

pe-light-S-COAX

Art.-Nr.: 0 685 XXXXXXXXXXXXXXXX



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Allgemeine Hinweise / General information

Diese Anleitung enthält wichtige Anmerkungen und Warnungen, deren Nichtbeachtung zu ernsthaften Personen- oder Anlagenschäden führen kann. Bitte lesen Sie die Anleitung vor Inbetriebnahme der Geräte aufmerksam durch. Ordnungsgemäßer Transport, korrekte Lagerung und Installation sowie sorgfältige Bedienung und Instandhaltung sind entscheidend für den sicheren Betrieb.

Bestimmungsgemäße Verwendung

- ▶ Die Geräte dürfen nur wie in der Anleitung beschrieben verwendet werden.
- ▶ Sie dürfen nur unbeschädigt und unter den angegebenen Umweltbedingungen eingesetzt werden.
- ▶ In den Geräten befinden sich keine durch den Benutzer wartbaren Komponenten.

Personalanforderungen

- ▶ Die Installation und Inbetriebnahme der Geräte darf nur durch technisch geschultes Personal erfolgen, das sich mit dieser Bedienungsanleitung vertraut gemacht hat.
- ▶ Alle Arbeiten an elektrischen Anlagen dürfen außerdem nur durch eine Elektrofachkraft oder unter deren Leitung oder Aufsicht durchgeführt werden.
- ▶ Anzuwendende lokale und nationale Sicherheitsbedingungen müssen jederzeit eingehalten werden.

Spannungsversorgung

- ▶ Die Geräte der PE-LIGHT Produktfamilie wurden für den direkten Betrieb mit einer Netzspannung von 230V / 50Hz design.
- ▶ Sie dürfen nur durch EN 62368-1 / VDE0805-1 konforme Spannungen versorgt werden.
- ▶ Um den Spannungsabfall auf der Anschlussleitung zum Laternenmast zu minimieren, ist ein entsprechender Kabelquerschnitt zu verwenden. Die Anschlussklemmen und Kabeldurchführungen auf der Unterseite sind daher für Querschnitte bis 25 mm² ausgelegt.
- ▶ Für die Zuleitung des Switches ist ein Kabelquerschnitt von mindestens 1mm² zu verwenden. Alle Anschlussleitungen müssen der DIN EN 60332 entsprechen.
- ▶ Nehmen Sie ausschließlich unbeschädigte Teile/Geräte in Betrieb.
- ▶ Das Gerät beinhaltet keine Servicebauteile. Bei Funktionsstörungen oder Beschädigungen schalten Sie die Versorgungsspannung ab und senden Sie das Gerät zur Überprüfung an die eks Engel FOS GmbH & Co. KG.

Gehäuse

- ▶ Das Öffnen des Gehäuses bleibt ausschließlich einem autorisierten Techniker der eks Engel FOS GmbH & Co. KG vorbehalten.

Gehäusetemperatur

- ▶ Wenn die Geräte bei Umgebungstemperaturen von über 50 °C betrieben werden, kann die Temperatur der Geräte mehr als 70 °C betragen.
- ▶ Die Geräte müssen dann in einem abgeschlossenen Bereich betrieben werden, der nur dem Service-Personal zugänglich ist oder von Benutzern, die über die Gründe dieser Einschränkung und über notwendige Vorkehrungen beim Betrieb über 50 °C informiert wurden.

Sicherheit von Lasereinrichtungen

- ▶ Die Geräte enthalten LED- oder LASER-Komponenten nach IEC 60825-1:2014: Klasse 1 Laser/LED-Produkt.



Warnung!

- ▶ Nicht mit optischen Instrumenten (z.B. Linsen, Mikroskop) in den Strahl der optischen Transceiver sehen! Missachtung dieser Warnung kann zu Augenschäden führen.
- ▶ Sehen Sie nicht in den optischen Sender. Das gebündelte und abhängig von der Wellenlänge sichtbare oder unsichtbare Licht kann zu Augenschäden führen!

This manual contains important notes and warnings that could lead to serious personal and properly damage, if ignored. Please read the manual carefully prior to commissioning the devices. Correct transport, storage and installation, careful handling and maintenance of the components are critical for a safe operation.

Intended use

- ▶ The units may only be operated as described in this manual.
- ▶ They may only be used undamaged and according to the specified ambient conditions.
- ▶ The devices do not contain any components that must be maintained by the customer

Personnel requirements

- ▶ Installation and commissioning of the devices may only be performed by technically trained personnel who are familiar with this operating manual.
- ▶ All work on electrical systems may only be carried out by qualified electricians or under their direction or supervision.
- ▶ Applicable local and national safety requirements must be complied with at all times

Power Supply

- ▶ The PE-LIGHT product family was designed for the direct operation with a main voltage of 230V / 50Hz.
- ▶ They may only be fed by voltages compliant with IEC62368-1 / VDE0805-1.

- ▶ In order to minimize the voltage drop on the connecting cable to the lantern pole, an appropriate cable cross section must be used. The connection terminals and cable bushings on the underside are therefore designed for cross-sections of up to 25 mm².

- ▶ The cross-section of the cable for the supply lines to the switch have to be at least 1mm². All the cables to the switch have to comply with DIN EN 60332.
- ▶ Only put undamaged parts/devices into operation.
- ▶ The device does not contain any service components. In case of malfunctions or damages, switch off the supply voltage and return the device for an inspection to eks Engel FOS GmbH & Co. KG.

Enclosure

- ▶ Opening the housing remains the sole responsibility of an authorized technician of eks Engel FOS GmbH & Co. KG.

Case temperature

- ▶ If the devices are operated at ambient temperatures above 50 °C, their temperature may exceed 70 °C.
- ▶ The units must then be operated in a closed area accessible only to service personnel or by users who have been informed about the reasons for this restriction and about the necessary precautions for operation above 50 °C.

Safety of laser products

- ▶ The devices of the product contain LED / laser components in accordance with IEC 60825-1:2014: Class 1 laser/LED-product.



Warnung!

- ▶ Do not look into the beam of the optical transceivers with optical instruments (eg, lenses, microscope)! Ignoring this warning may result in eye damage.
- ▶ Do not look into the optical transmitter. The bundled and - dependent on the wavelength - visible or invisible light can cause eye damage.

CE-Konformität CE / Conformity

Die Geräte stimmen gemäß den Bestimmungen der **EU-Richtlinie 2014/30/EU „RICHTLINIE ... über die elektromagnetische Verträglichkeit“** mit den folgenden Normen und normativen Dokumenten in den aktuellen Fassungen überein:

DIN EN 55032: Einrichtungen der Informationstechnik Funkstör-
eigenschaften – Grenzwerte und Messverfahren
2016-02 – Klasse A
DIN EN 61000-6-2: Elektromagnetische Verträglichkeit (EMV) – Teil 6-2:
2005 Fachgrundnormen – Störfestigkeit für Industriebereiche

The devices of the agree according to the provisions of **EU Directive 2014/30/ EU "DIRECTIVE ... relating to electromagnetic compatibility"** with the following standards and normative documents in the currently valid version:

DIN EN 55032: Information technology equipment - Radio disturbance
2016-02 - Class A characteristics - Limits and methods of measurement
DIN EN 61000-6-2: Electromagnetic compatibility (EMC) – Part 6-2: Generic
2005 standards - Immunity for industrial environments

Entsorgungshinweis / Disposal notes

Die Geräte dürfen nicht mit dem normalen Hausmüll entsorgt werden, sie können bei der eks Engel FOS GmbH & Co. KG entsorgt werden.

WEEE-Kennzeichnung: DE 900 53 255



The units must not be disposed with normal household waste but can be returned to eks Engel FOS GmbH & Co. KG for disposal.

WEEE-identification: DE 900 53 255



Systembeschreibung / System description

Die Geräte der pe-light-COAX Produktfamilie sind industrielle Komplettlösungen für den Einbau in Lichtmasten aus Stahl mit den folgenden Normen in den aktuellen Fassungen:

DIN EN 40-5 Anforderungen für Lichtmasten aus Stahl
DIN 49778 Lichtmaste, Gerüstesteg mit Schiebemuttern

Der Einbau des pe-light-COAX erfolgt in einem Laternenmast mit dem Innendurchmesser von ≥ 100 mm und einem Türausschnitt von $\geq 400 \times 85$ mm. pe-light-COAX gibt es in einer Variante mit einem RJ45 Ethernet Anschluss und in einer Variante mit zusätzlichem Gigabit Ethernet-PoE Switch wovon 3 x M12 GB Ethernet Ports frei verfügbar sind.

The devices of the pe-light-COAX product family are industrial complete solutions for the installation in light poles made of steel with the following standards as amended today:

DIN EN 40-5 Requirements for steel lighting columns
DIN 49778 Lighting columns, brackets with sliding nuts for mounting of devices

The pe-light-COAX is installed in a lantern pole with the inside diameter of at least ≥ 100 mm and a door section of $\geq 400 \times 85$ mm. pe-light-COAX is available as a version with one single RJ 45 ethernet port and in a version with additional GB ethernet-PoE Switch. Three M12 GB ethernet ports can be utilized by the enduser.

Vorbereitung / Preparation

Vor dem Öffnen des Gehäuses Spannungsfreiheit herstellen! / Make sure there is no voltage before opening the housing!

Geschlossen / closed	Öffnen / opening	Mast offen / open pole
		<p>Obere Befestigungsschraube / upper mounting screw</p> <p>Untere Befestigungsschraube / lower mounting screw</p> <p>Masterdungsschraube / earth bolt</p>
<p>Schrauben lösen / release screws</p>	<p>Deckel schräg anheben / open lid</p>	<p>Deckel abheben / remove lid</p>

<p>Klemmenblock entriegeln und abheben / Release screw terminal and pick up</p>	<p>Schraube des Netzteils lösen / Release screw of the power supply</p>	<p>Netzteil nach unten schieben entnehmen / push power supply downwards and remove it</p>
		
<p>Isolierscheibe abheben / remove insulating plate</p>	<p>Zugentlastung lösen / release strain-relief</p>	<p>Kabeleinsatz abheben / remove cable break</p>
		
<p>Koaxkabel anschließen / connect COAX cable</p>	<p>Isolierschiebe wieder einlegen / reinsert insulating plate</p>	<p>Netzteil einschieben und fixieren / place power supply and tighten the screw</p>
		
<p>Klemmenblock aufrasten / mount screw terminal</p>	<p>Netzanschlusskabel anschließen / connect mains</p>	<p>Zugentlastung montieren / mount strain-relief</p>
		

Deckel schräg einsetzen / insert lid



Deckel festschrauben / fix lid



Verbindungskabel vom internen COAX Medienwandler zum Switch in einen der vier M12 GB Ethernet Ports des Switches einschrauben.
Die drei freibleibenden M12 Anschlüsse können von Kundenapplikationen genutzt werden.

Connect the ethernet cable coming from the internal COAX converter to one of the four M12 GB Ethernet ports of the switch.
The three remaining M12 ports can be utilized by the end-user.



Masteinbau / Pole installation

Sicherheitshinweis: pe-light-S-COAX ist nur für Metallmasten nach DIN EN 40 mit Türausführung nach DIN 48778 geeignet!
Security advice: pe-light-S-COAX is only suitable for metal pole according to DIN EN 40 with door according to DIN 48778!

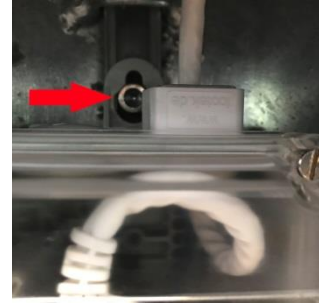
Erdungskabel anschließen /
Connect earth wire



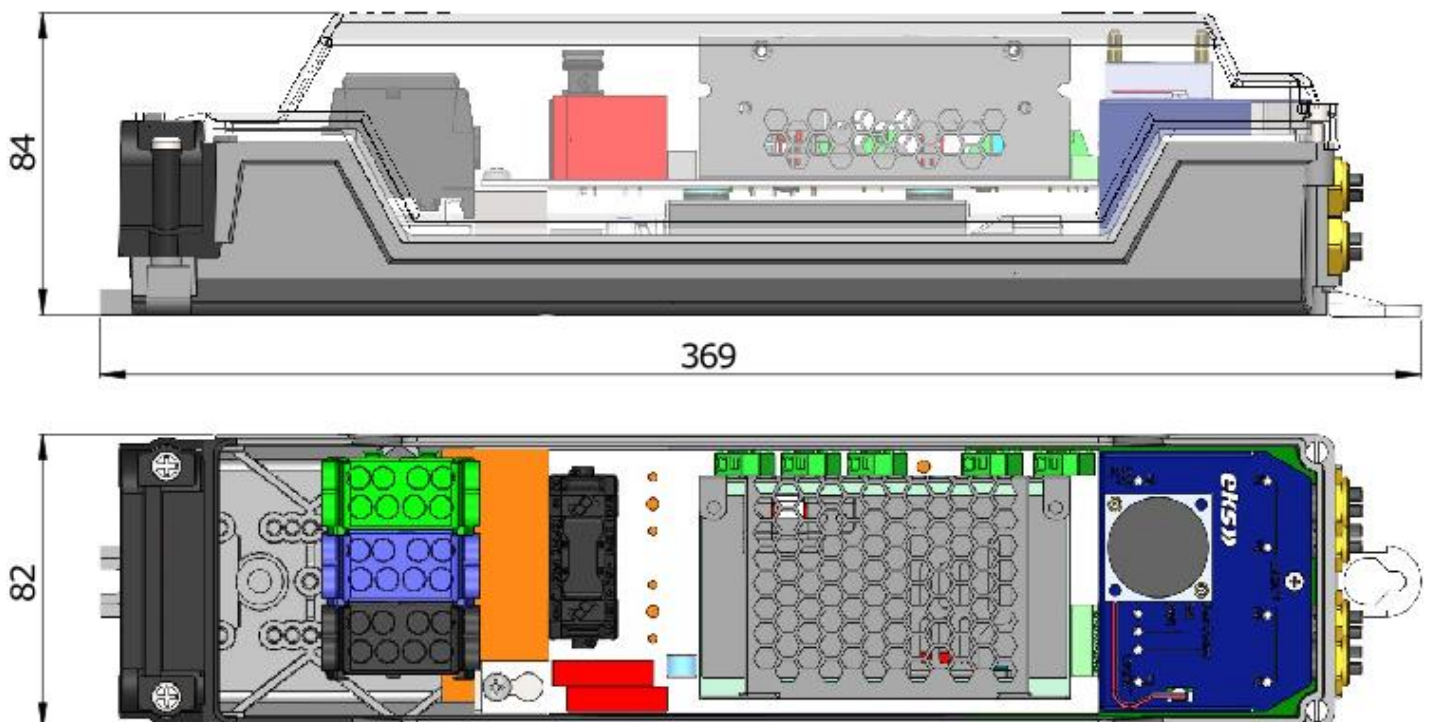
pe-light-COAX in Türöffnung setzen /
insert pe-light-COAX into the pole



Gehäuse mit beiden Befestigungsschrauben im Mast fixieren
fasten the housing with upper and lower fixing screw



Abmessungen / Dimensions



Technische Daten / Technical specifications

Bestellinformationen / Ordering information

Ausführung Type	blue	green	yellow	red				
PEL-S-COAX mit Gigabit PoE Switch managed	10008128							

Allgemeine Angaben / General information

Versorgungsspannung Operating voltage	230 VAC / 50 / 60 Hz
Leistungsaufnahme Power consumption	Max. 200 W
Potentialtrennung Potential separation	2500 VDC
Sicherung Fuse	Min. 40A²s, PoE-Switch: 2 A (z.B. Littelfuse FLM) Min. 40A ² s, PoE-Switch: 2 A (e.g. Littelfuse FLM)
Anschlussklemmen Clamp	1,5 mm² bis 25 mm² 1.5 mm ² to 25 mm ²
Befestigungsmöglichkeit Mounting options	Hakenbefestigung im Laternenmast Hook fastening in lantern pole
Betriebstemperatur Operating temperature	-20 °C bis +60 °C -20 °C to +60 °C
Lagertemperatur Storage temperature	-30 °C bis +80 °C -30 °C to +80 °C
Luftfeuchtigkeit Humidity	10-95% rHd nicht kondensierend 10-95% rHd non-condensing
EMV EMC	DIN EN 55032:2016-02 - Klasse A / DIN EN 61000-6-2:2005 DIN EN 55032:2016-02 - Class A / DIN EN 61000-6-2:2005
Gewicht Weight	1540 g
Abmessungen B x H x T Dimensions W x H x D	B: 82 mm, H: 84 mm, T: 369 mm W: 82 mm, H: 84 mm, D: 369 mm
Gehäuse / Schutzart Case / Protection class	Polycarbonat (PC GF 6-7) / IP54

Technische Änderungen vorbehalten. Für Irrtümer und Druckfehler keine Haftung. © eks Engel FOS GmbH & Co. KG
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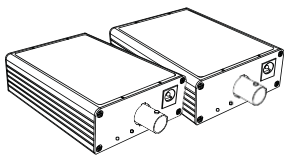
Quick Start Guide

ECP-2601T /ECP-2601R

Please read carefully the instruction manual before use. Depending on the model, the image and the actual look of the product may vary.

[Rev.1.0]

Package



ECP-2601T (Transmitter)
ECP-2601R (Receiver)



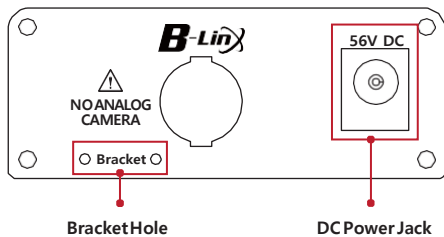
Bracket



Quick Start Guide

Hardware Overview

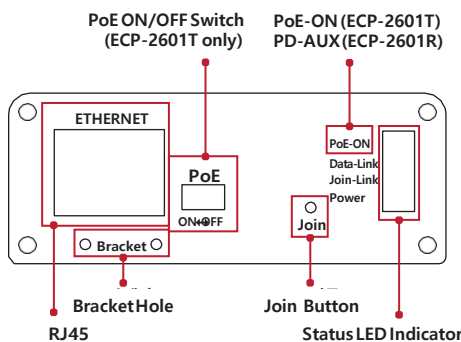
Right



Bracket Hole

DC Power Jack

Left



RJ45

Join Button

Status LED Indicator

LED Indicators

Indicator	Color	Function
PoE-ON (Tx)	Red	ON : PoE Switch On (PoE Output) OFF : PoE Switch Off
PD-AUX (Rx)	Red	ON : PoE Input or Powered by Transmitter OFF : Powered by adapter
Data-Link	Yellow	Blinking : Ethernet Data Act
Join-Link	Green	ECP-Product Link
Power	Orange	56V DC Link

Overview

This device is a High-Speed, long distance Ethernet & PoE extender that makes possible to transmit the Ethernet signal up to 2.4Km and PoE up to 1.2Km via Coax (or UTP, 2-wire) cables in different situations.

It is cost-effective and time saving solution to migrate existing analog system to IP based system since this device supports easy installation utilizing the existing cable.

With long distance transmission feature, the device makes to overcome 100 meters distance limitation easily and reduces the construction cost significantly compared with fiber optic configuration.

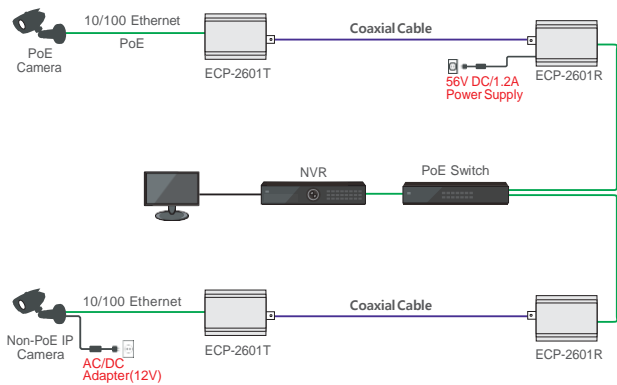
Features

- Ethernet over Coax communication following IEEE1901 Standard
- Data + Power over Coax cable (or UTP, 2-Wire)
- Data distance up to 2.4Km
- PoE distance up to 1.2Km
- Max. 95Mbps Bandwidth (270Mbps between Intercoax 2 series models)
- 10/100 Full Duplex
- 128bit AES network encryption
- Supports Multi-connection (Daisy chain, Star, etc.)
- PoE, PoE+, Extra PoE (Max. 60W output)
- Supports UTP, Telephone (2 Pairs), 2-Wire cable communication (Using BTE Series)
- LED Indication (Data, Power, Link, PoE)
- Plug & Play
- Surge Protection
- Support PoE+ Input (25.5W) from PSE devices – ECP-2601R Only
- Slim design

Installation Guide

1. Set the IP address on the camera following the instruction manual of the camera.
 - ⚠ If the camera IP is automatically assigned (DHCP, etc.), there is no need to set the camera IP separately.
2. Connect BNC of the coaxial cable to each **Transmitter/Receiver**.
3. Connect 56V DC power to **Transmitter/Receiver** first and then to AC outlet.
 - ⚠ **Receiver** can be powered by PoE Switch Device (PoE+ PD Supported) but for safe working, it recommended to use 56VDC Power supply on **Receiver**. When using both PoE switch Device and power supply at the same time, power supply works preferentially.
 - ⚠ In case of 7W camera, the device supports long distance PoE transmission up to 1,200m over RG6 coaxial cable. PoE transmission distance can be varied depending on cable type and Camera's power consumption(W).
4. When they are connected without any problem, Power / Join Link LED are on.
5. Adhere the brackets in the package to **Transmitter/Receiver** and then fix up the products.
6. Connect the UTP(LAN) cable between **Receiver** and NVR first and then between **Transmitter** and camera.
7. Turn on the PoE switch on **Transmitter** for PoE IP camera and if the camera is powered by a separate power source (not powered by PoE output feature of the **Transmitter**), turn off the PoE switch on **Transmitter**.
 - ⚠ Both **Transmitter/Receiver** send data and power together via BNC connector. **Receiver** does not have PoE support so that it can send data only via RJ45.
8. Ping test is recommended to confirm the whole network after installation.
9. Check the video signal on the monitor.

Applications



How to change the communication password (Coax/UTP/2-Wire)

All Intercoax EoC converters have the same password as factory defaults setting value and can be used immediately when connecting to the product (Plug & Play mode).

However, if a number of products are mixed in the same area or the signal transmission line is in poor condition, the communication passwords for each equipment (or group) can be set differently to prevent cross-talk between the lines.

1. Needed items for Joining

EoC Converters / Power supply / Short Cable (Coax, UTP, 2-Wire) / Paper clip

2. Product configuration

- Connect EoC Converters with Coax cable (or UTP, 2-Wire) and power to the one of the converters up with power supply.
- Check if the Power LED on both devices is ON.

3. Remove the existing password (Unjoining)

This process removes passwords that are entered as factory defaults.

- Press the Join button on one of the connected products using a paper clip until the Power LED turns off and on (Approximately 15 seconds)
- Remove the existing password by pressing the Join button on the opposite product in the same way as above.
- Join LED will be turned off if the password on the devices is removed correctly.

4. Create New Password (Joining)

New password for communication between connected devices is created and this will block the communication with other devices (or group) which have a different password.

- Press the Join button for 2 seconds on one of the connected product using a paper clip and the Join LED of the device will flicker at a constant speed. (Stand-by mode)
- Press the Join button for 2 seconds on the opposite device in the same way as above. And then, the Join LED of the device flickers at a constant speed and both devices restart at the same time.
- Then the Join-Link lights up and communications are resumed between the products

5. When adding new products in 1:N configuration to a group that has already been joined. (Group Joining)

- Connect new device to the group which is already joined. (using T-BNC or Y-UTP coupler, Terminal block)
- Remove the password of the new device in the same way as step '3-a'.
- Press Join button on the one of the device of the existing group for 2 seconds and Join LED flickers at a constant speed.
- Press Join button on the new device for 2 seconds and new device restarts
- Join-Link lights up and communications are resumed between the products.

Specification

Model		ECP-2601T	ECP-2601R
Interface	Coax	1 x 75Ω BNC (Female) - Ethernet over Coax (B-LinX)	
	Ethernet	1 x RJ45 - 10/100 Base-T with Auto-detect MDIX	
Transmission Rate		95Mbps Full Duplex (270Mbps between Intercoax devices)	
Transmission Distance	Ethernet	up to 2.4Km(RG-6)	
	PoE (PoC)	up to 1.2Km (RG-6 / 7W camera)	
LED Indication	Ethernet	1 x Data-Link (Yellow)	
	EoC	1 x Join-Link (Green)	
	Power	1 x Power On(Amber)	
	PoE	1 x PoE Out (Red)	
Encryption		128-bit AES	
Power	Input	B-LinX or DC12V~57V	PoE Switch or DC12V~57V
	PoE Output	IEEE802.3af(PoE), IEEE802.3at (PoE+), Extra PoE up to 60W	PoE Not Supported PoC Only
Mechanical	Dimension	82.4(L) x 61.6(W) x 24(H)mm	
	Weight	77g	
Environment	Operating Temp	-20 ~ 60°C	
	Storage Temp	-30 ~ 80°C	
	Relative Humidity	10% ~ 90%	
Compliance	Certification	FCC, CE, KC	
	Surge Protection	IEC 61000-4-54kV(1.2/50us), 2kA(8/20us)	
Optional Accessories		56VDC / 1.2A External Power Supply	

Caution

- Please install the device following the installation guide.
- Do not touch the device and cable with wet hands.
- Keep away from moisture and shock.
- Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus that produce heat.
- Indoor use only.
- Do not use for other purposes.
- Do not disassemble or modify this device.
- Do not put any sticker or paint on it.
- If this device is defective or malfunctioning, please unplug the power adapter immediately and contact dealer or service center.
- Please use the rated power supply for the product.
- Connect DC power to this device first and then to AC outlet.

Warranty

- This device has passed the quality control and product inspection.
- Please install and use according to the installation guide.
- The warranty period for this product is 24 months from the date of purchase.
- If this device is defective or malfunctioning, please unplug the power adapter immediately and contact dealer or service center.
- Any damages or breakage from user's abuse, accident, modification or natural disasters will not be covered manufacturer's warranty.



Intercoax Co., Ltd.

Please visit below website for more detailed information.
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 E-mail: info@intercoax.com Fax: +82. 31. 365. 3135

This device complies with part 15 of the fcc rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received including interference that may cause undesired operation