



AirMD-100L / AirKey

Motion detector / Key chain iNELS Air



Characteristics

AirMD-100

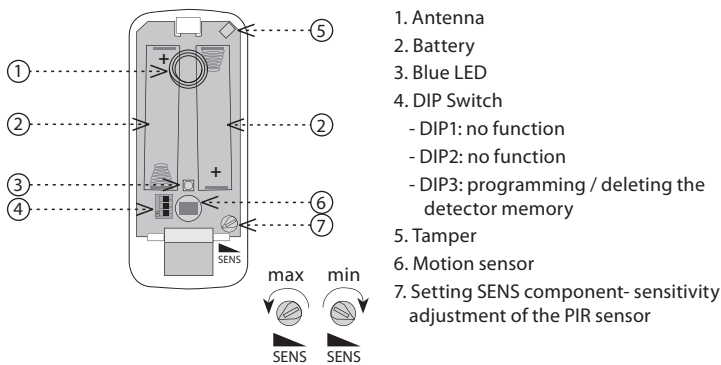
- The PIR motion detector is used to detect people moving in the interior.
- PIR sensitivity settings to eliminate unwanted switching.
- The detector offers a quick and comfortable solution for detecting motion in an object. It's just a simple installation at the location.
- The LoRa network can be used for message transmission.
- Anti-sabotage function (tamper): When unauthorized interference with the detector occurs (disassembly) it sends an information message to the server.
- 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.
- Power supply: battery 2x 1.5 V AA.
- The Disarm is done either with a message from the server or by using the AirKey key fob that communicates with the detector wirelessly.

AirKey

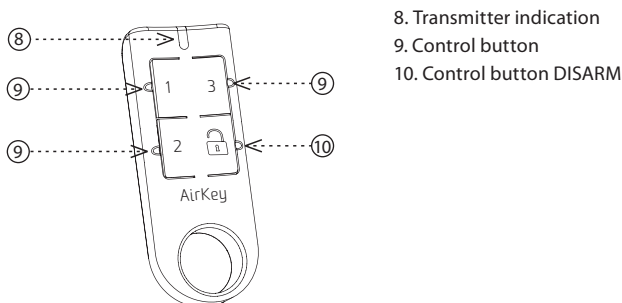
- It is used to activate and deactivate the motion detector when you enter or leave the monitored area.
- One detector can be matched up to 32 key fobs. The key fob can be paired with any number of detectors.
- Designed in black and white with laser printing.
- Battery power supply (3V/CR2032 - included in the supply) with battery life of around 5 years based on frequency of use.

Description

AirMD-100



AirKey



Cloud app assignment

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

General instructions

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 LoRa network is available to use this standard

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.

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.

Function

Enabling Guard (ARM)

If no movement is detected by the motion detector for 15 minutes, the guard will be activated automatically.

Data status report sent at a max of four-hour intervals (You can edit the message from the server).

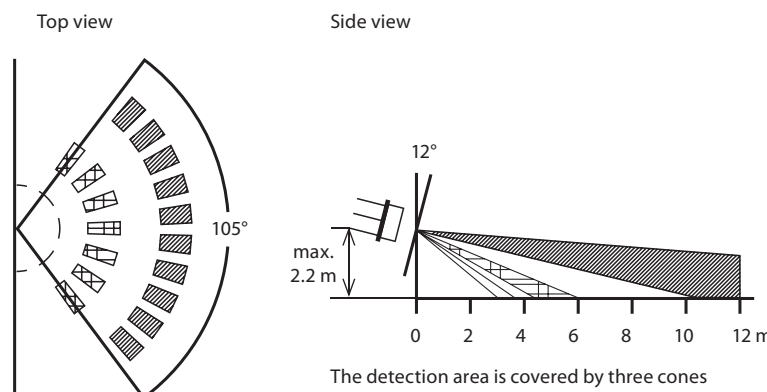
Disarm (DISARM)

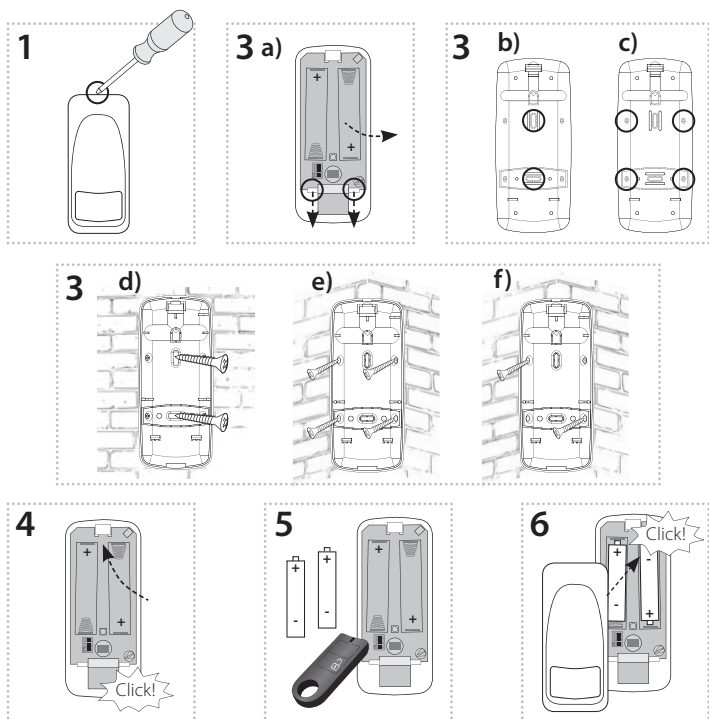
When capturing motion in the guard state, the blue LED lights up and an uninterrupted beep sounds at the same time. Press the button on the AirKey Controller. The audible alarm is switched off and the transition to the DISARM status is confirmed by a short beep.

If the guard is not switched off within 5 seconds, the audible alarm turns off and the detector sends the alarm to the user.

If the detector is deactivated by the AirKey controller, it does not transmit the motion detection information to the user.

Detection field





1. Push the screwdriver into the opening at the top of the detector and open the device cover.
2. You can attach the product either by sticking * on a flat surface - apply a suitable adhesive to the outside of the base. Place the base in the desired location and let it dry.
3. Or using a suitable fastener ** by screwing.
 - a) Push the beaks (mouldings) on the setting component down and remove the component from the base.

Depending on the required location, remove the screw plugs from the base (e.g. with a screwdriver).

 - b) To place on a flat surface.
 - c) To place in a corner.

Place the base at the desired location and attach it with suitable bonding material according to the substrate**.

 - d) On a flat surface.
 - e), f) into a corner.
4. Insert the component into the base and snap into place with pressure, gently.
5. Program the instrument (see chapter Programming the controller) and adjust the sensitivity of the PIR sensor.
6. Replace and snap the front cover.

Safe handling



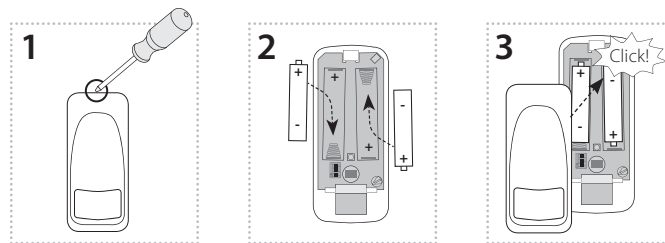
When handling a device unboxed it is important to avoid contact with liquids, avoid unnecessary contact with the components of the device. Do not touch the metal objects inside the unit.

Recommendations for installation

- When installing the detector, consider the handling area above the detector (to replace the batteries, etc.). Do not exceed the maximum recommended height for placement.
- The detector is intended for indoor use.
- After inserting the battery, the time delay is 15 seconds to stabilize the PIR detector, and then the motion detection function is activated.

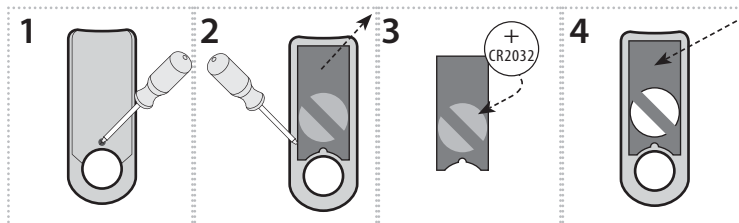
* The glue must meet the optimal conditions for product placement (influence of temperature, humidity ...)

** For example, a countersunk head screw can be used as a suitable fastener, screw of max. Ø 3 mm.



1. Push the screwdriver into the opening at the top of the detector and open the device cover.
2. Remove the original battery and insert new batteries into the battery holder. Beware of polarity. The blue LED on the detector will blink.
3. Replace and snap the front cover.

AirKey | Insertion and replacement of a battery

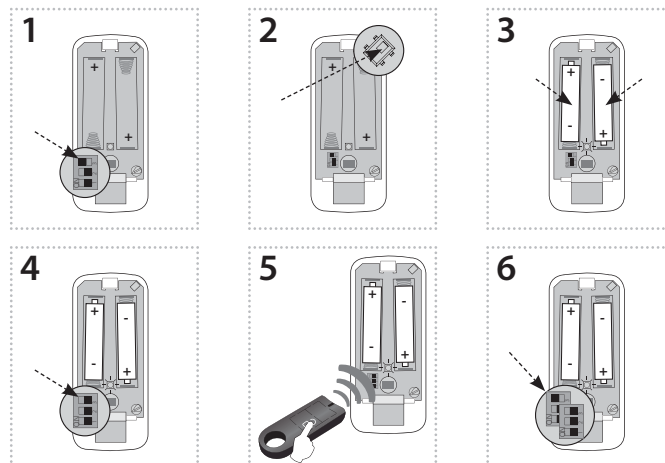


1. Using a Phillips head screwdriver, remove the screw on the back of the transmitter. Remove the rear cover.
2. Carefully remove the device from the box.
3. Slide the CR2032 battery into the battery holder. Observe the polarity.
4. Insert the device into the housing so that it clicks onto the tabs and to the stops inside the housing.
5. Replace the rear cover and replace the screw.

Notice:

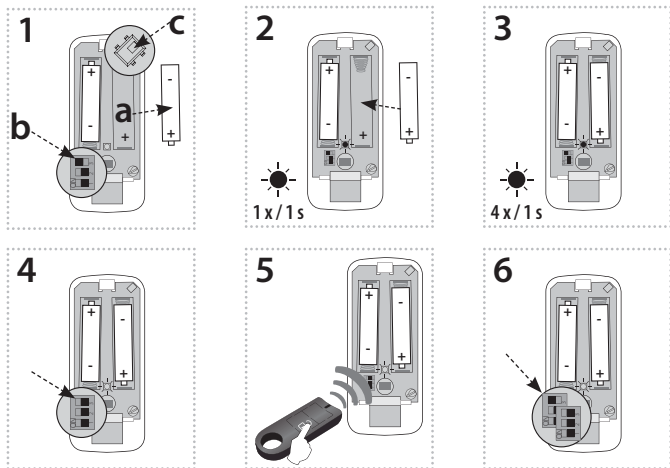
Only use batteries designed for this product correctly inserted in the device! Immediately replace weak batteries with new ones. Do not use new and used batteries together. If necessary, clean the battery and contacts prior to using. Avoid battery shorts! Do not dispose of batteries in water or fire. Do not dismantle batteries, do not try to 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. If it is suspected that the battery has been swallowed or somehow placed inside the body, consult a doctor immediately. Give the doctor information about the type of battery (from battery case, device or its manual, etc.) to determine the chemical composition of the battery. Batteries must be recycled or returned to an appropriate location (e.g. collection container) in accordance with local legal provisions.

Programming the controller for the detector



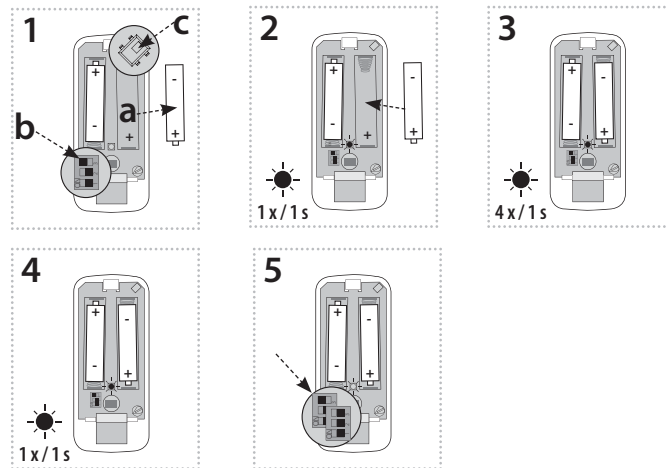
1. Switch DIP3 switch to ON.
2. Press the TAMPER button several times (to discharge the capacitors in the device).
3. Insert the batteries (observe the polarity). The blue LED flashes once every second, the detector enters the programming mode.
4. Switch the DIP3 switch to OFF - this will lock the detector in the programming mode.
5. Press one of the control button DISARM (Ⓐ) on the controller, the LED on the detector indicates blue LEDs with a long flash. This way you can program the desired number of controllers.
6. To quit the programming mode, turn the DIP3 switch to ON and then back to OFF. The blue LED on the detector will flash a long time. The detector will restart and go into operating mode. After approx. 15 seconds (required to stabilize the PIR sensor), it detects movement.

Deleting one controller from the detector



1. Remove one of the batteries (a). Turn the DIP3 switch to ON (b). Press the TAMPER button (c) several times.
2. Return the battery. The blue LED flashes once every second, the detector enters the programming mode.
3. Wait for the detector to enter the set up mode, which is indicated by blinking blue LED at 4x per second.
4. Switch the DIP3 switch to OFF - this will lock the detector in the set up mode.
5. Press one of the control button DISARM (Ⓐ) on the controller, the LED on the detector indicates blue LEDs with a long flash. The controller is erased from the detector memory.
6. To exit the set up mode, turn the DIP3 switch to the ON position and then back to the OFF position. The blue LED on the detector will flash a long time. The detector will restart and go into operating mode. After approx. 15 seconds (required to stabilize the PIR sensor), it detects movement.

Deleting all the controllers from the detector



1. Remove one of the batteries (a). Turn the DIP3 switch to ON (b). Press the TAMPER button (c) several times.
2. Return the battery. The blue LED flashes once every second, the detector enters the programming mode.
3. Wait for the detector to enter the set up mode, which is indicated by blinking blue LED at 4x per second.
4. Wait until the detector returns to the programming mode, the blue LED blinks once every second. This will erase all the controllers from the detector memory.
5. Next, you can start programming or return to the programming mode (see chapter Programming the controller).

UPLINK

	Port	Byte	0							1	2	3	4	5	6	7	
			Bit	7	6	5	4	3	2								1
START	1		1	1	0	0	0	0	0	0	0x00	version FW	subversion FW	version HW	subversion HW		
ALARM	alarm - 8, tamper - 6		0	1	0	status change ARM/ DISARM	Tamper: 1 - opened 0 - closed	Battery: 1 - low 0 - OK	ARM/ DISARM: 1 - ARM 0 - DISARM	Alarm: 1 - alarm 0 - no alarm	reserved	uptime [0] (*2)	uptime [1] (*2)	time from last alarm change (*1)	Nr. of last alarm/ tamper message		
DISARM through AirKey	9	0	1	0	AirKey adr.[0]									AirKey adr.[1]	AirKey adr.[2]		
Silence detected	7	0	0	1	Nr. of repeated silent message												
silence disruption	5	0	1	0	Nr. of repeated message												

*1 - time format: (max. 100 h)

bit 7: 1 - bits[6:0] = minutes

0 - bits[6:0] = hours

*2 - uptime format

uptime in hours = 256*uptime[0] + uptime[1]

response: is expected after START message, after 1. silence message and after 1. alarm message

Byte 0: reserved

Byte 1: silence length in minutes, before 1. silence message is sent and device is switched to ARM state

Byte 2: length of LED indication and length of receiving AirKey for DISARM in seconds, value 0 disables receiving AirKey

Byte 3: length in seconds of acoustic indication of alarm, value 0 disables beeper

Byte 4: length in minutes, how long after last motion indication is LED blocked

Function notes:

- If the detector does not detect any movement for 15 min, it sends a standard message (2x repetitions with a 2 minute interval), waits for an incoming message and goes into the ARM state.
- If it is calm, another message will be sent (2x with 2 minute interval) in 30 min.

- If it is still calm, another message will be sent (2x 2 minutes apart) in 60 min.

- If it is still calm, another message will be sent (1x) in 120 min.

- If it is still calm, another message will be sent (1x) in 240 min.

- If it is still calm, messages are sent after 240 min.

- When motion detection is detected in the ARM state, the LED and sound indication are activated and the AirKey DISARM command receiver is turned on.

- If the alarm is deactivated via AirKey, a DISARM message is sent, otherwise an ALARM message is sent.

- The ALARM message is sent 2 times 2 minutes apart when the alarm occurs.

- Then, AirMD goes to the DISARM state and reports the next move as a violation message.

- The next message about the disturbance is sent at 6 minutes if there was a movement between the 1st and the 6th minute and 2 messages are sent at a 2 minute interval.

- Another message about the disturbance is sent at 12 minutes and if there is a movement between 6 and 12 minutes, 2 messages are sent at 2 minute intervals.

- A further message of disturbance is sent at 30 minutes, and if there is a movement between 12 and 30 minutes, 2 messages are sent at 2 minute intervals.

- A further message of disturbance is sent at 60 minutes, and if there is movement between 30 and 60 minutes, 2 messages are sent at 2 minute intervals.

- Further reports of disturbance are sent every 60 minutes if movement has been detected since the previous message was sent.

DOWNLINK

	Port	Byte	0							1	2	3	4	5	6	7
			Bit	7	6	5	4	3	2							
response	1		reserved							length of silence detection	length of receiving AirKey	length of acoustic signal	length of LED motion indication	reserved		

AirMD-100L

Power supply	
Battery power:	battery 2x 1.5V AA
Battery life by frequency *:	
1x 10 minutes	1.4 year
1x 60 minutes	2 years
1x 12 hours	2 years
1x 24 hours	2 years
Setting	
Alarm Detection:	message to the server, audible alarm
Battery status view:	only when the battery is powered by a message on the server
Indication	
- blue LED:	motion detected
Programming:	DIP Switch 3
Detection angle:	105°
Detection distance:	max. 12 m
Recommended working height:	max. 2.2 m
Communication	
Protocol:	iNELS RF Control
Transmitter frequency:	868 MHz
Range in open space:	up to 100m
Protocol:	LoRa
Transmitter frequency:	868 MHz
Range in open space:	Approx. 10 km**
Transmission power (max.):	25 mW / 14 dBm
Other parameters	
Working temperature:	0...+50°C (Pay attention to the operating temperature of batteries)
Storage temperature:	-30...+70°C
Operating position:	vertical
Mounting:	glue / screws
Protection degree:	IP20
Color:	white
Dimension:	46 x 105 x 43 mm
Weight:	62 g (without battery)

* Values are calculated without activating the alarm, which is energy intensive
 ** Depending on network coverage

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.

AirKey/W AirKey/B

Supply voltage:	3 V battery CR 2032	
Transmission indication:	red LED	
Number of buttons:	4	
Communication		
Protocol:	iNELS RF Control RFIO	
Transmitter frequency:	868 MHz	
Range in open space:	up to 100 m	
Signal transmission method:	unidirectionally addressed message	
Other parameters		
Operating temperature:	-10 ... +50 °C	
Operating position:	any	
Color:	white	black
Protection:	IP20	
Contamination degree:	2	
Dimensions:	64 x 25 x 10 mm	
Weight:	10 g (without battery)	