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Made in Czech Republic

02-100/2017 Rev.: 0

AirWD-101

Magnetic detector (outdoor)

Characteristics

- The magnetic detector is used to detect motion – it is activated by attaching / removing the magnet from the sensor.
- The Sigfox, LoRa or NB-IoT network can be used for message transmission.
- Data is sent to the server from which it can be subsequently displayed as a smartphone, application, or Cloud notification.
- Battery status information is sent as a message to the server.
- Anti-sabotage (tamper): If the device is tampered with, the message is immediately sent to the server.
- Power supply: 1x 3.6 V batteries SAFT with approx. 5 years (depending on the frequency of use).
- Protection degree IP65.

Description

Detector   D/WD

1. Tamper
2. NanoSIM slot (AirWD-100NB only)
3. Programming pins
4. Button SET
5. Mounting hole Ø 4.3 mm wall
6. Antenna
7. Magnetic contact
8. Battery
9. LED
10. Magnet

General instrucions

Internet of Things (IoT)

- The IOT wireless communications category describes the Low Power Wide Area (LPWA). This technology is designed to provide full-range coverage both inside and outside buildings, energy-saving and low-cost operation of individual devices. Individual networks - Sigfox, LoRa, NarrowBand - are available to use this standard.

Sigfox network information

- The network supports bidirectional communication but with a limited number of feedbacks. It uses the free frequency band divided by Radio Frequency Zones (RCZ).
    - RCZ1 (868 MHz) Europe, Oman, South Africa
    - RCZ2 (902 MHz) North America
    - RCZ3 (923 MHz) Japan
    - RCZ4 (920 MHz) South America, Australia, New Zealand, Singapore, Taiwan
- Sigfox has more coverage across countries, so it is better suited for long distance monitoring.
- For more information on this technology, please visit www.sigfox.com.

LoRa network information

- The network is bidirectional and its communication uses free frequency band.
    - 865 - 867 MHz   India
    - 867 - 869 MHz   Europe
    - 902 - 928 MHz   North America, Japan, Korea
- The advantage of this network is the possibility of freely deploying individual stations in local locations, thus strengthening their signal. It can therefore be used efficiently in company premises or, for example, in local parts of cities.
- For more information on this technology, please visit www.lora-alliance.org.
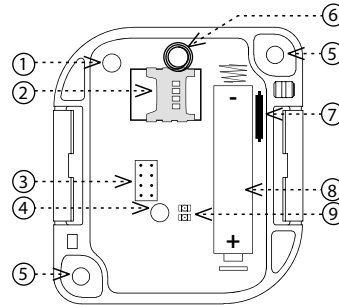
Information about the NarrowBand network

- The network provides two-way communication and the only one to use the licensed LTE band. Our devices allow band 1 (2100MHz), Band 3 (1800MHz), Band 8 (900MHz), Band 5 (850MHz), Band 20 (800MHz) and Band 28 (700MHz).
- It uses this SIM card technology for each device.
- The advantage of NarrowBand is the use of already built-up grids, which ensures sufficient reception outside and inside buildings.
- For more information on this technology, please visit www.vodafone.cz

Caution for proper operation:

- Products are installed according to the wiring diagram given for each product.
- For proper device functionality, it is necessary to have sufficient coverage of the selected network at the installation site.
- At the same time, the device must be registered in the network. Successful device registration on a given network requires a charge for traffic.
- Each network offers different tariff options - it always depends on the number of messages you want to send from your device. Information on these tariffs can be found in the current version of the ELKO EP pricelist.

Cloud app assignment

It is done in your Smartphone application. Enter the relevant information on the product cover into the application.

Function

- When the battery is inserted, the detector sends an initial message, the red LED blinks.
- Activation occurs when the magnet is attaching / removed from the sensor.
- The detector sends a data message every 12 hours. In case of a state change, it sends the data message immediately.
- In case of an open box, every movement of the magnet in/out is indicated by the blinking of the red LED. In the case of a weak battery when moving in / out of the magnet is indicated by the LED flash twice.

Assembly

Detector
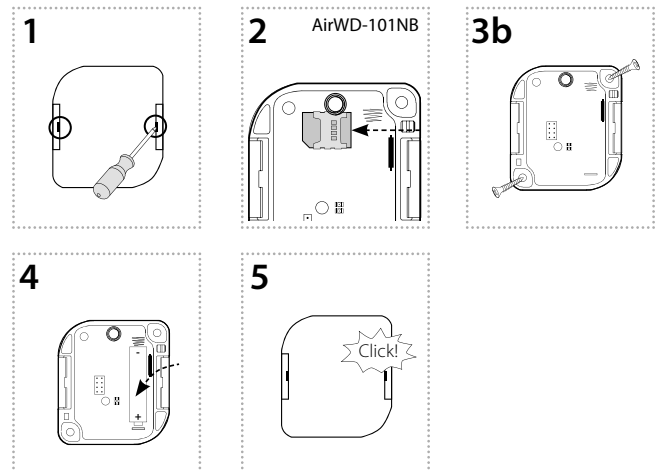
1. Using a flat-blade screwdriver gradually slide it into one groove and the other in the lid and swing open the cover.

2. Only with AirWD-101NB: Carefully insert nanoSIM (the device must not be energized when inserting or replacing nanoSIM!)

3. The product can be attached in two ways:
   a) Directly on a flat surface by gluing * - apply a suitable adhesive to the bottom of the base. Place the base in the desired location and let it dry.
   b) Using a suitable fastener ** by screwing - drill holes into the base with two holes of suitable diameter corresponding to the position of the holes in the bottom of the box. Place the base at the desired location and attach it with suitable bonding material according to the substrate.

Technical parameters

	AirWD-101S	AirWD-101L	AirWD-101NB
Power supply			
Battery power:	1x 3.6V LS 14500 Li-SOCl$_2$ AA		
Battery life:	max. 5 years (Depending on the type of sensing and pulse frequency and transmission)		max. 3 years
Standby consumption:	0.2 mW		
Transmitting power consumption:	250 mW	150 mW	850 mW
Setting			
Setting:	Using a message from the server, the programming cable		
Alarm Detection:	message to the server		
Battery status view:	message to the server		
Control			
Control:	Button SET / Magnetic contact / Tamper		
Detection			
Closed:	< 1.5 cm		
Open:	> 2 cm		
Reliability:	99.9 %		
Sensor:	Reed magnetic contact		
Communication			
Protocol:	Sigfox	LoRa	NB-IoT
Transmitter frequency:	RCZ1 868 MHz	868 MHz	LTE Cat NB1*
Range in open space:	Approx 50 km**	Approx 10 km**	Approx 30 km**
Transmission power (max.):	25 mW / 14 dBm	25 mW / 14 dBm	200 mW / 23 dBm
Other parameters			
Working temperature:	-30... +60 °C (Pay attention to the operating temperature of batteries)***		
Storage temperature:	-30 .. +70°C		
Operation position:	vertical		
Mounting:	glue / screws		
Protection degree:	IP65		
Detector			
Dimension / Weight:	70 x 62 x 34 mm / 43 g (without battery)		
Magnet D/WD****			
Dimension / Weight:	15 x 75 x 13 mm / 13 g		

* frekvenční pásma B1 / B3 / B5 / B8 / B20 / B28
** dle pokrytí jednotlivých sítí
*** pracovní teplota baterií je v rozsahu -60...+85 °C
**** součást balení

Safe handling

When handling a device unboxed it is important to avoid contact with liquids. avoid unnecessary contact with the components of the device. Do not touch the metal objects inside the unit.

Warning

Read the operating instructions before installing the device and putting it into operation. Instruction manual is designated for mounting and also for user of the device. It is always a part of its packing. Installation and connection can be carried out only by a person with adequate professional qualification upon understanding this instruction manual and functions of the device, and while observing all valid regulations. Trouble-free function of the device also depends on transportation, storing and handling. In case you notice any sign of damage, deformation, malfunction or missing part, do not install this device and return it to its seller. It is necessary to treat this product and its parts as electronic waste after its lifetime is terminated. Before starting installation, make sure that all wires, connected parts or terminals are de-energized. While mounting and servicing observe safety regulations, norms, directives and professional, and export regulations for working with electrical devices. Do not touch parts of the device that are energized – life threat. To ensure the transmission of the radio signal, make sure that the devices in the building where the installation is installed are correctly located. Unless otherwise stated, the devices are not intended for installation in outdoor and damp areas, they must not be installed in metal switchboards or in plastic cabinets with metal doors - this prevents transmission of the radio frequency signal. iNELS Air is not recommended for controlling life-saving instruments or for controlling hazardous devices such as pumps, heaters without thermostat, lifts, hoists, etc. - radio frequency transmission may be overshadowed by obstruction, interference, transmitter battery may be discharged etc., thereby disabling the remote control.

4. Insert the battery and check the correct location (when the battery is inserted, the detector functionality message will be sent to the application).

5. Replace and snap the front cover. When closing, the handles have to be snapped to their original position.

Magnet D/WD

You can attach the magnet in two ways:

- Directly on a flat surface by gluing * - Apply a suitable adhesive to the outside of the base. Place the base on the desired location (on the window or door frame) and let it dry.
- Using a suitable fastener *** by screwing.
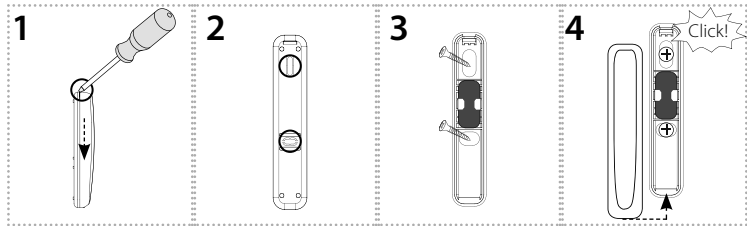
1. Push a screwdriver into the hole in the upper part of the magnet, the top cover slide and pull down magnet to open.
2. Break and remove the screw plugs (e.g. with a Screwdriver).
3. Place the base at the desired location (on the window or door frame) and attach it with suitable bonding material according to the substrate.
4. Insert the top cover of the cover into the hole in the lower cover and snap it into place.

Recommendations for installation

- For the proper operation of the detector, the correct positioning position must be maintained so that the sensing distance is maintained when the window or doors are closed. Therefore, test the position of the detector and the magnetic module before installation.
- WARNING: The detector has a magnet sensor located only on one side, so pay attention to the correct position relative to the magnet.
- The detector is suitable for outdoor use. Operating conditions are consistent with conventional chemically non-aggressive environments. The recommended working position is vertical.
- Before fixing the detectors in place consult with the manufacturer of the windows and doors, with regards to the most appropriate way to fix the detector.
- With the appropriate location (at the bottom of the window) can be applied to a window in a ventilation position.
- The product does not require special handling and maintenance.
- Ensure the correct location - see Warning.

* The glue must meet the optimal conditions for product placement (influence of temperature, humidity ...)

** For example, a screw or screw of max. Ø 4 mm can be used as a suitable fastener material, 13 mm (distance to the partition in the box) must be added to the required length for attachment to the substrate.

*** Suitable fitting material can be, for example, a countersunk head screw, a screw Ø of 3 mm.

Replacing batteries

1. Using a flat-blade screwdriver gradually slide it into one and then the other groove in the lid and swing open the cover.
2. Remove the discharged battery and insert a new battery into the holder. Beware of polarity. Both LEDs will flash 3 times (see device status indication).
3. Replace and snap the front cover.

Notice:

Only use batteries designed for this product correctly inserted in the device! Immediately replace weak batteries with new ones. Do not use new and used batteries together. If necessary, clean the battery and contacts prior to using. Avoid the shorting of batteries! Do not dismantle batteries, do not charge them and protect them from extreme heating - danger of leakage! Upon contact with acid, immediately rinse the affected area with a stream of water and seek medical attention. Keep batteries out of the reach of children. Batteries must be recycled or returned to an appropriate location (e.g. collection container) in accordance with local legal provisions.

Restart

- Open the cover. Power interruption (remove the battery from the device).
- Press SET> 1min.
- Connect power (insert battery). Close the cover.

Device states

Unit initialization	Indication	AirWD-101S	AirWD-101L	AirWD-101NB
Start	3 x R + G blinks	power supply (external or battery), reset unit		
Search for BTS * 2)	2 x flashes R (2xR _ 2xR _ ...)	x	Search availability BTS	Connection to the network
SIM ERR *2) ERR *2)	5 x flashes R (repeatedly)	error MAC / error MODULU / error SIM		SIM Error - cannot be loaded (SIM card insertion and rotation check) / or NB-IoT MODULE error
Successful network connection * 2)	1 x flashes R	start unit ok		
Measurement				
Tamper	without indication	opening the cover		
Magnet	3 x flashes G	non contact / contact magnet		
SET button short press (> 2s)	1 x flashes G	test, cancel, „long press"		
SET button longer press (> 2s / <5s)	2 x flashes G	setting mode (signaling of measurement / pulses)		
Communication				
Communication	1 x flashes R	sending / receiving data		
Other known states				
Does not respond to the SET button	any LED lights	it is necessary to disconnect the power supply (external or battery), after 60 seconds after the LED goes out, insert the battery		
The unit is still in reset	still indicates start	the battery may be discharged		
The unit does not respond even after removal insert the battery	without indication	a discharged battery or a damaged product		

When the tamper is pressed, the LED is turned off!

Note:
R... LED red
G... LED green

* 1) Indicates only when you press SET> 2 s (setting mode)
* 2) Planned