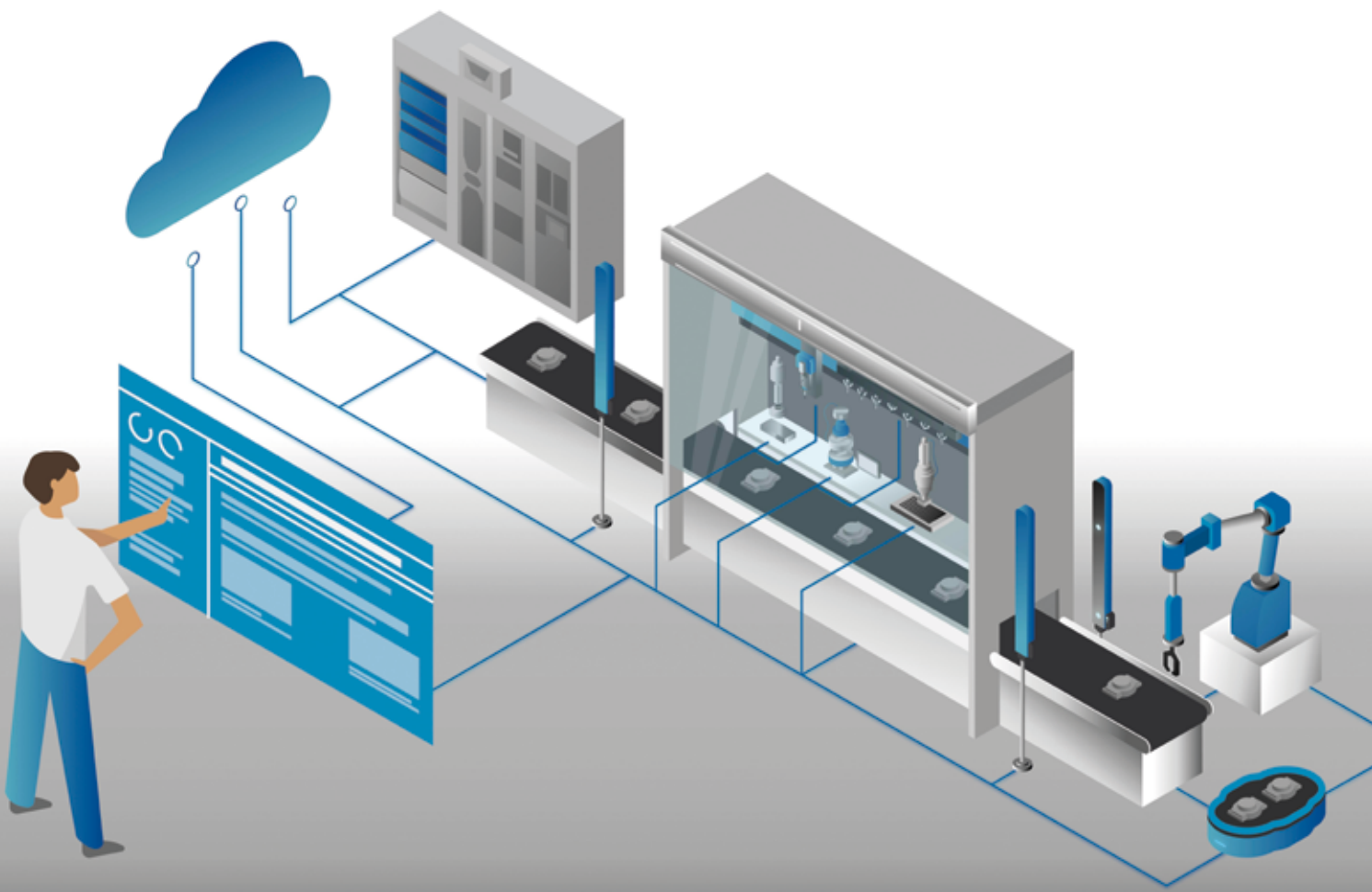
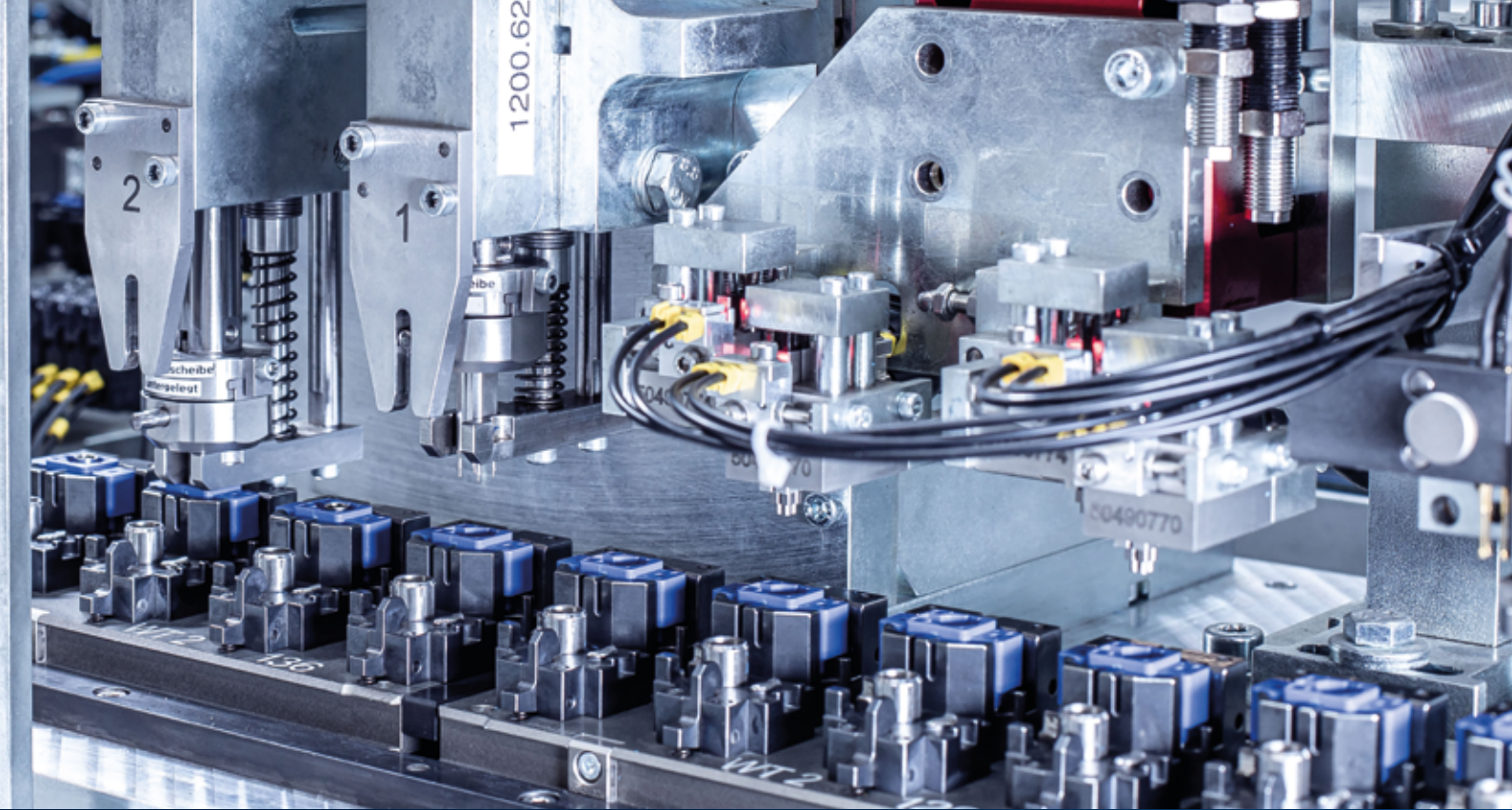


Connectivity Solutions for Industrial Applications

## Single Pair Ethernet (SPE) Connectors

INTERCONNECT





## Single Pair Ethernet

# SPE – One Wire Pair for an Infinite Number of Applications

Single Pair Ethernet (SPE) sets new standards in intelligent communication architecture. Using power over data line (PoDL), parallel high-performance data and power transmission is supported via just one Ethernet wire pair.

## Driven by Automotive Electronics

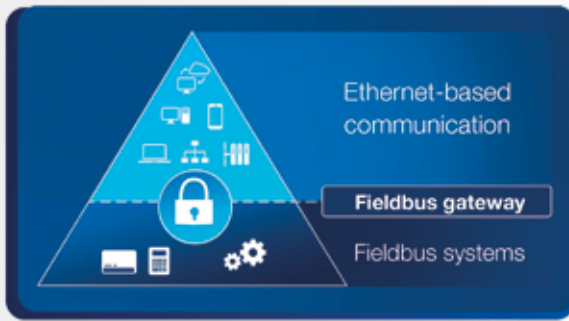
The development of Single Pair Ethernet systems has been primarily powered in the automotive industries. Future technologies, e.g. autonomous driving, require connectivity solutions which ensure high-reliable transmission of huge data rates in tightest spaces.

For automotive markets, Rosenberger has successfully developed MTD® and H-MTD® connector series – space-saving, lightweight and robust differential connector systems satisfying today's mechanical and environmental requirements.

The tasks of the Rosenberger experts in this area included the determination of limit values for connectors and cable components as well as the associated measurement processes, working on the basis of the requirements for the channel defined as a whole in the IEEE standard. Rosenberger played a leading role in the standardization process on, contributing its expertise in automotive connector design, signal integrity, and EMC.

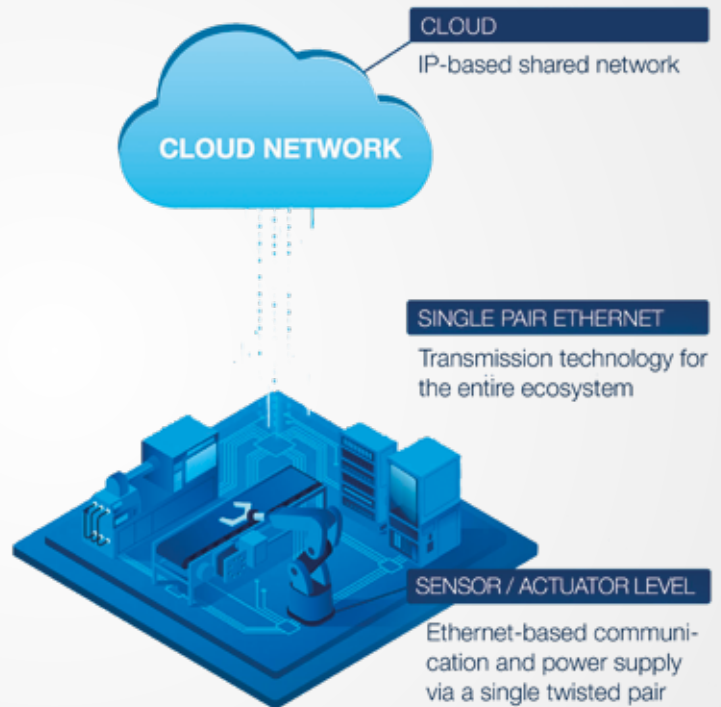
## Single Pair Ethernet in the industry

Current situation



Solution to the problem:

**SPE as a universal connection technology for the entire cloud network**



## Single Pair Ethernet

### From the Sensor to the Cloud

Traditional Ethernet solutions are undergoing a rapid transformation, driven by the increasing automation and digitization of industrial plants. This is demanding connections that are not only fit for purpose but also future-proof. With SPE you can be confident that your cabling deployments will stand the test of time for many years to come.

From the sensor to the cloud, SPE ensures a continuous and reliable connection. For every application, whether in industry, logistics, buildings, wherever data is generated.

Rosenberger is member of the SPE System Alliance, an association of leading technology companies from various industries and application areas, which shares a unified goal to combine their know-how in the field of SPE and exchange it in a strategic manner. All partners support the common goal of promoting Single Pair Ethernet technology for IIoT and all other areas of application. For more information on the SPE System Alliance, please visit [www.singlepairethernet.com](http://www.singlepairethernet.com)



**Single Pair Ethernet**  
System Alliance



## Single Pair Ethernet

### RoSPE Connectors, Standard According to IEC 63171-2 (IP 20)

- Extremely compact design
- Robust locking mechanism
- Field mounting types available
- Pre-assembled, variable cable lengths
- 50 % smaller than RJ 45 (80 % less installation space for the volume)

### Smart Plug for quick conversion to SPE

- Connector with integrated MAC-PHY
- 10BASE-T1S and BASE-T1L type with same pinout and size
- Channel interface according to IEC 63171-5
- Intermateable with IEC 63171-2
- Controller interface SPI

### RoSPE M8/M12 Connectors, Standard According to IEC 63171-5 (IP 67)

- Male and female cable connectors
- Pre-assembled patch cables and field plugs
- Interface identical to IP 20 connectors
- Easy to integrate into sensors with standard M8/M12 connection

### T-Adaptor for connection several components with a single cable

- Multidrop
- 10BASE-T1S Applications



## Single Pair Ethernet

### Advantages

- Single Pair Ethernet (SPE) connection enables uniform Ethernet-based communication - from the sensor to the cloud
- A key enabling technology for industry 4.0 and IIoT
- Low cabling costs due to use of existing cabling infrastructures
- Can be used across applications with ranges of up to 1,000 m
- Transmission characteristics of up to 1 Gbps
- Ideal for weight and space constrained environments
- Reduces total installation costs



## Website

For more information refer to our website:  
[www.rosenberger.com/spe](http://www.rosenberger.com/spe)

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