

Single Pair Ethernet

The IEEE 802.3cg 10BASE-T1L SPE standard for ultra low-power long reach single pair ethernet communication offers the possibility of using existing 2-wire infrastructure to realize 10Mbps Ethernet data transmission at line lengths of up to 1000m.

Installation & Operation

- 1 Prepare your 2-wire connections to the +/- input on the terminal plug.

Note: If using shielded cable, please terminate shield at one end only. Preferably at the 'Control/Security Room M5L Hub' this provides a common central grounding point for all connected machine rooms links whereby they are connected back in a star network topology.

Please reference LX1 Typical Network Overview diagram.

- 2 Connect the terminal plugs at both ends and if installation is complete at the CD-LX1/M5L hubs, apply power to both.
- 3 Upon power up the SPE cards will auto-negotiate a 2-wire ethernet link.
- 4 The LAN Status indicator will determine the cards link at the installed M5L hub, whilst the SPE Status indicator will determine the cards link to the remote CD-LX1/SPE link partner.

Specifications

Operating Voltage	3.3V DC Powered via M5L Hub
Operating Current	60mA (Idle), 110mA (Active)
Ethernet via mPCIe	10Base-T (Ethernet) via M5L Hub
Single Pair Ethernet	10Base-T1L (SPE)
Data Rate	10Mbps Full Duplex
Line Length	Up to 1000m (Long reach)
Link Topology	Peer-to-Peer
Line Impedance	100 Ω
Interface Isolation	IEC 62368-1, 1500V AC
Port Status LEDs	SPE Link/Act, LAN Link/Act
Operating Temperature	0 - 50°C
Operating Humidity	90% max relative humidity, noncondensing
Dimensions (mm)	36(W) x 74.2(H) x 1(D)

2-Wire SPE Interface

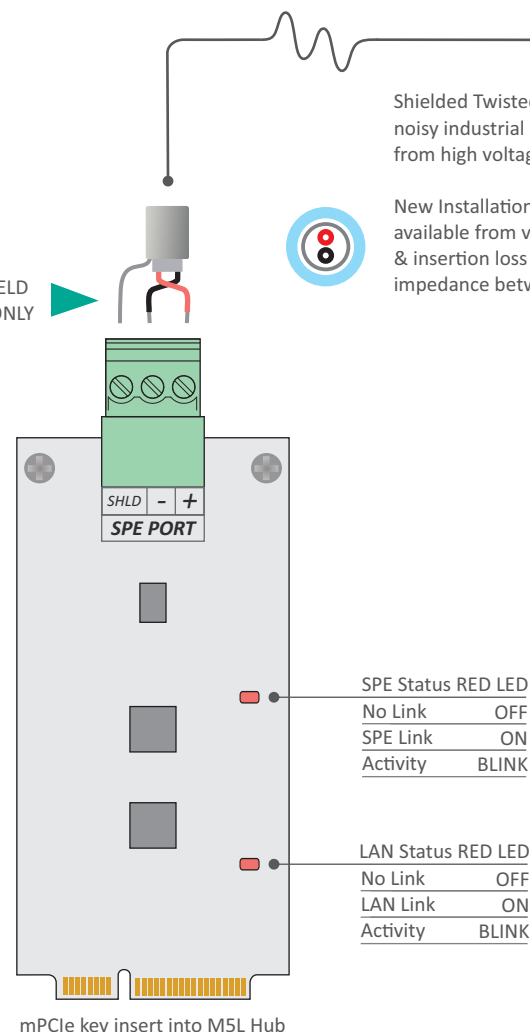
Connects to remote CD-LX1/SPE card (Link Partner)

Shielded Twisted Pair cabling provides improved noise immunity. However, in noisy industrial environments, care should always be taken to keep cables away from high voltage AC, DC & VF drives.

New Installations can benefit from purpose designed SPE cable solutions available from various cable manufactures providing best possible signal return & insertion loss (dB) for balanced transmission lines with a 100 Ω characteristic impedance between $0.1 \leq f \leq 20$ MHz.



Connect SHIELD at one end ONLY



SCAN ME
To access product
page on your tablet
or smart phone



CD-LX1/SPE		Date:	21-03-23
Installation & Operational Overview			
Designed By:	Revision:	Sheet:	
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