

INDUSTRIAL  
REMOTE  
SOLUTIONS

REPEATERS  
SWITCHES

FIELD BUS  
CONNECTIONS

GATEWAYS  
FIREWALL

## INDUSTRIAL COMMUNICATION AND INFRASTRUCTURE

Automation – innovative and secure networking

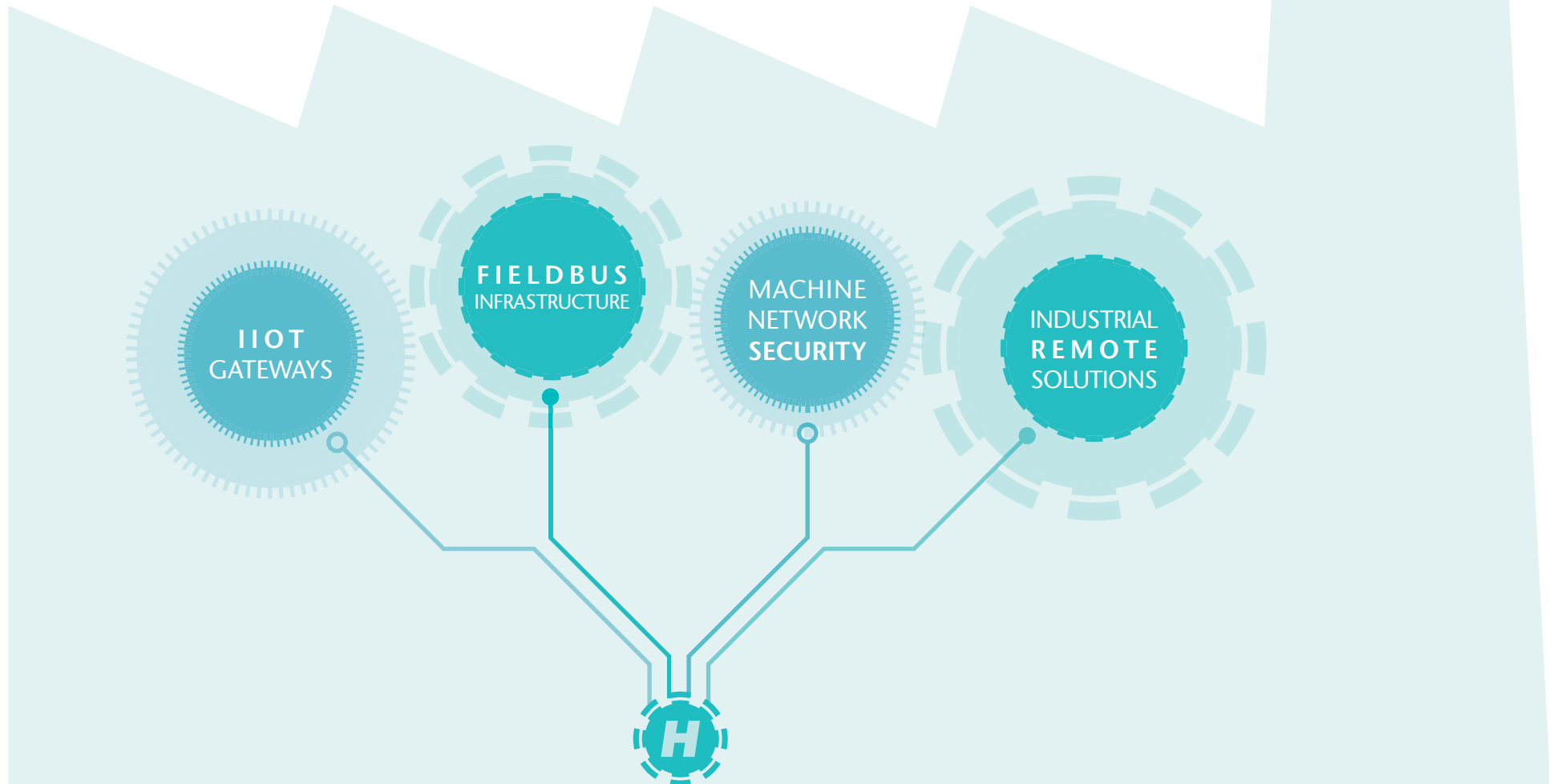
[www.helmholz.de](http://www.helmholz.de)

**Helmholz**<sup>®</sup>  
COMPATIBLE WITH YOU

# INDUSTRIAL COMMUNICATION AND INFRASTRUCTURE FOR THE DIGITAL FACTORY

Helmholz is your partner for modern communications infrastructure

- ... for the secure and easy integration of existing systems into digital networks.
- ... for implementation in other fieldbus networks.
- ... for collecting data from the control system.
- ... for restricting access and the organization of production networks.
- ... for secure remote access to machinery.



# PROTECT AND CONNECT INDUSTRIAL NETWORKS



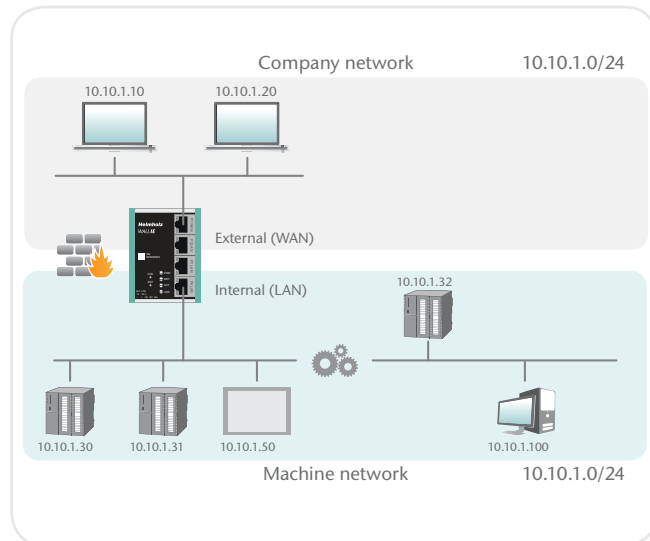
## WALL IE, Industrial Ethernet Bridge and Firewall

WALLIE simply integrates machinery networks into the higher level production network. A packet filter protects the networks from unauthorized access. If identical IP address ranges are to be realized, WALL IE functions as a bridge.

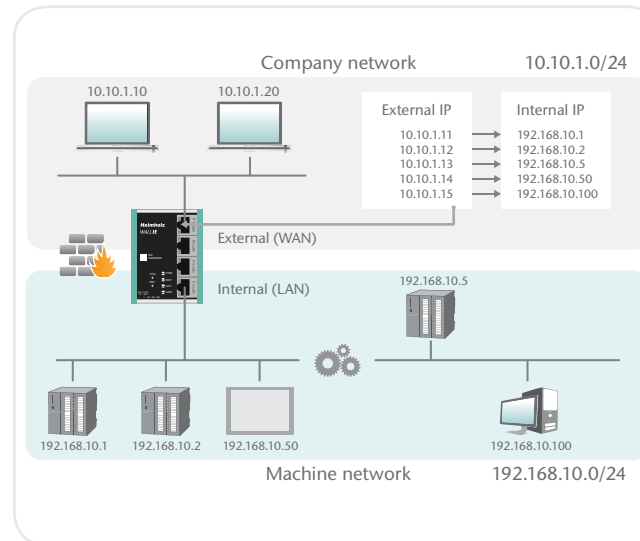
The NAT operating mode serves the forwarding of the data traffic between various IPv4 networks. It enables the address translation via NAT and uses packet filters for the limitation of access to the automation network located behind.

In the bridge operating mode, WALL IE acts as a layer 2 switch. In contrast with normal switches, however, packet filtering is also possible in this operating mode. This means that the restriction of access to individual areas of your network can be achieved without having to use different networks for this purpose.

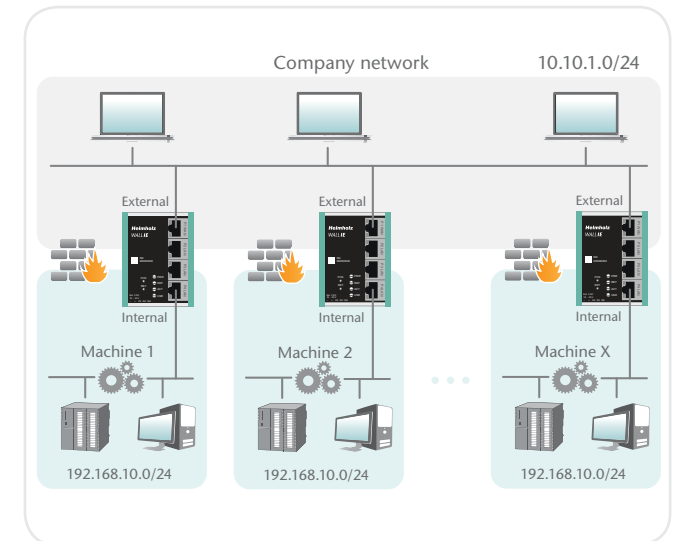
- Integration of machine networks into the higher-level production network
- Bridge functionality for identical IP address ranges
- NAT (Basic NAT, NAPT and port forwarding)
- Access restriction through packet filters: IPv4 addresses, protocol (TCP/UDP), ports, MAC addresses
- Reduction of the network load through the filtering of broadcasts and multi-casts
- Quick and easy configuration, as well as firmware updates thanks to responsive web interface
- DHCP server/client
- Static routes to other networks
- Reporting of events to a Syslog server
- Export/import of configuration



WALLIE, bridge operating mode with access restriction



WALLIE, Basic NAT



WALLIE, NAT functionality—same machines in the production network

# SECURE IOT REMOTE MAINTENANCE ACCESS



## REX 100 Ethernet router

Ethernet participants, such as PLC control systems, can be reached with the REX 100 industrial routers, irrespective of the manufacturer.

The REX 100 routers are systematically designed to operate in conjunction with the myREX24 portal: All programming and remote maintenance is carried out exclusively through the portal. Data transmission takes place via an encrypted VPN tunnel on the basis of the secure OpenVPN protocol.

With the digital inputs, alarms can be sent via the myREX24 V2 portal as SMS and e-mail.

The USB host port present in all devices enables the connection of USB devices (e.g. programming port of a motor) via the remote maintenance tunnel (USB-over-IP).

- Secure OpenVPN remote maintenance access via myREX24 V2 portal
- Integrated 3 or 4-port LAN switch
- WAN, 3G, LTE or WiFi variants available
- Digital inputs for establishing a connection and issuing alarms
- Integrated firewall
- Space-saving compact size
- Supports all of the usual mobile communications standards and is downwards-compatible where network coverage isn't present
- USB-over-IP



## REX 200/250, Ethernet router

The compact REX 200/250 Ethernet routers are specially designed for use in an industrial environment. They enable reliable and secure Internet remote maintenance of machines and systems. Thanks to the integrated Firewall, remote access is allowed only for authenticated users.

The routers are also distinguished by an integrated 4-port switch and additional interfaces, such as series, PROFIBUS, and USB. The WAN interface also integrated as a standard enables a fallback connection for 3G, LTE, and WiFi devices.

The REX 250 routers make it possible to incorporate series devices into your remote maintenance (Series-over-IP). The USB host port present in all devices enables the connection of USB devices (e.g. programming port of a motor) via the remote maintenance tunnel (USB-over-IP).

In combination with the myREX24 V2 portal, the complete scope of performance of industrial routers with the functions of remote maintenance, visualization, WEB2go, alarm and logging of the PLC data is possible.

- Secure OpenVPN remote maintenance access via myREX24 V2 portal
- Remote maintenance of PROFIBUS (RS232/RS485) and Ethernet-compatible devices (PROFINET-compatible)
- Integrated 4-port LAN switch
- Additional WAN interface, also as fallback for 3G, LTE, and WiFi devices
- WAN, 3G, LTE or WiFi variants available
- Data server for data access to SPS via RFC1006 (ISO on TCP), MPI, PROFIBUS, Modbus TCP/RTU, Allen Bradley, etc.
- Directly connect S7-MPI/PROFIBUS devices
- S7-MPI/PROFIBUS driver included
- Integrated firewall
- Series-over-IP and USB-over-IP

# MYREX24 V2 PORTAL



## Remote maintenance

- Diagnosis, configuration and programming of the machine via the Internet
- Worldwide end customer support from your experts
- Quick availability of service
- Income through new service offerings and maintenance agreements
- Saving of travel costs, reduction of personal absence
- Secure encoding through OpenVPN
- Standard OpenVPN clients also accessible through the portal
- Several simultaneous connections to one system



## Logging

- Protocols and reporting of PLC data
- Configuration, analysis, and evaluation via standard browser
- Planning of maintenance measures in keeping with actual usage of the system
- Continuous information on down times and production figures
- Connection of self-hosted databases
- External access to protocol data via WEB-API
- Automatic sending of reports (HTML, PDF, CSV)



## Visualization

- Freely configurable dashboards for the individual representation of the PLC data
- Extensive library of display elements, for example, pointer instruments and bar graphs
- Mobile and secure web access via HTTPS, also for smartphones and tablets
- Display of live and protocol data
- Easy login with user ID and password



## Alarming

- Monitoring of limit values and error incidents
- Flexible alarm messages, also with acknowledgment
- Alarm messages via SMS, e-mail, voice call or via the integrated message system
- User-dependent reporting profiles
- Calendar function for taking personnel deployment times into account

# MYREX24 V2 VIRTUAL

- Can be installed on your own server infrastructure
- Completely autonomous server management
- Front end in own design possible
- For “power users” with more than 250 devices and many active connections
- All data in your hands
- Scalable system that grows flexibly with your requirements
- M2M possible
- Permanent VPN access on all routers
- Maximum performance



myREX24 V2 virtual

For “power users” (e.g. more than 250 devices planned, with many active connections) and “self-hosters,” we recommend using the myREX24 V2 portal as a virtual server.

The virtual server can be configured individually and grows in a linear progression along with your requirements. We would be happy to create an offer for you.

# EASY CONNECTION OF FIELDBUS NETWORKS



## PROFIBUS/PROFINET coupler

With the new DP/PN coupler, a simple and uncomplicated connection of PROFIBUS to PROFINET is possible.

It allows data transfer between a PROFIBUS master and a PROFINET controller. The maximum size of the transmitted data is 244 bytes of input data and 244 bytes of output data.

The DP/PN coupler is projected via a GSD file on the PROFIBUS side and a GSDML file on the PROFINET side. No additional configuration software is necessary.

- Very compact design for DIN rail mounting
- Exchange of up to 244 bytes I/O data
- Redundant power supply
- Galvanic separation of the networks
- No influencing of the opposite side in the event of bus system failure
- Setting of the PROFIBUS addresses using DIP switches or software
- Configuration only with GSD/GSDML file; no additional software necessary
- PROFIBUS up to 12 Mbps
- PROFINET transmission rates of 100 Mbps



## PROFINET/PROFINET coupler

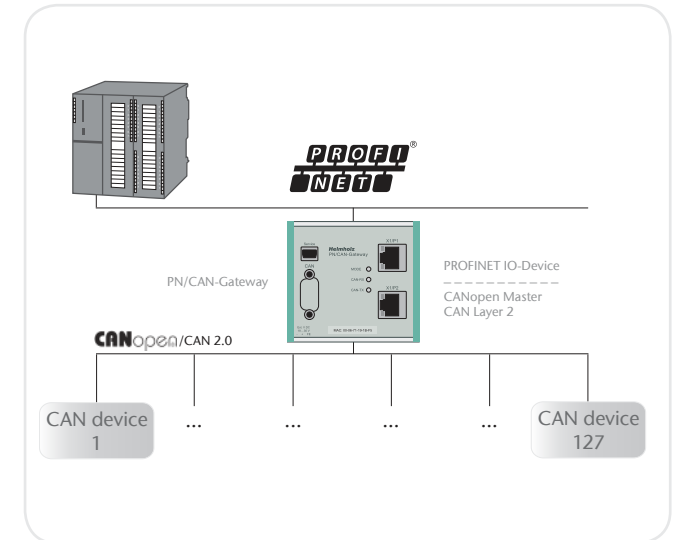
The PN/PN coupler connects two PROFINET networks with one another and enables data transmission between the controllers of the two networks.

The maximum size of the transmitted I/O data is 1,024 bytes.

The PN/PN coupler is projected via a GSDML file. No additional configuration software is necessary.

- Very compact design for DIN rail mounting
- Exchange of up to 1024 bytes I/O data
- Redundant power supply
- Galvanic separation of the networks
- Configuration only with GSD/GSDML file; no additional software necessary
- No influencing of the opposite side in the event of bus system failure
- PROFINET transmission rates of 100 Mbps

# EASY CONNECTION OF FIELDBUS NETWORKS



Application example PN/CAN gateway CANopen master or Layer 2

## PROFINET/CAN gateway CANopen | CANopen Slave | CAN Layer 2

With the PN/CAN gateway, the connection of CAN devices to PROFINET is easy and straightforward.

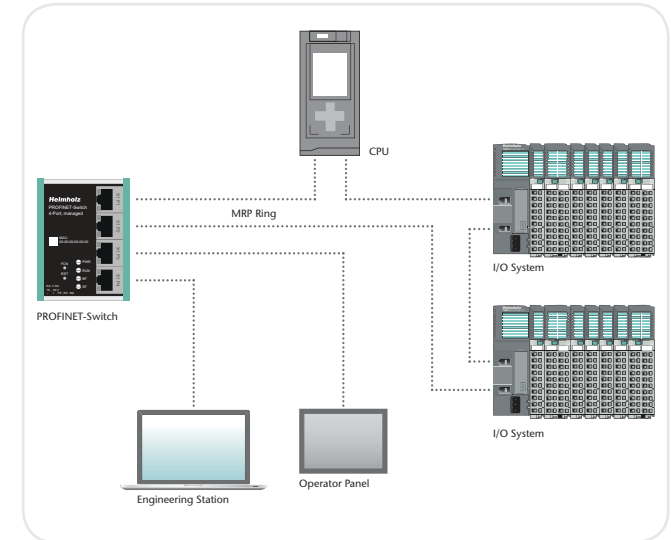
The product spectrum encompasses versions for CANopen Master, CANopen Slave or Layer 2 protocols.

The I/O data of the CAN participants is transparently displayed in a freely configurable manner on the PROFINET network and can thus be processed directly in the PLC.

The PN/CAN gateway is integrated with a GSDML file in the hardware configurator and can be fully configured there. Other software tools for configuration or handling blocks for programming are not required.

- CANopen master, CANopen slave or CAN Layer 2 protocols
- Up to 127 CANopen slaves possible
- SDO communication, emergency messages, participant monitoring with heartbeat and node guarding
- Up to 512 CAN messages can be configured (Layer 2)
- SAE J1939 protocol (Layer 2)
- CANopen Slave profile 402, or customized
- Easy configuration using a GSDML file; no handling blocks or configuration software necessary
- Can be used with all PROFINET-compatible projecting tools

# INNOVATIVE NETWORK AUTOMATION



Application example PROFINET switch 4-port

## PROFINET Switch, 4/8/16-port, managed

Connect up to 16 network participants to save time and costs with the managed PROFINET switch. It supports PROFINET according to Conformance Class B and offers transmission security through ring redundancy as an MRP client.

One of the most important functions of a PROFINET switch is the prioritizing of the PROFINET frame traffic in the machine network. The switch can differentiate whether the frame is a web query, an FTP file transmission, a media stream, or a PROFINET frame. In the case of a high transmission load, the important PROFINET frames can thus be prioritized in order to prevent frame losses.

With a GSDML file you can integrate the switch into your automation environment in the usual way. It is also possible to carry out a diagnosis and/or configuration via Telnet or SSH. The supported PROFINET protocols, such as LLPD, DCP, or even diagnosis alarms, can be easily configured and administered.

- Prioritizing of PROFINET frames
- Neighborhood detection
- Integration into the automation network with GSDML file
- Quick, simple configuration and diagnosis via PROFINET and web interface
- Media redundancy: MRP client
- Port mirroring and diagnostic alarms for network problems
- PROFINET Conformance Class B
- Managed switch with 4/8/16 x 100 Mbps RJ45 ports
- Assignment of a configuration via the device name
- Device exchange without programming device

# PROGRAMMING AND NETWORKING – FROM PROFIBUS TO ETHERNET

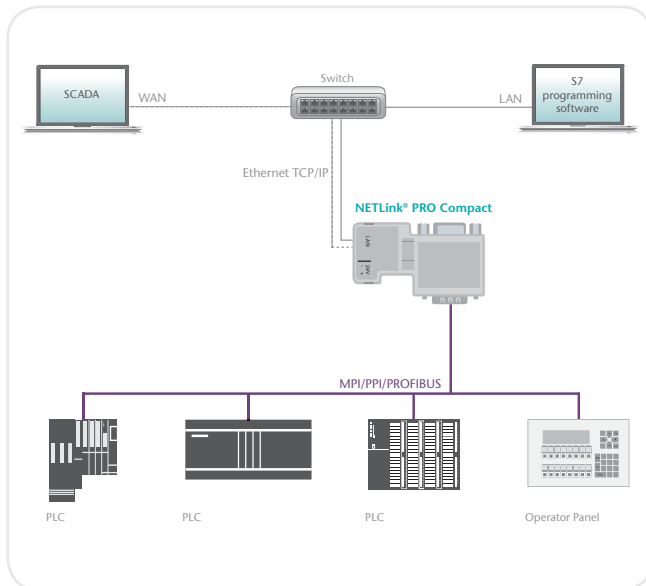


## NETLink® ,PROFIBUS Ethernet gateway

NETLink® gateways enable users to establish direct contact between a computer and a PLC with MPI/PPI/PROFIBUS using Ethernet, WLAN, and high speed USB are available for selection Standard Ethernet TCP/IP is used as a protocol.

The modules on the control system side enable the full 12 Mbps bit rate. The NETLink® product family encompasses five devices and covers the complete range of applications.

- Support for all common S7 engineering tools
- Dynamic address assignment using DHCP
- Security functions for securing TCP/IP access
- Switchable PLC write protection
- Easy configuration via web interface
- Variables can be monitored on a browser window
- Support for configuring slave parameters



## Secure and simple integration of existing machinery into digital networks

The following picture can be seen in many producing companies: The general trend toward digitalization affects existing systems ten or more years old. And this is especially the case for analog PLCs and other automation devices.

We already developed an efficient and compact technical response to this challenge more than ten years ago with the first Ethernet adapters of the NETLink® series.

However, with the NETLink® gateways, the integration of analog PLCs into network and industry 4.0 environments can be carried out easily, securely, and with a reasonable investment.

The NETLink® PRO Compact is especially suitable for retrofits, and has in the meantime already proven itself in many practical applications. . It is connected directly with the interface of the PROFIBUS participant, and therefore requires no extra space in the control cabinet. An integrated RJ-45 jack makes it possible on the TCP/IP side to connect standard CAT-5 network cable with a length of up to 100 meters without the need for additional components.

- (Retro)Fit for Industry 4.0
- Easy integration of old existing systems
- Reasonable investment
- Security functions for controlling TCP/IP access
- Easy configuration; drivers included in the delivery package

# MORE EFFICIENCY AND FLEXIBILITY FOR SOPHISTICATED PROFIBUS NETWORKS



## FLEXtra® PROFIBUS repeater X2/4/6

The FLEXtra® repeaters are multi-PROFIBUS repeaters designed for mounting on a DIN rail. They regenerate the incoming electrical signal on a bus line and retransmit it (bit reshaping and retransmission). The signals are restored in level, slope, and duty cycle.

The multiRepeater also allows the setting up of a star network with independent segments.

- System expansion by up to six segments with one device
- Setup of star networks
- Status LEDs for each segment
- Increase the number of participants
- Repeating function for each segment or totally disabled
- Electrical isolation of all segments



## PROFIBUS compact repeater

The PROFIBUS Compact Repeater can be used extraordinarily well for bus extension (up to 1 km with 2 PROFIBUS compact repeaters), to increase the number of participants, and to expand the system.

As a special application option, the PROFIBUS compact repeater allows the setup of stubs as separate segments. For this it can be plugged directly into the PG connection of an existing PROFIBUS connector.

- No additional space required in the control cabinet
- Can be used for bus extension or as a stub
- Increasing the number of participants, expansion of the system
- Status LEDs
- No 24 V supply required
- Electrical isolation

# QUICK CONNECTION OF FIELD DEVICES



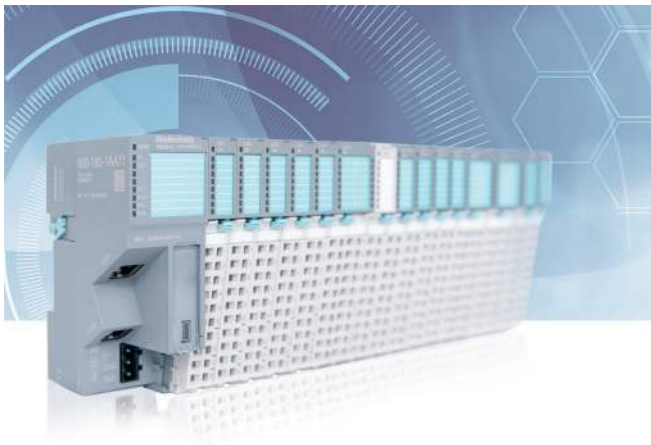
## Fieldbus connections

All Helmholtz fieldbus plugs can be installed easily and quickly, and are designed in an industry-compatible, robust way, in order that the plugs can be used in many industrial areas.

Product range of Helmholtz encompasses plug connections for:

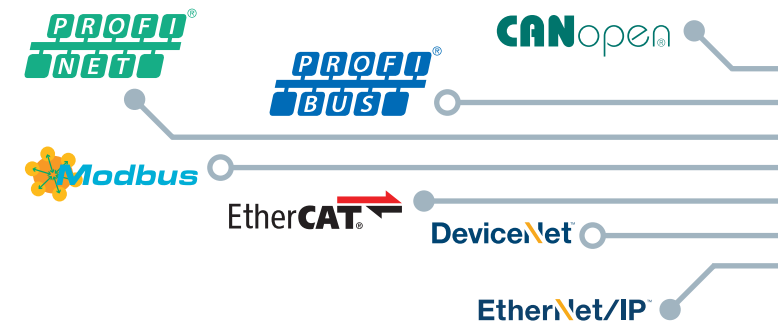
- PROFIBUS
- PROFINET
- CAN
- Implementer of PROFIBUS on LWL

# OTHER FIELDBUS SOLUTIONS FROM HELMHOLZ...



The compact, decentralized I/O system TB20 offers you the appropriate solution for many applications.

Are you also looking for a specific solution for your project? Talk to us. We are happy to help.



# Industrial communication with infrastructure components from Helmholz in the application

