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Made in Czech Republic

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EN

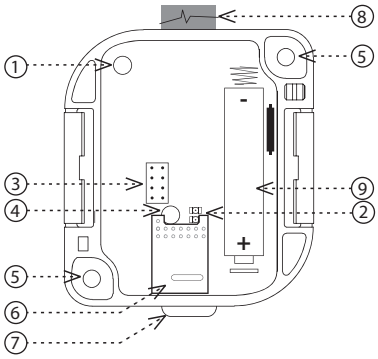
AirSOU-100L

Twilight sensor

Characteristics

- Information about the actual light intensity can be used in the task of maintaining a constant illumination in a given space, where it is possible to regulate the intensity of artificial lighting thanks to the contribution of natural lighting from outside, thereby reducing the energy consumption.
- AirSOU-100 can be used not only in residential projects, but also in commercial office projects or production and warehouse or production halls.
- The AirSOU-100 is recommended to be installed so that the light sensing sensor is facing downwards and not exposed to direct light.
- The scanning range is 1 - 100,000 lux.
- 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.
- The AirSOU-100 is supplied in an IP65 enclosure and can be installed in an outdoor environment.

Device description



1. Tamper
2. LED
3. Programming pins
4. Button SET
5. Mounting hole Ø 4.3mm wall
6. Sensing sensor
7. Light guide
8. Antenna
9. Battery

Cloud app assignment

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

Function

After inserting the batteries, the sensor sends an introductory message containing the measured light intensity.

The sensor scans the light intensity every 2 minutes. After that, it sends a data message of measured values every 60 minutes. In the event of a sudden change in light intensity, it sends the data message immediately.

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 LoRa network is available to use this standard.

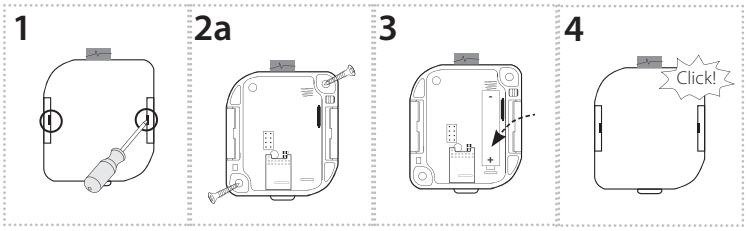
LoRa network information

- 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.

Assembly



1. Using a flat-blade screwdriver gradually slide it into one groove and the other in the lid and swing open the cover.
2. 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.
3. Insert the battery into the sensor and check correct location (the sensor functionality message is sent to the application when the battery are inserted).
4. Replace and snap the front cover. When closing, the handles have to be snapped to their original position.

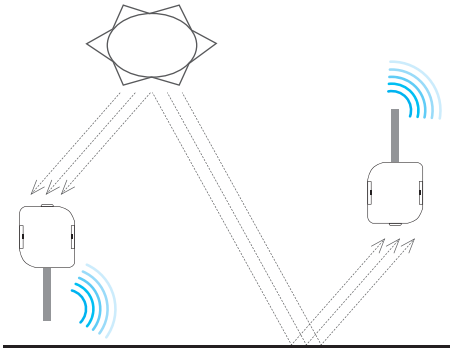
* The glue must meet the optimal conditions for product placement (influence of temperature, humidity ...)

** 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.

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.

Placement recommendations



- For the correct operation of the sensor, it is necessary to eliminate all disturbing light sources in the sensed area.
- Before mounting, check the range and location of the product and the antenna. Ensure the correct location - see Warning.
- The sensor is suitable for outdoor use. Operating conditions are consistent with conventional chemically non-aggressive environments.
- The recommended working position is vertical; the light guide should point downwards or upwards.
- For proper functionality, the light guide should be kept clean and uncovered (occasional cleaning of the light pipe without the use of chemicals).

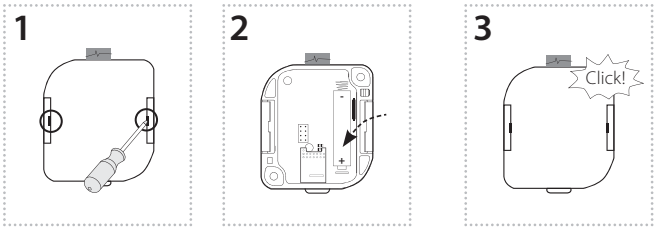
Inappropriate location

- Places where distortion may occur (the light pipe must not be illuminated by direct light) - below the lamp, where there is a sudden change in lighting intensity (e.g. flashing advertising), etc.
- Very dusty environment.
- In the case of a light guide installation, the light guide should not be exposed to weathering (sensing distortion may occur due to rain / snow).

Restart

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

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 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.

Device states

Unit initialization	**Indication**	
Start	3 x R + G blinks	power supply (external or battery), reset unit
Search for BTS * 2)	2 x flashes R (2xR _ 2xR _ ...)	Search availability BTS
SIM ERR *2) ERR *2)	5 x flashes R (repeatedly)	error MAC / error MODULU
Successful network connection * 2)	1 x flashes R	start unit ok
Measurement		
Tamper	without indication	opening the cover
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)
Measurement signaling * 1)	1 x flashes G	light measurement
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

UPLINK

		Byte	0	1								2	3	4	5
	Port	Bit		7	6	5	4	3	2	1	0				
HEARTBEAT	1		0x10	Reserved for future use						Tamper: 1 - opened 0 - closed	Battery: 1 - low level 0 - OK	Illuminance[0]	Illuminance[1]	Illuminance[2]	Illuminance[3]
START	3		Version FW	Subversion FW								Version FW LoRaWAN	Subversion FW LoRaWAN		

Name	Unit	Example
Illuminance[0 – 3]	[100*] lx	Illuminance[0] = 0x00 Illuminance[1] = 0x00 Illuminance[2] = 0x07 Illuminance[3] = 0xD0 Illuminance = 0x000007D0 = 2000 / 100 = 20 lx

Technical parameters

	AirSOU-100L
Photo sensor parameters	
Light measurement range:	1 - 100 000 lx
Detection angle:	100°
Power supply	
Battery power:	1x 3.6V LS 14500 Li-$SOCl_2$ AA
Battery life by frequency *:	
1x 10 minutes	7.1 years
1x 60 minutes	10.6 years
1x 12 hours	11.7 years
1x 24 hours	11.8 years
External power supply:	5- 12 V DC (on terminal)
Supply voltage tolerance:	+10 %; -15%
Standby consumption:	0.2 mW
Transmitting power consumption:	150 mW
Setting	
Setting:	Using a message from the server, the programming cable
Battery status view:	message to the server
Control	
Control:	button (Communication test) Tamper
Communication	
Protocol:	LoRa
Transmitter frequency:	868 MHz
Range in open space:	Approx. 10 km**
Transmission power (max.):	25 mW / 14 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
Dimension with antenna:	112 x 62 x 34 mm
Weight:	97 g***

* Values are calculated under ideal conditions
** Depending on network coverage
*** Without battery

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.