



Power Meter Monitor

**Business and Mission-
Critical Solutions Provider**

PLC Intelligent I/O, Industrial CPU

Data Sheet



Model: PMM0104

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 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

- Open platform-license-free with unlimited possibilities powered by 32-bit ARM Cortex-M3 RISC processor
- Different operational modes through DIP switches cover: Standalone or Central PLC CPU, Remote IO RTU and TCP, Process controller, Communication processor, Media converter and more
- 38 Customized IO Pins through our signal conditioner range including:
 1. 38 Digital inputs cover most standard voltage levels
 2. 38 Digital outputs cover most standard types of switching
 3. 10 x 12bit Analog inputs cover most standard types of analog inputs
 4. 2 x 10bit Analog Outputs
 5. 10 PWM outputs for Analog Outputs and motor control
 6. Up to 8 Serial communication ports cover all standard types as RS232, RS422, RS485, CanBUS, SPI, I2C and more
 7. Any Mix of Above options within the 36 pins
- 20 customizable LED indicators that can be controlled through programming.
- 1x Ethernet 10/100 ports
- 1x RS485 communication ports with 115,200 bps Baud Rate
- Wi-Fi 2.4GHz Port with external antenna
- GSM Ready Communication Slot
- 2-32 GB customizable SD card slot
- RTC with internal battery
- Many Programming options include Ladder diagram, Function block, Visual Studio, Arduino IDE compatible and many more.
- Different Power supply options with over voltage and reverse polarity protection
- Redundant in/out 5VDC direct Power option to be connected with signal conditioners or PMM compatible UPSs
- ± 2.5 kV ESD protection
- Meets all power substation requirements.
- Different mounting system style options
- -40 to 85°C system operating temperature
- Compact, fanless design
- Degree of protection: IP54

DESCRIPTION

PMM0104 is a rugged, powerful, reliable and fanless industrial CPU, independent, flexible, innovative, secure, and license-free powered by a 32-bit ARM Cortex-M3 RISC processor.

This device has a large variety of applications within the industrial domain, the pins can be easily customized through any type of programming software to fit function through our range of signal conditioners.

It is enclosed within a durable metal chassis that has been thoroughly tested on field to withstand shock, vibration, extended temperature ranges as well as the challenging elements of the harsh industrial environment.

With this industrial controller all field standards of power and **power substation** requirements are met. It is easily configurable, customizable, flexible, and reliable.

License-free Programming

PMM0104 is an open platform that comes with many predefined operations, the PLC can also be programed with many other software solutions like:

PlatformIO	Atmel Studio
MATLAB	Visuino
logi.CAD	LabVIEW
GNU Octave	Flowcode
Arduino IDE	Visual Studio Code
Visual Micro	and more.

Easy-GO.. No Complex Datasheet Required

With thousands of articles and application notes available on the web about Arduino projects, you can start your application in minutes .

Generally said: If the software is compatible with traditional Arduino boards, you can use it for PMM0104 too.

TECHNICAL SPECIFICATIONS

Controller

CPU	32-bit ARM Cortex-M3 RISC processor
Flash /SRAM	512 KB /100 KB
RTC CHIP	DS3231

Controller Interface

Ethernet	1x ports 10/100
Serial Communication Port	1x RS485
SD Card Slots	MicroSD
USB Ports	1x USB2.0 type A
Customized Interfaces	38 Digital inputs/outputs 12x 12 bit Analog Input 2x 10 bit Digital to Analog 10x PWM 2x I2C 2x UART 1x SPI
Optional Modules	Wi-Fi 2.4Ghz Port GSM Module

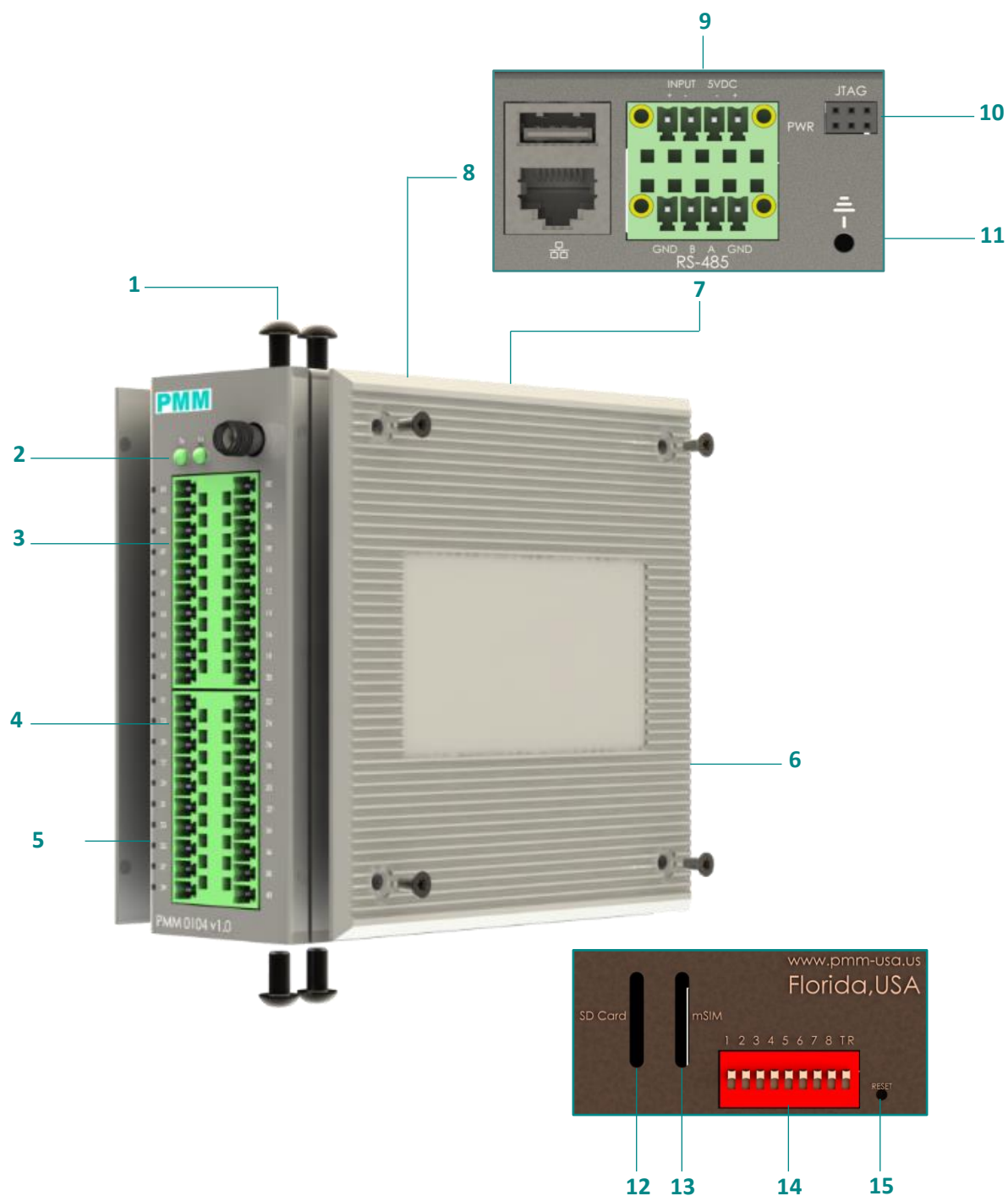
Power Parameters

Power Supply Options	10-60 VDC 85-285 VAC / 100-300 VDC
Power Connector	Phoenix Contact 4 pins 3.5mm

Physical Characteristics

Housing	Metal
Dimensions	4 x 4 x 1.75 inch (101 x 101 x44 mm)
Mounting Options	Standard 35mm DIN Rail Direct Panel Mounting Front Panel Mounting 19" rack 1U
Certifications	RoHS, CE and FCC

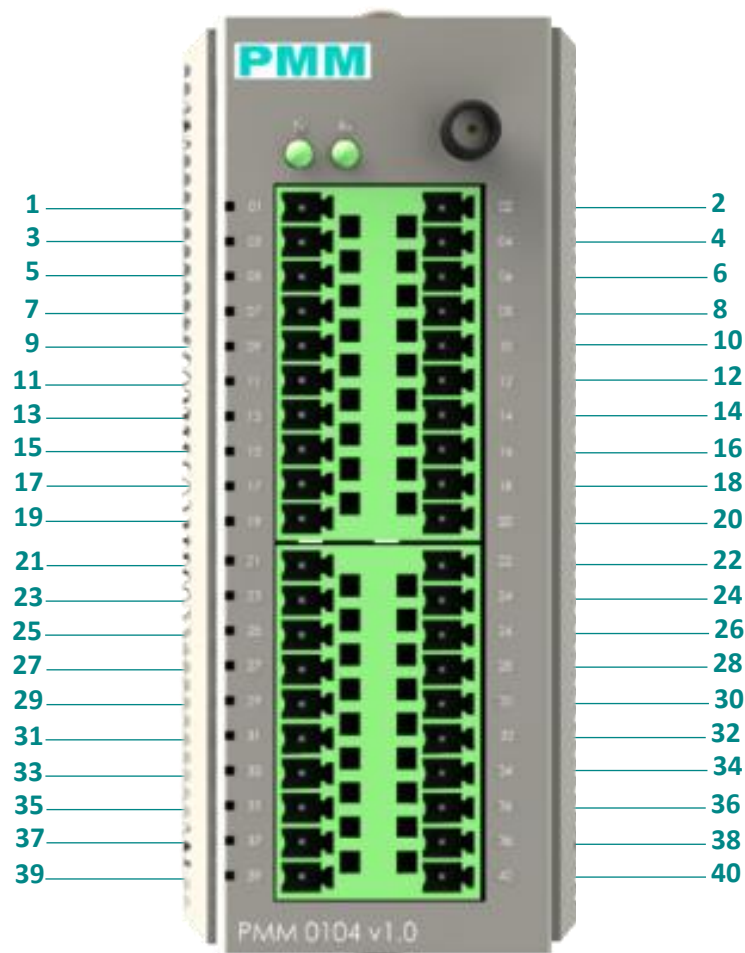
ENCLOSURE ASSEMBLY INFORMATION



ITEM	DESCRIPTION
1	Screws
2	Rs485 LED indicators
3	IO Ports
4	IO Ports
5	Programmable LEDs
6	Side Heat Sink
7	RS485 Connector

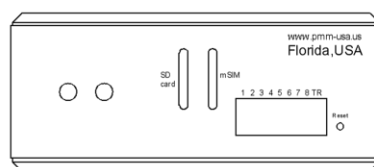
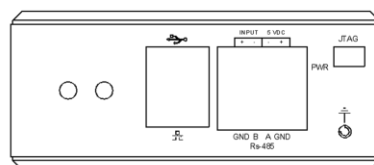
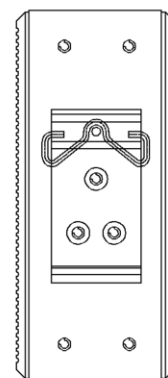
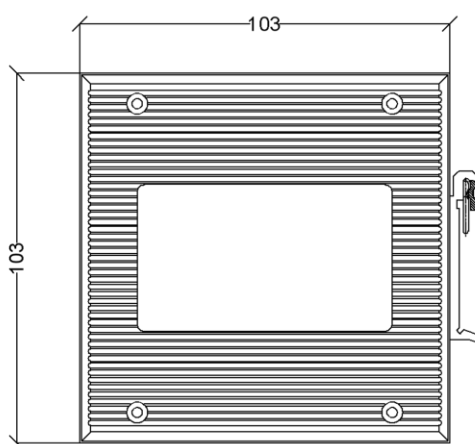
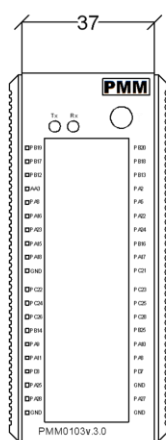
8	Ethernet and USB Connectors
9	Power Connector
10	JTAG Port
11	Earth
12	SD card slot
13	mSIM slot
14	Configuration Switch
15	Reset Button

PIN DESCRIPTION



DESCRIPTION				PIN	PIN	DESCRIPTION			
		A-10	D-01	1	2	D-02	A-11		
		A-08	D-03	3	4	D-04	A-09		
I2C0-SDA			D-05	5	6	D-06			I2C0-SCL
		A-06	D-07	7	8	D-08	A-07		
		A-04	D-09	9	10	D-10	A-05		
		A-02	D-11	11	12	D-12	A-03		
		A-00	D-13	13	14	D-14	A-01		
DAC-01			D-15	15	16	D-16			DAC-02
I2C1-SCL			D-17	17	18	D-18			I2C1-SDA
Ground				19	20	D-20		PWM-09	
	PWM-08		D-19	21	22	D-22		PWM-07	
	PWM-06		D-21	23	24	D-24		PWM-05	
	PWM-04		D-23	25	26	D-26		PWM-03	
	PWMH2		D-25	27	28	D-28		PWM-02	
TX-00			D-27	29	30	D-30			RX-01
TX-01			D-29	31	32	D-32			RX-00
TIO	PWM-12		D-31	33	34	D-34		PMW-11	
SPI-MISO			D-33	35	36	PA1			CANRX
SPI-MOSI			D-35	37	38	D-36			SPI-SPCLK
Ground				39	40	PD10			

ENCLOSURE DIMENSIONS



ORDERING INFORMATION

Order Configuration table	
PMM0104	-X
Power supply	
10-60 VDC	-1
85-285 VAC (100-300 VDC)	-2
DIN Mounting Kit (Included 1 Kit)	DIN Rail Mounting Bracket
Wall Mounting Kit (Included 1 Kit)	2x Wall Mounting Bracket
Panel Mounting Kit (Optional)	2x Panel Mounting Bracket
Rack Mounting Kit (Optional)	Rack Mounting Bracket

CONTACT INFORMATION:

For direct inquiries or any customized orders, contact us on sales@Pmm-usa.us