CLEODE

ZigBee Motion detector ZMOVE

User Manual

Révision : 3.00
Document : UM_ZMOVE_20090731_001_03_00

WARRANTY

The device supplied to the buyer and/or the recipient is guaranteed by CLEODE against any malfunctions originating from a design and/or manufacturing flaw, for a period of twelve (12) months following delivery. The buyer and/or recipient is (are) responsible for proving the existence of the said defects or flaws. This warranty is applicable in accordance with articles 1641 to 1648 of the French Civil Code and in compliance with the French statutory warranty. The warranty covers the replacement free of charge of devices and parts affected by a design and/or manufacturing flaw excluding conspicuous defects in the device that are covered by the buyer and/or the recipient.

In order to invoke the warranty, the buyer must immediately send written notice to CLEODE of the flaws that it attributes to the device. It must enable CLEODE to have access to the device to observe these defects and repair them. The warranty provided by CLEODE is strictly limited to the equipment provided and shall only have for effect the replacement or repair, at CLEODE's expense, on its own premises, of all devices or parts that are not functioning as a result of defects or flaws. CLEODE reserves the right to modify the devices in order to comply with the warranty.

The warranty does not apply to replacement or repairs that may result from normal wear and tear of devices, systems or products, damage or accidents resulting from negligence, failure to supervise or maintain, or incorrect use of the devices, systems and/or products.

The maintenance service is provided by CLEODE with all reasonable care possible and in compliance with the current state of the arts.

The exchange of parts or repairs performed under the warranty cannot result in extending the length of the warranty. In no event can the unavailability of the device due to servicing give rise to compensation for any reason whatsoever. The seller is released from all obligations relating to the warranty if the product or device has been modified without prior written consent, or if original parts have been replaced by parts which it has not manufactured without prior consent. If unforeseen damage is caused by the device, it is expressly agreed that the seller can only be liable for the reimbursement of monies received for the purchase of the device if it has been destroyed. Under no circumstances can the seller be held liable for indirect or contingent damage. The seller is released from any liability and the buyer waives any rights against it if an accident or direct or indirect damage is caused to the buyer following a defect, incorrect usage, incorrect maintenance or normal wear of the device sold.

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TABLE OF REVISIONS

Version	Authors(s)	Version description	Date
0.1	CLEODE	Initial version	08/02/2009
1.0	CLEODE	Validated document	08/04/2009
1.1	CLEODE	Minor corrections	04/09/2009
2.0	CLEODE	Validated document	04/09/2009
2.1	CLEODE	Add Technical features chapter	24/09/2009
3.0	CLEODE	Validated document	24/09/2009

REFERENCE DOCUMENTS

N°	Document	Description
[1]	ZigBee_Cluster_Library_Public	Zigbee Cluster Library specification
[2]	ZigBee_Home_Automation_Profile	Home Automation profile specification
[3]	ZigBee_Specification	ZigBee specification

I   INTRODUCTION

I.1 ZIGBEE MOTION DETECTOR PRESENTATION

ZMOVE is a ZigBee infrared based motion detector. It can detect some motions in a 10 meters square.
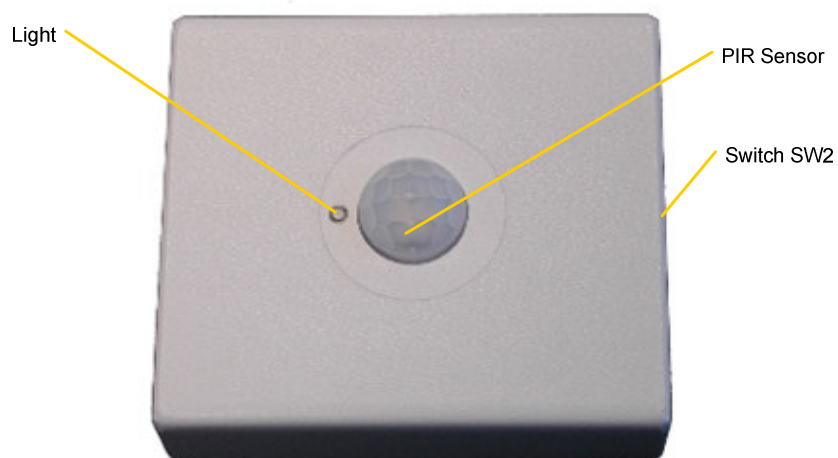The motion detector has this form:

Light

PIR Sensor

Switch SW2

Figure 1 : Motion detector presentation

I.2 COPYRIGHT

The CLEODE trademark and the CLEODE logo are properties of CLEODE SA, France. This document also refers to trademarks and other product names that are registered trademarks of their respective owners.
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II MOTION DETECTOR DESCRIPTION

I.3 ZIGBEE PRESENTATION

The ZigBee motion detector is based on the *Occupancy Sensor* application defined in the ZigBee Home Automation profile. This node is fully compliant with the ZigBee PRO 2007 and Home Automation profile. For more detail on the data exchange between device and network, see documents [1], [2] and [3].

I.4 MOTION DETECTOR APPLICATION

The detection of motions is made by reporting a value of attribute in the *Occupancy sensing* cluster.

II.1.1 MOTION DETECTOR APPLICATION DESCRIPTION

- Device ID : Occupancy Sensor
- Endpoint number: 1
- Clusters :

Server	Client
Basic (0x00)	/
Identify (0x03)	/
/	Group [1] (0x04)
Alarms (0x09)	/
Power Configuration (0x01)	/
Occupancy sensing	/

II.1.2 CLUSTER DESCRIPTION

This is a terse description of clusters and attributes which are implemented in the ZMOVE. For more detail on these, see document [1].

- Basic cluster :
This cluster is used to determine basic information about the device.

Attribute	Attribute ID
ZCLVersion	0x0000
ApplicationVersion	0x0001
StackVersion	0x0002
HWVersion	0x0003

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[1] Remarque : This commands are not implemented by now

Attribute	Attribute ID
ManufacturerName	0x0004
ModelIdentifier	0x0005
DateCode	0x0006
PowerSource	0x0007
LocationDescription	0x0010
PhysicalEnvironment	0x0011
DeviceEnabled	0x0012
AlarmMask	0x0013

▪ Identify cluster :

This cluster is used to put a device into an Identification mode. By writing the *IdentifyTime* attribute value, the user ask the device to blink the light, during a number of seconds specified by this value.

Attribute	Attribute ID
IdentifyTime	0x0000

▪ Alarms clusters:

This cluster is used to signal an alarm. In the case of ZMOVE, only the low battery power level is processed. If the battery power level is too low (under 2,4V) the *AlarmCount* value changes to 1 and a command message is send to coordinator.

Attribute	Attribute ID
AlarmCount	0x0000

▪ Power Configuration cluster:

This cluster is used to specify the min threshold of battery level by setting the *BatteryVoltageMinThreshold* attribute value.

Attribut	Attribute ID
BatteryAlarmMask	0x0035
BatteryVoltageMinThreshold	0x0036

▪ Occupancy sensing:

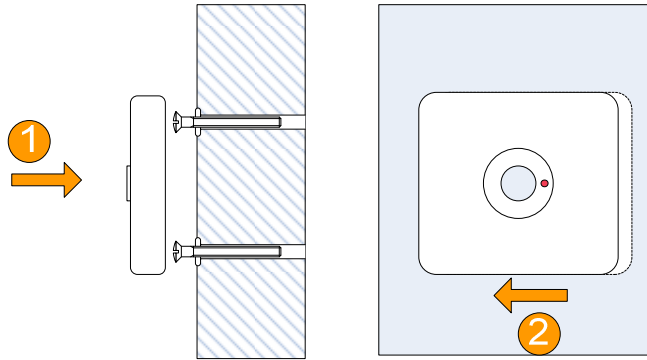This cluster is used to signal a motion or not by *Occupancy* attribute. On motion detection and at the end of detection on report of *Occupancy* attribute value is transmitted on the network.

Attribute	Attribute ID
Occupancy	0x0000

Attribute	Attribute ID
OccupancySensorType	0x0001
PIROccupiedToUnoccupiedDelay	0x0010
PIRUnoccupiedToOccupiedDelay	0x0011

III INSTALLATION AND NETWORK ASSOCIATION

I.5 INSTALLATION

III.1.1   WALL INSTALLATION

ZMOVE can be installed on a wall with two ways:
1) With a double-sided tape (not provided)
2) With two M3 screws (not provided)

Double-sided tape installation

To mount the ZMOVE with a double-sided tape, follow this:
1) Stick a double-sided tape on the ZMOVE bottom
2) Dust the wall
3) Mount the ZMOVE on the wall

Screw installation

To mount the ZMOVE on a wall with screws, follow this:
1) **Put** ZMOVE at a correct location and **note** the position of the top/left angle
2) **Put** the drilling template like the following figure

3) **Drill two holes** in the wall according screws and dowels
4) **Screw** the screws with a 3mm space between the screw head and the wall
5) **Put** ZMOVE on the wall by aligning the holes on the bottom to the screws

6) Push ❶ ZMOVE to the wall and move it to the left ❷ to finish the installation.

III.1.2   CHANGE THE BATTERIES

To change the batteries in ZMOVE, follow this :
   1) **Open** the box
   2) **Place the batteries** in the battery holder with careful with battery polarity.
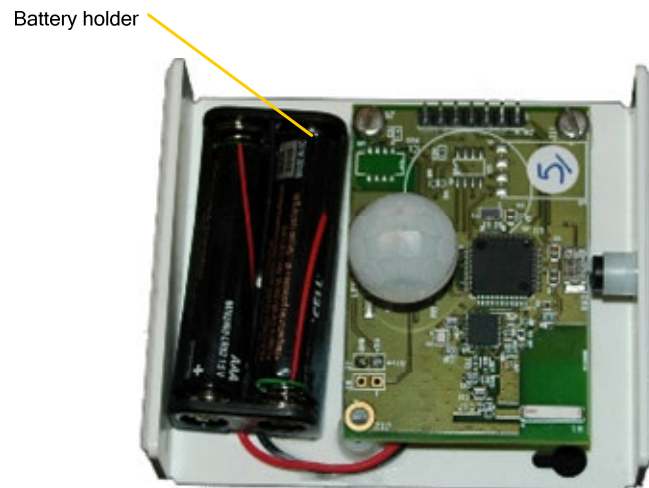   3) **Close** the box

Battery holder

Figure 2 : Batteries changing

I.6 NETWORK ASSOCIATION

At power supply, ZMOVE tries to connect to a coordinator or a router. This process takes few seconds if a coordinator or a router is joinable. In the case of not, ZMOVE goes to sleep and retries every fifteen minutes.

Otherwise, the user can press the switch SW2 to initiate a new association process. When the user does this, the light is flashing during the process and stays on during 2 seconds while is associated.

I.7 RESET DEVICE

In such case, the user can reset the device by press the switch SW2 for 5 seconds. Then, the device reset and tries to rejoin the network.

IV TECHNICAL FEATURES

Weight	70 g (without battery)
Power Supply	2 x AAA batteries
Battery Life	> 1 year
Range detection	10 m
Transmission range	100 m outdoor 30 m indoor
Managed channels (frequency)	19 (2445 Mhz), 20 (2450 Mhz), 25 (2475 Mhz)

REPAIR AND MAINTENANCE

Defective equipments shall be first reported to the CLEODE support team in order to be assigned an RMA number. Be prepared to state your name, company and the serial number of the defective item to the support personnel.

The item shall then be returned to CLEODE with the following documents:
- The RMA number
- A copy of the delivery slip
- A detailed description of the default and the test context

The maintenance period is typically four (4) weeks starting from the date of reception of the equipment at the CLEODE headquarters.

Remark : A FAQ (Frequently Asked Questions) is available on the www.cleode.com web site.

CLEODE S.A.

Technical Support Division

8, rue Bourseul

22300 Lannion

France

Phone : +33 (0) 2 96 48 68 18

Fax : +33 (0) 2 96 48 19 11

E-mail : support@cleode.com

Web :   http://www.cleode.com