



Single Pair Ethernet (SPE) Product Portfolio

IP20/65/67 receptacles and cordsets for seamless sensor-to-cloud communication



PRODUCT BULLETIN

Compact and lightweight receptacles and cordsets for cost-effective connectivity in industrial and transportation environments where the ability to monitor, share and analyze real-time data is essential to optimizing operations.

- Future-proof: Ethernet-based, the simplified network topology enables seamless connectivity from sensors to the cloud; gateways become optional
- High-performance bandwidth support: up to 10Gbits/s
- Rugged protection from harsh conditions: up to IP65/67 design protects against mechanical shock, vibration, dust, chemicals and temperature extremes; suitable for M3I3C3E3 environments
- Compact, lightweight design: increased flexibility and bending ratios make the cordsets easy to commission and overcome tight space constraints
- Built for sustainability: manufactured with up to 55% less metal and plastic than popular Ethernet cordsets, without sacrificing performance; IEC 63171-6, Lead-free RoHS compliant

The Single Pair Ethernet (SPE) product portfolio offers future-proof, economical, compact and excellent connections for seamless communication in industrial and transportation applications.

Key Features

- 30% smaller in diameter and 30% greater bending radius than popular Ethernet cables
- Standard product length variants up to 100M; customized lengths available by request
- Gold-plated contacts ensure hundreds of mating cycles without compromising signal quality
- Interchangeable flexible rear- and front-wall mounting T1 industrial IP20 products (M1I1C1E1)
- M8/M12 receptacles and cordset configurations (M2I2C2E2/M3I3C3E3)
- M8 unique design ensures reliability under shock and vibration load in transportation applications
- Metallic housing and 360-degree shielding for excellent signal integrity
- Oil and chemical resistant
- Temperature tolerant from -40°C to +85°C
- Supports all classes of Power-over-Data Line (PoDL)
- Universal protocol compatibility eliminates the need for gateways

Your Benefits

Belden's SPE product portfolio meets increasing demand for reliable, future-proof and high-performance connectivity driven by the growth in field devices and the growing need for more information from automated operations in both industrial and transportation applications.

The circular IP65/IP67-rated receptacles and cordsets are ideal for tight spaces in a wide range of industrial environments - from factories to transit systems. The metal housing and shielded design protect performance from the elements, such as vibration, dust, moisture, temperature extremes, oil and chemicals.

With universal Ethernet protocols, all devices on the network can seamlessly communicate directly to the enterprise backbone and further to the cloud, making gateways optional.

Applications

For manufacturers, the Belden SPE product portfolio enables IP20-rated, clean area, as well as IP65/IP67-rated field device connections to create the foundation for real-time communications between all devices on the network, the enterprise backbone and the cloud to improve process efficiency and reduce operational costs. As the exponentially growing number of sensors and actuators in automated production cells connect to the factory backbone, Industry 4.0 and smart factory applications, including predictive maintenance, digital twins and more are empowered. The new physical layer is universally compatible with industrial protocols.

For transit operations, including railway cars and rolling stock, the SPE product portfolio increases port density, significantly reduces cabling weight, indirectly improves battery performance, lowers the cost of upgrading automated systems and increases the ability to serve customers better with electronic-enabled systems. The smaller outer diameter makes the cordsets ideal for retrofitting any legacy vehicle with modem-monitoring systems, where routing cabling through wall thickness had been challenging.

Markets

The SPE product portfolio is ideal for environments where cost, reliability and performance are vital in evaluating investments, including machine building, automotive manufacturing, food and beverage manufacturing, intralogistics, mass transit systems and traffic control systems, railway and train stations and rail-rolling stock.

