



*eldes*

**EWR2**

WIRELESS SIGNAL REPEATER

**Compatible with:**

- ESIM364 v02.07.11 and up
- EPIR3 v01.01.00 and up
- EWP1 v16 and up
- EKB3W v8 and up
- EW1 v33 and up
- EWS1 v16 and up
- EWD1 v19 and up
- EWK1 v19 and up
- EWS2 v15 and up
- EWF1 v3 and up
- EWK2 v3 and up
- EWS3 v1 and up
- EWD2 v2 and up
- Other latest ELDES wireless products

**Main features:**

- Expands the wireless signal range.
- LED indicator for data transmission indication.
- External and internal antenna.
- Backup battery.

EW2 is a wireless device intended to expand the wireless signal range between ELDES alarm system and wireless devices. EW2 comes equipped with a LED indicator intended for successful data transmission to the ELDES alarm system confirmation. EW2 is also equipped with the battery fault/wrong battery placement LED indication, external power connection LED as well as two antennas, one internal, and one external (optional), with the possibility to switch between antennas. In addition, EW2 features 1-Wire input for Dallas® DS18S20, DS18B20 digital temperature sensor connection and allows to add up to 8 temperature sensors for temperature monitoring. In order to start using EW2, it has to be bound to ELDES alarm system using *ELDES Configuration Tool* software or by sending a corresponding SMS text message to ELDES alarm system.

It is possible to connect up to 4 EW2 devices to ELDES alarm system. Upon connection, EW2 picks the channel automatically. The maximum wireless connection range is 150 meters (in open areas).

- Compatible with ESIM364, EPIR3. Up to 4 EW2 per system
- Expands the wireless signal range
- LED indicator for data transmission, battery state and external power indication
- Internal/external antenna
- Supports up to 8 Dallas® DS18S20, DS18B20 digital temperature sensors
- Supports up to 32 wireless devices

**1. CONTENT OF PACK**

<b>Item</b>	<b>Quantity</b>
1. EW2 .....	1
2. User manual.....	1
3. Rechargeable batteries.....	3
4. Screws for mounting on the wall.....	2
5. Zone resistors .....	2
6. GSM wireless antenna .....	1

**Not included:**

Power supply unit - can be obtained from your local distributor.

Power supply .....	DC 9-15V $\pm$ 300mA, if no additional devices are connected
Backup battery .....	1.2V AA rechargeable NiMH >2000mAh type HR6 (IEC) / 1.2H2 (ANSI/NEDA)
Number of batteries .....	3
Battery operation time .....	Up to 48h (depending on working conditions)
Number of zones .....	2
Wireless transmitter-receiver frequency .....	ISM 868/ ISM 915
Wireless communication range .....	Up to 30 meters in premises; up to 150 meters in open areas
Supported temperature sensor model .....	Dallas® DS18S20, DS18B20
Maximum supported number of temperature sensors .....	8
Range of operating temperatures .....	-20...+55°C
Humidity .....	0-90% RH @ 0... +40 °C (non-condensing)
Dimensions .....	94x137x25mm
Compatible with alarm systems .....	ELDES wireless

## 2.2. Main Unit and LED Indicator Functionality

### Main unit functionality

SMA	SMA type connector for wireless antenna
USB	Mini USB connection for firmware upgrades
F1	Fuse MINISMDC050F 0.5A
FW UPGRADE	Pins for firmware upgrades
TAMPER	Tamper button
RESET TO DEFAULT	Button for restoring default settings

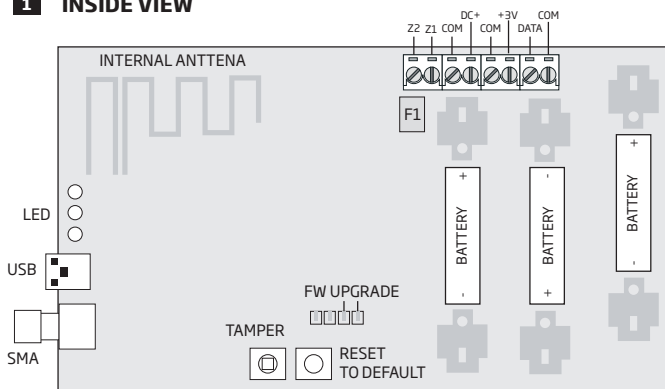
### LED indicator functionality

YELLOW	Indicates data transmission
RED	Battery fault
GREEN	External power OK
GREEN flashing	Charging batteries

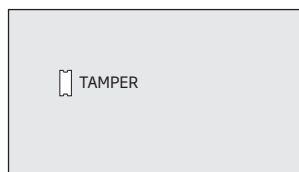
### Connector functionality

Z1	Zone 1 contact
Z2	Zone 2 contact
DC+	Positive power supply terminal
COM	Common terminal
DATA	1-Wire interface for temperature sensor connection
+3V	Temperature sensor power supply terminal (+3V)

## 1 INSIDE VIEW

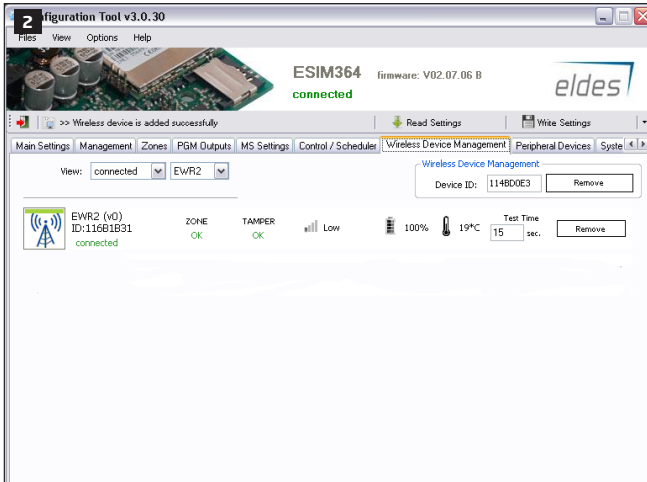


## BACK SIDE

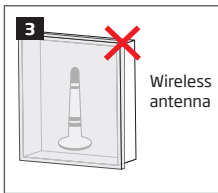


### 3. INSTALLATION

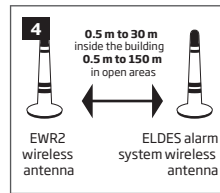
1. Open EWR2 enclosure.
2. Connect the wireless antenna to SMA connector (if needed).
3. Power up the device by **DC 9-15V** power supply unit.
4. Power up EWR2.
5. Once the device is powered up, the GREEN LED indicator will light up, indicating the successful main power connection.
6. Bind the device to the alarm system using *ELDES Configuration Tool* software. Open Wireless Device Management section, click on EWR2 icon and then click the **Add** button. Alternatively, you can enter a 8-digit wireless device ID located on the EWR2 enclosure and press **Add** button.



7. After EWR2 is added to the system, the YELLOW LED indicator will flash, indicating successful data transmission. Follow the EWR2 wireless signal strength indicated by *ELDES Configuration Tool* software. Place the EWR2 and/or the wireless antenna of EWR2 (if the external antenna is connected) in different areas until a location with the strongest wireless signal is discovered. In addition, changing the position of alarm system's wireless antenna might also improve the results. When placing the wireless antenna, please follow the recommendations:



- Never install in the following locations:
- inside the metal cabinet
  - closer than 20 cm from the metal surface and/or power lines



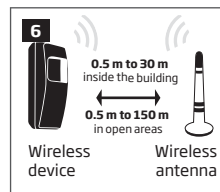
Recommended:

- keep the distance: 0.5 m to 30 m inside the building, 0.5 m to 150 m in open areas

8. Now place the ELDES wireless device in different areas and follow its wireless signal strength indication by *ELDES Configuration Tool* software in order to find the location with the strongest wireless signal available. When placing the wireless device, please follow the recommendations:



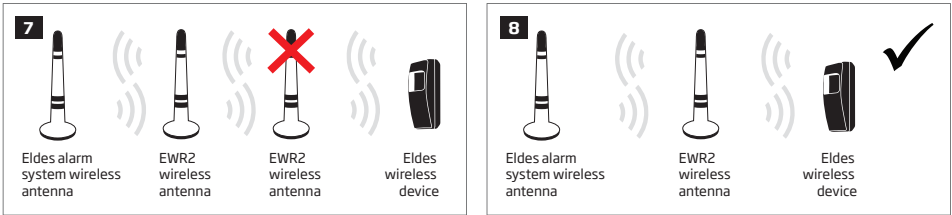
- Never install in the following locations:
- inside the metal cabinet
  - closer than 20 cm from the metal surface and/or power lines



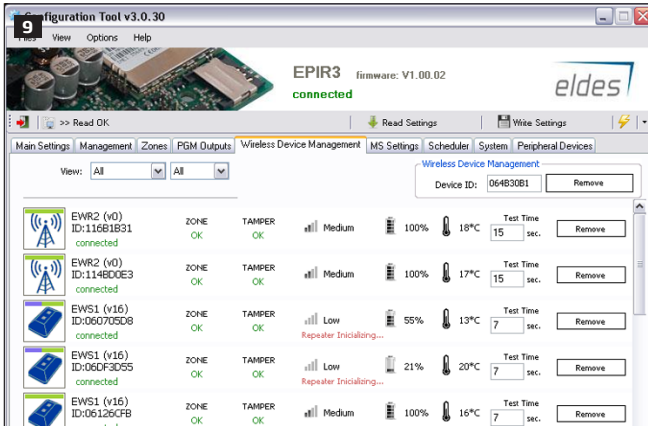
Recommended:

- face the front side of the wireless device towards the antenna.
- keep the distance: 0.5 m to 30 m inside the building, 0.5 m to 150 m in open areas.

9. Mind the locations of ELDES alarm system wireless antenna, EWR2, EWR2 wireless antenna and the ELDES wireless device. Please note that EWR2 can only expand the signal range of wireless devices and NOT other EWR2 repeaters:



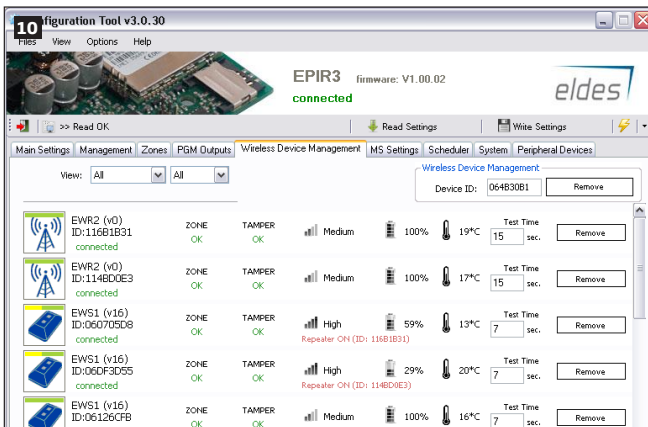
10. Wireless devices communicating directly with ELDES alarm system are indicated by the green stripe above their icons. Wireless devices with a bad wireless signal level, detected by EWR2 are indicated by the blue stripe at the top left corner of their icons.



**Green stripe** - Wireless device is communicating directly with ELDES alarm system.

**Green-blue stripe** - Wireless device has a bad signal level, connecting to EWR2.

Wireless devices which are connected to EWR2 are indicated by the yellow stripe at the top left corner of their icons.



**Green stripe** - Wireless device is communicating directly with ELDES alarm system.

**Green-yellow stripe** - Wireless device is connected to EWR2, signal level is good.

If the stripe above the wireless device doesn't change its colour to Yellow, move the device closer to ELDES alarm system or EWR2.

11. The system is ready for use.

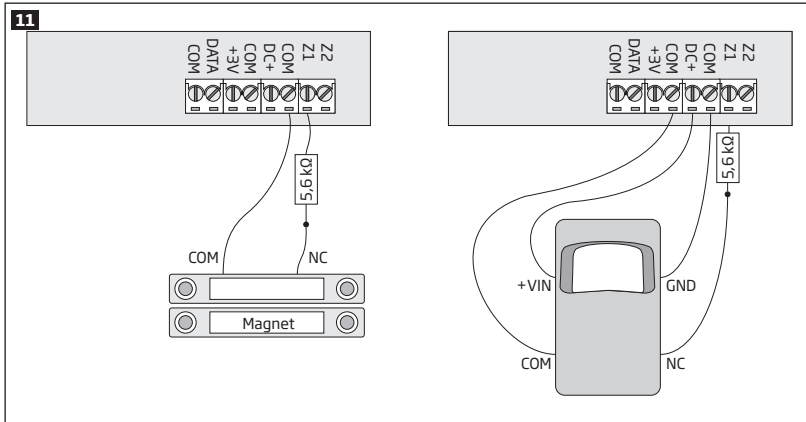
**NOTE:** For a wider wireless signal coverage in the area, place one or several (up to 4 in total) EWR2 devices.

**NOTE:** Unlike EWR1, it is necessary to bind EWR2 to the system using *ELDES Configuration Tool*, otherwise the device will not be able to operate correctly.

**ATTENTION!** DO NOT use EWR1 and EWR2 in one system at the same time, otherwise the system will not be able to operate correctly.

## 4. EWR2 ZONES AND TAMPERS

EWR2 is equipped with 2 zones. This feature enables wireless access for to 2 wired devices such as movement PIR sensors, magnetic door contacts etc.



**ATTENTION:** If you are using the wiring method, described above (Figure No. 11, right - sided), keep in mind that in case of main power loss, EWR2 will keep on functioning (using backup batteries), thus it won't be able to charge any other exterior devices.

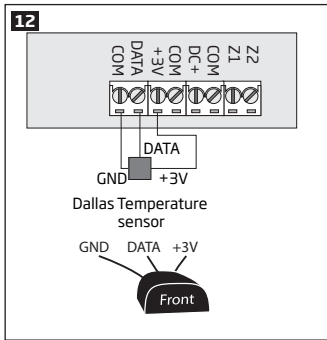
In case of tamper violation, the alarm is caused regardless of system being armed or disarmed. There are 2 ways to detect tamper violation on EWR2:

- **By tamper switch.** EWR2 comes equipped with 2 built-in tamper switches intended for enclosure supervision:
  - one located on the front side of the PCB supervising the front cover in case it is illegally opened (see fig. #1).
  - the other one located on back of the PCB supervising the back side of the enclosure in case the EWR2 is illegally detached from the wall (see fig. #1).Once the enclosure of EWR2 is tampered, the tamper switch will become triggered. This action will be followed by alarm, resulting in sending an SMS text message and/or phone call to the user. The SMS text message contains the violated tamper name.
- **By wireless connection loss.** The wireless connection loss between EWR2 and ELDES alarm system leads to alarm. The system identifies this event as a tamper violation and sends alarm by SMS text message and phone call to the user (-s) by default. The SMS text message contains the wireless device model, wireless ID code and tamper name. The user will also be notified by SMS text message as soon as the wireless signal is restored.

**ATTENTION:** The tamper will not operate if both wireless zones are disabled.

## 5. TEMPERATURE SENSORS

EWR2 allows user to add up to 8 temperature sensors, intended for temperature measurement in 8 different surrounding areas in real-time. 1 -Wire input requires only one port pin for communication with sensor. User may use a single temperature sensor or multiple temperature sensors simultaneously - wire up one after another in parallel - until the number of 8 sensors is reached. Once the temperature sensor (-s) is wired, it is necessary to enable it, using *ELDES Configuration Tool* software (after pairing EWR2 device with the system). This function is valid for: ESIM364 v02.11.00 and up; EPIR3 v01.07.00 and up. For more details on how to configure and pair the device with the system, please refer to *ELDES Configuration Tool* software's HELP section or ESIM364 user manual.

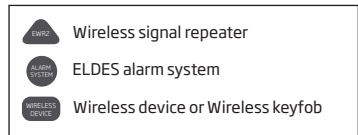
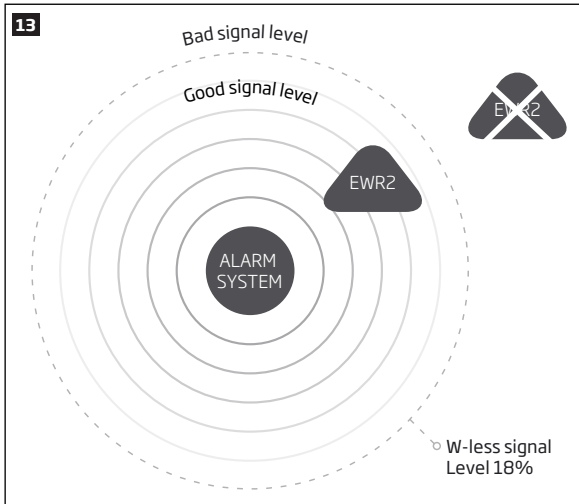


## 6. EWR2 FUNCTIONALITY

### Antenna Switching

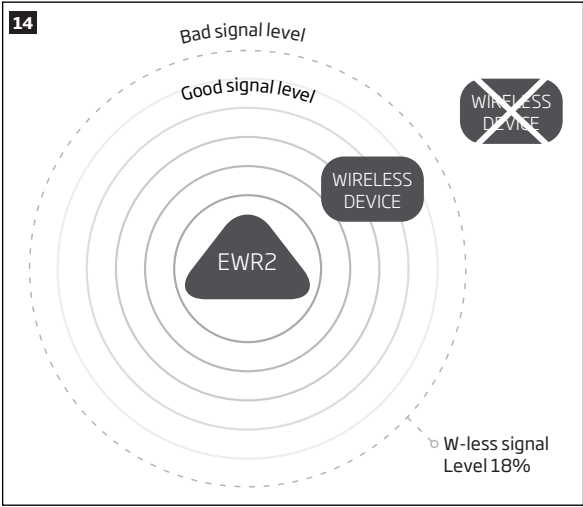
EWR2 comes equipped with the internal wireless antenna. The internal antenna can be switched with the external one. Connect your external wireless antenna to SMA type connector. EWR2 will automatically detect the external antenna connection and will use it for further communication.




### Smart Repeat



EWR2 begins expanding the signal range for wireless devices if the certain conditions are met. In order for EWR2 to function properly, the wireless signal level between EWR2 and ELDES alarm system must be at least 18% (see **Fig. No 13**).

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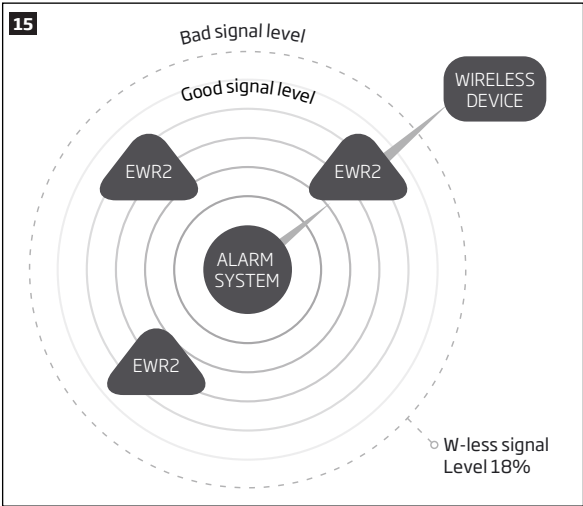
-  Wireless signal repeater
-  ELDES alarm system
-  Wireless device or Wireless keyfob




In order for EWR2 to start expanding the signal range of a wireless device, the wireless signal level between EWR2 and a Wireless device must be at least 18% (see **Fig. No. 14**).

After EWR2 was successfully bound to the ELDES alarm system, it will begin measuring the signal level of wireless devices within its range and transfer the information to ELDES alarm system.

- If signal level between a wireless device and ELDES alarm system is above 18%, EWR2 will take no action.
- If the signal level between a wireless device and ELDES alarm system is below 18%, EWR2 will connect to the device and start expanding its signal range by transferring the data from a wireless device to ELDES alarm system and the other way around.

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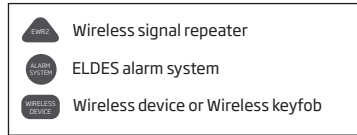
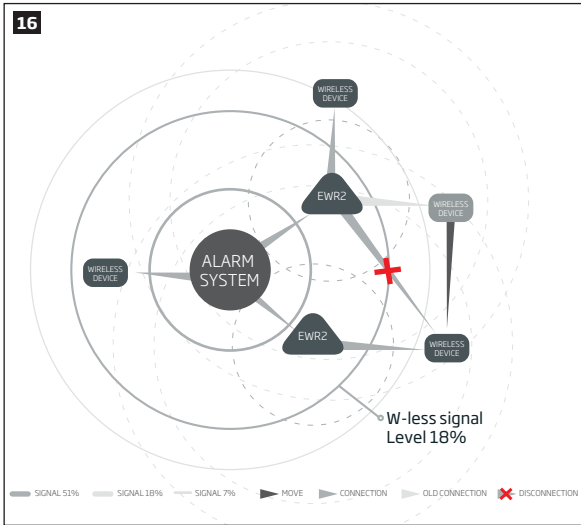
-  Wireless signal repeater
-  ELDES alarm system
-  Wireless device or Wireless keyfob

If more than one repeater is connected to ELDES alarm system at a time, the one that receives the strongest signal from a wireless device, will be used to expand its signal range.

After EWR2 has connected to a wireless device, it will continue to transfer data between the wireless device and ELDES alarm system, until the signal level of the device rises up to 51% or higher. Once the wireless signal level has risen, EWR2 will automatically disconnect from the wireless device, which will then be able to exchange data with ELDES alarm system directly.



## EWR2 Switching

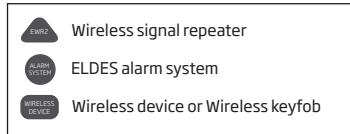
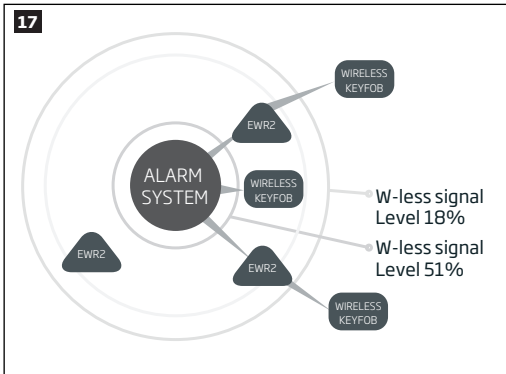


If more than one repeater is connected to ELDES alarm system at a time, the one that receives the strongest signal from a wireless device, will be used to expand its signal range. If the wireless device was connected to a certain EWR2, and was moved away from it to a different location, EWR2 repeaters will switch, and the device's signal range will be expanded by the repeater that has a better signal with the wireless device.

## EWR2 Setup Time

The time of connection of EWR2 to a wireless device may depend on the device type. In general, it takes approximately 10 minutes for EWR2 to detect and, if necessary, to connect to all wireless devices within its range. During the connection time EWR2 measures the signal level of a wireless device. If the signal level doesn't change or does not rise up to 18%, EWR2 connects to the wireless device.

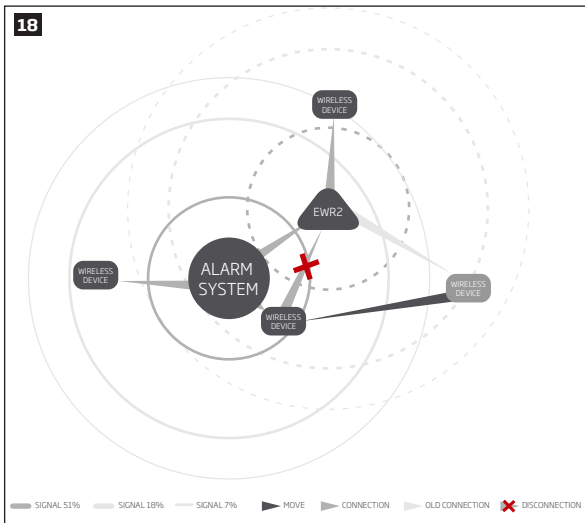
## EWK1/EWK2 Connection






When wireless keyfobs EWK1/EWK2 are bound to the system, EWR2 starts expanding the wireless signal of all keyfobs within its range, regardless of their wireless signal strength. If more than one repeater is connected to ELDES alarm system at a time, the one that is closer to the keyfob at that moment will be used to expand its signal range.

## Disconnecting From a Wireless Device

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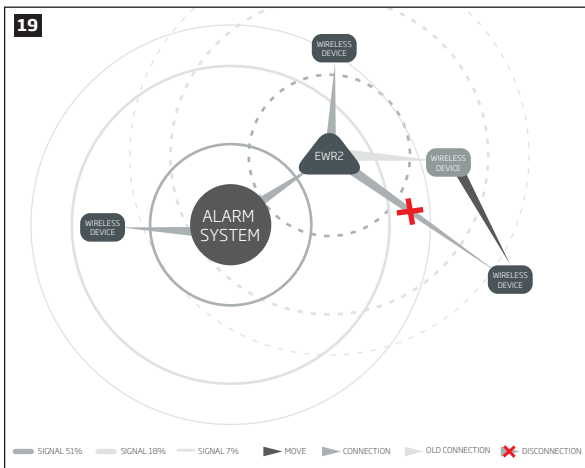





-  Wireless signal repeater
-  ELDES alarm system
-  Wireless device or Wireless keyfob

EWR2 automatically disconnects from a wireless device under certain conditions:

When the signal level between a wireless device and ELDES alarm system rises to 51% or higher.

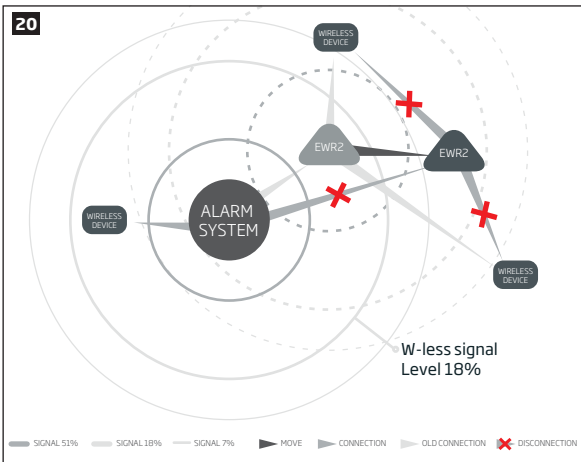
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-  Wireless signal repeater
-  ELDES alarm system
-  Wireless device or Wireless keyfob

EWR2 automatically disconnects from a wireless device under certain conditions:

When the signal level between a wireless device and EWR2 drops to 7% or lower.



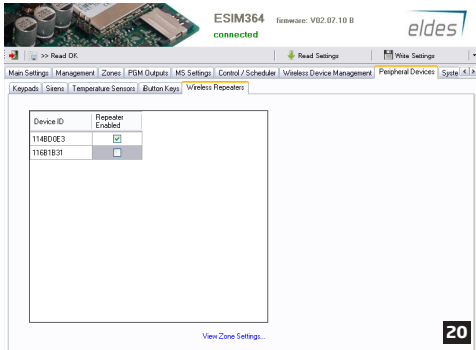
-  Wireless signal repeater
-  ELDES alarm system
-  Wireless device or Wireless keyfob

EWR2 automatically disconnects from a wireless device under certain conditions: When the signal level between an alarm system and EWR2 drops to 7% or lower.

### Enabling/disabling EWR2 repeating functionality

After EWR2 repeater(-s) is successfully bound to the alarm system, it is possible to enable/disable its repeating function remotely. You can do that using *ELDES Configuration Tool* software. EWR2 settings can be found in Peripheral Devices -> Wireless Repeaters section. You can disable or enable the repeating function of certain EWR2 repeaters by ticking or unticking the box near the repeater's ID number. The ID number can be seen in *ELDES Configuration Tool* software, Wireless Device Management section. All repeaters, connected for the first time have the repeating function enabled by default.

**NOTE:** When the repeating function is turned Off, EWR2 zones (if used) will still be able to operate normally.



## **7. UPDATING THE FIRMWARE VIA USB CABLE**

1. Remove 1 battery and disconnect the power supply.
2. Short circuit (connect) FW pins (this step should be used only for hardware version older than v.6).
3. Connect the device via USB cable to the PC.
4. The new window must pop-up where you will find the .bin file. Otherwise open My Computer and look for CRP DISABLED drive.
5. Delete the .bin file found in the drive.
6. Copy the new firmware .bin file to the same window.
7. Unplug USB cable.
8. Firmware updated.

## **8. RESTORING DEFAULT PARAMETERS**

1. Remove 1 battery and disconnect the power supply.
2. Press and hold the reset button.
3. Connect the external power supply or USB cable to the PC.
4. Wait until the RED LED indicator quickly flashes several times.
5. Release the reset button.
6. Parameters restored to default.

## 9. ADDITIONAL INFORMATION

### Limited Liability

The buyer must agree that the system will reduce the risk of fire, theft, burglary or other dangers but does not guarantee against such events. "ELDES UAB" will not take any responsibility regarding personal or property or revenue loss while using the system. "ELDES UAB" liability according to local laws does not exceed value of the purchased system. "ELDES UAB" is not affiliated with any of the cellular providers, therefore is not responsible for the quality of cellular service.

### Manufacturer Warranty

The system carries a 24-month warranty by the manufacturer "ELDES UAB". Warranty period starts from the day the system has been purchased by the end user. The warranty is valid only if the system has been used as intended, following all guidelines listed in the manual and within specified operating conditions. Receipt must be kept as a proof of purchase date. The warranty is voided if the system has been exposed to mechanical impact, chemicals, high humidity, fluids, corrosive and hazardous environment or other *force majeure* factors.

### SAFETY INSTRUCTIONS

Please read and follow these safety guidelines to safeguard yourself and others:

- DO NOT use the system where it can interfere with other devices - such as medical devices
- DO NOT use the system in hazardous environments
- DO NOT expose the system to high humidity, chemical environments or mechanical impact
- DO NOT attempt to repair the system yourself - any repairs must be carried out by fully qualified personnel only

The EWR2 can be powered by a 9-15V 300mA DC power supply unit, if no additional devices are connected. The device is not meant for outdoor use, i.e. you should use it inside a building and the power supply unit must be plugged into a standard Euro 2-pin socket or UK 3-pin socket (depending on the version of power supply unit you have bought). When connecting the power supply, mind the polarity terminals. DO NOT switch the polarity terminals places. The main circuit should be protected by short circuit or over-current protection.

Please use the power supply that meets the EN 60950-1 standard. Any additional device you connect to the system, such as a computer, must also be powered by an EN 60950-1 approved supply.

Disconnect the mains power before installing. Never install or carry out maintenance during stormy weather. The electric socket that powers the device must be easily accessible.

To switch the system off, unplug the external electric power supply or power down any other linked device that EWR2 is powered from. A blown fuse cannot be replaced by the user. The replacement fuse has to be of the kind indicated by the manufacturer (fuse F1 model - MINISMDC050F 0.5A).

**ATTENTION!** For EWR2 ONLY rechargeable batteries can be used!



The WEEE (Waste Electrical and Electronic Equipment) marking on this product (see left) or its documentation indicates that the product must not be disposed of together with household waste. To prevent possible harm to human health and/or the environment, the product must be disposed of in an approved and environmentally safe recycling process. For further information on how to dispose of this product correctly, contact the system supplier, or the local authority responsible for waste disposal in your area.

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**CE 1383**

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[www.eldes.it](http://www.eldes.it)