



Pace1ST

Hardened Transceiver

IP and PoE+ Over

Extended Distance CAT5e

Installation Guide



Overview:

Pace1ST is a long range hardened Ethernet transceiver designed for use with Pace1PRM, Pace4PRM, Pace8PRM and Pace16PRM receivers. They transmit data at 100Mbps full duplex and power via CAT5e or higher cable in a PoE(+) compliant format. Pace1ST will not deliver power to non-compliant devices, thus avoiding damage to improperly connected non-PoE cameras/devices. The receiver passes the PoE(+) compliant power over the cable to the Pace1ST 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:

- PoE (15W) IEEE 802.3af compliant or PoE+ (30W) IEEE 802.3at compliant from Pace1PRM, Pace4PRM, Pace8PRM or Pace16PRM.

Ethernet:

- Connectivity: RJ45, auto-crossover.
- Wire type: 4-pair CAT5e.
- 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.
- Throughput is rated to pass 100Mbps of data.

CAT5e or Higher:

- Distance: up to 500m @ 100Mbps.

LED Indicators:

- Green - PoE active.
- Yellow and Green LED IP Link status, 10/100Base-T/active.

Environmental:

Operating Temperature:

For 15W: – 40°C to 75°C (– 40°F to 167°F).

For 30W: – 40°C to 49°C (– 40°F to 120°F).

Storage Temperature:

– 40°C to 75°C (– 40°F to 167°F).

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.):
2.27" x 2.645" x 1.12"
(57.7mm x 67.2mm x 28.4mm).

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 is not intended to be connected to outside plant leads and should be installed indoors within the protected premises. Pace1ST is intended for indoor use only.

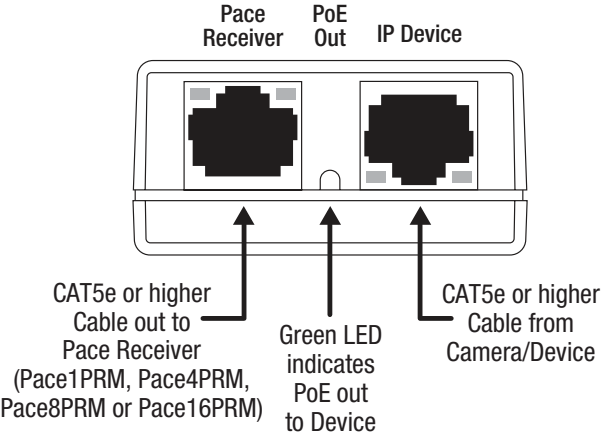
1. Secure unit to desired mounting surface with a proper fastening device utilizing the case's mounting hole (Fig. 2a, pg. 3). Unit should be mounted in the proximity of camera/device.
2. Connect structured cable from IP camera/device to RJ45 jack marked [IP Device] (Fig. 2, pg. 3).
3. Connect CAT5e or higher to the connector marked [Pace Receiver] from receiver (Pace1PRM, Pace4PRM, Pace8PRM or Pace16PRM) (Fig. 2, pg. 3).

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

Technical Specifications:

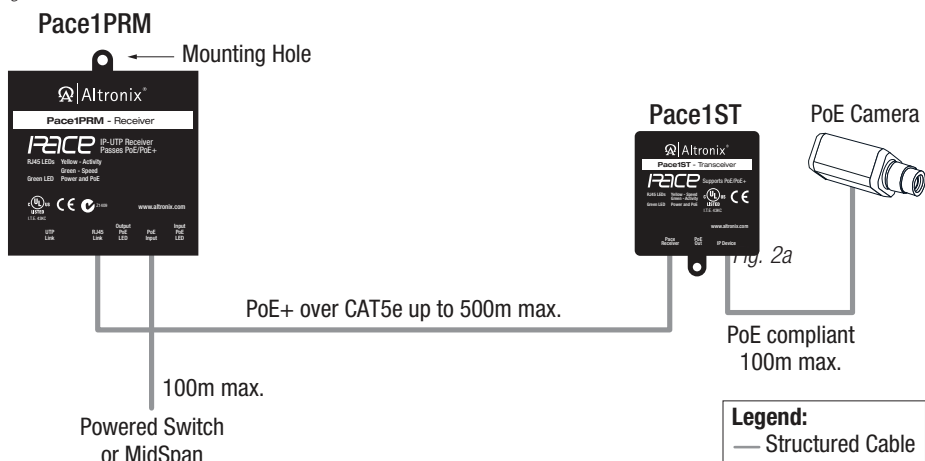
Parameter	Description
Connections	RJ45 for ethernet link.
Input power requirements	PoE (15W) IEEE 802.3af compliant or PoE+ (30W) IEEE 802.3at compliant from Pace1PRM, Pace4PRM, Pace8PRM or Pace16PRM.
Indicators	Yellow (RJ45 connector): On - Link, Off - No Link, Blinking - Activity. Green (RJ45 connector): On - 100Base-TX, Off - 10Base-T. Green: PoE Active.
Environmental Conditions	Operating Ambient Temperature (UL60950-1): For 15W: - 40°C to 75°C (– 40°F to 167°F). For 30W: - 40°C to 49°C (– 40°F to 120°F). Relative Humidity: 20 to 85%, non-condensing. Storage Temperature: - 40°C to 75°C (– 40°F to 167°F). 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: 0.22 lb. (0.1 kg) Shipping: 0.4 lb. (0.18 kg).

Fig. 1 Pace1ST



Single PoE Camera Connection:

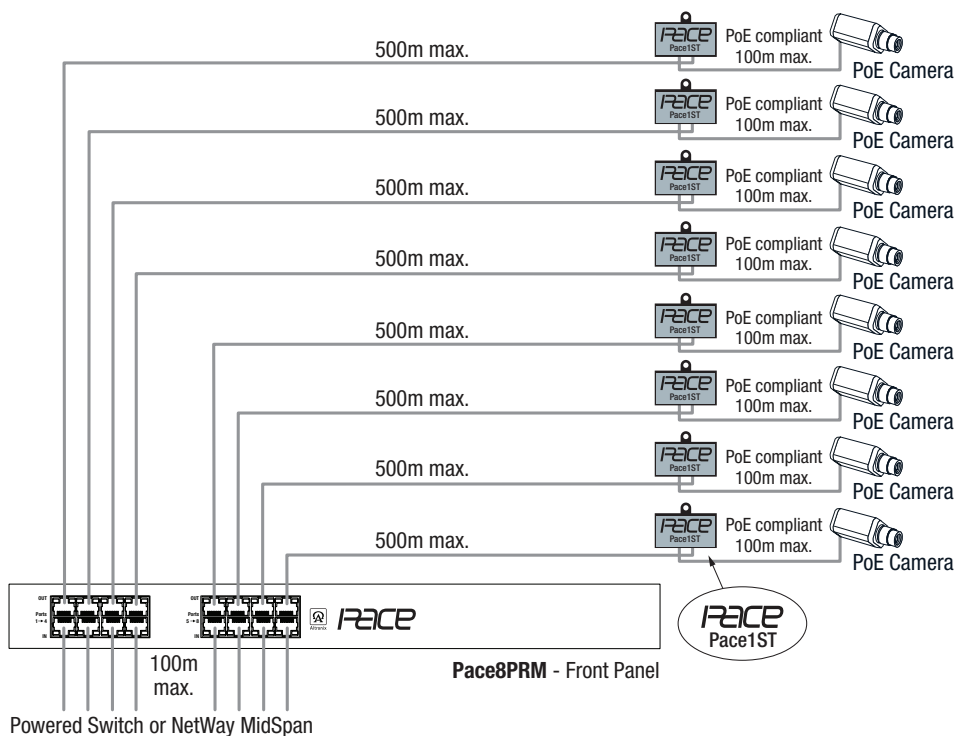
Fig. 2



Multiple PoE Cameras Connection:

Pace8PRM shown. Pace4PRM and Pace16PRM are similar, with four (4) and sixteen (16) channels respectively.

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	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: