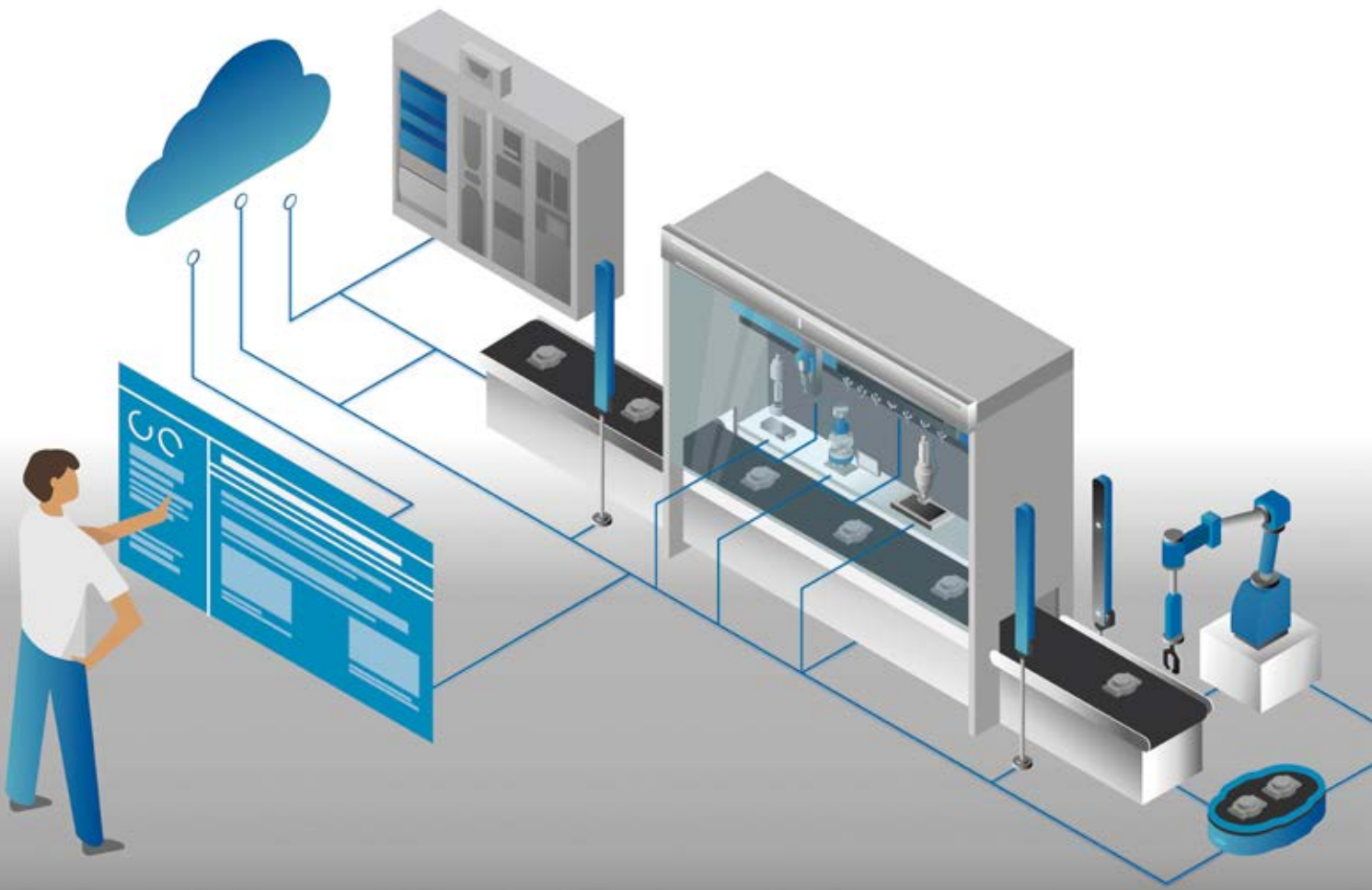
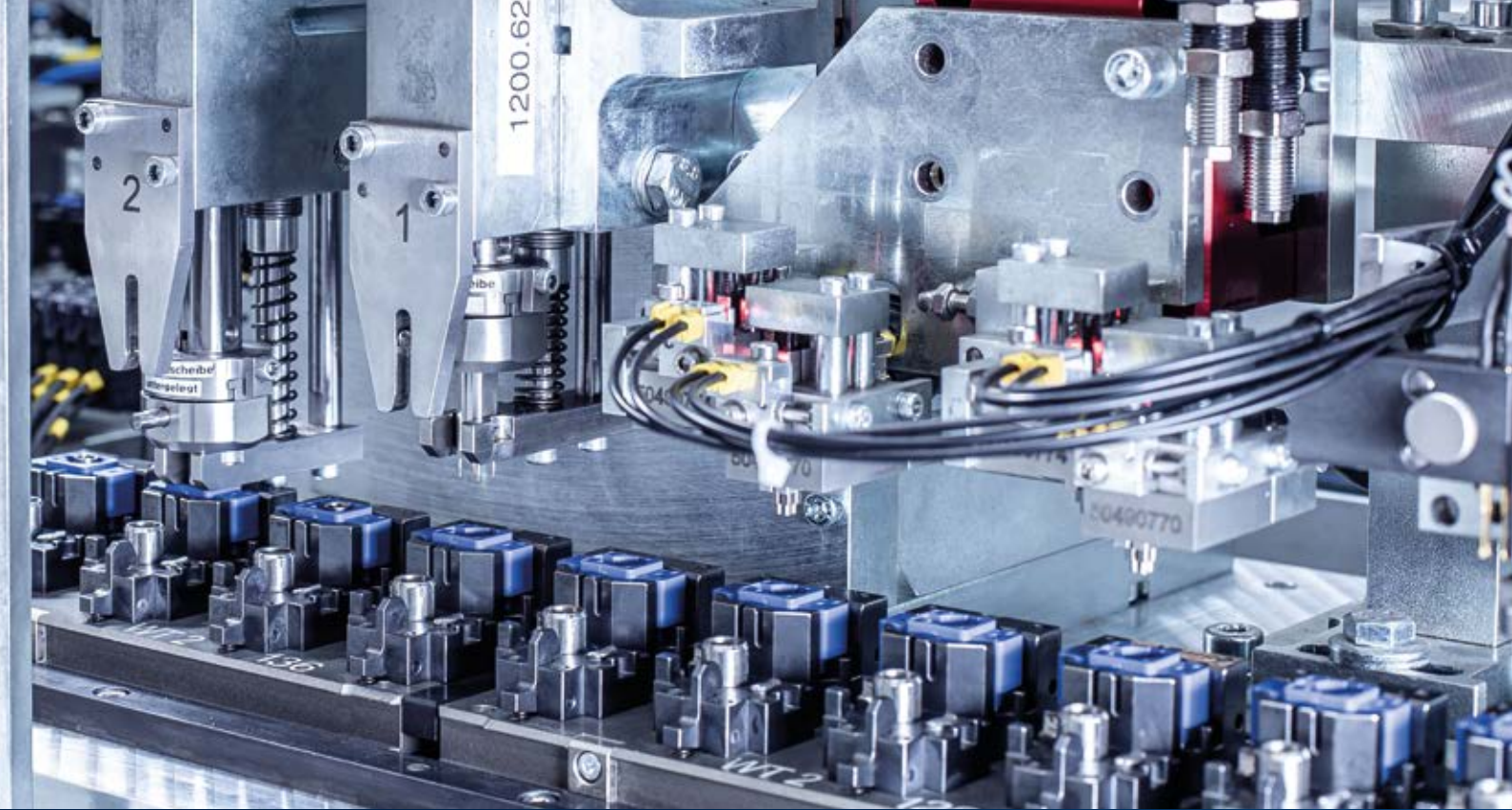


Connectivity Solutions for Industrial Applications

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

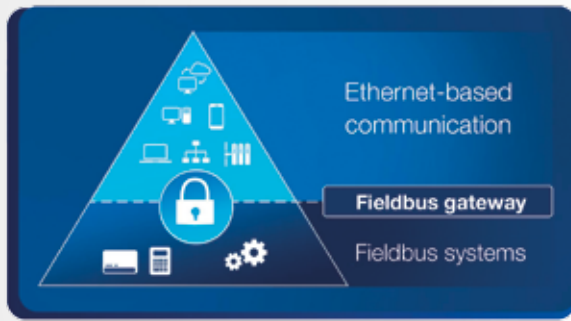
The development of Single Pair Ethernet systems has been primarily powered in the automotive industries. Future technologies, e.g. autonomous driving, require connectivity solutions which ensure high-reliable transmission of huge data rates in tightest spaces.

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.

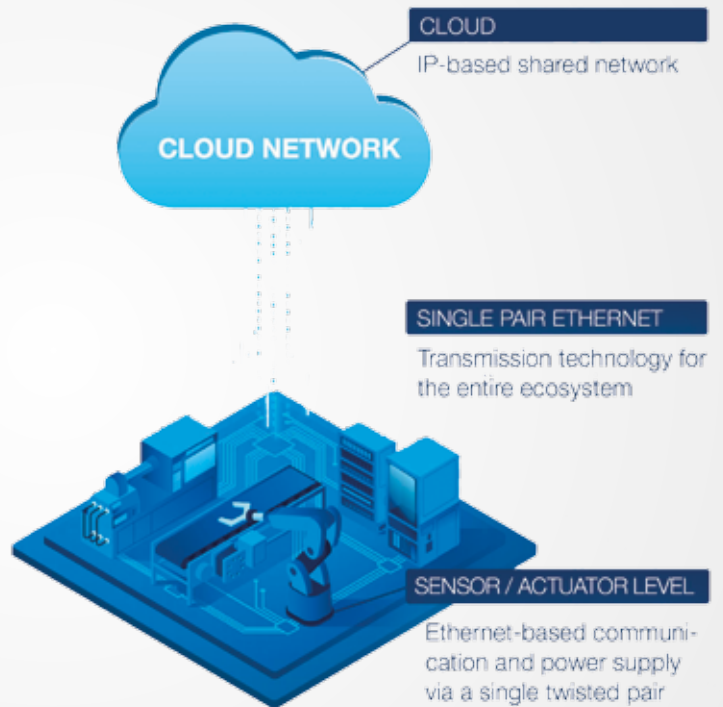
Single Pair Ethernet in the industry

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.



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)

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

RoSPE-Industrial | Product Features

- Industrial SPE connectors
- 2-pin powerful data transmission up to 10 Gbps
- Mating cycles > 750
- 360° shielded twisted-pair connector
- Developed in cooperation with leading manufacturers
- PoDL – up to 50 W useful power



Target Market and Applications

About the SPE System Alliance



Single Pair Ethernet
System Alliance

	Automotive	Building automation	Process automation	Factory automation
Focus of application	Wiring harness in vehicles	Wiring in switchboards; field cabling (e.g.: KNX)	Field cabling sensors	Industrial wiring in switchboards; field cabling sensors
Transmission speed	10 Mbps – 20 Gbps	10 Mbps – 1 Gbps	10 Mbps – 1 Gbps	10 Mbps – 1 Gbps
Transmission distance	15-40 m	< 1.000 m	< 1.000 m	< 100 m
Cable cross-section	AWG 26-22	AWG 26-22	AWG 22	AWG 26-22
Mech. elec. robustness	Medium - high	Low - medium	High (+Ex)	Medium - high
Current connectors	Automotive-specific connectors	Single wiring, terminal, KNX, RJ45	Terminal connectors, M8 or M12	RJ45, single wiring, terminal, M8/12

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



Website

For more information refer to our website:
www.rosenberger.com/spe

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