

PRESS CONTACT

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PRESS RELEASE

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Single Pair Ethernet The central nervous system of Industry 4.0

The Industrial Internet of Things (IIoT) is driving connectivity and is supporting Industry 4.0 innovations by connecting machines, devices and systems in the manufacturing and other business sectors. Single Pair Ethernet (SPE) now plays a decisive role in this context.

SPE enables both the transmission of data and the power supply (PoDL) via a single pair of wires. This significantly reduces the complexity of the network architecture and makes integration simpler and clearer. This simplicity is particularly important in industrial environments where hundreds or even thousands of sensors and actuators need to communicate seamlessly and reliably. The technology is also convincing when compared to conventional data rates for the operation of mobile applications such as those deployed in the automotive industry or agricultural technology.



ODU MINI-SNAP® SPE Assembly

Single Pair Ethernet offers the following advantages:

- Lean and clear network architecture
- High flexibility and scalability
- Better responsiveness through high convergence of information technology (IT) and operational technology (OT)

- Weight savings for more efficient mobility
- Higher range with sufficient data transmission rate

ODU meets required standards for Single Pair Ethernet

ODU connection solutions for SPE meet the MultiGigabitBase-T1L standard according to IEEE 802.3ch and deliver a reliable transmission rate of 10 GBit/s for a maximum length of 15 meters with a shielded cable.

If the required cable length is increased up to 40 meters, then the ODU connection solution provides a transmission rate of up to 1 Gbit/s (1000Base-T1) and thereby meets the requirements of the IEEE 802.3bp standard. ODU also offers high-quality standard cable assemblies including connectors in accordance with IEC 63171-2.

Lower transmission rates such as 100Base-T1 or 10Base-T1L for the handling of simpler protocols over longer distances are also possible, for example to drive forward process or factory automation.

A strong armor for the nervous system

In applications that are subject to regular maintenance or require high-frequency tool replacement, conventional connection interfaces quickly reach their limit as they are only suitable for a few mating cycles. ODU MINI-SNAP® SPE connectors can be deployed in tough environments and thereby withstand up to 5,000 mating cycles while offering an extremely small sized footprint. Modular connectors from the ODU-MAC® series, on the other hand, not only offer an extremely long service life with at least 10,000 mating cycles, but also the option of integrating SPE in a modular connector as a hybrid solution.

ODU also offers SPE connection solutions that are particularly resistant. They withstand extreme temperatures, shocks and vibrations as well as contamination from moisture and dust.

Customers benefit from the following advantages thanks to the portfolio variants defined by ODU:

- No qualification costs, as cable assemblies are already tested and qualified.
- Final product can be developed without samples using simulation results.
- ODU provides simulation results so that customers can plan and check the overall system in advance.
- Changes at short notice can be implemented cost-effectively and without great expenditure of time.
- Within the channel limits, the cable assemblies can be purchased individually in any total length.
- Standard assemblies are available with short delivery times thanks to factory stocking of individual components.



This results in short delivery times and low development costs. A reliable transmission system with many advantages over conventional data transmission technology. Thanks to connectors from ODU, SPE cable assemblies from ODU deliver the best signal integrity even in adverse environments and impress with their excellent service life.

ODU Group: global representation with perfect connections

The ODU Group is one of the world's leading suppliers of connector systems, employing 2,700 people around the world. In addition to its company headquarters in Muehldorf a. Inn (Germany), ODU also has an international distribution network, production and product development sites in Sibiu / Romania, Shanghai / China, Tijuana / Mexico and Camarillo / USA. ODU combines all relevant areas of expertise and key technologies including design and development, machine tooling and special machine construction, injection, stamping, turning, surface technology, assembly and cable assembly. The ODU Group sells its products globally through its sales offices in Austria, China, Denmark, France, Germany, Hong Kong, Italy, Japan, Korea, Sweden, UK and the US, as well as through numerous international sales partners. ODU connectors ensure a reliable transmission of power, signals, data and media for a variety of demanding applications including medical technology, military and security, automotive, industrial electronics, and test and measurement.