



Power Meter Monitor

**Business and Mission-  
Critical Solutions Provider**

**12 x Digital Input 24VDC**

# Data Sheet



**Model:** PMM0620-024  
**Document:** Data Sheet  
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## 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.

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## KEY FEATURES

- 12 x Isolated Digital Input 24VDC
- 32-bit ARM core CPU with 48 MHz clock
- Hot swap redundancy exchange and fail safe ready
- Stand-alone programming or Modular operation modes
- 1x Ethernet 10/100 port
- 1x Serial RS485 port with power surge  $\pm 2.5\text{kV}$  isolation protection
- Overvoltage and reverse polarity protected
- Onboard Termination resistor via dip switch
- Wide range of power supply options (9-56 VDC)
- 5000V system/field isolation
- Simple to set up and cost effective
- High speed data read/write with high reliability and accuracy
- EMI, EMS, EMC and shock protected
- -40 to 80 °C Operating temperature
- 5% to 90% Non-condensing Relative Humidity
- Standard 35mm din rail mounting bracket

## DESCRIPTION

PMM0620-024 is a reliable, and simple to set up digital Input module that has 12 isolated channels. The module receives digital signals from sensors and field devices of 24V range. In addition, the isolation feature provides high protection against ground potential differences between field signals and the CPU. PMM0620-024 is widely used in signal interface switching of PLC, single chip or other industrial control board.

Moreover, PMM0620-024 operates under three operational modes:

- **Modular operation mode:** the module is connected to a PLC by RS485 and implement specific function assigned by the PLC.
- **Fail Safe mode:** the module should be pre-programmed in case of lost connection with the PLC to carry on its function effectively.
- **Stand-alone:** the module can be programmed to work as PLC and control the field devices.

In addition, PMM0620-024 industrial grade IO module can function under harsh environmental conditions of any site. It is reliable, easy to configure and has an extreme accuracy.

## TECHNICAL SPECIFICATIONS

### INPUT SPECIFICATIONS

Signal type	Voltage
Voltage signal type	24V DC
Input characteristic	High-Side switching
Input current per channel	10mA
Isolation	5000V system/field
Power supply	9-56 VDC
Degree of protection	IP45

### Interfaces

Serial	1x RSR85 port
Ethernet	1x 10/100
DI/DO	12 digital inputs 24VDC
USB	1x USB2.0 Type micro-B
LED Indicators	1x LED for Tx and 1x LED for Rx for communication over RS485 port indication 12x LED for signals transmission indication

### Power Parameters

Input Power Supply Options	9-56 VDC (10-40 VAC)
Power Connector	Phoenix Contact 4 pins 3.5mm

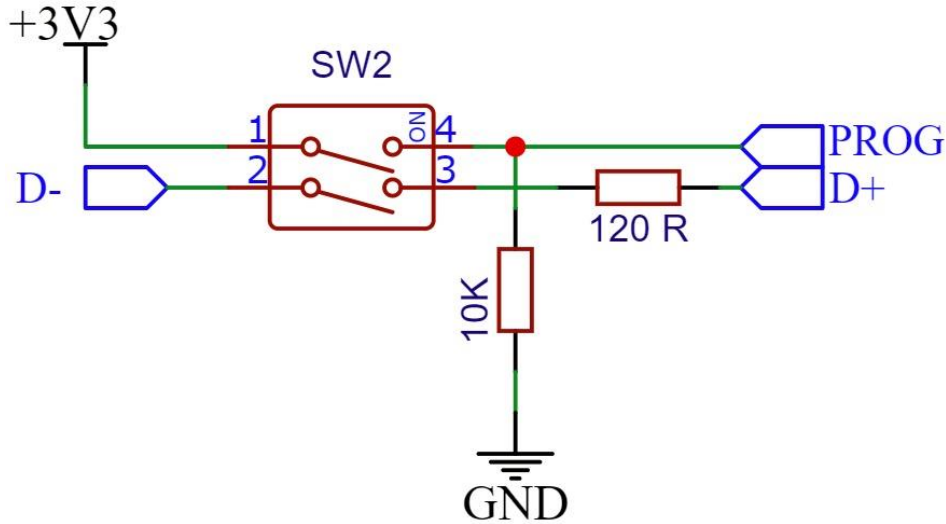
### Physical Characteristics

Housing	Polyamide (Nylon 6.66)/PA
Dimensions	3.91x4.37x0.99 inch (99.4x111.2x22.6 mm)
Mounting Options	DIN Rail

## HARDWARE CONFIGURATION

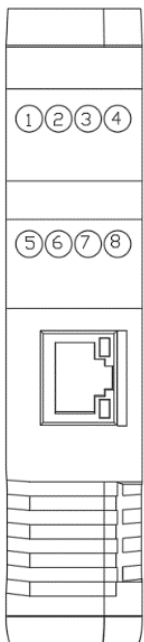
Termination resistor is needed to avoid data-corrupting reflections and expand the network between D+ and D- lines for the RS485.

- 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.



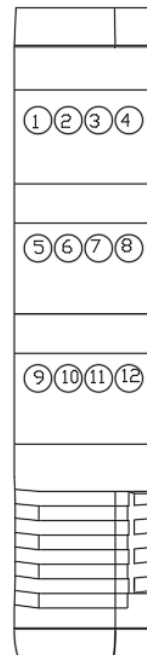
## PIN ASSIGNMENTS

### TOP VIEW



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

### BOTTOM VIEW



1. Digital Input 01
2. Digital Input 02
3. Digital Input 03
4. Digital Input 04
5. Digital Input 05
6. Digital Input 06
7. Digital Input 07
8. Digital Input 08
9. Digital Input 09
10. Digital Input 10
11. Digital Input 11
12. Digital Input 12

## HARDWARE CONNECTIONS

### 1. Connecting Power

PMM0620-024 has two power supply options 9-56V DC or 10-40 V AC, the user has to connect the positive power line (+) to pin no.5 in the top view and the negative line (-) to pin no.6 as illustrated in the pin's assignments.

**Note:** the power is protected against overvoltage and reverse polarity in case of wrong connection.

### 2. Connecting Serial Device

The unit's serial port is located on the top panel. If you are connecting an RS485 multidrop network with multiple devices, note the following:

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

### 3. Connecting Digital Input

- Connect the signal line with one of the twelve digital input pins on the bottom view (01-12) and the common line with pin no.3 or 4.

### 4. Connecting to a Host or the Network

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



# ENCLOSURE DIMENSIONS

