Altronix® Pace Installation Guide Rev. 111413

Pace1PRMT

IP and PoE+ Over Extended Distance UTP or CAT5e

Pace1PRM Receiver and Pace1PTM Transceiver Kit

c UL us LISTED I.T.E. 43KC CE Z1409

Overview:

Pace1PRMT is a long range Ethernet adapter kit that transmits data at 100Mbps full duplex and power via a single twisted pair (UTP) or CAT5e or higher cable in a PoE(+) compliant format. The Pace1PRM receiver is powered via a PoE midspan, such as the Altronix Netway series, or by an endspan. The receiver passes the PoE(+) compliant power over the cable to the Pace1PTM transceiver which, in turn, passes this power to an enabled IP camera/device. These plug and play units facilitate cost-effective solutions for IP devices that need to be installed at distances greater than 100m. They also provide a simple way to replace legacy analog products with new IP devices over single twisted pair (UTP) or structured cable.

Features:

Agency Listings:

- UL/cUL Listed for Information Technology Equipment (UL 60950-1).
- CE approved.
- C-Tick compliant.

Input (Pace1PRM):

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

Ethernet:

- Connectivity: RJ45, auto-crossover.
- Wire type: 4-pair CAT5 or 1 pair UTP structured cable.
- Distance: up to 500m.
- Speed: 10/100BaseT, half/full duplex, auto negotiation. PoE compliant to IEEE 802.3af (15W) and PoE+ compliant to IEEE 802.3at (30W) delivered to camera by Pace1PTM. Power provided by Pace1PRM to Pace1PTM by PoE protocol.*
- Throughput is rated to pass 100Mbps of data at distances up to 500m with proper headend equipment, this supports Megapixel, HD720, HD1080.

CAT5e or Higher:

- Distance: up to 500m @ 100Mbps *(see Maximum Length of Cable Type vs. Camera Power/PoE Class, pg. 4).*

UTP (Single Pair):

- Distance: up to 153m @ 100Mbps *(see Max. Length of Cable Type vs. Camera Power/PoE Class, pg. 4).*

LED Indicators:

- Pace1PRM/Pace1PTM: Green - PoE ON (by respective RJ45 jack).
- Pace1PRM and Pace1PTM (RJ45 jack): Yellow and Green LED IP Link status, 10/100Base-T/active.

Environmental:

- **Operating and Storage Temperature:** *(refer to Technical Specifications chart pg. 2)*.
- Humidity: 20 to 85%, non-condensing.

Functions:

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

Applications:

- Extend Network link distance in an industrial environment over 700m *(see note, pg. 2)*.
- Retrofit digital IP cameras in an analog CCTV CAT5e wired installations.
- Works with Megapixel, HD720, HD1080 and VGA (SD) cameras *(see note, pg. 3)*.

Mechanical:

- Dimensions (W x L x H approx.): Pace1PRM/Pace1PTM: 3.5” x 3.5” x 1” (88.9mm x 88.9mm x 25.4mm).

** See note on page 3.*

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.

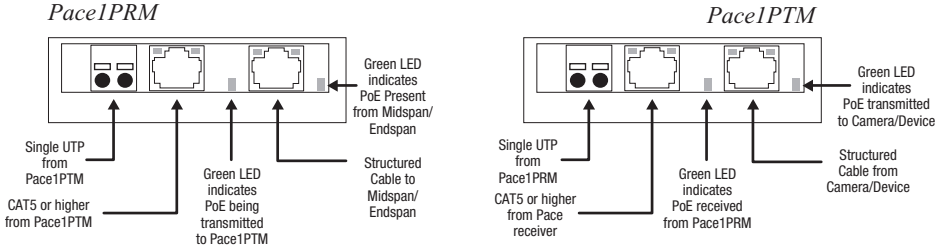
Pace1PTM and Pace1PRM are not intended to be connected to outside plant leads and should be installed indoors within the protected premises. Pace1PRM and Pace1PTM are intended for indoor use only.

1. **Pace1PRM installation:**
   a. Secure unit to desired mounting surface with a proper fastening device utilizing the unit's mounting hole *(Fig. 2a, pg. 3)*. 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, pg. 3)*.
   c. **CAT5e or higher:** Connect CAT5e or higher to connector marked [RJ45 Link] *(Fig. 2, pg. 3)*.
   UTP: Connect UTP to connector marked [UTP Link] *(Fig. 2, pg. 3)*.
2. **Pace1PTM installation:**
   a. Secure unit to desired mounting surface with a proper fastening device utilizing the case's mounting hole *(Fig. 2a, pg. 3)*. Unit should be mounted in proximity of camera/device.
   b. Connect structured cable from IP camera/device to RJ45 jack marked [PoE Out] *(Fig. 2, pg. 3)*.
   c. **CAT5e or higher:** Connect CAT5e or higher to connector marked [RJ45 Link] *(Fig. 2, pg. 3)*.
   UTP: Connect UTP to connector marked [UTP Link] *(Fig. 2, pg. 3)*.

Technical Specifications:

Parameter	Description
Connections	RJ45 for ethernet link or single pair UTP.
Input power requirements	Midspan or endspan port connected. PoE compliant to IEEE 802.3af (15W) and PoE+ compliant to IEEE 802.3at (30W)
Indicators	**Yellow *(RJ45 connector)*:** On - Link, Off - No Link, Blinking - Activity. **Green *(RJ45 connector)*:** On - 100Base-TX, Off - 10Base-T. **Green:** PoE Active.
Environmental Conditions	Operating Ambient Temperature (UL60950-1): **Pace1PRM:** -20ºC to 49ºC (-4ºF to 120.2ºF). **Pace1PTM:** For 15W: -40ºC to 75ºC (-40ºF to 167ºF) For 25W: -40ºC to 70ºC (-40ºF to 158ºF) For 30W: -40ºC to 60ºC (-40ºF to 140ºF) Relative Humidity: 20 to 85%, non-condensing. Storage Temperature: -40ºC to 75ºC (-40ºF to 167ºF). Operating Altitude: -304.8 to 2,000m.
Regulatory Compliance	UL/cUL Listed for Information Technology Equipment (UL 60950-1). CE approved. C-Tick compliant.
Weights (approx.)	Product: 3.88 oz. (0.11 kg) | Shipping: 6.70 oz. (0.19 kg)

Fig. 1

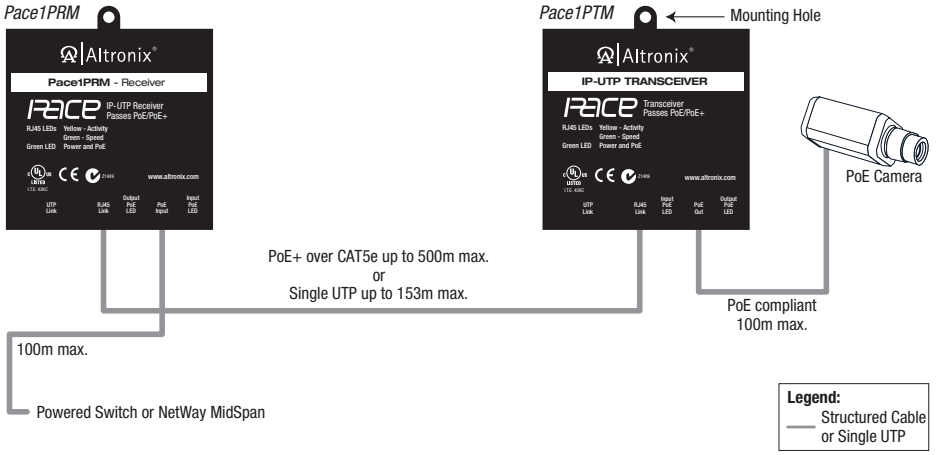


***Note:** Caution, once PoE connection is established between Pace1PRM and Pace1PTM, disconnection from Pace1PTM will not disable the PoE output voltage on the Pace1PRM. Although the Pace1PTM can be reconnected, caution should be taken not to connect the CAT5e or single UTP wiring from Pace1PRM to any non-PoE device.*

Single PoE Camera Connection Utilizing Pace1PRM and Pace1PTM:

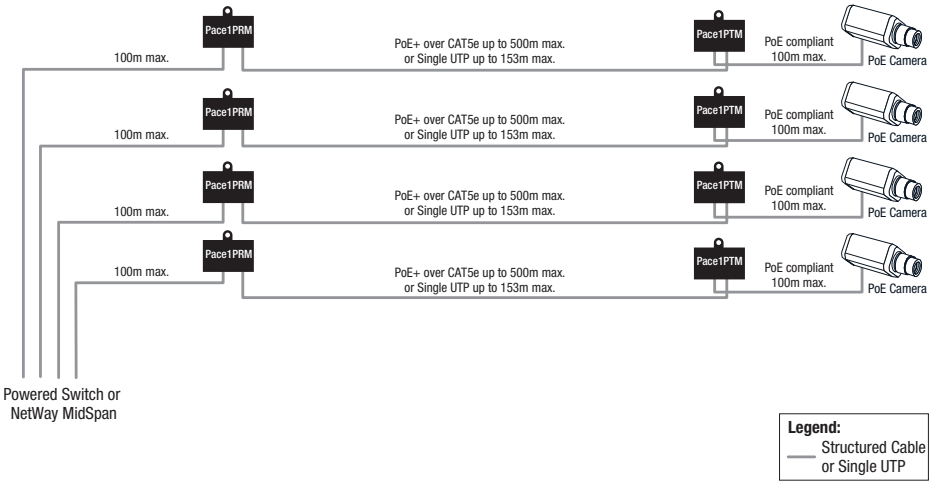
Fig. 2

Fig. 2a



Multiple PoE Cameras Connection:

Fig. 3



Maximum Length of Cable Type vs. Camera Power/PoE Class:

Cable Type	Total Power Consumption	Max. Data Distance	Max. Power Distance
CAT5e	15W	500m	846m
	30W		423m

Cable Type	Total Power Consumption	Max. Data Distance	Max. Power Distance
Single UTP (23AWG)	15W	153m	266m
	30W		133m

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