Pace1STR
IP and PoE+ Over Extended Distance CAT5e

I.T.E. 43KC

Kit includes

Pace1PRM Receiver and Pace1ST Mini Transceiver

Installation Guide

Overview:

Pace1STR is a long range Ethernet adapter kit that transmits data at 100Mbps full duplex and power via CAT5e or higher cable in a PoE(+) compliant format. 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 Pace1ST mini 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.

Features:

Agency Listings:
- UL/cUL Listed for Information Technology Equipment (UL 60950-1).
- CE European Conformity.

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 CAT5e or higher.
- 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 Pace1ST. Power provided by Pace1PRM to Pace1ST 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 CAT5e Type vs. Camera Power/PoE Class, pg. 3).*

LED Indicators:
- **Pace1PRM and Pace1ST:** Green - PoE ON (by respective RJ45 jack).
- **Pace1PRM and Pace1ST (RJ45 jack):** Yellow and Green LED IP Link status, 10/100Base-T/active.

Environmental:
- **Operating Temperature:**
  Pace1PRM:
  – 20ºC to 49ºC (– 4ºF to 120.2ºF).
  Pace1ST:
  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.

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

Applications:
- Retrofit digital IP cameras in an analog CCTV CAT5e installations.
- Extend Network link distance in an industrial environment over 610m.
- Works with Megapixel, HD720, HD1080 and VGA (SD) cameras with proper headend equipment.

Mechanical:
- Dimensions (W x L x H approx.):
  Pace1PRM:
  3.5" x 3.5" x 1"
  (88.9mm x 88.9mm x 25.4mm).
  Pace1ST:
  2.27" x 2.645" x 1.12"
  (57.7mm x 67.2mm x 28.4mm).

See note on Page 2.

Installation Instructions:

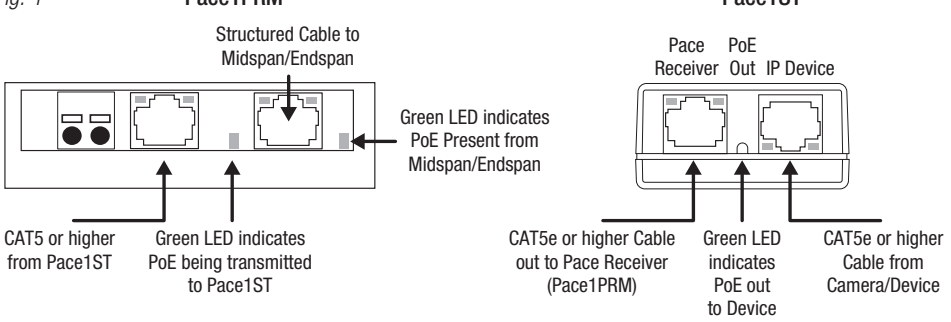
Wiring methods shall be in accordance with the National Electrical Code/NFPA 70/ANSI, and with all local codes and authorities having jurisdiction. Wiring should be UL Listed and/or Recognized wire suitable for the application. Pace1ST and Pace1PRM are not intended to be connected to outside plant leads and should be installed indoors within the protected premises. Pace1PRM and Pace1ST are intended for indoor use only.

1. **Pace1PRM installation:**
   a. Secure unit to the 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 OUT] *(Fig. 2, pg. 3)*.
2. **Pace1ST installation:**
   a. Secure unit to the desired mounting surface with a proper fastening device utilizing the case's mounting hole. Unit should be mounted in the proximity of camera/device.
   b. Connect structured cable from IP camera/device to RJ45 jack marked [PoE Out] *(Fig. 2, pg. 3)*.
   c. Connect CAT5e or higher to the connector marked [RJ45 IN] from receiver (Pace1PRM) *(Fig. 2, pg. 3)*.

Technical Specifications:

Parameter	Description
Connections	RJ45 for ethernet link.
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). **Pace1ST:** 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	UL/cUL Listed for Information Technology Equipment (UL 60950-1). CE European Conformity.
Weights (approx.)	Product: 0.4 lb. (0.18 kg) I Shipping: 1 lb. (0.45 kg).

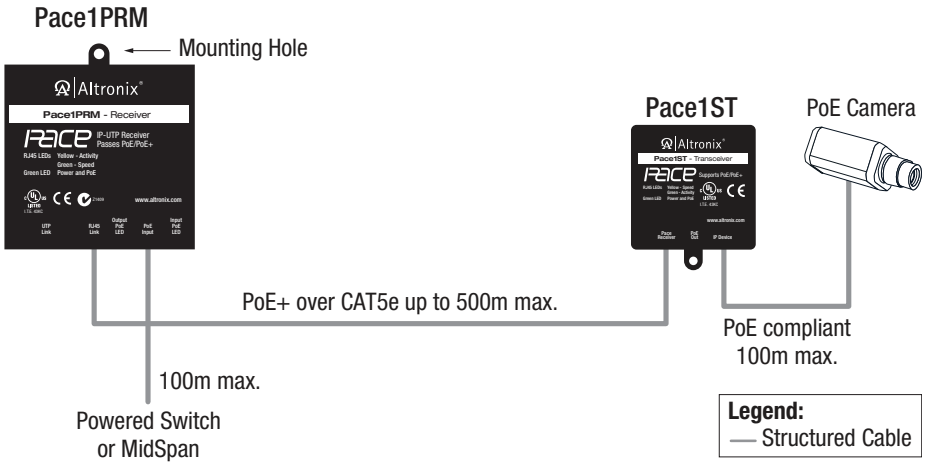
Fig. 1



***Note:** *Caution! Once PoE connection is established between Pace1PRM and Pace1ST, disconnection from Pace1ST will not disable the PoE output voltage on the Pace1PRM. Although the Pace1ST can be reconnected, caution should be taken not to connect the CAT5e from Pace1PRM to any non-PoE device.*

Single PoE Camera Connection:

Fig. 2 *Fig. 2a*



Maximum Length of CAT5e Type vs. Camera Power/PoE Class:

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

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.

Notes: