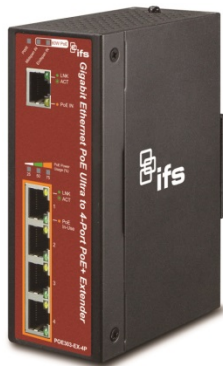


POE303-EX-4P User Manual

Figure 1: POE303-MS



1. Introduction

1.1 Packet Contents

Thank you for purchasing **IFS POE303-EX-4P- 1-Port Ultra PoE to 4-Port 802.3af/at Gigabit PoE Extender**. Open the box of the POE303-EX-4P and carefully unpack it. The box should contain the following items:

- Industrial Power over Ethernet Extender x 1
- User Manual x 1
- RJ45 Dust Cap x 5
- Wall Mounting Kit x 1

If any of these are missing or damaged, please contact your dealer immediately; if possible, retain the carton including the

original packing material, and use them again to repack the product in case there is a need to return it to us for repair.

1.2 Application Diagram

The POE303-EX-4P is designed as the repeater to forward both Gigabit Ethernet data and IEEE 802.3at PoE power, thus extending the range of PoE installation. With just plug and play and without additional power supply and setup, one single POE303-MS can increase the PoE range to 200m and drive up four remote PoE IP cameras or wireless access point.

See Figure 1.2 below.

1.3 Key Features

Physical Port

- 5-port 10/100/1000BASE-T Gigabit RJ45 interface
 - 1-port data + power input
 - 4-port data + power output

Power over Ethernet

- 1-port data + power input
 - Complies with ultra Power over Ethernet end-span and mid-span PD
 - Complies with IEEE 802.3at High Power over Ethernet end-span / mid-span PD
 - Supports PoE input power up to 60 W
- 4-port data + power output
 - Complies with IEEE 802.3af / IEEE 802.3at Power

Figure 1.2: Application Diagram



over Ethernet / end-span PSE

- Up to 4 IEEE 802.3af / 802.3at devices powered
- Supports PoE power up to 30.8 W for each PoE port
- Auto detects powered device (PD)
- Extends the range of PoE to an additional 100 meters (328ft.)
 - Forwards both Ethernet data and PoE power to remote device

Layer 2 Features

- Hardware based 10/100Mbps, half / full duplex and 1000Mbps full duplex mode, flow control, auto-negotiation, and auto MDI/MDI-X
- Features Store-and-Forward mode with wire-speed filtering and forwarding rates
- IEEE 802.3x flow control for full duplex operation and back pressure for half duplex operation
- Integrates address look-up engine, supporting 8K absolute MAC addresses
- 9K jumbo frame support in 1000Mbps duplex mode
- Automatic address learning and address aging
- Supports CSMA/CD Protocol.

Industrial Case / Installation

- IP30 aluminum case protection
- DIN rail and wall-mount design
- Supports EFT protection for 6000 VDC power, and 6000 VDC Ethernet ESD protection
- -40 to +75 °C operating temperature
- No external power cable required for installation
- Plug and Play installation

Standard Compliance

- IEEE 802.3 10BASE-T
- IEEE 802.3u 100BASE-TX
- IEEE 802.3ab 1000BASE-T
- IEEE 802.3x Flow Control
- IEEE 802.3at High Power over Ethernet
- IEEE 802.3af Power over Ethernet
- FCC Part 15 Class A, CE

Note:

PSE (Power Sourcing Equipment) is a device (switch, or hub for instance) that provides power in a PoE setup. Maximum allowed continuous output power per such device in IEEE 802.3af is 15.4W, and in IEEE 802.3at is 30W.

PD (Powered Device) is a PoE-enabled terminal by PSE and thus consumes energy, such as PoE IP Phones, PoE IP cameras, PoE wireless access points, etc.

Do not connect PSE devices to the OUTPUT of the POE303-EX-4P Extender as this may damage the unit.

1.4 Technical Specifications

Hardware Specifications

Network Connector	PoE In Port 1 x 10/100/1000BASE-T Ethernet with ultra PoE "Data + DC" in, auto MDI/MDI-X, auto-negotiation RJ45 connector PoE Out Port 4 x 10/100/1000BASE-T Ethernet with IEEE 802.3af/at PoE "Data + DC" out, auto MDI/MDI-X, auto-negotiation RJ45 connector
Switch Architecture	Store-and-Forward switch architecture
MAC Address Table	8K MAC address table with auto learning function
Data Buffer	1Mbit
Switch Fabric	10Gbps
Switch Throughput	7.44Mpps @ 64Bytes
Flow Control	IEEE 802.3x pause frame for full duplex Back pressure for half duplex
Jumbo Frame	9Kbytes
ESD Protection	6K VDC
EFT Protection	6K VDC
Enclosure	IP30 aluminum metal case
Installation	DIN rail kit and wall-mount ear
LED Display	System: PWR (Green) Power Input: Mid-span in (Green) End-span in (Green) PoE Power Usage (%): 25 (Green) 50 (Green) 75 (Green) PoE Input Port: LNK/ACT (Green) PoE in (Orange) Per PoE Output Port: LNK/ACT (Green) PoE-in-Use (Orange)
Cable	Twisted-pair cable: 10BASE-T: 2-pair UTP Cat. 3,4,5, up to 100 m 100BASE-TX: 2-pair UTP Cat. 5, 5e up to 100 m 1000BASE-T: 4-pair UTP Cat. 5e,6 up to 100 m
Dimensions (W x D x H)	135 x 87.8 x 56 mm
Weight	715 g
Power Consumption	60 W / 204.6BTU (Full loading with PoE function)
Power over Ethernet	
PoE Standard	PoE in Port IEEE 802.3at High Power over Ethernet end-span / mid-span PD class 4 PD Per PoE Out Port IEEE 802.3at High Power over Ethernet end-span PSE IEEE 802.3af Power over Ethernet end-span PSE
PoE Power	PoE in Port 50 to 57 VDC, max. 60 W

	Per PoE Out Port 44 to 55 VDC, max. 30.8 W
Power Pin Assignment	PoE in Port 1/2(+), 3/6(-); 4/5(+), 7/8(-)
	Per PoE out Port 1/2(+), 3/6(-)
PoE Power Budget	50 W (max.) @ Ultra PoE input 20 W (max.) @ IEEE 802.3at PoE+ input No support @ IEEE 802.3af PoE input
Standards Conformance	
Regulation Compliance FCC Part 15 Class A, CE	
Stability Testing	IEC60068-2-32 (Free fall)
	IEC60068-2-27 (Shock)
	IEC60068-2-6 (Vibration)
Standards Compliance	IEEE 802.3 Ethernet
	IEEE 802.3u Fast Ethernet
	IEEE 802.3ab Gigabit Ethernet
	IEEE 802.3x Flow Control
	IEEE 802.3af Power over Ethernet
	IEEE 802.3at High Power over Ethernet
Environment	
Operating	Temperature: -40 to +75 °C Relative Humidity: 5 to 95% (non-condensing)
	Storage

1.5 Power over Ethernet Budget

The following table lists how many PoE devices can be powered by POE303-EX-4P:

Power Source	PoE Output Budget*	Max. Number of PDs supported
IFS Ultra PoE PSE	50 W max.	Class 4 PD @ 25 W 2 units
		Class 3 PD @ 15-watt 3 units
		Class 2 PD @ 7 W 4 units
IEEE 802.3at PoE+ PSE	20 W max.	Class 4 PD @ 25 W 0
		Class 3 PD @ 15 W 1 unit
		Class 2 PD @ 7 W 2 units
IEEE 802.3af PoE PSE	10 W max.	Class 2 PD @ 7 W 1 unit

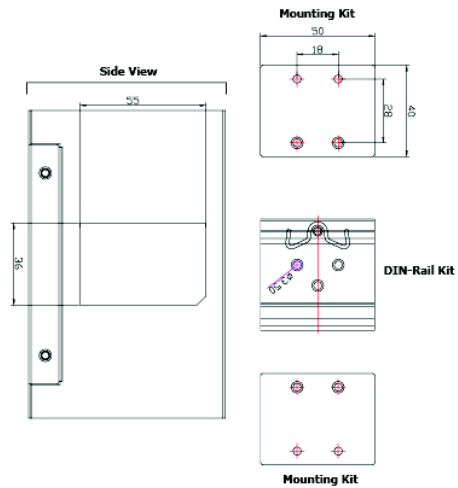
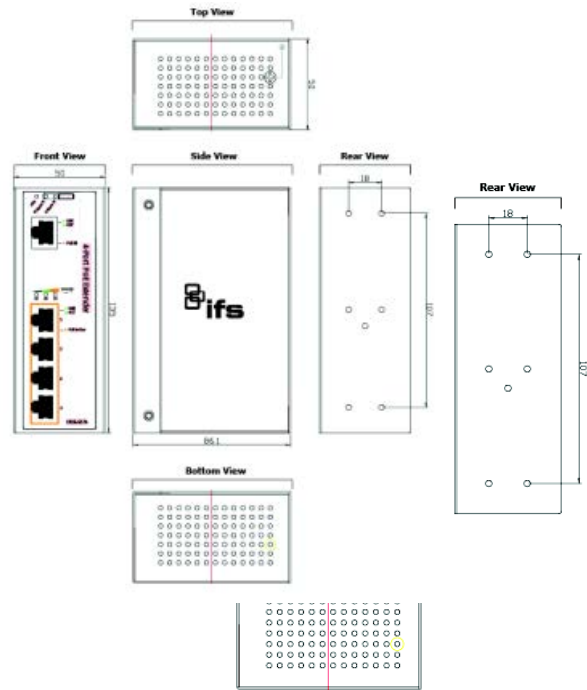
Remarks:

- The PoE Output Budget means the 4-port PD aggregated power output. The aggregated power consumption will be below 50 W if with Ultra PoE PSE.
- Please check the power input LED (60 W PoE) for optimal power output. Both mid-span and end-span LEDs should be turned on for maximum capability.

2. Installation

2.1 Physical Dimensions

POE303-EX-4P 1-port Ultra PoE to 4-port 802.3af/at Gigabit PoE Extender dimensions (W x D x H): 135 x 87.8 x 56 mm

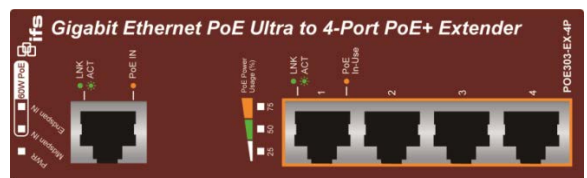


Dimensions (unit = mm)

2.2 Front Panel

Figure 2-1 shows the front panel of Industrial Power over Ethernet Extender.

Figure 2-1: POE303-EX-4P Front Panel



- **System**

LED	Color	Function
PWR	Green	Light to indicate POE303-EX-4P has power.
Midspan IN	Green	Light to indicate POE303-EX-4P is working in mid-span mode and offers up to 30-watt power.
Endspan IN	Green	Light to indicate POE303-EX-4P is working in end-span mode and offers up to 30-watt power.

- **PoE Input Port**

LED	Color	Function
		Light to indicate the port is linked up.
LNK/ACT	Green	Blink to indicate that the POE303-EX-4P is actively sending or receiving data over that port.
PoE In	Orange	Light to indicate POE303-EX-4P has power.

- **Per PoE Output Port (Port 1 ~ 4)**

LED	Color	Function
		Light to indicate the port is linked up.
LNK/ACT	Green	Blink to indicate that the POE303-EX-4P is actively sending or receiving data over that port.
PoE In-Use	Orange	Light to indicate the port is providing PoE power. OFF to indicate the connected device is not a PoE Powered Device (PD).

- **PoE Power Usage (%) This indicator is for indication of usage by % only.**

LED	Color	Function
25	Green	Light to indicate the system is providing >25% PoE power usage.
50	Green	Light to indicate the system is providing >50% PoE power usage.
75	Green	Light to indicate the system is providing >75% PoE power usage.

2.3 Mounting Installation

This section describes how to install the Industrial Power over Ethernet Extender and make connections to it. Please read the following topics and perform the procedures in the order being presented.

Note: In the installation steps below, this Manual uses NS3503-16P-4C (IFS 16 Port Industrial Gigabit Switch) as an example. However, the steps for IFSIFS Industrial Power over Ethernet Extender are similar.

2.3.1 DIN-rail Mounting

Place the Industrial Power over Ethernet Extender on the DIN rail, which is mounted on the wall, and screw it. Just follow the steps below to install the Extender.

Step 1: Lightly insert the bottom of the switch into the track.



Step 2: Check if the DIN rail is tightly on the track.



Please refer to the following procedures to remove the Industrial Power over Ethernet Extender from the track.

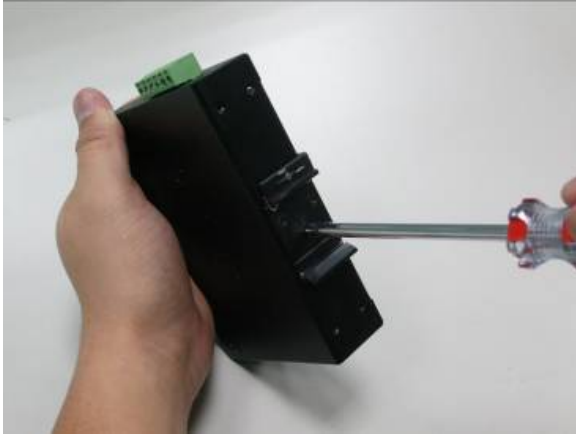
Step 3: Lightly remove the DIN rail from the track.



2.3.2 Wall-mounted Plate Mounting

To mount the Industrial Power over Ethernet Extender on the wall, please follow the instructions described below.

Step 1: To remove the DIN rail from the Industrial Power over Ethernet Extender, loosen the screws.



Step 2: Place the wall-mount plate on the rear panel of the Industrial Power over Ethernet Extender.



Step 3: Use the screws to screw the wall-mount plate on the Industrial Power over Ethernet Extender.

Step 4: Use the hook holes in the corners of the wall-mount plate to hang the Industrial Gigabit Ethernet Switch on the wall.

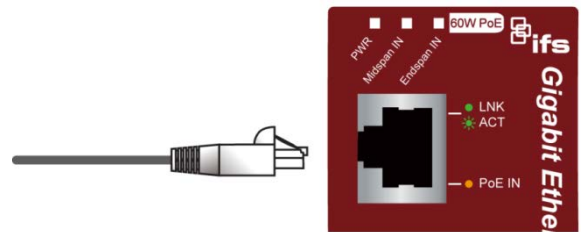
Step 5: To remove the wall-mounted plate, reverse the steps above.

2.4 Connecting POE303-EX-4P to Power Source Equipment (PSE)

This section describes how to install the Industrial Power over Ethernet Extender and make connections to it. Please read the following topics and perform the procedures in the order being presented.

There are five RJ45 ports in the Industrial Power over Ethernet Extender, of which the "PoE IN" port functions as "PoE (Data and Power) input" and the "PoE In-Use" port on the other side functions as "PoE (Data and Power) output".

Step 1: Connect a standard CAT-5e/6 UTP cable from **Power Source Equipment (PSE)**, such as PoE Switch, PoE injector hub and single port PoE injector, to the "PoE IN" port of the POE303-EX-4P.



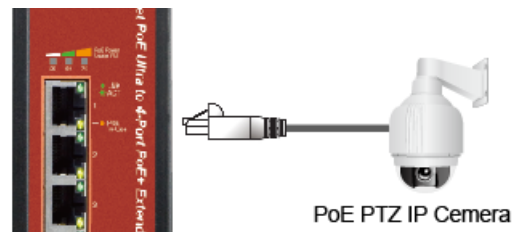
Step 2: The PSE delivers both Ethernet Data and PoE power over UTP cable to the POE303-EX-4P and the "PoE IN" LED will be lit steadily.

Note:

1. When the LED turns steady green, it means the POE303-EX-4P is being powered successfully with PoE.
2. If the LED is not lit, please check the remote PSE or the cable connecting to a PC or a network device to see if the cable is correct. Or with an 802.3at device such as the target PD, check whether the power injection is correct.
3. Never connect any non-standard POE PSE to the POE303-EX-4P. It will damage the device permanently.

2.5 Connecting POE303-EX-4P to Powered Device (PD)

Step 1: Connect the additional CAT-5e/6 cable that will be used to connect to the remote **Powered Device (PD)** to the "PoE In-Use" port of the POE303-EX-4P.



Step 2: The "PoE In-Use" port is also the power injector which transmits DC voltage to the CAT-5e/6 cable and transfer data and power simultaneously between the PSE and PD.

Step 3: Once the POE303-EX-4P detects the existence of an IEEE 802.3af/at device, the "PoE In-Use" LED indicator will be lit steadily, showing it is providing power.

Note:

1. If the connected device is not fully complying with IEEE 802.3af/at standard or in-line power device, the PoE In-Use LED indicator of the POE303-EX-4P will not be lit steadily.
2. According to IEEE 802.3af/at standard, the POE303-EX-4P will not inject power to the cable if not connecting to a standard IEEE 802.3af/at device.
3. DO NOT connect any PSE to the OUTPUT ports 1~4 of the POE303-EX-4P, it may damage the device permanently.

3. Customer Support

Thank you for purchasing IFS products. You can browse our online FAQ resource and User's Manual on IFS Web site first to check if it could solve your issue. If you need more support information, please contact IFS support team.



IFS online FAQ:

<http://www.Interlogix.com>

IFS support team mail address:

www.interlogix.com/support

Regulatory information

Copyright	© 2016 United Technologies Corporation. Interlogix is part of UTC Climate, Controls & Security, a unit of United Technologies Corporation. All rights reserved.
Manufacturer	Interlogix. 2955 Red Hill Avenue, Costa Mesa, CA 92626 5923, USA Authorized EU manufacturing representative: UTC Fire & Security B.V. Kelvinstraat 7, 6003 DH Weert, The Netherlands
FCC compliance	Class A: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
FCC conditions	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. (2) This Device must accept any interference received, including interference that may cause undesired operation.
ACMA compliance	Notice! This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.
Canada	This Class A digital apparatus complies with CAN ICES-003 (A)/NMB-3 (A). Cet appareil numérique de la classe A est conforme à la norme CAN ICES-003 (A)/NMB-3 (A).
Certification	 
European Union directives	12004/108/EC (EMC directive): Hereby, UTC Fire & Security declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 2004/108/EC.



2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info.



2013/56/EU & 2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info.

Trademarks and patents

The trade names used in this document may be trademarks or registered trademarks of the manufacturers or vendors of the respective products.

Contact information

For contact information, see www.interlogix.com or www.utcssecurityproducts.eu.