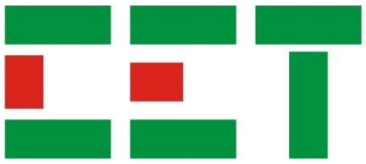
PMC-2105

Industrial Fiber Ethernet Switch

User Manual

Version: V1.4A

06/23/2012



Ceiec Electric Technology

Limited warranty

- Ceiec Electric Technology (CET) offers the customer a minimum of 12-month functional warranty on the device for faulty parts or workmanship from the date of dispatch from the distributor. This warranty is on a return to factory for repair basis.
- CET does not accept liability for any damage caused by device malfunctions. CET accepts no responsibility for the suitability of the device to the application for which it was purchased.
- Failure to install, set up or operate the device according to the instructions herein will void the warranty.
- The unit should only be opened in a fully anti-static environment. Failure to do so may damage the electronic components and will void the warranty.

Table of Contents

Chapter 1 Introduction

This manual explains how to use the PMC-2105 Industrial Fiber Ethernet Switch. This chapter provides an overview of the PMC-2105 and summarizes many of its key features.

1.1 Overview

The PMC-2105 Industrial Fiber Ethernet Switch supports plug-and-play capability with a single 100BaseFX fiber port and four 10/100BaseT ports. The PMC-2105 has been designed specifically with industrial automation in mind and therefore provides un-surpassed performance and reliability under the harshest industrial or commercial environments.

1.2 Features

- One 100BaseFX Fiber Ethernet Port supporting Full-Duplex operation
- Four auto-sensing 10/100BaseT Ethernet ports
- Compliance with IEEE802.3 and IEEE802.3u standards
- Act, Link and PWR LED Status Indicators
- 1kB MAC Address Table Size and 1MB Cache Buffer
- Plug and Play
- Standard DIN-Rail mount
- 6kV ESD protection
- 1.5kV isolation protection for Ethernet ports
- Extended operating temperature

1.3 Applications

- Fiber Ethernet conversion with integrated 4-port switch
- Extend Ethernet segment up to 60km
- Provide electrical isolation for substation, industrial, factory and building automation

Contact CET Technical Support should you require further assistance with your application.

1.4 Getting more information

Additional information is available from CET via the following sources:

- Visit **www.ceiec-electric.com**
- Contact your local representative
- Contact CET directly via email or telephone

Chapter 2 Installation

2.1 Appearance

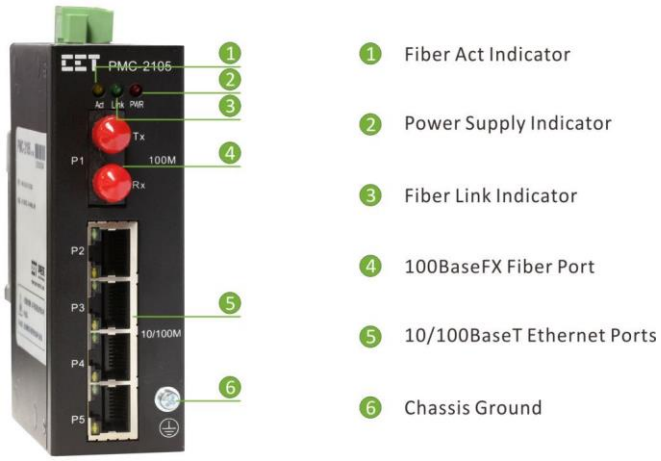


Figure 2-1 Appearance

2.2 Unit Dimensions

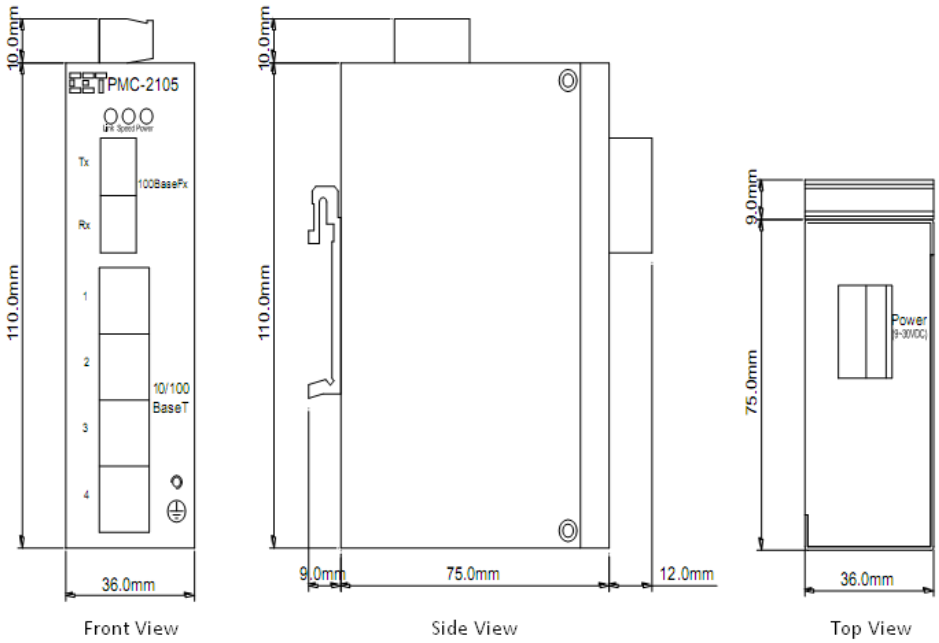


Figure 2-2 Dimensions

2.3 Mounting

The PMC-2105 should be installed in a dry environment with no dust and kept away from heat, radiation and electrical noise source.

Installation steps:

- Before installation, make sure that the 35mm DIN-Rail is already in place
- Align the top of the mounting clip at the back of the PMC-2105 at an angle against the top of the DIN rail as shown in the figure below
- Rotate the bottom of the PMC-2105 towards the back while applying a slight pressure to make sure that the device is completely and securely fixed on to the DIN rail

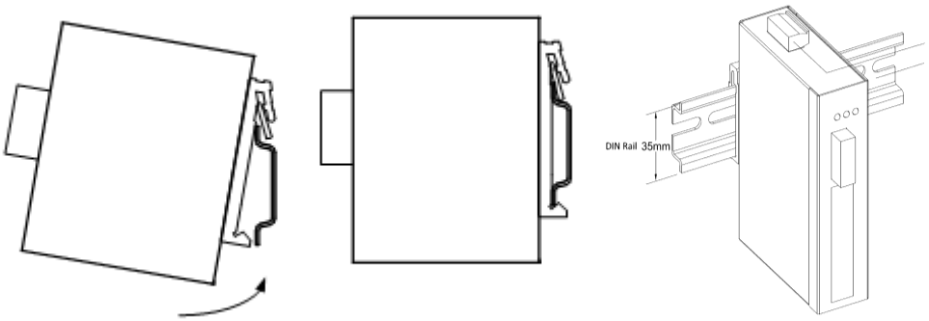


Figure 2-3 Mounting

2.4 Ethernet Wiring

2.4.1 Straight-through Connection

A straight through RJ45 cable should be used if the PMC-2105 is connected to terminal equipment. The following figure illustrates the definition of an 8-pin RJ45 straight through cable. The color-coded wires should be connected to the pins of the RJ45 connector as follows:

Pin1: Orange-White	Pin1: Orange-White
Pin 2: Orange	Pin 2: Orange
Pin 3: Green-white	Pin 3: Green-white
Pin 4: Blue	Pin 4: Blue
Pin 5: Blue-White	Pin 5: Blue-White
Pin 6: Green	Pin 6: Green
Pin 7: Brown-White	Pin 7: Brown-White
Pin 8: Brown	Pin 8: Brown

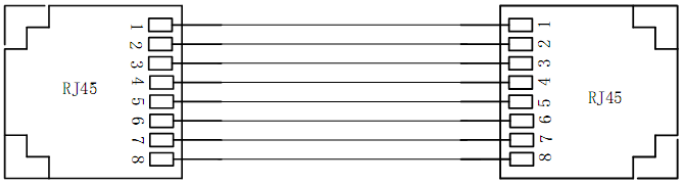


Figure 2-4 Straight-through Connection

2.4.2 Cross-over Connection

A cross-over RJ45 cable should be used if the PMC-2105 is connected to network devices. The following figure illustrates the definition of an 8-pin RJ45 cross-over cable. The color-coded wires should be connected to the pins of the RJ45 connector as follows:

Pin1: Orange-White	Pin 1: Green-White

Pin 2: Orange	Pin 2: Green
Pin 3: Green-white	Pin 3: Orange-White
Pin 4: Blue	Pin 4: Blue
Pin 5: Blue-White	Pin 5: Blue-White
Pin 6: Green	Pin 6: Orange
Pin 7: Brown-White	Pin 7: Brown-White
Pin 8: Brown	Pin 8: Brown

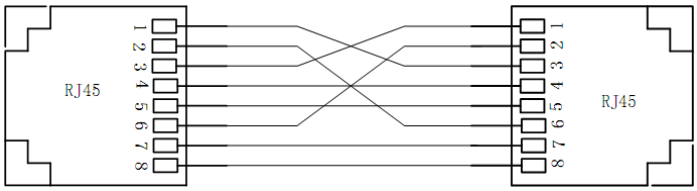


Figure 2-5 Cross-over Connections

2.5 Fiber Port Wiring

The fiber port's specifications are listed in the following table.

Standard	Connector	Mode	Wave Length	Distance (km)	Size (μm)
100BaseFX	**ST** 	Multi-mode	1310nm	2	50/125 62.5/125
		Single-mode	1310nm	20/60	9/125

Table 2-1 Fiber Port's specifications

The following figure illustrates the Fiber optical port connections:

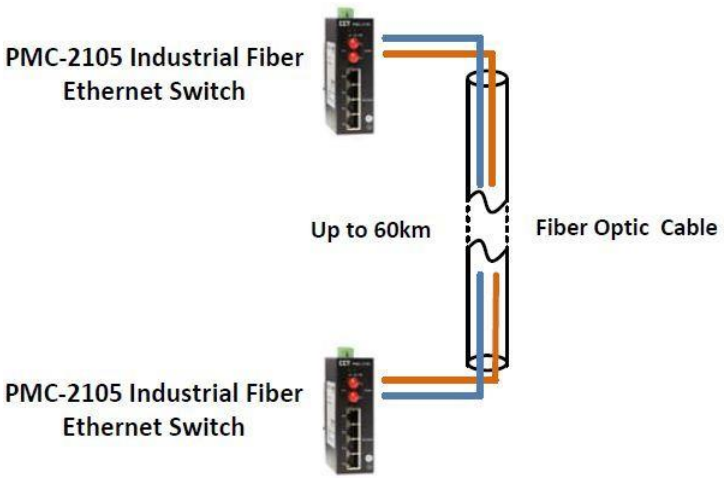


Figure 2-6 Fiber Connections

2.6 Power Supply Wiring

The PMC-2105 comes standard with a 95-250VAC/DC universal power supply and an optional 9-30VDC power supply.

For AC supply, connect the live wire to the L/+ terminal and the neutral wire to the N/- terminal. For DC supply, connect the positive wire to the L/+ terminal and the negative wire to the N/- terminal.

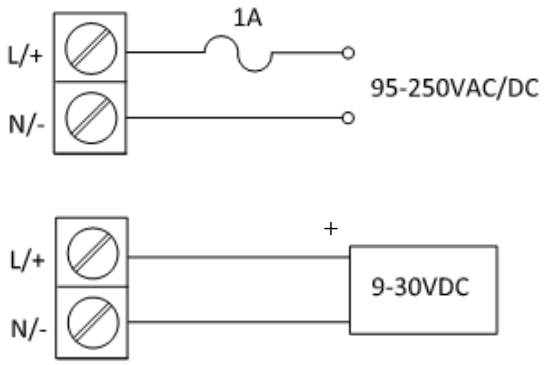


Figure 2-7 Power Supply Connections

2.7 Chassis Ground Wiring

Installation:

- Connect one end of the ground wire to the Chassis Ground terminal on the PMC-2105 using a spade connector
- Connect the other end of the ground wire to an Earth ground

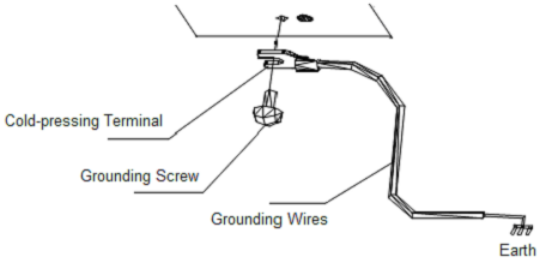


Figure 2-8 Chassis Ground connection

Chapter 3 Application

3.1 LED Indicators

PMC-2105's front panel is equipped with three LED indicators – **Act**, **Link and PWR**.

LED Indicator	Color	Function
PWR	Red	Power supply indicator
Link	Green	Fiber port connection status
Act	Yellow	Fiber port activities

Table 3-1 LED Indicators

3.2 Typical Application

The following figure illustrates the typical application of the PMC-2105:

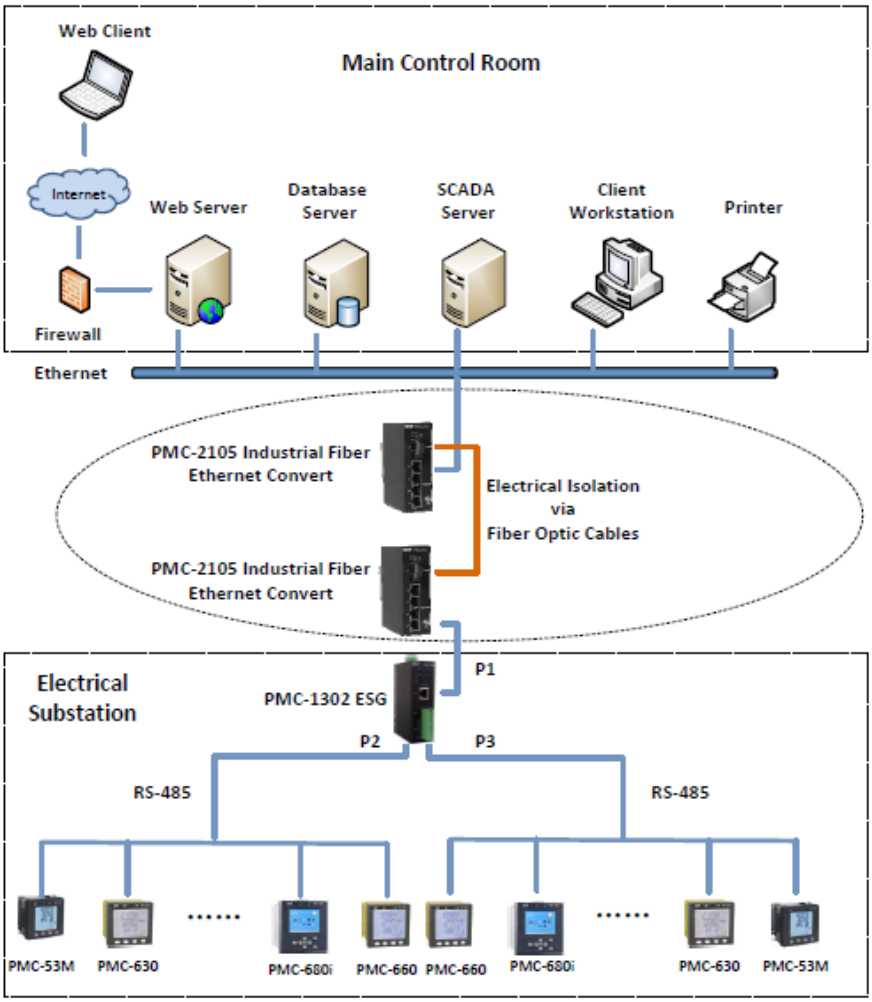


Figure 3-1 Typical Application

Appendix A Technical Specifications

Standards	
IEEE	802.3, 802.3u
Interface	
Fiber Port	1x100BaseFx Port with ST connectors
Ethernet Ports	4x10/100BaseT with RJ45 connectors
Cable	
Twisted Pair	CAT5, CAT5e with a maximum 100m distance
Multi-Mode Fiber	Supporting a distance of 2km
Wavelength, Size	1310nm , 50/125μm and 62.5/125 μm
Single-Mode Fiber	Supporting a distance of 20 / 60km
Wavelength, Size	1310nm , 9/125 μm
LED Indicators	
PWR (Red)	Power supply indicator
Link (Green)	Fiber port connection status
Act (Yellow)	Fiber port activities
Power Supply (L+, N-)	
Standard	95-250VAC/DC, 47-440Hz
Optional	9-30VDC@ 200mA
Burden	<3W
Environmental Conditions	
Operating Temp.	-25°C to +70°C
Storage Temp.	-40°C to +85°C
Humidity	0% to 95% non-condensing
Mechanical Characteristics	
Casing	Galvanized Iron
Dimensions (WxHxD)	36x110x75 mm (1.42″x4.33″×2.95″)
Weight	0.4 kg
Mounting	DIN-Rail Mount
IP Rating	30

Appendix B Standards of Compliance

Safety Requirements		
Insulation		IEC 60255-5-2000
Dielectric Test		2kV@1minute
Insulation Resistance		100MΩ
Impulse Voltage		5kV, 1.2/50us
Electromagnetic Compatibility		
Electrostatic Discharge		IEC 61000-4-2:2001 Level III
Radiated Fields		IEC 61000-4-3:2002 10V/m
Fast Transients		IEC 61000-4-4:2004 Level III
Surges		IEC 61000-4-5:2005 Level III
Conducted Disturbances		IEC 61000-4-6:2006 Level III
Magnetic Fields		IEC 61000-4-8:2001 Level IV
Oscillatory Waves		IEC 61000-4-12:1995 Level III
Mechanical Tests		
Vibration Test	Response	IEC 255-21-1:1988 Level I
	Endurance	IEC 255-21-1:1988 Level I
Shock Test	Response	IEC 255-21-2:1988 Level I
	Endurance	IEC 255-21-2:1988 Level I
Bump Test		IEC 255-21-2:1988 Level I

Appendix C Ordering Guide

Ceiec Electric Technology

Version 20120616

Product Code	Description
PMC-2105 Industrial Fiber Ethernet Switch	
Power Supply	
2	95-250VAC/VDC, 47-440Hz
A	9-30VDC
Fiber Connector	
ST	ST Connector
Fiber Port	
M002	Multi-mode, 2km
S020	Single-mode, 20km
S060	Single-mode, 60km

PMC-2105	–	**2**	–	**ST**	–	**M002**	**PMC-2105-2-ST-M002 (Standard Model)**

Contact us

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