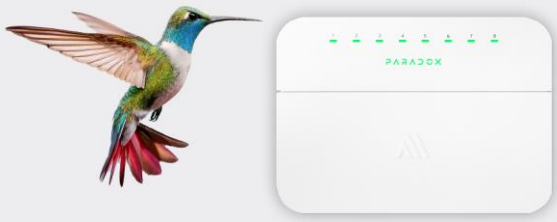
PARADOX

PGM8M

8-Ouput Expander



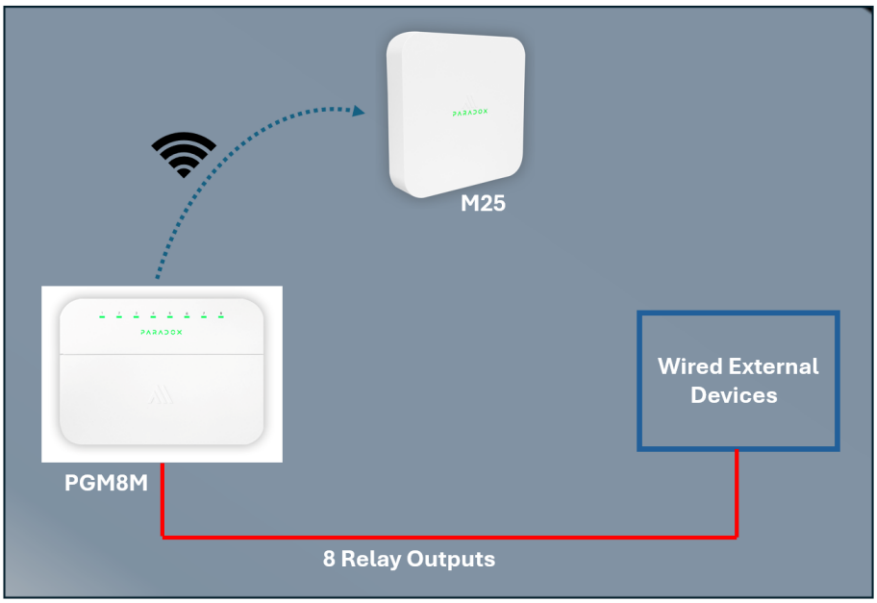
INSTALLATION MANUAL

Version 1.0

Introduction

The PGM8M is an 8-programmable output module designed to control external devices. It communicates with the Paradox M systems using 2-way wireless communication, featuring the latest Gaussian Frequency Shift Keying (GFSK) technology with frequency and encryption hopping. This ensures superior wireless range, enhanced encryption, supervision, and reliability. The PGM8M outputs can be controlled manually with a push switch for each output with adjustable time for manual operation via BlueEye.

The PGM8M module's built-in rechargeable lithium battery allows it to operate for up to 10 days. The PGM8M features cover tamper protection.



Overview

Quick Installation - Experienced Installers

To install PGM8M:

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

Built-in status indications of PGM8M:

Paradox Logo:

- Red – Not connected to the console; offline.

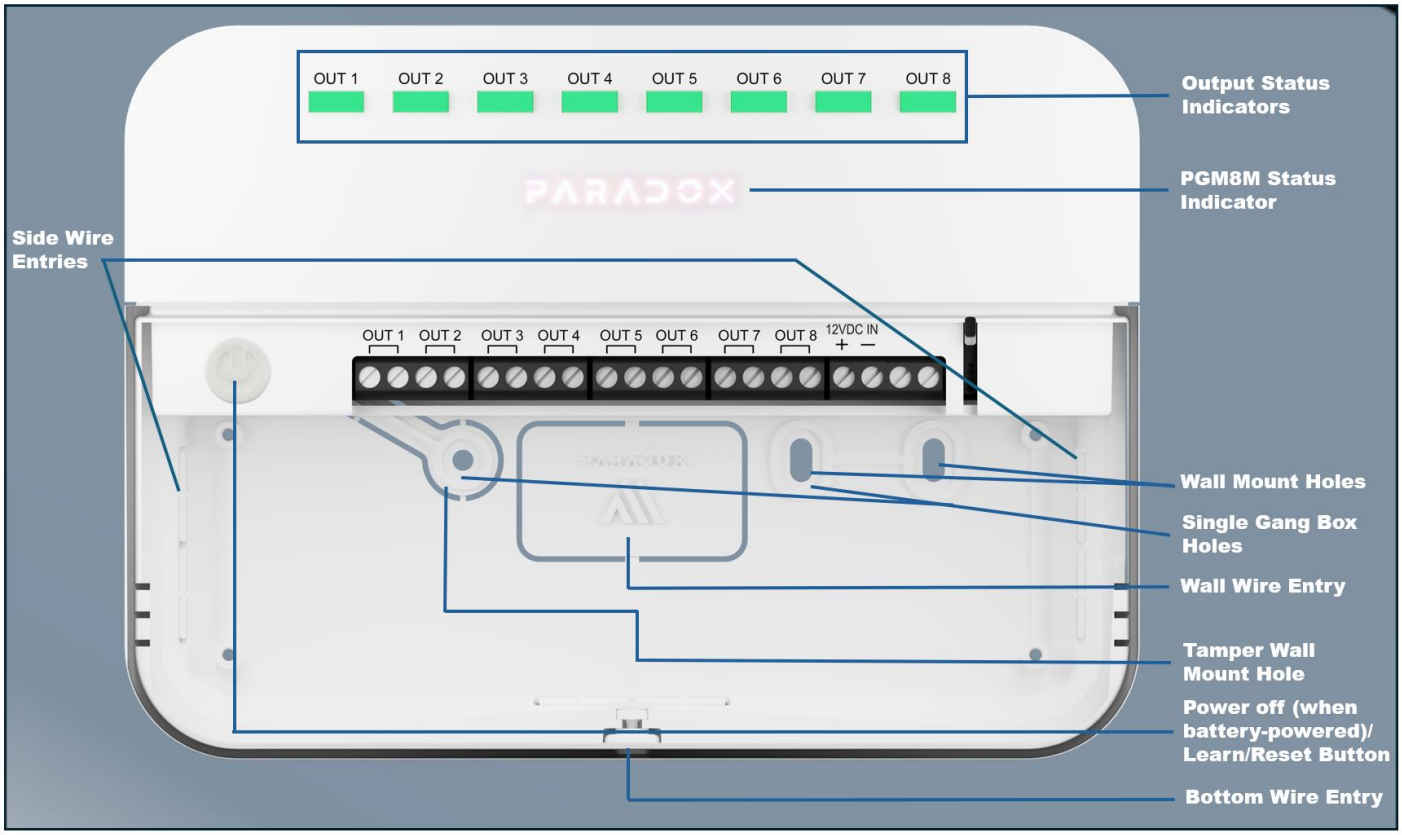
- White – Connected to the console; online.
- Green blinking every two seconds – Battery-powered, online with console
- Red blinking every two seconds – Battery-powered, offline, not communicating with the console.
- Red and Green flashing (5x) – Tamper open
- Green flashing (5x) – Tamper closed

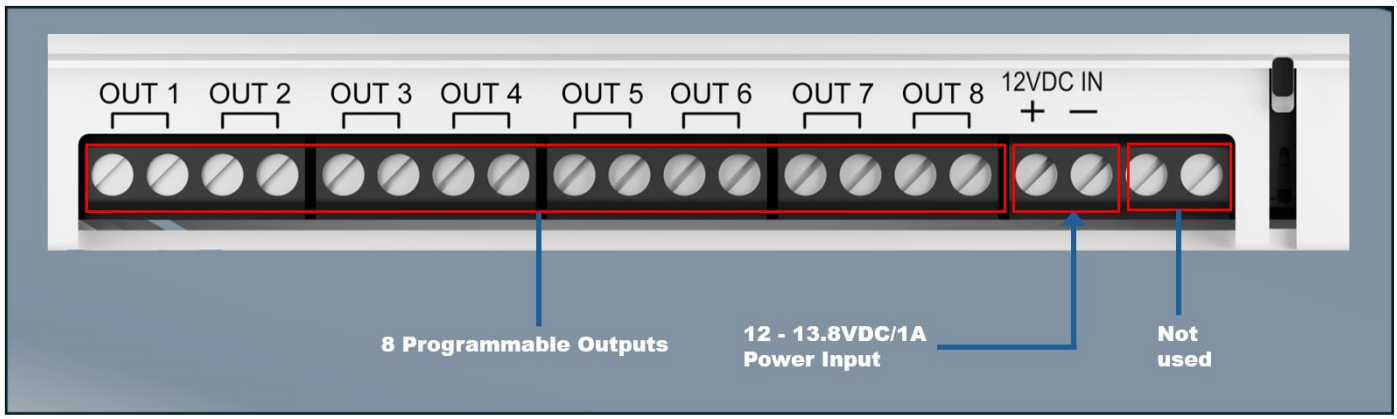
Output Status Indicator:

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

Components of PGM8M

The following figure displays the components of PGM8M.





Components of PGM8M

Physical Mounting

To mount PGM8M:

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

2. Screw the PGM8M device onto the wall through the mounting holes.
3. Provide a 12 - 13.8VDC/1A input connection to power the PGM8M. 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 with the Wireless M Console

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

Prerequisites

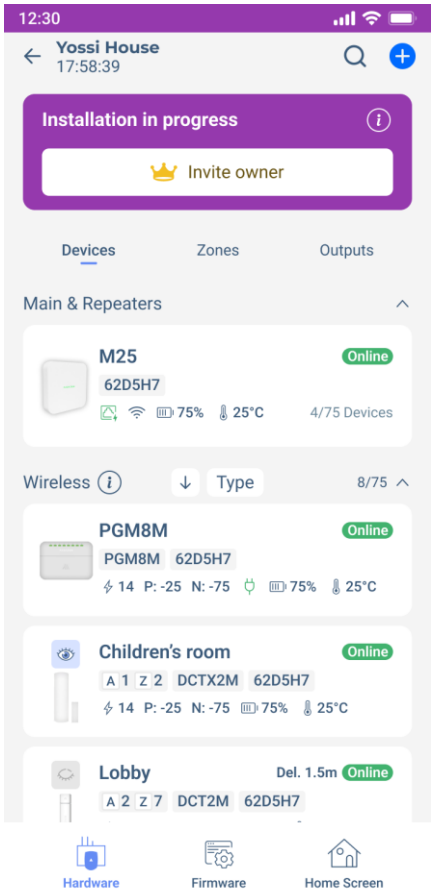
Ensure that:

1. The PGM8M 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

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

1. When in the **Hardware** tab, tap **+** on the top-right of the page, and then tap **Auto learn wireless devices**. 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.

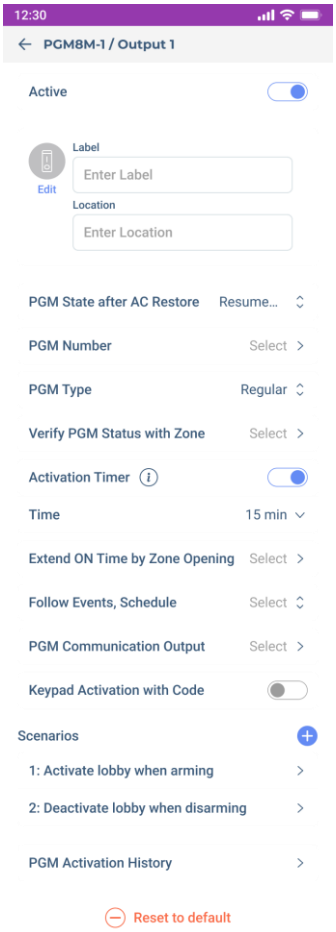
Alternatively, you can find a device by finding the serial number in the device list, or use the **Search** tool at the top right of the screen in the BlueEye application.

Configuring

You can configure the PGM8M settings in the BlueEye application.

To configure the PGM8M settings:

1. When in the **Hardware** tab, tap the **PGM8M** 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.
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, 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.**

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.

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:
   - 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.

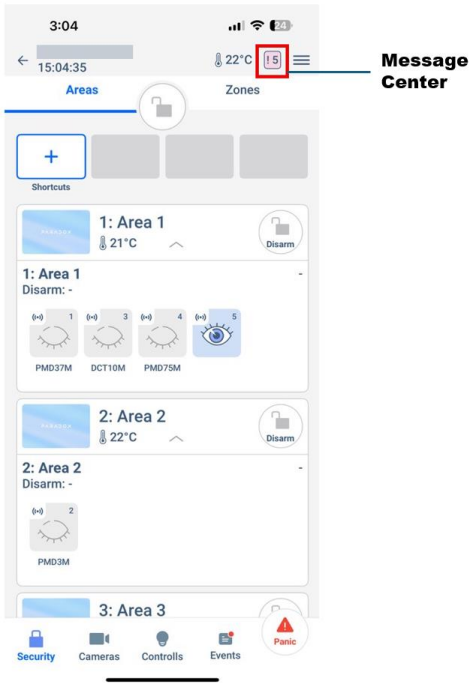
NOTE: *Values below -93 with maximum Tx power are not recommended values, and RPT5 can be used to extend the range.*

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.

Front Cover Tamper Protection

The PGM8M 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 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	8
Status Indicators in Application	Output status indications, tamper status, power supply, battery level, temperature, TX/RX values
PGM8M Status Indication	Logo: online, offline, battery or power operation, upgrade in process, tamper, Output status indicators: activated/deactivated
Battery Lithium	1 x 3.7V Li-ion battery with up to 10 days of battery life, 5000mAh
Transmission Time	Less than 20ms
Supervision Time	20 minutes, 10 minutes (Default), and 3 minutes
Installation Environment	Indoor
Firmware Upgrade	Remotely over the air, Via BlueEye, about 2 minutes after start delay, delay up to supervision time or any action on PGM8M
Operating Temperature	-20°C to +50°C (-4°F to 122°F)
Auto Learn	Yes
Colors	White

Weight	0.36 kg with battery
Dimensions	18W x 13H x 4.5D cm (7.09W x 5.12H x 1.79D in.)
Certification	CE, EN50131-3, 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.

IC Statements

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-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.

Warranty

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

Patents

US, Canadian, and international patents may apply. Paradox is a trademark or registered trademark of Paradox Security Systems (Bahamas) Ltd.