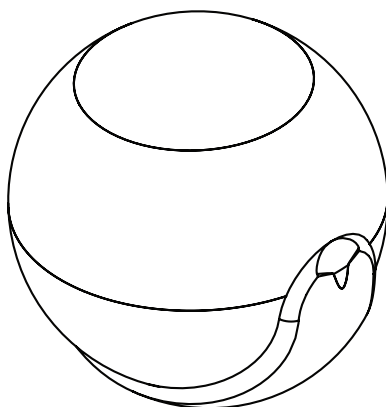




## **FIBARO MOTION SENSOR FGMS-001**

### **CONTENTS**

v2.0

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## Important safety information



### **Read this manual before attempting to install the device!**

Failure to observe recommendations included in this manual may be dangerous or cause a violation of the law. The manufacturer, Fibar Group S.A. will not be held responsible for any loss or damage resulting from not following the instructions of operating manual.

## General information about the FIBARO System

FIBARO is a wireless smart home automation system, based on the Z-Wave protocol. All of available devices can be controlled through a computer (PC or Mac), smartphone or tablet. Z-Wave devices are not only receivers, but can also repeat the signal, increasing the Z-Wave network's range. It gives advantage over traditional wireless systems that require direct link between transmitter and receiver, as a result the construction of the building could affect network's range negatively.

Every Z-Wave network has its unique identification number (home ID). Multiple independent networks can exist in the building without interfering. Transmission security of FIBARO System is comparable to wired systems.

Z-Wave technology is the leading solution in smart home automation. There is a wide range of Z-Wave devices that are mutually compatible, independently of manufacturer. It gives the system the ability to evolve and expand over time. For more information visit: [www.fibaro.com](http://www.fibaro.com).

## #1: Description and features

**FIBARO Motion Sensor** is a universal Z-Wave multi-sensor. Along with detecting motion the device measures the temperature and light intensity. The sensor has a built-in accelerometer to detect any tampering of the device. FIBARO Motion Sensor is battery powered device and designed to be installed quickly and easily on any surface. The LED indicator signals motion, temperature level, operating mode and can be used to see if device is within the Z-Wave network. The motion sensor can be used for lighting scenes and presence monitoring systems.

### NOTE

This device may be used with all devices certified with Z-Wave Plus certificate and should be compatible with such devices produced by other manufacturers.

### NOTE

FIBARO Motion Sensor is a Security Enabled Z-Wave Plus product and a Security Enabled Z-Wave Controller must be used in order to fully utilize the product.

### Main features of FIBARO Motion Sensor:

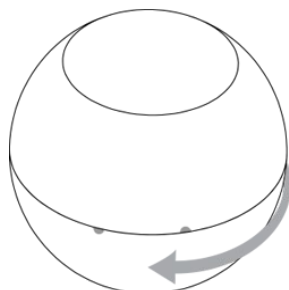
- compatible with any Z-Wave or Z-Wave+ Controller
- supports protected mode (Z-Wave network security mode) with AES-128 encryption
- detects motion using a passive IR sensor
- measures ambient temperature
- measures light intensity
- detects vibrations
- extremely easy installation
- may be installed anywhere - wall or any surface
- battery powered
- theft and tampering protection - once vibrations are detected, the notification is sent to the main controller
- detected movement, temperature and vibrations are signalled by the built-in LED diode



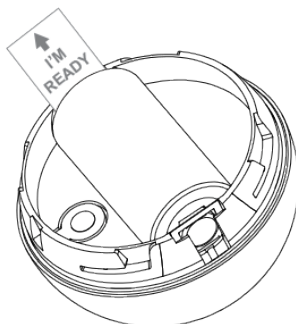
**FIBARO Motion Sensor is a fully compatible Z-Wave PLUS device.**

## #2: Basic activation

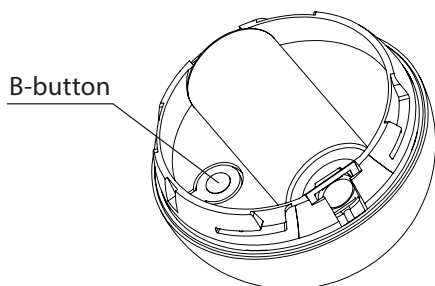
1. Turn the cover counter-clockwise and open it.



2. Remove the battery blocker.



3. Add the device (see "Adding/removing the device" on page 6).
4. Wake up the sensor by triple clicking the B-button.



5. Close the cover and turn it clockwise.
6. Install the device (see "Physical installation" on page 7).

## #3: Adding/removing the device

### **i** NOTE

Adding in security mode must be performed up to 2 meters from the controller.

### **i** NOTE

In case the Sensor is not added, please re-set the Sensor and repeat the adding procedure.

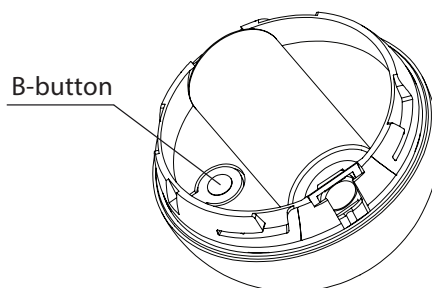
### **i** NOTE

Removing the device from the Z-Wave network restores all the default parameters of the device.

**Adding (Inclusion)** - Z-Wave device learning mode, allowing to add the device to existing Z-Wave network.

To add the device to the Z-Wave network:

1. Open the cover.
2. Place the Motion Sensor within the direct range of your Z-Wave controller.
3. Set the main controller in (security/non-security) add mode (see the controller's manual).
4. Quickly, three times press the B-button.

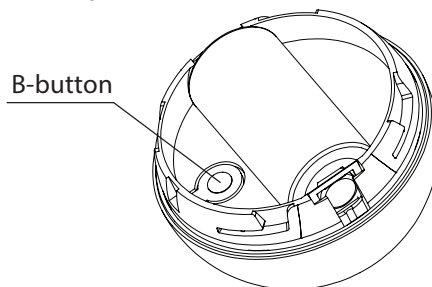


5. Wait for the adding process to end.
6. Successful adding will be confirmed by the Z-Wave controller's message.

**Removing (Exclusion)** - Z-Wave device learning mode, allowing to remove the device from existing Z-Wave network.

To remove the device from the Z-Wave network:

1. Open the cover.
2. Place the Motion Sensor within the direct range of your Z-Wave controller.
3. Set the main controller in remove mode (see the controller's manual).
4. Quickly, three times press the B-button.

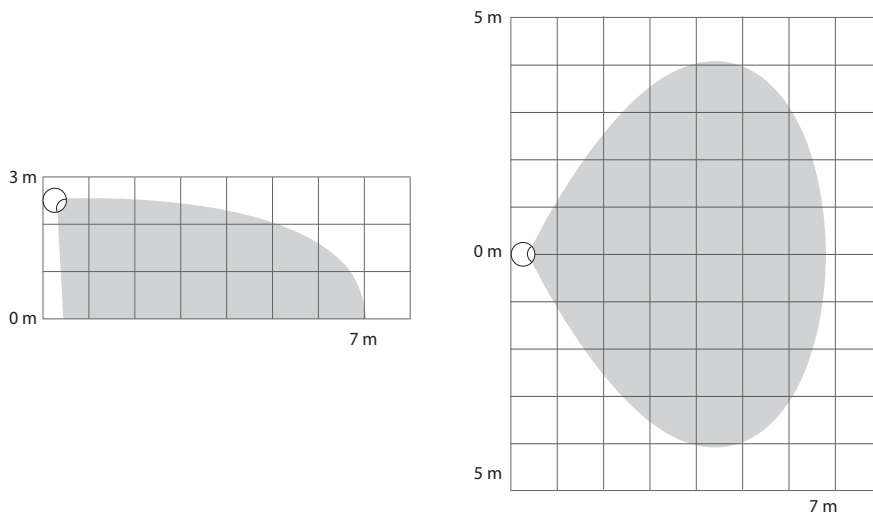


5. Wait for the removing process to end.
6. Successful removing will be confirmed by the Z-Wave controller's message.

## #4: Physical installation

### Detection range:

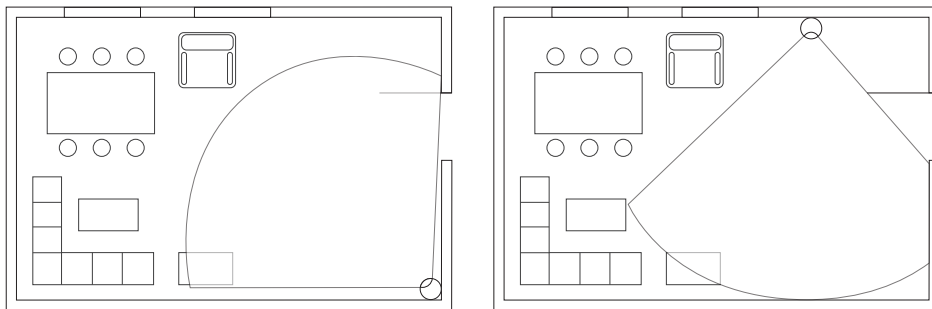
Detection range of the Motion Sensor is shown below. Actual range of the Sensor can be influenced by environmental conditions.



### Installation location and working conditions:

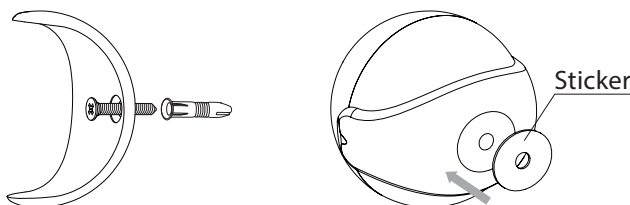
The Motion Sensor should be installed in a corner of the room or perpendicularly to the doors.

Moving objects such as trees blowing in the wind, cars passing by, windmills and moving masses of air and heat within detection area of the sensor can cause false motion detection.



### Installing the Motion Sensor:

1. Install the holder (using an expansion bolt or a sticker).



2. Insert the device into the holder.
3. Test the operation - check whether the device indicates motion detection.

### **i** NOTE

Remember to add the device to the Z-Wave network prior to installation, as the adding procedure must be performed within the direct range of the controller.

## #5: Operating the device

### Controlling the Motion Sensor using the B-button:

The Motion Sensor is equipped with a B-button, which allows to use the menu and additionally perform the following actions:

**1x click:** wake up the device or select the desired menu option (if menu is active)

**3x click:** add/remove the device to/from a Z-Wave network

**Holding:** enter/navigate through the menu

### Visual indications:

The Motion Sensor is equipped with a LED diode, signalling sensor's operating modes and alarms. In addition the visual indicator may inform of the Z-Wave network range and the current temperature.

Visual indicator signalling modes:

1. Motion Alarm colour will vary depending on the temperature. The colour and the signalling mode can be set in parameter 80.
2. Tamper alarm is signalled with an alternating blinking in LAPD colours (red - blue - white).
3. The Z-Wave Node Info command frame is signalled with glowing in blue. Node Info command frame is sent each time the device wakes up.
4. Menu position is signalled with assigned illumination colour.

### Menu:

Menu allows to perform Z-Wave network actions. In order to use the menu:

1. Press and hold the B-button.
2. Wait for the device to indicate desired position with a colour:
  - **VIOLET** - Z-Wave network's range test
  - **YELLOW** - device reset
3. Release the B-button.
4. Click the B-button to confirm selection.

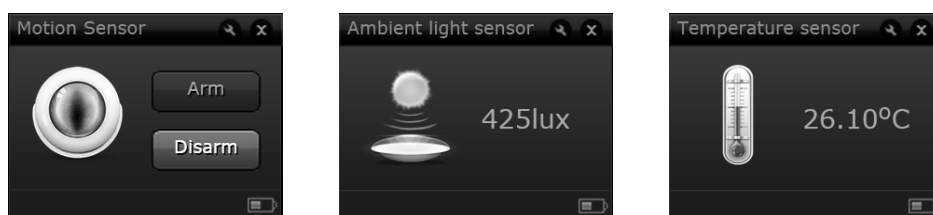
### Waking up the Motion Sensor:

The Motion Sensor needs to be woken up to receive information on new configurations from the controller, like parameters and associations.

To wake up the sensor manually triple click the B-button located inside the housing.

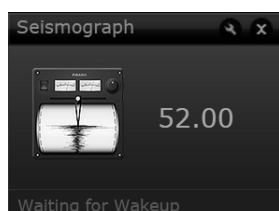
## Controlling the Motion Sensor with FIBARO Home Center controller:

The Motion Sensor has a built-in motion detector, temperature sensor and light intensity sensor, which make it a multi-channel device. In the Home Center interface it will be presented as three devices.



## Seismograph mode:

The Motion Sensor can be configured to work as a simple earthquake detector, by setting the parameter 24 value to 1. Reports with scale of the vibrations (in the Modified Mercalli Scale) will be sent immediately after vibrations have been detected. Minimal power of vibrations that will be reported, can be set in parameter 20. Once the vibrations cease and time of sustaining alarm elapses, reports will be stopped.



## Orientation in space:

The Motion Sensor has a built-in accelerometer. When the value of parameter 24 is set to 2, Z-Wave network controller will be informed on the Sensor's orientation in space by sending report after triggering tamper alarm.



## Resetting the Motion Sensor:

Reset procedure erases the memory, including all information on the Z-Wave network and the main controller.

1. Open the cover.
2. Press and hold the B-button.
3. Wait for visual indicator to glow yellow (2nd menu position).
4. Release the B-button.
5. Click the B-button to confirm selection.
6. After few seconds the device will be reset, which is signalled with the red, fading visual indicator colour.

### **i** NOTE

Resetting the device is not the recommended way of removing the device from the Z-Wave network. Use reset procedure only if the primary controller is missing or inoperable. Certain device removal can be achieved by the procedure of removing described in "Adding/removing the device" on page 6.

## #6: Association

### NOTE

Association allows direct transfer of control commands between devices, is performed without participation of the main controller and requires associated device to be in direct range.

**Association (linking devices)** - direct control of other devices within the Z-Wave system network e.g. Dimmer, Relay Switch, Roller Shutter or scene (may be controlled only through a Z-Wave controller).

#### **The Motion Sensor provides the association of four groups:**

**1st association group – “Lifeline”** reports the device status and allows for assigning single device only (main controller by default).

**2nd association group – “Motion”** is assigned to the motion sensor - sends motion detection and alarm cancellation frames to the associated devices.

**3rd association group – “Tamper”** is assigned to the tamper - sends tamper alarm and alarm cancellation frames to the associated devices.

**4th association group – “Motion BC”** is assigned to the motion sensor - sends motion detection and alarm cancellation frames to the associated devices. Provides backward compatibility with controllers not supporting Z-Wave+ protocol.

**5th association group – “Tamper BC”** is assigned to the tamper - sends tamper alarm and alarm cancellation frames to the associated devices. Provides backward compatibility with controllers not supporting Z-Wave+ protocol.

The Motion Sensor in 2nd to 5th group allows to control 5 regular and 5 multichannel devices per an association group, with the exception of “LifeLine” that is reserved solely for the controller and hence only 1 node can be assigned.

It is not recommended to associate more than 10 devices in general, as the response time to control commands depends on the number of associated devices. In extreme cases, system response may be delayed.

#### **To add an association** (using the Home Center controller):

1. Go to device options by clicking the icon: 
2. Select the „Advanced” tab.
3. Specify to which group and what devices are to be associated.
4. Wait for the configuration process to end. Sending relevant information to devices added to associated groups may take even a few minutes.
5. Wake up the device manually to speed up the configuration process.

## #7: Z-Wave range test

The Motion Sensor has a built in Z-Wave network main controller's **range tester**.

Follow the below instructions to test the main controller's range:

1. Open the cover.
2. Press and hold the B-button.
3. Wait for visual indicator to glow violet (1st menu position).
4. Release the B-button.
5. Click the B-button to confirm selection.
6. Visual indicator will indicate the Z-Wave network's range (range signalling modes described below).
7. To exit Z-Wave range test, press the B-button briefly.

### Z-Wave range tester signalling modes:

**Visual indicator pulsing green** - the Motion Sensor attempts to establish a direct communication with the main controller. If a direct communication attempt fails, the device will try to establish a routed communication, through other modules, which will be signalled by visual indicator pulsing yellow.

**Visual indicator glowing green** - the Motion Sensor communicates with the main controller directly.

**Visual indicator pulsing yellow** - the Motion Sensor tries to establish a routed communication with the main controller through other modules (repeaters).

**Visual indicator glowing yellow** - the Motion Sensor communicates with the main controller through the other modules. After 2 seconds the device will retry to establish a direct communication with the main controller, which will be signalled with visual indicator pulsing green.

**Visual indicator pulsing violet** - the Motion Sensor does communicate at the maximum distance of the Z-Wave network. If connection proves successful it will be confirmed with a yellow glow. It's not recommended to use the device at the range limit.

**Visual indicator glowing red** - the Motion Sensor is not able to connect to the main controller directly or through another Z-Wave network device (repeater).

### CAUTION

To make Z-Wave range test possible, the device must be added to the Z-Wave controller. Testing may stress the network, so it is recommended to perform the test only in special cases.

### NOTE

Communication mode of the Motion Sensor may switch between direct and one using routing, especially if the device is on the limit of the direct range.

## #8: Advanced parameters

The Motion Sensor allows to customize its operation to user's needs. The settings are available in the FIBARO interface as simple options that may be chosen by selecting the appropriate box.

In order to configure the Motion Sensor (using the Home Center controller):

1. Go to the device options by clicking the icon: 
2. Select the „Advanced” tab.

### Wake up interval

Available settings: **1-65535** (1-65535 seconds)

Default setting: **7200** (every 2 hours)

The Motion Sensor will wake up after each defined time interval and always try to connect with the main controller. After a successful communication attempt, the sensor will update configuration parameters, associations and settings and will go into standby mode. After failed communication attempt (e.g. lack of Z-Wave range) the device will go into standby mode and retry to establish connection with the main controller after the next time interval.

Wake up may be performed manually by a single B-button click.

Longer time interval means less frequent communication and thus a longer battery life.

### 1. Motion detection - sensitivity

The lower the value, the more sensitive the PIR sensor is.

|                     |              |                 |                  |
|---------------------|--------------|-----------------|------------------|
| Available settings: | <b>8-255</b> |                 |                  |
| Default setting:    | <b>15</b>    | Parameter size: | <b>2</b> [bytes] |

### 2. Motion detection - blind time

PIR sensor is “blind” (insensitive) to motion after last detection for the amount of time specified in this parameter.

Shorter time periods allow to detect motion more frequently, but the battery will be drained faster.

|                     |                                                         |                 |                 |
|---------------------|---------------------------------------------------------|-----------------|-----------------|
| Available settings: | <b>0-15</b> (0.5-8 seconds, time [s] = 0.5 x (value+1)) |                 |                 |
| Default setting:    | <b>15</b>                                               | Parameter size: | <b>1</b> [byte] |

#### NOTE

Blind time should be shorter than the time period set in parameter 6 (alarm cancellation delay).

### 3. Motion detection - pulse counter

This parameter determines the number of moves required for the PIR sensor to report motion. The higher the value, the less sensitive the PIR sensor is.

It is not recommended to modify this parameter settings!

|                     |                                                                                         |                 |                 |
|---------------------|-----------------------------------------------------------------------------------------|-----------------|-----------------|
| Available settings: | <b>0</b> - 1 pulse<br><b>1</b> - 2 pulses<br><b>2</b> - 3 pulses<br><b>3</b> - 4 pulses |                 |                 |
| Default setting:    | <b>1</b> (2 pulses)                                                                     | Parameter size: | <b>1</b> [byte] |

### 4. Motion detection - window time

Period of time during which the number of moves set in parameter 3 must be detected in order for the PIR sensor to report motion. The higher the value, the more sensitive the PIR sensor is.

It is not recommended to modify this parameter setting!

|                     |                                                                                                |                 |                 |
|---------------------|------------------------------------------------------------------------------------------------|-----------------|-----------------|
| Available settings: | <b>0</b> - 4 seconds<br><b>1</b> - 8 seconds<br><b>2</b> - 12 seconds<br><b>3</b> - 16 seconds |                 |                 |
| Default setting:    | <b>2</b> (12 seconds)                                                                          | Parameter size: | <b>1</b> [byte] |

### 6. Motion detection - alarm cancellation delay

Time period after which the motion alarm will be cancelled in the main controller and associated devices.

Any motion detected during this period resets the timer.

|                     |                             |                 |                  |
|---------------------|-----------------------------|-----------------|------------------|
| Available settings: | <b>1-32767</b> (in seconds) |                 |                  |
| Default setting:    | <b>30</b> (30s)             | Parameter size: | <b>2</b> [bytes] |

### 8. Motion detection - operating mode

This parameter determines in which part of day the PIR sensor will be active.

This parameter influences only the motion reports and associations. Tamper, light intensity and temperature measurements will be still active, regardless of this parameter settings.

|                     |                                                                                                                                               |                 |                 |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|
| Available settings: | <b>0</b> - PIR sensor always active<br><b>1</b> - PIR sensor active during the day only<br><b>2</b> - PIR sensor active during the night only |                 |                 |
| Default setting:    | <b>0</b>                                                                                                                                      | Parameter size: | <b>1</b> [byte] |

**i NOTE**

Values of BASIC ON and BASIC OFF command frames can be modified with dedicated parameters (14 and 16).

## 9. Motion detection - night/day

This parameter defines the difference between night and day in terms of light intensity, used in parameter 8.

|                     |                              |                 |                  |
|---------------------|------------------------------|-----------------|------------------|
| Available settings: | <b>1-32767</b> (1-32767 lux) |                 |                  |
| Default setting:    | <b>200</b> (200 lux)         | Parameter size: | <b>2</b> [bytes] |

## 12. BASIC command class configuration

This parameter determines the command frames sent to 2nd association group (assigned to PIR sensor).

|                     |                                                                                                                                                                                                                             |                 |                 |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|
| Available settings: | <b>0</b> - BASIC ON and OFF command frames sent in Basic Command Class<br><b>1</b> - only the BASIC ON command frame sent in Basic Command Class<br><b>2</b> - only the BASIC OFF command frame sent in Basic Command Class |                 |                 |
| Default setting:    | <b>0</b>                                                                                                                                                                                                                    | Parameter size: | <b>1</b> [byte] |

## 14. BASIC ON command frame value

The command frame sent at the moment of motion detection. Further motion detections, during the cancellation time, will not result in sending the association.

|                     |              |                 |                 |
|---------------------|--------------|-----------------|-----------------|
| Available settings: | <b>0-255</b> |                 |                 |
| Default setting:    | <b>255</b>   | Parameter size: | <b>2</b> [byte] |

## 16. BASIC OFF command frame value

The command frame sent at the moment of motion alarm cancellation, after cancellation delay time specified in parameter 6.

|                     |              |                 |                  |
|---------------------|--------------|-----------------|------------------|
| Available settings: | <b>0-255</b> |                 |                  |
| Default setting:    | <b>0</b>     | Parameter size: | <b>2</b> [bytes] |

## 18. Associations in Z-Wave network Security Mode

This parameter defines how commands are sent in specified association groups: as secure or non-secure. Parameter is active only in Z-Wave network security mode. It does not apply to 1st group "Lifeline".

|                     |                                                                                                                                                                                                          |                 |                 |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|
| Available settings: | <b>0</b> - none of the groups sent as secure<br><b>1</b> - 2nd group sent as secure<br><b>2</b> - 3rd group sent as secure<br><b>4</b> - 4th group sent as secure<br><b>8</b> - 5th group sent as secure |                 |                 |
| Default setting:    | <b>15</b>                                                                                                                                                                                                | Parameter size: | <b>1</b> [byte] |

## 20. Tamper - sensitivity

This parameter determines the change in force acting on the device, that will result in reporting tamper alarm - g-force acceleration.

|                     |                                                                      |                 |                 |
|---------------------|----------------------------------------------------------------------|-----------------|-----------------|
| Available settings: | <b>0</b> - tamper inactive<br><b>1-121</b> - (0.08-2g; every 0.016g) |                 |                 |
| Default setting:    | <b>20</b> (0.4g)                                                     | Parameter size: | <b>1</b> [byte] |

## 22. Tamper - alarm cancellation delay

Time period after which a tamper alarm will be cancelled in the main controller and associated devices.

Any tampering detected during this period will not extend the delay.

|                     |                             |                 |                  |
|---------------------|-----------------------------|-----------------|------------------|
| Available settings: | <b>1-32767</b> (in seconds) |                 |                  |
| Default setting:    | <b>30</b> (30s)             | Parameter size: | <b>2</b> [bytes] |

## 24. Tamper - operating modes

This parameter determines function of the tamper and sent reports. It is an advanced feature serving much more functions than just detection of tampering.

|                     |                                                                                                                   |                 |                 |
|---------------------|-------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|
| Available settings: | <b>0</b> - tamper only<br><b>1</b> - tamper and earthquake detector<br><b>2</b> - tamper and orientation in space |                 |                 |
| Default setting:    | <b>0</b>                                                                                                          | Parameter size: | <b>1</b> [byte] |

## 25. Tamper - alarm cancellation

This parameter allows to disable cancellation of the tamper alarm.

|                     |                                                                                                 |                 |                 |
|---------------------|-------------------------------------------------------------------------------------------------|-----------------|-----------------|
| Available settings: | <b>0</b> - do not send tamper cancellation report<br><b>1</b> - send tamper cancellation report |                 |                 |
| Default setting:    | <b>1</b>                                                                                        | Parameter size: | <b>1</b> [byte] |

## 28. Tamper - broadcast mode

The parameter determines whether the tamper alarm frame will or will not be sent in broadcast mode. Alarm frames sent in broadcast mode can be received by all of the devices within range (if they accept such frames), but not repeated by them.

|                     |                                                                                                         |                 |                 |
|---------------------|---------------------------------------------------------------------------------------------------------|-----------------|-----------------|
| Available settings: | <b>0</b> - tamper alarm sent to 3rd association group<br><b>1</b> - tamper alarm sent in broadcast mode |                 |                 |
| Default setting:    | <b>0</b>                                                                                                | Parameter size: | <b>1</b> [byte] |

## 29. Tamper - backward compatible broadcast mode

The parameter determines whether the backward compatible tamper alarm frame will or will not be sent in broadcast mode. Alarm frames sent in broadcast mode can be received by all of the devices within range (if they accept such frames), but not repeated by them.

### NOTE

Device operating in Security Mode does not send frames in broadcast mode. In this case leave the default values of parameters 28 and 29.

This parameter provides backward compatibility with controllers not supporting Z-Wave+.

|                     |                                                                                                                                                 |                 |                 |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|
| Available settings: | <b>0</b> - backward compatible tamper alarm sent to 5th association group<br><b>1</b> - backward compatible tamper alarm sent in broadcast mode |                 |                 |
| Default setting:    | <b>0</b>                                                                                                                                        | Parameter size: | <b>1</b> [byte] |

#### 40. Illuminance report - threshold

This parameter determines the change in light intensity level resulting in illuminance report being sent to the main controller.

|                     |                                                                        |                 |                  |
|---------------------|------------------------------------------------------------------------|-----------------|------------------|
| Available settings: | <b>0</b> - reports are not sent<br><b>1-32767</b> (illuminance in lux) |                 |                  |
| Default setting:    | <b>200</b> (200 lux)                                                   | Parameter size: | <b>2</b> [bytes] |

#### 42. Illuminance report - interval

Time interval between consecutive illuminance reports. The reports are sent even if there is no change in the light intensity.

|                     |                                                                           |                 |                  |
|---------------------|---------------------------------------------------------------------------|-----------------|------------------|
| Available settings: | <b>0</b> - periodical reports are not sent<br><b>1-32767</b> (in seconds) |                 |                  |
| Default setting:    | <b>3600</b> (1h)                                                          | Parameter size: | <b>2</b> [bytes] |

#### 60. Temperature report - threshold

This parameter determines the change in measured temperature that will result in new temperature report being sent to the main controller.

|                     |                                                                          |                 |                  |
|---------------------|--------------------------------------------------------------------------|-----------------|------------------|
| Available settings: | <b>0</b> - reports are not sent<br><b>1-255</b> (0.1-25.5°C, 0.1°C step) |                 |                  |
| Default setting:    | <b>10</b> (1°C)                                                          | Parameter size: | <b>2</b> [bytes] |

#### 62. Temperature measuring - interval

Time interval between consecutive temperature measurements. The shorter the time, the more frequently the temperature will be measured, but the battery life will shorten.

|                     |                                                                       |                 |                  |
|---------------------|-----------------------------------------------------------------------|-----------------|------------------|
| Available settings: | <b>0</b> - temperature is not measured<br><b>1-32767</b> (in seconds) |                 |                  |
| Default setting:    | <b>900</b> (900s)                                                     | Parameter size: | <b>2</b> [bytes] |

#### 64. Temperature report - interval

Time interval between consecutive temperature reports. The reports are sent even if there is no change in the temperature.

|                     |                                                                           |                 |                  |
|---------------------|---------------------------------------------------------------------------|-----------------|------------------|
| Available settings: | <b>0</b> - periodical reports are not sent<br><b>1-32767</b> (in seconds) |                 |                  |
| Default setting:    | <b>0</b>                                                                  | Parameter size: | <b>2</b> [bytes] |

#### **i** NOTE

Frequent illuminance reports will shorten the battery life. Parameter value under 5 may result in blocking the temperature reports.

#### **i** NOTE

Temperature measurements are still performed during the wake up, even if the periodic measuring is disabled (parameter 62 set to 0).

#### **i** NOTE

Frequent temperature reports will shorten the battery life. Parameter value under 5 may result in blocking the illuminance reports.

## 66. Temperature offset

The value to be added to the actual temperature, measured by the sensor (temperature compensation).

|                     |                                                |                 |                  |
|---------------------|------------------------------------------------|-----------------|------------------|
| Available settings: | <b>-1000 - 1000</b> (-100 - 100°C, 0.1°C step) |                 |                  |
| Default setting:    | <b>0</b> (0°C)                                 | Parameter size: | <b>2</b> [bytes] |

## 80. Visual LED indicator - signalling mode

This parameter determines the way in which visual indicator behaves after motion has been detected.

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |                 |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|
| Available settings: | <b>0</b> - LED inactive,<br>Values from <b>1 to 9</b> - single long blink at the moment of reporting motion. No other motion will be indicated until alarm is cancelled.<br><b>1</b> - colour is temperature dependent, <b>2</b> - Flashlight Mode, <b>3</b> - white, <b>4</b> - red, <b>5</b> - green, <b>6</b> - blue, <b>7</b> - yellow, <b>8</b> - cyan, <b>9</b> - magenta<br>Values from <b>10 to 18</b> - single long blink at the moment of reporting motion and one short blink each time the motion is detected again.<br><b>10</b> - colour is temperature dependent, <b>11</b> - Flashlight Mode, <b>12</b> - white, <b>13</b> - red, <b>14</b> - green, <b>15</b> - blue, <b>16</b> - yellow, <b>17</b> - cyan, <b>18</b> - magenta<br>Values from <b>19 to 26</b> - single long blink at the moment of reporting motion and two short blinks each time the motion is detected again.<br><b>19</b> - colour is temperature dependent, <b>20</b> - white, <b>21</b> - red, <b>22</b> - green, <b>23</b> - blue, <b>24</b> - yellow, <b>25</b> - cyan, <b>26</b> - magenta |                 |                 |
| Default setting:    | <b>10</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Parameter size: | <b>1</b> [byte] |

## 81. Visual LED indicator - brightness

This parameter determines the brightness of the visual LED indicator when indicating motion.

|                     |                                                                                                     |                 |                 |
|---------------------|-----------------------------------------------------------------------------------------------------|-----------------|-----------------|
| Available settings: | <b>0</b> - brightness determined by the illuminance (parameters 82 and 83)<br><b>1-100</b> (1-100%) |                 |                 |
| Default setting:    | <b>50</b> (50%)                                                                                     | Parameter size: | <b>1</b> [byte] |

## 82. Visual LED indicator - illuminance for low indicator brightness

Light intensity level below which brightness of visual indicator is set to 1%.

|                     |                                            |                 |                  |
|---------------------|--------------------------------------------|-----------------|------------------|
| Available settings: | <b>0 to value of parameter 83</b> (in lux) |                 |                  |
| Default setting:    | <b>100</b>                                 | Parameter size: | <b>2</b> [bytes] |

### NOTE

Flashlight Mode - visual indicator glows in white for 10 seconds. If value of parameter 80 is set to 11, each detected motion extends the glowing by next 10 seconds.

### CAUTION

The value of parameter 83 must be higher than the value of parameter 82.

**83. Visual LED indicator - illuminance for high indicator brightness**

Light intensity level above which brightness of visual indicator is set to 100%.

|                     |                                                |                 |                  |
|---------------------|------------------------------------------------|-----------------|------------------|
| Available settings: | <b>value of parameter 82 to 32767</b> (in lux) |                 |                  |
| Default setting:    | <b>1000</b>                                    | Parameter size: | <b>2</b> [bytes] |

**86. Visual LED indicator - temperature for blue colour**

This parameter determines minimal temperature that will result in blue visual indicator colour. Relevant only when parameter 80 has been properly configured.

|                     |                                                       |                 |                  |
|---------------------|-------------------------------------------------------|-----------------|------------------|
| Available settings: | <b>0 to value of parameter 87</b> (in Celsius degree) |                 |                  |
| Default setting:    | <b>18</b> (18°C)                                      | Parameter size: | <b>2</b> [bytes] |

**87. Visual LED indicator - temperature for red colour**

This parameter determines minimal temperature that will result in red visual indicator colour. Relevant only when parameter 80 has been properly configured.

|                     |                                                         |                 |                  |
|---------------------|---------------------------------------------------------|-----------------|------------------|
| Available settings: | <b>value of parameter 86 to 255</b> (in Celsius degree) |                 |                  |
| Default setting:    | <b>28</b> (28°C)                                        | Parameter size: | <b>2</b> [bytes] |

**89. Visual LED indicator - tamper alarm**

This parameter allows to enable/disable indicating tamper alarm (flashing white, red and blue)

|                     |                                          |                 |                 |
|---------------------|------------------------------------------|-----------------|-----------------|
| Available settings: | <b>0</b> - tamper alarm is not indicated |                 |                 |
|                     | <b>1</b> - tamper alarm is indicated     |                 |                 |
| Default setting:    | <b>1</b>                                 | Parameter size: | <b>1</b> [byte] |

## #9: Specifications

|                                  |                                                                                                      |
|----------------------------------|------------------------------------------------------------------------------------------------------|
| Power supply:                    | 3.0V DC battery                                                                                      |
| Battery type:                    | CR123A                                                                                               |
| EU directives compliance:        | RoHS 2011/65/EU<br>R&TTE 1999/5/EC                                                                   |
| Radio protocol:                  | Z-Wave (500 series chip)                                                                             |
| Radio frequency:                 | 868.4 or 869.8 MHz EU;<br>908.4, 908.42 or 916.0 MHz US;<br>921.4 or 919.8 MHz ANZ;<br>869.0 MHz RU; |
| Range:                           | up to 50m outdoors<br>up to 40m indoors<br>(depending on terrain and building structure)             |
| Recommended installation height: | 2.4 meters                                                                                           |
| Operating temperature:           | 0-40°C                                                                                               |
| Temperature measuring range:     | -20-100°C                                                                                            |
| Temperature measuring accuracy:  | 0.5°C (within 0-40°C range)                                                                          |
| Illuminance measuring range:     | 0-32000 lux                                                                                          |
| Dimensions (diameter):           | 76 x 17 x 19 mm                                                                                      |

### CAUTION

Using batteries other than specified may result in explosion. Dispose of properly, observing environmental protection rules.

### NOTE

Radio frequency of individual device must be same as your Z-Wave controller. Check information on the box or consult your dealer if you are not sure.

## #10: Regulations

### **This device complies with Part 15 of the FCC Rules**

Operation is subject to the following two conditions:

1. This device may not cause harmful interference
2. This device must accept any interference received, including interference that may cause undesired operation. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
  - Reorient or relocate the receiving antenna.
  - Increase the separation between the equipment and receiver.
  - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
  - Consult the dealer or an experienced radio/TV technician for help.

### **Industry Canada (IC) Compliance Notice**

This device complies with Industry Canada license-exempt RSSs. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil est conforme aux normes d'exemption de licence RSS d'Industry Canada. Son fonctionnement est soumis aux deux conditions suivantes : (1) cet appareil ne doit pas causer d'interférence et (2) cet appareil doit accepter toute interférence, notamment les interférences qui peuvent affecter son fonctionnement.

### **Legal Notices**

All information, including, but not limited to, information regarding the features, functionality, and/or other product specification are subject to change without notice. Fibaro reserves all rights to revise or update its products, software, or documentation without any obligation to notify any individual or entity.

FIBARO and Fibar Group logo are trademarks of Fibar Group S.A. All other brands and product names referred to herein are trademarks of their respective holders.

**Note**

Changes and modifications not expressly approved by the manufacturer or registrant of this equipment can void your authority to operate this equipment under Federal Communications Commission's rules.

**DGT Warning Statement****Article 12**

Without permission, any company, firm or user shall not alter the frequency, increase the power, or change the characteristics and functions of the original design of the certified lower power frequency electric machinery.

**Article 14**

The application of low power frequency electric machineries shall not affect the navigation safety nor interfere a legal communication, if an interference is found, the service will be suspended until improvement is made and the interference no longer exists.

**第十二條**

經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

**第十四條**

低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。

前項合法通信，指依電信法規定作業之無線電通信。

低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

**Information according REACH**

The included Panasonic CR123A battery contains 1,2-Dimethoxyethane substance. Normal use of the device does not expose the user to a given substance.

**Declaration of conformity**

Hereby, Fibar Group S.A. declares that FIBARO Motion Sensor is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

