

## WIRELESS MBUS 433 MHz GATEWAY



**Model: PMM1202G**

**Document: Datasheet**

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## DECLARATION OF CONFORMITY

This device is designed for use in business environments where it may generate, use, and radiate radio frequency energy. If not installed and used in strict accordance with the instructions, it may cause harmful interference to radio communications.

Although every effort is made to minimize interference, there is no guarantee that interference will not occur in a particular installation. If this device causes interference in radio or television reception, the user may mitigate the issue by applying one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the distance between the device and the receiver.
3. Connect the device's power supply to a separate power circuit than that of the receiver.

## TECHNICAL SUPPORT AND SERVICE

For technical support and service, please visit [pmm-usa.us](http://pmm-usa.us) to access FAQs and additional resources.

Before contacting support, users should prepare the following information:

- Product name, model, and serial number.
- Installed software details (operating system, version, and applications).
- Complete description of the issue.
- Detailed error information and any observed conditions.

## SAFETY INSTRUCTIONS

Only trained and qualified personnel should install, operate, or maintain this device. Failure to follow safety precautions may result in damage to the equipment and personal injury.

Key safety guidelines include:

- Carefully read all safety instructions and heed warning labels before installation.
- Do not use liquids or spray cleaners; ensure the device is completely disconnected from power before cleaning.
- Take precautions to prevent the device from dropping during transport or installation.
- Ensure input voltage and power match device specifications before connecting to the power source.
- Keep cables properly routed and protected.
- If the device is not used for an extended period, disconnect power to prevent transient overvoltage damage.
- Do not allow liquids to enter the device to avoid fire hazards or short circuits.
- Recommended storage temperature **-40°C to +85°C**.

PMM is not liable for consequences arising from failure to comply with safety standards, regulations, or codes related to design, production, and equipment usage

## WARNINGS & CAUTIONS

### ⚠ Warning

- Read the power source and device inlet specifications carefully before connecting.
- Always handle the device with both hands.
- Clean and maintain the device only with safe, recommended methods.

### ⚠ Caution

Unauthorized modifications, settings changes, or repairs without **PMM approval** will void the user's rights to operate or control this

## PRODUCT OVERVIEW

The MMS1202G is a high-reliability wireless Mbus 433 MHz gateway, that aggregates and transmits wireless data through multiple integrated 433 MHz communication modules. It has been engineered for long-range, low-power operation, and is enclosed in a rugged IP65 housing suitable for outdoor deployments.

The device combines data management, anti-jamming, watchdog recovery, and secure communication features into one platform. With support for extended backup operation, redundant power inputs, and automatic fault recovery, it is ideally suited for mission-critical remote monitoring environments, particularly water metering networks.

## KEY FEATURES

Feature	Description	
Multi-Module Integration	Supports up to 4 wireless modules, synchronized for wide coverage	
Data Export	Automatic reporting in CSV or custom formats to FTP servers at configurable intervals	
Anti-Jamming Protection	Intelligent self-reset in the event of communication interference	
Watchdog Functionality	Automatic system recovery from lockups or unexpected faults	
Power Management	Integrated charger for Lithium-ion / Lithium-polymer backup batteries, extended runtime on battery in case of power outage, low-power design with automatic sleep/wake-up cycles	
Secure Communication	AES-128 encryption for data integrity and protection	
Reliability & Protection	Automatic Restart	Watchdog-controlled automatic restart
	Anti-Jamming	Auto-reset logic to recover from interference
	Battery Protection	Integrated protection circuits
	Backup Operation	Extended operation up to 48 hours on battery backup
	Surge Protection	Optional surge & lightning protection
	ESD Protection	Up to 15 kV
	Ingress Protection	Certified IP65
Compliance & Certifications	Safety & Environmental	CE, FCC, RoHS (in progress / planned)
	EMC	EN55032
	Protocol Compliance	Wireless M-Bus EN13757-4
	Immunity Standards	IEC 61000 for surge and immunity
Performance Metrics	Battery Runtime	Up to 48-hours of continuous operation without external power
	Communication Range	Up to 2 km line-of-sight (depending on antenna)
	Data Reliability	>99% packet success rate with retransmission logic
	Latency	Typically, < 200 ms per hop

## TARGET APPLICATION

Application Area	Examples / Use Cases
Water Metering & Utility Systems	Smart water metering, AMR/AMI networks, district metering, leak monitoring
Renewable Energy & Industry	PV and wind plant monitoring, substation data collection, industrial automation
Broadband Private Networks	Transportation, education campuses, oil & gas, finance, government facilities
Public Infrastructure	Railways, electric power distribution, public security
Multimedia Transmission	Video conferencing, telepresence, integrated image/voice/data systems

**ELECTRICAL SPECIFICATIONS**

Parameter	Specification
Frequency Range	433.05 – 434.70 MHz
Transmission Power	up to 14 dBm
Receiver Sensitivity	–108 dBm (at 32.768 kbps)
Number of Channels	12
Data Rates	4.8 / 32.768 / 100 kbps
Protocols	Wireless M-Bus, EN 13757-4 (S, T, C modes)
Encryption	AES-128 with configurable keys
Supply Voltage (Module)	2.0 – 3.6 V DC
System Power Supply	7–60 V DC, redundant input
Current Consumption	TX ~33 mA @ 14 dBm, RX ~9 mA, Sleep ~1 µA
Interfaces	UART (default 19200 bps, 8N1)
Operating Temperature	–40 °C to +80 °C
Storage Temperature	–50 °C to +105 °C
Humidity Tolerance	Up to 95% RH non-condensing

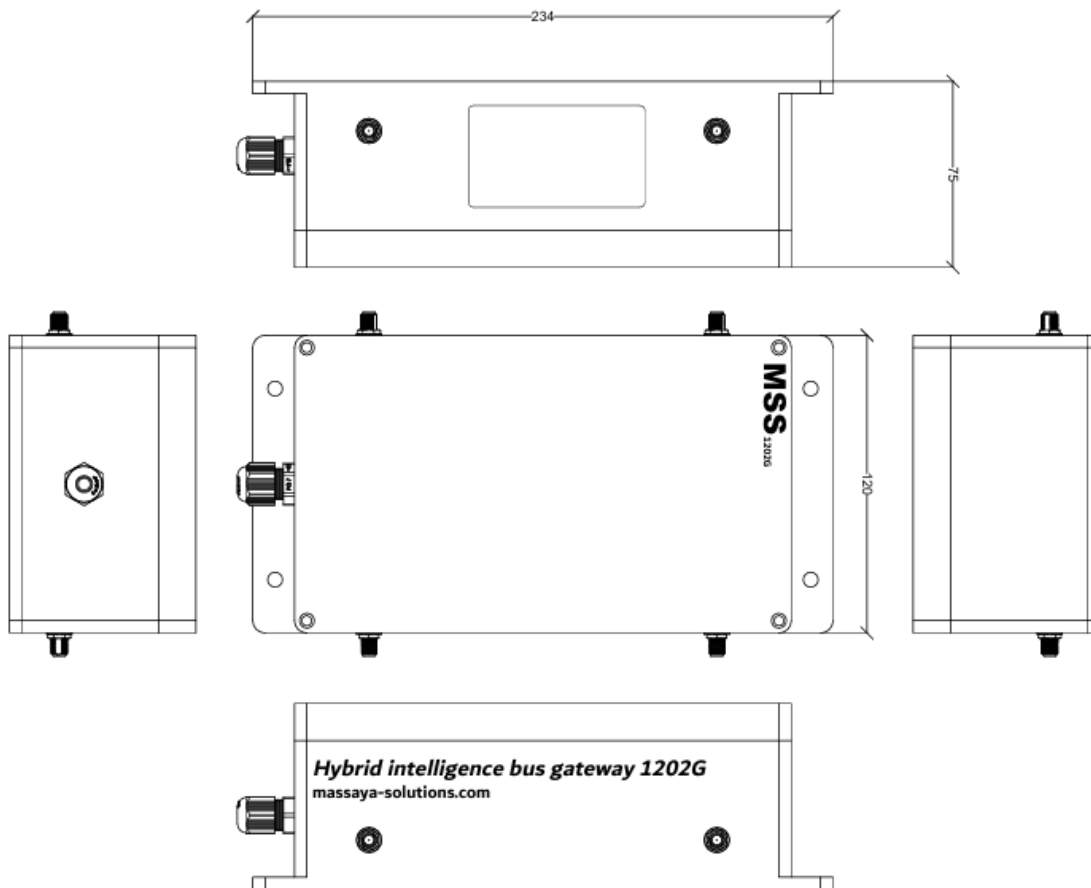
**ENCLOSURE SPECIFICATIONS**

Parameter	Description
Material	ABS Plastic
Size	234w × 120d × 75h mm
Ingress Protection	IP65 – waterproof & dustproof
Durability	UV and impact resistant for long-term outdoor use
Mounting Options	Wall, pole, or panel mount (DIN rail kit optional)

**INSTALLATION GUIDELINES**

Guideline	Description
Mounting	Secure installation with 4 screws on wall, panel, or pole
Clearance	Maintain at least 20 cm from walls and metallic structures for reliable RF transmission
Deployment	Suitable for meter pits, outdoor cabinets, rooftops, and substation environments
Protection	Grounding and surge protection recommended for stability and long-term reliability

## ENCLOSURE DIMENSIONS



## STANDARDS COMPLIANCE



## CONTACT INFORMATION

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