User Manual

ZSHADE

ZigBee®device

for electric rolling shutter

Revision : 3.0

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Status : Approved

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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to the warranty if the product or device has been modified without prior written consent, or if original parts have been replaced by parts which it has not manufactured without prior consent.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.

Table of revision

Version	Author(s)	Version description	Date
0.1	CLEODE	Initial version	15/09/2011
1.0	CLEODE	Document validation	21/09/2011
1.1	CLEODE	Update for new hardware version	20/01/2015
2.0	CLEODE	Document validation	23/01/2015
2.1	CLEODE	Updating pictures	05/10/2015
3.0	CLEODE	Document validation	08/10/2015

Reference documents

N°	Document	Description
[1]	ZigBee_Cluster_Library_Public	Specification of the ZigBee® Cluster Library
[2]	ZigBee _Home_Automation	Specification of the Home Automation profile
[3]	ZigBee _Specification	Specification of the ZigBee® standard

Table of contents

Table of figures

I. Overview et technical characteristics

I.1 Overview

The SHADE is a ZigBee® device for motor shutters. It can be managed in different ways:

- On reception of ZigBee® command (on the WindowsCovering cluster)
- Or by a roller shutter switch.

The device is presented as follow:

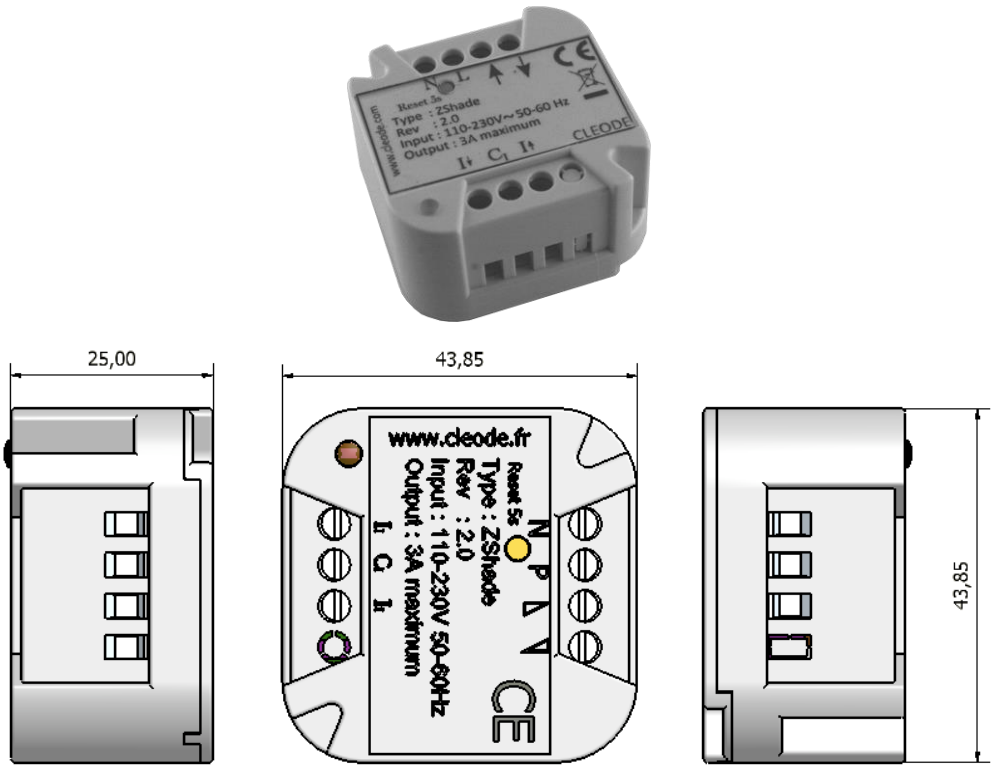


Figure 1 : Global view of the ZShade device

I.2 Red light meanings

The red indicator shows the state of the device.

This indicator takes the following states depending on the modes described in the table below:

Legend : Off Slow flash

On with steady light for 2s Rapid flash

Mode	Etat		Description
Default			Without special announcement, the association led remains off.
On starting		2 fois	To start the device announces its State by 2 slow flashes

Identification		The given time in the frame Identify	During the identification period, the device is identified via slow flashes as long as the duration of identification is not exceeded.
Manual starting of pairing process		20 secondes max	The device reports by quick flashes that it is in coordinator research stage.
Pairing OK		2 secondes	Once paired, the device announces its state with steady light for 2s.

I.3 Technical characteristics

Stack ZigBee®	ZigBee® Pro 2007 16 channels
Radio range	About 150 m (indoor)
Operating temperature	+5 à +45 °C
Electrical supply	110-230V / 50-60Hz
Maximum current capability	3A
Dimension	44 x 44 x 25 mm

II. ‘Quick Start’

Rapid implementation procedure:

1) Install the **ZShade** product (For more details, refer to chapter III.1).
2) Pair the **ZShade** product in the ZigBee® network (For more details, refer to chapter **Erreur ! Source du renvoi introuvable.**).
3) The product is operational in your ZigBee® network.
4) Test the operation of the **ZShade** product.

III. Procedures

III.1 Installation

IMPORTANT: This product permits a maximum current of 3A, it should not be used to power a shutter motor greater than 3A.

III.1.1 Power wiring

The ZShade must be supplied with a mains voltage between 110V and 230V with a frequency between 50 Hz and 60 Hz. The wiring must be carried out as shown in the image below:

- The neutral is represented by letter N (blue wire)
- The phase is represented by letter L (Fil rouge)

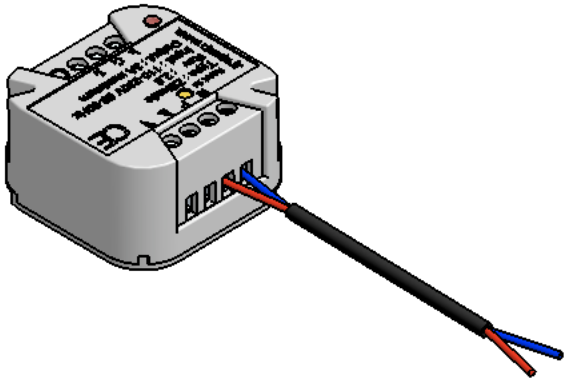


Figure 2 : Power wiring

III.1.2 Wiring of the roller shutter motor

The roller shutter must accept the same voltage as the power supply of the ZShade (110-230V/50-60Hz).

The roller shutter must be wired as below:

- The neutral is represented by the letter N (blue wire), it must be connected with the neutral of the power supply
- La phase utilisée pour la monté du volet est représentée par (Fil noir)
- The phase used for the opening of the roller shutter is represented by ↑ (black wire)
- The phase used for the closing of the roller shutter is represented by ↓ (brown wire)

The color of the phases of the roller shutter is given as an example, may be that they do not correspond with the motor used.

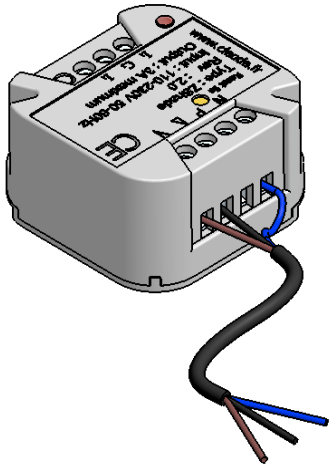


Figure 3 : wiring of the roller shutter motor

Once the power and shutter motor connected you need to get the wiring below.

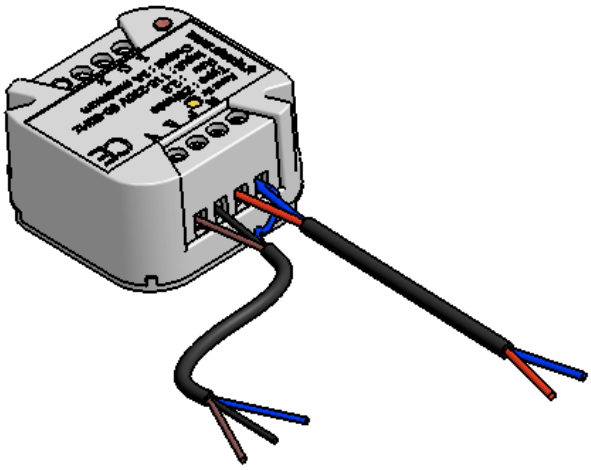


Figure 4 : wiring of power supply and motor

III.1.3 Wiring of the switch

It is possible to order the ZShade product by a wired switch for roller shutter as for example those pictured below:

Figure 5 : Switch for roller shutter LEGRAND

Figure 6 : Switch for roller shutter Schneider

To use a switch you must connect it as shown below:

- C_I : connect this output to the phase of the switch (red wire)
- $I_{\uparrow}$: connecter cette entrée sur la sortie de l'interrupteur (fil violet)
- $I_{\uparrow}$: connect this input to the output ↑ of the switch (purple wire)
- $I_{\downarrow}$: connect this input to the output ↓ of the switch (orange wire)

The color of the wires is given as an example.

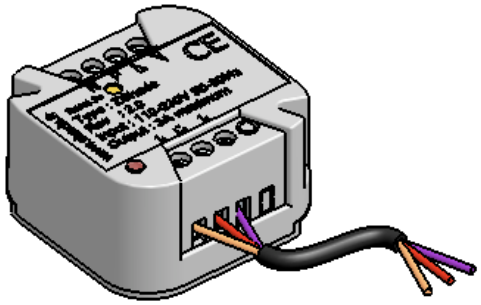


Figure 7 : wiring of a switch for roller shutter

Do not use an external power supply on the switch for roller shutter or on the roller shutter inputs of the ZShade product, at the risk of damaging the product ZShade.

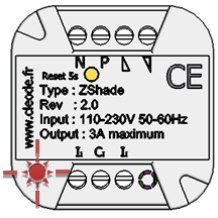
The ZShade product itself supplied the voltage to operate the switch.

III.2 Pairing of the product for the first time

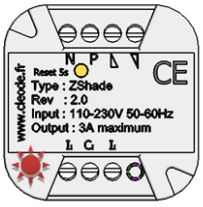
To integrate the ZSHADE into a ZigBee® network, proceed with pairing as follows:

1) Allow the addition of a ZigBee® device in your network (see the user manual of your coordinator).

2) At power-up, the ZShade product tries to associate and blinks twice.



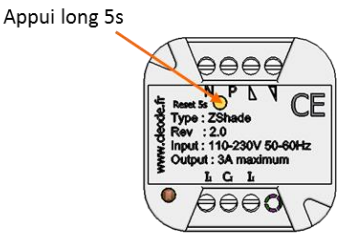
1) If a coordinator is present and allows the ZShade to join, the ZShade indicator will light for 2 seconds then turns off.



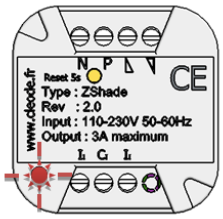
III.3 Reset of the product

To clear the ZShade network settings, proceed as follows:

1) Press the pairing button 5 seconds.



2) When the ZShade is reset, the indicator flashes 2 times and shuts off.



IV. Software interface

IV.1 Overview

The ZSHADE contains a Windows Covering application defined in the Home Automation standard (See document [2]).

This device conforms to the standard ZigBee ® PRO 2007 and the Home Automation 1.2 profile. For more details on the data exchanged, please refer to the documents [1], [2] and [3].

IV.2 Application

IV.2.1 Description of the application

- Device ID : Windows Covering
- EndPoint number : 1
- Clusters :

Server	Client
Basic (0x0000)	/
Identify (0x0003)	/
Groups (0x0004)	/
Scenes (0x0005)	/
Alarms (0x0009)	/
Windows Covering (0x0102)	/

IV.2.2 Description of clusters

Here is a brief description of the clusters and the attributes implemented in the ZShade product. For more precision on the functioning thereof, please refer to the document [1].

IV.2.2.1 Cluster Basic

This cluster hosts the version information, name of manufacturer, model of the object, etc...

Attribut	Attribut ID
ZCLVersion	0x0000
ApplicationVersion	0x0001
StackVersion	0x0002
HWVersion	0x0003
ManufacturerName	0x0004
ModelIdentfier	0x0005
DateCode	0x0006
PowerSource	0x0007
LocationDescription	0x0010

PhysicalEnvironment	0x0011
DeviceEnabled	0x0012
AlarmMask	0x0013

IV.2.2.2 Cluster Identify

This cluster is used to physically identify the object in the network. On writing the value of the *IdentifyTime* attribute, the object light will blink during the time specified by this value.

Attribut	Attribut ID
IdentifyTime	0x0000

IV.2.2.3 Cluster Group

This cluster is used to manage scenes incorporating the ZShade product.

Attribut	Attribut ID
NameSupport	0x0000

IV.2.2.4 Cluster Scenes

This cluster is used to memorize the names of the groups to which the ZShade product belongs.

Attribut	Attribut ID
SceneCount	0x0000
CurrentScene	0x0001
CurrentGroup	0x0002
SceneValid	0x0003
NameSupport	0x0004

IV.2.2.5 Cluster Alarms

This cluster is used to signal an alarm. In the case of the ZShade product, no alarm is handled.

Attribut	Attribut ID
AlarmCount	0x0000

IV.2.2.6 Cluster Windows Covering

This cluster is used to:

- Read the status of the product ZShade (operational or not)
- Configure the direction of motor rotation
- Calibrate le ZShade product.

Attribut	Attribut ID
WindowsCoveringInformation	0x0000
WindowsCoveringSettings	0x0001

The *WindowsCoveringInformation* attribute is a set of attributes. The description of each of these attributes is presented in the table below.

Attribut	Attribut ID
WindowCoveringType	0x0000
Config/status	0x0007

The ZShade product is a rolling shutter control system, so the *WindowCoveringType* is SHUTTER (0x06).

The *Config/status* attribute is an attribute of type bitmap. The description of each bit is presented in the following table:

Bit	Description	Values
0	Operational	0 - Not Operational 1 - Operational
1	In line	0 – Not in ligne 1 – In ligne
2	Direction command	0 - Normal 1 - Inversed
3	Vertical control	0 – Opened loop 1 – Closed loop
4	Tilt control	0 – Opened loop 1 – Closed loop
5	Vertical control mode	0 – Timer control 1 – Sensor control
6	Tilt control mode	Ignored
7	Reserved	Réserved

The *WindowCoveringSettings* attribute is a set of attributes. The description of each of these attributes is presented in the following table:

Attribut	Attribut ID
InstalledOpenLimit - Lift	0x0000
InstalledClosedLimit - Lift	0x0001
InstalledOpenLimit - Tilt	0x0002
InstalledClosedLimit - Tilt	0x0003
Mode	0x0007

Attributes *InstalledOpenLimit-Lift*, *InstalledClosedOpenLimit-Lift*, *InstalledOpenLimit-Tilt* and *InstalledClosedOpenLimit-Tilt* are ignored.

The Mode attribut is an attribut of type bitmap. The description of each bit is presented in the following table:

Bit	Description	Values
0	Motor direction	0 – Normal 1 - Inversed
1	Operating mode	0 – Normal 1 – Calibration
2	Motor operation	0 – Normal 1 - Maintenance
3	Visualisation	0 – Led off 1 – Led on
4-7	Reserved	Reserved

V. Technical Issues

Description of the problem	Verifications to be done
The roller shutter moves up when I want that it moves down	The wiring of the phases of the motor has been reversed. Redo the wiring correctly or change the command in the *Config/status* attribute of the *WindowsCovering* cluster.
I can't associate the ZShade product in my ZigBee® network.	Verify that your coordinator accepts the associations and the ZShade is located in radio range of the other ZigBee ® network elements (Coordinator, routers).
The ZShade device no longer meets ZigBee® commands or commands to the switch.	Check that the ZShade is always powered.
I sent to the device a command to close the roller shutter at 50% but it closes fully.	Check the calibration of the ZShade has been carried out correctly, if necessary again perform a calibration.

Repair and maintenance

Defective hardware will be returned to the premises of CLEODE accompanied by:

- A copy of the delivery,
- A detailed description of its appearance dysfunction observed.

The average maintenance time is four (4) weeks from the back to the factory.

The information provided on the label are as follows:

- Model,
- Year of production,
- Reference and Version,
- Serial Number.

This information may you be requested by the company CLEODE to identify your hardware.

Requests for support should be addressed to:

CLEODE S.A.S

Service Support et Maintenance

3 rue Thomas Edison

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

E-mail : support@cleode.com

Web : http://www.cleode.com

End Of User manual