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Made in Czech Republic

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EN

AirSF-100

Flood detector

Characteristics

- The flood detector is used to detect water leakage - the activation occurs the moment the flooding of the contacts located on the underside of the detector occurs.
- Provides a quick solution to learn about unwanted flooding in your bathroom or kitchen that you can react too immediately.
- With a wireless Sigfox / LoRa / NB-IoT communication network the device can be immediately put in the desired location and run immediately.
- Anti-sabotage function - the detector contains a motion sensor and sends a message to the server during any unauthorized manipulation.
- Flood detection is signalled by vibration, optical and acoustic signalling. In the case of water detection, data is sent to the server, ...
- Data is sent to the server from which it can be subsequently displayed as a smartphone, application, or Cloud notification.
- Anti-sabotage: If access to the device is unauthorized, a message is immediately sent to the server.
- Power supply: 1x CR123A battery life approx. 2 years (depending on frequency of use).

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.

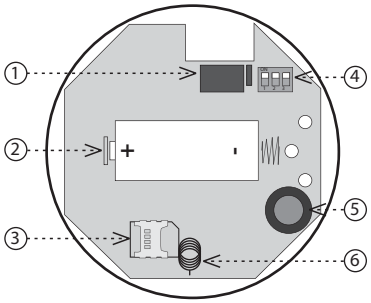
Information about the NarrowBand network

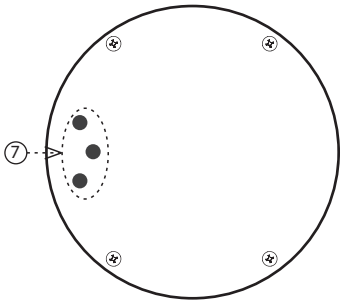
- The network provides two-way communication and the only one to use the licensed LTE band. Our devices allow band 1 (2100MHz), Band 3 (1800MHz), Band 8 (900MHz), Band 5 (850MHz), Band 20 (800MHz) and Band 28 (700MHz).
- It uses this SIM card technology for each device.
- The advantage of NarrowBand 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.

Description





Underside view

1. Vibrating motor
2. Battery
3. NanoSIM slot (AirSF-100NB only)
4. DIP switch
   - Position 1: turn off sound signal
   - Position 2: turn off mechanical signal
   - Position 3: turn off optical signal
5. Hooter
6. Antenna
7. Probes pads

Cloud app assignment

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

Function

The detector is designed to detect the presence of water in flooded areas such as cellars, bathrooms, warehouses, boats, etc. It is suitable for dealing with potentially recurring situations such as bath overflow, washing machine, dishwasher, boiler, blockages or foul waste, and floods due to groundwater, river or other emergencies.

Detector states

- When the battery is inserted, the detector sends an initial message, the red LED blinks. The next data status report is sent at twelve-hour intervals.
- Alarm - when the scanning contact is connected, the detector sends the data message and starts the set alarm. The signalling type can be set by the DIP switch. Signalling stops after 3 minutes even if the reason for the alarm has not been removed. In case of positive detection, the audible alarm is restored after 5 minutes.
- Terminate the alarm after a few seconds after the flood has dropped (disconnect the connection contacts).

Technical parameters

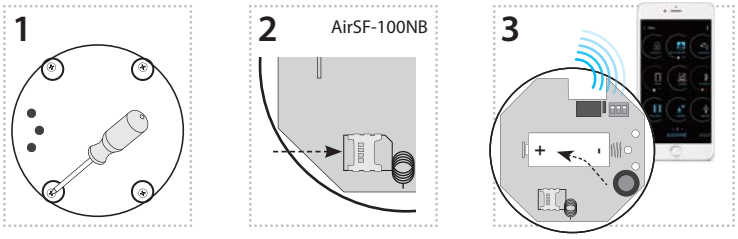
	AirSF-100S	AirSF-100L	AirSF-100NB
Power supply			
Battery power:	1x CR123A battery		
Battery life:	approx. 2 years (depending on frequency of use)		
Setting			
Alarm Detection:	message to the server,		
Battery status view:	vibration, optical and audible alarm message to the server		
DIP switch:	Position 1: turn off sound signal		
Acoustic signal:	Position 2: turn off mechanical signal Position 3: turn off optical signal greater than 85 dB		
Detection			
Sensor:	contacts for flooding		
Detection principle:	contact between the sensor sensed liquid		
Response Time:	2 s after connecting the scanning contacts		
Measurement accuracy:	99.8 %		
Sensitivity:	in the range 0.03 - 20 kΩ		
Indication			
- red LED:	broadcast, alarm		
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**
Other parameters			
Working temperature:	0…+50°C (Pay attention		
Storage temperature:	to the operating temperature of batteries) -30…+70°C		
Operation position:	capture contacts for flooding downwards		
Mounting:	loose		
Protection degree:	IP68		
Dimension:	Ø 89 x 23 mm		
Weight:	25 g (without battery)		

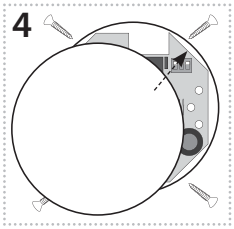
* Multiple frequency bands of B1 / B3 / B5 / B8 / B20 / B28
** Depending on network coverage

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.

Replacement of a battery





1. Use a screwdriver to open the detector.
2. For AirSF-100NB only: Carefully insert nanoSIM (the device must not be energized when inserting or replacing nanoSIM!)
3. Insert the battery and check the correct location (when the battery is inserted, the detector functionality message will be sent to the application).
4. Replace the front cover and screw it in.

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.

Placement recommendations

After inserting the battery and setting the required alarm, place the detector in any place where flooding is supposed to occur.

The detector requires no maintenance and is intended for indoor use.

Safe handling

When handling a device unboxed it is important to avoid contact with liquids. Never place the device on the conductive pads or objects, avoid unnecessary contact with the components of the device.

Conductivity of liquids

Liquids suitable for detection

Type of liquid	Resistivity [Ωcm]*
Drinking water	5-10 kΩ
Well water	2-5 kΩ
River water	2-15 kΩ
Rain water	15-25 kΩ
Waste water	0.5-2 kΩ
Seawater	~0.03 kΩ
Salt water	~2.2 kΩ
Natural / hard water	~5 kΩ
Chlorinated water	~5 kΩ
Condensed water	~18 kΩ
Milk	~1 kΩ
Milk serum	~1 kΩ
Fruit juices	~1 kΩ
Vegetable Juices	~1 kΩ
Broths	~1 kΩ
Wine	~2.2 kΩ
Beer	~2.2 kΩ
Coffee	~2.2 kΩ
Soap toam	~18 kΩ

Inadmissible liquids

- Demineralised water
- Deionised water
- Bourbon
- Gasoline
- Oil
- Liquid gases
- Paraffi n
- Ethylene glycol
- Paints
- High alcohol-content liquids

* Resistivity characterizes the local conductivity or resistive properties of materials which conduct electric current.