

# sensor sound and noise

## DESCRIPTION

"Sound & Noise Sensor" records sound levels through its integrated microphone. It is able to record the surrounding ambient sound in the audible frequency spectrum for the human ear, showing the data collected in dBA. This information is essential in certain workstations exposed to spaces with high levels of noise pollution, or conversely, with acoustic restrictions.



## BENEFITS

- Prevention of exposure to hearing hazards through the control of maximum ambient sound levels.
- Monitoring of the sound activity in open spaces as well as in closed spaces, allowing knowing in detail the sound activity of a certain area

## DATA ANALYSIS

The sensor records specific (measurements each predetermined time interval) or continuous sound level information in the areas in which it is located. It can also provide an analysis by its classification in percentiles and absolute maximum, enabling the user to control the acoustic pollution of a neighborhood, factory, etc. and to improve it by the use of acoustic protection measures.

## OPERATES IN A WIDE RANGE OF ENVIRONMENTAL CONDITIONS

The transmitter module and the battery are installed inside an enclosure that provide the sensor with an IP66 insulation level and make it operable over a wide temperature range, thus being able to work in harsh environmental conditions.

## INSTALLATION

The device must be installed in a zone free of metal surfaces so that shipments can be carried out correctly. Otherwise the screen effect may occur, not allowing the radio signal to propagate in the air.



# TECHNICAL SPECIFICATIONS

## PRODUCT

<i>Dimensions:</i>	200x120x60
<i>Weight</i>	610g (including batteries)
<i>Temperature range:</i>	-40°C to +65°C
<i>IP protection:</i>	IP 60
<i>Housing<sup>(1)</sup>:</i>	Material: ABS (UV resistant) <sup>(1)</sup> Note: customizable design according to volume of units purchased
<i>Batteries:</i>	3 Primary Lithium Batteries Thionyl Chloride, 3.6V, 13Ah Estimated Lifetime <sup>(2)</sup> : Continuous Mode enabled: <ul style="list-style-type: none"> <li>- Max 2 months: sound sensor activate all time, 1 submission /day (GPRS)</li> <li>- Max 2 months: sound sensor activate all time, 24 submission /day (LoRa)</li> </ul> (It's possible connecting to a supply power through UPS boards to increase the Lifetime, this changes are available on request)  Continuous Mode disabled: <ul style="list-style-type: none"> <li>- Max 3 years: 1 data/day, 1 submission/day (GPRS)</li> <li>- Max 2 years: 1 data/hour, 1 submission/day (GPRS)</li> <li>- Max 7 years: 1 data/day, 1 submission/day (LoRa)</li> <li>- Max 3 year: 1 data/hour, 1 submission/hour (LoRa)</li> </ul> <sup>(2)</sup> Note: Estimated consumption in laboratory tests under normal conditions, differences may exist between devices due to the conditions of the installation.
<i>Connectors:</i>	Internal: <ul style="list-style-type: none"> <li>- Antenna: Internal antenna type PCB included.</li> <li>- Power range: 3.6V to 15V</li> <li>- Connection for device configuration: via supplied configuration cable</li> </ul> External: <ul style="list-style-type: none"> <li>- It has not external connectors.</li> </ul>
<i>Internal storage:</i>	- 16 MB (up to 500000 data registers)
<i>Options on order:</i>	<ul style="list-style-type: none"> <li>- Power supply with 10-28 DC. Includes rechargeable Li-Ion backup batteries, with 500mA max. charge current and total capacity of 2x2600mAh batteries<sup>(3)</sup>.</li> <li>- Power supply through 230 AC. Includes rechargeable Li-Ion backup batteries, with 200mA max. charge current and total capacity of 2x2600mAh batteries<sup>(3)</sup>.</li> <li>- High Performance External Antenna<sup>(3)</sup></li> </ul> <sup>(3)</sup> Note: modification may involve changing device dimensions.

## SENSORS

<i>Pulse sensor</i>	<ul style="list-style-type: none"> <li>- Description: 40-100 dBA</li> <li>- Precision: ±2dBA</li> </ul>
<i>Temperature sensor</i>	<ul style="list-style-type: none"> <li>- Description: measures the internal temperature of the device</li> <li>- Measure range: -40°C a +65°C</li> <li>- Accuracy: ±3°C</li> </ul>
<i>Battery</i>	<ul style="list-style-type: none"> <li>- Description: measure the battery level of the device</li> <li>- Measure range: 3.6 a 15V</li> <li>- Resolution: 1mV</li> </ul>

## AVAILABLE COMMUNICATIONS

<i>GPRS</i>	(Quad band (850/900/1800/1900Mhz) TCP/UDP protocol
<i>Wifi</i>	2.4GHz-2.5GHz, standard IEEE 802.11 b/g/n, safety WPA/WPA2
<i>LoRa</i>	434/470Mhz 868/915 Mhz , link modes OTAA/ABP
<i>Sigfox</i>	868MHz Uplink-Downlink modes

## SOFTWARE

<i>Configurable Parameters</i>	<ul style="list-style-type: none"> <li>- Disable function</li> <li>- Data sending schedule (GPRS)</li> <li>- Gateway configuration</li> <li>- APN configuration</li> <li>- Modes of operations</li> </ul>
<i>Optional access to IoTsens Smart City Solution</i>	<ul style="list-style-type: none"> <li>- Historical analysis</li> <li>- Map of sensors</li> <li>- Alarms y notifications</li> <li>- Control of user accounts</li> <li>- Dashboards with relevant data</li> </ul>

