Altronix Pace1KRT Long Range Single Pair UTP Ethernet Adapter Kit Installation Guide

Contents

Altronix Pace1KRT Long Range Single Pair UTP Ethernet Adapter Kit

Product Specifications

- Model: Pace1KRT
- Kit includes Pace1KR Receiver and Pace1KT Transceiver
- Transmission: Long Range Single Pair (UTP) Ethernet Adapter Kit
- Power: PoE(+) compliant format
- Maximum Transmission Distance: Up to 1km (1,000m, 3,280 ft.)
- Data Transmission Rate: 10Mbps
- Power Output: IEEE 802.3af (15W) and IEEE 802.3at (30W)

Product Usage Instructions

Installation Guide:

Altronix Pace1KRT is suitable for various applications such as Surveillance cameras, Security systems, Industrial setups, BMS, HVAC, and Elevator Controllers.

Features:

- PoE compliant to IEEE 802.3af (15W) and PoE+ compliant to IEEE 802.3at (30W)
- Operates with 16/2 AWG or higher @ 10Mbps
- Supports Ethernet connectivity over existing wire pair
- LED indicators for easy monitoring

Installation Instructions:

Follow these steps for installing the Pace1KRT kit:

1. **Pace1KR Installation:**
    1. Secure the unit to the mounting surface near the Ethernet switch or network device.
    2. Connect the structured cable from the Ethernet midspan or endspan device to the RJ45 jack marked

[PoE Input].

2. **Pace1KT Installation:**
    1. Secure the unit to the desired mounting surface near the camera or device.
    2. Connect the structured cable from the Pace1KR to the Pace1KT for data and power transmission.

Frequently Asked Questions

- **Q: What is the maximum transmission distance supported by the Pace1KRT kit?**
    - A: The Pace1KRT kit can transmit data and power via UTP up to 1km (1,000m, 3,280 ft.) to a remote PoE device.
- **Q: Can the Pace1KRT kit be used for non-PoE devices?**
    - A: Yes, for non-PoE remote devices, data-only transmission is supported by the kit.
- **Q: Are Pace1KR and Pace1KT suitable for outdoor installations?**
    - A: No, Pace1KR and Pace1KT are intended for indoor use only and should not be connected to outside plant leads.

Overview

Altronix Pace1KRT is a long-range Ethernet adapter kit solution that transmits data and power via twisted pair (2-wire, UTP or shielded) in a PoE(+) compliant format. In addition to new SPE (UTP) Ethernet network installations for Surveillance-cameras/Security/Industrial/BMS/HVAC & Elevator Controllers, applications include upgrading of legacy networks, i.e. LONworks, RS485, 4-20ma Control Loops, etc. by using the existing two wire cabling, thus saving rip-out & reinstallation costs. Operationally, the Pace1KR is connected to a POE midspan/endspan switch at the headend and passes network data and power to the Pace1KT from the switch via UTP up to 1km (1,000m, 3,280 ft.) to a remote 10/100 PoE device, such as a camera. For non-PoE remote devices, data only is transmitted.

Features

Input (Pace1KR Receiver):

- Powered by midspan or endspan.
  PoE compliant to IEEE 802.3af (15W) and
  PoE+ compliant to IEEE 802.3at (30W).

UTP Connection:

- Wire type: Twisted pair (2-wire, UTP or shielded).
- Speed: 10Mbps
- Distance: 1km (1,000m, 3,280 ft.), 16/2 AWG or higher @ 10Mbps (see Maximum Length of Cable Type vs. Total Power Consumption,)

Ethernet Connection:

- Connectivity: RJ45, auto-crossover.
- Wire type: 4-pair CAT5e or higher.
- Distance: up to 100m from midspan to Pace1KR receiver (headend), 100m from PaceKT transceiver to device

- Speed: 10/100BaseT, half/full duplex, auto negotiation. PoE compliant to IEEE 802.3af (15W) and PoE+ compliant to IEEE 802.3at (25W) delivered to device by Pace1KR. Power provided by Pace1KR to Pace1KT by PoE protocol.*

LED Indicators:

- Pace1KR and Pace1KT:
  - Link LED: Green, PoE Active (left of UTP link)
  - Link LED: Green, Active Indicate
  - Data transmission (Next to Ethernet link)
- Pace1KR and Pace1KT: (RJ45 jack):
  - Yellow and Green LED IP Link status, 10/100Base-T/active.

Environmental:

- Operating Temperature:
  - 40ºC to 75ºC (– 40ºF to 167ºF).
- Storage Temperature:
  - 40ºC to 75ºC (– 40ºF to 167ºF).
- Relative humidity:
  - 20 to 85%, non-condensing.

Functions:

- Auto detection and protection of legacy non-PoE cameras/devices.

Applications:

- Upgrade LONworks, RS485, 4-20mA control loops to Ethernet over existing wire pair.
- Building Automation, Elevator Systems, HVAC, Lighting, Surveillance & Security.
- Utilize twisted pair for new installations or retrofit of IP devices over existing twisted pair cabling
- Extend Network link distance in an industrial environment over 1km (1,000m, 3,280 ft.).
- Works with Megapixel, HD720, HD1080 and VGA (SD) cameras with proper headend equipment.

Mechanical:

- Dimensions (W x L x H approx.):
  - Pace1KR:
    3.8” x 2.5” x 1” (96.52mm x 63.5mm x 25.4mm).
  - Pace1KT:
    2.27” x 2.65” x 1.12” (57.7mm x 67.2mm x 28.4mm)

For dual port connectivity please refer to kit model: Pace2KRT

Installation

Instructions:

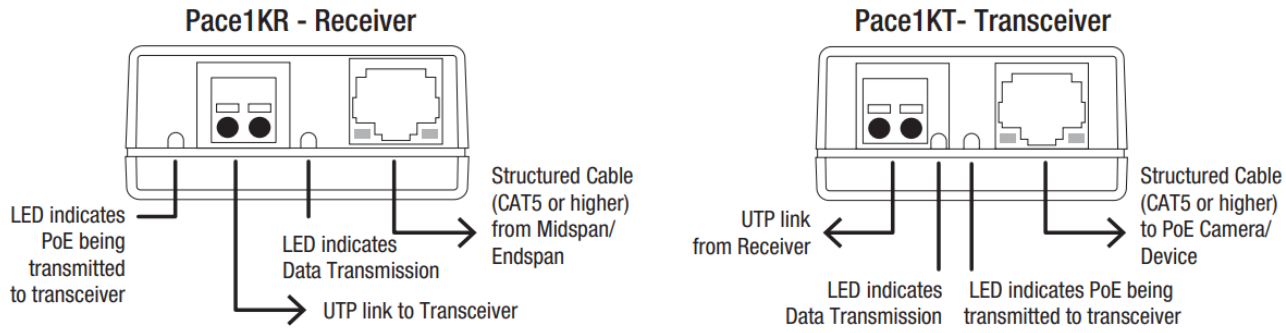
Wiring methods shall be in accordance with the National Electrical Code/NFPA 70/ANSI, and with all local codes and authorities having jurisdiction. Wiring should be UL-listed and/or Recognized wire suitable for the application. Pace1KR and Pace1KT are not intended to be connected to outside plant leads and should be installed indoors within the protected premises. Pace1KR and Pace1KT are intended for indoor use only.

1. Pace1KR installation:
    - a. Secure unit to the desired mounting surface with a proper fastening device utilizing the unit's mounting hole (Fig. 2a,). The unit should be mounted in proximity to ethernet switch/network, NVR or video server.
    - b. Connect structured cable from ethernet midspan or endspan device to RJ45 jack marked [PoE Input] (Fig. 2,).
    - c. UTP / 2-wire: Connect UTP to connector marked [+, –] (Fig. 2, pg. 3).
2. Pace1KT installation:
    - a. Secure unit to the desired mounting surface with a proper fastening device utilizing the case's mounting hole (Fig. 2a,). The unit should be mounted in the proximity of the camera/device.
    - b. Connect the structured cable from IP camera/device to RJ45 jack marked [PoE Out] (Fig. 2).
    - c. Connect UTP to the connector marked [+, –] from receiver (Pace1KR) (Fig. 2).

Technical Specifications

Parameter	Description
Connections	RJ45 for CAT5/6 or higher ethernet link. UTP (2-wire) screw terminals to interconnect receiver/transceiver
Input power requirements	Midspan or endspan port connected. PoE compliant to IEEE 802.3af (15W) and PoE+ compliant to IEEE 802.3at (25W)
Indicators	Yellow (RJ45 connector): On – Link, Off – No Link, Blinking – Activity. Green (RJ45 connector): On – 100Base-TX, Off – 10Base-T. Green Link LEDs: Link active
Environmental Conditions	Operating Ambient Temperature: UL60950-1 Pace1KR: – 20ºC to 49ºC (– 4ºF to 120.2ºF). Pace1KT: For 15W: – 40ºC to 75ºC (– 40ºF to 167ºF). For 30W: – 40ºC to 49ºC (– 40ºF to 120ºF). Storage Temperature: – 40ºC to 75ºC (– 40ºF to 167ºF). Relative Humidity: 20 to 85%, non-condensing. Operating Altitude: – 304.8 to 2,000m.
Regulatory Compliance	CE European Conformity.
Weights (approx.)	Product: 0.4 lb. (0.18 kg) | Shipping: 1 lb. (0.45 kg).

Fig. 1



Single PoE Camera Connection

Fig. 2

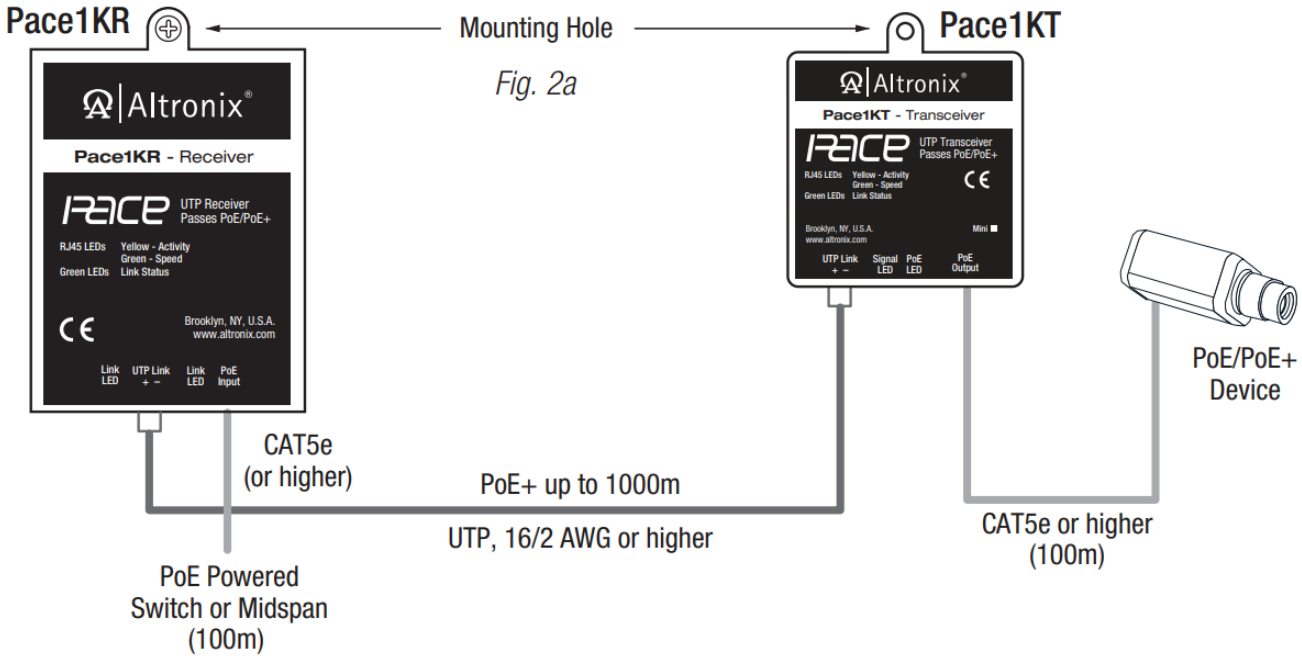


Fig. 2a

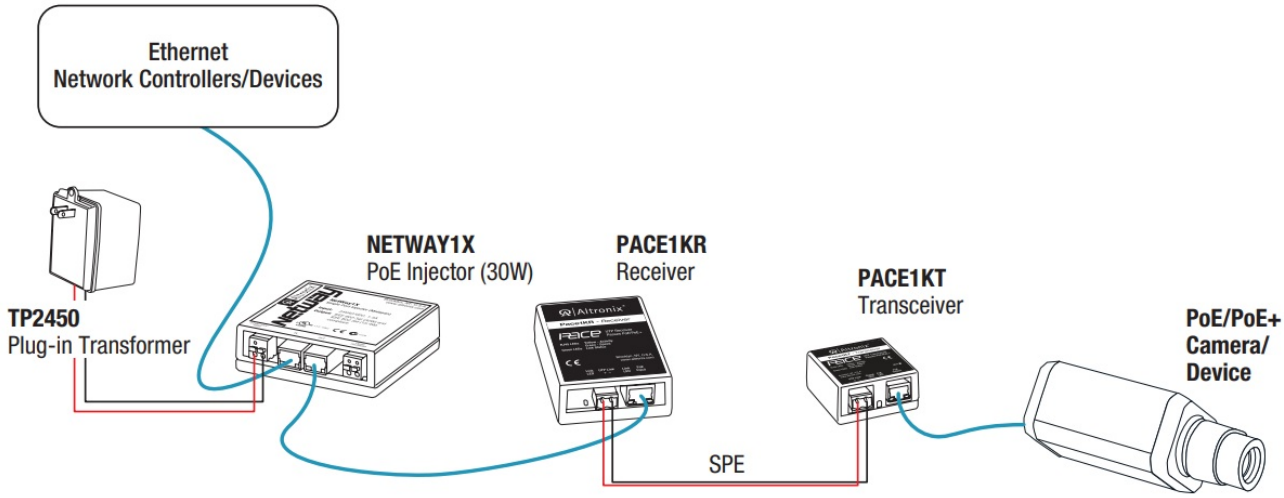
Maximum Length of Cable Type vs. Total Power Consumption

Wire type	Total Power Consumption	Max. Data Distance	Max. Power Distance
18 AWG (2-wire, UTP)	7.5W	1,000m (3,280 ft)	1,996m (6,548 ft.)
	15W	1,000m (3,280 ft)	998m (3,274 ft.)
	30W	1,000m (3,280 ft)	269m (882 ft)
16 AWG (2-wire, UTP)	7.5W	1,000m (3,280 ft)	3,169m (10,396 ft.)
	15W	1,000m (3,280 ft)	1,584m (5,196 ft.)
	30W	1,000m (3,280 ft)	427m (1,400 ft.)

Note: Calculations based on 56VDC starting voltage from the power source and account for a 10VDC voltage drop. IEEE standards voltage range requirement for powered devices are: PoE (15W) – 37VDC to 57VDC, PoE+ (30W) – 44VDC to 57VDC)

Typical Application Utilizing Altronix PoE Injector and Pace1KRT

Fig. 3



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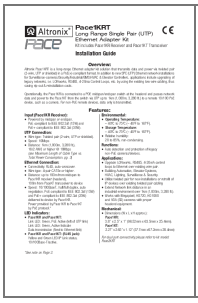
- Lifetime Warranty
- IIPace1KRT Rev. 012121

Documents / Resources

	Altronix Pace1KRT Long Range Single Pair UTP Ethernet Adapter Kit [pdf] Installation Guide Pace1KRT Long Range Single Pair UTP Ethernet Adapter Kit, Pace1KRT, Long Range Single Pair UTP Ethernet Adapter Kit, Single Pair UTP Ethernet Adapter Kit, UTP Ethernet Adapter Kit, Adapter Kit, Kit

References

- User Manual