PARADOX

PGM8M & PGM4M

8 & 4 Ouput Expanders

INSTALLATION MANUAL

FW Version: V1.00.016

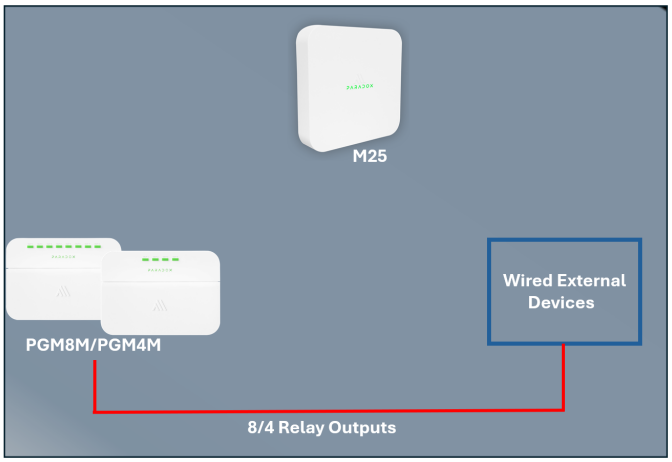
NOTE: *PGM8M and PGM4M are identical, except for the number of outputs.*

Introduction

The PGM8M and PGM4M are programmable output modules designed to control external devices. The PGM8M offers 8 outputs, while the PGM4M provides 4 outputs. Both modules communicate with Paradox M systems via 2-way wireless communication, incorporating advanced Gaussian Frequency Shift Keying (GFSK) technology with frequency and encryption hopping. This ensures extended wireless range, enhanced encryption, continuous supervision, and reliable performance.

Each output can be manually controlled using a dedicated push switch, with adjustable timing for manual operation through the BlueEye app. A built-in rechargeable lithium battery allows operation for up to 10 days without external power. Both models are equipped with cover tamper protection for added security.

NOTE: *The device is shipped with a battery charge level of 10% or less.*



Overview

Quick Installation - Experienced Installers

To install PGM8M/PGM4M:

1. Mount the device on the wall with two screws.
2. Provide a 12 - 13.8VDC/1A power supply to power the PGM8M/PGM4M. Connect all required output devices.
3. Pair PGM8M/PGM4M with the console (Using the BlueEye application):
   - Go to: **Hardware** > Tap **Add Devices** > **Wireless Devices Auto learn/Scan QR code or add devices manually** (by entering serial number).
     NOTE: *You can instantly pair PGM8M/PGM4M by either pressing the **Power off** button momentarily, or by opening the tamper.*
4. Configure PGM8M/PGM4M (Using the BlueEye application):
   - Go to: **Hardware** > Tap **PGM8M/PGM4M** from the device list > Enter the necessary details > **Save**.

Built-in status indications of PGM8M/PGM4M:

Paradox Logo:

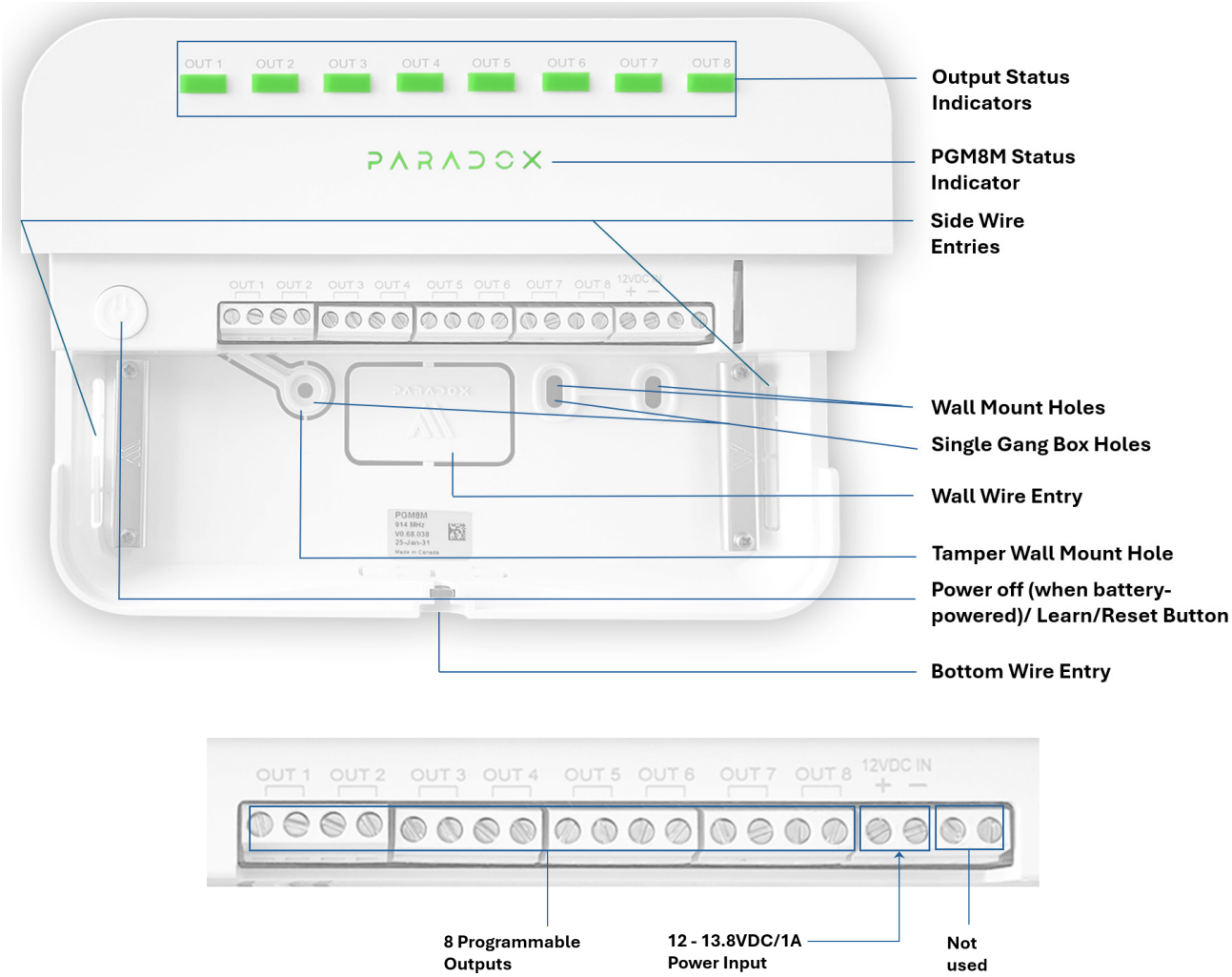
- Red – Not connected to the console; offline.
- White – Connected to the console; online.
- Green blinking every two seconds – Battery-powered, online with console
- Red blinking every two seconds – Battery-powered, offline, not communicating with the console.
- Red and Green flashing (5x) – Tamper open
- Green flashing (5x) – Tamper closed

Output Status Indicator:

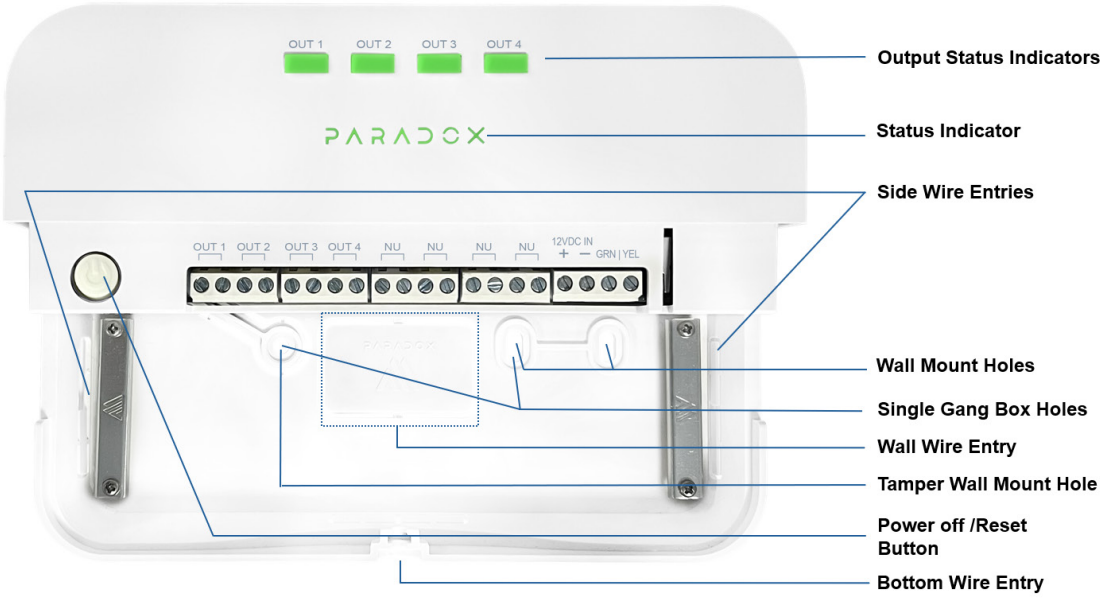
- Green – Output is activated
- Off – Output is deactivated

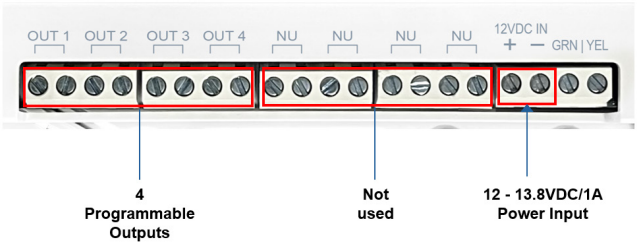
Components of PGM8M

The following figure displays the components of PGM8M.



Components of PGM8M





Components of PGM4M

Physical Mounting

To mount PGM8M/PGM4M:

1. Release the screw from the bottom of the PGM8M/PGM4M and remove the front cover.

2. Screw the PGM8M/PGM4M device onto the wall through the mounting holes.
3. Provide a 12 - 13.8VDC/1A input connection to power the PGM8M/PGM4M. Connect all required output devices by routing cables through the wire entry holes of the device.
4. After completing the wire connection, reattach the front cover and tighten the screw at the bottom. Ensure the logo flashes green 5 times to confirm the screw is secured properly and the tamper is closed.
   NOTE: *The internal lithium battery is not dealer-replaceable and is designed to last throughout the device's life expectancy.*

Pairing PGM8M/PGM4M with the Wireless M Console

The pairing and configuration settings of PGM8M are managed through the BlueEye application.

Prerequisites

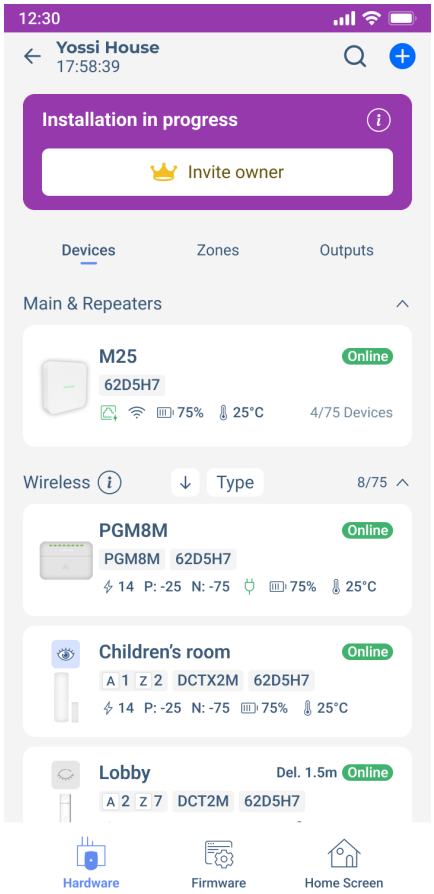
Ensure that:

1. The PGM8M/PGM4M is within the range of the console.
2. The BlueEye application is installed on your mobile and connected to the site.
3. The M console is powered on (Paradox logo color - white, red, or green).

Pairing PGM8M/PGM4M

To pair the PGM8M/PGM4M with the wireless console by an installer:

1. When in the **Hardware** tab, tap **Add Devices**, and then tap **Wireless Devices Auto learn**. The wireless console searches for new devices and a rotating radar icon is displayed. This may take up to 6 minutes. To pair instantly, press momentarily on the power off button, or open the tamper. The device pairs with the console and it appears at the top of the device list with a ***new*** tag and voice announcements.



After pairing, to identify the new device, you can trigger the PGM8M tamper. A T symbol appears on the device tab in the BlueEye application.

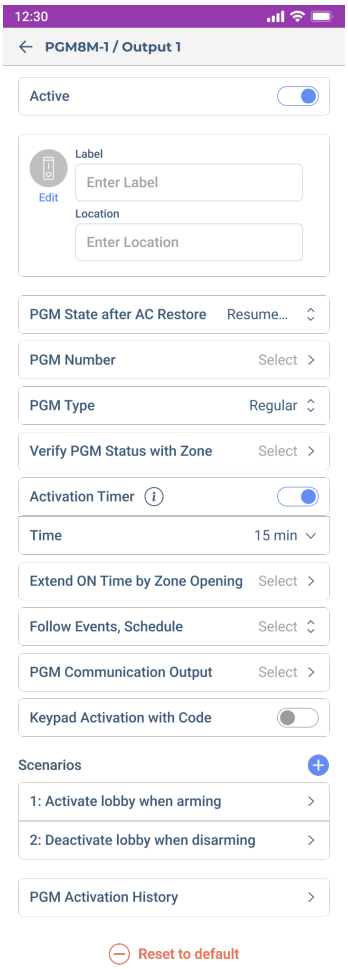
Alternatively, you can find a device by finding the serial number in the device list, or use the **Search** tool at the top right of the screen in the BlueEye application.

Configuring

You can configure the PGM8M/PGM4M settings in the BlueEye application.

To configure the PGM8M/PGM4M settings:

1. When in the **Hardware** tab, tap the **PGM8M/PGM4M** device.
2. On the page that opens, tap the output you want to configure and enter the necessary details.
3. Tap **Save**.
   For details about each parameter displayed on the page, see Table 1.



The following table lists the parameters displayed for configuring the PGM8M, along with their descriptions.

Table 1

Parameter	Description
Label	Enter a label for the device.
PGM State after AC Restore	Select how the PGM behaves after power restoration: • **Resume Last State** • **On** • **Off**
PGM Number	Select the PGM number.
PGM Type	Define the PGM type: • **Regular** • **Restricted** • **Installer**
Verify App PGM Status with Zone	Assigns zone to verify the status of the PGM.
Activation Timer	Sets the duration for PGM activation.
Extend on Time by Zone Opening	Extends the PGM activation duration when the assigned zone is triggered.
Keypad Activation with Code	Enables PGM activation using a keypad and a code.
Follow Events, Schedule	Defines the PGM activation behavior: • **None**: No automatic activation; the PGM operates solely based on manual inputs. • **Zone**: Activates the PGM when a specific zone is triggered. • **Area Status**: Activates the PGM based on the status of a particular area.

	• **Trouble**: Activates the PGM in response to system trouble conditions. • **Schedule**: Activates the PGM according to a predefined schedule. • **Module Temperature**: Activates the PGM when the module's temperature reaches a specified threshold.
PGM Communication Output	Specify the notification type, method, and receivers for PGM communication.
Scenarios	Example automation scenarios: • Activate lobby when arming • Deactivate the lobby when disarming
PGM Activation History	Displays the history of PGM activations.
Temperature Calibration	Allows manual calibration of the device's reported temperature to match the actual ambient temperature.
Reset to Default	This will reset the device to the factory default settings. **NOTE**: *Only an installer can reset the device.*
About	This tab displays details such as the installation date, production date, last programming date, battery replacements, battery history, and upgrade history.
Suspend Device	Disables monitoring of the device in the system.
Delete Device	This option deletes the device from the system completely. After deletion, the system generates a push notification only if the owner registration is complete, not during installation. **NOTE**: *Only an installer can delete the device.*

LED Indications

After configuring PGM8M/PGM4M, the device displays various LED indications based on specific events.
The following table lists the LED indications and their corresponding event.

Table 2

LED Indication	Event
Paradox Logo	
Red	Not connected to the console; offline.
White	Connected to the console; online.
Green blinking every two seconds	Battery-powered, online with console
Red blinking every two seconds	Battery-powered, offline, not communicating with the console.
Red and green flashing (5x)	Tamper open
Green flashing (5x)	Tamper closed
Output Status Indicator	
Green	Output is activated
Off	Output is deactivated

Functionalities of Power Button

The power-off button on the PGM8M is used to:

- **Power Off (only when battery-powered)**: Press the power button twice momentarily within 5 seconds to turn off the device. To turn it back on, provide an input power supply.
- **Reset**: Press and hold the power off button for 8 seconds to reset the device to its default settings. After 8 seconds, the Paradox logo will display **amber.**
  NOTE: *If the device is already paired and online, delete the device first, then perform the reset on the device, and pair it again. Otherwise, the reset will have no effect.*

Upgrading Firmware

When the firmware upgrade is in progress, the Paradox logo on the device displays steady blue. To upgrade the firmware:

1. In the **Hardware** tab, tap on the device > **Check for Upgrade**.
2. If an upgrade is available, tap **Upgrade** when prompted.
   The process may take a few minutes. Keep track of the progress in the BlueEye application to ensure that the upgrade is completed successfully. Both the Installers and owners can perform the upgrade.

IMPORTANT: The firmware upgrade can be done only when the system is disarmed.

Signal Strength and Transmit Power Monitoring

The BlueEye application provides insights into each device's received signal strength and transmission power to optimize performance.

To view the RSSI and transmit power range:

1. When in the M site, tap the ⓘ icon next to the **Wireless** tab.
   A pop-up window with the RSSI and transmit power range is displayed.
2. Maximum power transmitted by PGM8M/PGM4M:
   - 868 MHz: +14 dBm
   - 914 MHz: +22 dBm

Tap on any listed device to view signal strength and additional device metrics. The following parameters are displayed for each device:

- **P** - Received signal strength at the panel
- **N** - Received signal strength at the device
- - Transmit power of the device.
- - Current temperature reading of the device.
- - Battery level of the device

A higher P and N value indicates stronger and clearer communication between the console and the device.

- If **P** is low, the console struggles to receive signals from the device.

- If **N** is low, the device struggles to receive signals from the console.

NOTE: *Values below -93 with maximum Tx power are not recommended values, and RPT5M can be used to extend the range.*

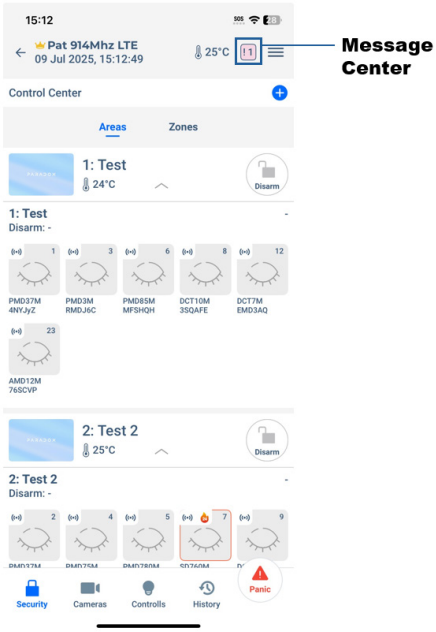
Power transmission impacts only **P**:

- When **power transmission** increases, the **P** value at the console generally improves, as a stronger signal is sent.
- If the **P** value is good, the device can reduce its transmission power to save battery life.

IMPORTANT: All nodes adjust their transmission power. The adjustment depends on the surrounding noise level and is updated at intervals set by the supervision timer or during a node status update.

Front Cover Tamper Protection

The PGM8M/PGM4M programmable output module is equipped with front-cover tamper protection. A tamper activation displays tamper trouble in the message center.



Technical Specifications

The following table lists the technical specifications of PGM8M/PGM4M along with their descriptions.
NOTE: *The specifications are subject to change without prior notice.*

Table 3

Specification	Description
Power Input	12-13.8VDC/1A
Wireless Type	GFSK two-way with frequency and encryption hopping
RF Frequency	868 (865.05 - 867.95) MHz or 914 (902.25 - 927.55) MHz Might vary in different countries.
RF Power	868 MHz: +14 dBm radiated, 914 MHz: up to +22 dBm in permitted countries.
Number of Outputs	PGM8M – 8 PGM4M – 4 Relay Output Rating (per output) – 30V/2A
Status Indicators in Application	Output status indications, tamper status, power supply, battery level, temperature, TX/RX values
Status Indication	Logo: online, offline, battery or power operation, upgrade in process, tamper, Output status indicators: activated/deactivated
Battery	1 x 3.7V Li-ion battery with up to 10 days of battery life, 5000mAh (optional)
Transmission Time	Less than 20 ms
Supervision Time	20 minutes, 10 minutes (Default), and 3 minutes
Installation Environment	Indoor
Firmware Upgrade	Remotely over the air, Via BlueEye
Operating Temperature	-20°C to +50°C (-4°F to 122°F) Battery charging: 0°C to 40°C (32°F to 104°F)
Auto Learn	Yes
Colors	White
Dimensions	18W x 13H x 4.5D cm (7.09" W x 5.12" H x 1.79" D)
Weight	0.36 kg with battery
Certification	CE, FCC 15.247

FCC Statements

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and the receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

WARNING – RF EXPOSURE COMPLIANCE: This equipment should be installed and operated with a minimum distance 20cm between the radiator and your body.

FCC ID: KDYPGM8M
IC: 2438A-PGM8M

- This Class B digital apparatus complies with Canadian ICES-003.
- -Cet appareil numerique de la classe B est conforme a la norme NMB-003 du Canada.

IC Statements

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

AVERTISSEMENT – CONFORMITÉ AUX NORMES D'EXPOSITION AUX RF: Cet équipement doit être installé et utilisé à une distance minimale de 20 cm entre le radiateur et votre corps.

Warranty

For complete warranty information on this product, see the Limited Warranty Statement document, or contact your local Paradox distributor.

Patents

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