for all renowned camera models. Audio devices, such as loudspeakers, microphones or DECT base stations become VoIP servers thanks to the Connection Rail.

Our Connection Rail series allows you to be able to exploit the benefits of analogue cameras **AND** digital networks, without having to put up with disadvantages or quality losses!

It does not always have to be ATEX.

The question as to where video and audio signals should be best digitalised is always a planning issue. If the installation paths from the safe electrical cabinet room to the explosion risk zone are short, it is advisable to mount the Connection Rail in the safe zone. Should explosion risk zones be developed large distances away, it is occasionally essential and more efficient to digitalise in the field.

No matter what project implementation you choose, with the ATEX-certified **ExConnection Rail** or the **Connection Rail** for safe zones, you always have the optimum digitalisation device for every planning task.

Hardware.

The **Connection Rail series** is the „Plug & Play" solution for digitalising analogue camera and audio signals from explosion risk zones. All the components and connections are coordinated to this.

The centrepiece of the **Connection Rails** are video audio servers from AXIS Communications, which we modify in the Connection Rail for the usage conditions. Furthermore, the Connection Rail contains power supplies, fuses, coupling relays, and, if necessary, media converters or WLAN access points.

The Connection Rails are supplied with complete technical documentation, circuit diagrams, user manuals and preinstalled camera drivers. The installation and commissioning of the Connection Rail can be reduced to elementary, simple steps: Establish the power supply – connect the network – connect the cameras. And you're done!

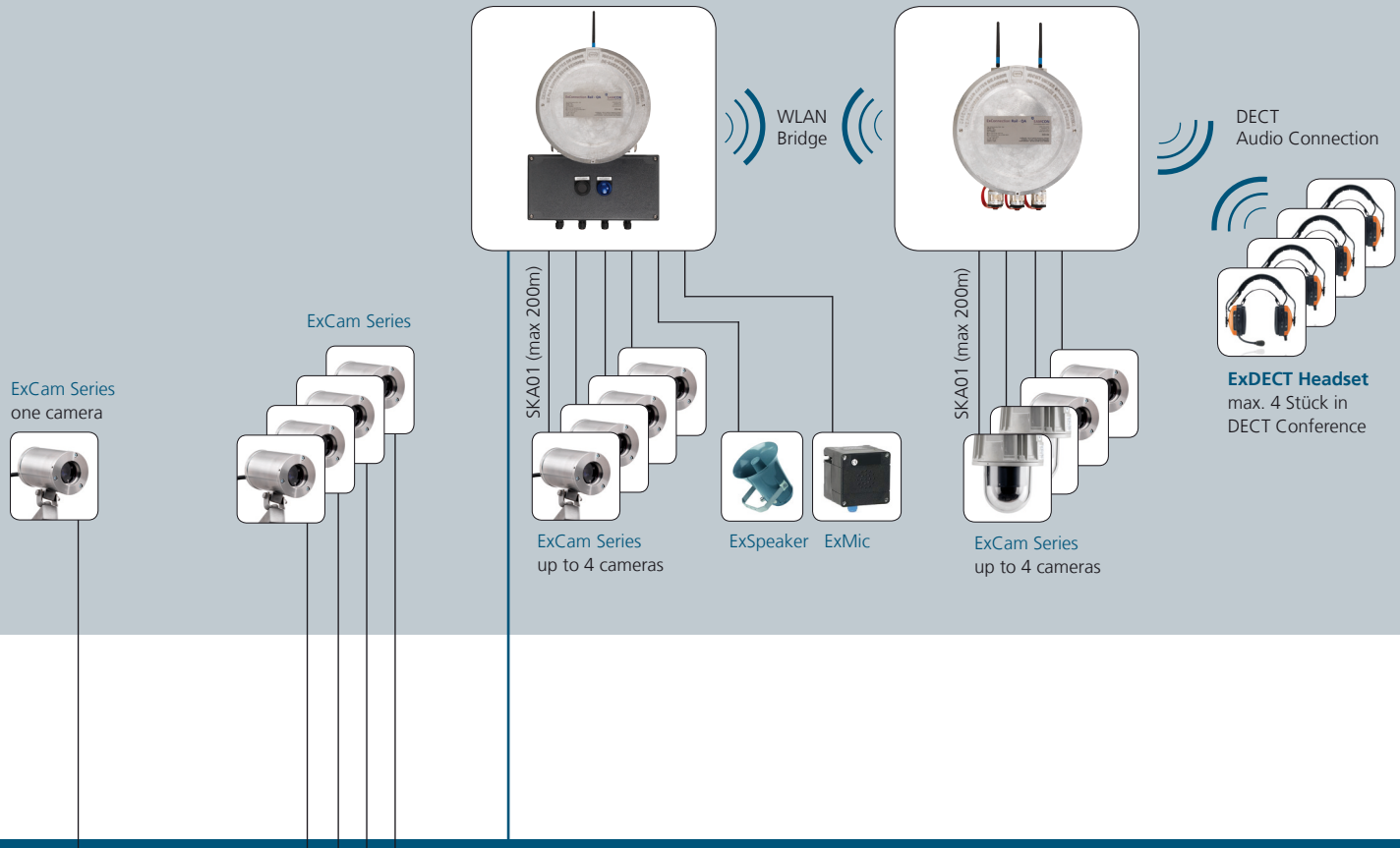
FOC, Copper or WLAN Ethernet.

Ethernet signals can be transferred via copper line (Cat5), fibre optic cable or radio (WLAN). These transfer media may vary in any way in the case of our **Connection Rails** (see network example on page 4). For long installation paths to the next active network participant, it is advisable to use fibre optic cables. An industrial access point, which supports all common operating types, such as Bridge or WDS, is used as a WLAN unit. A **Connection Rail** with WLAN turns analogue cameras into **WLAN cameras**. And it can do this in an explosion risk zone, if necessary.

Speaking and Hearing through the Ether.

VoIP (Voice over IP) technology is increasingly finding its way into our telephone networks. With the VoIP interface in our **Connection Rails**, there exists the option of addressing via the Ethernet outlying audio devices, such as loudspeakers, microphones or DECT base stations, in explosion risk zones. This means that you say something into a microphone on your computer and your words are forwarded to the explosion risk zone via a loudspeaker. In return, you hear via a sound card on your computer what is being said to a room microphone in the explosion risk zone.
The special feature of VoIP technology in this example is that it is not important where you are or your computer is located! Should you prefer a radio interface for the audio connection, opt for our DECT ExNF Interface, a DECT base station with radio approval for explosion risk zones. It enables full-duplex audio communication between up to four ATEX-certified headsets and you or your computer!

Network Example

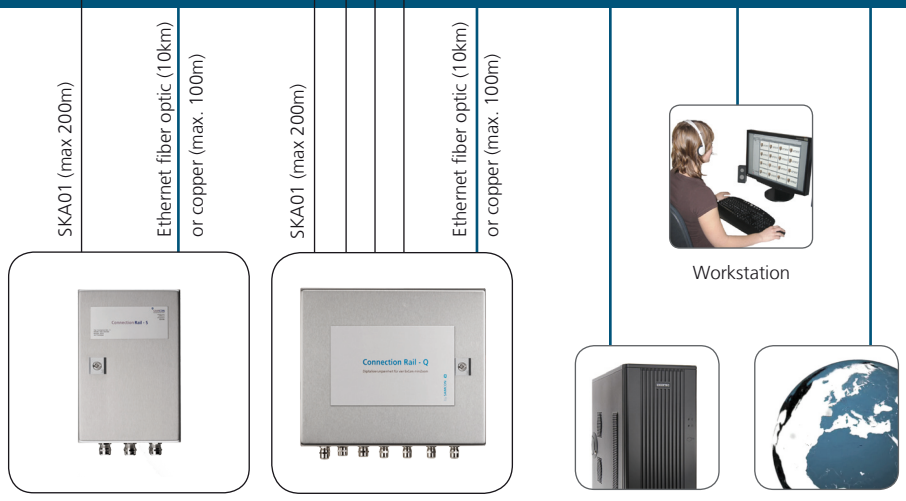


design: www.iverse-media.de
printed in germany

Ethernet

hazardous area

safe area



For further information and datasheets of the (Ex)Connection Rails, please visit our website: www.samcon.eu. If you still have questions about the connection rail series, or a demonstration wish, we are always at your disposal.

SAMCON
Prozessleittechnik GmbH

Schillerstraße 5a
D-35102 Lohra-Altenvers

www.samcon.eu
info@samcon.eu
T: +49 6426 9231-0
F: +49 6426 9231-31