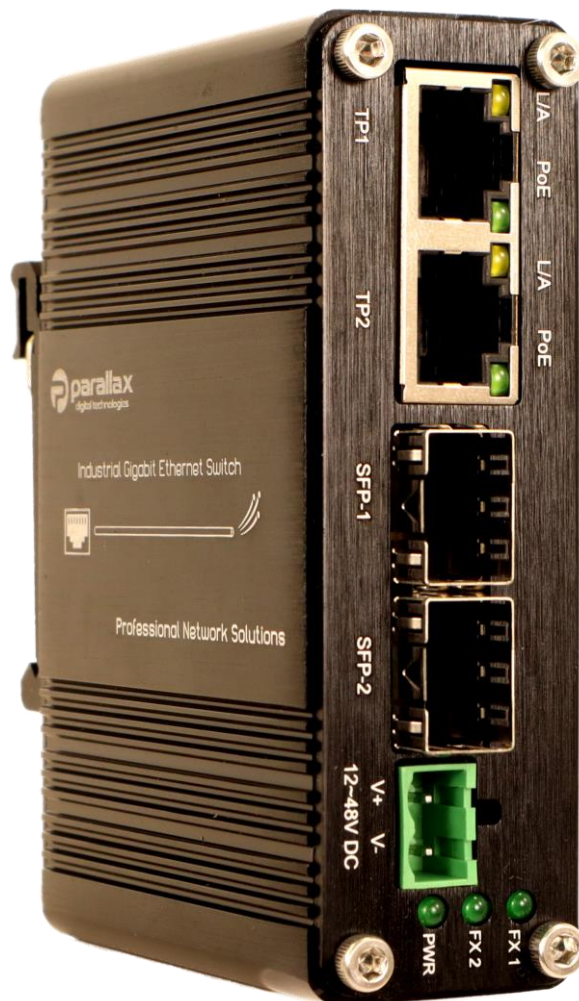


Operations Manual



PDT-NSU-7202-MP-SF-I

Revision 2.0 – March 2023



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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
PoE	Power over Ethernet
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.

3.3 Fibre-Optic Ports

DANGER

This device incorporates Fibre Optic transmission ports – under no circumstance should anyone look directly into these ports, as this may cause temporary or permanent damage to the user's eyes.

4. Packing List

The following items are included in the shipping carton:

- 1 x PDT-NSU-7202-MP-SF-I Unmanaged Ethernet Switch
- 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)

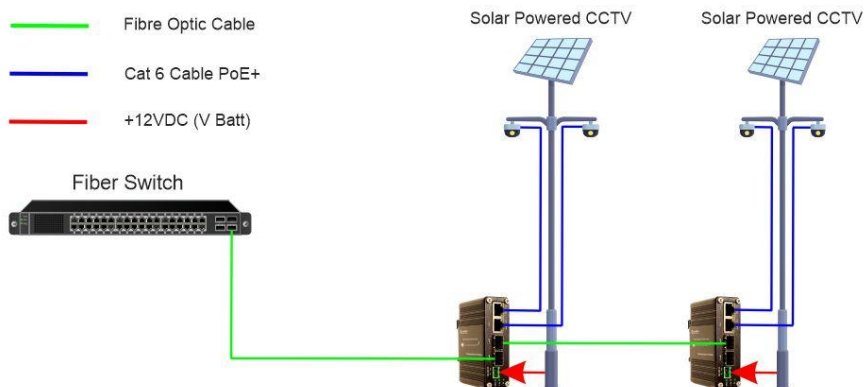
5. Product Overview

The PDT-NSU-7202-MP-SF-I is a Small Form Factor Industrial Unmanaged Network Switch, supporting 2 x 10/100/1000 BASE-T RJ45 Ports, and 2 x 100/1000 BASE-FX SFP Ports, with the 2 x RJ45 Ports being PoE+ capable (802.3at).

This model can operate on input voltages from +12-48VDC, and the device has a voltage boosting circuit to allow +48VDC to be supplied on the PoE output lines, even with a +12VDC supply voltage.

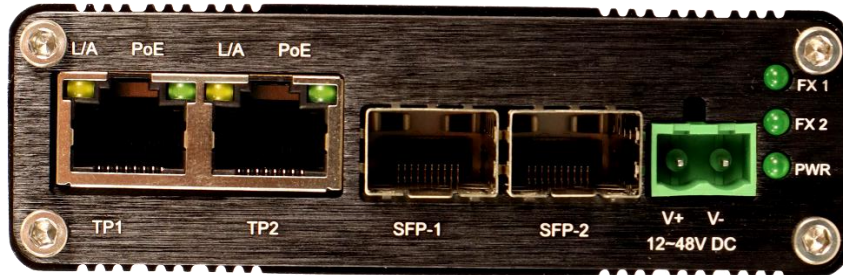
The device is designed for use in harsh industrial environments, and incorporating a rugged aluminium housing, it can be operated across a wide temperature range (-40°C to +75°C) making it suitable for most conditions.

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



6. Connectors and Indicators

Front Panel



6.1 LED Indicators

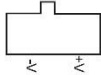
The Front Panel LEDs display the status of the switch and the associated port connections as indicated in the table below:

LED	Name	Colour	State	Status
PWR	Power Source	Green	OFF	Power Not Avail
			ON	Power Available
FX 1/2	Fiber Link	Green	ON	SFP Connected
			OFF	SFP Not Connected
L/A	Link Activity	Yellow	OFF	Not Running
			ON	Running
PoE	Port Connection	Green	OFF	No Connection
			Flashing	PD Detected
			ON	PoE Established

6.2 RJ45 Ports

The Front Panel has 2 RJ45 Ports and which are all 10/100/1000 BASE-T Ports – note that these are all PoE+ capable ports, in accordance with the IEEE 802.3at Standard. All of the RJ-45 ports are auto MDI/MDI-X compatible and can operate in Full/Half Duplex Modes via auto-negotiation. The remaining SFP port is 100/1000 BASE-FX and accept a wide range of SFP modules.

6.3 Power Connections

Model	V-	V+	Power Input
PDT-NSU-7202-MP-SF-I	GND	12-48VDC	

Note: All Power Supplies should provide over-current and short-circuit protection and should have a capacity rating to meet the required output current for the device.

6.4 PoE Output

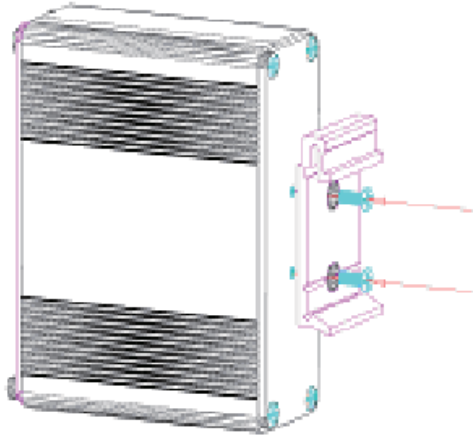
Model	802.3af	802.3at	802.3bt
PDT-NSU-7202-MP-SF-I	●	●	

6.5 PoE Budget

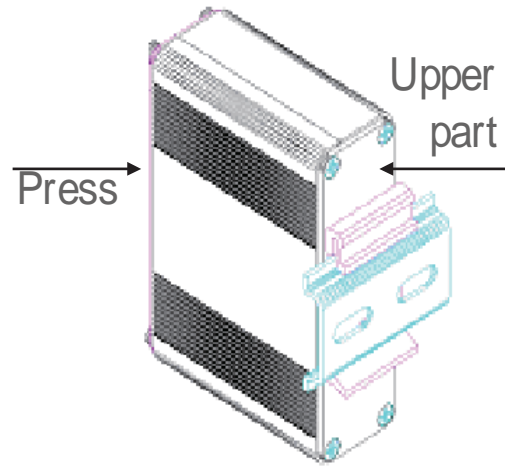
The total PoE Power Budget for this product is independent of input voltage and is fixed at 60W total.

7. Installation Procedures

7.1 DIN Rail Installation

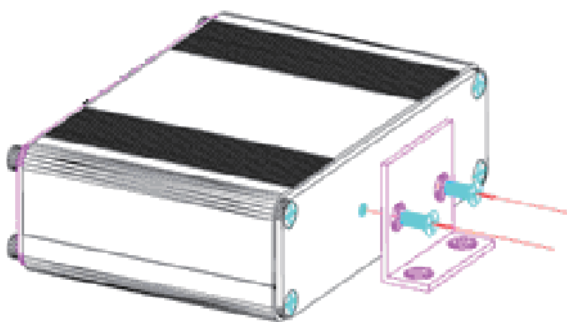


Attach the DIN Rail Bracket (if not fitted) to the switch case using the screws supplied

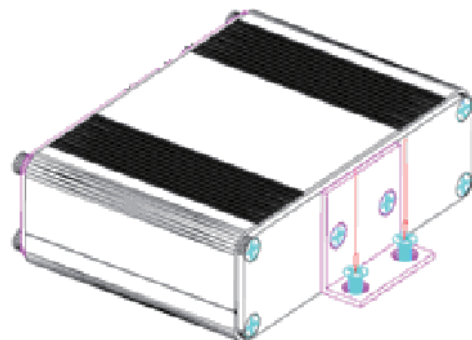


Clip the upper edge of the bracket onto the DIN Rail and push to latch the bottom strip

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 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 Uplink port should be connected to the host device or network, and the access ports TP1-4 are available for other devices or connections. All cables should be solid copper and not CCA.

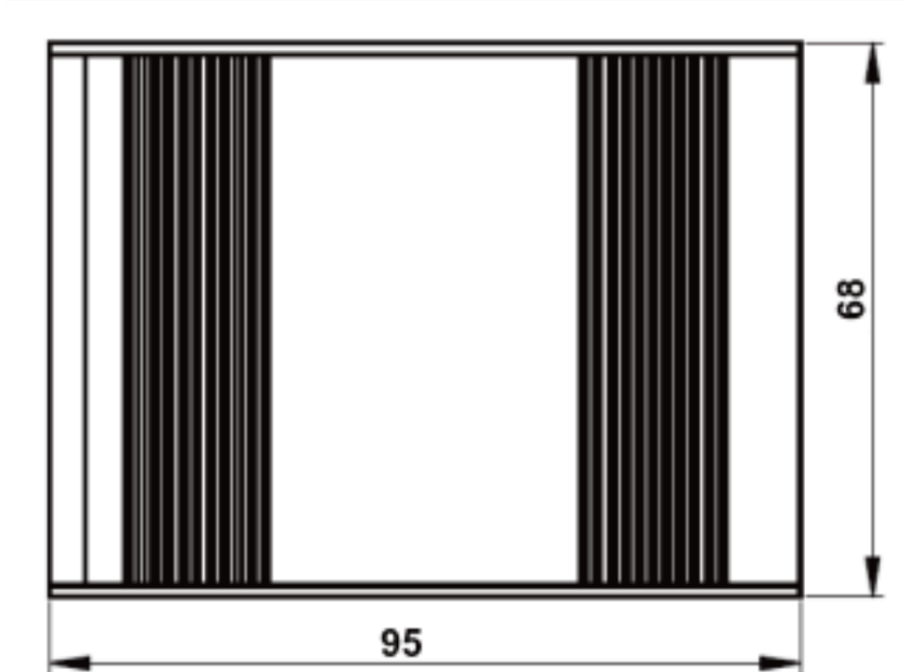
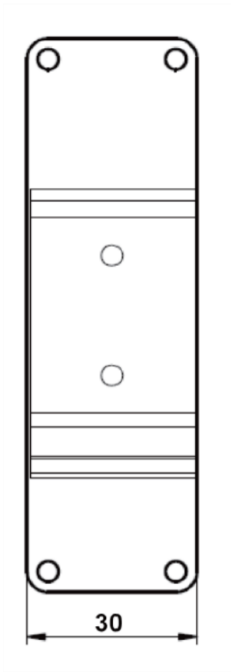
8.3 SFP Port Connections

Ensure that the SFP socket is clear from any dirt or contamination and that any required SFP Modules are installed into the unit before applying power and care should be taken not to look directly into any open port once power is applied. It is recommended to leave port blanks fitted when not in use. Only compatible SFP modules should be installed in the unit and the maximum data throughput for ports the optical port is 1000Mbps.

8.4 Power Up

The Unit will automatically power up as soon as DC power is applied to the device. All LEDs will flash briefly to complete the initialization sequence, then the Power LEDs- will be illuminate. Following this, the Port Status LEDs and the Fiber indicator will display the current state of each of the ports.

9. Physical Dimensions



All Dimensions in mm

10. Hardware Specification

ETHERNET

Standards

IEEE 802.3 Ethernet
 IEEE 802.3u Fast Ethernet
 IEEE 802.3ab Gigabit Ethernet
 IEEE 802.3x Full Duplex Flow Control
 IEEE 802.3az Energy Efficient Ethernet
 IEEE 802.3af Power over Ethernet
 IEEE 802.3at Power over Ethernet 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

Exchange Property

Backplane Bandwidth 20Gbps
 Packet Forwarding Rate 14.88Mbps

INTERFACE

Wired

2 x 10/100 BASE-T RJ45

Fiber

2 x 1000 BASE-FX SFP

PoE

Standard

IEEE 802.3af/ IEEE 802.3at

Port Type

RJ45

Power Pin Assignment

4/5 (+) 7/8 (-)

Power Budget

48VDC Supply: 120W
 24VDC Supply: 90W
 12VDC Supply: 60W

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

12-48VDC (Terminal Block Connector)

Power Consumption

6W

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

FX

Fiber Port Status

L/A

Link Activity

SPD

Link Speed

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:

support@parallaxdigital.co.uk