

**COPPERLINE**<sup>®</sup>



-40° to 75° C



EXTENDER



PASS-THRU



The ComNet CopperLine<sup>®</sup> Ethernet-over-copper minis are an ultra-small form factor addition to the ComNet CopperLine product family. These miniature remote units provide 10/100 Mbps Ethernet data with or without Pass-through PoE power over extended distance coaxial cable or UTP. Available in both standard and PoE applications, the mini CopperLine units will allow extended distance over copper to be used in applications where space is extremely limited. Automatically configured as remote units, and with user configurable selection of 10 Mbps or 100 Mbps speed these units are simple to install.

## FEATURES

- › Transmits individual Ethernet data with or without Pass-through PoE over UTP or Coaxial cable
- › Extends Ethernet up to 5,000 feet (1,524 m) at 10 Mbps or 2,000 feet (610m) at 100 Mbps over 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
- › Extended temperature operation from -40°C to +75°C
- › Extended Pass-through PoE meets the IEEE 802.3af 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, HTTP/HTTps
- › Designed to meet 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.
- › Designed and manufactured in the USA
- › LED status indicators confirm operating status
- › Can be DIN-rail mounted with optional DINBKT4 mounting kit
- › Lifetime warranty

## APPLICATIONS

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

**SPECIFICATIONS**

**Ethernet**

Data Interface	10/100BaseT(X) Ethernet
Data Rate	DIP switch selection of 10/100 Mbps Full data rate / full duplex up to the maximum rated distance
RFC	2544 TCP/IP Packet Transmission
Standards	IEEE 802.3af PoE (CLRFE1EO(C,U)P/M), RFC: 768 UDP, 2068 HTTP, 793 TCP 791 IP, 1783 TFTP, 894 IP over Ethernet.
Transmission Distances <sup>1</sup>	See chart below

**Connectors**

Ethernet	RJ-45
Extended Distance	CLRFE1EOCP/M: Pigtailed BNC CLRFE1EOCE/M: Pigtailed BNC CLRFE1EOUP/M: Pigtailed RJ-45
Operating Power	CLRFE1EO(C,U)P/M: Powered by PoE CLRFE1EOCE/M: 2-pin screw terminal

**Power**

CLRFE1EO(C,U)P/M	Runs off PoE pass-through only
CLRFE1EOCE/M	12 VDC or 24 VAC
Power Consumption	1.5 W
Current Protection	Automatic Resettable Solid-State Current Limiters

**Mechanical**

LED Indicators	Operating Power Ethernet Link and Activity Extended Link and Activity Meets IPC Standard
Circuit Board Size (L×W×H)	2.3 × 1.6 × 1.1 in (5.7 × 4.1 × 2.8 cm)
Shipping Weight	<1 lb / 0.45 kg

**Environmental**

MTBF	>100,000 hours
Operating Temp	-40° C to +75° C UL Safety certifications conducted at maximum ambient temperatures (Tma) of 65°C.
Storage Temp	-40° C to +80° C
Relative Humidity	0% to 95% (non-condensing) <sup>2</sup>

AGENCY COMPLIANCE  
FC PART 15 COMPLIANT



**MADE IN THE USA**

**MAXIMUM TRANSMISSION DISTANCES<sup>1</sup>**

Media	COAX - RG59/U				UTP - 4 pair				UTP - 1 pair	
	10M		100M		10M		100M		10M	100M
Data Rate										
Source Power	15W	30W	15W	30W	15W	30W	15W	30W	N/A	
Non-PoE Max.Distance <sup>1</sup>	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) <sup>1</sup>	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) <sup>1</sup>	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	

[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

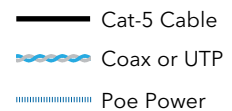
Part Number	Description	Position	Power	Pass-Through PoE	Form Factor	Cable
CLRFE1EOCE/M	Miniature CopperLine Single Channel Ethernet over Coax	Remote	12 VDC or 24 VAC	No	Mini Size	Coax
CLRFE1EOCP/M	Miniature CopperLine Single Channel Ethernet over Coax	Remote	PoE Only	Yes	Mini Size	Coax
CLRFE1EOUP/M	Miniature CopperLine Single Channel Ethernet over UTP	Remote	PoE Only	Yes	Mini Size	UTP

Accessories: Unit-appropriate power supply (one each provided with each CLRFE1EOCE/M extender unit, for benign 0 to 50°C applications only. Hardened power supply available, consult factory)

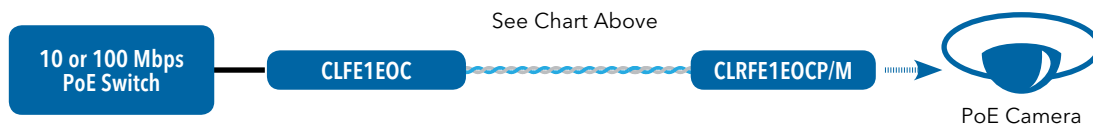
Options [2] Add suffix '/C' for Conformally Coated Circuit Boards to extend to condensation conditions (Extra charge, consult factory)  
DIN-Rail Mounting Adaptor Kit - With Mounting Hardware (Optional, order model DINBKT4)

In a continuing effort to improve and advance technology, product specifications are subject to change without notice.

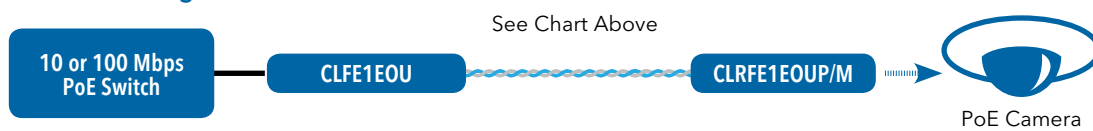
TYPICAL APPLICATIONS



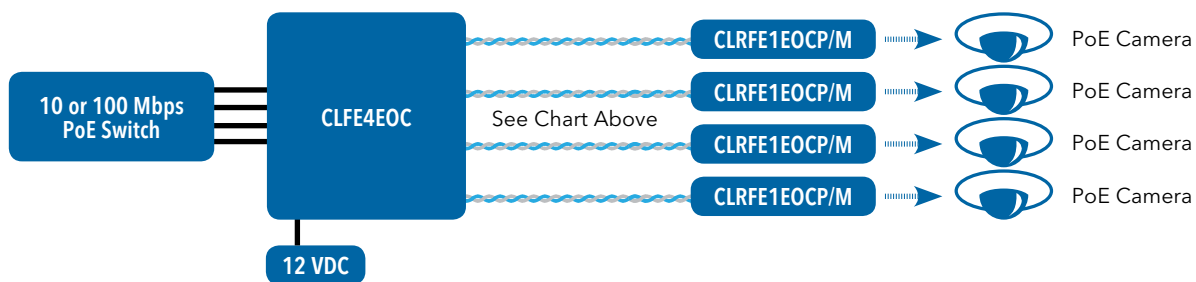
PoE Pass-Through Mode



PoE Pass-Through Mode



PoE Pass-Through Mode with Multiple Remote Units



Non-PoE Mode

