

COPPER LINE®



The ComNet™ CopperLine® Ethernet over copper line supports up to sixteen channels of 10/100Mbps Ethernet with PoE+ Power Injection and Pass-through PoE+ over twisted pair cable (CAT-5, UTP) or over coax. With the ability to connect directly to a PoE+ switch, or the ability to generate PoE+ power with a 48 to 56 V input to either the Local or Remote ends, these units provide the ultimate flexibility for extending a powered device (PD) over long distance copper. A complete set includes both a Local and Remote module. Remote units are available in small package sizes that include one or four channels, and Local modules are available in the same packages as well as a 1RU rack for larger channel counts.

FEATURES

- › Transmits individual Ethernet data channels with PoE+ Power Injection or Pass-through PoE+ over standard UTP or Coaxial cable
- › Extends Ethernet up to 3,000 feet (914 m) at 10 Mbps or 2,000 feet (610 m) at 100 Mbps over UTP cable
- › Extends Ethernet up to 5,000 feet (1,524 m) at 10 Mbps or 2,000 feet (610 m) at 100 Mbps over Coaxial cable
- › Extended temperature operation from -40°C to +75°C
- › Extended Pass-through PoE meets the IEEE 802.3at 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, 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 CALTRANS Traffic Signal Control Equipment Specifications.
- › LED status indicators confirm operating status
- › Available in small-size, ComFit interchangeable stand alone or 1RU high rack mounted models
- › Designed and manufactured in the USA
- › Lifetime warranty

APPLICATIONS

- › Retrofit existing analog CCTV installations to Ethernet-based systems
- › CCTV systems for casinos, airports, school campuses

* One Channel Units Only. Multichannel units are designed to meet NEMA TS-2 Spec.

SPECIFICATIONS

Ethernet

| | |
|----------------|---|
| Data Interface | 10/100BaseT(X) Ethernet |
| Data Rate | DIP-switch selectable 10/100Mbps Full data rate / full duplex up to the maximum rated distance |
| RFC | 2544 TCP/IP Packet Transmission |
| Standards | IEEE 802.3af/at PoE+, RFC: 768 UDP, 2068 HTTP, 793 TCP 791 IP, 1783 TFTP, 894 IP over Ethernet. |

Transmission Distances¹
Connectors

| | |
|-------------------|---|
| Ethernet | RJ-45 |
| Extended Distance | Coaxial (C): female BNC Ethernet (U): RJ-45 |
| Operating Power | Powered by PoE or 4-pin screw terminal for local power or power injection |

Power

| | |
|----------------------|---|
| Pass-Through Mode | 1 CH: Operates on PoE power or optional 9 to 36 VDC or 24 VAC, 1.5 W 4 CH: 12 to 15 VDC, 6 W 8 CH: 12 to 15 VDC, 12 W 16 CH: 12 to 15 VDC, 24 W |
| Power Injection Mode | 1 CH: 48 to 56 VDC, 30 W 4 CH: 48 to 56 VDC, 30 W 8 CH: 48 to 56 VDC, 240W & 12 to 15 VDC, 12 W 16 CH: 48 to 56 VDC, 480 W & 12 to 15 VDC, 24 W |

AGENCY COMPLIANCE

MADE IN THE
USA

LED Indicators

Operating Power
PoE Power
Ethernet Link and Activity
Ethernet Speed
Extended Link and Activity

Mechanical

| | |
|----------------------|--|
| Current Protection | Automatic Resettable Solid-State Current Limiters |
| Circuit Board | Meets IPC Standard |
| Size (L×W×H) | 1 CH: 3.3 × 2.5 × 1.1 in (8.4 × 6.4 × 2.8 cm) 4 CH: 6.1 × 5.3 × 1.1 in (15.5 × 13.5 × 2.8 cm) 8+ CH: 6.1 × 19 × 1.75 in (15.5 × 48.26 × 4.45 cm) |
| Number of Rack Slots | 1 (4CH Version Only) |
| Shipping Weight | 1 CH: <1 lbs./0.5 kg 4 CH: <2 lbs./0.9 kg 8+ CH: <5 lbs./2.3 kg |

Environmental

| | |
|-------------------|--|
| MTBF | >100,000 hours |
| Operating Temp | -40° C to +75° C UL Safety certifications conducted at maximum ambient temperatures (T _{ms}) of 65°C. |
| Storage Temp | -40° C to +80° C |
| Relative Humidity | 0% to 95% (non-condensing) ² |

[1] 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. When using UTP models Pass-Through PoE and Local PoE Injection is only possible in 4-pair mode.

ORDERING INFORMATION

| Part Number | Description | Position | Channels | Form Factor | Cable |
|-------------|-------------------------------|----------|----------|---------------------|-------|
| CLLFE1POEC | 1 Port EOC Ethernet Extender | Local | 1 | Small Size | Coax |
| CLRFE1POEC | 1 Port EOC Ethernet Extender | Remote | 1 | Small Size | Coax |
| CLLFE1POEU | 1 Port EOU Ethernet Extender | Local | 1 | Small Size | UTP |
| CLRFE1POEU | 1 Port EOU Ethernet Extender | Remote | 1 | Small Size | UTP |
| CLLFE4POEC | 4 Port EOC Ethernet Extender | Local | 4 | ComFit (1 Slot) | Coax |
| CLRFE4POEC | 4 Port EOC Ethernet Extender | Remote | 4 | ComFit (1 Slot) | Coax |
| CLLFE4POEU | 4 Port EOU Ethernet Extender | Local | 4 | ComFit (1 Slot) | UTP |
| CLRFE4POEU | 4 Port EOU Ethernet Extender | Remote | 4 | ComFit (1 Slot) | UTP |
| CLLFE8POEC | 8 Port EOC Ethernet Extender | Local | 8 | 1 RU 19" Rack Mount | Coax |
| CLLFE8POEU | 8 Port EOU Ethernet Extender | Local | 8 | 1 RU 19" Rack Mount | UTP |
| CLLFE16POEC | 16 Port EOC Ethernet Extender | Local | 16 | 1 RU 19" Rack Mount | Coax |
| CLLFE16POEU | 16 Port EOU Ethernet Extender | Local | 16 | 1 RU 19" Rack Mount | UTP |

Accessories: Unit-appropriate power supply (one each provided with each extender unit). For PoE injection sold separately 48-56VDC PSU is required.

Options: 48 Volt DC Plug-in Power Supply (extra charge, consult factory)

[2] Add suffix 'C' for Conformally Coated Circuit Boards to extend to condensation conditions (Extra charge, consult factory)

DIN-Rail Mounting Adaptor Kit - With Mounting Hardware (Optional, order model DINBKT1 or DINBKT4) (Suitable for 1CH and 4CH units only)

MAXIMUM TRANSMISSION DISTANCES¹

| Media | COAX - RG59/U | | | | UTP - 4 pair | | | | UTP - 1 pair | |
|-----------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-------------------|-------------------|
| | 10M | | 100M | | 10M | | 100M | | 10M | 100M |
| Source Power | 15W | 30W | 15W | 30W | 15W | 30W | 15W | 30W | N/A | |
| Non-PoE Max.Distance ¹ | 5,000 ft 1,524 m | | 2,000 ft 610 m | | 3,000 ft 914 m | | 2,000 ft 610 m | | 3,000 ft 914 m | 1,000 ft 305 m |
| PoE CLASS2 (6.5W) ¹ | 3,000 ft (914 m) | 3,000 ft (914 m) | 2,000 ft (610 m) | 2,000 ft (610 m) | 3,000 ft (914 m) | 3,000 ft (914 m) | 2,000 ft (610 m) | 2,000 ft (610 m) | N/A | |
| PoE CLASS3 (13W) ¹ | 750 ft (228 m) | 850 ft (259 m) | 750 ft (228 m) | 850 ft (259 m) | 750 ft (228 m) | 850 ft (259 m) | 750 ft (228 m) | 850 ft (259 m) | N/A | |
| PoE CLASS4 (25.5W) ¹ | N/A | 335 ft (102 m) | N/A | 335 ft (102 m) | N/A | 335 ft (102 m) | N/A | 335 ft (102 m) | N/A | |

[1] 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. When using UTP models Pass-Through PoE and Local PoE Injection is only possible in 4-pair mode.

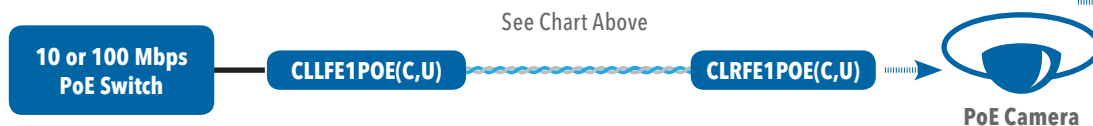
MAXIMUM TRANSMISSION DISTANCES WITH 54V INPUT (CL(L,R)FE1POEU ONLY)

| Media | COAX - RG59/U | | | | UTP - 4 pair | | | |
|---------------|---------------|-----|------|-----|--------------|-----------------|------|-----------------|
| | 10M | | 100M | | 10M | | 100M | |
| Source Power | 15W | 30W | 15W | 30W | 15W | 30W | 15W | 30W |
| PoE Up to 25W | N/A | N/A | N/A | N/A | N/A | 1000 ft (305 m) | N/A | 1000 ft (305 m) |

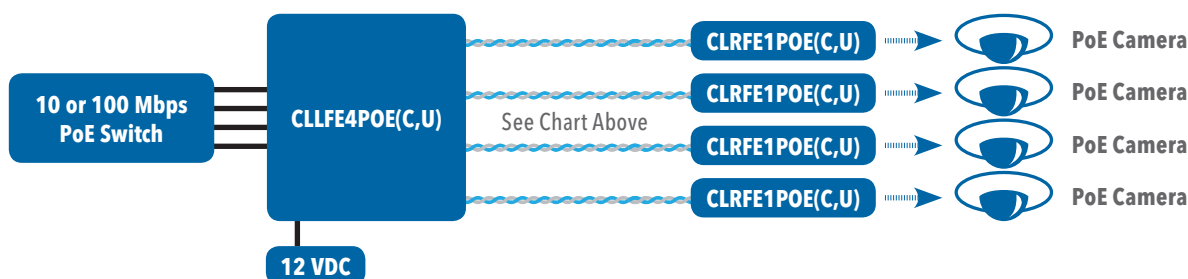
TYPICAL APPLICATIONS

- CAT-5 CABLE
- TWISTED PAIR / COAX
- PoE POWER

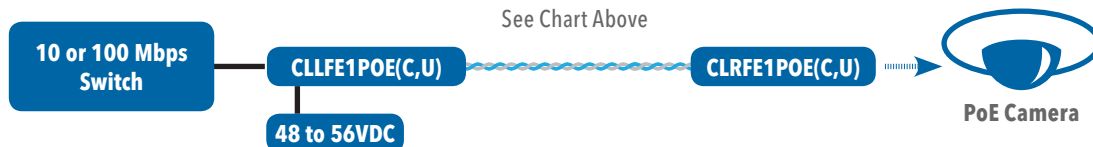
PoE Pass-Through Mode



PoE Pass-Through Mode with Multiple Remote Units



Local PoE Injection Mode



Remote PoE Injection Mode

