# EC-1500C/U Series EthernetConnect™ Extender

## 1, 4, 8, OR 16 PORTS WITH PASS-THROUGH POE TO 15 WATTS, LOCAL OR REMOTE

### Product Features

- Transmits Individual Ethernet Data Channels with Pass-Through Power over Ethernet (PoE) over Standard Cat5/Cat5e/Cat6 UTP Cable or Coaxial Cable

- Extends Ethernet up to 914 m (3,000 ft) at 10 Mbps or 610 m (2,000 feet) at 100 Mbps over Cat5/Cat5e/Cat6 UTP Cable

- Extends Ethernet up to 1,524 m (5,000 ft) at 10 Mbps or 549 m (1,800 ft) at 100 Mbps over Coaxial Cable

- Extended Temperature Operation from –40° to 75°C (–40° to 167°F)

- Extended Pass-Through PoE Meets the IEEE802.3af Standard for Power over Ethernet

- Full 10/100 Mbps Bandwidth

- Supports Multicast, Unicast, and Jumbo Frame

- Symmetric Bandwidth Provides Consistent Upload and Download with Virtually Zero Packet Loss over the Total Usable Distance

- Type Tested to RFC-2544 TCP/IP Network Bandwidth Packet Transmission Standards

- User-Selectable Data Rate for Maximum Bandwidth and Transmission Distance Utilization

- Complies with all Major IEEE Standards and RFC Network Protocols for UDP, TCP/IP, and HTTP/HTTPs



- Tested and Certified by an Independent Laboratory for Full Compliance with the Environmental Requirements (Ambient Operating Temperature, Mechanical Shock, Vibration, Humidity with Condensation, High-Line/Low-Line Voltage Conditions, and Transient Voltage Protection) of NEMA TS-1/TS-2 and the Caltrans Specification for Traffic Signal Control Equipment

- LED Status Indicators Confirm Operating Status

- Available in Small Unit Size, Interchangeable Stand-Alone, or 1 RU Rack-Mounted Models

- Designed and Manufactured in the USA

The **EC-1500C Series** is ideally suited for applications where the existing coaxial cable needs to be leveraged for transmission of IP signals. For UTP applications, the **EC-1500U Series** is an effective Cat5/Cat5e/Cat6 UTP extender device beyond the 100 m (328 ft) limit of traditional Ethernet. In addition, for system configurations that have a single cable connected to the camera, the **EC-1500C/U Series** can pass through PoE (up to 15 W) to the camera. Designed to be a cost-effective, general-use product, the **EC-1500C/U Series** provides maximum flexibility in these applications without any programming.

The EthernetConnect™ **EC-1500C/U Series** is used to extend Ethernet over copper (EoC). The **EC-1500C Series** extends up to 16 ports of 10/100 Mbps Ethernet with pass-through PoE over coaxial cable. The **EC-1500U Series** extends up to 16 ports of 10/100 Mbps Ethernet with pass-through PoE over twisted pair Cat5/Cat5e/Cat6 UTP cable. Single-channel units can be powered from a PoE source, allowing for an installed network where power is not readily available.

The **EC-1500C/U Series** units provide the ultimate flexibility for extending a powered device (PD) over long distance copper. DIP switches are provided for the user to select local or remote settings. All application configurations should be verified at the time of ordering to facilitate ease of installation.
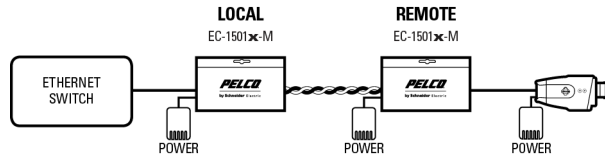
## TYPICAL APPLICATIONS

**Note:** Coaxial applications use EC-1500**C** modules; UTP applications use EC-1500**U** modules.
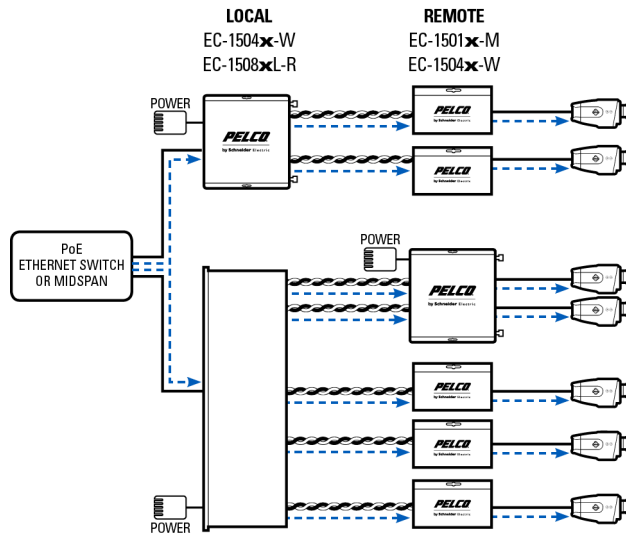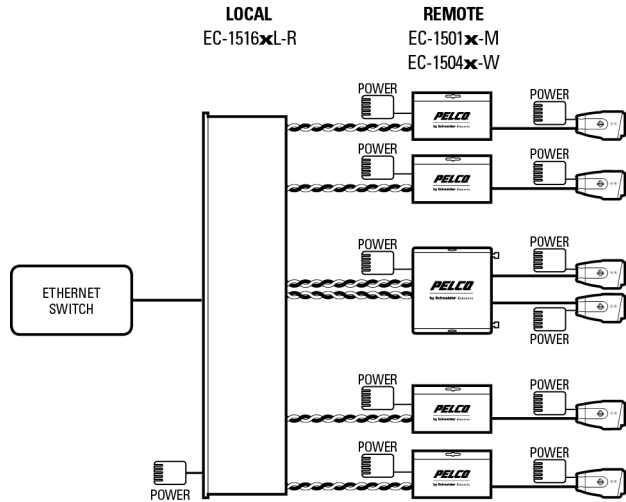
### PoE PASS-THROUGH MODE
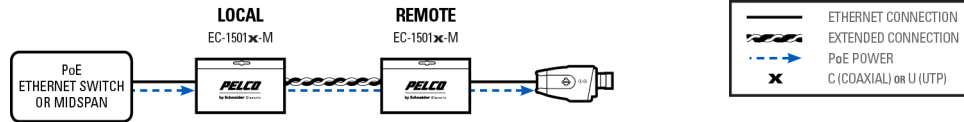


### NON-PoE MODE



### MULTICHANNEL PoE APPLICATION



### MULTICHANNEL NON-PoE APPLICATION



**IMPORTANT NOTE. PLEASE READ.** The network implementations are shown as general representations only and are not intended to show detailed network topologies. Your actual network will differ, requiring changes or perhaps additional network equipment to accommodate the systems as illustrated. Please contact your local Pelco representative to discuss your specific requirements.

## ELECTRICAL

Operating Voltage

EC-1501C-M/1501U-M

| | |
|---|---|
| PoE | Voltage supplied by PoE |
| Non-PoE | 12 to 32 VDC or 18 to 32 VAC, 1.5 W |

EC-1504C-W/1504U-W  12 VDC, 5 W;
9 VDC† when in a USRACK or EURACK

EC-1508CL-R/1508UL-R  12 VDC, 10 W

EC-1516CL-R/1516UL-R  12 VDC, 20 W

Current Protection  Automatic resettable solid-state current limiters

MTBF  >100,000 hours

LED Indicators  Operating power; Ethernet speed; Ethernet link and activity; extended link and activity

## DATA

Data Interface  10/100Base-T Ethernet

Data Rate  DIP switch selectable 10/100 Mbps; full data rate/full-duplex up to the maximum rated distance

RFC  2544 TCP/IP packet transmission

Standards

PoE  IEEE802.3af

RFC  768 UDP, 2068 HTTP, 793 TCP, 791 IP, 1783 TFTP, 894 IP over Ethernet

Maximum Transmission Distances

| Media | COAX-RG59/U | | UTP, 4 Pair | |
|---|---|---|---|---|
| Camera Data Rate | 10 Mbps | 100 Mbps | 10 Mbps | 100 Mbps |
| Non-PoE Camera* | 1,524 m (5,000 ft) | 549 m (1,800 ft) | 914 m (3,000 ft) | 610 m (2,000 ft) |
| PoE CLASS2 Camera (6.5 W)* | 914 m (3,000 ft) | 549 m (1,800 ft) | 914 m (3,000 ft) | 610 m (2,000 ft) |
| PoE CLASS3 Camera (13 W)* (10 W in pass-through mode) | 228 m (750 ft) | 228 m (750 ft) | 228 m (750 ft) | 228 m (750 ft) |

*Distance figures are based on a 50 V PSE PoE power source, and external power supplies for the extenders. Distance figures are obtained using in-house testing mirroring installations. Factors such as coaxial and copper cable quality, the number of connectors and splices in the cable run, the use of PoE, and environmental conditions encountered within the installation might affect the actual transmission distance and should be taken into consideration. Due to advanced negotiation signaling required in IEEE802.3at applications, pass-through applications are limited to IEEE802.3af PD devices only.

## MECHANICAL

Connectors

Ethernet  RJ-45

Extended Interface

Coaxial  Female BNC

UTP  RJ-45

Operating Power  Powered by PoE or two-pin screw terminal

## GENERAL

Dimensions

| 1 CH | 8.4 x 6.4 x 2.8 cm (3.3" D x 2.5" W x 1.1" H) |
|---|---|
| 4 CH | 15.5 x 13.5 x 2.8 cm (6.1" D x 5.3" W x 1.1" H) |
| 8 CH | 15.5 x 48.26 x 4.45 cm (6.1" D x 19" W x 1.75" H) |
| 16 CH | 15.5 x 48.26 x 4.45 cm (6.1" D x 19" W x 1.75" H) |

Operating Temperature  −40° to 75°C (−40° to 167°F)

Storage Temperature  −40° to 80°C (−40° to 176°F)

Relative Humidity  0% to 95%, noncondensing

Shipping Weight

| 1 CH | <0.5 kg (1 lb) |
|---|---|
| 4 CH | <0.9 kg (2 lb) |
| 8 CH | <2.3 kg (5 lb) |
| 16 CH | <2.3 kg (5 lb) |

## CERTIFICATIONS/RATINGS

- CE, Class A
- FCC, Part 15, Class A
- UL/cUL Listed
- C-Tick
- Designed to meet NEMA TS-1/TS-2 standards and the Caltrans for traffic signal control equipment environmental standards

## RECOMMENDED ACCESSORIES

ECPS-12VDC-0.5A†  12 VDC, 0.5 A power supply for EC-1501C-M, EC-1501U-M, EC-1504C-W, and EC-1504U-W

ECPS-12VDC-3A†  EthernetConnect 12 VDC, 3 A power supply for EC-1508CL-R, EC-1508UL-R, EC-1516CL-R, and EC-1516UL-R

USRACK†  Rack-mount chassis, 14-slot, 9 VDC, 6.5 A, internal power supply, US power cord

EURACK†  Rack-mount chassis, 14-slot, 9 VDC, 6.5 A, internal power supply, EU power cord

RACK1B  Single-width blank module for empty rack slots

†Contact Pelco pre-sales support, or refer to the appropriate installation and operation manual when configuring and specifying power for a deployment.

## MODELS

### EC-1500C SERIES (COAXIAL CABLE)

**Local or Remote**

EC-1501C-M — EthernetConnect local or remote single-port coaxial extender with pass-through PoE to 15 W, EoC using coaxial cable, mini case, 12 VDC/24 VAC

EC-1504C-W — EthernetConnect local or remote 4-port coaxial extender with pass-through PoE to 15 W, EoC using coaxial cable, wall mount

**Local**

EC-1508CL-R — EthernetConnect local 8-port coaxial extender with pass-through PoE to 15 W, EoC using coaxial cable, 1 RU rack mount

EC-1516CL-R — EthernetConnect local 16-port coaxial extender with pass-through PoE to 15 W, EoC using coaxial cable, 1 RU rack mount

### EC-1500U SERIES (UTP CABLE)

**Local or Remote**

EC-1501U-M — EthernetConnect local or remote single-port UTP extender with pass-through PoE to 15 W, EoC using Cat5/Cat5e/Cat6 UTP, mini case, 12 VDC/24 VAC

EC-1504U-W — EthernetConnect local or remote 4-port UTP extender with pass-through PoE to 15 W, EoC using Cat5/Cat5e/Cat6 UTP, wall mount

**Local**

EC-1508UL-R — EthernetConnect local 8-port UTP extender with pass-through PoE to 15 W, EoC using Cat5/Cat5e/Cat6 UTP, 1 RU rack mount

EC-1516UL-R — EthernetConnect local 16-port UTP extender with pass-through PoE to 15 W, EoC using Cat5/Cat5e/Cat6 UTP, 1 RU rack mount
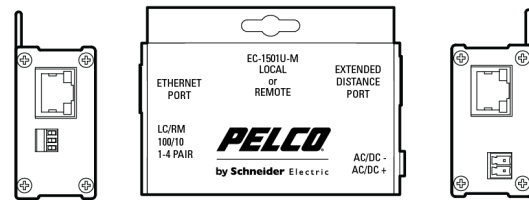
## FRONT AND REAR PANEL LAYOUTS (COAXIAL)
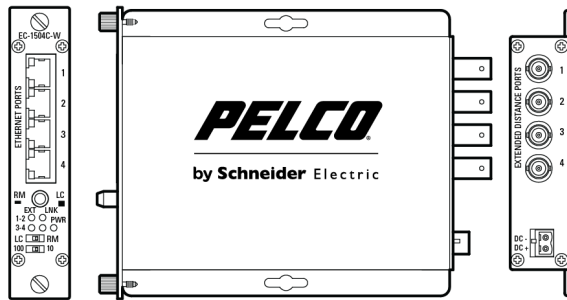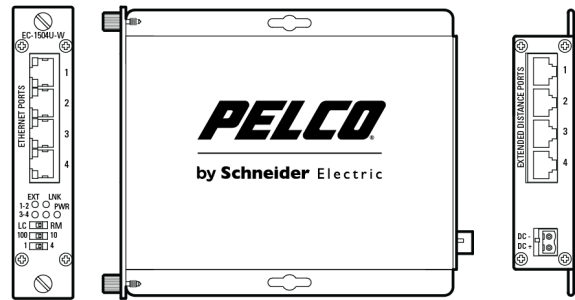
### SINGLE-CHANNEL COAXIAL UNITS



### FOUR-CHANNEL SURFACE OR RACK MOUNT COAXIAL UNITS



### MULTICHANNEL RACK COAXIAL UNITS
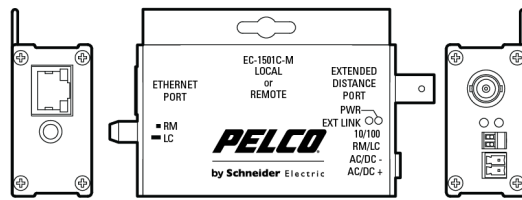


## FRONT AND REAR PANEL LAYOUTS (UTP)

### SINGLE-CHANNEL UTP UNITS



### FOUR-CHANNEL SURFACE OR RACK MOUNT UTP UNITS
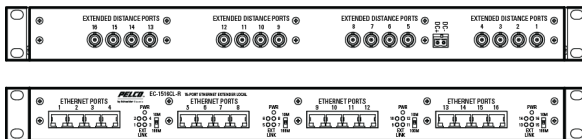


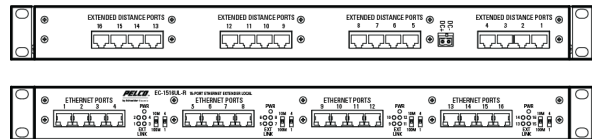### MULTICHANNEL RACK UTP UNITS