



Power Meter Monitor

Business and Mission-

Critical Solutions Provider

POWER PLANT CONTROLLER AND DATA LOGGER

Data Sheet



Model: PMM1105

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

- **Data Logging**
Records several thousand data channels with a resolution of up to one second.
- **Protocols**
Modbus-RTU, Modbus TCP, inverter protocols, sensor protocols, IEC 101 and IEC104 protocols.
- **Data Transfer**
FTP, SFTP, FTPS Server and Client functionality.
- **API**
REST API
- **Simple HMI**
Web browser-based visualization and control interface.
- **Configuration Interface**
Browser based web-frontend.
- **Absolute production constraint**
A controlling function used to limit the active power generated at the point of connection.
- **Power Gradient Constrains**
Enforces a gradient at which the plant must ramp its active power to the desired set point, to prevent disturbances on the network.
- **Voltage Control**
Regulates the voltage at the point of connection.
- **Reactive Power Control**
Regulates the reactive power at the point of connection.
- **Power Factor Control**
Regulates the plant at a constant power factor at the point of connection.
- **Frequency Control**
As defined in the grid code, it considers both under and over frequency conditions.
- All standard security requirements (SSL) are met without compromising low power consumption.
- Grid interaction based on IEC60870-5, DNP 3.
- Connectivity Protocols from all leading inverter manufacturers are integrated I/O devices (e.g., weather stations, medium voltage parameters).
- Data memory with individual logging interval 32GB flash 0.1 s up to 72 h, individual per channel.

DESCRIPTION

PMM1105 is a reliable and flexible solution capable of controlling a series of different elements present in PV and Wind power plants to achieve TSO (Transmission System Operator) or DSO (Distribution System Operator) requirements at the point of common coupling.

The international requirements for grid stability management are met using closed loop controls offering the following functionalities:

- Active Power Reference, with or without ramp rate limiter (increase or decrease power if it is possible).
- Active Power Curtailment, regardless of the presence of a ramp rate limiter.
- Frequency control depending on the frequency deviations.
- Voltage Control through an automatic voltage regulator.
- Reactive Power control.
- Power factor control.

Data acquisition and control is inverter independent and gives feedback about losses due to inverter malfunction, PV modules soiling, shading and but not limited to module degradation.

This Windows based platform can control up to 200MW PV plants with just one controller meeting all international requirements and fulfilling IEC 60870-5 (communication protocol for supervisory control and data acquisition) standard for active power, reactive power, ramp rates, etc. Data collection rate can be down to one second or more, which is often required by utilities to zoom for grid impacts tests.

The strength of this flexible data solution is its ability to perform signal conditioning, data storage, transfer, and compression. Communication is fast, easy, and reliable as it uses the communication industry standard protocols (Modbus), longer distances can be reached effortlessly through fiber optic technology.

PMM0108 CHASSIS HARDWARE SPECIFICATIONS

Processor

CPU	Intel® Apollo Lake Series J3355
Frequency	Dual core 2.3GHz
L2 Cache	2 MB
BIOS	AMI EFI 16Mbit

Display

Display Controller	Integrated graphics media accelerator
HDMI	Max resolution up to 4096×2160@30Hz

Memory

Architecture	DDR3L-1666MHz
Capacity	Up to 8GB
DIMM	1 x 204-pin SODIMM

LAN

LAN 1	Intel i210 Gbe LAN controller
LAN 2	Intel i210 Gbe LAN controller
Extended LAN	4x 1000 Mbps RJ-45

IO

COM	2x RS-232 Ports (RS-232/485 Optional)
USB	4x USB3.0/2.0/1.1

Other

Digital IO	N/A
Watchdog	0 to 255 seconds programmable

Expansion Slot

Mini ePCI	2x full size PCIe with SIM holder
ePCI	N/A

Storage Medium

SSD	1x full size mSATA SSD
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Operating System

Microsoft Windows	Windows 10
Linux	Ubuntu

Power

Type	AT
Input Voltage	9-30V DC ±10%
Minimum Input	12V, 3A
Power Adapter	Optional

Power Dissipation

No-load	15 Watt
Full load	31 Watt

physical Characteristics

housing	Aluminum Alloy Box
Mounting	Standard 35mm Din-rail 2 Bracket wall-mounting
Dimensions	5.71 x 5.71 x 2.95 inch (145mm x 145mm x 75mm)
Weight	1.6 Kg

Environmental

Operating Temperature	-20 to 60°C (-4 to 140°F) Wide temperature SSD 0 to 45°C (32 to 113°F) General temperature HDD/SSD
Storage Temperature	-40 to 80°C (-40 to 176°F)
Operating Humidity	5 to 95% (Non condensation)
Shake	SSD applied: 1.5 Grms, IEC 60068-2-64, random, 5 to 500 HZ, 1hr/axis
Shock	SSD applied: 10 G, IEC 60068-2-64, Half sine wave, 11ms duration
EMC	CE/FCC Class A
Safety Certification	CCC

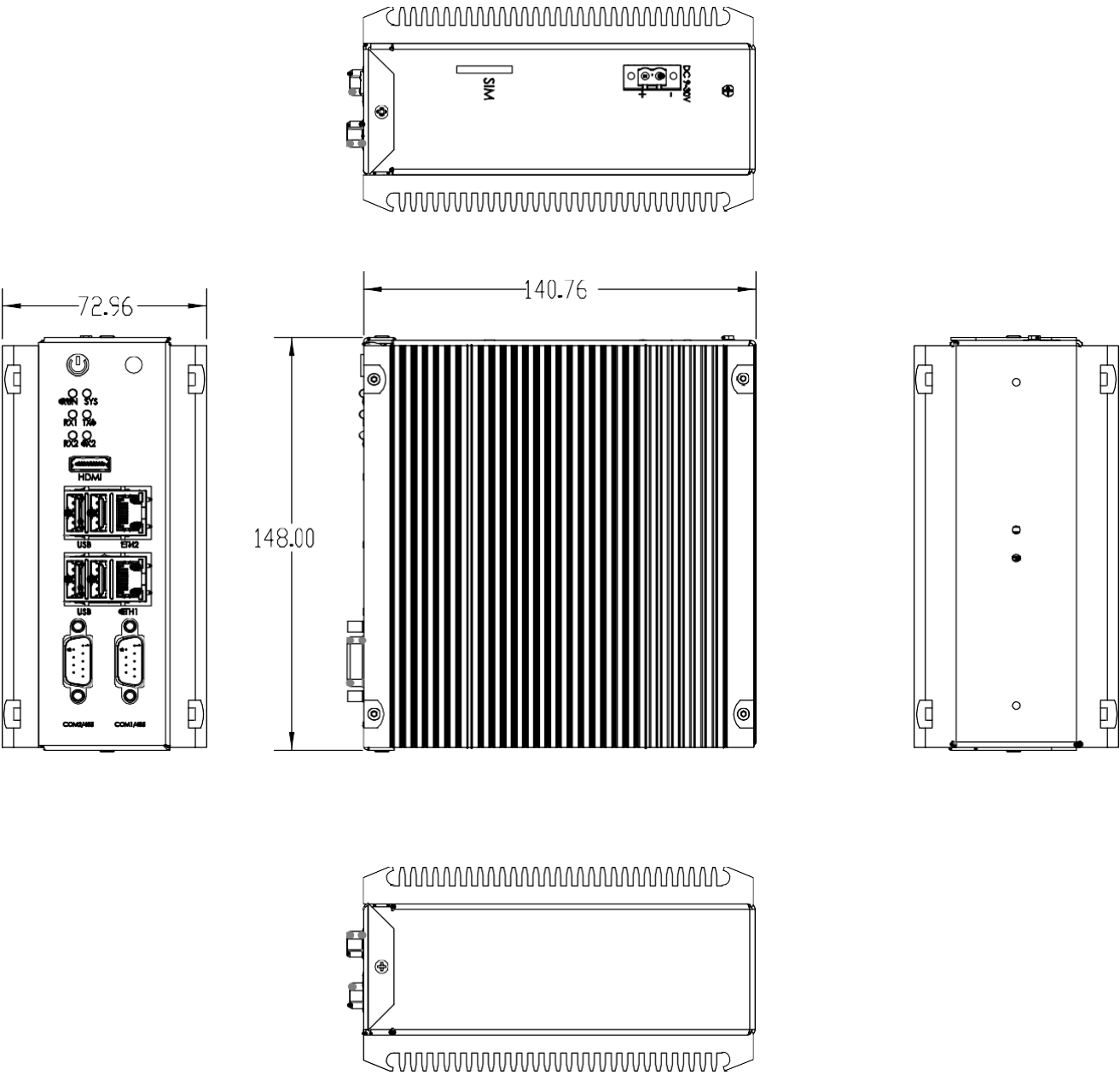
ENCLOSURE ASSEMBLY INFORMATION



ITEM	DESCRIPTION
1	Power Switch
2	LEDs
3	HDMI Port
4	4x USB3.0 Ports
5	2x Ethernet Ports

6	2x RS485 Ports
7	SIM card slot (option only)
8	DC 9~30V
9	Heatsink
10	Screw

ENCLOSURE DIMENTIONS



ORDERING INFORMATION

Supply Voltage

TYPE	Description
DC input	9-30 Vdc power supply

Accessories

DIN01 (included)	1x DIN Rail Clip
MB01 (included)	2x Mounting Bracket

Recommended Products

PMM0703-I/O	I/O module with 16 input output channels.
PMM0108-INV-050	External power supply DC/AC: 12-56VDC / 10-48VAC
PMM0108-INV-100	External power supply DC/AC: 100-300VDC / 85-265VAC
EC25-EUX Mini PCIe	LTE module for cellular connectivity.

WORLDWIDE DISTRIBUTION (OUTSIDE USA)

Find us on:



For direct inquiries, contact us on sales@Pmm-usa.us

CUSTOMIZED REQUIREMENT

For any customized inquiries and orders, contact us on info@Pmm-usa.us

HAZARDOUS MATERIALS DISCLOSURE

Hazardous Materials Disclosure Table for IPB Products Certified as RoHS Compliant Under 2002/95/EC without Mercury

The details provided in this appendix are to ensure that the product is compliant with the Peoples United states of America (USA) RoHS standards. The table below acknowledges the presence of small quantities of certain materials in the product and is applicable to USA RoHS only.

A label will be placed on each product to indicate the estimated “Environmentally Friendly Use Period” (EFUP). This is an estimate of the number of years that these substances would “not leak out or undergo abrupt change.” This product may contain replaceable sub-assemblies/components which have a shorter EFUP such as batteries and lamps (These components will be separately marked).

Please refer to the table below.

Part Name	Toxic or Hazardous Substances and Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (CR(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers(PBDE)
Housing	X	O	O	O	O	X
Housing	X	O	O	O	O	X
Printed Circuit Board	X	O	O	O	O	X
Metal Fasteners	X	O	O	O	O	O
Cable Assembly	X	O	O	O	O	X
Fan Assembly	X	O	O	O	O	X
Fan Assembly	X	O	O	O	O	X
Battery	O	O	O	O	O	O

O: This toxic or hazardous substance is contained in all the homogeneous materials for the part is below the limit requirement in SJ/T11363-2006

X: This toxic or hazardous substance is contained in at least one of the homogeneous materials for this part is above the limit requirement in SJ/T11363-2006