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SMART ROLLER SHUTTER V2

WiDom
Roller Shutter 2

N I2 I1 ② ① L

UMS 2 Operating instructions

Z WAVE PLUS

Revision History

Rev. Doc.	Date	Reviser	Pag.	Description
0	20/11/2018	GT		Initial version
1	23/11/2018	GT	5	Calibration description
2	14/01/2019	GT	5, 11	Minor update calibration, parameter 22

# Content

Device description

WiDom Smart Roller Shutter is an "in wall device", for the multilevel control of roller shutter motors. It can accurately control the opening and closing of blinds, curtains, shutters, venetian blinds as requested by the user through local commands or remotely using computers, smartphones, tablets.

At the same time, it is completely configurable so that it can adapt to the most varied customers' needs, while being ready for use without needing additional configurations in order to operate.

After an initial calibration procedure, thanks to a _proprietary algorithm_, WiDom Smart Roller Shutter is able to identify the exact position of the roller shutter without using external sensors. During the operation, a continuous and automatic control of the _limit switches_ allows maintaining the calibration. In the absence of a power source, the system runs a self-repositioning procedure that restores calibration.

The device is equipped with contact protection technology (_Zero Crossing_) which reduces the electrical stress on the relay contacts and ensures a longer life. The open / closed switching of the device always occur when the instantaneous value of voltage is 0.

It operates in any Z-Wave network with other Z-Wave/Z-Wave Plus certified devices and controllers from any other manufacturer. As a constantly powered node, WiDom Smart Roller Shutter will act as repeater regardless of the vendor in order to increase the reliability of the network.
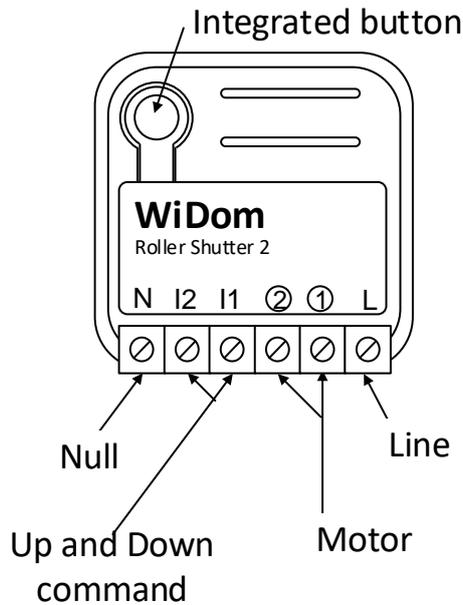
Line	Phase connection terminal
Null	Neutral connection terminal
Motor Contacts	1) Closure 2) Aperture
Open/Close Buttons	I1) Close command I2) Open command
Integrated Button	1 click to enter in Learn Mode 6 clicks to reset the system to manufacturer's settings

Technical Specification

Power supply	110 - 230 VAC±10% 50/60 Hz
Maximum Load	1200 Watt
System temperature limitation	105°C
Work temperature	From -10° to 40° C
Power consumption	< 230 mW in standby mode < 500 mW when motor is moving
Radio frequency	Check the radio frequency section
Protection system	S0 and S2 Security
Maximum distance	up to 100 m outdoor up to 40 m indoor
Dimensions	37x37x17 mm
Actuator element	Relay
Compliance	CE, RoHs
Electrical IP Rating	IP20

Radio Frequency

Product Code	Z-Wave Frequency	Product Code	Z-Wave Frequency
UMS2EU	868.4 MHz	UMS2AU	919.8 MHz
UMS2BR	919.8 MHz, 921.4 MHz	UMS2CN	868.4 MHz
UMS2CL	919.8 MHz, 921.4 MHz	UMS2HK	919.8 MHz
UMS2CO	908.4 MHz, 916 MHz	UMS2IL	916 MHz
UMS2IN	865.2 MHz	UMS2MY	919.8 MHz, 921.4 MHz
UMS2JP	922.5 MHz, 923.9 MHz, 926.3 MHz	UMS2SG	920.9 MHz, 921.7 MHz, 923.1 MHz
UMS2RU	869.0 MHz	UMS2KR	920.9 MHz, 921.7 MHz, 923.1 MHz
UMS2ZA	868.4 MHz, 869.85 MHz	UMS2TH	920.9 MHz, 921.7 MHz, 923.1 MHz
UMS2TW	922.5 MHz, 923.9 MHz, 926.3 MHz	UMS2US	908.4 MHz
UMS2AE	868.4 MHz, 869.85 MHz		

Safety information

INFO: WiDom Smart Roller Shutter is designed to be installed in flush mounting junction boxes and close to the motor to be controlled.

WARNING: WiDom Smart Roller Shutter must be installed by electricians qualified to intervene on electrical systems in compliance with safety requirements set out by the regulations in force.

DANGER: WiDom Smart Roller Shutter must be connected with a voltage of 230 VAC, before carrying out any operation, please make sure the power main switch is in **OFF** position.

DANGER: Any procedure requiring the use of the Integrated Button is related only to the installation phase and is to be considered a service procedure that must be performed by qualified personnel. This operation must be performed with all necessary precautions for operating in areas with a single level of insulation.

WARNING: Do not connect loads that exceed the maximum load allowed by the relay contacts.
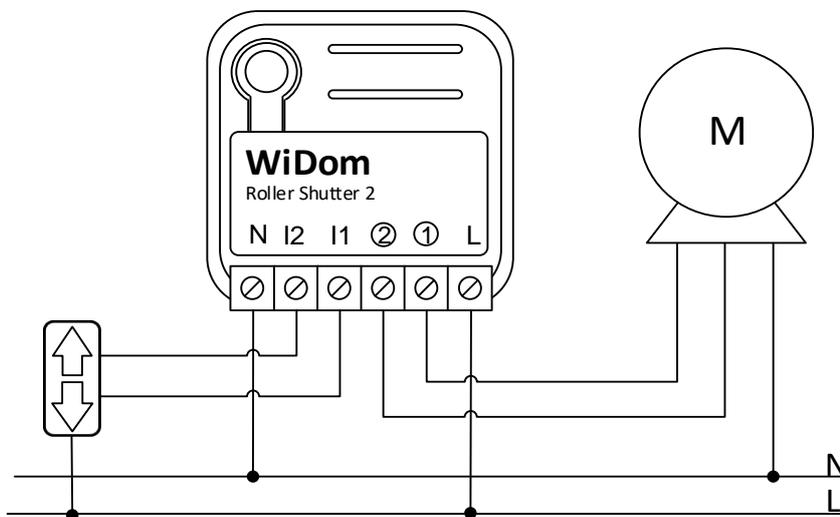
WARNING: All connections must be performed according to the electrical diagrams provided

WARNING: WiDom Smart Roller Shutter must be installed in norm-compliant systems suitably protected from overloads and short circuits.

Electrical connections diagram

N) Neutral; L) Phase; 1, 2) Motor terminals; i1, i2) Commands switch

⚠️ **WARNING:** The power line must be opportunely protected from short-circuits and excess load due to a potential motor malfunction.

Device Installation

1) Make sure the main switch is set to the OFF position

2) Connect the device based on the diagrams provided above

3) Turn the main switch to the ON position

4) If necessary, calibrate the motor limit switches (see motor manufacturer's manual)

5) Include the device in the Z-Wave network

💡 **TIP:** The antenna must not be shortened, removed or modified. To ensure maximum efficiency, it must be installed as shown. Large size metal equipment near the antenna can negatively affect reception. Each WiDom device is a node in a mesh network. If there are metal obstacles, the obstacle can often be overcome with a further triangulation node.
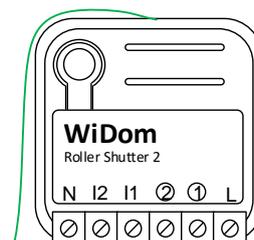
LED status indicator

The system includes an RGB LED that shows the device's status during installation:

Solid RED: the device is not included in any network

OFF: the device is already associated to a Z-Wave network

Blink GREEN: the device has sent an unsolicited Multilevel Frame to Lifeline group

Blink YELLOW: the device has sent an unsolicited Meter Frame to Lifeline group

Blink VIOLET: the device has sent a command to the association device. The number of blinks is equal to the ID Association group

Blink BLUE: calibration

Sequence of GREEN-BLUE Learn Mode for inclusion

Sequence of RED-BLUE Learn Mode for exclusion

INFO: The *Learn Mode status* is activated or deactivated by a single click on the integrated button.

TIP: To test if the electrical connections are correct, before the inclusion of the device, while pressing *n* times the external switch, the RGB LED should flash *green* for the same amount of times. If it does not, check the wire connections.
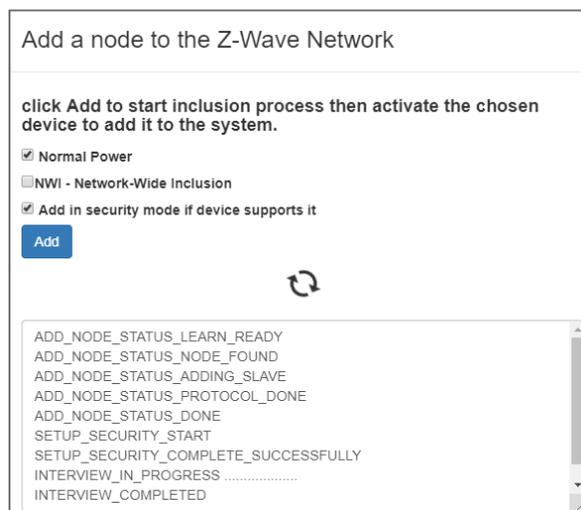
Including the device into a Z-Wave network

WiDom Smart Roller Shutter is compatible with all Z-Wave/Z-Wave Plus certified controllers. The device supports both the *Network Wide Inclusion* mechanism (which offers the ability to be included in a network, even if the device is not directly connected to the controller) and *Normal Inclusion*.

By default, the inclusion procedure starts in *Normal Inclusion* mode and after a short timeout the procedure continues in *Network Wide Inclusion* mode that lasts for about 20 Seconds.

If you are using the *WiDom Multi Sensor Room Controller* you can include the device in the preferred room by clicking on the ✚ button and opening the inclusion interface.

Before including the device the LED status indicator is solid RED. <u>The procedure of inclusion is activated by clicking **Add** in the inclusion interface and by pressing any sequence of click on the integrated button</u>. As soon as the inclusion procedure initiates the LED indicator starts a sequence of GREEN-BLUE blinks. The device is included in the network when the LED status is OFF and the interview is completed.

Excluding the device from a Z-Wave network

Only a controller can remove the device from the network. After activating the exclusion function by the controller, the device can be removed by setting it in *Learning Mode*.

If you are using the *WiDom Multi Sensor Room Controller,* the procedure of exclusion can be activated by **Removing** a node from the Z-Wave network and any click sequence on the integrated button; as soon as the exclusion initiates, the LED indicator starts a sequence of RED-BLUE blinks. The device is excluded from the network when the LED status indicator is solid RED and the App_status in the interface is OK.
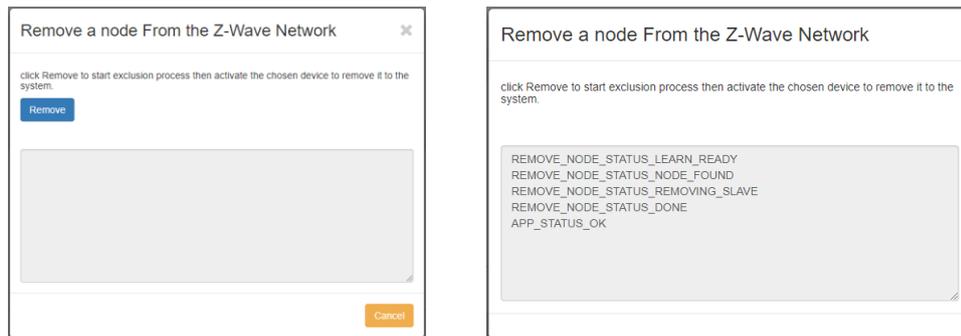
Calibration

The calibration is the procedure through which the system carries out a mapping of the positions taken by the roller shutter and the motor functioning parameters. The calibration procedure runs automatically at the first startup as soon as the device receives a command by the external switches (or by the controller if the device is included in a Z-wave network before the execution of the calibration procedure).

After this procedure is executed, it will be possible to control the shutter movement.

The calibration can be activated again by using Parameter No. 20.

The system precision depends on several factors such as the motor type, the limit switches sensitivity, the shutter type, etc. Statistically, the maximum error occurring while reaching a set position, starting from top or from the bottom is lower than the height of a single shutter batten.

The start of the calibration procedure requires the system to completely run twice, from being completely closed to completely open and to stop then in the final position.

Favorite Positions

The system can set two favorite positions: one for the upward movements (opening movements) **Favorite level for ON position**, the other for the downward movements (closing movements) **Favorite level for OFF position**. These positions can be activated by the user through a single/double click (Parameter No.1) on the UP button or on the DOWN button respectively. The levels of favorite positions can be configured using parameters No. 2 and No. 3 *(see Configuration section)*.

Controlling the device

With WiDom devices, the normal switches/buttons found in a traditional electrical system can become intelligent control systems.

Controlling the WiDom Smart Roller Shutter by External switches

The clicks/hold on the external switches control the shutter movements. WiDom framework recognizes the number of clicks or hold event on the external switch and can be configured to perform different actions based on the identified event.

i **External switch**: Double command button: UP/DOWN, open/close, ON/OFF

i **Events:** The actions performed on the external Switch: Clicks or Hold.

i **Click**: A click means pressing the button and then releasing it.

i **Hold:** Applies only to buttons that are normally open and occurs when the pressure on the button lasts longer than a click.

i **Device status:** ON/OFF/STOP, Open/Close/Stop refers to the fact that the motor is rotating towards the direction Open/Close or it is stopped.

Control Actions

- **Holding** the UP/DOWN button makes the motor move in the relevant direction, and stops it as soon as the button is released or the shutter reaches its limit switch.
- **An action ordering an UP/DOWN** movement while the motor is moving in opposite direction, will stop the motor.
- **An action ordering an UP/DOWN** movement while the motor is moving in the same direction, will be ignored.
- **A single and/or a double click** (Parameter No.1) on the button UP/DOWN makes the motor move until it reaches the **favorite position** set for the UP/DOWN position.

Controlling the WiDom Smart Roller Shutter by the controller

The WiDom Smart Roller Shutter can be controlled by any Z-Wave / Z-Wave Plus certified controller available in the market.

In the figure below, is represented how the device will appear once included into the *WiDom Multi Sensor Room Controller*.
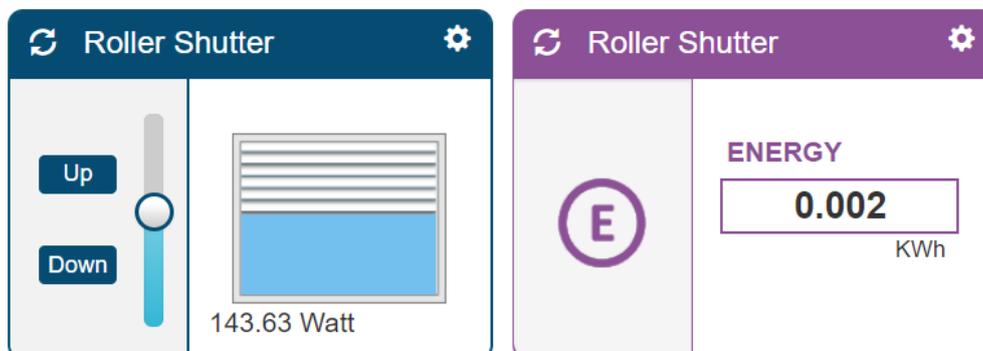
View of the WiDom Smart Roller Shutter control panels inside the WiDom Multi Sensor Room Controller interface

The control panels show the status of the load in terms of *opening level*, *instantaneous power* and *energy consumption*.

The Up/Down buttons in the control panel allow to Open/Close the shutter. Using the Up/Down button while the motor is moving in opposite direction, will stop the motor. By moving the cursor in the scrollbar is possible to regulate the opening level of the shutter.

The device status is typically updated in case of status change. Nevertheless, it is possible to refresh the shown status by using the _Refresh Button_ ↻.

The device configuration parameters and settings can be accessed by using the Configuration Button ⚙.

Associations

WiDom Smart Roller Shutter can control other devices like other relays or dimmers. It also supports 4 association groups, each of which supports the association of up to 8 devices (nodes):
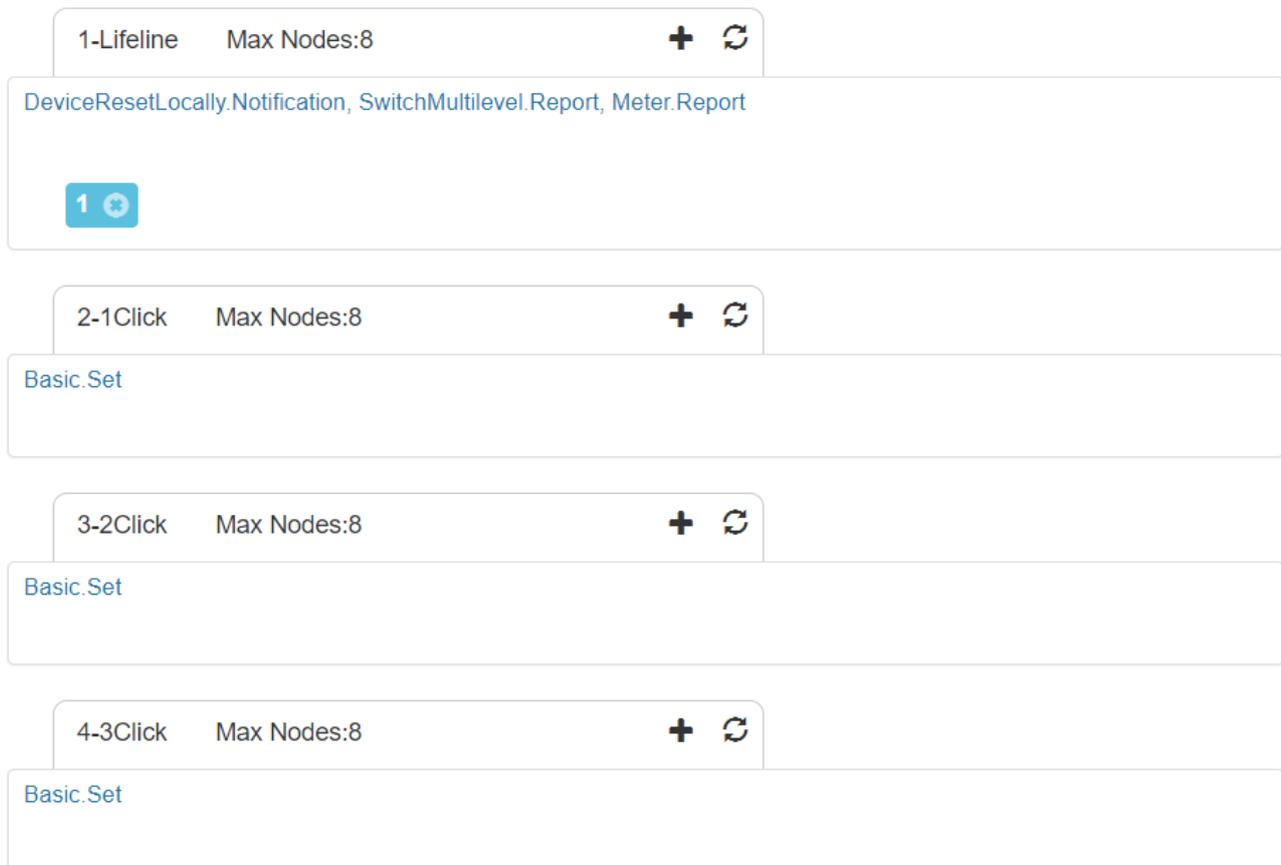
| 1-Lifeline   Max Nodes:8   ✚ ⟳ |
| DeviceResetLocally.Notification, SwitchMultilevel.Report, Meter.Report |
| 1 ⊗ |

| 2-1Click   Max Nodes:8   ✚ ⟳ |
| Basic.Set |

| 3-2Click   Max Nodes:8   ✚ ⟳ |
| Basic.Set |

| 4-3Click   Max Nodes:8   ✚ ⟳ |
| Basic.Set |

> ℹ **INFO**: Association ensures direct transfer of control commands between devices, and is performed without participation of the main controller.

> 💡 **TIP:** WiDom Smart Roller Shutter can control up to 8 devices for each group. To avoid network delays, we recommend limiting the amount of associated devices to no more than 5 per group.

> ℹ INFO: If you want to add the device within the first group and you are using the _WiDom Multi Sensor Controller,_ the device association group can be configured as follows: 1) Click **Configuration button**, 2) select **Association** section, 3) click the ✚ button to **Add** a new device to the group or click on the ⊗ button to **Remove** a device.

Power consumption management

Widom Smart Roller Shutter integrates a meter system that allow to measure values of Power and Energy consumed by the motor. These values can be obtained through the certified controllers that support the Meter Command Class version 2.

To monitor the consumption of the device, based on your needs, the cumulated energy of the device can be reset. If you are using the *WiDom Multi Sensor Controller*, the Reset steps are the followings: 1) Click **Configuration button** of energy panel, 2) select **Setting** section and 3) click **Reset** Meter.

METER

Reset cumulated meter value
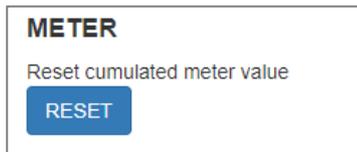
RESET

Reset to the factory settings

The device can be reset to the original factory settings using one of the following methods:

Method 1: Remove the device from the Z-Wave network

Method 2: 6 consecutive clicks on the integrated button

i **INFO:** If the reset is performed while the device is still part of a network, it notifies the other devices that it has been removed *(Device Reset Locally Notification)*.

Firmware Update

The system supports over-the-air firmware updates that do not require the device to be removed from its location. The firmware update can be activated from all certified controllers supporting version 2 of the Firmware Update function.

⚠ **WARNING:** The system will be rebooted at the end of the firmware update procedure. It is advisable to carry out the firmware update procedure only when necessary and following careful planning of the intervention.

Configurations

Parameter No. 1: Numbers of clicks to control the local load (1 Byte)
Define which sequences of click control the local load.

Configuration	Result
0	**DISABLED** Local Control disabled
1	**ONE_CLICK** 1 click control the local load
2	**TWO_CLICKS** 2 clicks control the local load
3 (Default value)	**ONE_CLICK** and **TWO_CLICKS** 1 click and 2 clicks control the local load

Parameter No. 2: Favorite level for ON position (1 byte).

Configuration	Result
50-100 **100 (Default value)**	50-100% opening level (100% correspond to completely open)

Parameter No. 3: Favorite level for OFF position (1 byte).

Configuration	Result
0-49 **0 (Default value)**	0-49% opening level (0 correspond to completely closed)

Controlling the associated devices

Defines the actions to be carried out on the associated devices in terms of *Basic Set.*

Configuration	Result
1-99	**Dimming purpose**
0	**OFF**
-1	ON

The values in the table above can be used to configure the parameters No. 4, 5, 6, 7, 8, and 9.

Parameter No. 4: value used for devices belonging to Group 2 when UP button receive 1 Click (1 byte).

Configuration	Result
1-99	**Dimming purpose**
0	**OFF**
-1 (Default Value)	ON

Parameter No. 5: value used for devices belonging to Group 2 when DOWN button receive 1 Click (1 byte).

Configuration	Result
1-99	**Dimming purpose**
0 (Default Value)	**OFF**
-1	ON

Parameter No. 6: value used for devices belonging to Group 3 when UP button receive 2 Clicks (1 byte).

Configuration	Result
1-99	**Dimming purpose**
0	**OFF**
-1 (Default Value)	**ON**

Parameter No. 7: value used for devices belonging to Group 3 when DOWN button receive 2 Clicks (1 byte).

Configuration	Result
1-99	**Dimming purpose**
0 (Default Value)	**OFF**
-1	ON

Parameter No. 8: value used for devices belonging to Group 4 when UP button receive 3 Clicks (1 byte).

Configuration	Result
1-99	**Dimming purpose**
0	**OFF**
-1 (Default Value)	ON

Parameter No. 9: value used for devices belonging to Group 4 when DOWN button receive 3 Clicks (1 byte).

Configuration	Result
1-99	**Dimming purpose**
0 (Default Value)	**OFF**
-1	ON

Other configuration parameters

Parameter No. 20: Calibration (1 byte).

Defines the status of the calibration procedure. By default, as soon as the device has been included, the calibration starts in automatic mode. At the end of the calibration, this parameter is set to 1.

Afterwards the calibration can be done again by setting this parameter to 0 (AUTO) or 2 (MANUAL) and clicking on any external button.

If the calibration is set in AUTO mode, it will be completed automatically.

If the calibration is set in MANUAL mode, a click on any external button is necessary to carry on the next step.

During the calibration, the LED indicator blinks repeatedly in BLUE.

Configuration	Result
1	**DONE** Calibration has been done
2	**TO_BE_DONE_MANUAL** Calibration to be done in manual mode
0 (Default Value)	**TO_BE_DONE_AUTO** Calibration to be done in automatic mode

Parameter No. 21: Motor idle state definition (2 byte)

Defines the level of power consumption under which the motor is considered steady (stationary)

Configuration	Result
0-3000 **1000 (Default Value)**	Expressed in hundredths of Watt (ex. 3000=30 Watt)

Parameter No. 22: Limit switch recognition (1 byte)

The motor has reached the limit switch when its power consumption is lower than PLIMIT (the power defined in parameter No. 21) for an amount of time defined by this parameter.

Configuration	Result
1-127 **30 (Default Value)**	Expressed in tenths of seconds
0	Limit Switch ignored

Disposing the devices
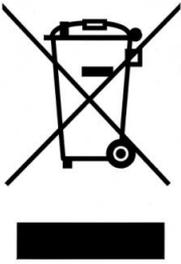
This product bears the selective sorting symbol for waste electrical and electronic equipment (WEEE).

This means that this product must be handled pursuant to European Directive 2002/96/EC in order to be recycled or dismantled to minimize its impact on the environment.

For further information, please contact your local or regional authorities.

Electronic products not included in the selective sorting process are potentially dangerous for the environment and human health due to the presence of hazardous substances.

Compliance with directives

WiDom devices are built in compliance with directives LVD 2006/95/EC, EMC 2004/108/CE and R&TTE

WiDom shall not be held responsible for any damage caused by these devices if they are used in a manner that is not compliant with the instructions in this manual. WiDom reserves the right to make any changes to the product that it considers necessary or useful without jeopardizing its primary features.

Warranty

This warranty is provided by WiDom srl (hereinafter "**WiDom**") based in Quartu S.Elena 09045 (CA), Italy (VAT number 03452490927).

WiDom warrants to the original purchaser (hereinafter "**Customer**") that the device sold under this agreement (hereinafter "**Device**") is free from defects in parts and workmanship under normal use for 12 months from date of purchase ("**Warranty Period**").

The original purchase invoice or sales receipt, showing the date of purchase is the proof of date of purchase by the Customer.

If a Device, sold by WiDom to the Customer, has manufacturing defects or in any case of alleged lack of conformity, the Customer shall send within thirty (30) days from the day in which he discovers such defects, a claim form by using the web site (www.widom.it) informing WiDom on the full name of the Customer, the nature of the defects and the date in which the Devices has been purchased.

Warranty Claims received after the expiration of the Warranty Period shall not be considered valid.

Once WiDom, receives the Warranty Claim, it shall inform the Customer by e-mail or letter, if the Warranty is applicable and the address where the Device shall be sent in order to verify the defects (if any). Customer must prepay shipping and transportation charges as indicated by WiDom. The Device shall be sent by the Customer to WiDom at its own costs and expenses, by express courier or hand delivered, and with the original packaging, the supplied accessories (if any) and documents proving date of purchase. WiDom shall then inform the Customer about the defects and on its repair or replacement (where applicable). Should WiDom not evidence defects on the Device, the Device shall be returned to the Customer.

Should WiDom notices the defects, and this warranty is applicable, it will remove, at its sole discretion, any defect, free of charge, by repairing any defective components of the Device with new or regenerated components or by replacing the Device. The Warranty Period of the replaced or repaired Device shall not be extended.

WiDom will ship the repaired or a replaced Device to Customer freight prepaid.

WiDom will not be liable for damages to property caused by faulty device. WiDom will not be liable for indirect, incidental, special, consequential or punitive damages, or for any damage, including, inter alia, loss of profits, savings, data, loss of benefits, claims by third parties and any property damage or personal injuries arising from or related to the use of the Device.

If the Device cannot be replaced with another of the same type (e.g. the Device is no longer in production or no longer available for selling in the Customer's country), it may be replaced with a different one having similar technical specifications to the faulty one. Such replacement shall be considered as a total fulfilment of WiDom's obligations.

<u>Warranty exclusion</u>

- defects caused by normal wear of parts or especially subject to wear, such as parts that require periodic replacement during the normal operation of the system (e.g. Batteries);
- splits, cracks, scratches, dents, scratched or discolored surfaces and parts, breakage of plastic parts and in general of any other cosmetic damage;
- damages resulting from use of the system other than that provided, including but not limited to the failure to follow instructions contained in the operating manual;
- damages caused by accident, abuse, misuse, dirt, viruses, liquid contact, fire, earthquake, improper or inadequate maintenance or calibration, negligence or other external causes;
- environmental damage and / or defects caused by smoke, dust, dirt, soot, or other external influences;
- damages caused by modifications and alterations in the functionality or features without the written permission of WiDom;
- damages resulting from transportation or inadequate packaging when returning the product to a WiDom or to an authorize service center;
- defects caused by force majeure events such as lightning, floods, fires, incorrect voltage, improper ventilation;
- damages caused by malfunctioning software, computer virus attack, or by failure to update the software as recommended by WiDom;
- damages resulting from surges in the power and/or telecommunication network, improper connection to the grid in a manner inconsistent with the operating manual, or from connecting other devices not recommended by WiDom;
- damages caused by operating or storing the device in extremely adverse conditions, i.e. high humidity, dust, too low (freezing) or too high ambient temperature;
- products whose serial number has been removed, damaged or rendered illegible;
- expiration of the Warranty Period.

If a defect is not covered by the Warranty, WiDom will inform the Customer about the extra expenses for the repair or replacement.

This warranty may be subject to changes. Please check at www.widom.it the newest warranty claim procedure.

This guarantee shall not exclude, limit or suspend the Customer rights when the provided product is inconsistent with the purchase agreement.

<u>Extended warranty activation</u>

The devices bought in the EU, entitle the end customers to a two-year guarantee offered by the retailer (or trader) that is separate from the above commercial guarantee offered by the manufacturer to the distributor or reseller.

WiDom offers <u>an extra year guarantee to the end customers</u> in addition to the EU guarantee. This warranty can be <u>obtained only if</u> the customer completes, by using the contacts on WiDom's website, the following two steps:

1) Within fifteen (15) days from the date of purchase, send to WiDom a copy of the purchase invoice and product code;

2) Promptly after installing the device, send to WiDom the conformity certification issued by the professional who installed the device with indication of the serial number.

Please check at www.widom.it the newest version of this document.

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