



Industrial Ethernet

Seamless Industrial Ethernet Connectivity With Single Pair Ethernet

Experience seamless networking with Weidmüller's unmanaged Single Pair Ethernet (SPE) switch. Featuring four 10Base-T1L ports with PoDL (up to Class 14), the SPE switch delivers power and data over a single twisted pair, reducing cabling complexity. A single 10/100mbits RJ45 port ensures easy integration with existing networks.

Customizable via DIP switches, the SPE switch adapts to QoS, MAC multi-cast filtering, PoDL class selection and SCCP, making it ideal for PROFINET applications. With the power of Single Pair Ethernet, the new unmanaged switch delivers a more reliable, efficient and future-ready Industrial IoT network.

Our SPE unmanaged switch offers fast and secure data transmission for industrial networks. Our 10Base-T1L Single Pair Ethernet unmanaged switch is developed for reliable forwarding of data packets in automation technology for distances up to 1,000 meters.

Advantages of SPE Technology

- Reduced cabling and cost
- Long-distance communication
- Seamless integration and compatibility with existing Ethernet infrastructure
- Deliver power up to 50W over data cable
- Leverage existing 2-wire cabling
- Faster transmission rates and lower jitter compared to traditional serial communication

Approvals



Compact & efficient installation

Save space and simplify setup with data transmission and power supply over a single pair of wires (PoDL classes 10-14, up to 30W, SCCP support).



Universal compatibility

Our unmanaged switch seamlessly integrates with all Ethernet and IP-based protocols, making it adaptable across various applications.



Optimized network performance

Ensure reliable, high-efficiency connectivity that enhances system performance while reducing complexity.

Optimize Network Connectivity & Increase System Efficiency With SPE

The network infrastructure for Industrial IoT



Weidmuller SPE Switch Features

- 4 x 10Base-T1L ports up to 1km range
- PoDL Auto Negotiation with SCCP
- Quality of Service (QoS) and Mac Frame Filter (LLDP)
- -40...+70 °C operating temperature
- 1 x 10/100BaseT(X) RJ45 port for connection to Ethernet network
- PoDL Class 10 to 14 to transmit power over long distance

Features	Traditional Ethernet	Single Pair Ethernet
Cabling	4-pair twisted copper (Cat5e, Cat6)	1-pair twisted copper (SPE cable)
Max. cable length	100 meters (standard Ethernet)	Up to 1,000 meters (10Base-T1L)
Power delivery	PoE (Power over Ethernet)	PoDL (Power over Data Line)
Industrial adoption	Widely used in IT & industrial networks	Emerging in IIoT, automation & automotive industry applications
Size & weight	Bulkier cables & connectors	Compact wiring & reduced weight
Cost efficiency	Higher material & installation costs	Lower wiring costs & simplified installation
Use cases	Data centers, offices, industrial automation	IIoT, sensor networks, automotive, robotics
Interoperability	Requires converters for legacy systems	Compatible with edge devices & industrial sensors

Ordering Data

Type	Features	Order no.
IE-SW-SPE05-4T1LMPDOL-1TX	Network switch – unmanaged, Fast Ethernet, 10Base-T1L, number of ports: 1x RJ45, 4 x SPE connection according to IEC 63171-2, IP30, -40 °C...+70 °C	3012120000
IE-PS-SP0-S-FH-180	SPE field attachable plug, SPE-Plug according to IEC 63171-2, IDC, 2-core, IP20	2726040000
IE-S1ES2LE-100	System cable, Single Pair Ethernet (SPE), T1-B, LSZH, 100	2926140000
IE-S1DS2VE0030T01T01-E	Patch cable, SPE plug (IEC 63171-2) – IP20 socket contact straight, SPE plug (IEC 63171-2) – IP20 socket contact straight, T1-B, PVC, 3m	2725850030
IE-PCB-SPE-P-90V2.1-THR-YG/YG RL	PCB plug-in connector, male header, black, SPE, clip-on flange, THT/THR solder connection, 1.80mm, number of poles: 2, 90°, solder pin length (l): 2.1mm, Ni/Au, tape	2795120000

Supporting products in Single Pair Ethernet technology solutions



Single Pair Ethernet PCB terminal blocks

OMNIMATE® components from Weidmuller transmit data and voltage via Single Pair Ethernet (SPE) – efficiently and reliably up to 1,000 meters. Ideal for Industrial IoT and Industry 4.0: real-time data and security field device connection.



OMNIMATE® 4.0 hybrid connectors

Discover the new, modular, hybrid system to build every kind of plug-in connector for data, signal and power – also ready for IIoT. The future-proof system, featuring SNAP IN connection technology, is suitable for the toughest requirements of the digital and connected world.



OMNIMATE® Ethernet-APL interface components

Ethernet-APL as a dedicated definition of the SPE standard 10Base-T1L enables direct connection via a two-wire solution taking into account the special requirements of the process industry.

Discover more about Weidmuller's SPE unmanaged switches!

Contact your local Weidmuller sales representative today at www.weidmuller.com/sales



Discover more at
www.weidmuller.com/spe