

# Operations Manual



## PDT-PEX-7004-PP-I

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## 2. Abbreviations

Abbreviation	Description
AP	Access Point
CCA	Copper-Clad Aluminium
DC	Direct Current
IEEE	Institute of Electrical and Electronic Engineers
IP	Internet Protocol
MTBF	Mean Time Between Failures
PD	Power Device
PSU	Power Supply Unit

## 3. Safety Information

### 3.1 General Safety Information

#### **WARNING**

Only trained and authorised personnel should be permitted to work on this equipment. It is assumed that those using this guide are competent to work on equipment of this nature and will take appropriate precautions when working with the fault analysis guide.

All devices should be inspected upon receipt for signs of physical damage, which may in turn, affect operational performance, or the overall safety of the unit. Any damaged items should be returned to Parallax Digital Technologies Ltd for safety checks.

Parallax Digital Technologies accepts no responsibility for any injury or loss caused by unsafe or inadequate working practices, or for work carried out by an unauthorised third party.

To prevent possible danger, damage, and bodily harm when handling the equipment, please observe all warnings, cautions notices contained in this section. Failure to heed the following danger, warnings, and cautionary statements could lead to serious injury or death.

### 3.2 DC Power Supply

#### **WARNING**

The Unit should be mains-fed using a DC Power Supply using an appropriately rated cable assembly, which is protected internally at the power supply device itself. If the device is to be fed from an alternative power source, then the appropriate circuit protection device should be used to ensure that the supply circuit is interrupted, in the event that a fault in the device causes too much current to flow into it, causing an unsafe condition.

## 4. Packing List

The following items are included in the shipping carton:

- 1 x PDT-PEX-7004-PP-I Industrial PoE Extender
- 1 x DIN Rail Mounting Kit (Fitted)
- 1 x Wall Mounting Kit
- Operation & Maintenance Manual (May be electronically supplied)
- Declaration of Conformity (May be electronically supplied)

## 5. Product Overview

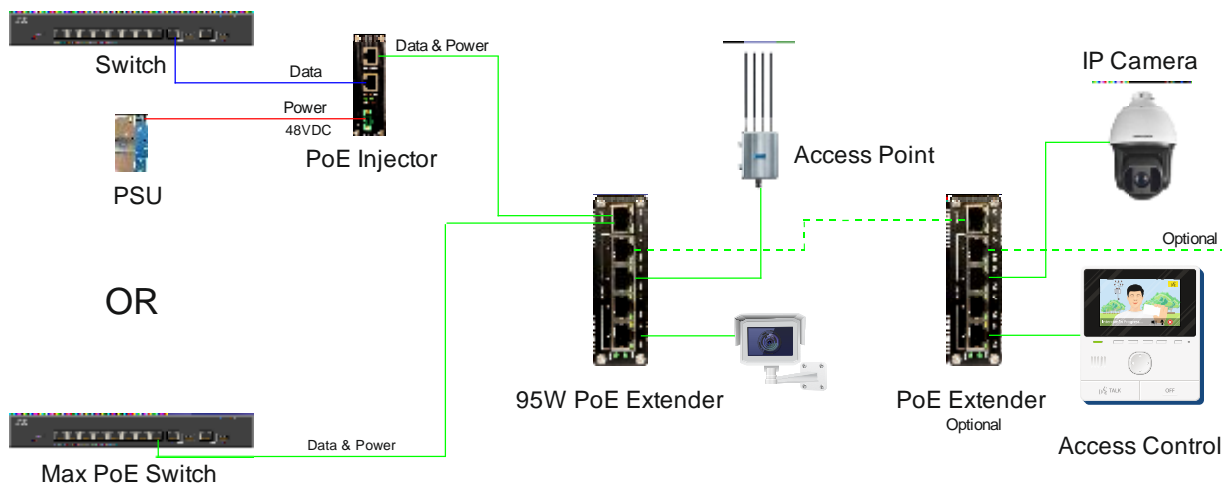
The PDT-PEX-7004-PP-I is a hardened 4 Channel Gigabit Ethernet PoE Extender which facilitates connectivity for IEEE 802.3 af/at devices, such as cameras, access points, and other PoE devices, up to a range of 100m from the device, and in locations where there is no power source available.

The device is powered from a remote power source with PoE+/++ capability (IEEE 802.3at/bt), and this can be extended, in a daisy chain configuration, up to 400m.

The device has 4 access ports which are IEEE802.3af/at compatible (max total PoE load 75W) and has one 10/100/1000 RJ45 Port which receives the data and power feed from the host device from a PoE power source up to 95W.

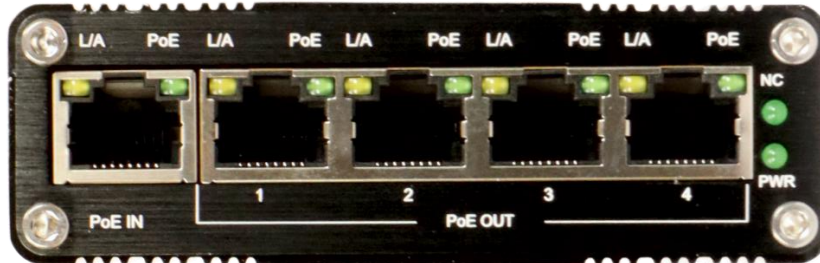
The unit is designed for use in harsh industrial environments, and incorporating a rugged aluminium housing, it can be operated across a wide temperature range (-40°C to +80°C) making it suitable for most conditions.

A typical application setup can be seen in the following diagram:



## 6. Connectors and Indicators

### Front Panel



#### 6.1 LED Indicators

The Front Panel LEDs display the status of the switch and the associated port connections as indicated in the table below:

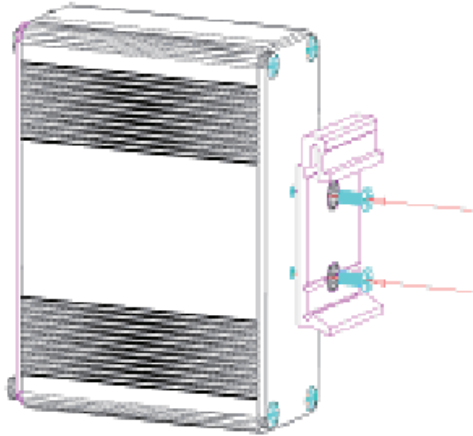
LED	Name	Colour	State	Status
PWR	Power	Green	OFF	Unit Power Off
			ON	Unit Power On
L/A	Link Activity	Yellow	OFF	No Link
			On/ Flashing	100/1000Mbps
PoE	PoE Output Power	Green	OFF	PoE Output On
			ON	PoE Output Off
NC	Not Used	Green	OFF	Not Used
			ON	Not Used

#### 6.2 RJ45 Ports

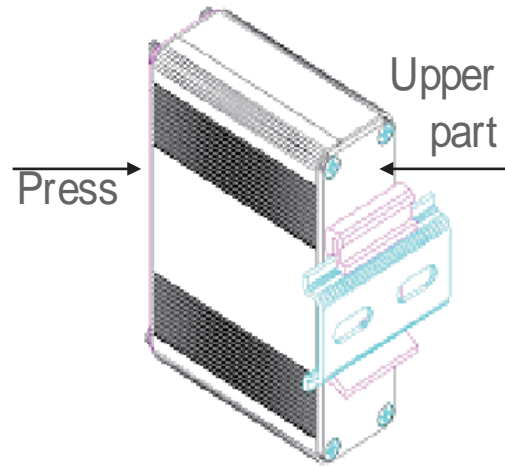
The Front Panel has 5 RJ45 Ports. The first port, labelled 'PoE IN', is the supply port where data and power from a PoE+ Power Sourcing Equipment (PSE device), which can be a PoE+ switch or a PoE+ PoE Injector device. The remaining 4 ports are access ports, which can provide data and PoE output power up to a maximum of 25W per channel and 25W in total across all 4 RJ45 ports.

## 7. Installation Procedures

### 7.1 DIN Rail Installation

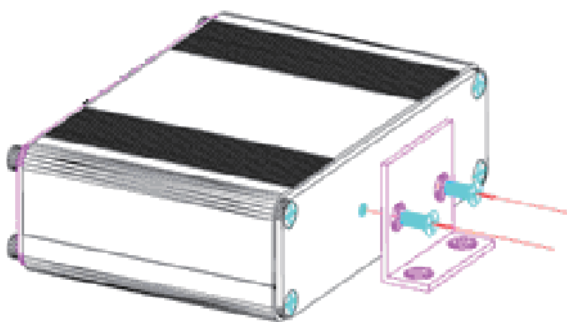


Attach the DIN Rail Bracket (if not fitted) to the switch case using the screws supplied

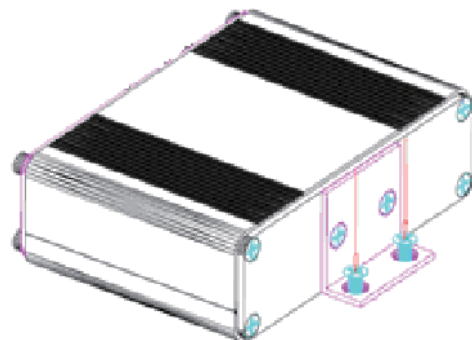


Clip the upper edge of the bracket onto the DIN Rail and push to latch the bottom strip

### 7.2 Wall Mount Installation



Attach the Wall Mount Bracket (if not fitted) to the switch case using the screws supplied



Mount the switch to the required surface using appropriate fixings



## 8. Connection and Setup

### 8.1 Inspection Checks

Please inspect the unit to ensure that there is no damage to the external casing which could cause a malfunction of the device or cause a safety critical fault. Any damaged units should be returned to Parallax Digital Technologies for inspection and testing.

Please ensure that the DC Cables are securely fastened in the terminal block, and that the terminal block is wired correctly, and correctly inserted into the switch power connector housing.

### 8.2 RJ45 Connections

Ensure all required RJ45 Ports are connected correctly using CAT5e cable or better to the client devices. The source data feed should be connected to the PoE IN Ethernet Port, and the target end device should be connected to the PoE+ OUT Port. Devices may be cascaded to extend the range of the PoE supply, but only up to a maximum of 3 devices, and the overall Power Budget for the first PoE Extender should not be exceeded and allowances should be made for voltage drop and end device efficiency in your power budget calculations.

### 8.3 Power Up

The Unit will automatically power up as soon as DC power is applied to the device. The Power Light will be illuminated, and as soon as valid power is available to the target device, the PoE LED will illuminate.

## 9. Physical Dimensions



All Dimensions are in mm

## 10. Hardware Specification

### ETHERNET

Standards	IEEE 802.3 Ethernet IEEE 802.3u Fast Ethernet IEEE 802.3ab Gigabit Ethernet IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet Plus IEEE 802.3bt Power over Ethernet Plus Plus
Forwarding and Filtering Rate	14,880pps (10Mbps) 148,800pps (100Mbps) 1,488,000pps (1000Mbps)
Packet Buffer	1Mbits
Packet Length	10KB
MAC Address Table	8K
Switch Fabric	10Gbps non-blocking
Exchange Property	Backplane Bandwidth 20Gbps Packet Forwarding Rate 14.88Mbps

### INTERFACE

Power & Data	1 x RJ45 Power & Data Input (IEEE 802.3at/bt) 4 x RJ45 Power & Data Output (IEEE 802.3af/at)
Transmission Distance	100m
Cascade Limit	3 Devices

### POE

Standard Port	IEEE 802.3af/ IEEE 802.3at/ IEEE 802.3bt RJ45
Power Supply Type	Mid-Span & End-Span
Pin Assignment	1/2 (+) 3/6 (-) 4/5 (+) 7/8 (-)
Power Budget	Up to 75W total <100m – 65W 100-200m Max 75W on one channel

### ENVIRONMENTAL

Operating Temperature	-40°C to +80°C
Storage Temperature	-40°C to +85°C
Relative Humidity	5% - 95% non-condensing
MTBF	200,000 hours

### ELECTRICAL

Operating Voltage	+48~57VDC via PoE (IEEE 802.3bt)
Power Consumption	5w without PoE
Short-Circuit Protection	Auto-Reset
Reverse Polarity	Protected

### MECHANICAL

Dimensions	95mm x 70mm x 29mm
Weight	250g
Casing	Aluminium
Mounting	DIN Rail & Wall Mount

### INDICATORS

PWR	Power Status
L/A	Link Activity
PoE	PoE Power Output Status
NC	No Function

CERTIFICATION

Electrical Safety	EN 62368-1:2020+A11:2020
Emissions	EN 55032:2015+A1:2020
Radiated Immunity	EN 55035:2017+A1:2020
Harmonic Emissions	EN 61000-3-2:2014
Fluctuations and Flicker	EN 61000-3-3:2013
Electro-Static Discharge	EN 61000-4-2:2009
Electromagnetic Field Immunity	EN 61000-4-3:2010
Electrical Fast-Transients	EN 61000-4-4:2012
Surge	EN 61000-4-5:2014+A1:2017
Conducted Immunity	EN 61000-4-6:2014
Power Frequency Magnetic Field	EN 61000-4-8:2010
RoHS	IEC 63000:2018

For all technical enquiries regarding this product, please contact our technical support team using the following email address:

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