



Power Meter Monitor

**Business and Mission-  
Critical Solutions Provider**

## Ethernet - Serial Media Converter

# Data Sheet



**Model:** PMM0501

**Document:** Data Sheet

**Document version:** 1.3

**Date:** September 2023



## COPYRIGHT NOTICE

The information in this document is subject to change without prior notice to improve reliability, design, and function and does not represent a commitment on the part of the manufacturer.

In no event will the manufacturer be liable for direct, indirect, special, incidental, or consequential damage arising out of the use or inability to use the product or documentation, even if advised of the possibility of such damages.

This document contains proprietary information protected by copyright. All rights are reserved. No part of this manual may be reproduced by any mechanical, electronic, or other means in any form without prior written permission of the manufacturer.

## TRADEMARKS

All registered trademarks and product names mentioned herein are used for identification purposes only and may be trademarks and/or registered trademarks of their respective owners.

AMI is a trademark of American Megatrends Inc.

Intel & Atom are trademarks of Intel Corporation

IBM, PC/AT, PS/2&VGA are trademarks of International Business Machines Corporation Microsoft Windows is a trademark of Microsoft Corp. RTL is the trademark of Realtek Semiconductor Co., Ltd.

## DECLARATION OF CONFORMITY

This restriction is subject to protect the operational process of the system in the business environment, which will produce, use, and transmit radiofrequency energy. Harmful interference to radio communication could result if instructions to the correct installation and usage were not applied. The interference prevention cannot be guaranteed even with proper installation according to the manual. If the device causes a bad effect on the radio / TV signal. The user could preclude that by turning the device on/off.

When this device produces some harmful interference, the user can use the following measure to solve the interference problem:

1-Setting the receiving antenna's direction or location to increase the distance between this device and receiver.

2-Plug in the device's power connector into different circuits of the power outlet with the receiver.

3-If any technical support is needed, the dealer or experienced radio/TV technical personnel must be informed.

## TECHNICAL SUPPORT AND SERVICE

Visit [Pmm-usa.us](http://Pmm-usa.us) to browse FAQs and get further details.

User should collect the following information before submitting technical support and service requests:

- Product name, model and serial number.
- Installed software (operating system, OS version, installed applications and so on).
- Full description of the problem
- Detailed information about every error.

## SAFETY INSTRUCTIONS

- Only trained and qualified personnel can install, operate, or maintain the device.
- Before starting the installation, all safety precautions must be read, and warning labels affixed to the device must be observed. Doing so protects the device from damage and ensures your safety.
- Safety precautions provided in this document may not cover all safety aspects, note to always remain mindful of safety.
- PMM is not liable for any consequence that results from violation of regulations pertaining to safe operations or safety codes pertaining to design, production, and equipment usage.
- DO NOT use liquids or decontamination spray to clean the device surface and assure that it is totally disconnected while cleaning.
- Take all measures to prevent device drop before or during installation.
- Prior to connecting the device to power source, ensure the source and device voltage and power are 100% matched.
- Keep the cables in a suitable covered place.
- If the device is not used for a long time, shut off the power to avoid the damages by transient overvoltage.
- DO NOT allow any liquid flow into the device; to avoid fire or short circuit.
- The recommended storage temperature range should NOT be less than 30°C OR higher than 85°C.



### Warning:

- Read the power source and device inlet carefully.
- Handle device with both hands.
- Clean and maintain the device using recommended, safe and suitable methods.



### Caution:

If any unauthorized changes of settings or repairs are done without PMM approval; then user's rights of controlling this device will be canceled.

# Contents

KEY FEATURES.....4

DESCRIPTION .....4

APPLICATIONS.....4

TECHNICAL SPECIFICATIONS.....5

ORDERING INFORMATION.....5

    Accessories .....5

HARDWARE CONFIGURATION.....6

PINS ASSIGNMENTS .....6

HARDWARE CONNECTIONS.....7

- Connecting Power.....7
- Connecting Serial Device .....7
- Connecting to a Host or the Network.....7

ENCLOSURE DIMENSIONS.....8

## KEY FEATURES

- Converts smoothly Between Ethernet to serial Rs485 (bridge)
- Up to 4 simultaneous Ethernet masters
- Can be used as Modbus converter through using any port forwarder software
- Effortless configuration via web-based server
- 2 or 4 serial Rs485 ports options
- Baud rate: up to 115200 Kbs
- Operating temperature: -40 to 75°C (-40 to 167°F)
- EMI, EMS, EMC and shock protected
- 10-56VDC Supply voltage with Overvoltage and reverse polarity protection
- Serial port with power surge  $\pm 2.5\text{kV}$  and isolation protection

## DESCRIPTION

PMM0501 hardware provides the flexibility needed to fulfill the various conditions that arise with field devices that use different communication protocols to connect any type of industrial solution network such as the SCADA system. This slave device is effortlessly incorporated into an existing Modbus TCP network from any Modbus RTU device.

PMM0501 industrial grade media converter can function under harsh environmental conditions of any site. It is especially designed to meet all power substations and PV plants requirements. Furthermore, it covers all field standards of power, reliability, easy configuration and long-lasting life.

This device can be ordered with multiple powersupply ratings to select from.

## APPLICATIONS

PMM0501 can perform efficiently and effectively in the PV, substation and industrial applications as:

- Ethernet - RS485 General Converter

## TECHNICAL SPECIFICATIONS

### Interfaces

Serial	2 or 4 customized Serial ports of the following options: <ul style="list-style-type: none"> <li>Isolated RSR85 port</li> <li>Isolated RS422 port</li> <li>Isolated RS232 port</li> </ul>
Ethernet	1x 10/100/1000Base-T RJ45
LED Indicators	2x LED for full duplex

### Power Parameters

Input Power Supply Options	10-48 VAC / 10-60 VDC
Power Connector	Phoenix Contact 4 pins 3.5mm

### Physical Characteristics

Housing	Plastic
Dimensions	Dimensions 4.05*4.05*1.45 inch (103*103*1.45 mm)
Mounting Options	DIN Rail

## ORDERING INFORMATION

### Order Configuration Table

<b>PMM0501 (2x Serial Ports)</b>	-09xx
<b>COM Port 1</b>	
RS485 (PMM0912)	-0912
<b>COM Port 2</b>	
RS485 (PMM0912)	-0912
<b>PMM0501 (4x Serial Ports)</b>	-09xx
<b>COM Port 1</b>	
RS485 (PMM0912)	-0912
<b>COM Port 2</b>	
RS485 (PMM0912)	-0912
<b>COM Port 3</b>	
RS485 (PMM0912)	-0912
<b>COM Port 4</b>	
RS485 (PMM0912)	-0912

### Accessories

DIN Mounting Kit (Included 1Kit)	DIN Rail Mounting Bracket
----------------------------------	---------------------------

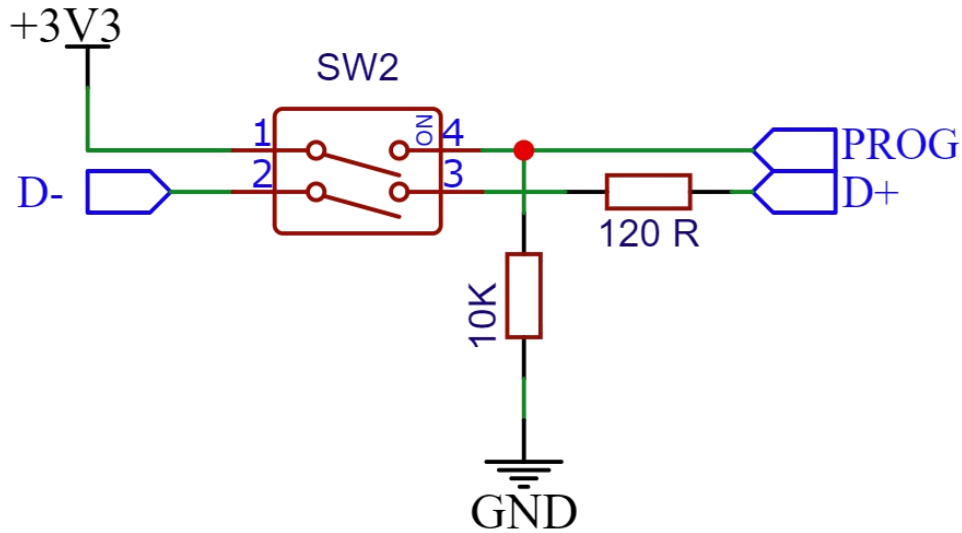
## CONTACT INFORMATION:

For direct inquiries or any customized orders, contact us on [sales@Pmm-usa.us](mailto:sales@Pmm-usa.us)

## HARDWARE CONFIGURATION

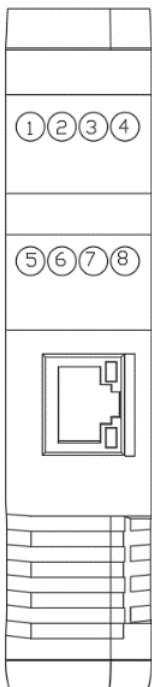
Termination resistor is needed to avoid data-corrupting reflections and expand the network between D+ and D- lines for the RS485.

- Turn on the dip switch (closed circuit) to have a termination resistor of 120Ω between D+ and D- lines.
- The other dip switch is for PROG mode, it is used to switch between two customized modes. As shown in the figure below.



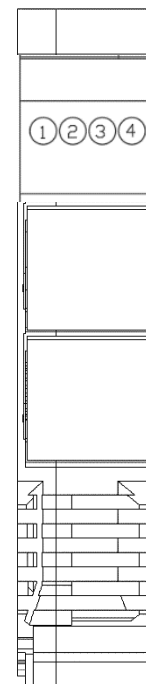
## PINS ASSIGNMENTS

TOP VIEW



1. D- (RS485)
2. D+ (RS485)
3. Earth
4. Earth
5. V DC+ (9-56)
6. V DC- (9-56)
7. Earth
8. Earth

BOTTOM VIEW



1. D+ (RS485)
2. Earth
3. D- (RS485)
4. Earth

## HARDWARE CONNECTIONS

- **Connecting Power**

PMM0501 has customized power supply options including: 10-48V AC and 10-60V DC based on these options connect the power line to the terminal block (POWER) as shown in the figure below.

PMM0501 does not have on/off switch thus the device turns on automatically when receiving power.

- **Connecting Serial Device**

PMM0501 has two or four serial ports; If you are connecting an RS485 multidrop network with multiple devices, note the following:

1. All devices that are connected to a single serial port must use the same protocol (i.e., either Modbus RTU or Modbus ASCII).
2. For the first port connect the D+ with pin no.1 and D- with pin no.2 and Earth with pin no.7 or 8 as illustrated in the pin's assignments to complete the connection successfully.
3. For the second port connect the D+ with pin no.1 and D- with pin no.3 and Earth with pin no.2 or 4 as illustrated in the pin's assignments to complete the connection successfully.
4. Turn on the dip switch to have 120  $\Omega$  termination resistor between the D+ and D- lines. Refer hardware configuration section.

- **Connecting to a Host or the Network**

There is a 10/100 Ethernet port at the unit's front panel. This port is used to connect the unit with a host or Ethernet network.

# ENCLOSURE DIMENSIONS

