

SEZA



# SEZO AL

outdoor (PM) and indoor (VOC - Volatile Organic Compounds) air quality monitoring

sending data to Orange Live Objects platform or user via LoRaWAN

measuring environmental parameters such as temperature, humidity and atmospheric pressure

powered by AC230V, using a common power socket



USB configuration

PIR (infrared) sensor

flexibility & configurability (threshold configuration for all measured parameters)

# POTENTIAL USE CASES



## FACILITY MANAGEMENT

**SEZO AL** makes refineries and chemical production companies more *secure*.

**Facility managers** leverage the **SEZO AL** device to measure shocks and movements of critical facility components and machinery, thanks to the built-in *accelerometer*.

The device can be adjusted to clients individual needs, involving the measurement of *basic environmental parameters*, i.e. temperature, humidity, atmospheric pressure and sound levels. The device has an integrated *alarm threshold configuration*, giving the user the capability to adjust alarm thresholds of all measured parameters (such as temperature, humidity, light, air quality, as well as acoustic intensity).

The device is capable of sending data to the Orange Live Objects platform via LoRaWAN.

end device

IoT

environment  
monitoring

health & security

smart building

indoor/outdoor



## PUBLIC INSTITUTIONS

**SEZO AL** makes public institutions more *comfortable* and more *efficient*.

**Public facilities** like libraries, museums or city halls leverage **SEZO AL** capabilities such as monitoring temperature, humidity, sound level, and illumination to *make the space more comfortable and efficient*. Thresholds for the measured parameters can be set individually through the build-in *alarm threshold configuration*.

The *integrated accelerometer* enables measurement of shocks and/or movements (e.g. of objects such as doors or exhibition pieces) and can potentially decrease response time of facility security (more reliable than CCTV).

The device is capable of sending data to the Orange Live Objects platform via LoRaWAN.

end device

IoT

comfort  
monitoring

health & security

smart building

indoor/outdoor

# POTENTIAL USE CASES



## SCHOOLS

**SEZO AL** makes schools a safer place for children and staff.

**School management** leverages **SEZO AL** to detect and prevent exposure to floating dust on school yards and parking lots and therefore *make schools a safer place for both, children and staff.*

**SEZO AL** measures particulate matter such as *PM10, PM2.5, and PM1.* When placed on school corridors or inside classrooms, **SEZO AL** allows you to continuously check the effectiveness of the *ventilation system* in school buildings.

The device is powered via AC 230V *power supply*, and can therefore be used conveniently in various locations with a common power socket.

The device is capable of *sending data via LoRaWAN* to the Orange Live Objects platform.

end device

IoT

schools

health & security

air quality

indoor/outdoor



## INDUSTRIAL PRODUCTION SITES

**SEZO AL** enhances security processes at *industrial manufacturing sites.*

The device is capable of sending data to the Orange Live Objects platform via LoRaWAN and pulls data from the environment like dust levels (PM1 / PM2.5 / PM10), sound levels. **SEZO AL** device is powered by AC230V.

The device has an *integrated PIR (infrared) sensor*, so it can detect the presence of people (like light detectors). This can be used as an alarm function, individually configured by the user. PIR sensors are commonly used in security alarms and automatic lighting applications.

The device has an *alarm threshold configuration* for all measured parameters.

end device

IoT

industrial

health & security

indoor

outdoor

# SEZO AL - TECHNICAL SPECIFICATIONS

<b>DESCRIPTION</b>	<ul style="list-style-type: none"> <li>- Compact sensor device measuring environmental parameters, luminosity, noise and air quality, and motion detector</li> <li>- Suitable for indoor and outdoor environment monitoring</li> <li>- LoRaWAN networking technology for long transmission range</li> <li>- USB configuration</li> <li>- Every unit is shipped with individual test report</li> <li>- Integrated with Orange Live Objects Platform</li> </ul>
<b>MEASURED PARAMETERS</b>	Particulate matter concentration, volatile organic compound concentration, temperature, humidity, atmospheric pressure, light intensity, noise level and movement (PIR)
<b>OPERATING TEMPERATURE</b>	-30 ÷ 60°C
<b>MEASUREMENT RANGE AND ACCURACY</b>	<ul style="list-style-type: none"> <li>- PM: 0 ÷ 500 µg/m<sup>3</sup>, ±10 µg/m<sup>3</sup> @&lt;100 µg/m<sup>3</sup> (measurement disabled below -10°C and above 95% RH)</li> <li>- IAQ (Indoor Air Quality), range 0-500, typ. ±15, measurement resolution 1</li> <li>- Temperature: -30 ÷ 60°C, typ. ±0.5°C, max ±2°C</li> <li>- Humidity: 0 ÷ 100%, typ. ±4%, max. ±7% @25°C</li> <li>- Air pressure: 300 ÷ 1100 hPa, typ ±1 hPa max ±3 hPa</li> <li>- Luminosity: 0 ÷ 1000 lx, typ. ±10%, max ±35% @500lx</li> <li>- Noise: 40 ÷ 100dB, ±6dB at voice frequency band</li> <li>- PIR motion detection: 10 [m] range for a human-sized object</li> </ul>
<b>COMMUNICATION PROTOCOL</b>	LoRaWAN v1.0.2, Class A device
<b>FREQUENCY AND TRANSMISSION POWER</b>	868 MHz, maximum 14 dBm
<b>DATA TRANSMISSION INTERVAL</b>	Default 15 minutes (configurable) or event-triggered
<b>POWER SUPPLY</b>	Internal AC adapter 100-240V 50Hz max. 1W, Europlug
<b>ENCLOSURE AND MOUNTING</b>	IP55, polycarbonate, four screw holes
<b>WEIGHT</b>	210 g (without power cord and mounting bracket)
<b>PRODUCT DIMENSIONS</b>	Length 89 mm, width 80 mm, height 48.5 mm



## About WiRan

WiRan Sp. z o.o. is a B2B company providing R&D services to national and international clients in the space, maritime, railway, industrial and IoT sectors. Our expertise lies in Radio Frequency and Wireless technologies, the development of electronic parts, fast product prototyping, feasibility studies, certifications and EMC testing. Founded in 2002, we are looking back at soon to be 20 years as a HW design office - supporting our diverse clients from the conception through prototyping to product quality development of electronic devices You can find our designs mounted around Tricity (air quality measuring systems), and soon also in space (satellite communication modules), just to name a few.

WiRan offices and laboratories are currently located in Gdynia, Poland.

## About SEZO

SEZO is a suite of products that can be best described as long range, customizable IoT solutions. SEZO products are based on LoRaWAN™ and LTE-M / NB-IoT technology and can be customized by clients, based on their needs.