

Outdoor 4 Port BT PoE Switch + 2 SFP Uplink Port Hardware Installation Guide

Introduction

Microchip's PDS-204GCO™ switch is a 4 + 2 ports outdoor PoE switch. It can provide power and data connectivity for four powered devices and connect them to the network through data uplink ports. The PDS-204GCO switch can be remotely managed through the web or SNMP, allowing monitoring and control of the device and its ports. The PDS-204GCO switch supports 10/100/1000 Mbps data rates on the RJ45 Gigabit ports and 100/1000/2500 Mbps on the SFP ports. It is powered through wide-range AC input (100 V_{AC}–240 V_{AC}). The PDS-204GCO switch is IP66/IP67 rated and has an extended temperature range. Therefore, it can be installed in an outdoor environment.

In a typical installation, the PDS-204GCO switch provides power to four outdoor devices, such as WLAN AP, WLAN Mesh, IP Camera, and so on.

Audience

This guide is designed for personnel who install and maintain the switch. These persons must be familiar with electronic circuitry and wiring practices, and qualified and experienced electronic or electromechanical technicians.

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1. **Hardware Description**

This switch provides two SFP ports for uplink and four GE copper PoE ports for downstream connectivity.

The PDS-204GCO switch can be either wall or pole mounted.

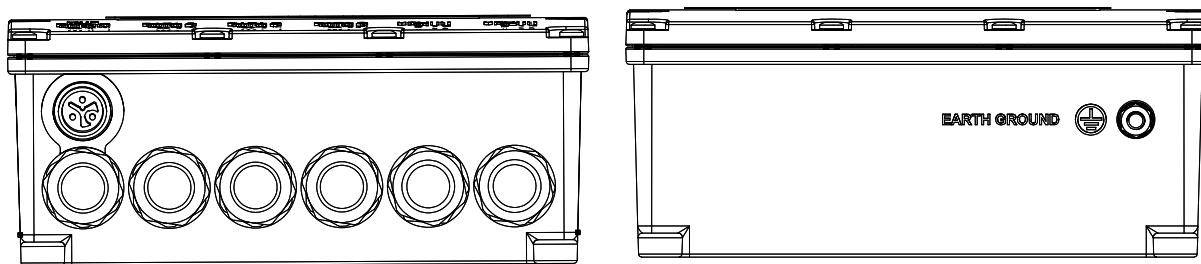
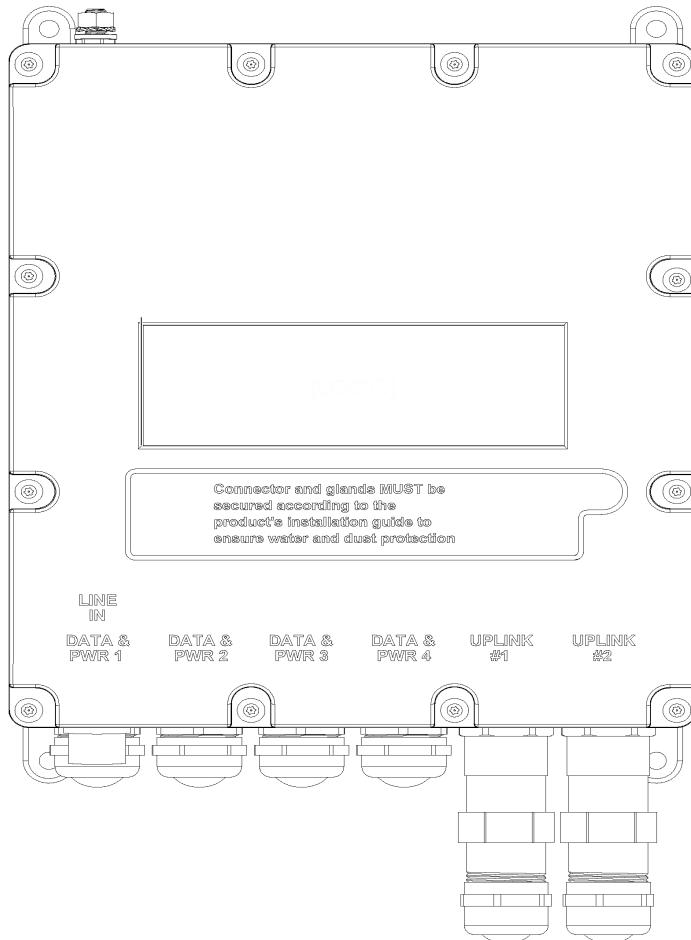
The PDS-204GCO switch provides the following hardware features:

- Two SFP ports 100/1000/2500Base-X
- Four copper PoE 10/100/1000BASE-T ports
- Up to 90W PoE copper per port
- Maximum total power 152W
- Management Ethernet port (any of the ports can be used as Management)
- Fan-less passively cooled design
- AC input
- IP66/IP67 enclosure
- Four Copper cable glands
- Two fiber cable glands + cable gland extender
- Six ports cable gland caps
- Mechanical mounting kit—enables pole mounting (including with unit)

2. Mechanical View

The following figures show the mechanical view of the PDS-204GCO switch.

Figure 2-1. Mechanical View



3. Installation

This section describes the installation process of the PDS-204GCO switch.

⚠ CAUTION

Ensure the following before mounting the PDS-204GCO switch to a fixed location:

- Weather-proof connection is present. To meet IEC60529 level IP66/IP67, the PDS-204GCO AC power plug must be connected to a weather-proof AC power source box.
- There is no ON or OFF switch; plug the PDS-204GCO switch into an AC main power source.
- PDS-204GCO AC power lines must be connected to the socket-outlet. This socket-outlet must be installed near the equipment and must be easily accessible.

⚠ WARNING

PDS-204GCO unit must be connected to earth grounding using a customer-supplied ground wire before power is applied.

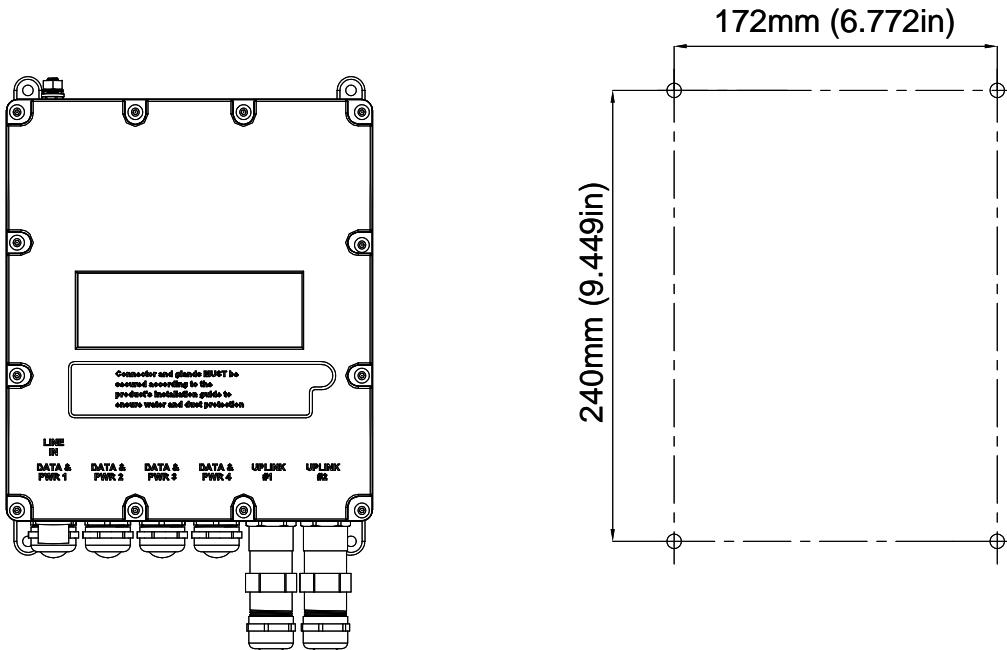
The following two sections describe the installation options.

3.1 Wall Installation

The PDS-204GCO unit can be mounted on a wall/bench (all kinds of flat surfaces: wood, brick, concrete, and so on) using the mounting holes.

Fasten the PDS-204GCO using four screws, as shown in the following figure.

Figure 3-1. Wall Mounting



3.2

Pole Mounting Installation

The following table lists the kit details supplied with the product.

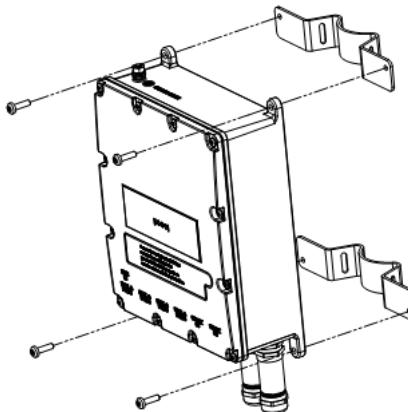
Table 3-1. PDS-204GCO Kit Details

Item Description	Quantity
Pole bracket	2
Worm screw clamps	2
SCREW M5X18	4

Perform the following steps for pole mounting installation.

1. Attach the pole bracket to the switch using four pan head screws and tighten the pan head screws to 1.1 Nm.

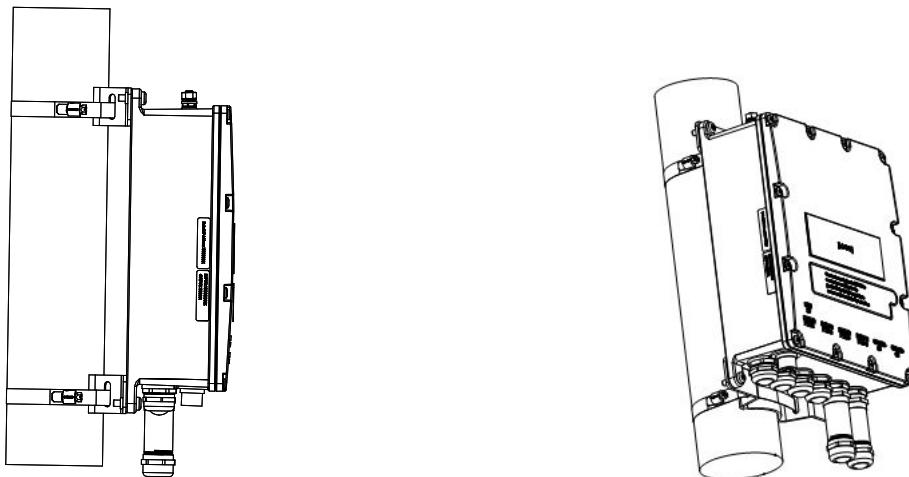
Figure 3-2. Assemble Brackets



2. The unit must be installed with DATA IN, and DATA & PWR OUT ports facing down, as shown in the following figures.

Dimensions of support Pole diameter: 60 mm to 200 mm (2.5 inches to 8 inches)

Table 3-2. Installation of Units on Pole



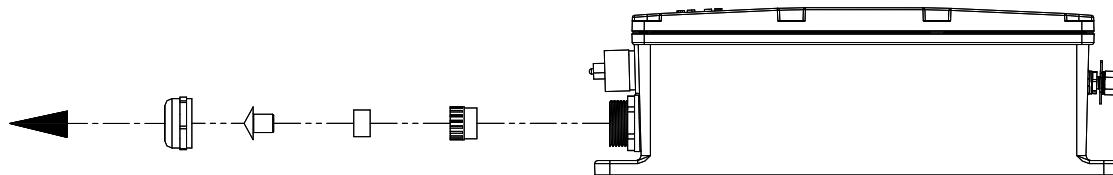
4. Connecting Network Cables

This section describes how to connect the following PDS-204GCO interfaces.

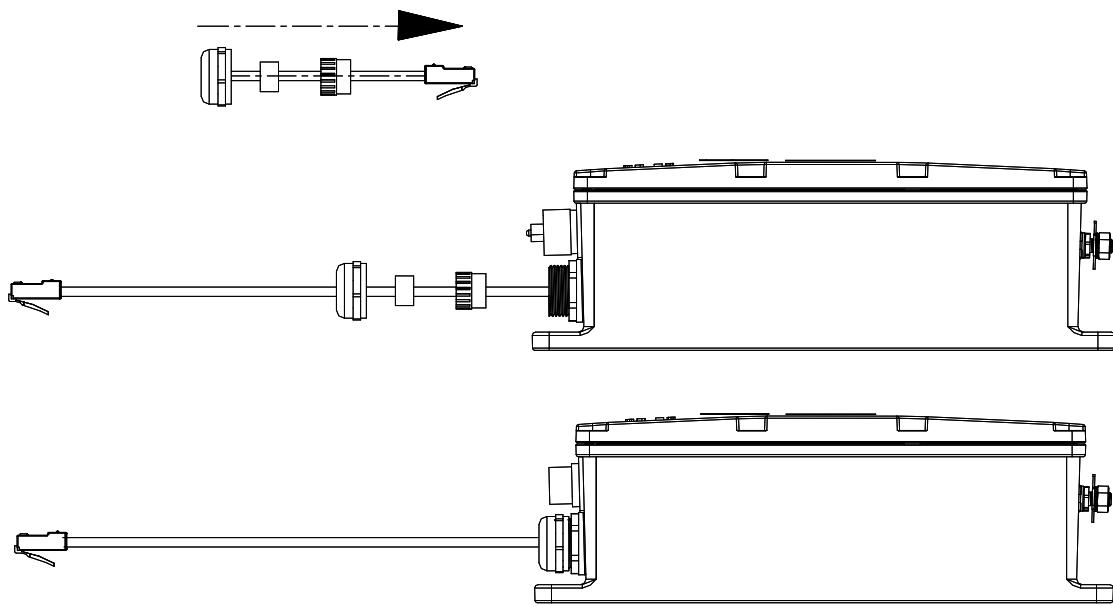
4.1 Connecting Gigabit Ethernet Cable

Perform the following steps to connect the Gigabit Ethernet cable.

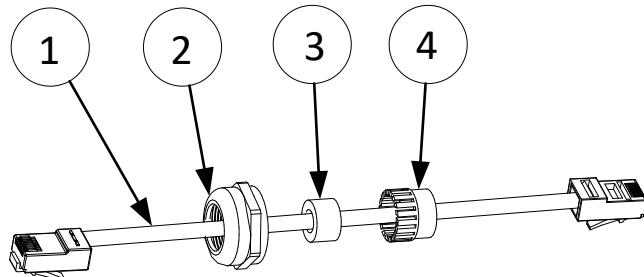
1. Remove the metal gland from the PDS-204GCO unit by turning it counterclockwise. Keep the dust cap for future use.



2. Insert the cable through metal gland, rubber seal, and pressure fingers and plug into the port number 1.



3. Secure all glands till the rubber gasket is tightly closed around the cable.



Where:

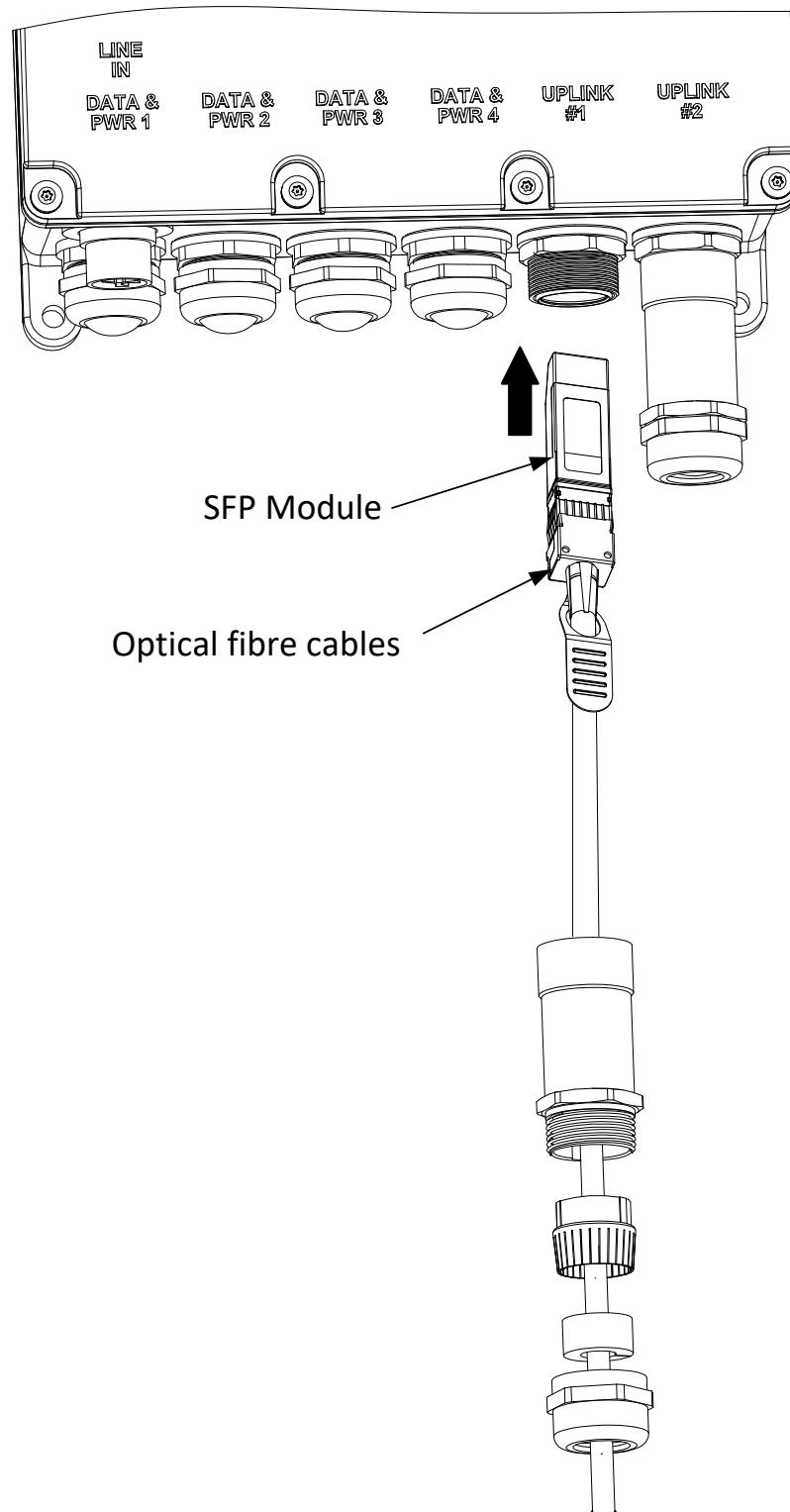
- 1: Ethernet cable
- 2: Metal gland
- 3: Rubber seal
- 4: Pressure fingers

Notes:

- For easier installation, start with port number 1 assembly (**Data & PWR 1**), and then connect the Uplink port.
- Use cable Cat 5e or above outdoor grade.
- Secure the gland until the rubber gasket is firmly closed around the cable.
- The PDS-204GCO switch is not shipped with Ethernet cable and RJ45 male connectors.

4.2 Connecting Fiber Optic Cable

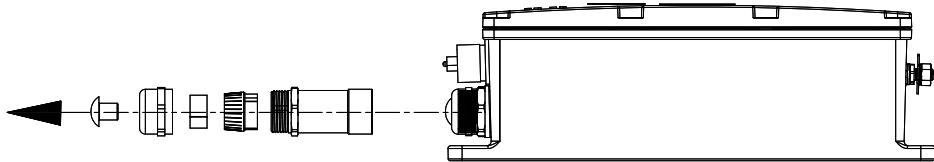
Figure 4-1. Connecting Fiber Optic Cable



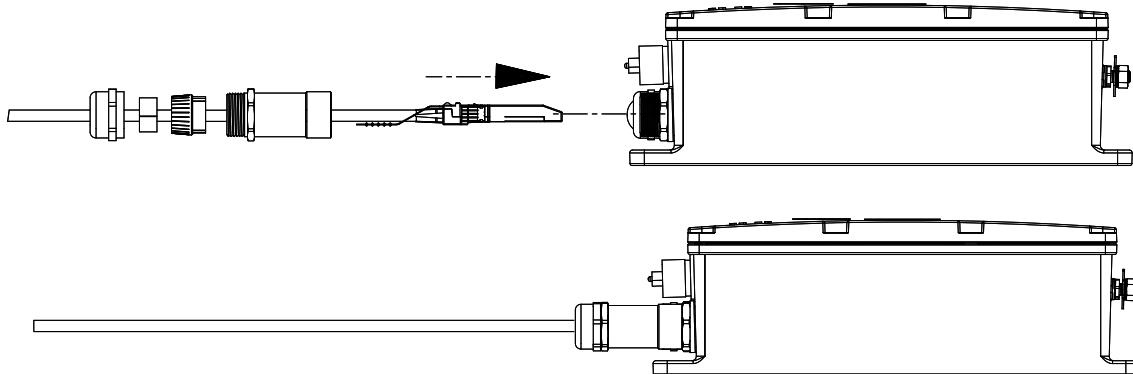
PDS-204GCO/AC™

Connecting Network Cables

1. Remove the metal gland from the PDS-204GCO unit by turning it counterclockwise. Keep the dust cap for future use.



2. Insert the cable through metal gland, rubber seal, and pressure fingers and plug into the **Uplink** port.



3. Secure the gland until the rubber gasket is firmly closed around the cable.

Note: SFP cord must be outdoor use grade.

5. Connecting Power Cable

The following table lists the AC power cable specifications.

Table 5-1. AC Power Cable Specifications

Parameter	Value
Recommended cable type	North America—SJOW or SOOW Worldwide—H05RN-F or H07RN-F
Voltage rating	300V (or better recommended)
Temperature range	-40 °C to 65 °C (or better recommended)
Cable size	16 AWG–18 AWG 3C 1.0 mm ² –1.5 mm ² 3C
Cable outer dimension	Diameter: 3/16 in.–3/8 in. Diameter: 5.0 mm–9.5 mm
Approved for indoor and outdoor applications.	

The following figures show how to connect the power connector.

Figure 5-1. Connecting AC Connector

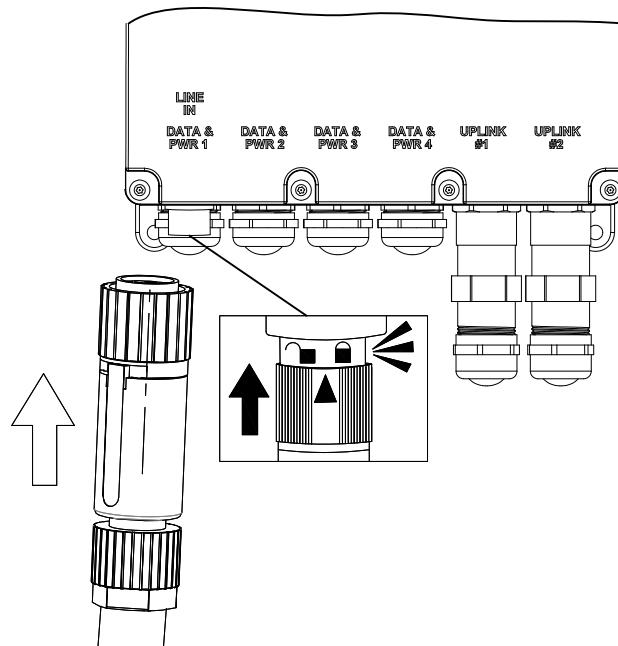
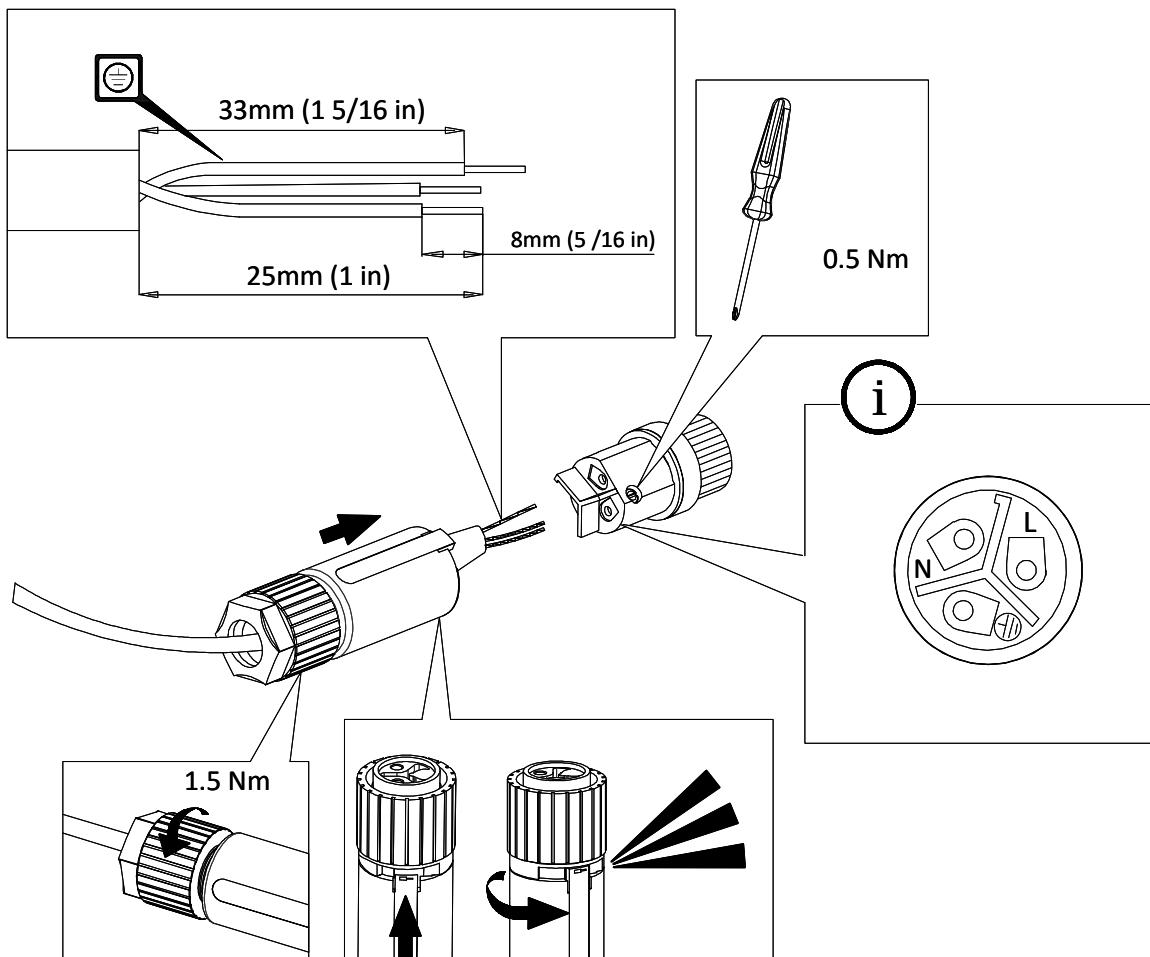


Figure 5-2. AC Connector Assembly



6. Appendix A: Safety and Warnings

The following sections describe safety information and warnings.

6.1 Safety Information

- Installation and removal of the PDS-204GCO unit must be carried out by qualified personnel only.
- The PDS-204GCO DATA PWR OUT ports are shielded RJ45 data sockets. They cannot be used as Plain Old Telephone Service (POTS) sockets. Only RJ45 data connectors can be connected to these sockets.
- Follow basic electricity safety measures while connecting the PDS-204GCO unit to its power source.
- A voltage mismatch can cause equipment damage and might pose a fire hazard. If the voltage indicated on the label is different from the power outlet voltage, do not connect the PDS-204GCO to this power outlet.
- All wiring and connections must be in accordance with NFPA 70 (NEC).
- This product is not intended to become a permanent part of the building structure.
- Power supply cord must not be attached to the building surface or run through walls, ceilings, floors, and similar openings in the building structure.
- Measures must be taken to prevent physical damage to the power supply cord, including proper routing.

6.2 Warnings

- Do not use a cross-over cable between the PDS-204GCO output port and the load device.
- Take extra care when connecting the AC power, so that "N", "L", and "Ground", are connected to the proper polarity.
- Ensure that the AC power is within the allowed range.

6.3 Information en Matière de Sécurité

Lire les informations suivantes en matière de sécurité avant d'utiliser d'activer l'alimentation sur votre appareil Ethernet Switch.

6.3.1 Directives Générales

Lire les informations suivantes en matière de sécurité avant d'installer ou enlever quoi que ce soit, ou procéder à l'entretien de l'alimentation de votre appareil Ethernet Switch. Les mises en garde contiennent des instructions qui doivent être suivies pour la sécurité des personnes et du produit. Suivre les instructions soigneusement.

6.3.2 Mises en Garde

- Lire les instructions d'installation dans [3. Installation](#) avant de connecter le Switch à une source d'alimentation.
- Suivre les mesures de sécurité électrique de base lors de la connexion de l'injecteur PoE à sa source d'alimentation.
- Seul du personnel formé et qualifié doit être autorisé à installer, remplacer et entretenir cet équipement.
- Une disparité de voltage peut endommager l'équipement et constituer un risque d'incendie. Si le voltage indiqué sur l'étiquette est différent du voltage de la source d'alimentation, ne pas connecter le Switch à cette prise.
- Tout le câblage et les connexions doivent être conformes à la norme NFPA 70 (NEC).
- Le cordon d'alimentation ne doit pas être fixé à la surface du bâtiment ni passer à travers les murs, les plafonds, les planchers et les ouvertures similaires de la structure du bâtiment.
- Des mesures doivent être prises pour éviter tout dommage physique au cordon d'alimentation, y compris son acheminement correct.
- Les ports **Data et Power** du PoE Switch sont des prises de données blindées RJ45. Elles ne peuvent pas être utilisées comme prises de service téléphonique traditionnel. Connecter seulement des connecteurs de données RJ45 à ces prises. Le câblage Ethernet connexe doit être limité à l'intérieur de l'immeuble.
- Pour disposer/jeter ce produit, suivre les lois et règlements locaux.

7. Appendix B: Troubleshooting

Table 7-1. Troubleshooting Symptoms and Solutions

Symptom	Corrective Steps
Unit does not power up	<ol style="list-style-type: none"> 1. Verify that a reliable power cord is used. 2. Verify that the voltage at the power inlet is between 100 VAC–240 VAC. 3. Remove and re-apply power to the device.
PD does not operate	<ol style="list-style-type: none"> 1. Verify that the unit detects a PD. 2. Verify that the PD is designed for PoE operation. 3. Verify that a standard Category 5/5e/6 cable is in use - Straight wired cable, with four pairs. 4. If an external power splitter is in use, replace it with a splitter known to be in good condition. 5. Ensure that the input Ethernet cable is connected to the Up-link port. 6. Verify that the PD is connected to the Data & Power port. 7. Try reconnecting the same PD to a different PoE switch. If it works, then there is probably a faulty port or faulty RJ45 connection. 8. Verify that there is no short-circuit over any of the twisted pair cables or over the RJ45 connectors.
The end device operates, but there is no data link	<ol style="list-style-type: none"> 1. Verify that the port indicator on the unit GUI (Wed page) is continuously lit. 2. If an external power splitter is in use, then replace it with a splitter known to be in good condition. 3. Verify that for this link, you are using standard UTP/FTP Category 5 straight (non-crossover) cabling, with all four pairs. 4. Verify that the Ethernet cable length is less than 100 meters from Ethernet source to the remote terminal. 5. Try to reconnect the same PD to a different PoE switch. If it works, then there is probably a faulty port or faulty RJ45 connection.

8. Appendix C: Specifications

The following table lists the environmental specifications.

Table 8-1. Environmental Specifications

Mode	Temperature	Humidity
Operating	-40 °C to 50 °C for 152W (-40 °F to 122 °F) -40 °C to 60 °C for 90W (-40 °F to 140 °F)	10% to 90% (no condensation allowed)
Storage	-40 to 85 °C (-40 °F to 185 °F)	5% to 95%

The following table lists the electrical specifications.

Table 8-2. Electrical Specifications

Parameters	Value
Input Voltage	100 V _{AC} –240 V _{AC} (50 Hz–60 Hz)
Input Current (100 V _{AC} –240 V _{AC})	2.5A (max.)
Available Output Power (max.)	152W
Nominal Output Voltage	55 V _{DC}

The following table lists the specifications of the interface.

Table 8-3. Interface

Parameters	Value
Uplink	SFP cage
PDS-204GCO:	<ul style="list-style-type: none"> 1000BASE-X 2500BASE-X 100BASE-FX
Output (DATA PWR OUT)	RJ45 female socket, with DC voltage
AC Power IN	3 Pins AC power in—Line, Neutral, and Earth Ground.

9. Appendix D: Standards

PDS-204 EMC Compliance

- CE:
 - EN55035, EN61000-4-5 Class 5 (6KV on AC in)
 - EN55032 class B
- FCC Part 15 class B
- VCCI

PDS-204 Safety Compliance

- UL/EN/IEC 62368-1
- UL60950-22
- D-Mark

PDS-204 Lightning Protection

Designed to meet GR-1089-CORE (issue 4) lightning protection requirements.

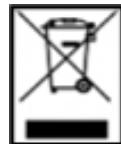
Other Standards and Approvals

- IEEE® 802.3bt (PoE) standards
- RoHS compliant
- WEEE compliant
- REACH compliant
- Dust and water intrusion
 - IEC60529, level IP66/IP67
 - NEMA 250, level 4x

10. Appendix E: Recycling and Disposal

This section provides disposal instructions for old products. The WEEE (Waste Electrical and Electronic Equipment) national environmental initiatives have been put in place to ensure that products are recycled using best available treatment, recovery, and recycling techniques to ensure human health and high environmental protection. Your product is designed and manufactured with high quality materials and components, which can be recycled and reused. Do not dispose of your old product in your general Household waste bin. Inform yourself about the local separate collection system for electrical and electronic products marked by the following symbol:

Figure 10-1. Recycling and Disposal Symbol



Use one of the following disposal options:

- Dispose the complete product (including its cables, plugs, and accessories) in the designated WEEE collection facilities.
- If you purchase a replacement product, hand your complete old product back to the retailer. He must accept it, as required by the national WEEE legislation.

11. Ordering Information

Table 11-1. Ordering Information

Item	Description
Product Name	Microchip Outdoor PoE Switch
Part Number	PDS-204GCO/AC
Description	4 PoE ports + 2 SFP uplink port

12. References

For additional information, see the following related documents:

- Microchip Getting Started With PDS204GCO™ Switch Configuration User Guide
- Microchip PDS-204GCO™ Web Management User Guide
- Microchip PDS-204GCO™ Command Line Interface (CLI) User Guide

13. Revision History

The revision history describes the changes that were implemented in the document. The changes are listed by revision, starting with the most current publication.

Revision	Date	Description
A	12/2022	Initial Revision

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