USER MANUAL

ThermoGuard TwinLog

CML2275

SW version 4.n

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 case of damage caused by disregarding the guidelines, the warranty becomes void.

The user must regularly check the proper functioning of the device. The manufacturer cannot be held liable for any damage or loss caused by any incorrect use or incorrect functioning of the Mobeye® device.

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 SMS text messages, making telephone calls and sending (log) files. Other uses are not permitted and may invalidate the warranty.

Battery recycling
CR123 batteries, as used in the Mobeye CML2275, are classified as non-hazardous waste and can be recycled. Please take empty batteries to a nearest collection point.

CONTENT

1. GENERAL DESCRIPTION

The Mobeye CML2275 is a GSM module used to monitor the temperature using one or two temperature probes. As soon as one of the temperature limits are violated or one of the inputs are activated, it sends alarm notifications. The unit can run battery-powered. When powered externally, the power supply will be monitored too. If connected to the web portal, the temperature values are logged and transferred to the web portal.

The Mobeye CML2275 is pre-programmed with standard behaviour. To change this behaviour please refer to chapter 4.

The factory settings of the Mobeye CML2275 cause following reactions:
- In case of a temperature alarm, the Mobeye CML2275 sends an alarm SMS text message and calls the phone numbers as programmed. The SMS message contains the text 'Temperature too high' or 'Temperature too low', followed by the measured temperature. If two temperature probes are connected, the message will include the indication which probe is in alarm status.
- As soon as the temperature gets back to a value inside the range, an SMS text message is sent to the programmed phone numbers containing the text 'Temperature OK', followed by the measured temperature.
- If one of the inputs is activated by a sensor, the Mobeye CML2275 sends an alarm SMS text message and calls the phone numbers as programmed.
- If one of the temperature sensors is removed, the Mobeye CML2275 sends an alert SMS text message to the administrator (first telephone number).
- If an external power supply is used and a power failure occurs, the Mobeye CML2285 sends a 'power failure' SMS text message and calls the phone numbers as programmed. If the power is restored, the Mobeye CML2285 sends a 'power restored' SMS text message to the numbers.
- If the batteries need to be replaced, the Mobeye CML2275 sends a 'battery low' SMS text message to the administrator.
- For all types of alarms a local alarm indication will sound, which can be interrupted by briefly pressing the button.

If the Mobeye CML2275 is connected to the Mobeye Internet Portal, additional functions are active:

- The configuration of the Mobeye CML2275 can be done either via the web-based environment or via the SMS commands as described in this manual.
- In the event of an alarm situation, the Mobeye CML2275 will call the phone numbers as programmed and send a message to the portal. The portal will despatch the message to contact persons (SMS and/or e-mail), which are preconfigured in the portal. The receivers of the alarm messages can differ from the receivers of the technical messages.
- Logging of the temperature values. As default the temperature values are measured and logged every 60 minutes and sent to the portal every 12 hours. The log frequency and synchronisation interval can be adjusted.
- The display of the status and historical events.
- The unit can be given a name and location in the portal, which are used in SMS and e-mail messages.
- Once connected to the Internet portal, test messages ("keep alive") are sent regardless the unit is armed or disarmed. The portal will monitor the receipt of the test messages; if it is not received in time, the portal sends an exception message to the - set in the portal - (service) contact persons. In this way the communication between the Mobeye CML2275 and the portal is checked (default: every 7 days).

See www.mobeye.eu/portal for more information. The portal can be accessed via www.mymobeye.eu.

2. GETTING STARTED

To get started with the Mobeye CML2275, at least the following steps need to be taken in the following order:

1. Insert a SIM card
2. Connect the temperature sensor(s)
3. Insert the batteries
4. Enter the program mode
5. Program at least one telephone number
6. Enter a value for the temperature limits
7. Arming/disarming the system

These steps are further explained in this chapter. After these steps the module will be operational.

2.1 INSERT A SIM CARD

Open the enclosure by removing the 4 screws and insert a SIM card into the module. Push the black cover slightly outward to open the holder. Before installing the SIM card should have PIN code "0000", or PIN code removed.
(A PIN code can be changed or removed by putting the SIM card in to any mobile phone and entering the 'security' menu)

NB: Make sure the SIM card is inserted before the batteries are inserted. If you replace a SIM card, first remove the batteries (and remove any other external power supply). The settings are stored in the device memory.

2.2 CONNECT THE TEMPERATURE SENSOR(S)

Plug the external temperature sensor into the socket on the PCB (sensor 1) and press it firmly. It is possible to connect two temperature sensors.

Then insert the sensor head through the swivel to outside. It is possible the bring out only the a part of the head of the sensor, or the entire sensor with a part of the cable, depending on the application. Close the swivel by turning it in order to reduce the tensile strength and make it waterproof. A second sensor can be connected in the same way on second sensor.
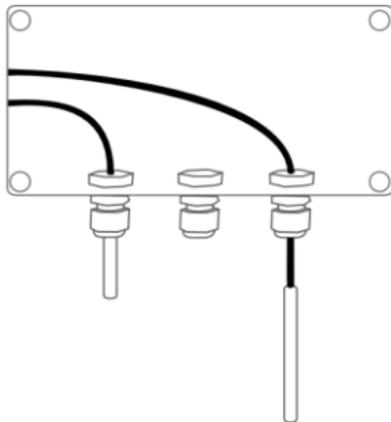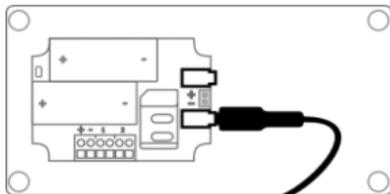
2.3 INSERT THE BATTERIES

Insert the two batteries (CR123) in the module. Use the +/- indication for the correct placement.

2.4 ENTER THE PROGRAM MODE

In order to program the unit, the GSM module needs to be open and connected to the network. Using external power, the unit is always in program mode.
A battery-operated unit switches to the program mode after inserting the batteries.
First the GSM module establishes network connection. During this time the LED flashes green and red. Within 10-30 seconds the connection is established and the status LED starts flashing 1 sec. on/1 sec. off (or stays on continuously in case the first telephone number has been configured).

The Mobeye CML2275 returns to the program mode by pressing the button for 5 seconds, until the LED starts flashing red/green. Once it has GSM connection it will be flashing again (or stays on continuously).

As long as the unit is in program mode, the status green LED is on (or flashing 1 sec. on/1 sec. off if the module has no configuration). During the first 3 minutes, the GSM module remains active, ready to receive SMS commands. After 3 minutes a time-out occurs and the GSM module switches off in order to save the batteries. The unit returns to the low power operational mode.

2.5 PROGRAM AT LEAST ONE TELEPHONE NUMBER

The Mobeye CML2275 is able to send messages up to 5 telephone numbers. The first telephone number (TEL1) belongs to the administrator. Technical messages (such as *battery low*) are sent to the administrator only. Without the administrators' phone number, the Mobeye CML2275 cannot function.
When the CML2275 is in initial (factory) status and the batteries are inserted (so the LED is flashing), the administrators' number is programmed by calling the telephone number of the Mobeye CML2275 using the administrators' phone. The unit will recognize this number and store it as administrator (TEL1). The administrator will receive a confirmation SMS text message including the security code. This code is needed to program the other settings in the unit.

NB: For this way of programming the number recognition in the administrator's phone must be 'on'. To program or change the administrators' number by SMS command, please refer to 5.2.

2.6 PROGRAM THRESHOLD VALUES FOR THE INPUTS

A separate high and/or low temperature limit can be set for each temperature sensor. All limits can be set between -35 and +70 ºC. Negative values are set by placing a "-" in front of the value.
To enter a temperature limit, be sure the Mobeye CML2275 is in program mode. Send an SMS text message to the unit with following content for the first sensor:

SMS command lower limit: **1111 LTL1:**
          example: 1111 LTL1:-5
SMS command upper limit: **1111 HTL1:**
          example: 1111 HTL1:25

Similar for the second sensor:
SMS command lower limit: **1111 LTL2:**
SMS command upper limit: **1111 HTL2:**

Please mind the space behind 1111.

2.7 SWITCHING ON/OFF

After the previous steps, the Mobeye CML2275 is ready for use and switched on automatically. It can be switched on and off by the user-defined time schemes or the button on top. By default this button is 'locked', to prevent that the unit can be switched off by mistake. This can be changed by choosing the value "OFF" for the setting "BUTTONLOCK" (see 6.20). After unlocking the button, the system can be switched on and off pressing it for one second.

When the unit is switched off, the green LED is off. When the unit is on, the green LED blinks once every 3 seconds (battery-powered) or stays 'on' continuously (in case of an external power supply).

In the disarmed status the Mobeye CML2275 will not send alarm notifications. The functions automatic arming and sending a 'low battery' message, are still active.

2.8 CONFIRMATION OF THE ALARM MESSAGE

When the system is triggered it will send alarm notifications. First an SMS text message is sent to all programmed alarm numbers, followed by a phone call. When you pick up the phone, you will hear beeps. It is possible to confirm the phone call by answering the phone and pressing any key. The other alarm numbers will not be called afterwards.

By switching off the 'SMS' function, the system will only call. This prevents the other numbers being notified by SMS.

3. USE OF EXTERNAL POWER SUPPLY

Although the Mobeye CML2275 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 GSM network and therefore always in program mode. When the power fails, the batteries take over and a power failure message is sent. The module continues operating albeit in the low power mode. This means the GSM module switches off and only establishes network connection when it needs to send an alarm notification, test message or low battery alert.

Connect the external power adapter (or any other regulated 12VDC power supply) to the power input of the connector (press on the green pins to connect the wires):

- V+ (black lead with white stripe) to "+"
- Ground (black lead) to "-"
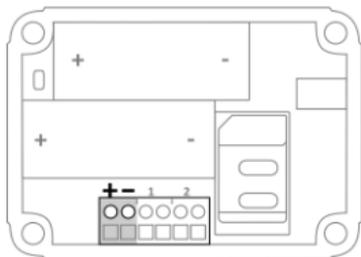
4. USE OF THE INPUTS AND OUTPUT

4.1 CONNECT A SENSOR TO THE INPUT

It is possible to connect two external sensors to the inputs. As a standard reaction after a triggered input, the Mobeye CML2275 sends an SMS text message to the preset numbers and calls these numbers.

Insert the 2 wires of an external sensor through the hole of the enclosure to the inside part and next 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.
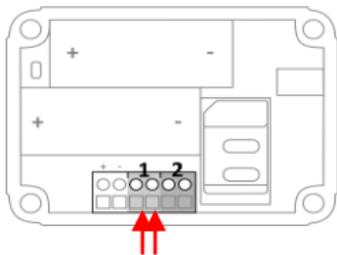
When using a second input, connect this to input 2.

As default the inputs are programmed as Normally Open (NO) contacts. This means the inputs are triggered if the input is closed for at least 1 second. In case the contact is Normally Closed (NC), please refer to paragraph 6.8. If you require the sensor to be activated for a shorter or longer period before triggering an alarm, please refer to 6.8.

4.2 CONNECT A DEVICE TO THE OUTPUT

The Mobeye CML2275 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 (see 6.15).

The maximum load of the output is 200mA.
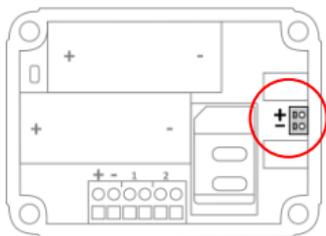
To switch devices, a relay can be placed behind the output with an input voltage of 12VDC. The required switching voltage of the relay depends on the device connected. NOTE: The output does not work if the CML2275 is battery-operated.

4.3 CONTROL THE OUTPUT VIA SMS COMMAND

If CML2275 has external power, the GSM module is always open, able to receive an SMS command to switch the output. The output type needs to be 'RC' (see next paragraph).

To switch the output, send following SMS command to the unit:
CODE O1ON
    example: 1111 O1ON

To switch off the output, send following SMS command to the unit:
CODE O1OFF
    example: 1111 O1OFF

Be aware of the space after 1111.

The output has a pulse time of 5 second in the factory defaults (see 6.17).

4.4 OUTPUT BEHAVIOUR

The output can be switched by SMS command when the unit is powered externally, or automatically after an alarm (ALARM). The output remains on as long as the unit remains in alarm status. For controlling the output via SMS command the output behaviour should be 'RC' (remote control). The pulse time defines the duration of switching (see 6.17). By default, this value ALARM.

To set the output behaviour, send following SMS command to the unit:
OUTPUT:
    example: 1111 OUTPUT:ALARM

5. CONFIGURATION

To program the Mobeye CML2275, the GSM module must have network connection. In case only batteries are used, first switch the unit to the program mode. Next send SMS commands for the configuration. All settings are stored and will be kept in the unit, even in case the power supplies are removed.

5.1 PROGRAM MODE

If the unit is connected to an external power supply, the CML2275 has continuous network connection and the unit is permanently in program mode.
If the unit is battery-powered the program mode can be achieved by pressing the button for 5 seconds, until the LED starts flashing red and green. Alternatively, the program mode can be accessed by (re) inserting the batteries.

First the GSM module establishes network connection. During this time the LED flashes green/red. Normally this takes 10-30 seconds. Once the connection is established the status LED starts flashing 1 sec. on/1 sec. off (or stays on continuously in case the first telephone number has been configured).

In program mode, the device is ready to receive SMS commands. If no correct command is received for 3 minutes, the GSM module switches off in order to save the batteries. The unit returns to the low power operational mode.

The program mode is interrupted by pressing the button for one second until the LED switches off. The unit is switched off completely (disarmed).

5.2 THE (SECURITY) CODE

For configuration activities the (security) code of the Mobeye CML2275 must be used. The initial (security) code is '1111'. You can change the (security) code to your own code. See section 4.4.

5.3 PROGRAMMING THE SETTINGS BY SMS

To program the settings by SMS text message:

1. Make sure the CML2275 is in program mode (please refer to 5.1).
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**

- 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

See section 5.4 for a full list of SMS commands.

5.4 LIST OF SMS COMMANDS FOR CONFIGURATION

The setting options for the CML2275. The commands are case insensitive.

Setting	SMS Command	Options	Default value
Change security code	INSTCODE:	0000···9999	1111
Telephone number for alarm messages	TEL1: ... TEL5:		Empty
Delete telephone number	DEL1 ... DEL5		
Lower limit temperature sensor 1 and 2	LTL1: LTL2:	-35··· 70 (ºC)	OFF
Upper limit temperature sensor 1 and 2	HTL1: HTL2:	-35··· 70 (ºC)	OFF
Identification text	NAME:	20 characters	Mobeye
Call on/off	CALL:	ON, OFF	ON
SMS on/off	SMS:	ON, OFF	ON
Input type input 1	TYPEIN1:	NO, NC	NO
Input type input 2	TYPEIN2:	NO, NC	NO
Delay temperature sensor 1 and 2	DELAYTEMP1: DELAYTEMP2:	000···999 (min)	0
Temperature calibration	TOFFSET1: TOFFSET2:	-5,0··· 5,0 (ºC)	0
Unit of temperature	TEMPUNIT:	C, F	C
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···999 (min)	0
Text at too low temperature sensor 1	TEXT1:	20 characters	Temperature 1 too low:
Text at too high temperature sensor 1	TEXT2:	20 characters	Temperature 1 too high:

Setting	SMS Command	Options	Default value
Text temperature restoration sensor 1	TEXT3:	20 characters	Temperature 1 OK:
Text at too low temperature sensor 2	TEXT4:	20 characters	Temperature 2 too low:
Text at too high temperature sensor 2	TEXT5:	20 characters	Temperature 2 too high:
Text temperature restoration sensor 2	TEXT6:	20 characters	Temperature 2 OK:
Alarm text NO/NC input 1	TEXT7:	20 characters	Alarm 1
Alarm text NO/NC input 2	TEXT8:	20 characters	Alarm 2
Alarm text power failure	TEXT9:	20 characters	Power failure
Text at power restore	TEXT10:	20 characters	Power restored
Power failure delay time	DELAYPOW:	0…999 (min)	0
Power message	POWERMESSAGE:	OFF,ALERT,ALARM	ALARM
Alarm indication	ALARMSOUND:	ON, OFF	OFF
Pulse time output	TO1:	0…9999 (sec)	0
Output behaviour	OUTPUT:	ALARM, RC	ALARM
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
Use of button	BUTTONLOCK:	ON (button locked) OFF (unlocked)	ON
Interval 'test SMS'	TEST:	0…30 (days)	0
Time test message	TESTTIME:	hhmm	

Examples:

Set phone number 1:   1111 TEL1:071234567   Mind the space behind 1111.

6. POSSIBLE SETTINGS

6.1 PHONE NUMBERS

The Mobeye CML2275 is able to send alarm messages to up to 5 phone numbers.
The first telephone number (TEL1) belongs to the administrator. Only this number
receives all system messages. The other phone numbers (including the administrator)
only get the alarm messages.

To set or change telephone numbers:
SMS command 1st telephone number: **TEL1:**
               example: 1111 TEL1:07123456789

.... similar for TEL2:, TEL3:,TEL4: and TEL5:
For foreign number, start with + followed by the country code (depending on the
country leave out the zero for the local area code).
               example: 1111 TEL1:+447123456789

To delete telephone numbers:
SMS command delete 1st telephone number: **DEL1**
               example: 1111 DEL1
.... similar for DEL2, DEL3, DEL4 and DEL5

6.2 SET A MINIMUM AND/OR MAXIMUM TEMPERATURE LIMIT

A separate high and/or low limit for the temperatures can be set. The limits can be set
between -35 and +70 ºC. Negative values are set by a "-" before the value.

To enter the temperature limits:
SMS command lower limit sensor 1:   **1111 LTL1:**
SMS command upper limit sensor 1:   **1111 HTL1:**
               example: 1111 HTL1:25

SMS command lower limit sensor 2:   **1111 LTL2:**
SMS command upper limit sensor 2:   **1111 HTL2:**
               example: 1111 HTL2:25

6.3 IDENTIFICATION TEXT

It is possible to add a standard identification text (NAME) to all messages sent out by the Mobeye CML2275. The alarm messages are a combination of the name and the alarm text. A user defined identification has a length of maximum 20 characters. The default identification text is 'Mobeye'.

SMS command identification text: **NAME:**
         example: 1111 NAME:my Mobeye device

6.4 ALARM TEXTS

Unique alarm texts can be programmed into the Mobeye CML2275. User defined texts have a maximum length of 20 characters.
Following default texts are programmed:

Text 1 (low temperature 1 alarm):	Temperature 1 too low:
Text 2 (high temperature 1 alarm):	Temperature 1 too high:
Text 3 (temperature 1 restored):	Temperature 1 OK
Text 4 (low temperature 2 alarm):	Temperature 2 too low:
Text 5 (high temperature 2 alarm):	Temperature 2 too high:
Text 6 (temperature 2 restored):	Temperature 2 OK
Text 7 (input 1):	Alarm 1
Text 8 (input 2):	Alarm 2
Text 9 (power failure):	Power failure
Text 10 (power restoration):	Power restored

NB: text 9 and 10 are only valid at POWERMESSAGE set to 'ALARM'.

SMS command text low temperature 1 alarm: **TEXT1:**
SMS command text high temperature 2 alarm: **TEXT2:**
Similar for TEXT3 ... TEXT10
         example: 1111 TEXT4:freezer too cold

6.5 SMS ON/OFF

By default, the Mobeye CML2275 sends alarm notifications via text message and calls (you will hear a beep signal) to the preset contact persons. By turning off the SMS, the unit will only call after a triggered input.

SMS command enable / disable SMS: **SMS:ON** or **SMS:OFF**
example: 1111 SMS:OFF

6.6 CALL ON/OFF

By default, the Mobeye CML2275 sends alarm notifications via text message and calls the preset contact persons. By turning off the CALL, the unit will only send an SMS text message as alarm notification. It is not possible to switch off both the SMS and the call.

SMS command enable / disable call: **CALL:ON** or **CALL:OFF**
example: 1111 CALL:ON

6.7 TEMPERATURE DELAY TIME

The temperature delay time defines the duration a temperature limit is violated before an alarm is initiated. If the temperature returns to the non-alarm status within the delay time, no alarm is sent. For each temperature input a delay time can be set. The time can be set between 0 and 999 minutes.
As default, the temperature delay time is set to 0 minutes.

SMS command temperature delay time sensor 1: **DELAYTEMP1:**
SMS command temperature delay time sensor 2: **DELAYTEMP2:**
example: 1111 DELAYTEMP1:15

6.8 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.

SMS command alarm delay input 1: **DELAY1:**
SMS command alarm delay input 2: **DELAY2:**
example: 1111 DELAY1:999

6.9 INPUT TYPE

The input type defines the character of the 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.

SMS command input type input 1: **TYPEIN1:NO** or **TYPEIN1:NC**
SMS command input type input 2: **TYPEIN2:NO** or **TYPEIN2:NC**
            example: 1111 TYPEIN1:NC

6.10 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".

SMS command inactive time input 1: **INACTIVEIN1:**
SMS command inactive time input 2: **INACTIVEIN2:**
            example: 1111 INACTIVEIN2:45

6.11 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 SMS alarm will be repeated after the 'alarm repeat time'. The time can be set between 0 and 999 minutes. As default the alarm repeat time is set to 0 minutes.

SMS command alarm repeat time: **REPEAT:**
            example: 1111 REPEAT:20

6.12 POWER FAILURE DELAY TIME

If the Mobeye CML2275 is powered externally and the power fails it can notify the contact person(s). The power failure delay time 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 and is only accepted if the POWERMESSAGE is set to 'ALARM'. As default, the delay time is set to 0.

SMS command power failure delay time: **DELAYPOW:**
         example: 1111 DELAYPOW:15

6.13 POWER FAILURE MESSAGE

If the Mobeye CML2275 is powered externally and the power fails it sends an SMS text message to the programmed telephone numbers followed by a call (setting 'ALARM'), following the on/off settings of 'CALL' and 'SMS'. Power restore results in an SMS alert to all numbers. This setting can be set to 'ALERT' or 'OFF'. If the setting is 'ALERT' the power failure message and restore will be sent as SMS to the TEL1 (administrator). The setting 'OFF' means that no power failure message is sent. The default setting for the 'power failure message' is set to "ALARM".

SMS command power failure message: **POWERMESSAGE:ALARM**
                 (or **ALERT** or **OFF**)
        example: 1111 POWERMESSAGE:ALERT

6.14 UNIT OF TEMPERATURE

The temperature can be programmed and displayed in degrees Celsius (C) or Fahrenheit (F). If the unit was set to F, the temperature limits can be set between -30 °F and 158 °F. As default this unit is set to C.

SMS command unit of temperature: **TEMPUNIT:**
         example: 1111 TEMPUNIT:F

6.15 TEMPERATURE CALIBRATION

The high quality temperature sensor is digital and calibrated at the factory. For special applications it is possible to calibrate the sensor and program a correction. The adjusted temperature will be used in the measurement and reports. For each temperature sensor a calibration can be entered.
Example: the Mobeye CML2275 measures 13 °C. Actual ambient temperature: 13,5 °C. To adjust this difference, +0,5 degrees shall be programmed.

SMS-command calibration sensor 1:   **TOFFSET1:**
SMS-command calibration sensor 2:   **TOFFSET2:**
           example: 1111 TOFFSET1:0,5

6.16 ALARM INDICATION

The CML2275 has an internal piezo siren, which sounds at an alarm and keeps sounding as long as the unit is in alarm status. The siren can be interrupted by briefly pressing the button. The alarm indication can be disabled, so it won't sound at all (OFF). As default this indication is set to 'ON'.

SMS command alarm indication: **ALARMSOUND:**
          example: 1111 ALARMSOUND:OFF

6.17 PULSE TIME OUTPUT

The pulse time or switch time of the output is adjustable between 1 and 9999 seconds. The pulse time indicates how long the output remains switched after a telephone number sends CODE O1ON (e.g. 1111 O1ON), before it automatically switches back again. If the pulse time is set to 0 seconds, the output will not automatically switch back. It may be switched back by SMS command CODE O1OFF. By default, the pulse time is set to "0" second.

SMS command pulse time output: **TO1:**
          example: 1111 TO1:45

6.18 OUTPUT BEHAVIOUR

The output can switch automatically when the unit is powered externally, or after an alarm (ALARM). The output remains on as long as the unit remains in alarm status. For controlling the output via SMS command the output behaviour should be 'RC' (remote control). The pulse time defines the duration of switching (see 6.17). By default, this value is set to ALARM.

To set the output behaviour, send following SMS command to the unit:

SMS command output behaviour: **OUTPUT:**
             example: 1111 OUTPUT:ALARM

6.19 AUTOMATIC ARMING / DISARMING

The Mobeye CML2275 only works if the unit is armed, which is done via the 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).
For arming/disarming automatically, the internal clock time needs to be correct. Some telecom providers offer this in the network, which the Mobeye CML2275 synchronizes during start-up and after sending test messages. It is possible to set the time manually. To view the clock time, request a list of the settings by sending the command 1111 SET?.

To set the actual date:
SMS command actual date: **DATE:**

To set the actual time:
SMS command actual time: **TIME:**

To set a daily arming scheme:
SMS command arming scheme 1: **TIMEARM1:**

To set a daily disarming scheme:
SMS command disarming scheme 1: **TIMEDISARM1:**

To set a second daily arming scheme:
SMS command arming scheme 2: **TIMEARM2:**
To set a second daily disarming scheme:
SMS command disarming scheme 2: **TIMEDISARM2:**
example: 1111 TIMEDISARM2:1455

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

To assign TIMEARM and/or TIMEDISARM to weekdays:
SMS command to assign 'scheme 1': **DAYS1:**
SMS command to assign 'scheme 2': **DAYS2:**

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 entered in one command (e.g. 12345 means Monday till Friday).

examples: 1111 DAYS1:12345
1111 DAYS2:67

6.20 BUTTONLOCK

It can be useful to lock the button to prevent the unit from being switched off unintentionally. In the 'buttonlock' mode the button is still available to get in the program mode. As default the buttonlock is ON (so, the button is disabled). To enable the button, the buttonlock needs to be switched to OFF.

SMS command buttonlock: **BUTTTONLOCK:**
example: 1111 BUTTONLOCK:OFF

6.21 TEST MESSAGE

The Mobeye CML2275 can send regular test SMS messages (*keep alive*) to the administrator (first phone number), 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 programmed.

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).

SMS command interval test message: **TEST:**
                    example: 1111 TEST:21

6.22 ADDITIONAL LOG FUNCTIONS IN THE MOBEYE INTERNET PORTAL

The Mobeye CML2275 can run standalone and is ready for use, after inserting a SIM card from any provider. However, with a subscription to the Mobeye SIM / portal services and a registration in the Mobeye Internet Portal (www.mymobeye.eu) the Mobeye CML2275 offers additional features such as logging of temperature values.

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. When transferring data, the recorded values are sent to the Portal. The logging interval can be set between 0 and 999 minutes. The default logging interval is set at 60 (minutes). The transmission interval can be set between 1 and 999 hours. The standard transmission interval is set to 12 (hours).

To change the logging interval:
SMS command log interval: **LOGINTERVAL:**

To change the data transfer interval:
SMS command transfer interval: **TRANSFERINTERVAL:**

6.23 SYSTEM RESET

To reset the Mobeye CML2275 to its factory settings:

1. Remove the batteries (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.
4. If relevant, connect the external power supply.

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

7. REQUEST LIST OF THE STATUS, SETTINGS AND SIGNAL STRENGTH

Several lists and status reports can be retrieved by sending an SMS text message to the Mobeye CML2275, from any telephone. Before sending the request, make sure the unit is in the program mode (please refer to 5.1).
Upon sending the command, the Mobeye CML2275 returns an SMS text message to the originator of the request. The commands are case insensitive.

ACTUAL TEMPERATURE
The actual temperature values as measured by the Mobeye CML2275 can be requested by sending an SMS message with the content (without code):

?

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

SMS command status request: **STATUS?**
         example: 1111 STATUS?

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

SMS command list basic settings: **SET?**
SMS command list advanced settings: **SETA?**
SMS command list of texts: **TEXT?**
         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: **CALL?**
         example: 1111 CALL?

GSM SIGNAL STRENGTH
The signal strength of the used mobile network can be requested. If the network is weak, it is advised to use a SIM card of another network provider or an external GSM antenna (a Mobeye accessory). The GSM signal strength can be requested by sending following SMS text message:

SMS command request GSM signal: **NETWORK?**
example: 1111 NETWORK?

8. TECHNICAL MESSAGES AND STATUS FEEDBACK

Technical messages

In the event of technical issues the administrator 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.

When receiving one of the above mentioned technical messages, please take appropriate action as soon as possible. During the battery replacement, the SIM card does not have to be removed.

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

Technical specifications

GSM	:	Quad band EGSM, 850/900/1800/1900 MHz
Batteries	:	2* CR123 (lithium)
Battery life in normal mode	:	>1 year (battery operated)
	:	>2 years (external power supply)
Ext. power connection	:	12 VDC (+/- 2 VDC) / min. 500 mA (optional)
Power consumption low power	:	ca. 50 μA stand-by / max. ca. 500 mA
Power consumption 12V	:	ca. 50 mA stand-by / max. ca. 500 mA
Dimensions	:	162 x 82 x 55 mm
Ambient temperature	:	-10 °C until +50 °C
Open collector output	:	max. 200mA

$C \epsilon$

Declaration of Conformity

Herewith we, Mobeye, declare that the products

Mobeye CM21 telemetry module

And the derived products
**CM2000, CM2100, CM2200, CM2300, CM2300-FS, CM2400, CM2410, CM2500
CM2600, CML2015, CML2025, CML2055, CML2255, CML2275, CML2285**

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

Directive 73/23/EEC (low voltage directive)

Directive IEC/EN 50130 Electromagnetic compatibility

Directive 1995/5/EC R&TTE (Radio & Telecommunications Terminal Equipment)

The conformity with the essential requirements of 1995/5/EC has been verified against:

**ETSI EN 301 489-1 V1.5.1
ETSI EN 301 489-7 V1.2.1
ETSI EN 301 511 V9.0.2
CENELEC EN 60950:2001**

Mobeye
Poeldonkweg 5
5216 JX 's-Hertogenbosch
The Netherlands

Name: Jack van de Vijver
Position: General Manager
Signature:

mobeye®

Date: 10 December 2015