



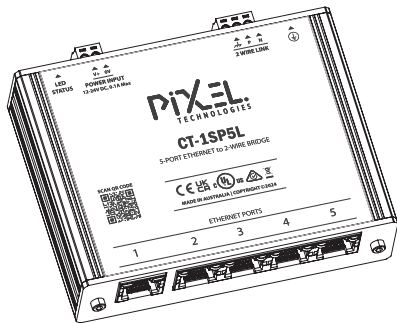
CT-1SP5L

User Guide

Rev: 1.0.2616.0

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Description



The CT-1SP5L media converter is a compact and reliable solution for extending Ethernet communication over a single twisted pair. It integrates a 5-port Ethernet switch with a single pair 2-wire link delivering 10 Mbps full-duplex data transmission over distances of up to 1000 m.









Designed for low-power operation and dependable performance in harsh or space-limited installations, the CT-1SP5L is well suited for elevator systems, escalators, industrial automation, building management systems and Ethernet retrofitting applications.

Features:

- 5 Port 10/100Base-TX Ethernet switch
- Ultra-Low Power Ethernet to 2-Wire Media Conversion
- Auto MDI-MDIX Ethernet Ports
- Auto-Negotiation, Fast Link up < 1s
- Retrofit of IP devices over existing twisted pair wiring
- LED Status Indicators for fast diagnostics

Installation Steps

The CT-1SP5L is an unmanaged, plug-and-play device and requires no setup or configuration. Once powered and connected to a remote CT-1SP5L or CT-SPE10 link partner, both devices will automatically negotiate and establish a 2-wire Ethernet link.

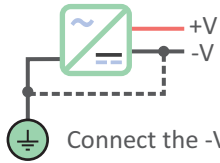
-  Refer to the Installation Overview Diagram (back page).
-  1 Connect a single twisted-pair cable to the P and N 2-wire Link terminals on both the local and remote units.
-  If using a shielded (STP) cable, connect the cable shield at one end of the 2-wire link only.
-  2 Connect Ethernet cables to any of the five RJ45 ports to link your IP devices or network equipment at both the local and remote units.
-  3 Connect a 12-24 V DC power supply to the V+ and 0V power input terminals on both units.
-  4 Once both units are powered, the RJ45 Ethernet ports and the 2-wire link will automatically negotiate and establish a network connection between the devices.
-  Refer to the LED Status Table on the back page for link activity, fault indication and system heartbeat status.
-  5 Your Ethernet connection over the 2-wire link is now active.

Specifications

Operating Voltage	12 - 24V DC
Operating Current	96mA @ 12V 54mA @ 24V
Ethernet	5 × RJ45 ports, 10/100Base-TX (Auto MDI-X)
2-Wire Data Rate	10Mbps, Full Duplex
2-Wire Line Length	Up to 1000m
2-Wire Link Topology	Peer-to-Peer
2-Wire Line Impedance	100 Ω
2-Wire Isolation	IEC 62368-1, 1500V AC
Status Indication	Heartbeat, 2-Wire/Ethernet (Link/Act), Fault
Operating Temperature	0 - 50°C
Operating Humidity	90% max RH, non-condensing
Mounting	DIN Rail
Dimensions (mm)	108 x 93.5 x 34.5

Power Supply Input

12 - 24V DC



Connect the -V terminal of PSU to protective earth (PE)

SHIELD NOTE

If using STP cable connect Shield at **one end** of the 2-Wire transmission line **ONLY** to avoid ground loops.

2-Wire Link Interface

Connects to remote CT-1SP5L/CT-SPE10 (Link Partner)



Recommended Cabling: UTP or STP twisted-pair with a 100 Ω characteristic impedance.

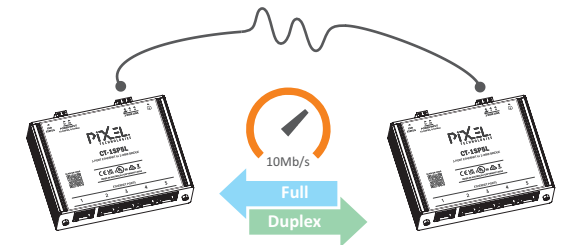
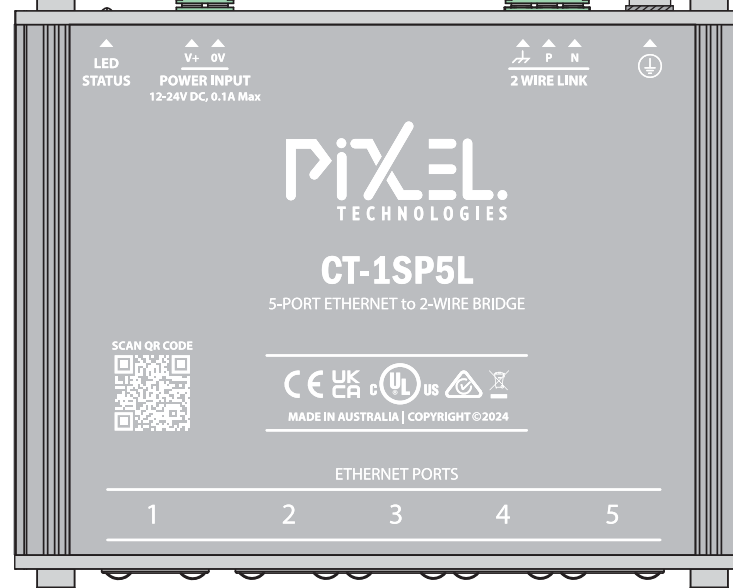


Shielded Twisted Pair cabling provides improved noise immunity. However, in noisy industrial environments, care should always be taken to keep cables away from high voltage AC, DC & VF drives.

Connect chassis earth screw to protective earth (PE) using a suitable earth lug and conductor.

LED Status Indicators

LED	Function	State	Description
Blue	2-Wire Link	OFF	No Link
		ON	Link
Red	Fault Indicator	OFF	No Fault
		Blink	2-Wire or ALL Ethernet ports have been down for 30s
Yellow	System Heartbeat	Blink	System Running
Green	2-Wire Link ↕ 5-Port Ethernet	OFF	No Link
		ON	Link
		Blink	Tx/Rx Activity



Peer-to-Peer Connectivity

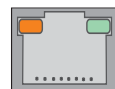


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5-Port Ethernet Switch



Green LED (10/100 LAN Link & Activity)

No Link	OFF
Link	ON
Activity	BLINK

PIXEL TECHNOLOGIES	CT-1SP5L	Date:	15-04-26
	Installation & Operational Overview		
Designed By: D.H	Revision: 1.0.2616.0	Sheet:	1/1