



# SINGLE PAIR ETHERNET CONNECTIVITY SOLUTIONS

**COMPACT & LIGHTWEIGHT**  
**EASY & FAST CABLING**  
**SEAMLESS RUGGED**  
**CONNECTIVITY**

Up to IP68 sealing

Ultra-robust materials

Vibration & shock resistant



The Ethernet has spread in many sectors, including defense, industrial automation, transportation, smart cities and defense that require the use of networked devices.

More recently, in the automotive industry and in industrial automation (linked to Industry 4.0), connectivity challenges have arisen due to the increase in sensor density, actuators and controllers:

- long cabling distances to cover;
- bandwidth limitations from legacy connectivity systems;
- and complexity from managing multiple protocols.

These challenges have fueled the demand for a smaller, lighter and more affordable version of the Ethernet – the Single Pair Ethernet (SPE). SPE uses just one pair of twisted copper wires to transmit data at speeds ranging from 10 Mbit/s to 10 Gbit/s, with Power over Data Line (PoDL) up to 52 Watts and over distances from 15 meters (at 10, 100 and 1000 Mbit/s) to 1000 meters (at 10 Mbit/s).

#### **SPE in a nutshell**

- Compact and lightweight: two wires instead of 8 copper wires for Gigabit Ethernet
- Fast and easy to cable and repair
- Increased durability:
  - Energy saving thanks to its light weight
  - Higher material resistance and less cable servicing, due to more flexible cables that withstand more bending cycles
- Greater flexibility of movement for machines and robots
- Versatile connectivity solutions (with a choice of installation length, bandwidth, with or without PoDL)
- End-to-end seamless connectivity

Fischer Connectors designs, manufactures, and distributes rugged connectors and cable assemblies particularly suitable for applications requiring faultless precision, durability and resistance to extreme conditions. We can now combine SPE's unique features with our renowned high-reliability, high-performance, sealed connectors to take SPE connectivity to new heights and markets.



# SINGLE PAIR ETHERNET

## Rugged Industrial

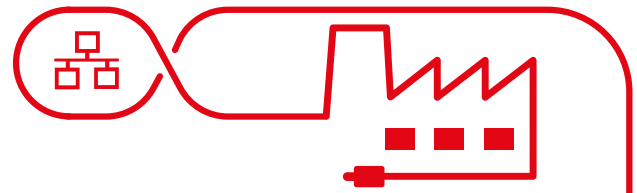
Single Pair Ethernet (SPE) is designed to meet multiple device-connectivity needs. What if you could benefit from SPE in rugged industrial environments, such as wet food production?

### Opportunities for using a Single Pair Ethernet protocol

- **Seamless connectivity:** SPE enables you to bring Ethernet down to the production lines, connecting multiple production line modules to the rest of the organization's network system seamlessly.
- Increasing the number of sensors and actuators used on production lines in a large infrastructure implies a growing need for cables and connections over a range of distances – this calls for the most **cost-effective** connectivity solution.
- Production line modules may need to be connected in confined areas where **minimal space** is available for connectivity.
- **Robots** may be used on the production line, requiring **extra flexibility** of movement which is easier to attain using SPE, with a single pair of wires, than with rigid Ethernet cables.

### Why a Fischer Connectors solution?

- Ideal in environments with highly corrosive cleaning solutions and water that call for **IP68-sealed** solutions in **corrosion-resistant** material.
- **Blind mating** solutions make it easier to connect confined and hard-to-access areas.

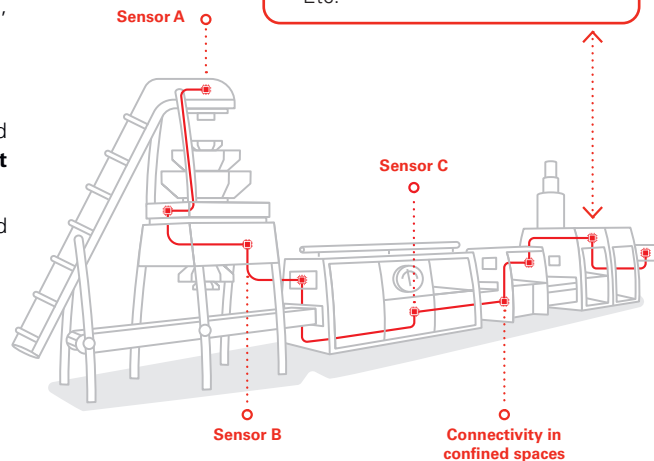


### Other rugged industrial environments:




- Chemical plants
- Industrial seaports
- Mines
- Oil rigs

### Data transmitted to/from:

- Production Line Supervisors
- Production Planning
- Enterprise Resource Planning (ERP) systems
- Etc.



## Our connectivity solutions

PRODUCT	SIZE	LAYOUT	CONTACT BLOCK*	10 Mbit/s (shielded)	100 Mbit/s (shielded)	1 Gbit/s (shielded)
FISCHER CORE SERIES BRASS 	102	066 (2 pins)		●	●	●
FISCHER MINIMAX™ SERIES 	06	0202 (4 pins)		●	●	●
FISCHER ULTIMATE™ SERIES 	07	0S2 (2 pins)		●	●	●
FISCHER FREEDOM™ SERIES 	08	004 (4 pins)		●	●	—

\*Contact block icons prevail over product images

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# KENSINGTON

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ALASKA & HAWAII

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