CABLE ASSEMBLIES

# Single Pair Ethernet – the streamlined connectivity solution for networked systems in industry, building automation, medical technology, and logistics

ASSMANN WSW's pre-assembled SPE cables enable end-to-end IP communication from the sensor all the way to the control and cloud levels, and significantly reduce weight and space requirements thanks to the use of just a single wire pair.

**Manufacturing and Quality Features**

- Custom cable lengths, cross-sections (typically AWG 18 to AWG 26), and jacket materials—tailored to your application.
- Precisely assembled connectors with controlled characteristic impedance for high signal integrity.
- Validated manufacturing processes for high mechanical durability and long-term stability in industrial applications.

**Technical Features**

- Support for current IEEE standards, e.g., 10BASE-T1L and 100BASE-T1
- Data rates up to 10 Mbit/s over distances of up to 1 km (10BASE-T1L, depending on system design).
- Power over Data Line (PoDL) in accordance with IEEE 802.3bu/cg for simultaneous power and data transmission over a single pair.
- Cable design for industrial environments (shielding, EMC-compliant construction, defined impedance).

**Standards and Connector Faces**

- Connector faces according to IEC 63171, e.g.:
- IEC 63171-2 for compact IP20 applications in
- industry and building automation.
- IEC 63171-6 for rugged industrial connectors, including IP67 solutions.
- Compatibility with common SPE components and patch cables in accordance with SPE system recommendations.

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| | | |
|---|---|---|
| Electrical character | | |
| Rated voltage | | 50 AC.63V DC |
| Rated current | | 2A \| 8A |
| Mechanical characterstics | | >100 |
| (mating cycle) | | |
| Degree of protection | | IP67 |
| (60-20653 IEC60529) | | |
| Operating temperature | | -20°C ~ +80°C |

Typical cable lengths for Single Pair Ethernet (SPE) depend heavily on the data rate and the specific standard.

For typical SPE standards, ASSMANN WSW has defined the following cable lengths:

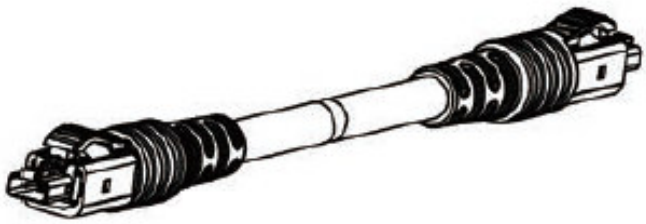
300 mm: Components located directly next to each other to avoid cable clutter.

500 mm: Connections within a panel or between two adjacent DIN rails.

1000 mm: Standard patch between components in a control cabinet panel

1500 mm: Connections across multiple DIN rails or within wide cabinets;

3000 mm: For patching in a large control cabinet.



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| AWSW-Bestellnummer | Längen [mm] | für xxxx einsetzen | Beschreibung | Zeichnungs-Nr. |
|---|---|---|---|---|
| A-SPE-MCOE-xxxxGN | 300<br>500<br>1000<br>1500<br>3000 | 0030<br>0050<br>0100<br>0150<br>0300 | SPE-I M12 hybrid 7-pin male connector to open end, black | ASS 11792 CA |
| A-SPE-FCOE-xxxxGN | | | SPE-I M12 hybrid 7-pin female connector to open end, black | ASS 11793 CA |
| A-SPE-MBOE-xxxxBK | | | SPE M8 hybrid 2+2-pin male connector to open end, black | ASS 11794 CA |
| A-SPE-FBOE-xxxxBK | | | SPE M8 hybrid 2+2-pin female connector to open end, black | ASS 11795 CA |
| A-SPE-MAMA-xxxxBK | | | SPE-2-pin male connector to SPE-2-pin male connector, black | ASS 11796 CA |

ASSMANN WSW components

# LEADING CUSTOMIZED CONNECTIVITY SOLUTIONS

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