

# mobeye<sup>®</sup>

USER MANUAL

**Mobeye<sup>®</sup> MiniPir**

**iCM41**





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## **Attention! Very important**

This user manual contains important guidelines for the installation and usage of the Mobeye® device as described in this manual. Please read these thoroughly before you start using the Mobeye® device.

In the case of damage caused by disregarding the guidelines and the instructions for use, no liability is accepted and the warranty becomes void. The user must regularly check the proper functioning of the Mobeye® device. The manufacturer cannot be held liable for (direct and indirect) damage as a result of incorrect operation or incorrect functioning of the device, software, internet or telecom connection. The manufacturer is in no way liable for the loss of personal passwords or codes.

### **Safety guidelines**

- The permitted ambient temperature during operation may not be exceeded (not lower than -10 °C and not higher than 50 °C).
- The device is intended for use in dry and clean places.
- Protect the device from moisture, heat and water splashing. Not intended for external use.
- The guidelines for the battery usage must be regarded.
- Do not expose the device to strong vibrations.
- Do not let it fall from height.
- Do not use in an environment where any inflammable gases, vapors or dust are present or could be present.
- Repair of the device may only be carried out by people, trained for Mobeye® repair.
- If the device must be repaired, only original replacement components may be used. The use of different parts may lead to damage of the Mobeye® device.

### **Use in accordance with the regulations**

The purpose of this device in accordance with the regulations is sending messages and making telephone calls after an alarm situation. Other uses are not permitted and may invalidate the warranty.

### **Battery recycling**

This product contains recyclable components. When disposing of this product, please take it to a waste collection point for disposal or to your sales point. Bring empty batteries to a recycling centre or collection point.

## **1. GENERAL DESCRIPTION**

The Mobeye MiniPir is an all-in-one intruder system with (passive infrared) movement sensor and an integrated 2G/4G communication module. It reacts on movements and sends a notification in the event of an alarm. The alarm system is battery-operated.

In order to activate the device, a few steps are to be followed.

First of all, you need to insert a SIM card. With the Mobeye SIM card, the Mobeye MiniPir uses the 4G LTE-M network or 2G network. The LTE-M network has a strong network coverage, deep penetrability in buildings and also works in remote areas. The Mobeye SIM card is a 'multi-provider' and can be used internationally; it may choose from several providers per country. In case of a network problem it will switch to another provider or fall back to 2G. In addition, the Mobeye SIM card offers access to the Mobeye Internet Portal. This management environment gives the device essential functions such as online programming, display of status and history, extensive possibilities for reporting messages and will also monitor test messages (keep alive).

Optionally, alarm messages are sent as a push message via an app. The relevant contact person will receive instructions and an installation link on their phone.

## 2. STANDARD BEHAVIOUR

### 2.1 MOBEYE MINIPIR WITH MOBEYE SIM AND INTERNET PORTAL

The Mobeye MiniPir with Mobeye SIM card and registered on the Mobeye Internet Portal, has the following behaviour as factory settings:

- When a movement is detected by the passive infrared sensor, the Mobeye MiniPir sends an alarm message to the Mobeye Internet Portal. The Portal forwards the alarm as push notification, call (spoken message), text message and/or e-mail to the 'alarm contacts'.
- When the batteries need to be replaced, the Mobeye MiniPir sends a 'low battery' message to the Mobeye Internet Portal. The portal forwards this to the 'service' contacts.
- The unit will send test messages to the portal as communication check (default: every 7 days). If these are not received in time, the portal sends an exception message to the 'service' contacts.
- In case one of the additional inputs is activated by a sensor, the Mobeye MiniPir sends an alarm message via the Mobeye Internet Portal.
- When an external power supply is used and a power failure occurs, the Mobeye MiniPir sends a 'power failure' message via the Mobeye Internet Portal and after the power is restored a 'power restored' message.

Chapter 5 describes how to influence the standard behaviour.

Communication between the Mobeye MiniPir and the Mobeye Internet Portal takes place via data (and SMS as fallback). Messages can be sent as a push message to the Mobeye Messages app (via the portal). If a contact confirms the receipt of the message, the subsequent contacts will not receive it (alternatively a group message is possible). If the message is not confirmed (or the app is not used), it can still be sent by call (with spoken text). SMS and email are also possible. A credit system applies to calling and SMS texting, the other methods are unlimited. At initialisation and contract renewal, a starting credit is loaded, which is sufficient for most users. In the event of a low balance, the account holder will receive an email with the advice to top up online. The credit balance has an unlimited validity period and applies to all devices under one account.

### 3. GETTING STARTED

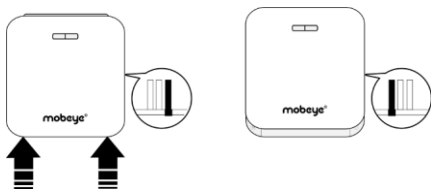
To get started with the Mobeye MiniPir, at least the following steps need to be taken in the following order:

1. Open the casing and insert the SIM card
2. Insert the batteries
3. Programming when using the Mobeye SIM/Portal
  - a. Sign up in the Mobeye Internet Portal
  - b. Activate the SIM card and the device
  - c. Program the settings and synchronise
  - d. Use of the portal and app
4. Optionally: connect additional sensors
5. Optionally: connect an external power supply

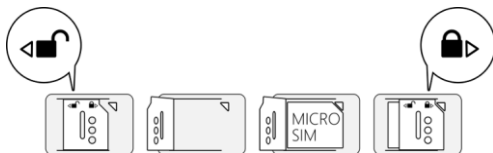
Step 5 is described in chapter 4. Step 6 can be found in chapter 0.

#### 3.1 OPEN THE CASING AND INSERT THE SIM CARD

Open the casing by pressing the corners of the front panel with both thumbs.



Insert the SIM card into the module.



The Mobeye SIM card is PIN code secured and will only work in a Mobeye device. Please do not place it in another device.

## **3.2 INSERT THE BATTERIES**

Insert the batteries in the module. Use the +/- indication for the correct placement. If you replace the batteries the settings will not be deleted, since they are stored in the device memory.

After placing the SIM card and batteries the Mobeye MiniPir will search for the network. The outside LED flashes green and red. This process normally takes 10-30 seconds, in a new device this can take some minutes. When the network has been established the LED will first blink green rapidly and next stay green (or flashes 1 sec. on/1 sec. off in case the unit has not been configured yet).

A time-out occurs after 3 minutes, after which the communication module switches off in order to save the batteries. It will search for network connection once it needs to send notifications. It can also be forced to establish a network connection by re-inserting the batteries or holding the tag against the reader for 5 seconds.

Close the casing.

## **3.3 PROGRAMMING**

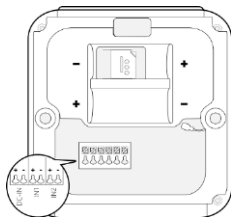
The settings and alarm notifications are prepared in the online Mobeye Internet Portal. This is explained in chapter 4.



### 3.4 CONNECT A SENSOR TO THE INPUT (OPTIONALLY)

Additional to the PIR sensor two external sensors can be connected to the inputs.

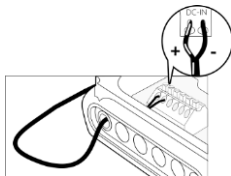
Insert the 2 wires of an external sensor through the hole in the casing and insert them in the two connectors of input 1 (press on the green pins for connecting the wires). It does not matter which wire is connected to which connector. A second sensor may be connected to input 2.



As default the input is programmed as Normally Open (NO) contact. In case the contact is Normally Closed (NC), see paragraph 5.5. To change the delay time before triggering an alarm, see **Fout! Verwijzingsbron niet gevonden.**

### 3.5 CONNECT AN EXTERNAL POWER SUPPLY (OPTIONALLY)

Although the MiniPir is designed to run on batteries, it is possible to use an external power supply. In this mode the module is always connected with the mobile network and therefore always in program mode. When the power fails, the batteries take over and a power failure alarm message is sent. The module continues operating albeit in the low power mode. This means the communication module switches off and only establishes network connection when it needs to send an alarm notification, test message or low battery alert.



Connect the power adapter (or any other regulated 12-24V DC power supply) to the power input of the connector (press on the green pins to connect the wires).

	<u>Mobeye adapter 10027</u>	<u>position</u>
- V+ to "+"	black lead with white stripe	left
- Ground to "-"	black lead	2 <sup>nd</sup> from left

If powered externally switching can be done via SMS commands:

SMS command to switch on:	CODE ARM	(e.g. 1111 ARM)
SMS command to switch off:	CODE DISARM	(e.g. 1111 DISARM)

## 4. PROGRAMMING WHEN USING THE MOBEYE SIM AND PORTAL

### 4.1 SIGN UP IN THE MOBEYE INTERNET PORTAL

Go to [www.mymobeye.com](http://www.mymobeye.com)  
and sign up for a new account.  
Follow the instructions on the screen.



You will receive an e-mail to confirm the new account. After confirmation login on the portal.

If you do not receive this e-mail, please check your spam box or ask Mobeye ([info@mobeye.com](mailto:info@mobeye.com)).

### 4.2 REGISTER THE MOBEYE SIM CARD

To activate the Mobeye SIM card in the Mobeye Internet Portal, choose 'activate SIM card' on the 'Add Device' screen.



Add Device

Fill in the SIM card number. This is the number written on the plastic SIM card below the barcode. You can take the entire number or only the last 8 digits.



Activate SIM card

If the SIM card and batteries are already installed, a pop-up will appear, where you assign a name and location to the device. You can change these later.

(If you have not installed the SIM card and batteries before, you will first be asked to select the device type, in your case it will be "iCM41".)

At the moment you accept the price and terms, you confirm the subscription. You will be taken to the payment screen. You will receive an invoice for the mentioned amount. Your new device is now visible on the dashboard.

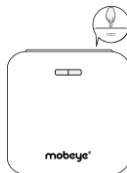
Before the device is ready for use, first prepare the settings and alarm forwarding. See next paragraphs to learn how to do this.

### 4.3 CONFIGURATION AND SYNCHRONISATION

The device settings can be programmed in the Mobeye Internet Portal. In this way you prepare the settings, to be picked up by the device. Since the Mobeye device is leading in the communication between the portal and the device, the data synchronisation is done after:

- 1) any message to the portal (regular test message, alarm, low batteries).
- 2) pressing the button for 5 seconds (see image).
- 3) reinserting/reconnecting all batteries.

During the data exchange with the portal, the LED flashes green. A battery-operated unit will first blink red-green while connecting to the network.



### 4.4 BASICS OF THE MOBEYE INTERNET PORTAL

#### Dashboard


With multiple devices, the dashboard shows all devices, with the (alarm) messages in the last 24 hours, (missed) test messages and low battery status. Select a device to go to the details of a specific device.

#### Status & History

The status block shows values about the status of the unit.

If the "Synchronised" status is set to "No", there are new settings or alarm numbers that still need to be transferred to the device.

The network strength value at the last communication session is shown. If the value is lower than -98 dB, consider another location for the device.

Click on the position icon  to see the geographical location during the last report. Note: this is an indication based on "cell-id".

The history displays all historical events. Click on "all events" to see the list.



#### Device Settings

The device settings can be changed via the Mobeye Internet Portal. To do this, click on the "edit" icon and type in the security code (factory setting is "1111"). See chapter 5 for the description per setting.

After saving the new settings, they must be retrieved by the device (synchronized). See 4.3 for more information about synchronizing.

In the block "device data" the name and location of the device can be changed. These texts are mentioned in the call, text message and e-mail to indicate the device. A free text is available as an internal comment field. This is not included in reports.

### **Alarm dispatch and the Mobeye app**

In the block "Contacts for messages" you link the contact persons who receive alarm and service messages via push notification, call, text message and/or e-mail. Service messages can be warnings about missed test messages and low battery voltage. To add a contact person, first create it as a contact. This can be done via the  or in the main menu under the blue Contacts tab. For push notifications, install the  Mobeye Messages app from the Play Store/App Store on the phone.

- Select "App message" for a push notification. A contact will then (once) receive a code via SMS to register in the app.
- Optionally select "Voice call" as a fallback: If none of the contacts confirm the app message, a voice call will follow.
- If no app message is set for a contact, but call is set, this call is always made (regardless of whether other contacts receive push notifications).
- If SMS and/or email is set up for a contact, this is always sent (possibly alongside the app message).
- An app message can be sent as a group message (to all contacts at once) or via an escalation plan (where a "confirmation" prevents the app message from being forwarded to a next contact).
- When selecting "Escalation", adjust the order with the arrows ▲ and ▼.

Hints:

- Always include an email contact for service notifications.
- During testing, we recommend using the app and email (and minimizing calls and texts) to save on credit.
- If the app asks for a new code or a contact has a new phone, send it from the contacts tab (change contact).

### **Message texts**

The texts in the calls, SMS and e-mail messages consist of the name, location and message text. The message texts can be adapted to your own text.

## 4.5 HOW TO ACTIVATE THE MOBEYE MINIPIR

After set-up the module is ready for use. Use the supplied tags or schedules (see 5.6) to switch on and off.

In order to switch on (arm) the Mobeye MiniPir:

- Hold a tag briefly against the tag reader, after which the exit indication starts. The exit time takes 30 seconds.



In order to switch off (disarm) the Mobeye MiniPir:

- Hold a tag briefly against the tag reader. A short beeps are heard to indicate a correct disarming. The disarming process is completed when you hear 3 short beeps.

In the disarmed status the Mobeye MiniPir will not send alarm notifications. The unit remains active and is able to switch on time-controlled and to send test and 'low battery voltage' messages.

## 4.6 SYSTEM RESET

To reset the Mobeye MiniPir two steps are necessary, in following sequence:

### 1. Delete the Mobeye MiniPir from the Mobeye Internet Portal

Go to "Device Settings" and click on the delete icon in the "Device" block. Then confirm your choice.

### 2. Reset the Mobeye MiniPir to its factory settings

1. Remove / disconnect the batteries.
2. Keep (an enrolled) tag against the outside button while reinserting the batteries. Keep it pressed for (about) another 5 seconds.
3. Release the tag immediately after the LED starts to flash.
4. Re-enroll the tags (see chapter 6).

After a successful reset, the outside LED will blink green to indicate that the module is not configured.

The SIM card is now disconnected and is visible on the "Add device" screen. The SIM card can be used again in another (or the same) Mobeye device in combination with the portal.

## 5. POSSIBLE SETTINGS

The Mobeye MiniPir has many setting options that influence the behaviour of the module. If connected on the Mobeye Internet Portal, the settings are prepared in the portal (see chapter 4). If your own SIM card is used, programming is done via SMS commands (see chapter **Fout! Verwijzingsbron niet gevonden.**).

### 5.1 ALARM FORWARDING

An alarm is sent by the device to the portal, from where it will be forwarded to the alarm contacts. In the Mobeye Internet Portal, under "alarm messages" an unlimited number of contact persons can be set.

### 5.2 TEST MESSAGE

The Mobeye MiniPir can send regular test messages (keep alive) to the Mobeye Internet Portal, to ensure the proper functioning of the unit. The test message will also be sent if the unit is disarmed. The Mobeye Internet Portal expects the test message and checks the timely receipt. The monitoring of the test messages follows the 'management by exception' rule: only if the message was not received, the 'service' contacts will receive a notification.

The timing of the test message can be programmed. Since new settings (options) will be synchronised after the test message, setting a specific time of the test message may help the process of remote programming. Example: if you force a daily test message at 17.30 hrs, you can prepare new settings and be sure they are loaded into the device before the evening.

The interval between the test messages can be set between 0 days (no test message) and 30 days. The default test interval is set to "7" (weekly).

### 5.3 ENTRY DELAY TIME

The entry delay time defines the time from the detection of a movement until an alarm is initiated. If the Mobeye MiniPir is switched off within the entry delay time, the message will not be sent.

After the entry delay time the network connection needs to be set up, which makes the receipt time slightly longer. As default, the entry delay time is set to 15 seconds.

## **5.4 EXIT DELAY TIME**

The exit delay time defines the time between the moment of switching on the module and the moment the module is able to send the first alarm message. The time can be set between 0 and 999 seconds. As default, the exit delay time is set to 30 seconds.

## **5.5 INACTIVE TIME**

The "inactive time" defines the time the PIR sensor (or extra input) is not active after an activation. During the inactive time, no new alarm message will be sent. The time can be set between 0 and 60 minutes. As default, the inactive time is set to "5" for the PIR sensor ("0" for the extra inputs).

## **5.6 AUTOMATIC ARMING / DISARMING**

The Mobeye MiniPir only works if the unit is armed, which is done via the on/off button. It is possible to automatically arm and disarm the unit, based on an arming and/or disarming time scheme. Two schemes can be entered, which can be assigned to the days in the week (e.g. to have a different weekend scheme).

As default the automatic (dis) arming times are valid for all days. It is possible to assign them to only a few days in the week. In this way it is possible to have two different schemes, which are valid on different days.

As value the weekdays can be entered. Monday is 1, Tuesday is 2, etc. If the scheme is valid for several days, the days can be set in a row (e.g. 12345 means Monday till Friday).

Example: to arm the system only during weekdays, from 6AM to 7PM, set the TIMEARM1 to 06:00, TIMEDISARM1 to 19:00 and DAYS1 to 12345.

## **5.7 INPUT TYPE**

The input type defines the character of the additional inputs IN1 and IN2. This can be Normally Open (NO) or Normally Closed (NC). If an input is set to "NO", the alarm will be triggered as soon as the terminals of the input are closed. If the input is set to NC, the alarm is triggered when the connection between the input terminals is broken. The default input type is set to "NO".

## **5.8 POWER FAILURE MESSAGE**

If the Mobeye MiniPir is supplied with external power and the power fails, it can send alarm messages. If the setting is "OFF", no message is sent. In the default setting "ALARM", notifications are sent to the set contacts.

## **5.9 POWER FAILURE DELAY TIME**

To avoid false alarms caused by short power failures, a power failure delay time can be set. This defines the time between the initial power failure and the alarm notification. If the power is restored within the delay time, no alarm is sent. The time can be set between 0 and 999 minutes. As default, the delay time is set to "0".

## **5.1 NOTIFICATION TO PRIVATE EMERGENCY CENTER**

The Mobeye MiniPir can send the reports to a control room using the standard SIA DC09 protocol. This requires the use of the Mobeye SIM/Portal. Contact Mobeye for information.



## 6. ENROLMENT OF NEW TAGS

Tags are used for switching on and off and to enter the program mode. The supplied tags are already enrolled and therefore ready-to-use. If additional tags are provided, they must be enrolled by the user. To enrol a new tag, the device should be in program mode (see **Fout! Verwijzingsbron niet gevonden.**). Once in program mode, send following SMS command to the device's phone number to reach the enrolment mode:

SMS command to switch to the tag enrolment mode:

```
CODE TAG
example: 1111 TAG
mind the space between the installation code and TAG
```

A short melody confirms the correct command and indicates the tag enrolment mode. The tag reader turns red (for 15 seconds).

Now hold a new tag to the tag reader at the bottom of the detector. The detector confirms the successful enrolment of the new tag by beeps. The number of beeps represents the tag number (the first tag beeps once, the second tag twice, etc.). If a tag was enrolled before, the beeps will sound to indicate the tag number; it will not re-enrol.

The detector leaves the enrolment mode if no tag was hold against the tag reader for 15 seconds.

A tag can be enrolled on multiple Mobeye MiniPirs, allowing it to operate multiple devices. 25 tags can be enrolled per device.

To delete a certain tag, first check the memory position by the enrolment procedure. Once in program mode, send following SMS command to the telephone number in the device to delete a tag:

SMS command to delete tag x (replace x by the number of the tag):

```
CODE DELTAG3
example: 1111 DELTAG3
mind the space between the code and TAG
```

## 7. STATUS FEEDBACK

LED pattern	Status	Required action
Blinking green, 1 second on / 1 second off	Module not configured	Configure at least one telephone number.
Green LED stays on continuously	Module is switched on, powered by an external source	No action required.
Flashing red/ green every second	Module establishes network connection	Wait until the network connection is established.
2 flashes red, every 3 seconds	No GSM connection	Try the SIM card in any mobile telephone; replace SIM card using other telecom provider; try the module at another location.
3 flashes red, every 3 seconds	No valid SIM card or wrong PIN	Try the SIM card in any mobile telephone; remove PIN code; check credit; replace SIM card.
Blinking 3 times green	Successful programming action	No action required.
Blinking 5 times red	Faulty programming action	Check SMS command.
4 red flashes every 3 seconds	Low batteries	Replace both batteries.
Quickly flashing green	Module exchanges data with portal	No action required

## Technical specifications

Communication	: 4G LTE-M, Fallback 2G 900/1800 MHz
Batteries	: 2* CR123 (lithium) recommended: Varta, Panasonic and Energizer (please no Duracell or Philips)
Battery life CR123 (at normal use)	: > 1 year (battery-operated)
Power consumption 12V	: ca. 80 mA stand-by / max. ca. 500 mA
Ambient temperature	: -10 °C until +50 °C

For more information, visit [www.mobeye.com](http://www.mobeye.com).

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This user manual meets the technical requirements at the moment of printing. Changes in technology and equipment are reserved.

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### Declaration of Conformity

Herewith we, Mobeye, declare that the

Mobeye CM41 telemetry module

And the derived products  
CM4000, CM4100, CM4200, CM4300, CM4300-F1, CM4410, CM4500, CM4600, CM4610,  
CM4401S, CM4401S, CM4421S, CM4421S, CM4421S, CM4421S, CM4421S, CM4421S, CM4421S

are in compliance with the essential requirements of the following European standards / EU Directives:

Directive 73/23/EEC (low voltage directive)

Directive 89/336/EEC (electromagnetic compatibility)

Directive 2014/53/EU (RED)

The conformity with the essential requirements set out in Art.3 of the 2014/53/EU has been demonstrated against the following harmonized standards:

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013  
EN 62311:2008  
EN 301 489-1 V2.1.1, Draft EN 301 489-12 V1.1.0  
EN 301 511 V12.1.1

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