

PoE+ Gigabit Ethernet Media Converter

▶ PMC-1F1T / PMC-1SC1T-SM



1. Introduction

Thank you for choosing FS PoE+ Gigabit Ethernet Media Converters. This guide is designed to familiarize you with the layout of the PoE+ Gigabit Ethernet Media Converters and describes how to deploy them in your network. In the following sections, the term “PoE+ Media Converter” indicates the product family PMC-1F1T and PMC-1SC1T-SM.

1.1 Package Contents

Open the box of the PoE+ Media Converter and carefully unpack it. The box should contain the following items:

- PoE+ Gigabit Ethernet Media Converter x 1
- Power Adapter x 1
- Quick Start Guide x 1

If any of these are missing or damaged, please contact your sales representative immediately; if possible, retain the box 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 Product Specifications

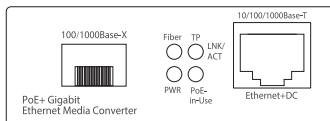
Product	PMC-1F1T	PMC-1SC1T-SM
Interface		
Copper Interface	1x 10/100/1000Base-T RJ45 with Data + Power output Auto-negotiation, auto-MDI/MDI-X	
Fiber Optic Interface	1x 100/1000Base-X SFP	1x 1000Base-X SC
Power Over Ethernet		
PoE Output Standard	IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet Plus	
PoE Power Output	DC 52V, Max. 30 Watts	
PoE Power Supply Type	End-span	
Power Pin Assignment	1/2(+), 3/6(-)	
PoE Power Budget	30 watts	
Hardware Specifications		
Speed	Twisted-pair: 10/100Mbps for half/full duplex 1000Mbps for full duplex Fiber Optic: PMC-1F1T: 100/1000Mbps for full duplex PMC-1SC1T-SM: 1000Mbps for full duplex	
Duplex Mode	Full or half duplex mode by auto-negotiation (TP)	
Flow Control	Back pressure for half duplex mode IEEE 802.3x pause frame for full duplex mode	
Jumbo Frame	9K	
LED	PWR Fiber LNK/ACT TP LNK/ACT PoE in Use	
Dimensions (Hx Wx D)	1.02"x 2.76"x 3.7" (26x70x94 mm)	
Input Voltage	52V~56V DC	
DIP Switch (ON/OFF)	LFP function (Enable/Disable) setting	

Enclosure	Metal case
Cables	Twisted-pair: Cat 5/5e/6 Ethernet cable Fiber Optic: MM: 50/125μm or 62.5/125μm fiber optic cable SM: 9/125μm fiber optic cable
Standards Conformance	
Standards and Protocols	IEEE 802.3 Ethernet IEEE 802.3u Fast Ethernet IEEE 802.3ab Gigabit Ethernet IEEE 802.3z Gigabit Ethernet over Fiber Optic IEEE 802.3x Flow Control IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet Plus
Environment	
Temperature	Operating: 0°C to 50°C Storage: -40°C to 70°C
Relative Humidity	Operating: 5 to 90%, non-condensing Storage: 5 to 90%, non-condensing

2. Hardware Overview

2.1 Front Panel Ports

PMC-1F1T



PMC-1SC1T-SM

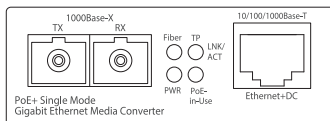


Figure 1: Front Panel

P/N	Ports	Description
PMC-1F1T	RJ45	10/100/1000Base-T port for Ethernet connection
	SFP	Hot swappable SFP port for 100/1000Base fiber connection
PMC-1SC1T-SM	RJ45	10/100/1000Base-T port for Ethernet connection
	SC	SC port for duplex SC single mode fiber connection

2.2 Front Panel LEDs

LED	Color	Description
PWR	Green	Lit: To indicate the device is powered on.
Fiber LNK/ACT	Green	Lit: To indicate the link through fiber port is successfully established.
		Blinks: To indicate that the fiber port is actively sending or receiving data.
		Off: To indicate that the fiber port is linked down.
TP LNK/ACT	Green	Lit: To indicate the link through TP port is successfully established.
		Blinks: To indicate the TP port is actively sending or receiving data.
		Off: To indicate that the TP port is linked down.
PoE in Use	Orange	Lit: To indicate that the port is providing PoE power to remote powered device.
		Off: To indicate that the port is not providing PoE power to remote powered device.

2.3 Rear Panel

There are one DC 52V ~ 56V power socket and one DIP switch. The DIP switch is turned on for Link Loss Carry Forward (LLCF) and Link Loss Return (LLR) detection but this feature is not operable when turned off. Please refer to **3. Link Fault Pass Through (LFP)** section for more.

PMC-1F1T / PMC-1SC1T-SM

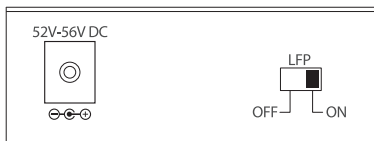


Figure 2: Rear Panel

2.4 Power Information

The power jack of the PoE+ Media Converter measures 2.1mm in diameter, and comes with 52V ~ 56V DC power input. It conforms to the bundled AC-DC adapter.



2.1mm

Width of DC Receptacle: 2.1mm

+52V ~ 56V for each slot



DC receptacle is 2.1mm wide that matches the central pole; the width of the PoE+ Media Converter's DC jack also measures 2.1mm.

Warning: Do not install any improper unit.

The PoE+ Media Converter is a power-required device, meaning it will not work till it is powered. If the networks should be active all the time, please consider using UPS (Uninterrupted Power Supply) for the device. It will prevent you from network data loss or network downtime.

3. Link Fault Pass Through (LFP)

The LFP function includes LLCF and LLR. LLCF and LLR can immediately alarm administrators the issue of the link media and provide efficient solutions to monitor the network. The LFP function can be disabled or enabled by the DIP switch.

LLCF (Link Loss Carry Forward) means when a device is connected to the converter and the TP line loses the link, the converter's fiber will disconnect the transmission link. LLR (Link Loss Return) means when a device connected to the converter and the fiber line loses the link, the converter's fiber will disconnect the transmission link.



LFP function is ON by default setting. If you are familiar with the network installation and for diagnostic purpose (i.e. check which end is broken), you can turn it off and reset the converter to make it take effect. Otherwise, please remain it in the default position.

4. Installing

This section describes the functionalities of the PoE+ Media Converter's components and instructs you to install it. Please read this chapter completely before continuing.

4.1 Stand-alone Installing

Step 1: Connect the power adapter to the PoE+ Media Converter and verify that the Power LED lights up.

(Please refer to the **2.4 Power Information** section for power input.)

Step 2: 2-1: Prepare a twisted-pair, straight-through Cat 5/5e/6 Ethernet cable for Ethernet connection.

2-2: Prepare a fiber cable for connection to the SFP fiber port, and make sure both sides of the SFP transceivers are the same type.

(Please refer to the **4.3 Cable Connection** section for the type of connection.)

Step 3: 3-1: Connect the Ethernet cable. Insert one side of the Cat 5/5e/6 Ethernet cable into the PoE+ Media Converter's RJ45 Ethernet port while the other side into the network devices' RJ45 Ethernet port, like a Switch, PC or Server. The TP port (RJ45) LED on the PoE+ Media Converter will light up when the cable is connected with the network device.

(Please refer to the **2.2 Front Panel LEDs** section for the functions of LED lights.)

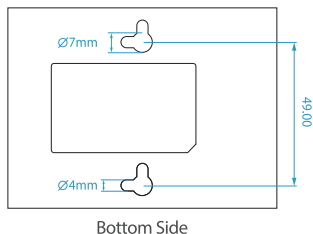
3-2: Connect the fiber cable. Attach one side of the fiber cable to the SFP transceiver in the PoE+ Media Converter while the other side to the fiber network.

Step 4: When all the connections are all set and the LED lights all show normally, the installation is complete.

4.2 Optional Wall-mount Installing

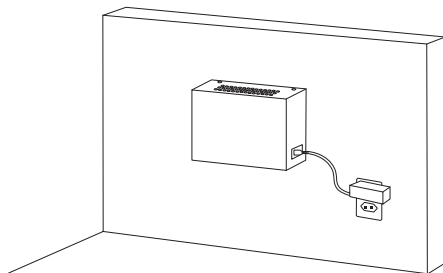
There are two wall-mount holes on the bottom of PoE+ Media Converter that allows being easily mounted to the wall. Refer to the following steps for the wall-mount Installation of PoE+ Media Converter:

Step 1: Screw two M4 screws (not included in the package) on the wall.



Step 2: Hang the PoE+ Media Converter on the screws from the wall.

Step 3: Refer to Chapter **2.4 Power Information** on power supply to the PoE+ Media Converter.



4.3 Cable Connection

● Installing the SFP Transceiver

The sections describe how to insert an SFP transceiver into the SFP slot on PMC-1F1T (For PMC-1SC1T-SM, please directly refer to the next two sections “Connecting the Fiber Cable” and “Connecting the Ethernet Network Cable”). The SFP transceiver can be plugged into the SFP port without having to power down the PMC-1F1T.

Before connecting to other switches, workstation or Media Converters, please make sure both sides of the SFP transceivers are the same type, for example, 1000Base-SX to 1000Base-SX, 1000Base-LX to 1000Base-LX.

● Connecting the Fiber Cable

1. Connect one end of a fiber optic cable to the SFP transceivers.
2. Connect the other end of the cable to a Switch, fiber NIC or a Media Converter.

● Connecting the Ethernet Network Cable

1. Connect an Ethernet cable to the 10/100/1000Base-T RJ45 port on the PoE+ Media Converter.
2. Connect the other end of the Ethernet cable to a Switch, fiber NIC or a Media Converter.

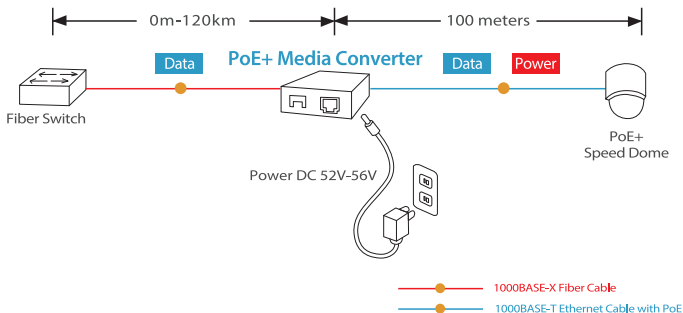


Note

Be sure the connected network devices support MDI/MDI-X. If it does not support, then use the crossover Cat 5/5e/6 cable.

4.4 PoE Function

The PoE+ Media Converter provides a way to supply power conveniently and easily for any IEEE 802.3at/802.3af devices that need to be powered on. It equips an AC-DC adapter with DC 54V input and injects the DC power into the pin of the twisted-pair cable.



5. Troubleshooting

This chapter contains information to help you solve issues. If the PoE+ Media Converter is not functioning properly, make sure it is set up according to instructions in this Quick Start Guide.

- **The per port LED is not lit**

Solution: Check the cable connection of the PoE+ Media Converter.

- **Performance is bad**

Solution: Check the speed duplex mode of the partner device. The PoE+ Media Converter usually runs in auto-negotiation mode. If the partner is set to half duplex, the performance will be poor.

- **Per port LED is lit, but the traffic is irregular**

Solution: Check that the attached device is not set to dedicate full duplex. Some devices use a physical or software switch to change duplex modes. Auto-negotiation may not recognize this type of full duplex setting.

- **The PoE+ Media Converter doesn't connect to the network**

Solution: Check per port LED on the PoE+ Media Converter. Make sure the cable is installed properly. Make sure the cable is the right type. Turn off the power. After a while, turn on the power again.

