

**Secure communication from the field to the control level**  
Innovative industrial Ethernet solutions for your application

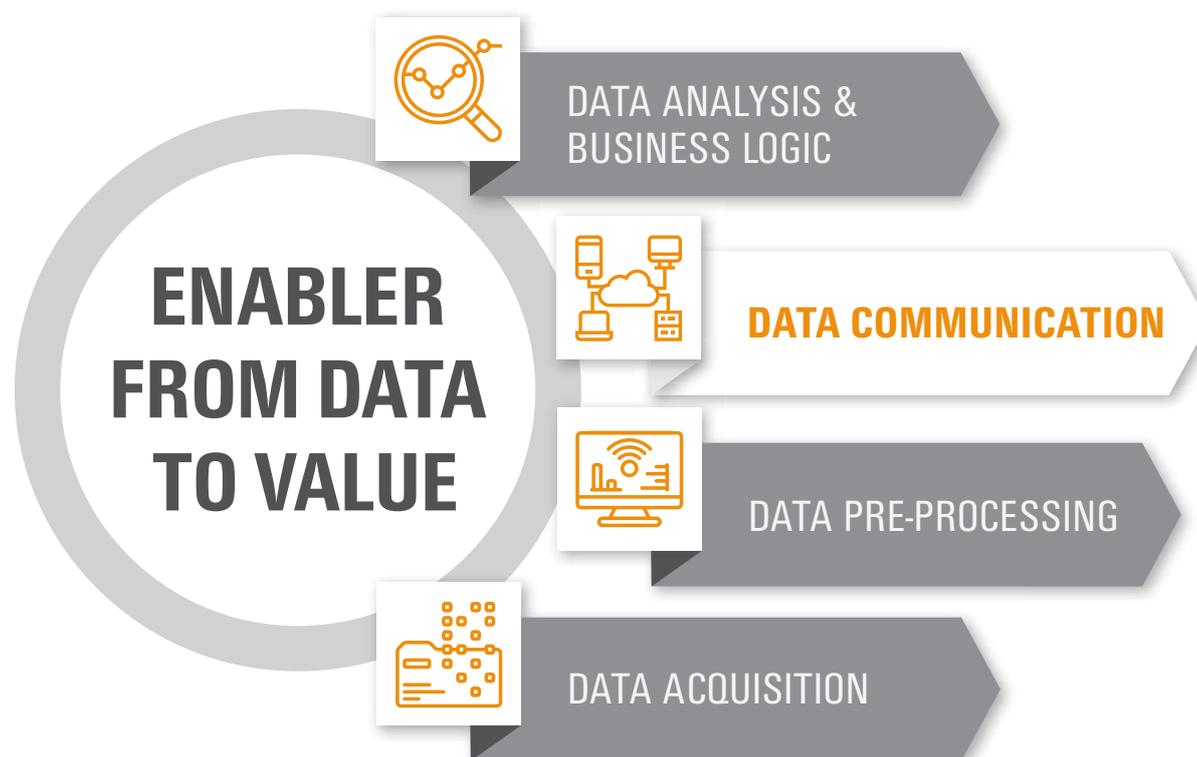


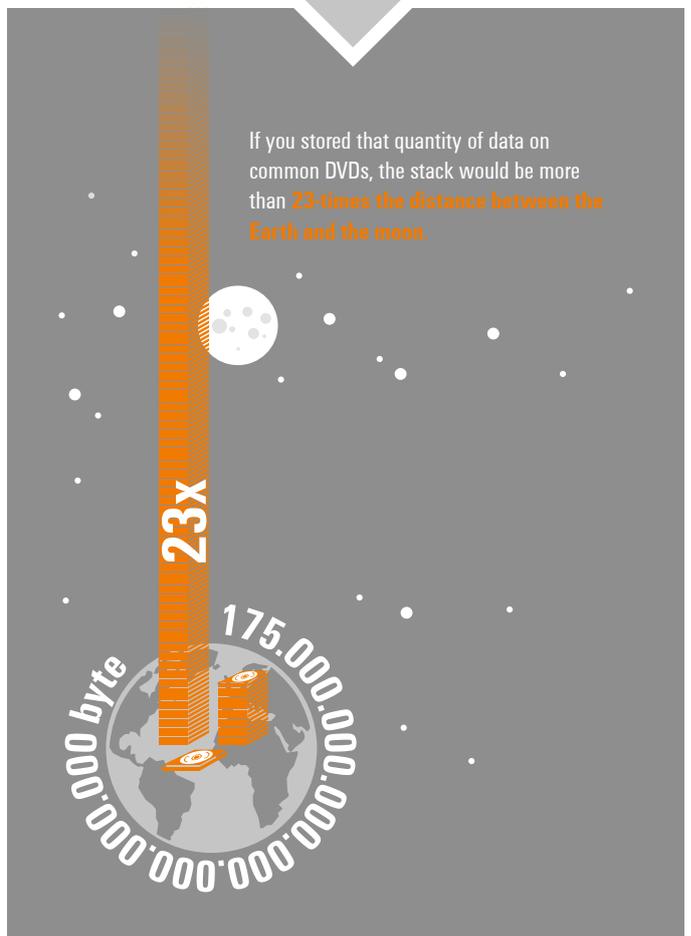
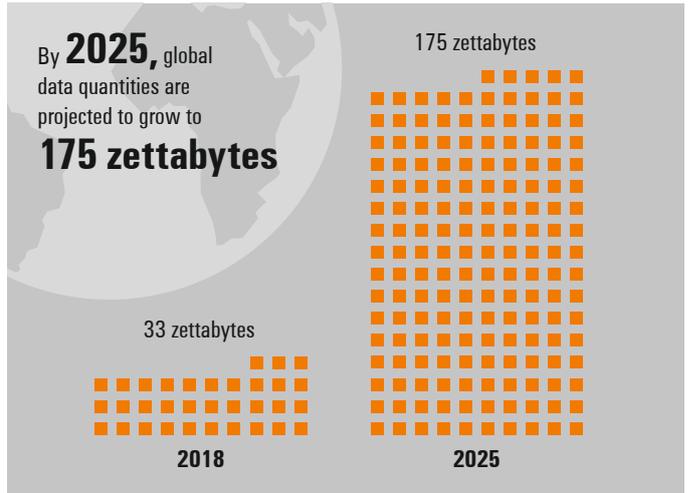
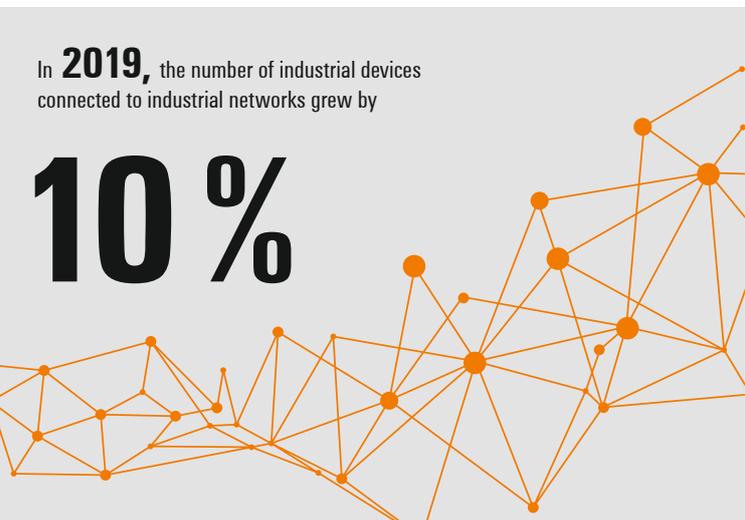
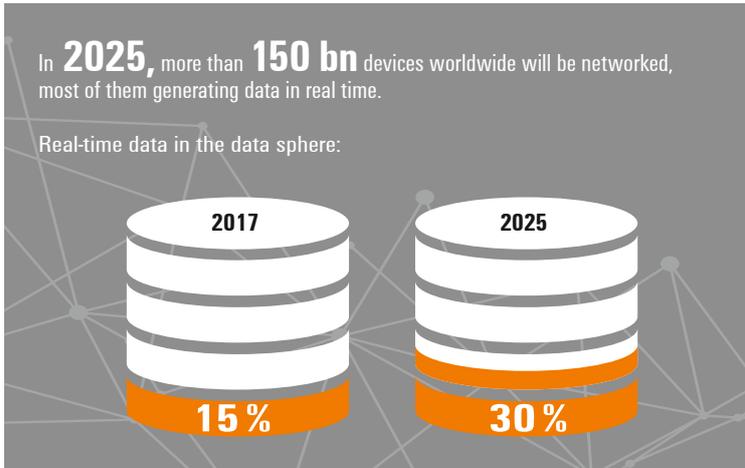
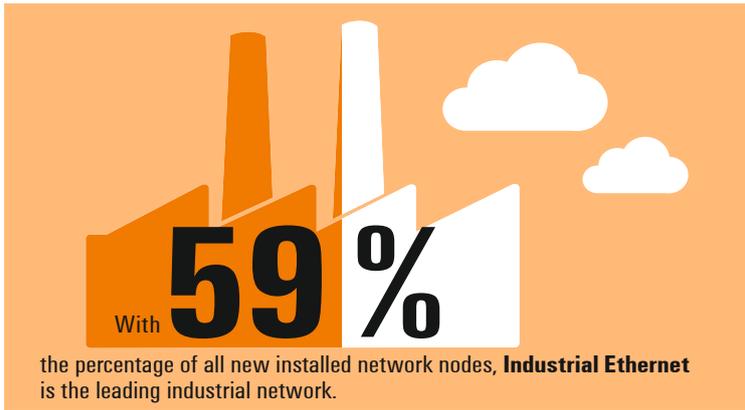
# Trends in industrial communication

## Equipped to handle anything with Weidmüller

Need to communicate an ever-growing quantity of data at ever-faster speeds? We cannot prevent the framework conditions from becoming more and more complex. However, we can offer you a reliable and secure complete solution for industrial data transmission, perfectly tailored to these framework conditions, based on our many years of expertise and experience.

Find out more: [www.weidmueller.com/ie](http://www.weidmueller.com/ie)





Sources: [www.bitkom.org](http://www.bitkom.org), [blog.wiwo.de](http://blog.wiwo.de), [www.seagate.com](http://www.seagate.com)

# Experience our Industrial Ethernet products for your application

Many different use cases



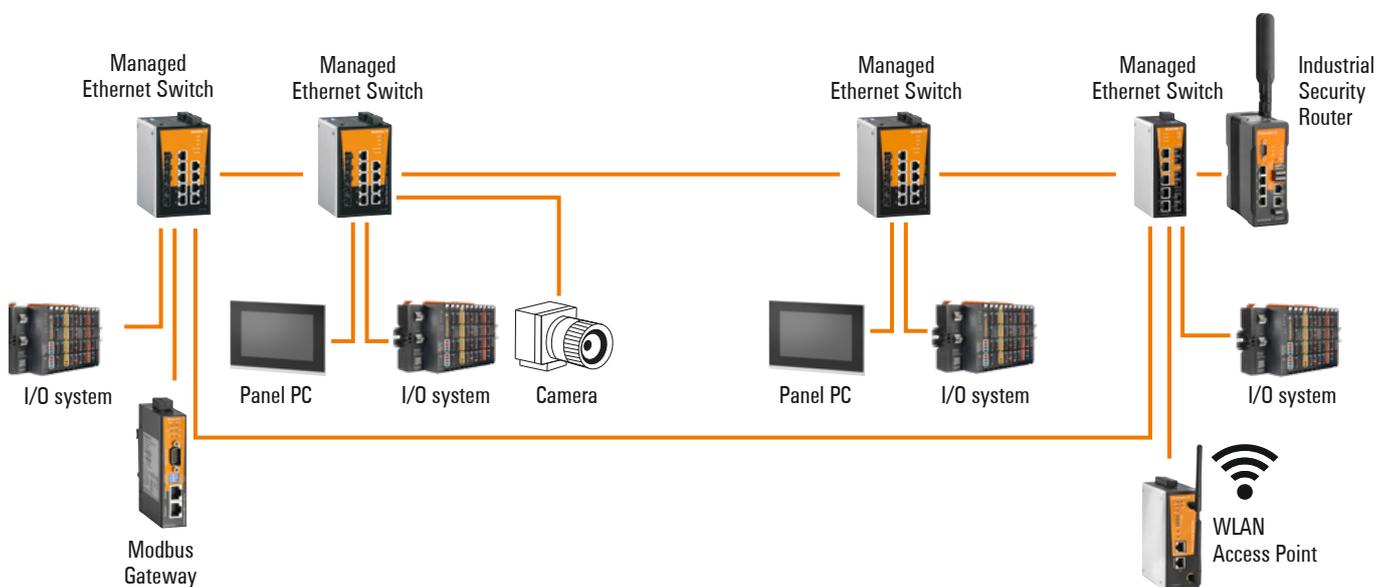
# Highly-available communication within a system

## Redundant networks for high availability



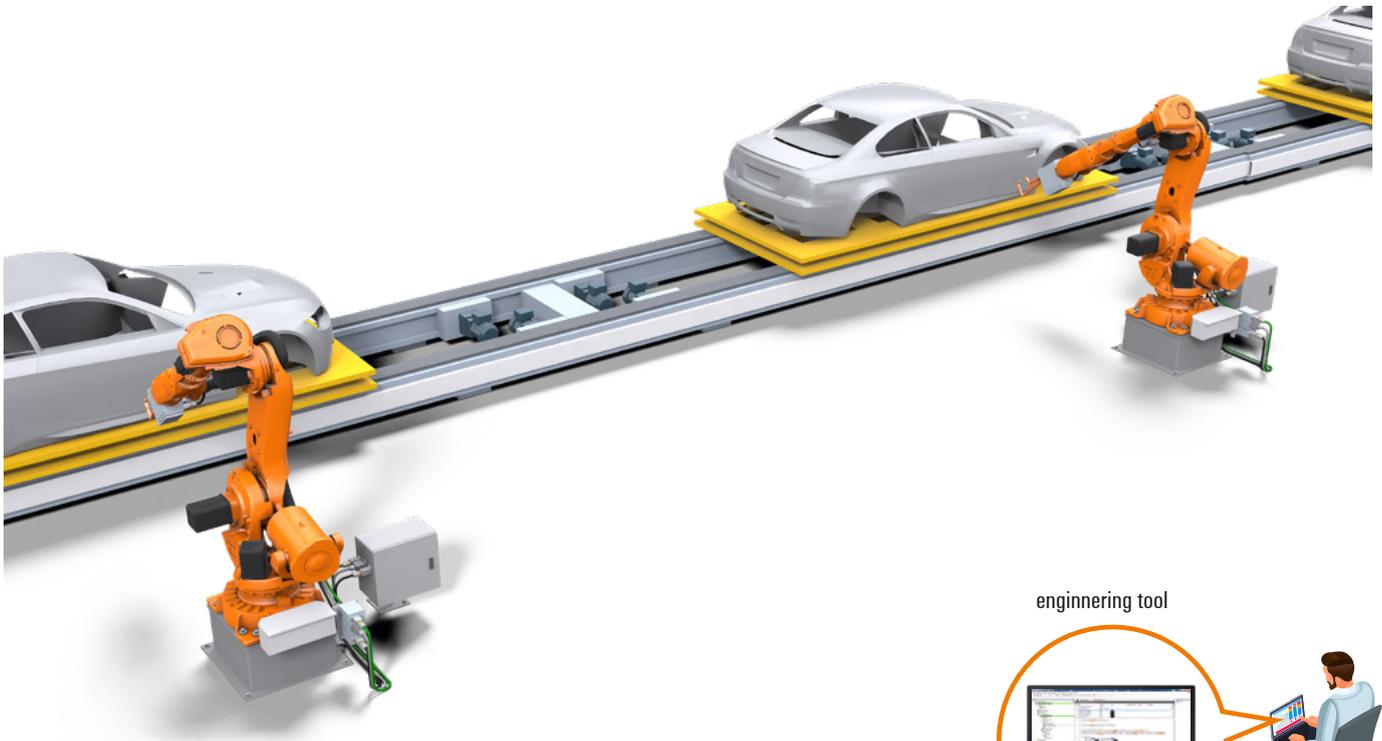
### Your special advantage

- Fast ring redundancy for quick restoration times (20 ms)
- Chain topology for fast and redundant linking to existing third-party systems
- Support for standardised protocols such as STP, RSTP



# Real-time communication of data and integration into programming tools

Well-equipped to handle applications where every millisecond counts

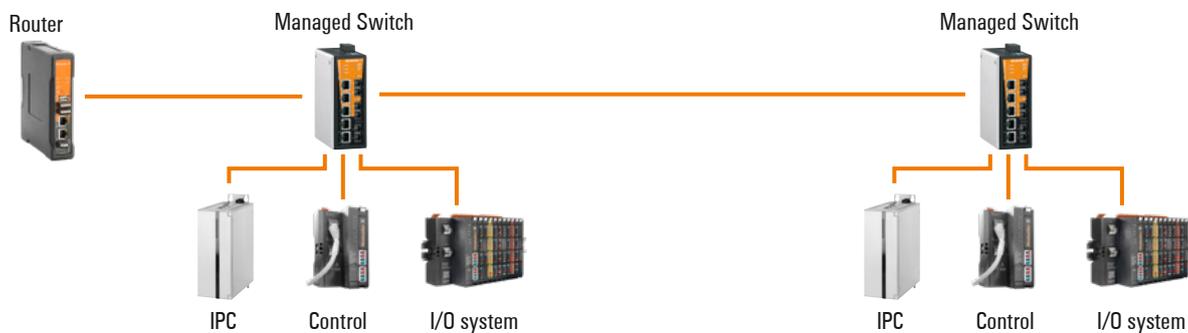


engineering tool



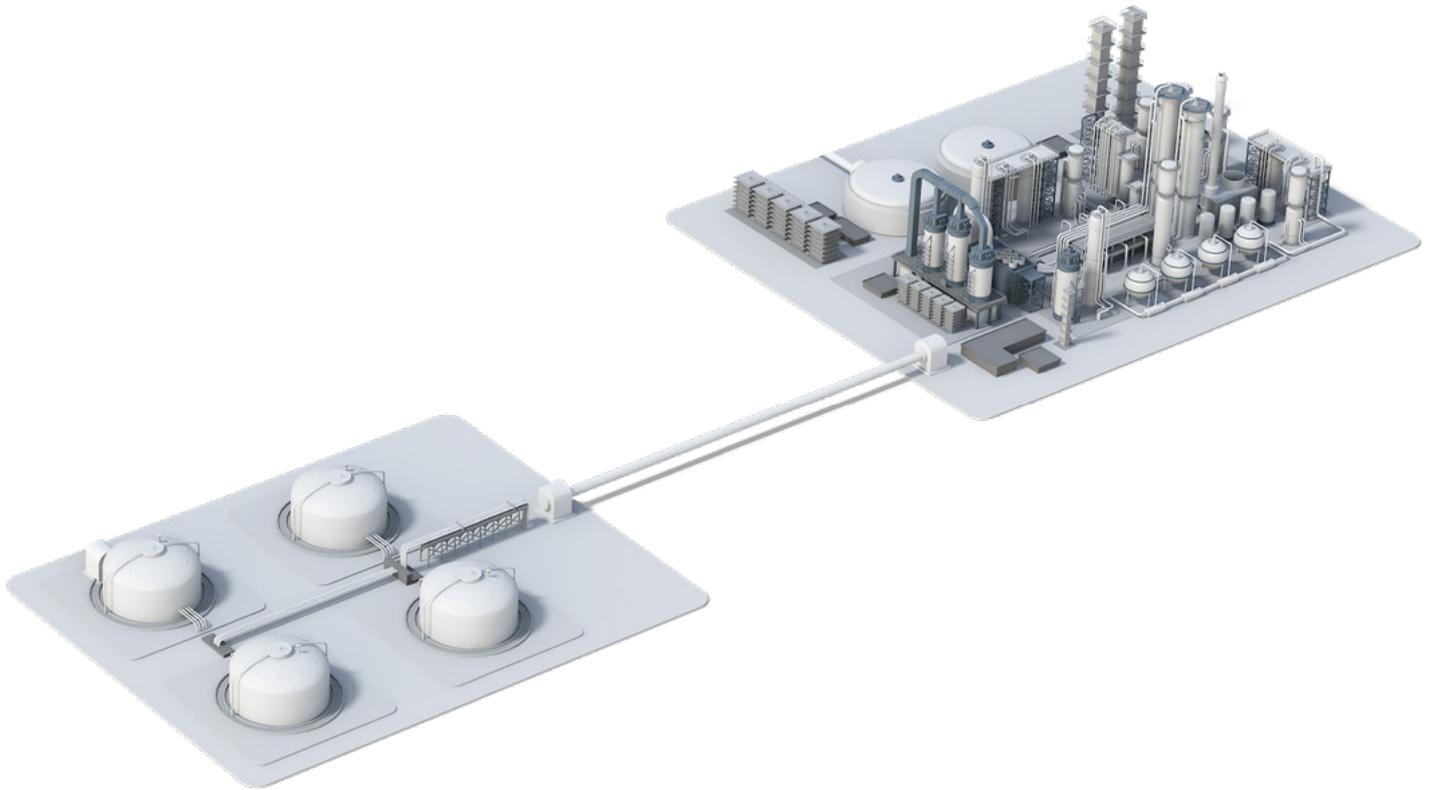
## Your special advantage

- Support of Profinet Conformance Class B and Ethernet/IP
- Integration into engineering environments
- Expanded diagnostic capabilities



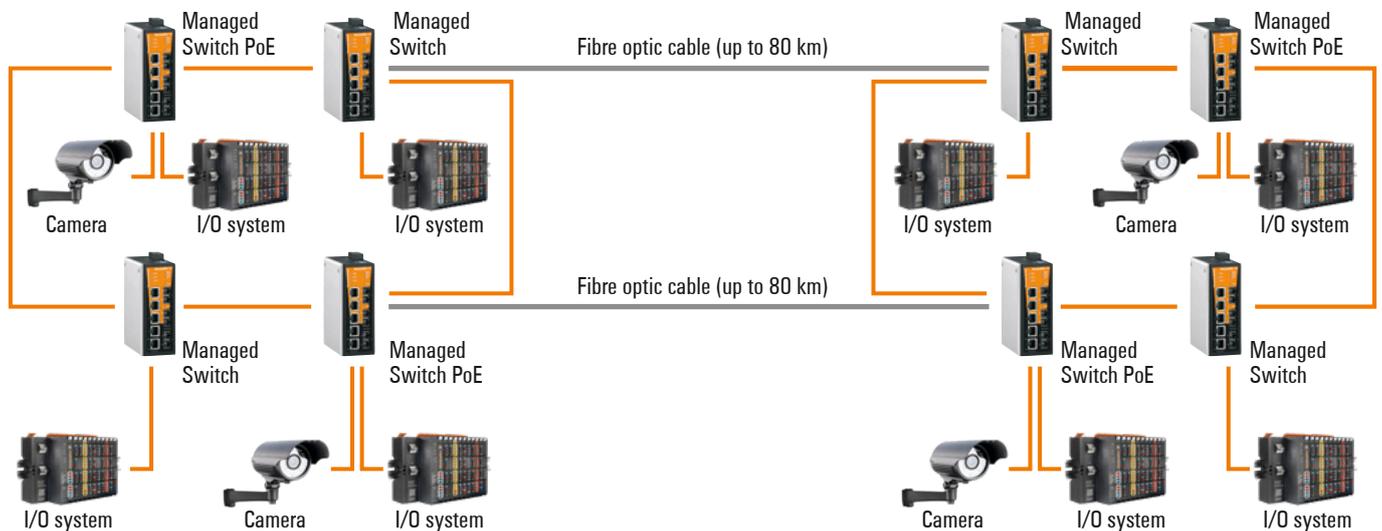
# Communication over long distances

## Connect distant stations with high-speed



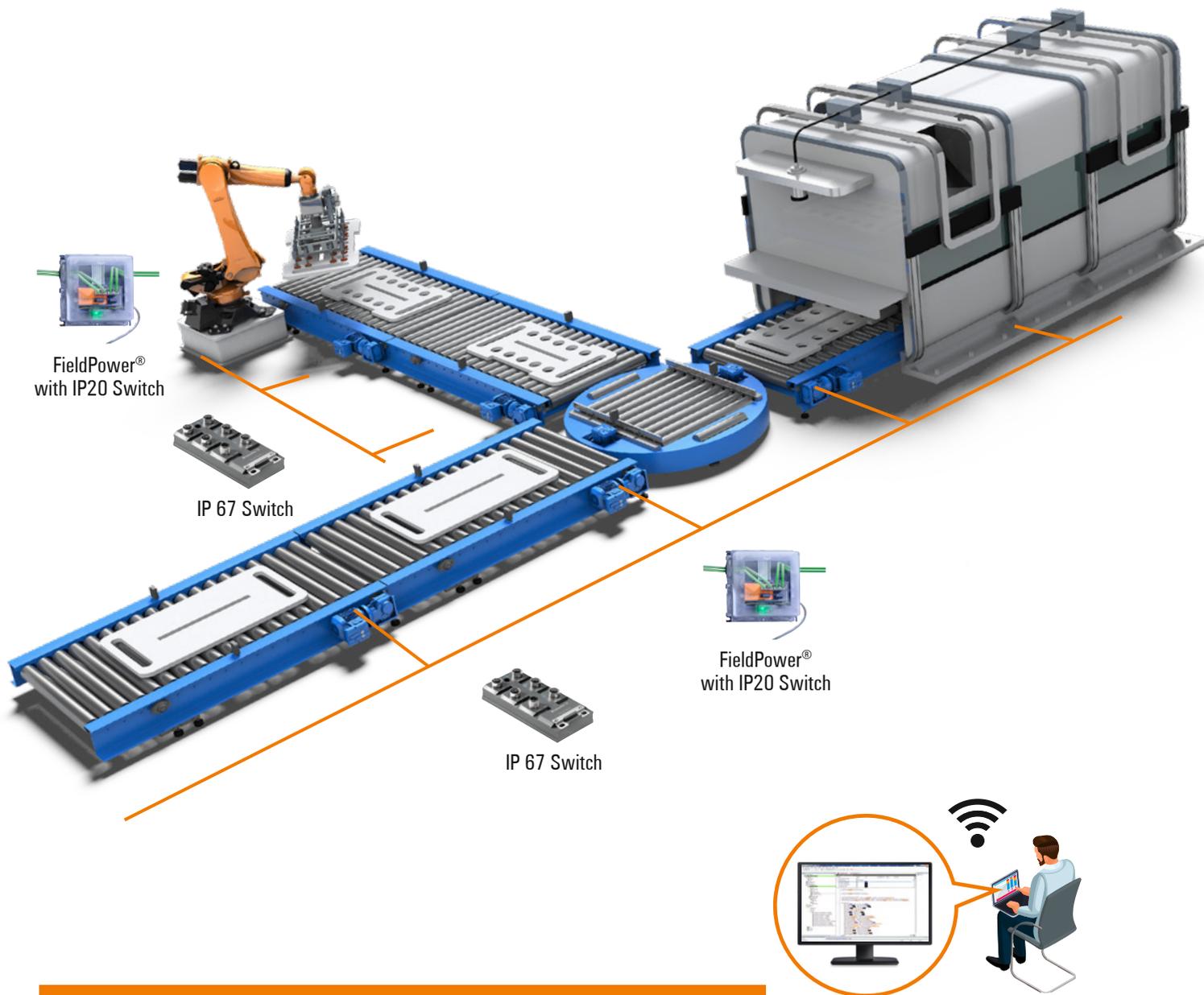
### Your special advantage

- Bridge distances of up to 80 km
- Also for use in EX protected areas
- Reliable and robust design with long service lives



# Decentralised Ethernet communication

## Diverse options for connecting field devices



### Your special advantage

- IP67 Switch with M12 connectors for simple signal wiring in the field
- Switches integrated into a FieldPower® Box combined with other functions, such as a Remote I/O

# On-site access

Secure access to your systems from any desired position



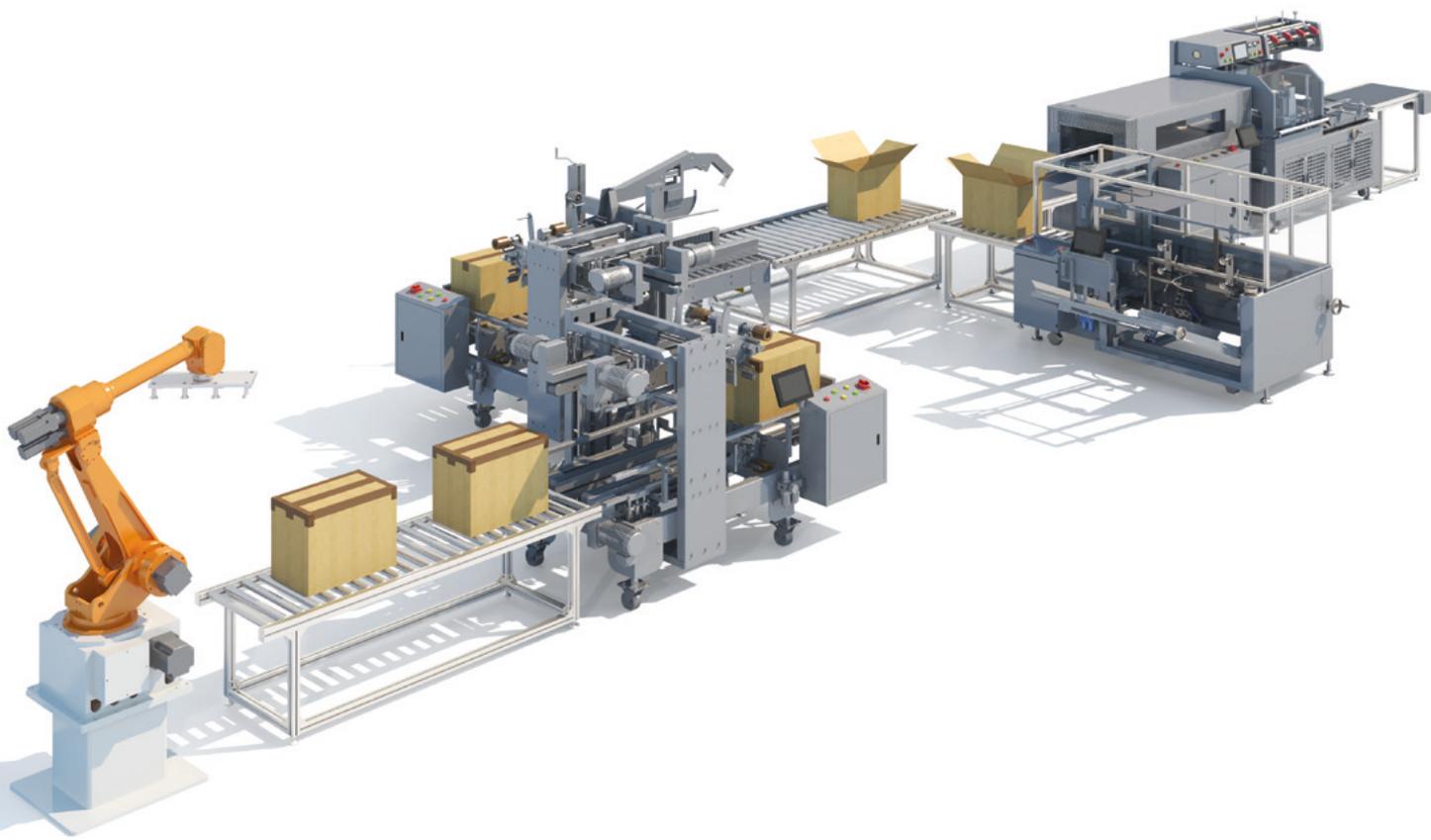
## Your special advantage

- On-site access via switch cabinet interfaces FrontCom® with Ethernet or USB interfaces
- Flexible access via WiFi Access Points
- Secure remote access from anywhere with the u-link Remote Access Service



## Modular systems

Easy integration into customer networks and flexible extension



### Your special advantage

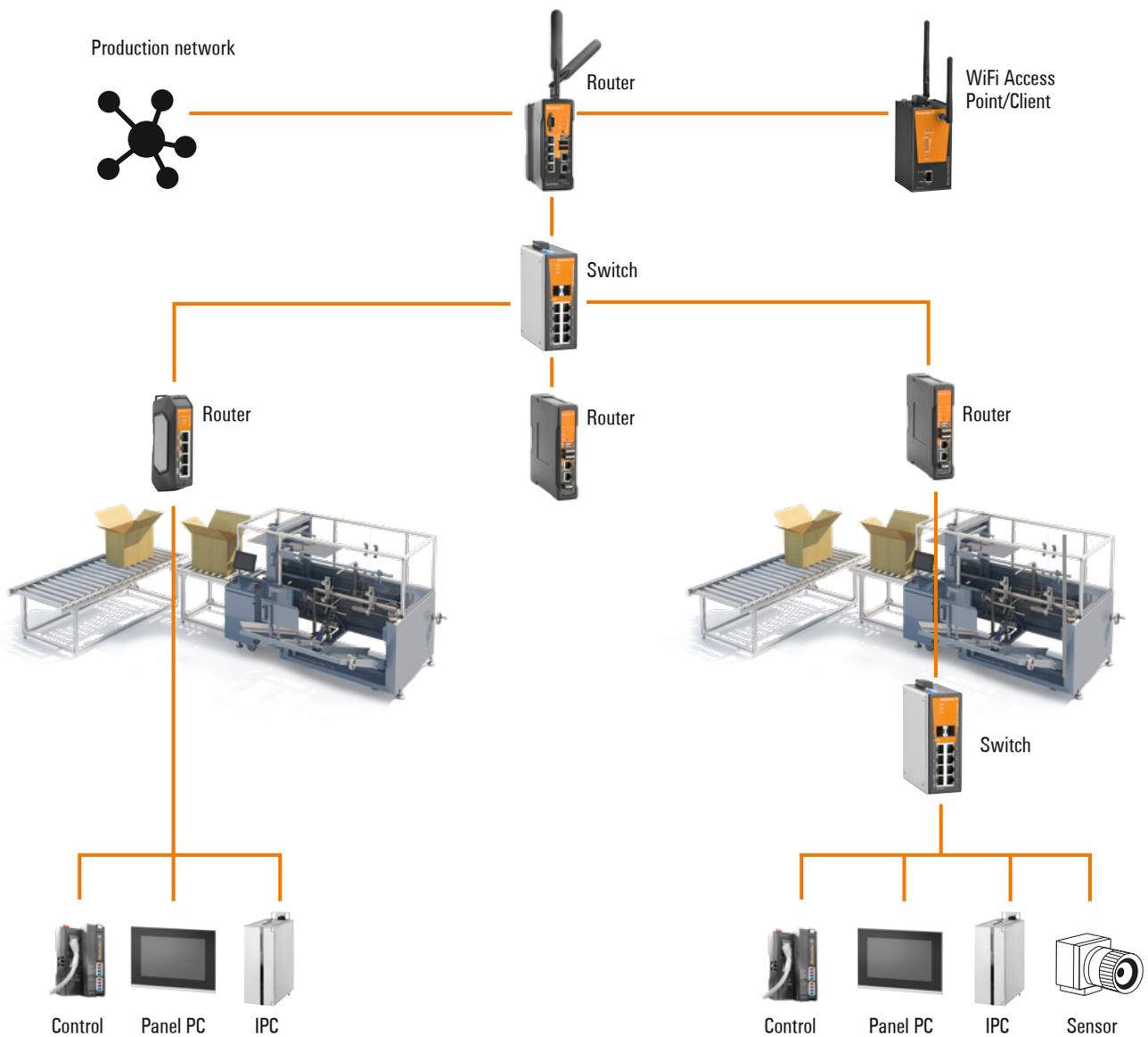
- Integrate systems into customer networks with minimal adjustments
- Flexibly expand system network with new modules
- Networking and communication between modules

# Network security

## Consistent security and flexibility in the system network

### Your special advantage

- Protect network with segmentation and needs-based firewall rules
- Separate networks for wireless technologies or a DMZ
- Protection of know-how by separation from the customer network



# Always the best choice for your requirements

## Our Switch product lines for all-around, application-specific solutions

In an Ethernet network, data packages need to be able to be exchanged between specific devices. The devices are connected via Ethernet switches for this purpose. Ethernet switches collect all data streams and distribute these to the respective devices so that communication can take place. Since Ethernet switches need to fulfil very different requirements depending on the application, we offer different product lines. These differ in terms of their properties, their unique features, and their technical highlights.

### EcoLine

The unmanaged switches in our EcoLine stand out for their wide variety of available versions and excellent economy.



#### Product characteristics

- Devices have 5 to 24 ports
- Extended temperature range of -40 to +75 °C
- Flexible use thanks to SFP port
- Models with power-over-Ethernet function and integrated DC/DC converter
- Uniquely space-saving design

### BasicLine

The BasicLine series provides a comprehensive portfolio of unmanaged plug-and-play switches.



#### Product characteristics

- Devices have 5 to 8 ports
- Optimised for use in harsh industrial environments
- Numerous international licenses, such as cULus, Class I, Div. 2, ATEX and DNV/GL
- Suitable for many different sectors
- Variants with singlemode and multimode fibre optics and a variety of connector faces
- Models with power-over-Ethernet function and integrated DC/DC converter

### ValueLine

We offer managed and unmanaged switches in the ValueLine series.



#### Product characteristics

- Numerous international licenses, such as cULus, Class I, Div. 2, ATEX, Zone 2 and DNV/GL
- Variants with singlemode and multimode fibre optics and a variety of connector faces

#### Unmanaged

- Devices with up to 16 ports
- Port diagnostics

#### Managed

- Configurable via web interface
- Support for a variety of communication protocols, such as MODBUS/TCP, PROFINET/RT or ETHERNET/IP
- Network management functions, such as VLAN, SNMP and diagnostic options
- Redundancy mechanisms

## The entire portfolio is available in our Catalogue 9 – Industrial Ethernet at:

[www.weidmuller.com/int/service/technical\\_product\\_catalogues.jsp](http://www.weidmuller.com/int/service/technical_product_catalogues.jsp)

### AdvancedLine

Managed switches in our AdvancedLine stand out for their wide variety of available versions and excellent economy.



#### Product characteristics

- Devices have 5 to 24 ports
- Temperature ranges from -40°C to +75°C
- Flexible use thanks to SFP port
- Line includes models from Lite-Managed to Full-Managed
- Configurable via web interface
- Network management functions, such as VLAN, SNMP and diagnostic options
- Redundancy mechanisms
- Models with power-over-Ethernet function and integrated DC/DC converter
- Expanded security features

### PremiumLine

Managed switches in our PremiumLine are truly high-end products. They are particularly well-suited for challenging network solutions involving high quantities of data.



#### Product characteristics

- Devices have 8 to 18 ports
- Configurable via web interface
- Support for a variety of communication protocols, such as MODBUS/TCP, PROFINET/RT or ETHERNET/IP
- Network management functions, such as VLAN, SNMP and diagnostic options
- Redundancy mechanisms
- Models with power-over-Ethernet function and integrated DC/DC converter
- Variants with singlemode and multimode fibre optics and a variety of connector faces
- Expanded security features

### SubstationLine

The SubstationLine consists of managed Ethernet switches that fulfil the IEC 61850-3 standard.



#### Product characteristics

- Devices have 10 to 28 ports
- Not sensitive to electromagnetic disruptions (IEC 61850-3)
- Redundant power supply for different mains voltages
- Modular variants with transmission rates of up to 10 Gigabit Ethernet
- Variants for 19" rack installation
- Available time synchronization according to PTPv2
- Optimal use in substations and other energy systems (T&D)

# Equipped for all applications

## Products for Industrial IoT and Security Applications

For more complex applications and use cases, such as Industrial IoT or Cyber Security, additional functions and devices are required. With the "all from a single source" approach, Weidmüller offers comprehensive portfolios for more advanced requirements in the field of Industrial Ethernet.

### Industrial Security Router

Weidmüller's Industrial Ethernet Routers ensure that different networks interoperate in unison and with top-level security. They also offer the possibility to reduce your service costs through remote maintenance.



#### Product characteristics:

- 2 Product lines fitting your applications
- High-performance stateful packet inspection firewall
- Comprehensive Features for network separation and easy machine integration
- Cellular connection via 4G, fully backwards compatible
- Secure remote access with VPN via open standards such as OpenVPN and IPsec or simply via the u-link Remote Access Service
- Also suitable for ship networks, port facilities or off-shore applications thanks to DNV-GL approval

### Media converters and protocol gateways

Solutions for fault-free data transmission over long distances for Ethernet and serial data and their conversion.



#### Product characteristics:

- Integration of serial devices into Ethernet networks
- Use of Ethernet over long distances and in EMC-critical environments
- Transmission of serial signals over long distances
- Conversion from Modbus RTU to TCP

## The entire portfolio is available in our Catalogue 9 – Industrial Ethernet at:

[www.weidmueller.com/int/service/technical\\_product\\_catalogues.jsp](http://www.weidmueller.com/int/service/technical_product_catalogues.jsp)

### Industrial WiFi

Wireless industrial devices that serve as access points, bridges or clients for wireless Ethernet connectivity.



#### Product characteristics:

- Industrial WiFi devices for reliable wireless networking
- Flexible use as access point, bridge or client
- Client routing mode for separating LAN, and WiFi network
- Up to 300 Mbit/s transmission rate
- Optimised security through encryption, Radius server and packet filter

### IoT gateway

The IoT gateway is designed to collect and preprocess machine and process data from existing applications and perform remote access.



#### Product characteristics:

- Process data can be collected via various interfaces, such as Ethernet, CAN, RS485 or RS232.
- Support for many different protocols, such as OPC-UA or MQTT
- Simple data preprocessing with Node-RED
- Integrated remote access with u-link
- Infrastructure independent due to cellular connection via 4G.

# u-link Remote Access Service – one tool for all cases

## Advanced functions for convenient remote access management

The remote maintenance of machines and system facilitates is often laborious and time-consuming. In addition, there is the demand for a targeted and secured functional connection to the associated IT systems. For many users these two challenges are a major obstacle for the global connection of systems.

u-link guarantees fast and secure access to machines and system facilitates and at the same time enables efficient management of production facilities, user clients, access rights or firmware versions. The intuitive u-link Web portal can be configured quickly and easily without expert knowledge and adapt it to specific processes. Secured servers in Europe provide a online platform that monitors the conformity between different IT systems during remote maintenance.

**Remote Access head office of manufacturers**



### **Individual system management**

u-link can manage users and groups as well as their access rights according to individual specifications. These include group allocation and access permission to production facilities.



### **Low configuration effort**

With the intuitive user interface and without specific IT knowledge, you can easily connect routers and clients to each other. With u-link, you can quickly establish a several systems network.



### **Secure remote access and remote diagnosis**

Remote access to machines and systems is provided worldwide everywhere via secure VPN connection. The high availability of the servers grants secure access to your systems at all times.



### **Status monitoring and status message**

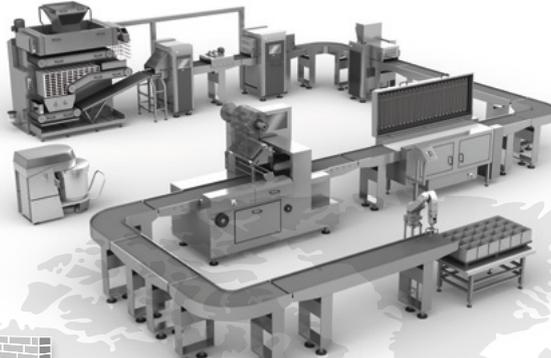
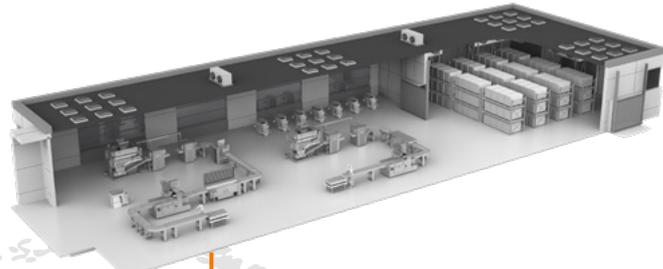
Weidmüller Heartbeat can be used to report the availability of a router to u-link. It facilitates status monitoring and enables status messages from the installed router.



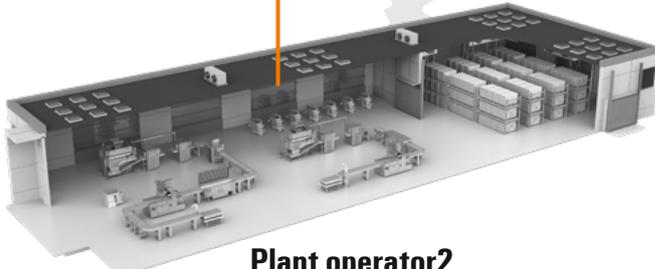
[www.u-link.weidmueller.com](http://www.u-link.weidmueller.com)

**Plant operator 3**

**Plant operator 1**



**Mobile Remote Access  
of manufacturers**



**Plant operator 2**

# Simple – secure – u-link

## The holistic security concept for your networks

The growing number of network-capable devices, and increasing networking in manufacturing over the Internet, offers a significant potential for cyber attacks. To protect our systems, we offer state-of-the-art functions with u-link, without increasing complexity.

### Your security features:



- X.509 certificates for authentication
- 2048 bit key length
- ISO 27001 certified hosting



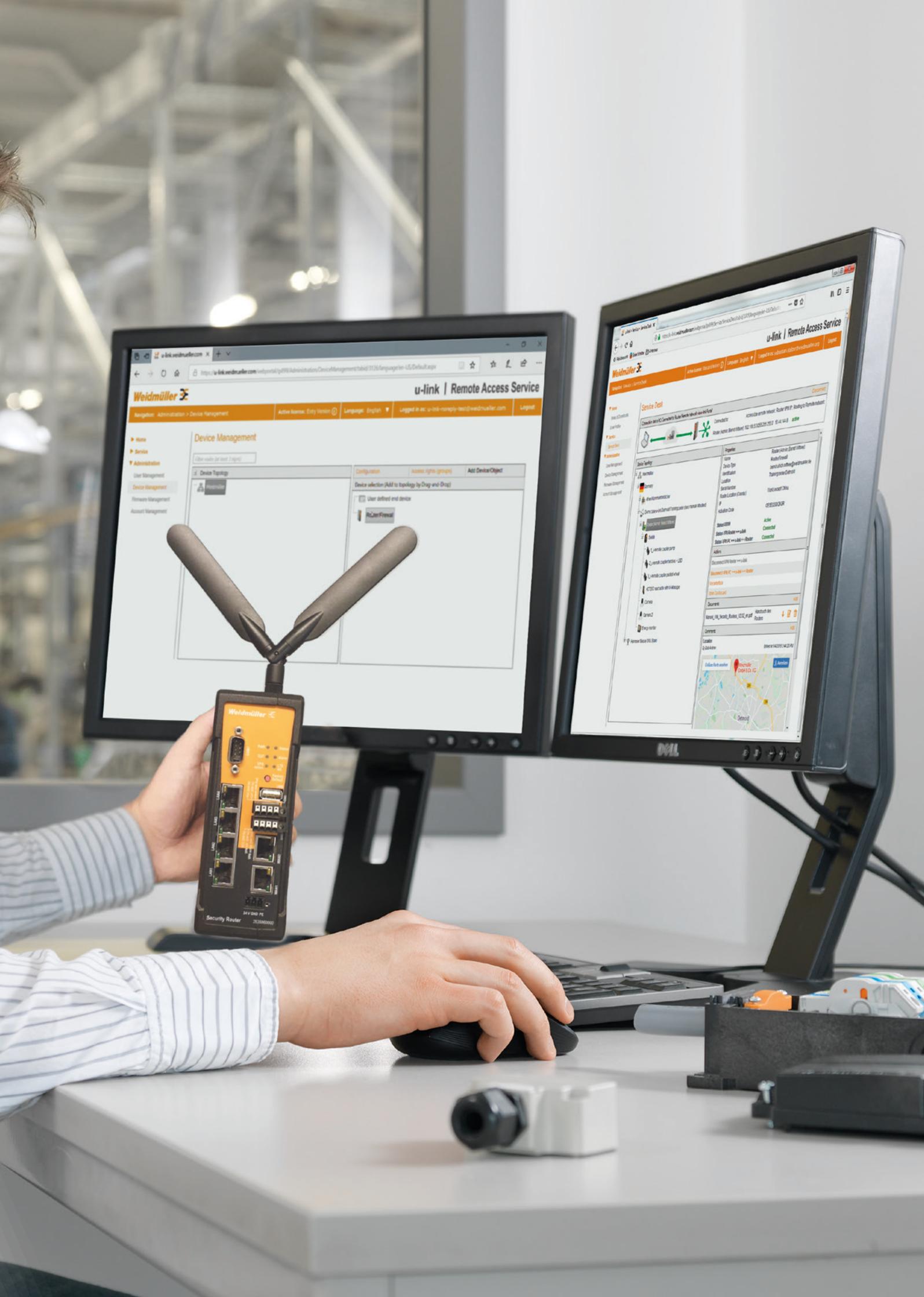
- TLS/SSL encryption
- 2-factor authentication
- Custom password guidelines



- Exclusively outgoing connections
- Exclusively Port 443 for remote access
- User and rights management



- Firewall integrated into u-link for remote access
- Option to approve remote access on site
- Remote firmware update



**u-link | Remote Access Service**

Navigation: Administration > Device Management

Active license: Entry Version | Language: English | Logged in as: u-link-remote-access@weidmuller.com | Logout

### Device Management

Device selector (Add to topology by Drag and Drop)

Device selector (Add to topology by Drag and Drop)	Configuration	Access rights groups	Add Device Object
	User defined end device		<input type="button" value="Add Device Object"/>

**u-link | Remote Access Service**

Navigation: Administration > Service Config

Active license: Entry Version | Language: English | Logged in as: u-link-remote-access@weidmuller.com | Logout

### Service Config

Device selector (Add to topology by Drag and Drop)

Device selector (Add to topology by Drag and Drop)	Configuration	Access rights groups	Add Device Object
	User defined end device		<input type="button" value="Add Device Object"/>

Property	Value
Device Type	Router
Device Name	Router
Device ID	0123456789
Device Location	0123456789
Device IP	192.168.1.1
Device MAC	00:00:00:00:00:00
Device Vendor	0123456789
Device Model	0123456789
Device Serial	0123456789
Device Description	0123456789
Device Status	0123456789
Device Group	0123456789
Device Role	0123456789
Device Type	0123456789
Device Name	0123456789
Device ID	0123456789
Device Location	0123456789
Device IP	0123456789
Device MAC	0123456789
Device Vendor	0123456789
Device Model	0123456789
Device Serial	0123456789
Device Description	0123456789
Device Status	0123456789
Device Group	0123456789
Device Role	0123456789

Map: 0123456789



## Weidmüller – Your partner in Industrial Connectivity

As experienced experts we support our customers and partners around the world with products, solutions and services in the industrial environment of power, signal and data. We are at home in their industries and markets and know the technological challenges of tomorrow. We are therefore continuously developing innovative, sustainable and useful solutions for their individual needs. Together we set standards in Industrial Connectivity.

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be found on our website:  
[www.weidmueller.com/contact](http://www.weidmueller.com/contact)

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