



## INSTALLATION AND OPERATION MANUAL

### CLFE(X)UTP

#### ETHERNET-OVER-UTP/TWISTED PAIR EXTENDER WITH PASS-THROUGH POE

#### Important Safety Warning:

Read and keep these directions  
Heed all warnings  
Follow all instructions  
Do not use this apparatus near water  
Clean only with a dry cloth  
Install in accordance with the manufacturer's instructions  
This installation should be made by a qualified service person and should conform to all local codes  
**See further safety instructions on Page 8**

The ComNet™ CopperLine® CLFE(X)UTP Ethernet over UTP line consists of four models that support 100Mbps Ethernet as well as Pass-through Power over Ethernet (PoE) over twisted pair cable (CAT5, UTP). These models support transmission distances of up to 3,000 feet (914m) at 10 Mbps, or 2,100 feet (640m) at 100 Mbps. The CLFE1UTP, the CLFE4UTP, CLFE8UTP and the CLFE16UTP transport, one, four, eight or sixteen channels respectively. The IEEE 802.3-compliant Ethernet electrical interface of these Ethernet extenders also meets the requirements for IEEE 802.3af PoE power, passing-through up to 30 watts of power per port to the powered device (PD). The CLFE(X)UTP series may also be used interchangeably with other CopperLine Ethernet-over-UTP extenders.

Environmentally hardened to the requirements of NEMA TS-1/ TS-2 for most out-of-plant applications, and true plug-and-play design ensures ease of installation and operation.

LED indicators are provided for rapidly ascertaining the operating status of the device. See **Figures 6 - 8** on **Page 7** for LED explanations.

Packaged in a rugged aluminum housing, these units are designed for desktop or stand-alone mounting. The CLFE8UTP and CLFE16UTP are offered in EIA 19" 1U high rack for easy installation. See **Figures A** through **C** on **Page 8** for mounting instructions.

See **Figures 1 - 8** for complete installation details.

FIGURE 1 - CLFE1UTP

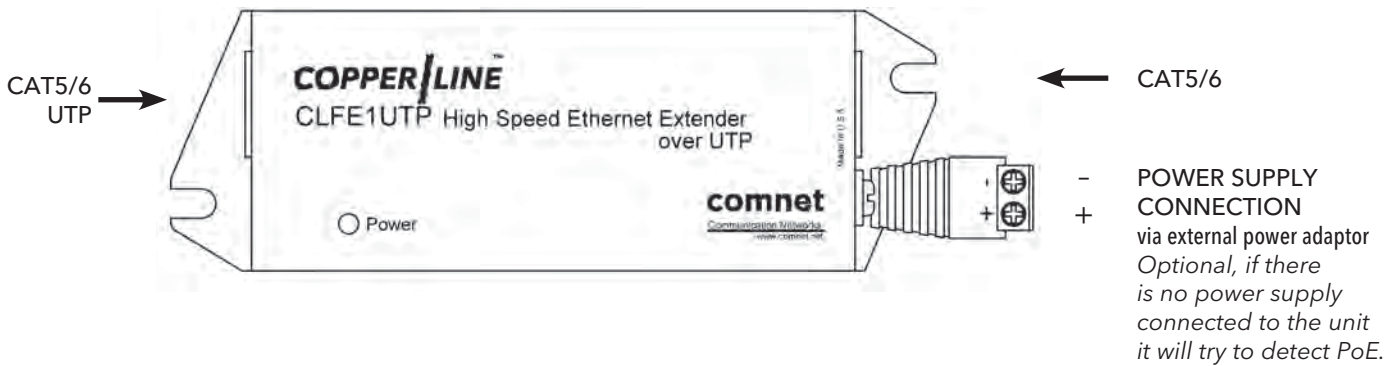
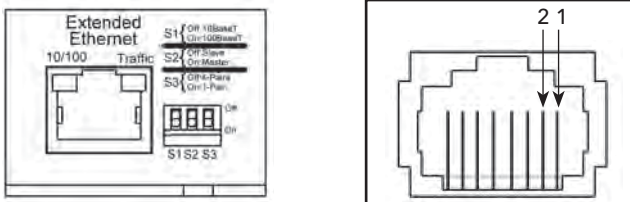


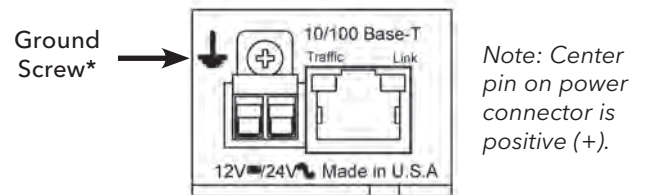
FIGURE 2 - CLFE1UTP

LEFT PANEL



For 1-pair mode, use the first pair of pins (pins 1 & 2) of the "Extended Ethernet" RJ-45 port on the left panel.  
**Note:** 4-pair mode is required for PoE.

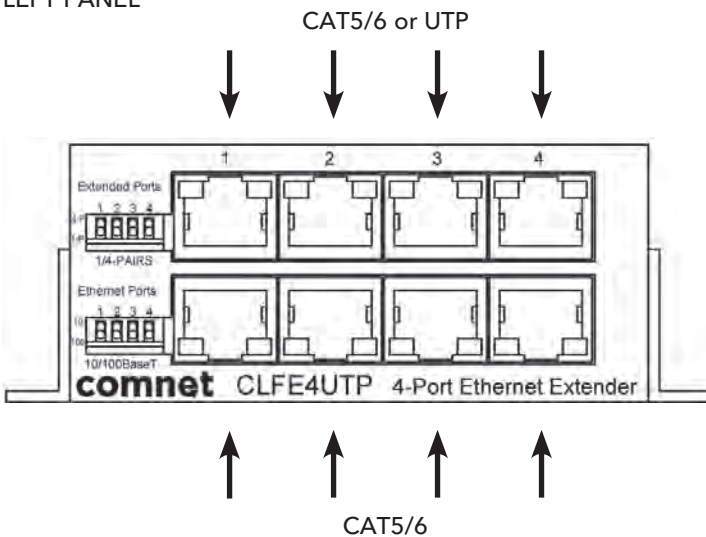
RIGHT PANEL



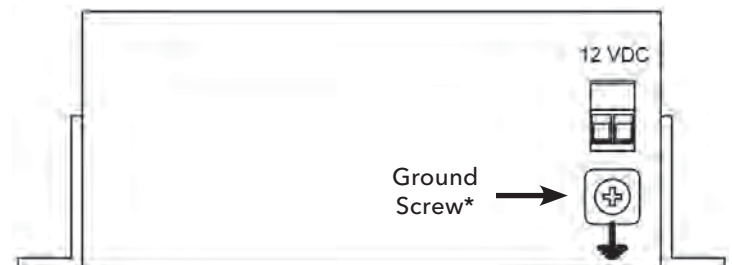
**\* WARNING:** A ground connection is required for the surge protection to work. Failure to ground properly voids the warranty and may cause damage.

FIGURE 3 - CLFE4UTP

LEFT PANEL



RIGHT PANEL



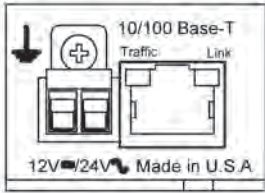
**\* WARNING:** A ground connection is required for the surge protection to work. Failure to ground properly voids the warranty and may cause damage.

## PASS-THROUGH PoE OPERATIONS FOR THE CLFE1UTP

ComNet's CopperLine CLFE1UTP extended distance IP data and PoE maintains the safety standards for communications found within the 802.3af PoE standards. This is for the protection of products operating in the extended distance transmission chain. **In the event of malfunctions the communication system is designed to shut down power transmission to avoid device damage.**

The CLFE1UTP can be powered by a local power source (12 Volts D.C. or 24 Volts A.C.) or from a single PSE source, such as a network switch's PoE port using its unique Pass-through PoE feature (4-pair mode only). This latter feature eliminates the need for CLFE1UTP local power while also providing power for the camera (See full installation instructions, Page 6).

### Powering The CLFE1UTP Transceivers



Input with  
external power  
plug installed.



External  
power adapter  
(included)

Under normal operating conditions CLFE1UTP transceivers should be powered using the PoE source. External power to the CLFE1UTP should be restricted to installations where a camera requires local power.

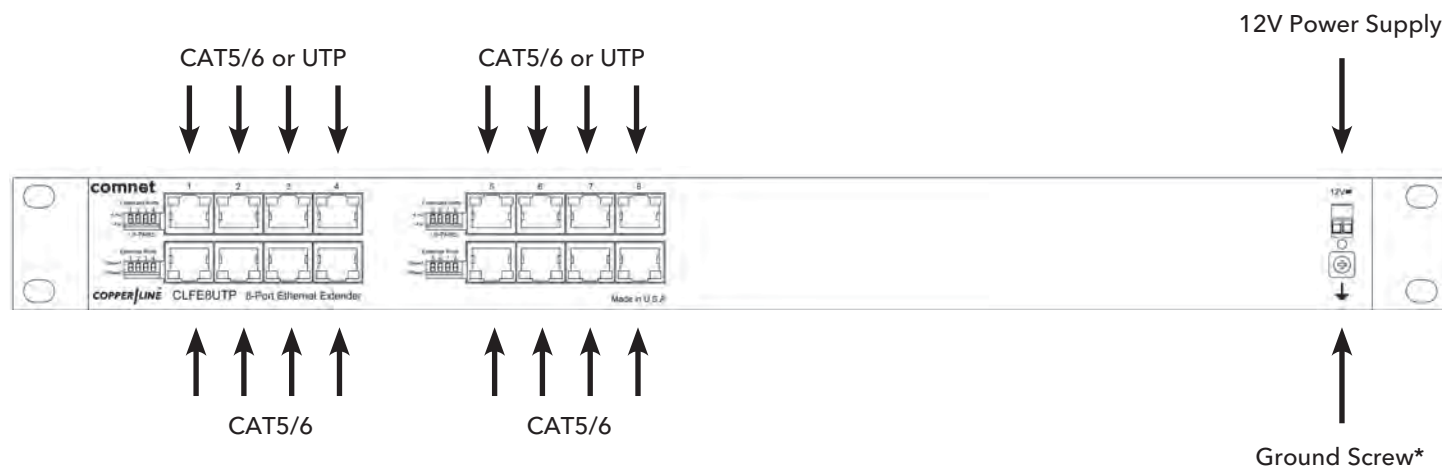
When installing the CLFE1UTP, the following conditions apply which will affect its operations.

The CLFE1UTP is provided with the ability to operate using a local external power supply. The standard accessory local power adaptor plug can be used for power supplies that do not have the CLFE1UTP's standard power input connector. When inserting the adaptor into the power input, the CLFE1UTP is only powered from a local power source and not from a PSE source. The camera will continue receiving power from the PSE source and operations will be normal.

However, if the external plug adaptor is inserted in the CLFE1UTP and no power is applied, the CLFE1UTP will not power up even if a PoE source is present, the camera will continue to receive power. In this case the CLFE1UTP is not operational and no data will flow.

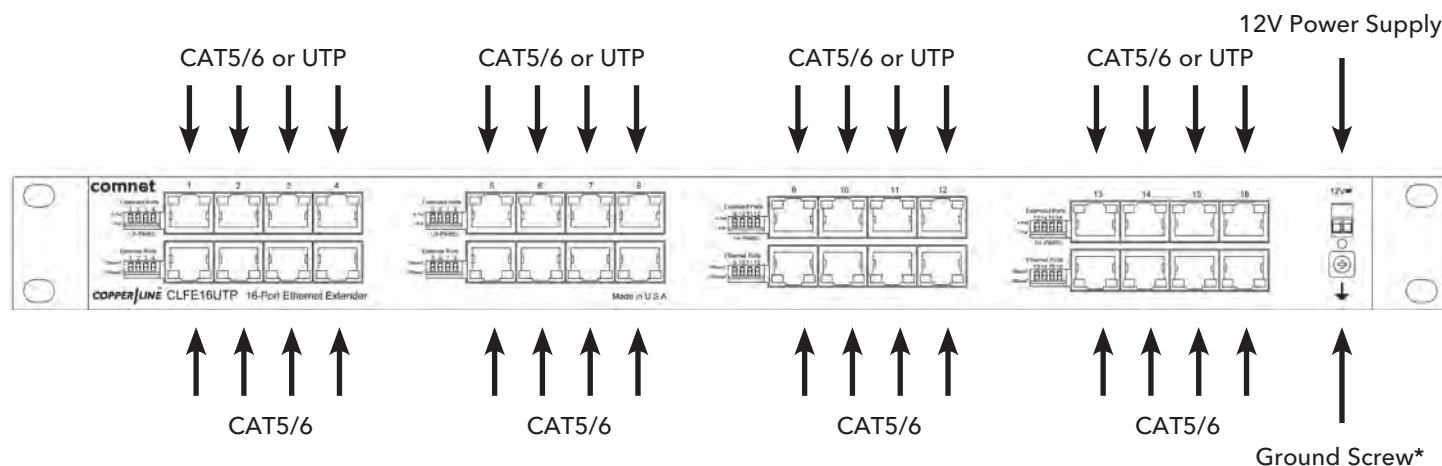
If the CLFE1UTP is externally powered and PSE power is lost, power to the CLFE1UTP must be recycled in order for the PSE to recognize the PD (Camera).

FIGURE 4 - CLFE8UTP



\* WARNING: A ground connection is required for the surge protection to work. Failure to ground properly voids the warranty and may cause damage.

FIGURE 5 - CLFE16UTP

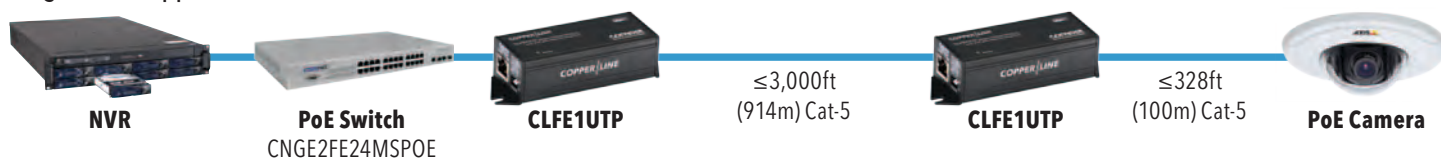


\* WARNING: A ground connection is required for the surge protection to work. Failure to ground properly voids the warranty and may cause damage.

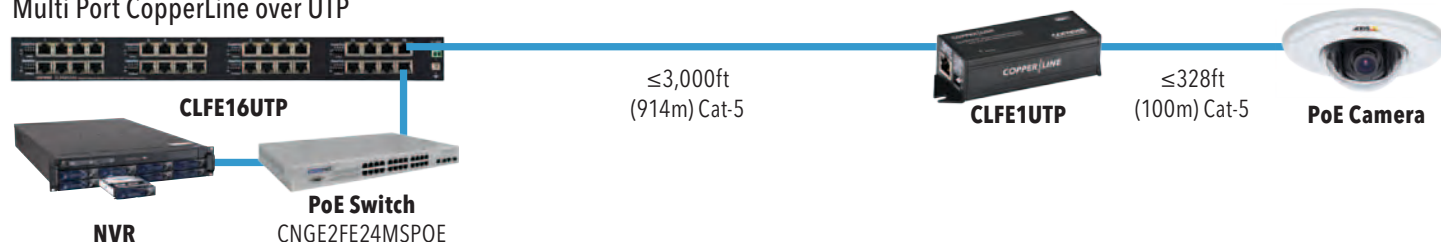
## FIGURE 6 - POSSIBLE ETHERNET CONFIGURATIONS

Multiple Configurations are possible. Consult ComNet Design Center.

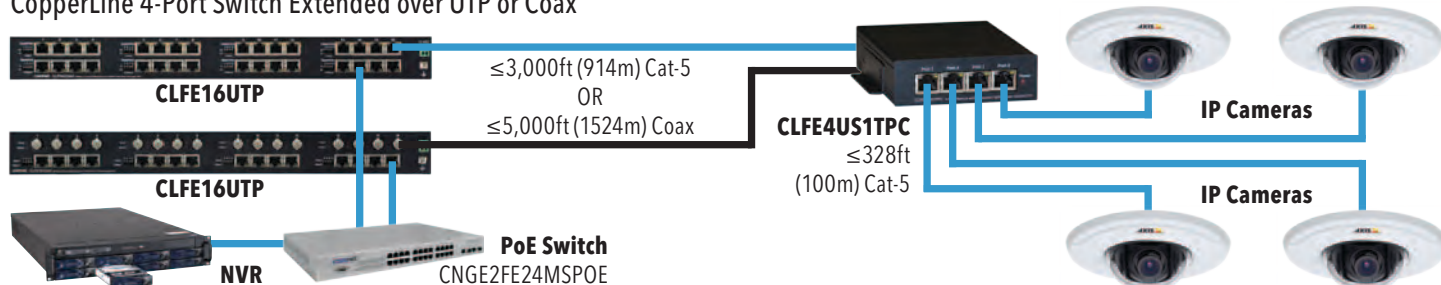
### Single Port CopperLine over UTP



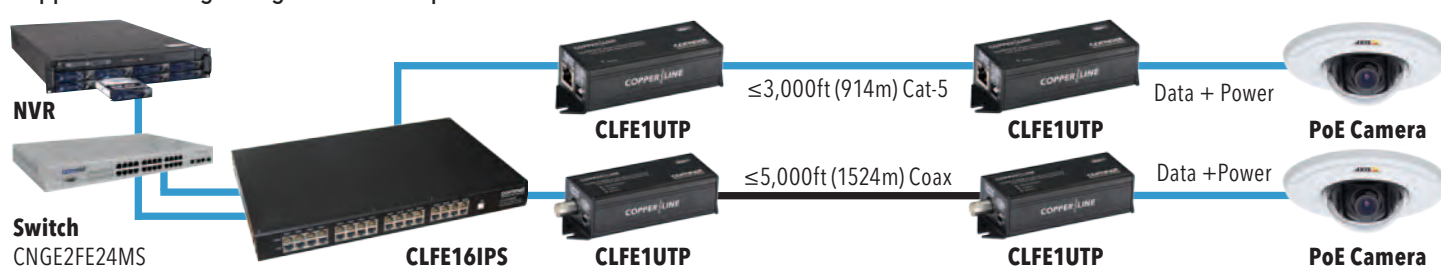
### Multi Port CopperLine over UTP



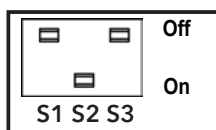
### CopperLine 4-Port Switch Extended over UTP or Coax



### CopperLine Managed High Power Midspan



## IP CAMERA-END INSTALLATION (CLFE1UTP)



Set the S1 10/100BaseT dip switch to the appropriate rate based on the required maximum data rate and maximum distance. OFF = 10BaseT; ON = 100BaseT

Set the S2 Master/Slave dip switch to ON for "Master" mode

Set the S3 1- or 4-pair dip switch ON for 1-pair or OFF for 4-pair operation.

For systems not utilizing PoE, connect the 12V Power Supply to the power connector of the CLFE1UTP. A power adapter connector is provided to simplify connection.

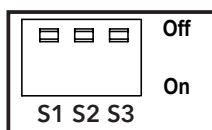
**CAUTION:** If the external power adaptor is connected with no power applied, the CLFE1UTP will not recognize the PoE source and the system will be inoperative.

Connect the IP camera RJ-45 connector to the 10/100BaseT Ethernet port of the CLFE1UTP using a standard Cat5/6 cable, 100m length (max).

Connect one end of the long UTP cable to the RJ-45 connector of the CLFE1UTP.

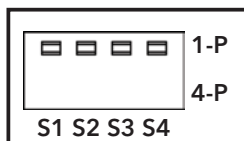
The link LED on the 10/100 connector should be "ON" to indicate proper connection between the camera and the CLFE1UTP.

## ETHERNET SWITCH/NVR-END INSTALLATION (CLFE1UTP)



Set the S2 Master/Slave dip switch to OFF for "Slave" mode

Set the S1 and S3 dip switches to match the setting on the camera-end.



### CLFE4UTP, CLFE8UTP and CLFE16UTP:

For each channel used, set the appropriate dip switches for each channel to match the camera end.

*Note: Multichannel units are preset to "Slave" mode. No adjustment required.*

For systems not utilizing PoE, connect the 12V Power Supply to the power connector of the selected CLFE(X)UTP.

Connect the RJ-45 connector of the Ethernet switch to the 10/100BaseT Ethernet port of the selected CLFE(X)UTP using a standard Cat5/6 cable, 100m length (max).

Connect one end of the long UTP cable to the RJ-45 connector of the selected CLFE(X)UTP.

The Link LED on the 10/100 Ethernet connector should be "ON" to indicate proper connection between the switch and the selected CLFE(X)UTP.

The Link LED (Red for 100BaseT, Green for 10BaseT) will be "ON" and not flashing to indicate confirmed connection between the CLFE1UTP and selected CLFE(X)UTP extenders.

FIGURE 7 - POWER LED INDICATORS

	POWER
<b>RED</b>	Power is on
<b>OFF</b>	Power is off

FIGURE 7 - EXTENDED LED INDICATORS

	TRAFFIC (Extended)	10/100BaseT
<b>GREEN</b>	-	Connection is OK, 10BaseT mode
<b>YELLOW</b>	Flashing, Traffic present	-
<b>RED</b>	-	Connection is OK, 100BaseT mode
<b>OFF</b>	No traffic	-

FIGURE 8 - ETHERNET LED INDICATORS

	TRAFFIC (Standard)	Link
<b>GREEN</b>	Flashing - Connection is OK with traffic	-
<b>YELLOW</b>	-	Connection is OK
<b>OFF</b>	No connection	No connection

INSTALLATION CONSIDERATIONS

The CLFE1UTP and CLFE4UTP are supplied as Standalone modules. The CLFE8UTP and CLFE16UTP can be installed as Standalone modules or can be rack-mounted with the addition of the provided 19-Inch Rack-Mounting Ear Brackets.

FIGURE A

Dimensions are for the CLFE1UTP standalone ComNet module

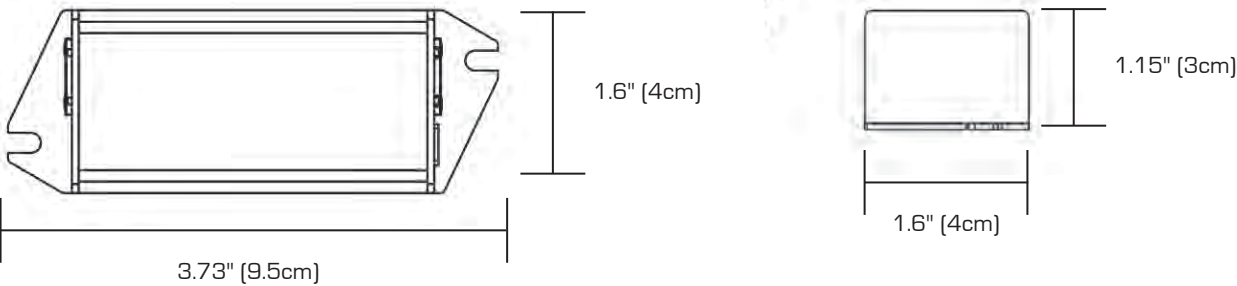


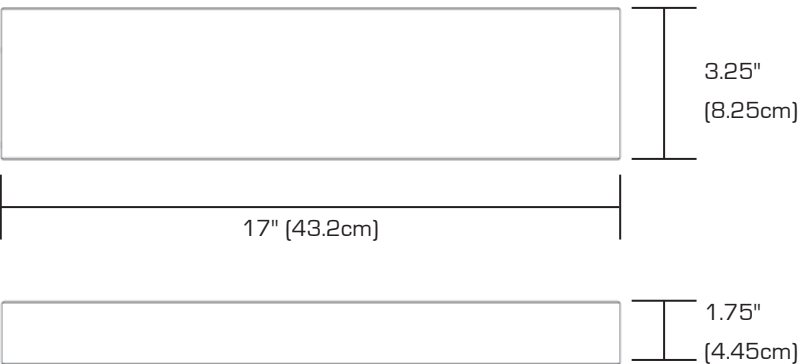
FIGURE B

Dimensions are for the CLFE4UTP standalone ComNet module



FIGURE C

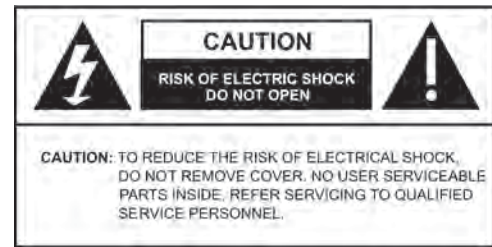
Dimensions are for the CLFE8UTP and CLFE16UTP ComNet modules





# MECHANICAL INSTALLATION INSTRUCTIONS

- Read and keep these directions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with a dry cloth.
- Install in accordance with the manufacturer's instructions.
- This installation should be made by a qualified service person and should conform to all local codes.
- DO NOT bundle UTP or Coax signals in the same conduit as high-voltage wiring.
- To reduce the risk of fire or electrical shock, do not expose these products to rain, moisture, dripping or splashing.
- No objects filled with liquids, such as vases, shall be placed on the equipment.
- DO NOT install the unit in a place where the operating ambient temperature exceeds 75°C.
- Make sure that the external power supply output voltage is in the recommended range.
- Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including DVRs) that produce heat.
- Protect the power cord from being walked on or pinched, particularly at the power source, convenience receptacles and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when a power supply cord or plug is damaged, liquid has been spilled, objects have fallen inside the apparatus, the apparatus has been exposed to rain or moisture, do not operate normally or has been dropped.
- The main plug is used as the disconnect device and shall remain readily operable.



**WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. This apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases shall be placed on the apparatus.

**WARNING:** This apparatus is a Class I product. This product must be connected to a mains socket outlet through an AC to DC power supply.

**WARNING:** The mains plug is used as the disconnect device and shall remain readily operable.

**WARNING:** For non-PoE applications, unit is to be connected to a mains socket outlet through a Listed Class I power supply rated 12 VDC or 24 VAC.

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