

# mobeye<sup>®</sup>

USER MANUAL

## **Mobeye<sup>®</sup> CM-Guard TwinLog CML4055**



## **. 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.

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## **1. GENERAL DESCRIPTION**

The Mobeye CML4055 is a monitoring device with an integrated communication module used to send alarm notifications after the activation of an input. The inputs can measure voltages or potential-free sensors. Connected to the Mobeye Internet Portal, analogue values can be logged and displayed in the online portal. It can run battery operated or externally powered. If an external power supply is used, it can also send a power failure alarm.

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 CML4055 uses the 4G LTE-M network. This 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.

It is also possible to place your own (2G) SIM card. The most important alarm functions such as calling and/or texting after an alarm also work. The communication goes entirely through the 2G network. The Mobeye Internet portal features will not work.

Where the installation steps differ for both modes of use, this is indicated. The use of the Mobeye Internet Portal with Mobeye SIM card is also referred to as Mobeye SIM/Portal.

## 2. STANDARD BEHAVIOUR

### 2.1 MOBEYE CML4055 WITH MOBEYE SIM AND INTERNET PORTAL

The Mobeye CML4055 with Mobeye SIM card and registered on the Mobeye Internet Portal, has the following behaviour as factory settings:

- In case one of the inputs is activated by a sensor, the Mobeye CML4055 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'.
- Analog values are logged every 60 minutes and sent to the portal every 24 hours. The log and synchronization frequency are adjustable.
- When one of the inputs remain in the alarm status, the CML4055 repeats sending the alarm message via the Mobeye Portal every four hours.
- When an external power supply is used and a power failure occurs, the Mobeye CML4055 sends a 'power failure' message to Mobeye Internet Portal, to be forwarded to the 'alarm contacts'. When the power is restored, the Mobeye CML4055 sends a 'power restored' message.
- When the batteries need to be replaced, the Mobeye CML4055 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.

Chapter 5 describes how to influence the standard behaviour.

Communication between the Mobeye CML4055 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.

## **2.2 MOBEYE CML4055 WITH OWN SIM CARD**

The Mobeye CML4055, equipped with your own SIM card, has the following standard behavior as factory settings:

- When one of the inputs is activated by a sensor, the Mobeye CML4055 sends an alarm SMS text message and calls the phone numbers programmed in by the user.
- When one of the inputs remain in the alarm status, the Mobeye CML4055 repeats sending the SMS alarm message every four hours.
- When the batteries need to be replaced, the Mobeye CML4055 sends a 'low battery' SMS text message to the first telephone number.
- When an external power supply is used and a power failure occurs, the Mobeye CML4055 sends a 'power failure' SMS text message to the first telephone number. When the power is restored, the Mobeye CML4055 sends a 'power restored' SMS text message.

Chapter 5 describes how to influence the standard behaviour.

### 3. GETTING STARTED

To get started with the Mobeye CML4055, at least the following steps need to be taken in the following order:

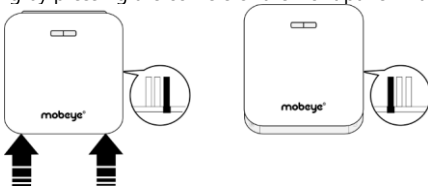
1. Open the casing and insert the SIM card
2. Connect an analog device or sensor to the input
3. Insert the batteries
4. Connect an external power supply (optionally)
5. Programming when using the Mobeye SIM/Portal
  - a. Sign up in the Mobeye Internet Portal
  - b. Activate the SIM card and the device
  - c. Program the settings and synchronise
  - d. Use of the portal and app
6. Programming when using your own SIM card
  - a. Enter the program mode
  - b. Program the settings

Steps 1 to 4 are described in sections 3.1 up to 3.4.

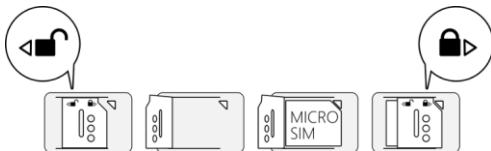
Step 5 is described in chapter 4. Step 6 can be found in chapter 6.

#### 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.



### **When using the Mobeye SIM card:**

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

### **When using your own SIM card:**

An own SIM card has a "micro" format, is suitable for the 2G network and can make calls and send text messages. The PIN code is "0000", or the SIM card is PIN code free.

(A PIN code can be changed or removed by putting the SIM card in to any mobile phone and entering the 'security' menu.)

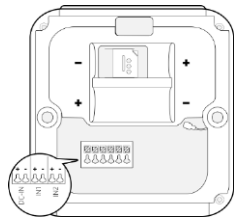
Note: make sure that the power supply is removed when inserting or changing the SIM card. The settings are stored in the device memory.

## **3.2 CONNECT AN ANALOG DEVICE OR SENSOR TO THE INPUT**

Two external signals or sensors can be connected to the inputs. These can be potential-free contacts or analogue signals, for which adjustable limit values can be set. Once an input is in alarm status the Mobeye CML2055 will send alarm messages.

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). For potential-free signals it does not matter which wire is connected to which connector. For an analog sensor, the "+" must be connected to the "+" and the "-" to the "-".

A second sensor may be connected to input 2.



As default the inputs are programmed as Analog (AN). This means that they expect a voltage signal. If an alarm limit is set and the measure value is out-of-range for at least 1 second, an alarm is triggered. In case the contact is Normally Open (NO) or Normally Closed (NC), please refer to paragraph 5.7. If the sensor needs to be activated for a longer period before triggering an alarm, see 5.7. If a recovery message after an alarm reset is desired, see 5.10.

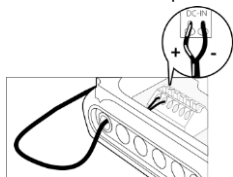


### 3.3 INSERT THE BATTERIES

Insert the two batteries (CR123) 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.

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

Although the CML4055 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.



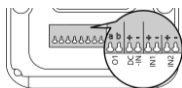
Connect the power adapter (or any other regulated 12-24V DC power supply) to the power input of the connector (press on the green pins to connect the wires).

	<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

### 3.5 CONNECT A DEVICE TO THE OUTPUT (OPTIONALLY)

The Mobeye CML4055 has an open collector output, which switches after receiving a correct SMS or after an alarm. The output can switch permanently, or just switch for a pulse time after which the output automatically switches back.

Plug the wires of a device into the two left connectors (press the corresponding green pin at the same time).



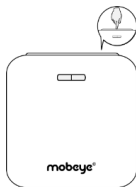
The maximum load of the output is 200mA. To switch a heavier device, a relay can be placed behind the output with an input voltage equal to the power supply (mostly 12VDC). The required switching voltage of the relay depends on the device connected.

**NOTE:** The output only works if the CML4055 is externally powered (12-24V DC).

### 3.6 NETWORK CONNECTION AND PROGRAM MODE

After placing the batteries (and external power) the Mobeye CML4055 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).

In a battery-operated unit a time-out occurs after 3 minutes, after which the communication module switches off in order to save the batteries. In this low power mode the LED flashes once per 3 seconds. 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 pressing the button at the back for 5 seconds.



If the CML4055 is connected to an external power supply, it has continuous network connection and is permanently in program mode.

## 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 "CML4055".)

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) reconnecting power and reinserting batteries.
- 3) pressing the button (at the backside) for 5 seconds.
- 4) pressing the SYNC symbol in the portal settings (only visible if external power is connected), or sending the SMS command 1111 SYNC to the phone number in the unit (1111 is the security code in factory settings).

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. If devices in the dashboard have logging functions, the dashboard changes when you click on "Diagrams" or "Gauges" in the gray bar. 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.

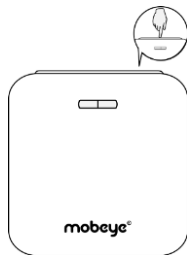
## 4.5 HOW TO ACTIVATE THE CML4055

After the previous steps the Mobeye CML4055 is ready for use. It is armed automatically.

In order to switch off (disarm) the Mobeye CML4055:

- Press the button at the backside for 1 second. The green LED switches off to indicate the disarmed status.

In the disarmed status the Mobeye CML4055 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.



In order to switch on (arm) the Mobeye CML4055:

- Press the button at the backside for 1 second. The green LED blinks once every 3 seconds (battery-powered) or stays on continuously (in case of an external power supply).

If powered externally (with network connection), 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)

To update the status in the Mobeye Internet Portal: press the button for 5 seconds, or - if the device is externally powered - send a question mark to the unit (without code).

SMS command status update: ? The status in the portal will be refreshed (only with external power).

## 4.6 SYSTEM RESET

To reset the CML4055 two steps are necessary, in following sequence:

### 1. Delete the Mobeye CML4055 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 CML4055 to its factory settings

1. Remove the batteries and SIM card (and external power supply).
2. Press the outside button while reinserting the batteries. Keep it pressed for (about) another 5 seconds.
3. Release the button immediately after the LED starts to flash.

After a successful reset, the status LED will blink green to indicate that the module is not configured. The security code is back to factory settings as well.

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 CML4055 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 6).

### 5.1 ALARM PHONE NUMBERS

When using Mobeye Internet Portal: an unlimited number of contacts can receive the alarm messages. These are set in the portal.

When using your own SIM card: the Mobeye CML4055 can inform 5 telephone numbers in the event of an alarm. It is mandatory to set at least one number (TEL1). The numbers set are used for the telephone calls and/or SMS messages from the unit.

### 5.2 TEST MESSAGE

When using the Mobeye Internet Portal: The Mobeye CML4055 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).

When using your own SIM card: The Mobeye CML4055 can send regular test SMS messages (keep alive) to the first phone number (TEL1), to ensure the proper functioning of the unit. The test message function is only active if the unit is armed. The timing of the test message is determined by the time of programming. The test time can also be set. 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 "0" (no test message).

### **5.3 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 "AN".

### **5.4 ALARM LIMITS FOR VOLTAGE SIGNALS**

To monitor the analog voltage on an (analog) input, a self-selected (lower or upper) limit value can be set. In the case of a battery, it is advisable to select a value for this parameter where the battery voltage is too low, but the battery itself will not be damaged yet (responding to an alarm then makes sense). The value can be entered per input with one decimal (for example 10 or 10,2).

### **5.5 LOG INTERVAL**

When using the Mobeye Internet Portal the Mobeye CML4055 can log analog values and send these to the portal. The logging interval is the interval in which the measured values are logged (with a timestamp). The data are stored in the system until the next data transfer. The logging interval can be set between 0 and 9999 minutes. The default log interval is set at 60 (minutes).

### **5.6 TRANSFER INTERVAL**

If the log interval is active the recorded values are periodically transmitted to the portal during the data synchronisation. The transmission interval can be set between 1 and 999 hours. The standard transmission interval is set to 24 (hours).

### **5.7 ALARM DELAY TIME**

The input delay time defines the time that the input is triggered before an alarm is initiated. If the input returns to the non-alarm status within the delay

time, no alarm is sent. The time can be set between 0 and 999 seconds. As default, the input delay time is set to 1 second.

## 5.8 INACTIVE TIME

The “inactive time” defines the time an input is not active after an activation. During the inactive time, no new alarm message will be sent. Only when the input returned to the non-alarm status, gets activated again and remains active, an alarm will be sent yet after the inactive time. If the time is set to “0” (minutes), the input will be active again immediately after returning to the non-alarm status. The time can be set between 0 and 60 minutes. As default, the inactive time is set to “0”.

## 5.9 ALARM REPEAT TIME

In order to emphasize the urgency of the alarm messages, all alarms can be repeated. As long as the input has not returned to the inactive status, the textual messages (no phone calls) will be repeated after the ‘alarm repeat time’. The repeat interval can be set between 0 and 24 hours. As default the alarm repeat time is set to 4 hours.

## 5.10 ALARM RESTORE MESSAGE

In factory setting, the Mobeye CML4055 will send alarm restore messages if the input type is set to “AN”. If set to “NO” or “NC” it does not send recovery messages. If this is desired, an “action rule” can be programmed for this via an SMS command. For this purpose, the device must be in program mode (see 3.6).

### When using the Mobeye Internet Portal

1111 IN1RESET:SEND Restore message via portal for input 1

1111 IN2RESET:SEND Restore message via portal for input 2

After a first restore message the text is visible (and can be changed) under the message texts in the Mobeye Internet Portal.

### When using your own SIM card (replace yourowntext for another text)

1111 IN1RESET:SEND,yourowntext Restore SMS for input 1

1111 IN2RESET:SEND,yourowntext Restore SMS for input 2

For more information, see the support page on [www.mobeye.com](http://www.mobeye.com).

## **5.11 POWER FAILURE MESSAGE**

If the Mobeye CML4055 is supplied with external power and the power fails, it can send alarm messages. If the setting is "OFF", no message is sent. When set to "ALARM", notifications are sent to the set contacts. When using your own SIM card, the setting "ALERT" only results in an SMS notification to TEL1. The default setting is "ALARM" for portal use and "ALERT" for own SIM cards.

## **5.12 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".

## **5.13 AUTOMATIC ARMING / DISARMING**

The Mobeye CML4055 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.

(Only) when using your own SIM card, the DATE and TIME must also be set manually. The portal synchronizes this automatically.

## **5.14 BUTTONLOCK**

It can be useful to lock the on/off button to prevent the unit from being switched off unintentionally. As default the buttonlock is unlocked (so, the button is enabled). To disable the button, the buttonlock needs to be switched to "ON". Synchronising the settings to the portal, by pressing for 5 seconds, always works.

## **5.15 EXIT DELAY TIME**

The exit delay time defines the time between the moment of switching on the module – while the input is active – and the moment the module starts sending the first alarm message. Example: the module has been installed in a cabinet where a door magnet contact is connected to the input. The exit delay time is the time between switching on the module and closing the cabinet's door. Only after this time has exceeded, alarm messages will be sent. The time can be set between 0 and 999 seconds. As default, the exit delay time is set to 0 second.

## **5.16 PULSE TIME AND OUTPUT BEHAVIOUR**

The output switches in the event of an alarm or after an incoming SMS command, depending on the output behaviour. Output behaviour "ALARM" makes the output switches off -in the event of an alarm- after the pulse time has elapsed (default: 5 seconds). With pulse time "0" it switches off when the alarm status is canceled.

Output behavior "SMS" means the output is switched on after the incoming SMS command CODE O1ON (default: 1111 O1ON) and switches back once the pulse time has elapsed. Switching time "0" makes it only switches back after the incoming SMS command CODE O1OFF (default: 1111 O1OFF).

The pulse time is adjustable between 1 and 9999 seconds. By default, the output behavior is set to "OFF" and the pulse time to "5" seconds.

## **5.17 LOW POWER MODE**

The low power mode is only important with an externally powered Mobeye CML4055. If the (factory) mode is set to "OFF", the communication module will always have a network connection. When set to "ON" the behaviour is the same as for a battery-powered device; the communication module is

turned off as much as possible to minimize power consumption. Note: in low power mode the module cannot be reached via SMS commands.

### **5.18 CALL AND/OR SMS (OWN SIM CARDS)**

When using your own SIM card, by default the CML4055 will call and send SMS text messages. It is possible to suppress one of these. By turning off the CALL, the unit will only send SMS text messages. By turning off the SMS, it will only call. The default both values are set to "ON".

With output behaviour 'SMS' or 'SMSCALL' the output is switched on via SMS command CODE O1ON (for example 1111 O1ON), and switched off via CODE O1OFF (for example 1111 O1OFF), or automatically after the pulse time.

With output behaviour "SMSCALL" the output switches after an incoming call from any telephone.

For switching after an alarm, the output behaviour must be set to "RC". The default behaviour is set to "OFF".

See 5.16 for more explanation about the output behaviour and pulse time.

## 6. PROGRAMMING WHEN USING OWN SIM CARD

If your own SIM card is used, programming proceeds via SMS commands. For this purpose the communication module requires network connection.

### 6.1 PROGRAM MODE

If the CML4055 is connected to an external power supply, it has continuous network connection and is permanently in program mode.

A battery-operated Mobeye CML4055 switches to the program mode after re-inserting the batteries or pressing the button at the back for 5 seconds. While searching for the network connection the outside LED flashes green and red. This process normally takes 10-30 seconds. 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).

In this program mode the device is ready to receive commands and settings. In a battery-operated unit a time-out occurs if no correct command is received for 3 minutes, after which the communication module switches off in order to save the batteries. In this low power mode the LED flashes once per 3 seconds to indicate it is armed.

### 6.2 PROGRAMMING THE SETTINGS BY SMS

When using your own SIM card, the settings are programmed in by SMS text messages:

1. Make sure the CML4055 is in program mode (please refer to 6.1).
2. Send an SMS text message with the (security) code and the command.
3. The green LED blinks 3 times to indicate the successful configuration. In case of an incorrect command, the red LED flashes 5 times.

SMS messages have the following content: **CODE COMMAND:OPTION**

Example: **1111 TEL1:0044772345678**

- CODE stands for the security code, factory setting is 1111.
- Do not forget the space character between (security) code and command.
- The commands are case insensitive.

- Several commands may be combined in one SMS message (with a maximum of 160 characters) by placing a # between the commands.

CODE COMMAND:OPTION#COMMAND:OPTION#COMMAND:OPTION

- All settings are saved and remain saved, even when the unit has no power or the batteries are removed.

In chapter 5 the options are explained.

In chapter 7.1 all possible SMS commands are listed.

### **6.3 PROGRAM AT LEAST ONE TELEPHONE NUMBER**

The Mobeye CML4055 is able to send messages up to 5 telephone numbers. The first telephone number (TEL1) is mandatory. This number will receive, next to alarm message, also system messages such as battery low and keep-alive message. The telephone number TEL1 is programmed via an SMS command. This can be done from any telephone, making it possible to program someone else's number. The TEL1 telephone will receive a confirmation text message with the security code.

SMS command 1st telephone number: CODE TEL1:

example: 1111 TEL1:07212345678

.... similar for TEL2 ... TEL5

To program international numbers, start with 00 followed by the country code (for example 0044123456789).

example: 1111 TEL1:0044612345678

## 7. LIST OF SMS COMMANDS FOR PROGRAMMING WITH OWN SIM

### 7.1 LIST OF SMS COMMANDS

When using your own SIM card, the settings are programmed via SMS commands. See chapter 6 for the programming method and chapter 5 for an explanation per setting. The commands are case insensitive.

Setting	SMS command	Options	Default value
Change security code	INSTCODE:	0000 ... 9999	1111
Set telephone number for alarm messages	TEL1: ... TEL5:		Empty
Delete telephone number	DEL1 ... DEL5		
Identification text	NAME:	20 characters	Mobeye
Interval 'test SMS'	TEST:	0 ... 30 (days)	0
Time test message	TESTTIME:	hhmm	
Input type input 1	TYPEIN1:	AN, NO, NC	AN
Input type input 2	TYPEIN2:	AN, NO, NC	AN
Lower limit voltage IN1	AN1LOW:	0 ... 48,0	Empty
Upper limit voltage IN1	AN1HIGH:	0 ... 48,0	Empty
Lower limit voltage IN2	AN2LOW:	0 ... 48,0	Empty
Upper limit voltage IN2	AN2HIGH:	0 ... 48,0	Empty
Delay on input 1	DELAY1:	0 ... 999 (sec)	1
Delay on input 2	DELAY2:	0 ... 999 (sec)	1
Inactive time input 1	INACTIVEIN1:	0 ... 60 (min)	0
Inactive time input 2	INACTIVEIN2:	0 ... 60 (min)	0
Alarm repeat time	REPEAT:	0 ... 24 (hrs)	4
Power message	POWERMESSAGE:	OFF,ALERT,ALARM	ALERT
Power failure delay time	DELAYPOW:	0 ... 999 (min)	0
Actual time	TIME:	hhmm	Empty
Actual date	DATE:	yyyymmdd	Empty
Arming time	TIMEARM1:	hhmm	Empty
Disarming time	TIMEDISARM1:	hhmm	Empty
2nd arming time	TIMEARM2:	hhmm	Empty
2nd disarming time	TIMEDISARM2:	hhmm	Empty
Assigning times 1	DAYS1:	1234567	Empty
Assigning times 2	DAYS2:	1234567	Empty



Setting	SMS command	Options	Default value
Use of on/off button	BUTTONLOCK:	ON (button locked) OFF (unlocked)	OFF
Low power status	LOWPOWER:	ON, OFF	OFF
Call on/off	CALL:	ON, OFF	ON
SMS on/off	SMS:	ON, OFF	ON
Exit delay	DELAYEXIT:	0 ... 999 (sec)	0
Alarm text AN IN1 high	TEXT1:	20 karaktars	Input 1 high
Alarm text AN IN1 low	TEXT2:	20 karaktars	Input 1 low
Text input 1 restored	TEXT3:	20 karaktars	Input 1 OK
Alarm text AN IN2 high	TEXT4:	20 karaktars	Input 2 high
Alarm text AN IN2 low	TEXT5:	20 karaktars	Input 2 low
Text input 2 restored	TEXT6:	20 karaktars	Input 2 OK
Alarm text NO/NC IN1	TEXT7:	20 karaktars	Alarm 1
Alarm text NO/NC IN2	TEXT8:	20 karaktars	Alarm 2
Alarm text power failure	TEXT9:	20 karaktars	Power failure
Alarm text power restore	TEXT10:	20 karaktars	Power restored
Output behaviour	OUTPUT:	RC, ALARM, OFF	OFF
Pulse time output	TO1:	0 ... 999 (sec)	5

Examples:

Set phone number 1:                    1111 TEL1:0712345678

Delete phone number 1:                1111 del1

Be aware of the space between "1111" and the command.

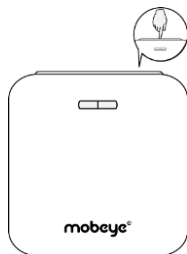
## 7.2 HOW TO ACTIVATE THE CML4055

After the previous steps the Mobeye CML4055 is ready for use. It is armed automatically.

In order to switch off (disarm) the Mobeye CML4055:

- Press the button at the backside for 1 second. The green LED switches off to indicate the disarmed status.

In the disarmed status the Mobeye CML4055 will not send alarm notifications. The unit remains active and is able to switch on time-controlled and to send 'low battery voltage' messages.



In order to switch on (arm) the Mobeye CML4055:

- Press the button at the backside for 1 second. The green LED blinks once every 3 seconds (battery-powered) or stays on continuously (in case of an external power supply).

If powered externally (with network connection), 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)

## 7.3 SYSTEM RESET

To reset the Mobeye CML4055 to its factory settings:

1. Remove the batteries and SIM card (and external power supply).
2. Press the outside button while reinserting the batteries. Keep it pressed for (about) another 5 seconds.
3. Release the button immediately after the LED starts to flash.

After a successful reset, the status LED will blink green to indicate that the module is not configured. The security code is back to factory settings as well.

## 7.4 SMS REPORTS WHEN USING OWN SIM CARD

Several lists and status reports can be retrieved by sending an SMS text message to the Mobeye CML4055, from any telephone number. Before sending the request, make sure the unit is in the program mode (see 6.1). Upon sending the command, the Mobeye CML4055 returns an SMS text message to the originator of the request. The commands are case insensitive.

### STATUS REQUEST

The status includes the armed/disarmed status, status of the inputs, power and batteries. The status can be requested by sending following SMS text message:

SMS command status request:	<b>STATUS?</b>
example:	1111 STATUS?

### LIST OF SETTINGS

The settings can be requested by sending following SMS text message:

SMS command list basic settings:	<b>SET?</b>
SMS command list advanced settings:	<b>SETA?</b>
SMS command list of texts:	<b>TEXT?</b>
example:	1111 SET?

### LIST OF PHONE NUMBERS

The list of telephone numbers can be requested by sending following SMS text message:

SMS command list of phone numbers:	<b>CALL?</b>
example:	1111 CALL?

## 7.5 TECHNICAL MESSAGES

In the event of technical issues the telephone number programmed in at position 1 (TEL1) receives an SMS message. Possible technical messages are:

Message	Reason
Low batteries, external power supply OK	Power is available, batteries need to be replaced.
No external power supply, batteries OK	No external power supply, batteries are able to take over operation in low power mode.
Low batteries, no external power supply	No external power supply, batteries need to be replaced.
External power supply OK, batteries OK	The external power is restored (or the adapter is plugged in a socket), batteries do not need to be replaced.
(delayed message)	If (delayed message) is added to the SMS text messages, the message couldn't be sent earlier, due to a SIM card failure or GSM network failure.
Batteries too low. Module shutting down.	The module has shut down due to low voltage. Replace the batteries or connect the power supply to restart the unit.
Module restarted. Power supply [status]. Batteries [status].	The module has been able to restart after a shutdown.

When receiving one of the above mentioned technical messages, please take appropriate action as soon as possible.

## 8. STATUS FEEDBACK

LED pattern	Status	Required action
Blinking green, 1 second on / 1 second off	Module not configured	Configure at least one telephone number.
1 green flash every 3 seconds	Module is switched on, powered by batteries	No action required.
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 in normal mode	: > 1 year (battery operated) : > 3 years (external power supply)
Ext. power connection (optional)	: 12 -24V DC (+/- 2V DC) / min. 500 mA any 24 VDC power source needs to be regulated
Power consumption low power	: ca. 50 $\mu$ A stand-by / max. ca. 500 mA
Power consumption 12-24V	: ca. 50 mA stand-by / max. ca. 500 mA
Input voltage IN1 and IN2	: 0-48V, max. peaks of 64V
Dimensions	: 94 x 94 x 28 mm
Ambient temperature	: -10 °C until +50 °C

This product is designed and manufactured in the Netherlands.  
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-FS, CM4410, CM4500, CM4600, CM4610,  
CML4015, CML4055, CML4255, CML4275, CML4285, CMVXI-R, iCM41

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

Directive 214/35/EU (low voltage directive)

Directive 2014/30/EU (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 301 489-52 V1.1.0  
EN 301 511 V12.5.1

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