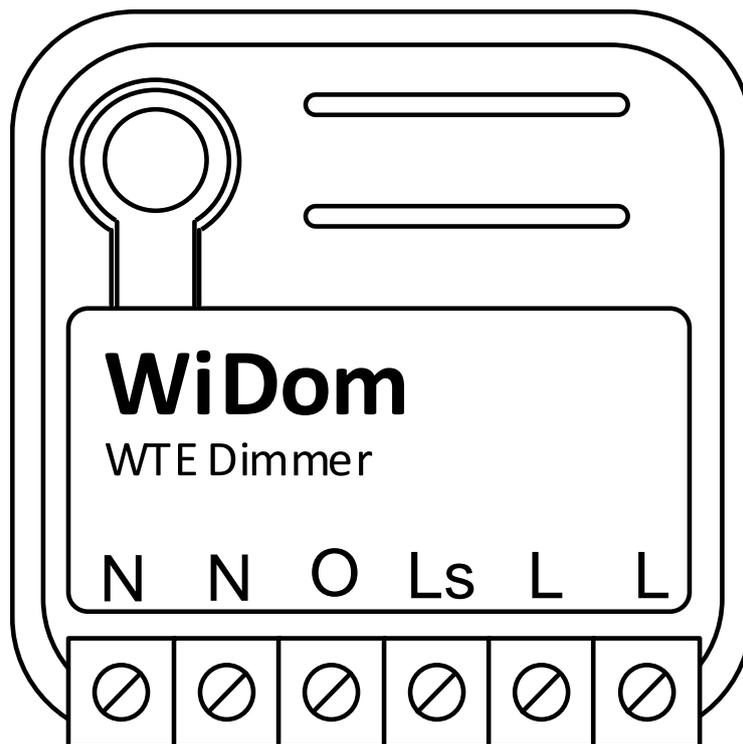




Smart TE Dimmer



WTE Dimmer Operating Instructions



Revision History

Rev. Doc.	Date	Reviser	Pag.	Description
0	22/11/2018	GT		Initial version
1	21/12/2018	GT	2	Product code update
2	24/12/2018	GT	6,7	Associations and device configuration settings update
3	08/01/2019	GT	4,5,6,7	Associations groups and device control and overheat protection
4	14/01/2019	GT	5,7,8	Associations groups and overheat protection

Content

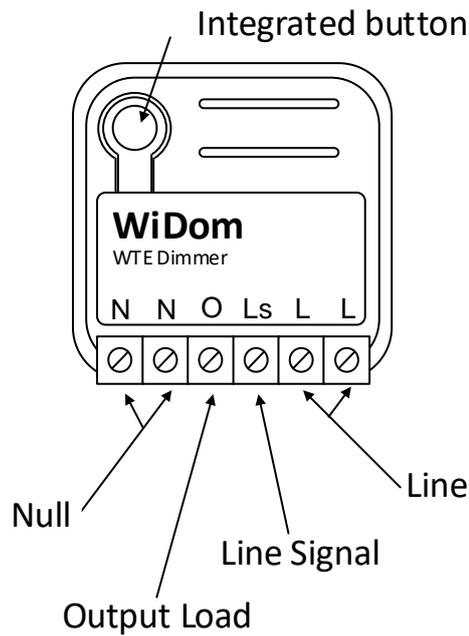
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Device description

WiDom Smart TE Dimmer is an "in-wall device" that controls the luminosity level and/or fan speed. A universal device that controls the light intensity of **all types of dimmable lights**, including LED lamps and energy-saving lamps. The Smart TE Dimmer includes the ON / OFF control option of non-dimmable loads.

WiDom Smart TE Dimmer is very easy to install and works with both momentary and toggle switches.

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 TE Dimmer 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
Output Load	Lamp or fan to be dimmed
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	300 Watt
System temperature limitation	105°C
Work temperature	From -10° to 40° C
Power consumption	<1 W
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	Double Power Mosfet
Compliance	CE, RoHs
Electrical IP Rating	IP20

Radio Frequency

Product Code	Z-Wave Frequency
WTEDEU	868.4 MHz
WTEDBR	919.8 MHz, 921.4 MHz
WTEDCL	919.8 MHz, 921.4 MHz
WTEDCO	908.4 MHz, 916 MHz
WTEDIN	865.2 MHz
WTEDJP	922.5 MHz, 923.9 MHz, 926.3 MHz
WTEDRU	869.0 MHz
WTEDZA	868.4 MHz, 869.85 MHz
WTEDTW	922.5 MHz, 923.9 MHz, 926.3 MHz
WTEDAE	868.4 MHz, 869.85 MHz

Product Code	Z-Wave Frequency
WTEDAU	919.8 MHz
WTEDCN	868.4 MHz
WTEDHK	919.8 MHz
WTEDIL	916 MHz
WTEDMY	919.8 MHz, 921.4 MHz
WTEDSG	920.9 MHz, 921.7 MHz, 923.1 MHz
WTEDKR	920.9 MHz, 921.7 MHz, 923.1 MHz
WTEDTH	920.9 MHz, 921.7 MHz, 923.1 MHz
WTEDUS	908.4 MHz

Safety information



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



WARNING: WiDom Smart TE Dimmer 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 TE Dimmer must be connected with a voltage of 230 VAC, before carrying out any operation, please make sure that 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 actuator element.

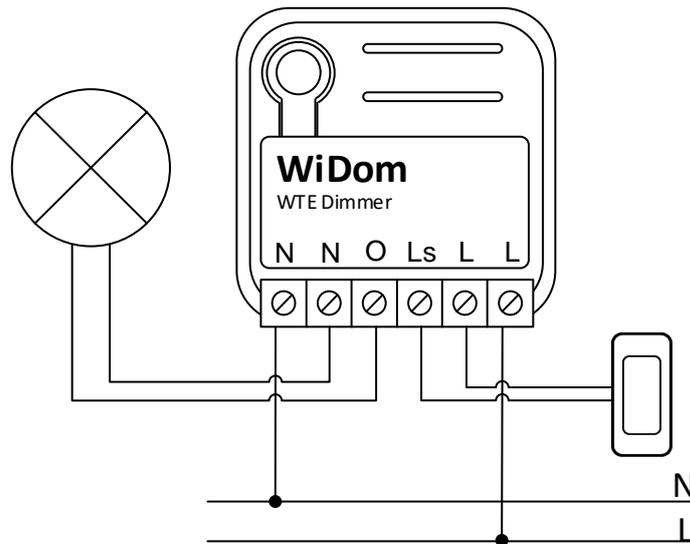


WARNING: All connections must be performed according to the electrical diagram provided below.



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

Electrical connections diagram



N) Neutral; L) Phase; O) Output Load; Ls) Dimming control (Momentary switch)



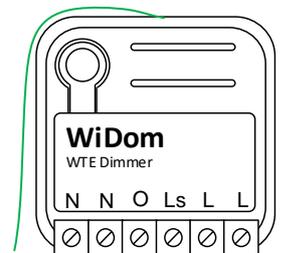
WARNING: The power line must be properly protected from short-circuits and excess load due to a potential Output Load malfunction.

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) 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

Blink RED: overheat protection mode.



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

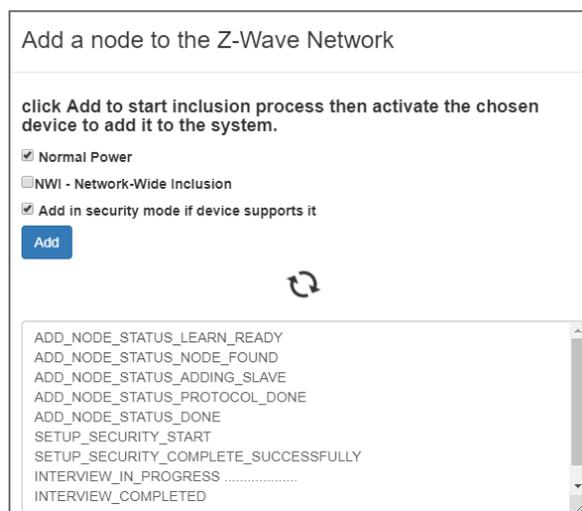
WiDom Smart TE Dimmer is compatible with all Z-Wave/Z-Wave Plus certified controllers. The device supports both the **Network Wide Inclusion** mechanism (which offers the ability to be included in a network, even if the device is not directly connected to the controller) and **Normal Inclusion**.

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.



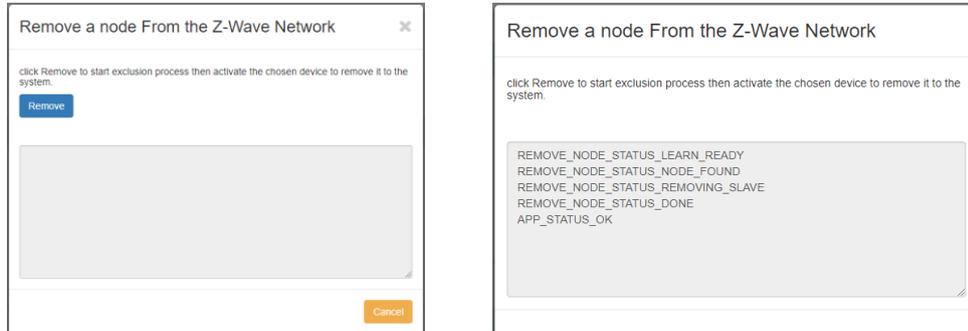
Before including the device the LED status indicator is solid RED. The procedure of inclusion is activated by clicking **Add** in the inclusion interface and by pressing any sequence of click on the integrated button. As soon as the inclusion procedure initiates the LED indicator starts a sequence of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



Controlling the device

The WiDom Smart TE Dimmer can control the lighting intensity and fan speed by using an external switch or from remote through a controller.

Controlling the Smart TE Dimmer by External Switches

The clicks/hold on the external switch control the dimming level. 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.

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

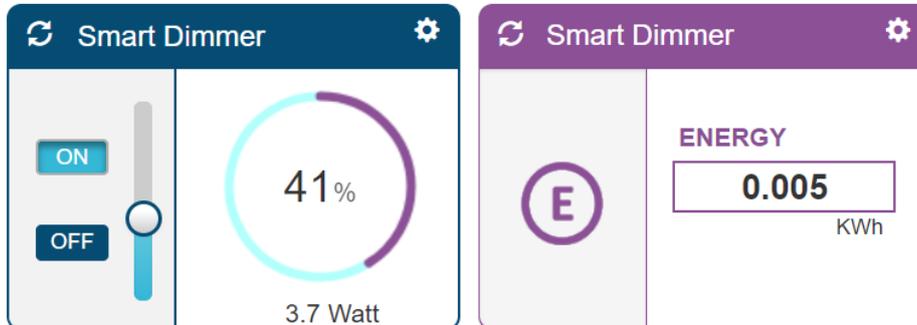
Control Actions

- **Holding** the external switch shifts the dimming level *upward* or *downward*, in the opposite direction of the last dimming. Fade On and Fade Off time is defined by Parameter No.4 (see *Configuration section*).
- **1 click** on the external switch toggles the load from OFF to the last recent non-zero level where Fade Off and Fade On times are defined by Parameter No.2 and No.3 (see *Configuration section*).
- **2 clicks** on the external switch toggles the load to full ON level, where Fade Off and Fade On times are defined by Parameter No.2 and No.3 (see *Configuration section*).

Controlling the Smart TE Dimmer by the Controller

The WiDom Smart TE Dimmer 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 TE Dimmer control panels inside the WiDom Multi Sensor Room Controller interface

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

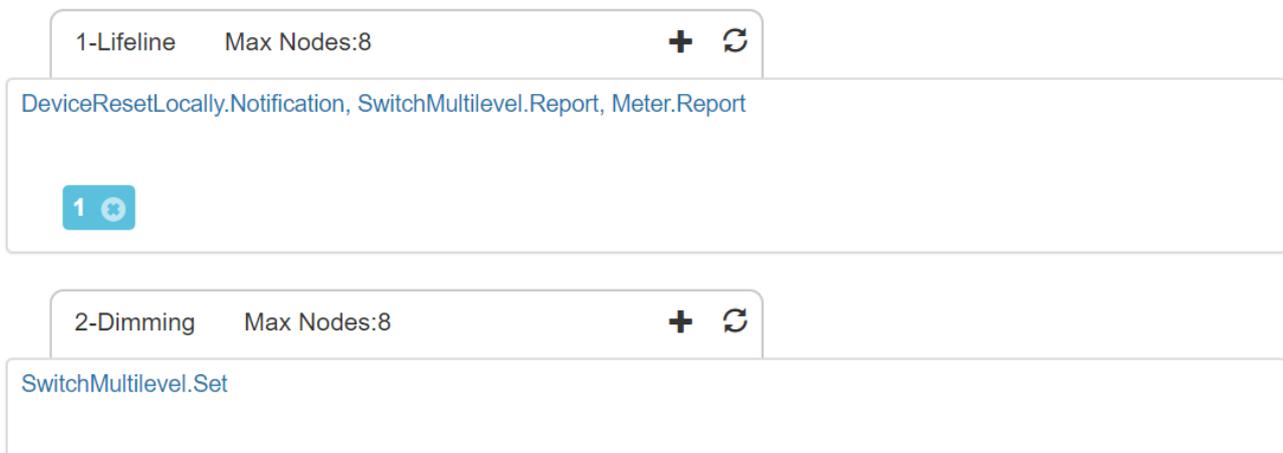
The ON/OFF buttons in the control panel allow to turn ON the load at the last dimming level, or turn OFF the load completely. By moving the cursor in the scrollbar is possible to regulate the dimming level from 1% to 99%.

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 TE Dimmer *can control other dimmers*. It supports 2 association groups, each of which supports the association of up to 8 devices (nodes):



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



TIP: WiDom Smart TE Dimmer 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.

If you are using the *WiDom Multi Sensor Controller*, the device association groups 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.

Controlling other associated devices

The 2nd association group allows to propagate the status of the controller device to its associated devices.

The devices of the 2nd association group will receive a “*Start level change*” command by pressing the external switch of the dimmer (controller device), and a “*Stop level change*” command when the switch is released.

The “*Start level change*” also sets the dimming duration and start level for the controlled devices by propagating its local dimming time and its current value.

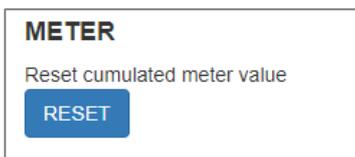
Other Control Actions

- **1 click** on the external switch turns OFF all the devices, or brings them all at the previous dimming level of the controller device.
- **2 clicks** on the external switch bring all the devices at maximum dimming level.

Power consumption management

The WiDom Smart TE Dimmer is equipped with a very precise power metering functionality, so you can easily monitor the cumulated energy consumption and instantaneous power of your lights or cooling fans.

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.



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



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.

Overheat protection mode

The device constantly monitors its temperature, and when an overheating occurs, it enters in overheat protection mode by turning OFF the load. During the protection mode the LED status indicator blinks RED and the load can't be controlled. When the temperature returns to a normal range the device will exit from overheat protection mode and the load can be controlled again.

Configurations

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

Defines the status of the device, in term of light level, following a restart.

Configuration	Result
0-99	0-99% dimming level after device restart
-1 (Default value)	At device's restart it restores the same dimming level at the moment of power failure.

Parameter No. 2: Fade On Time (1 byte).

Defines the time spent to switch the load from complete OFF to complete ON.

Configuration	Result
1 to 127 1 (Default value)	Expresses in seconds the time spent to switch the load from complete OFF to complete ON
-1 to - 126	Expresses in minutes the time spent to switch the load from complete OFF to complete ON

Parameter No. 3: Fade Off Time (1 byte).

Defines the time spent to switch the load from complete ON to complete OFF.

Configuration	Result
1 to 127 1 (Default value)	Expresses in seconds the time spent to switch the load from complete ON to complete OFF
-1 to - 126	Expresses in minutes the time spent to switch the load from complete ON to complete OFF

Parameter No. 4: Local Dimming Time (1 byte).

Defines the time spent to switch the controlled load when the external switch is hold down.

Configuration	Result
0	Applies the timing spent to switch the controlled load to Fade On and Fade Off as defined in parameters 2 and 3.
1 to 60 5 (Default value)	Expresses in seconds the time spent to switch the load

Parameter No. 10: Minimum Light Level (1 byte).

Defines the light level that will correspond to the 1% of dimming.

Configuration	Result
1 to 98 1 (Default Value)	Defines which light level will correspond to 1% in the range between 1 and 98%

Parameter No. 11: Maximum Light Level (1 byte).

Defines the light level that will correspond to the 99% of dimming.

Configuration	Result
2 to 99 99 (Default Value)	Defines which light level will correspond to 99% in the range between 2 and 99%

Parameter No. 20: Dimmable Load (1 byte).

Define if the connected loads are dimmable or not.

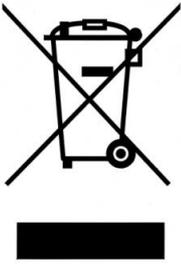
Configuration	Result
0	NON DIMMABLE LOAD Any dim level value greater than 0 will set the load to full load. Fade On and Fade Off are considered as 0 seconds.
1 (Default Value)	DIMMABLE LOAD The load can be controlled as dimmable load

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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