



Smart Dry Contact Switch



Smart Dry Contact Switch Operating instructions



Revision History

Rev. Doc.	Date	Reviser	Page	Description
0	15/01/2019	GT		Initial version
1	19/03/2020	GT	7	Minor update Associations
2	15/06/2020	GT	9	Correction on parameter 15 size

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Device description

WiDom Smart Dry Contact Switch can turn ON and OFF equipment's with an independent power supply, such as solenoid valves (e.g. gas, water and irrigation), power operated valves etc.

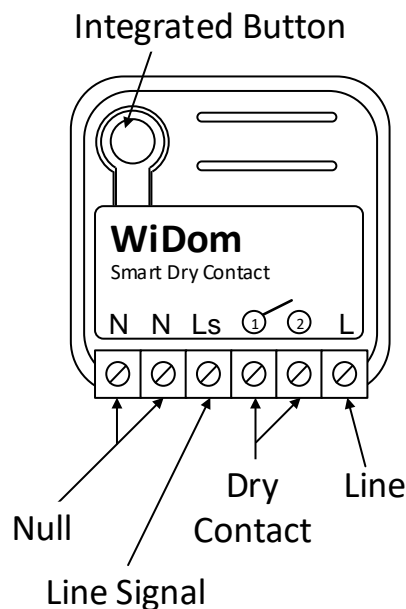
WiDom Smart Dry Contact Switch is very easy to install and works with both momentary and toggle switches.

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 Dry Contact Switch will act as repeater regardless of the vendor in order to increase the reliability of the network.

This device is a security enabled Z-Wave Plus product that is able to use encrypted Z-Wave Plus messages to communicate to other security enabled Z-Wave Plus products.

This device must be used in conjunction with a Security Enabled Z-Wave Controller in order to fully utilize all implemented functions.



Line	Phase connection terminal
Null	Neutral connection terminal
Dry Contact	16A contact relay
Line Signal	External Switch Connection
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 on Relay	13A resistive Load
System temperature limitation	105°C
Work temperature	From -10° to 40° C
Power consumption	< 260 mW in standby < 480 mW with working load
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	16 Amp relay
Compliance	CE, RoHs
Electrical IP Rating	IP20

Radio Frequency

Product Code	Z-Wave Frequency
DRYEU	868.4MHz,
DRYBR	919.8MHz, 921.4MHz
DRYCL	919.8MHz, 921.4MHz
DRYCO	908.4MHz, 916MHz
DRYIN	865.2MHz
DRYJP	922.5MHz, 923.9MHz, 926.3MHz
DRYRU	869.0MHz
DRYZA	868.4MHz, 869.85MHz
DRYTW	922.5MHz, 923.9MHz, 926.3MHz
DRYAE	868.4MHz, 869.85MHz

Product Code	Z-Wave Frequency
DRYAU	919.8MHz,
DRYCN	868.4MHz
DRYHK	919.8MHz
DRYIL	916MHz
DRYMY	919.8MHz, 921.4MHz
DRYSG	920.9MHz, 921.7MHz, 923.1MHz
DRYKR	920.9MHz, 921.7MHz, 923.1MHz
DRYTH	920.9 MHz, 921.7MHz, 923.1 MHz
DRYUS	908.4MHz

Safety information



INFO: WiDom Smart Dry Contact Switch is designed to be installed in flush mounting junction boxes or close to the load to be controlled.



WARNING: WiDom Smart Dry Contact Switch 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 Dry Contact Switch 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 permitted by the actuator element.



WARNING: All connections must be performed according to the electrical diagrams provided



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

Electrical Connections diagram

The device must be supplied by phase and neutral.

Connections must be done following one of the diagrams below: if you need to control a Load connected on a different power supply system you **must** follow the diagram on the right side.

Diagram for controlling a Load in the same power supply system

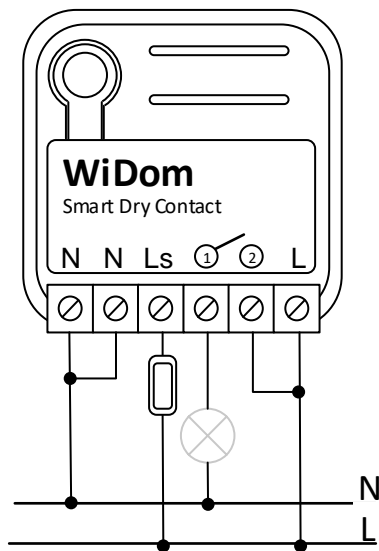
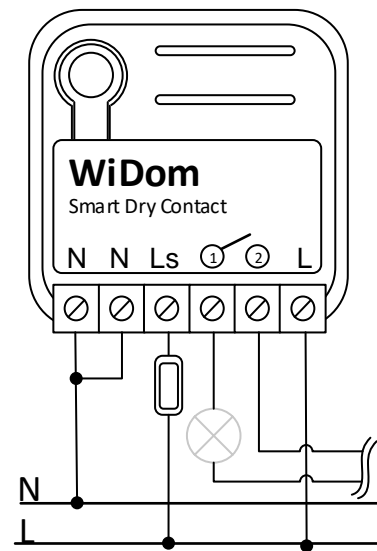


Diagram for controlling a Load connected to an independent power supply system



N) Neutral; L) Phase; Ls) External Switch; 1, 2) Dry contact



WARNING: The power line must be opportunely protected from short-circuits and excess load due to a failure of the load.

Device Installation

- 1) Make sure the main switch is set to the OFF position
- 2) Connect the device based on the diagrams provided
- 3) Turn the main switch to the ON position
- 4) 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

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.



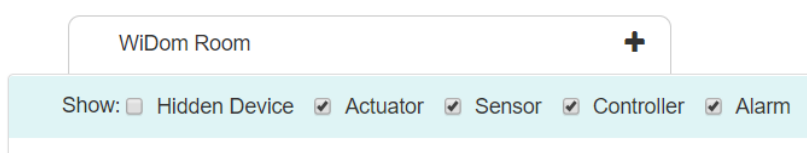
TIP: To test if the electrical connections are correct, before the inclusion of the device, while pressing *n* times the external switch, the RGB LED should flash **green** for the same amount of times. If it does not, check the wire connections.

Including the device into an existing Z-Wave network

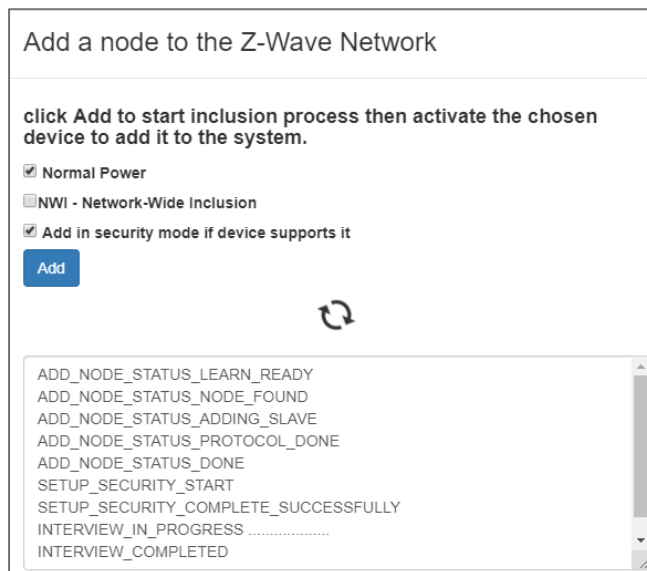
WiDom Smart Dry Contact Switch is compatible with all Z-Wave/Z-Wave Plus certified controllers. The device supports both the **Network Wide Inclusion** mechanism (which offers the ability to be included in a network, even if the device is not directly connected to the controller) and **Normal Inclusion**.

By default, the inclusion procedure starts in **Normal Inclusion** mode and after a short time out 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.



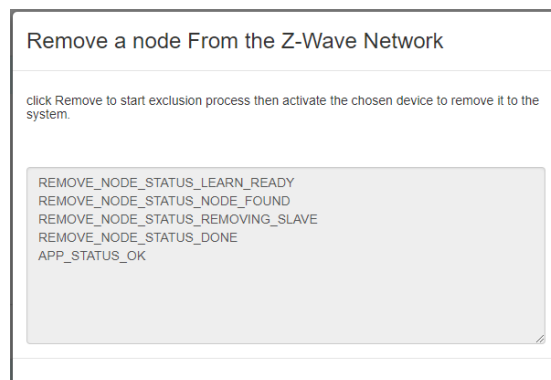
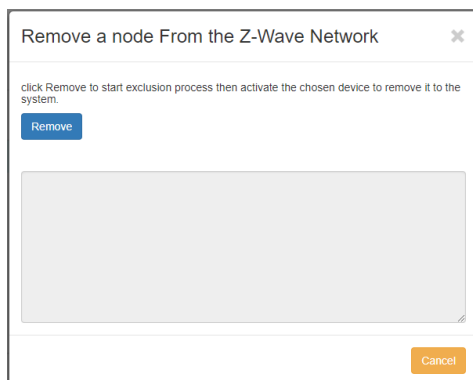
Before including the device the LED status indicator is solid RED. The procedure of inclusion is activated by clicking **Add** in the inclusion interface and by pressing any sequence of click on the integrated button. As soon as the inclusion procedure initiates the LED indicator starts a sequence of 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.



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.

Controlling the device

The WiDom Smart Dry Contact Switch can turn ON and OFF by using an external switch, or from remote through a controller.

Controlling the Smart Dry Contact Switch by External Switches

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.



External switch: External button or switch connected to the Line Signal terminal.



Click: If the external switch is a button (when pressed it autonomously returns to the initial position), a click means pressing and then releasing it. If the external switch is bistable (when pressed it does not return to the initial position), a single click means one single flip of the switch.



Hold: Applies only when the external switch is a normally opened button and occurs when the pressure on the button lasts longer than a click.

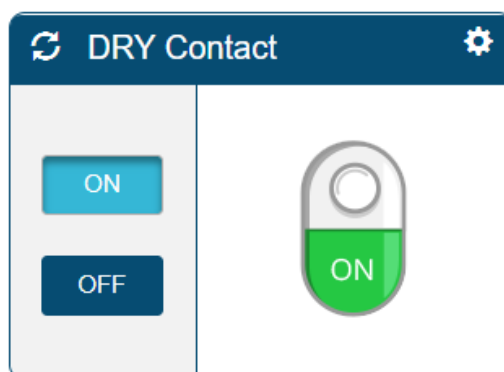
Control Actions – Result Event

- **Holding** the external switch changes the status of dry contact and return to the previous status as soon as the button is released.
- **A single click** on the external switch turns ON/OFF the load.

Controlling the Smart Dry Contact Switch by the controller


The WiDom Smart Dry Contact Switch 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 Dry Contact Switch control panels inside the *WiDom Multi Sensor Room Controller* interface

The control panel show the load status. The ON/OFF buttons in the control panel allow to turn ON/OFF the load connected to the dry contact.

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

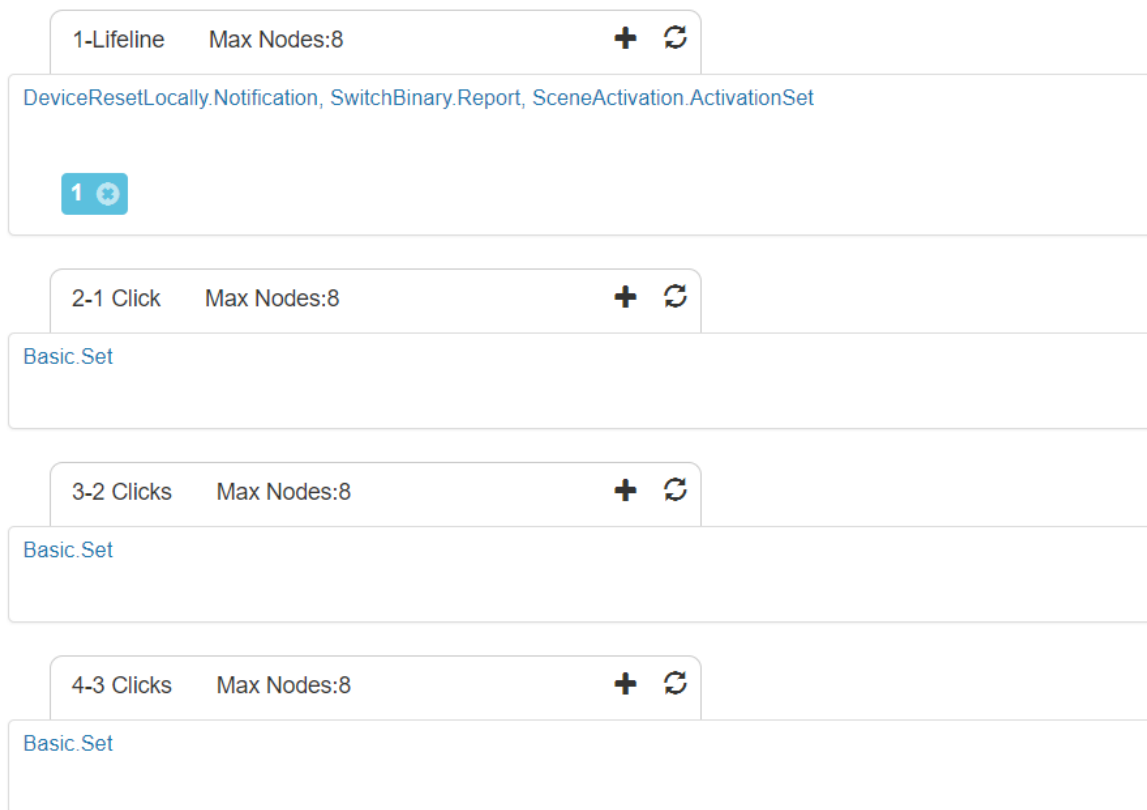
WiDom Smart Dry Contact Switch can control other devices like other relays or dimmers. WiDom Dry Contact supports 4 association groups:


1- Lifeline: Nodes belonging to this group will receive: notification about device reset; changes related to the relay status; scene activation commands.


2- 1 Click: Nodes belonging to this group will be controlled by a basic set if the external switch receives one click.


3- 2 Clicks: Nodes belonging to this group will be controlled by a basic set if the external switch receives two clicks.

4- 3 Clicks: Nodes belonging to this group will be controlled by a basic set if the external switch receives three clicks.



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

 **TIP:** WiDom Smart Dry Contact Switch 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.

 **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.

Configurations

Parameter No. 1: Numbers of clicks on the external switch to control the load (1 Byte)

Defines which sequences of clicks control the load.

Configuration	Result
0	DISABLED Local Control disabled
1	ONE_CLICK 1 click controls the local load
2	TWO_CLICKS 2 clicks control the local load
4	THREE_CLICKS 3 clicks control the local load
7 (Default Value)	ONE_CLICK, TWO_CLICKS or THREE_CLICKS The load connected to the Channel 1 can be controlled using 1 click, 2 clicks or 3 clicks
<p>The value for the configuration parameter can be the <u>sum</u> of single values as below: To control the load with 1 click and 2 clicks -> Parameter value must be $1 + 2 = 3$ To control the load with 1 click and 3 clicks -> Parameter value must be $1 + 4 = 5$ To control the load with 2 clicks and 3 clicks -> Parameter value must be $2 + 4 = 6$</p>	

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
100	The same value of dry contact status

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 the external switch receives 1 Click (1 byte).

Configuration	Result
1-99	Dimming purpose
0	OFF
-1	ON
100 (Default Value)	The same value of dry contact status

Parameter No. 5: Value used for devices belonging to Group 3 when the external switch receives 2 Clicks (1 byte).

Configuration	Result
1-99	Dimming purpose
0	OFF
-1	ON
100 (Default Value)	The same value of dry contact status

Parameter No. 6: Value used for devices belonging to Group 4 when external switch receives 3 Clicks (1 byte).

Configuration	Result
1-99	Dimming purpose
0	OFF
-1	ON
100 (Default Value)	The same value of dry contact status

Timer management

Parameter No. 10: Timer to switch OFF the Relay (2 byte)

Defines the time after which the relay is switched OFF.

Configuration	Result
0 (Default Value)	Timer disabled
1 - 32000	Number of time units (see parameter No.15) after which the dry contact is switched OFF

Parameter No. 11: Timer to switch ON the Relay (2 byte)

Defines the time after which the relay is switched ON.

Configuration	Result
0 (Default Value)	Timer disabled
1 - 32000	Number of time units (see parameter No.15) after which the dry contact is switched ON

Parameter No. 15: Timer scale (1 byte)

Defines the time unit used for parameters No.10 and No.11.

Configuration	Result
1 (Default Value)	Tenth of seconds
2	Seconds

Parameter No. 20: One Click Scene Activation Set (2 byte)

Defines the *Scene Activation Set* value sent to the Lifeline group with 1 Click on the external switch.

Configuration	Result
0 (Default Value)	No value is sent
1 - 255	Value sent to the Lifeline group

Parameter No. 21: Two Clicks Scene Activation Set (2 byte)

Defines the *Scene Activation Set* value sent to the Lifeline group with 2 Clicks on the external switch.

Configuration	Result
0 (Default Value)	No value is sent
1 - 255	Value sent to the Lifeline group

Parameter No. 22: Three Clicks Scene Activation Set (2 byte)

Defines the *Scene Activation Set* value sent to the Lifeline group with 3 Clicks on the external switch.

Configuration	Result
0 (Default Value)	No value is sent
1 - 255	Value sent to the Lifeline group

Parameter No. 60: Start-up Status (1 Byte).

Defines the status of the device following a restart.

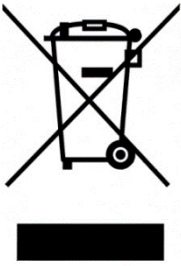
Configuration	Result
1	ON Relay ON
2	OFF Relay OFF
3 (Default value)	PREVIOUS STATUS Status prior to restart

Parameter No. 62: Type of external switch (1 byte)

Defines the type of external switch connected to the device.

Configuration	Result
0	IGNORE The actions on the external switch are ignored. In this mode, the device can only be controlled through the network.
1 (Default value)	BUTTON The external switch is a momentary switch type
2	SWITCH The external switch is a traditional switch (toggle switch)

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.

Warranty exclusion

- 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.

Extended warranty activation

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 an extra year guarantee to the end customers in addition to the EU guarantee. This warranty can be obtained only if 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.

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