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Made in Czech Republic

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EN

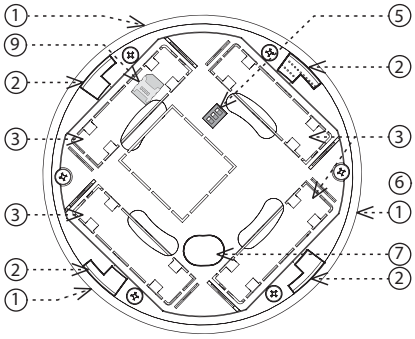
AirSD-100NB

Smoke detector

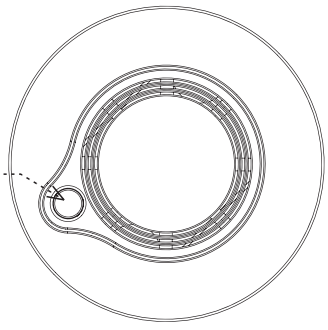
Characteristics

- The smoke detector is used for the early warning of an emerging fire in residential and commercial buildings and also measures the actual temperature, humidity and light intensity in the room.
- The detector utilises a scanning method using an optical chamber, which has enhanced smoke detection responses.
- Self-test function highlights the failure of the detector, eliminating the malfunction in the event of a fire.
- Anti-sabotage: If access to the device is unauthorized, a message is immediately sent to the server.
- Thanks to the wireless solution and NB-IoT communication, it can communicate instantly to your chosen location and be operated immediately.
- Data is sent to the server from which it can be subsequently displayed as a smartphone, application, or Cloud notification.
- Battery power can be sent to the server when it is powered by a battery.
- Power supply: battery 4 x 1.5 V AA, the battery life is around 1 year.

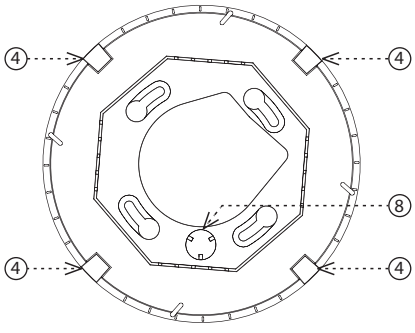
Description



The underside of the detector



The front of the detector



The inner side of the base

1. Two-color LED position
2. Holes for locking segments
3. Battery
4. Secure segments
5. DIP switch - Position 1 - Turn off scanning signaling
6. Button SET
7. Tamper position
8. Probe for magnet scanning tampermenty
9. NanoSIM slot

Cloud app assignment

It is done in your Smartphone application. Enter the relevant data located on the detector cover into the application.

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. The NarrowBand network is available to use this standard.

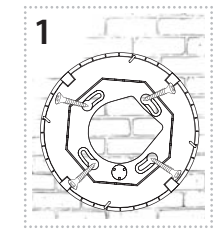
Information about the NarrowBand network

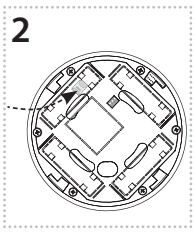
- The network provides two-way communication and the only one to use the licensed LTE band. Our devices allow band 1 (2100MHz), Band 3 (1800MHz), Band 8 (900MHz), Band 5 (850MHz), Band 20 (800MHz) and Band 28 (700MHz).
- It uses this SIM card technology for each device.
- The advantage of NarrowBand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

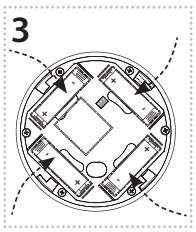
Caution for proper operation:

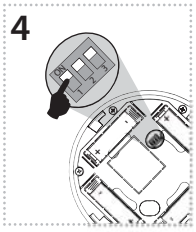
- Products are installed according to the wiring diagram given for each product.
- For proper device functionality, it is necessary to have sufficient coverage of the selected network at the installation site.
- At the same time, the device must be registered in the network. Successful device registration 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.

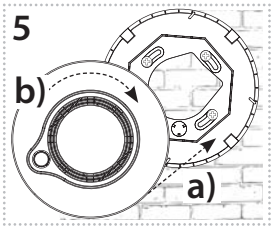
Assembly

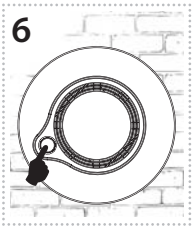












1. Place the base at the desired location (on a flat surface). You can use the base as a drilling template. Attach the base with suitable bonding material * according to the substrate.
2. Carefully insert nanoSIM (the device must not be energized when inserting or replacing nanoSIM!)
3. Insert the batteries into the detector and check that they are correctly positioned (a detector functionality message will be sent to the application when the batteries are inserted).
4. Set DIP 1 as required.
5. Attach the detector to the base so that the projection on the base faces the tamper position in the detector cover (a). Turn the detector clockwise (b).
6. Press the test button to test the correct alarm function (see Test Detector Test).

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

Function

An internal, battery-powered smoke detector combines the timely detection of smouldering and open fires from which smoke escapes. It is equipped with an optical smoke detector for smoke detection. An example of a smouldering fire is a burning cigarette on a couch or bedding, which is a common cause of fires.

Indicators and detector states

After inserting the batteries, the detector sends an introductory message containing the measured temperature, humidity, light intensity, optical-smoke sensor status, and firmware version of the device.

- The detector scans for smoke every 10 seconds, the green LED blinks at the same time (the LED signalling can be switched off by the DIP switch). Every 10 minutes the detector senses temperature, humidity and light intensity. Displays the measured data report at six hourly intervals. In the case of smoke detection or rapid temperature change it is displayed immediately.
- Alarm - the sensor detects smoke, the red LED blinks within 1 second, the detector emits a loud, intermittent „beep". Terminate the alarm by scattering the smoke. The audible alarm can be switched off by the test button, in the case of positive smoke detection; the audible alarm is restored after 5 minutes.
- Dead battery:
  - sending a message to the server
  - every 5 s 3 times the red LED lights up on the detector.
- Detector failure:
  - sending a message to the server
  - Indication of the red LED on the detector and one short beep every 40 seconds.
- Removed from base:
  - sending a message to the server
  - every 3 seconds the red LED lights up on the detector.

Important Notice

- The detector can only warn you in time if it is properly installed and properly maintained and tested according to the instructions.
- WARNING: This appliance does not detect fire, carbon monoxide or other hazardous gases.
- The detector is not intended for installation in an industrial environment.
- Always be aware of potential dangers, develop safety awareness, and take precautions to avoid dangers whenever and wherever needed. The detector can reduce the likelihood of catastrophe but cannot guarantee 100% safety.

Testing the detector

Long press the test button to start the detector test. During the test, the green LED flashes (two flashes every second). The siren's activity is first tested - a long tone sounds. The smoke chamber test follows. After a successful test, the detector flashes and beeps three times. The application will automatically send a message about the successful completion of the test.

If the detector does not signal properly, check the correct detector assembly, the battery location, replace the batteries, and then repeat the test.

WARNING

Every detector must be tested regularly to ensure that it is properly installed and working properly.

- Test the detectors regularly at least once a month. It is also recommended to perform the function test even before long absences outside the detected area (holiday, etc.).
- Do not use an open flame to test the detector.
- When testing the device, keep the distance from the detector to the length of your arm or use hearing protection.
- Keep the detector clean.
- If it does not work properly, replace it immediately.

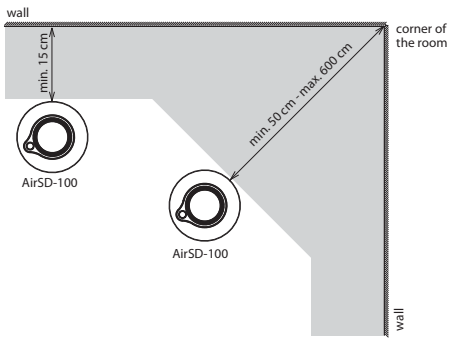
What to do when smoke is detected

If an alarm sounds and the smoke alarm is not being tested, smoke is detected. Your immediate attention and actions are required. Follow fire precautions.

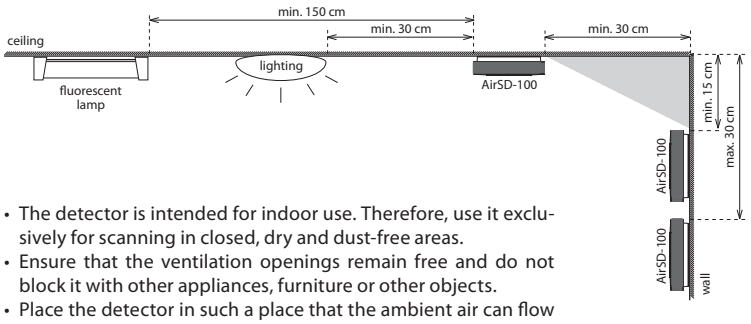
1. If it is safe to do so, check the source of the smoke, try to put out the source of the fire (smoke).
2. If the fire fails to be extinguished, call the emergency line by phone and follow exactly the instructions you are given in the situation.
3. Exit the area. Check if all people have left the area.
4. Ensure that electricity, gas, heating ... is turned off, remove hazardous materials (e.g. cylinders)...
5. As far as possible, take part in the evacuation of persons, animals, and fighting the fire, etc.

Placement recommendations

a)



b)



- The detector is intended for indoor use. Therefore, use it exclusively for scanning in closed, dry and dust-free areas.
- Ensure that the ventilation openings remain free and do not block it with other appliances, furniture or other objects.
- Place the detector in such a place that the ambient air can flow through the device.

Appropriate location

In new buildings, install smoke detectors according to the project.

- Smoke and other combustion products rise to the ceiling and expand horizontally. In residential buildings we recommend installing smoke detectors in the middle of the ceiling.
- Detector area is 40 m^3. Make sure that the smoke detector is located at least 15 cm from the side wall and 50 cm from each corner of the room (fig. A). Max. The recommended installation height is 4 m.
- In the rooms with a sloping, pointed or saddle roof (e.g. attics) the smoke detectors are mounted on the ceiling at a distance of 90 cm from the highest point.
- When installing on a wall, place the detector 15 -30 cm below the ceiling (Figure b). The bottom of the detector should be located above the top edge of all doors, windows and other openings.
- Although it is most appropriate to install a fire detector, it is recommended to place it in a connection room such as a staircase or hallway. The triggering of the alarm is delayed, but it will limit the number of the false alarms from the smoke of burnt pans or smoke from the fireplace.
- To increase security, detectors should be installed in each room of the building.

Inappropriate location

- Places where smoke sensing can be distorted:
  - Room where turbulent air flows from ventilators, heaters or doors or windows, etc.
  - Top of the gable roof
  - Less than 30 cm from the wall when mounted on the ceiling and 50 cm from the corner of the room
  - Less than 30 cm from the luminaires
  - Less than 150 cm from fluorescent lamps
  - If there are objects near the detector that could prevent smoke accessing the detector (decoration, etc.).
  - A clearance of at least 50 cm must be maintained in all directions under the detector.
- Rooms with high humidity and rooms with alternating temperature (bathrooms, showers, laundries, kitchens, etc.).
- In dusty environments, in areas with heavy concentrations of cigarette smoke (boiler rooms, garages, etc.).
- In places infested with insects.
- In places where regular testing or maintenance would be dangerous.

Maintenance and cleaning

To ensure proper operation, it is advisable to keep the detector clean.

- At least once every 6 months, clean the surface using a soft brush or cloth. Using a brushless vacuum cleaner, carefully clear the cover and the ventilation holes from dust and dirt.
- Never use water, detergents or solvents. The detector may be damaged.
- Do not use any chemicals near the device (such as cleaning products, hair spray ...) fumes can adversely affect the function of the device.
- Do not apply colour to the detector. When painting, remove the detector and return to the location after the work has finished.
- Do not disassemble the detector; do not attempt to clean the inside of the detector.
- After every cleaning, test the detector!
- If you do not use the detector for a long time, remove it, remove the batteries. Wrap the detector and store it in a cool, dry place.

Replacing batteries

1. Rotate the detector counter clockwise and remove it from the base.
2. Remove the original battery and insert new batteries into the battery holder. Beware of polarity. The red LED on the detector will blink.
3. Attach the detector to the base so that the projection on the base faces the tamper position in the detector cover. Turn the detector clockwise.
4. Press the test button to test the correct alarm function (see Test Detector). WARNING - do not damage the test button during battery replacement, the device may not work properly.

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.

UPLINK

Function	Byte	0-14	15					16	17	18	19	20	21	22	23	24
	Bit		7-4	3	2	1	0									
START		IMEI	0xC	Tamper: 1 - opened 0 - close	Battery: 1 - low 0 - OK	reserved	Alarm: 1 - alarm 0 - OK	FW version	Run time[0]	Run time[1]	Temperature [0]	Temperature [1]	Humidity [0]	Humidity [1]	Illuminance [0]	Illuminance [1]
HEARTBEAT			0x0					0x00								
ALARM			0x6					alarm message number (01 - XY)								
ALARM__CANCELED			0x4					alarm clear flag 0x00 - smoke cleared, 0x01 - button pressed , 0x02 detector inserted in to the base								
TEST			0x2					test result								

Notes

Unit	Example
Temperature [°C] * 10	00F5 = 245 = 24,5 °C
Humidity [%] *10	01A1 = 417 = 41,7 %

Example

Message example	Byte	
04 00 00 48 00 54 01 25	04	Message type and flags - first digit define message type according to the table (0 is heartbeat) and second digit define flags of battery, tamper and smoke alarm - 4 Hex is 0100 binary so according to the table the battery is low
	00	Value according to the message type - in this case message type is Heartbeat so byte don´t have useful value
	00	Run time in hours - 0 * 256 hours
	48	Run time in hours - 48 Hex is 72 decimaly so the run time is 72 hours
	00	Temperature - 0054 Hex is 84 decimaly so the temperature is 8.4 °C
	54	
	01	Humidity - 0125 Hex is 293 decimaly so the humidity is 29.3 %
	25	

Technical parameters

	AirSD-100NB
Power supply	
Battery power:	battery 4x 1.5 V AA
Battery life by frequency *:	
1x 10 minutes	2.5 years
1x 60 minutes	3.5 years
1x 12 hours	3.5 years
1x 24 hours	3.5 years
Input	
Smoke Detection:	built-in sensor
Detection:	smoke from burning
Detection principle:	optical-smoke scanning technology
Response Time:	a few seconds after contact with the smoke
Temperature measuring:	built-in sensor
Range:	-25 .. 70 °C
Accuracy:	± 3 °C
Humidity measuring:	built-in sensor
Sensitivity:	0 .. 90 % RH
Accuracy:	± 4 %
Light intensity measurement:	built-in sensor
Range:	0.045 - 188 000 Lx
Setting	
Alarm Detection:	message to the server, indication LED, audible alarm
Battery status view:	message to the server, indication LED
Button SET:	Test / setting / signalling
DIP switch:	Position 1 - Turn off scanning signaling
Control	
Detection area:	max. 40 m^3
Recommended installation height:	max. 4 m
Acoustic signal:	greater than 85 dB at 3 meters
Test button SET:	yes
Communication	
Protocol:	NB-IoT
Transmitter frequency:	LTE Cat NB1**
Range in open space:	Approx. 30 km***
Transmission power (max.):	200 mW / 23 dBm
Other parameters	
Humidity:	up to 92% relative humidity (RH) / 10% to 85% RH, no condensation or frost
Working temperature:	0…+40°C (Pay attention to the operating temperature of batteries)
Storage temperature:	-30…+70°C
Operation position:	Horizontal (ceiling) / Vertical (Wall)
Mounting:	screws
Protection degree:	IP20
Color:	white
Dimension:	Ø 120 x 36 mm
Weight:	176 g (without battery)

* Values are calculated under ideal conditions and may vary according to alarm frequency
** 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.