

BEETLE Lite Managed Switch

Single Pair Ethernet Lite Managed Switch

PRODUCT BULLETIN 



The Lumberg Automation BEETLE Lite Managed Switch supports the transition to future-ready networks built using Single Pair Ethernet (SPE), supporting seamless sensor-to-cloud connectivity.

- **Transmit Ethernet up at least 1 kilometer.** Meets the 10BASE-T1L standard for long-distance Ethernet.
- **Save space.** Supports Ethernet transmission via a single wire pair that is lighter and more compact than traditional Ethernet cables.
- **Reduce network complexity.** Integrate sensors and actuators directly into the network without the need for an additional gateway.
- **Simplify configuration and maintenance.** Streamline installation and maintenance and reduce operating costs with fewer gateways and protocols in use.
- **Gain essential lite managed switch features.** Provides an optimized price-performance ratio and lower long-term total cost of ownership.

Supporting future-ready networks that create the foundation for real-time communications, the BEETLE switch offers exceptional value and special features like Power over Data Line (PoDL).

Key Features

- DIN rail mounted SPE Lite Managed Switch with IP40 housing.
- 8 x M8 10BASE-T1L downlink and 2 x RJ45 100BASE-TX uplink.
- Utilizing M8 connectors for versatile applications (based on IEC 63171-6 standard).
- Operating temperature range from -10°C to +60°C.
- 24-volt DC power supply.
- Capable of PoDL class 12.
- Networking features like virtual local area network (VLAN).
- Supports OPC UA, EtherNet/IP and Modbus TCP.
- Simplified configuration via an embedded web server.
- Fully compatible with the Belden SPE portfolio of connectivity products, including cables, cordsets and connectors, to provide complete SPE solutions.

Your Benefits

As industrial environments grow in complexity, enterprises have opportunities to connect more field devices and gather more data. However, they need to consider space and weight constraints and simplify network infrastructure where possible. SPE supports this goal by allowing connectivity via a single pair of wires rather than the two or four pairs required by standard Ethernet. In addition, devices that previously communicated over fieldbus protocols can now join Ethernet-based networks without the need for additional gateways and protocols, reducing network complexity and maintenance. With the BEETLE SPE Lite Managed Switch from Lumberg Automation, industrial organizations can increase the scale of their operations and collect more useful, real-time data from connected field devices while achieving greater range, better device coverage, less network complexity, and long-term savings.

Applications

The BEETLE SPE Lite Managed Switch allows industrial organizations to deploy space-saving SPE cables inside walls, floors and robots. Instead of relying on traditional Ethernet cables that pose installation challenges and cause bottlenecks in complex automation environments, organizations can accelerate digitization and transmit more data from sensors, actuators and I/O modules at the field level with SPE technology. With more data available for both edge and cloud computing, organizations can make more informed, rapid decisions to enhance operational performance, safety and security.



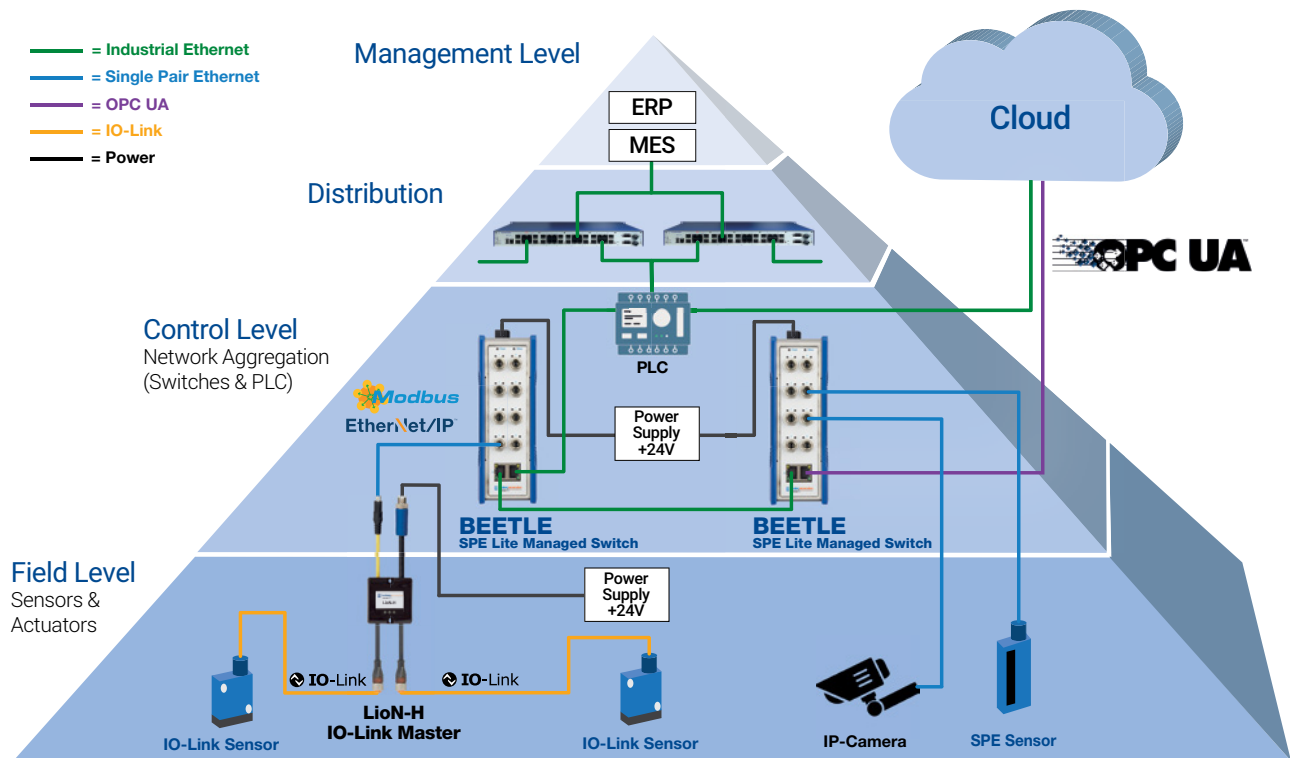
Markets

With its space-saving and long-distance Ethernet transmission benefits, the BEETLE SPE Lite Managed Switch meets the needs of many complex industrial environments, including the automotive manufacturing, material handling, discrete manufacturing, and logistics and intralogistics sectors. The BEETLE Switch allows organizations to benefit from deploying SPE and PoDL to achieve maximum system availability and reliability, unparalleled flexibility, future scalability and optimizing performance.



How BEETLE Can Integrate into a Network Solution

The BEETLE SPE switch is part of the control level in industrial networks. It monitors field level equipment, such as sensors, actuators, and other input devices and facilitates data transfer to the distribution level.



Benefits of a One Belden Single Pair Ethernet Solution



BEETLE Single Pair Ethernet Lite Managed Switch

With the BEETLE SPE Switch, industrial organizations can increase the scale of their operations, transmit data seamless from sensor to cloud, and achieve greater range, better device coverage and long-term savings.



LioN-H Single Pair Ethernet IO-Link Master

LioN-H features one power-port, one SPE standard 10BASE-T1L port and two IO-Link ports enabling intelligent communication between sensors and actuators in industrial environments.



DataTuff® Single Pair Ethernet Cables

Megabit and Gigabit SPE cable variants provide reliable, uninterrupted field-to-cloud connectivity, even in the harshest environments.



Single Pair Ethernet Connectors

Belden offers IP20-rated SPE cords and cordsets for clean-area connections and IP65/IP67-rated M8/M12 connectors for field device connections.

Technical Information

Product Description

Type	BTL-1-L-5-1-6-W2-08T1-2-02TX-S-Z9-HH-HH
Description	Lite Managed SPE Switch with 8 x M8 SPE-ports and 10Base-T1L and 2 x RJ45 Fast Ethernet.
Port Type and Quantity	2 x 10/100BASE-TX 8 x 10BASE-T1L
Order No.	935-800-001

Communication Interfaces

LEDs	Power, Port State, Device Status, PoDL
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Network Size - Length of Cable

Twisted Pair (TP)	0-100 m
Single Pair (SP)	0-1000 m

Power Requirements

Power Supply Connector	1 x plug-in terminal block, 6-pin
Operating Voltage	24 VDC
Voltage range incl. max. tolerances	18 V-32 VDC (20 V-30 VDC for PoDL)

Software

Management	LLDP (802.1AB), Password change on first login, HTTP, Responsive GUI
Diagnose	LEDs, Device Status Indication, Syslog, Link Speed and Duplex Monitoring, SPE cable diagnosis
Configuration	Web-based Management, OPC-UA
Security	Local User Management, MAC based ACL
Switching	VLAN (802.1Q), QoS/Port Prioritization (802.1D/p), TOS/DSCP Prioritization, CoS Queue Management, Queue-Shaping/Max. Queue Bandwidth, Unknown Multicast Filtering, Egress Interface Shaping, Ingress Storm Protection
Miscellaneous	PoDL (IEEE 802.3cg)

Ambient Conditions

Operating Temperature	-10 °C to +60°C
Storage/Transport Temperature	-40°C to + 70°C
Relative Humidity (non-condensing)	1% to 95 %

Mechanical Construction

Mounting	Din Rail
Protection Class	IP40
Dimensions (W x H x D) mm	61 mm x 163.6 mm x 114.7 mm
Weight	1016 g

Scope of Delivery and Accessories

Scope of Delivery	Device, Terminal Block, Start-up Instructions, Safety Instructions
Accessories to Order Separately	DataTuff SPE Cables, SPE Connectors, RPS Power Supply

NOTE: These are the prominent technical specifications. For complete technical specifications visit: www.belden.com