ELKO EP, s.r.o.
Palackého 493
769 01 Holešov, Všetuly
Czech Republic
Tel.: +420 573 514 211
e-mail: elko@elkoep.com
www.elkoep.com

Made in Czech Republic

02-27/2018 Rev.: 0

EN

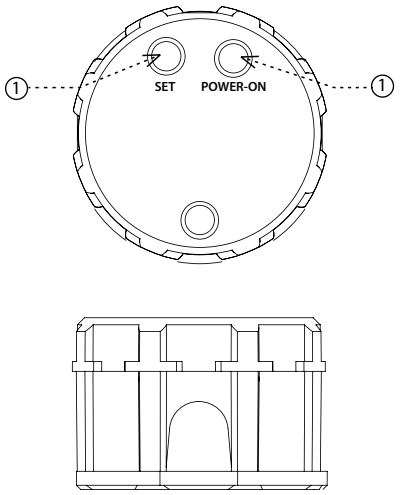
AirPD-100

Parking detector

Characteristics

- Parking detectors can be used in corporate parking lots, car parks at department stores or administrative complexes etc.
- Detects free or occupied parking spaces. To determine the current state of the parking space, it uses the anomaly measurements in the magnetic field of the ground, in the immediate vicinity of the detector.
- Detector is resistance to external influences (UV, salt, snow plough).
- With the wireless solution and Sigfox / LoRa / NB-IoT communication, it can communicate instantly to Server and be operated immediately.
- Battery power with a lifetime of about 10 years

Description



1. Magnetic contact

Cloud app assignment

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

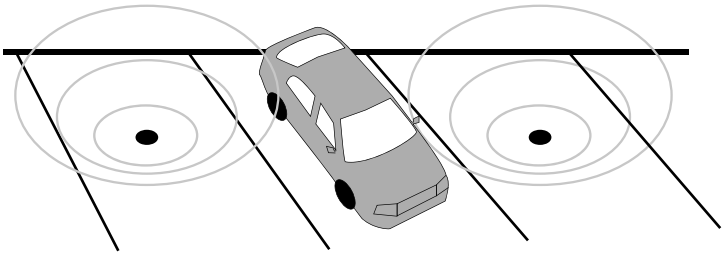
Function

Detects free or busy parking space. To determine the current state, the magnetic principle is used.

Every 4 seconds the sensor scans the free / occupied parking space, and every minute measures the room temperature.

The data message is sent within 120 minutes (can be edited by a message from the server). In the event of a change in status or a sudden change of temperature a message is sent immediately.

Settings: by using supplied magnet (included in the supply).



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.

Technical parameters

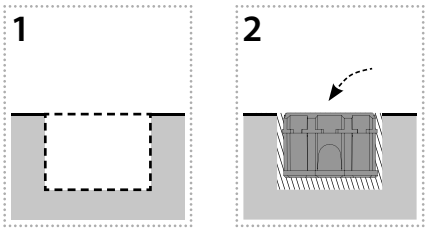
	AirPD-100S	AirPD-100L	AirPD-100NB
Power supply	non-removable battery		
Battery power:	2x 3.6V Li-SOCL$_2$		
Battery life:	Approx. 10 years, depending on the setting		
Battery status view:	message to the server		
Setting			
Setting:	With a message from the server, magnetic keys, RFAF/USB Service Key		
Measured values:	message to the server		
Detection			
Detection principle:	magnetic		
Detection distance:	0 - 50 cm		
Theft detection:	yes		
Temperature measurement:	yes		
Input			
Temperature measuring:	built-in sensor		
Range:	-30 .. 85 °C		
Sensitivity:	1 °C		
Accuracy:	± 3 °C		
Communication			
Protocol:	iNELS RF Control		
Transmitter frequency:	868.5 MHz		
Range in open space:	up to 100 m		
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 ... + 85 °C		
Operating position:	Push into the road (ground level)***		
Pressure load:	up to 1 000 kg		
Protection degree:	IP68		
Resistance to external influences:	UV, salt, snow plough		
Dimension:	Ø 87 x 62 mm		
Weight:	432 g		

* Depending on network coverage
** Multiple frequency bands of B1 / B3 / B5 / B8 / B20 / B28
*** Minimum distance from metal objects (canal) – 1m.

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.

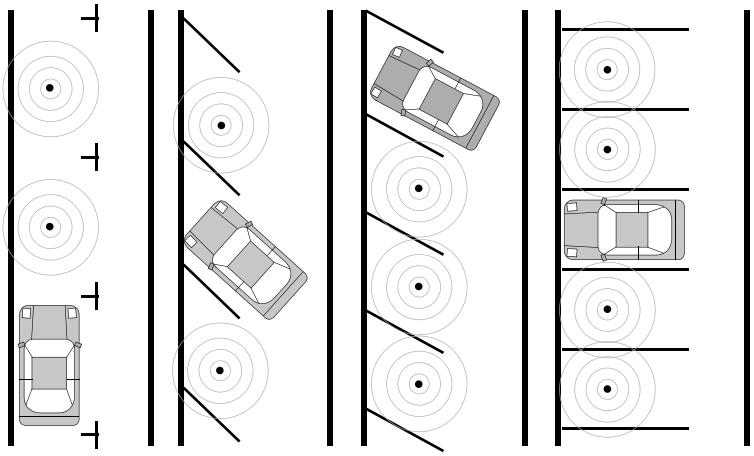
Assembly



1. Drill a hole of approx. 90 mm diameter and 65 mm depth in the ground at the desired location with a suitable tool.
2. Fill the hole with the desired fixing compound (according to the substrate and insert the detector so that it is level with the surface.
3. Refill or remove any excess, and allow the compound to set.

Recommendations for installation

- The detector is suitable for outdoor use. Operating conditions are consistent with conventional chemically non-aggressive environments.
- Before mounting, check the range. Ensure the correct location - see Warning.
- The recommended working orientation is vertical, magnetic contacts upright towards the detection area.
- The detector's immediate surroundings must remain free for proper detection. The minimum distance from metal objects (e.g. channel cover, track ...) is 1m.
- Do not cover the detector as this may reduce signal transmission.



Commissioning

To activate the detector, place the magnet on the POWER-ON magnetic contact for 5 seconds and then on the magnetic contact SET for 3 seconds. The detector sends a start message.

After activation, calibrate the detector by applying the magnet to the SET magnetic contact for 9 seconds. After successful calibration (15 seconds), the detector sends a message.

You can also perform calibration and detector setup in the application or using the RFAF/USB Service Key and to lock the detector against manual adjustment.