



## INSTALLATION AND OPERATION MANUAL

# COPPERLINE®

## CLRFE1EOC(E,P)/M Series

MINI ETHERNET-OVER-COPPER EXTENDER REMOTE UNITS  
POWERED BY EXTERNAL OR POE SOURCE

**This manual serves the following  
ComNet Model Numbers:**

CLRFE1EOCE/M

CLRFE1EOCP/M

The ComNet CopperLine® Ethernet-over-coax 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. Available in both standard and PoE applications, the mini CopperLine units are automatically configured as remote units.

Bi-color (Red/Green) LED indicators are provided for rapidly ascertaining equipment operating status. **Table 3** on **Page 4** describes the LED indicators for each light on the unit.

The mini CopperLine units are stand-alone with a small footprint for use where space is extremely limited. They may optionally be DIN-rail mounted by the addition of ComNet model DINBKT4 adaptor. See **Figure A** on **Page 5** for mounting instructions.

FIGURE 1 – CLRFE1EOCE/M SINGLE CHANNEL COAX REMOTE EXTERNALLY POWERED UNIT

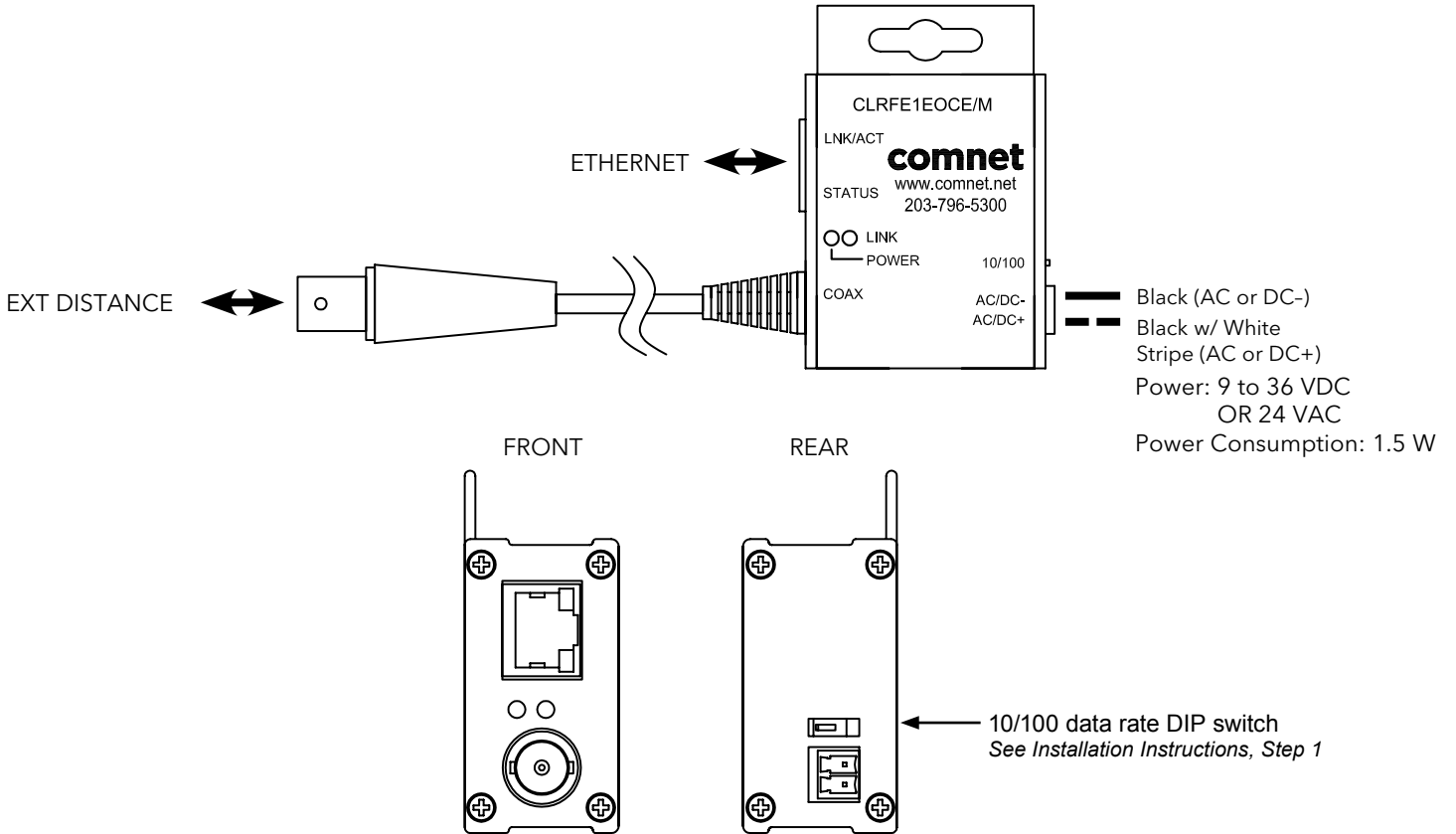
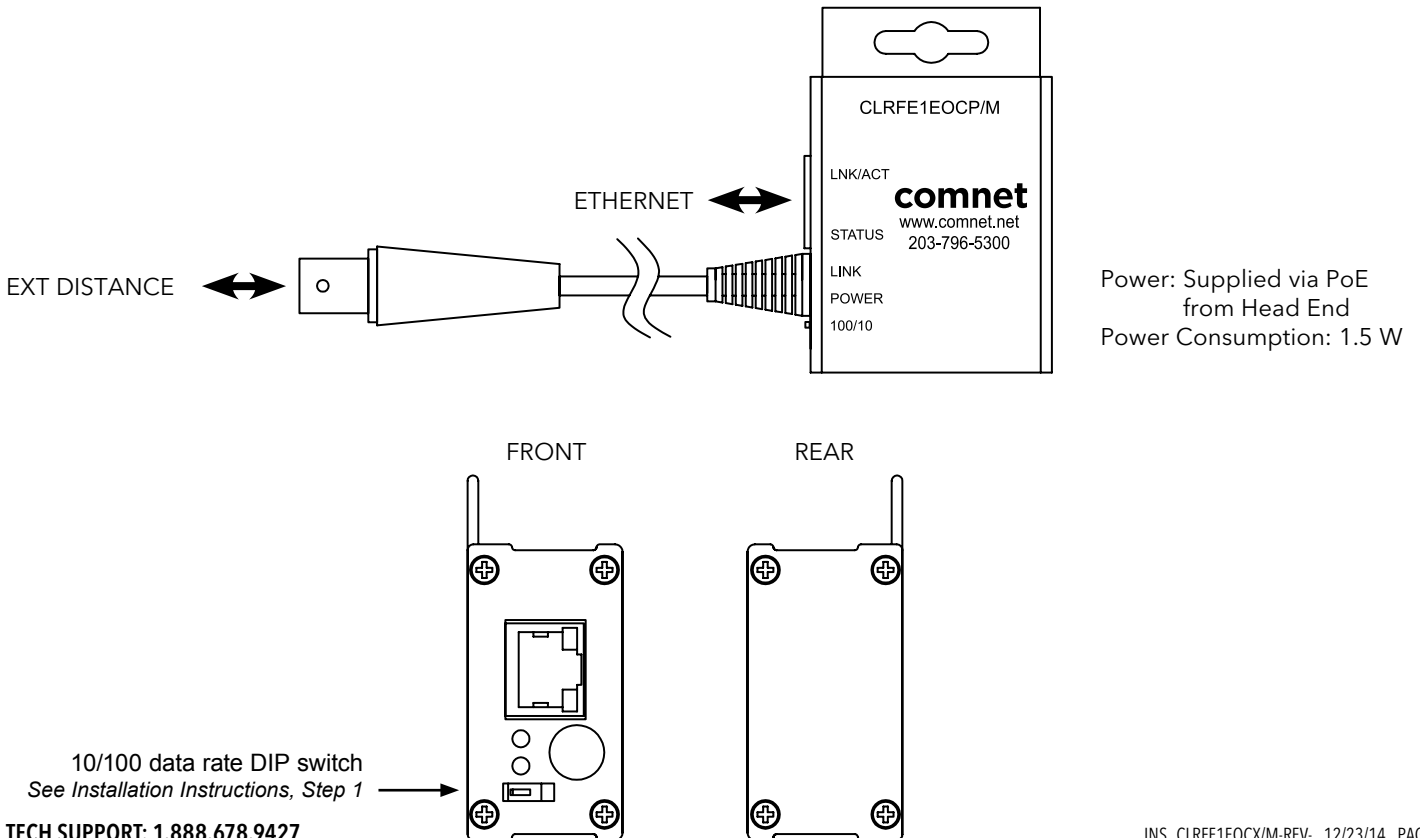
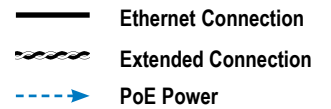


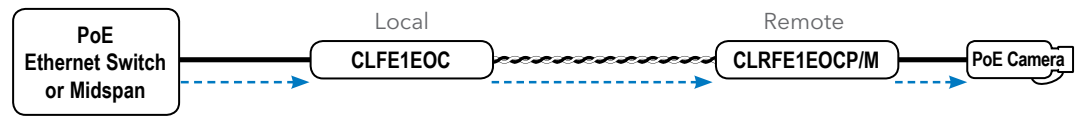
FIGURE 2 – CLRFE1EOCP/M SINGLE CHANNEL COAX REMOTE PASS-THROUGH-POE POWERED UNIT



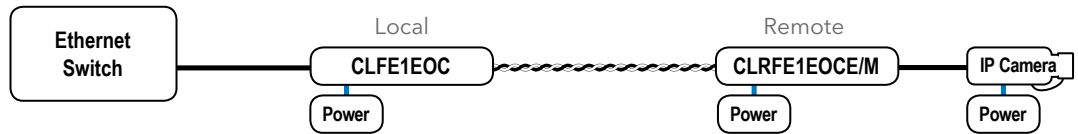
APPLICATION DIAGRAMS



PoE Pass-Through Mode



Non-PoE Mode



**IMPORTANT NOTE. PLEASE READ.** The applications 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 ComNet's Design Center to discuss your specific requirements.

APPLICATION NOTES

- 1 Mixed PoE and Non-PoE systems can be implemented.
- 2 All Non-PoE systems require local power.
- 3 PoE powered operation requires that a PoE Camera be connected, and that the camera power requirements are understood.
- 4 Lower data rates generally provide longer operating distances.

TABLE 1 – APPROXIMATE MAXIMUM EXTENDED DISTANCES<sup>1</sup>

Media	COAX - RG59/U	
Camera Data Rate	10M	100M
Non-PoE Camera <sup>1</sup>	5,000 ft 1,524 m	2,000 ft 610 m
PoE CLASS2 Camera (6.5W) <sup>1</sup>	3,000 ft 914 m	2,000 ft 610 m
PoE CLASS3 Camera(13W) <sup>1</sup> (10W in Pass-Through mode)	750 ft 228 m	750 ft 228 m

<sup>1</sup> Distance figures are based on a 50V 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/copper cable quality, the number of connectors/splices in the cable run, the use of PoE, and environmental conditions encountered within the installation may affect the actual transmission distance, and should be taken into consideration. Due to advanced negotiation signaling required in IEEE 802.3at applications, Pass-through applications are limited to IEEE 802.3af PD devices only.

**INSTALLATION INSTRUCTIONS**

**1 - SET 10/100 SWITCH**

Locate the 10/100 data rate DIP switch on the local unit.  
Set the data rate according to bandwidth required. The default setting for the data rate DIP switch is 100Mbps.  
**NOTE: The data rate must be set the same on both the local and remote units.**

**2 - SET LOCAL/REMOTE SWITCHES (1 AND 4 CHANNEL UNITS ONLY, FOR RACK UNITS SKIP TO STEP 4)**

Locate the Local/Remote Dip switch and set to “LC” at the head end.  
Locate the Local/Remote push button switch, and set to the same setting as the dip switch.  
The CLRFE1EOCE/M and CRLF1EOCP/M units are preconfigured as Remote devices.

**4 - CONNECT EXTENDED WIRING**

Connect Extended Distance Port to field wiring.

**5 - CONNECT NETWORK WIRING**

Using CAT5/5e, connect Local unit to network and Remote unit to camera.

**6 - CONNECT POWER**

Connect power to unit per the following table:

**Table 2 – Power Connections per Use Case**

Unit	Power Requirement
CLRFE1EOCE/M	9 to 36 VDC or 18 to 32 VAC Local External Power
CLRFE1EOCP/M	Provided from Head End CopperLine unit. No external power required

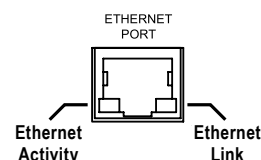
† Contact ComNet pre-sales support, or refer to the appropriate installation and operation manual when configuring and specifying power for a deployment.

**7 - VERIFY FUNCTIONALITY**

See LED table below and Troubleshooting Guide if corrective action is needed. See figures beginning on page 6 for LED configurations for each model.

**Table 3 – Indicating LEDs**

	PWR	Ethernet Link	Ethernet Activity	EXT LNK
<b>GREEN</b>	Power Applied	–	Activity Detected	10Mbps
<b>YELLOW</b>	–	Link Established	–	100Mbps
<b>OFF</b>	Power Off	No Link	No Activity	No Link



**TABLE 4 – TROUBLESHOOTING GUIDE**

Problem	Steps to Take
Indicating LEDs not lighting	Non-PoE: Check that power is properly applied to the unit PoE: Check that PoE camera is connected, PoE source is enabled.
No Communication	Check Ethernet Link LEDs, Extended Link LEDs, All Connections, Local/Remote and 10/100 switches are set properly. Verify that Local units are installed at the head end and that Remote units are installed in the field.
Bad Video	Make sure Data Rate Switch is set properly, and the extended distance is within specifications (see Table 1 – Approximate Maximum Extended Distances).
PoE Not Supplied to PD	Make sure camera is IEEE 802.3af rated, PoE Source switch is set properly, and the extended distance is within specifications (see Table 1 – Approximate Maximum Extended Distances).
Units not reaching estimated max distances over COAX or CAT5/UTP	Check extended distance cable and connections. Try connection on a short cable to eliminate possibility of faulty cabling. Check that the extended distance wire is connected to Extended Distance Port. Verify that there is no additional equipment (e.g. surge protector) on the Extended Link. The cable should be continuous from end to end, with no active components.

**INSTALLATION CONSIDERATIONS**

The CLRFE1EOC(E,P)/M is supplied as a standalone/surface mount (mini size) module. Units should be installed in dry locations protected from extremes of temperature and humidity.

**WARNING:** Unit is to be used with a Listed Class 2 power supply.

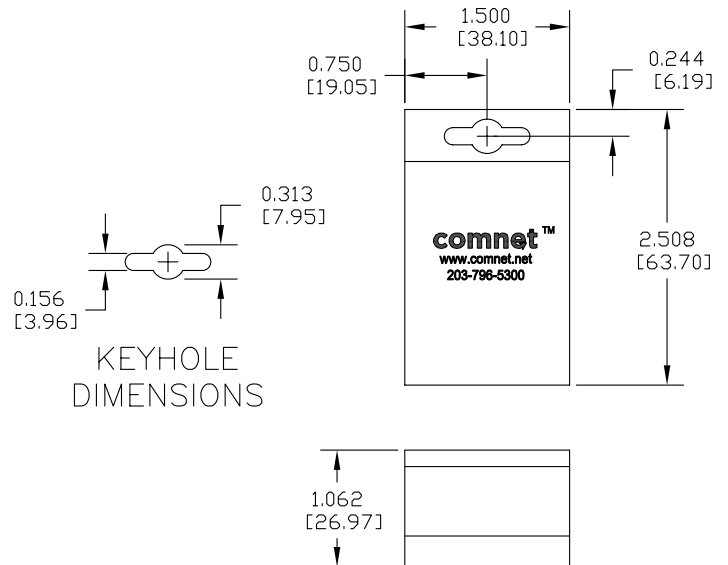
**IMPORTANT SAFEGUARDS:**

**A) Elevated Operating Ambient** - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature ( $T_{ma}$ ) specified by the manufacturer.

**B) Reduced Air Flow** - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

**FIGURE A**

*Dimensions are for a mini size module*



3 CORPORATE DRIVE | DANBURY, CONNECTICUT 06810 | USA | T: 203.796.5300 | F: 203.796.5303 | TECH SUPPORT: 1.888.678.9427 | INFO@COMNET.NET  
 8 TURNBERRY PARK ROAD | GILDERSOME | MORLEY | LEEDS, UK LS27 7LE | T: +44 (0)113 307 6400 | F: +44 (0)113 253 7462 | INFO-EUROPE@COMNET.NET

© 2016 Communication Networks. All Rights Reserved. "ComNet," the "ComNet Logo," "CopperLine," and the "CopperLine Logo" are registered trademarks of Communication Networks.