

SEZA



# SEZO EL

indoor air quality monitoring (Volatile Organic Compounds - VOCs)

sending data to Orange Live Objects platform or user via LoRaWAN



powered by 13000 mAh battery

measuring environmental parameters such as temperature, humidity and atmospheric pressure

PIR (infrared) sensor

USB configuration

built-in accelerometer and magnetometer informing about object movement and orientation

flexibility & configurability (threshold configuration for all measured parameters)

# POTENTIAL USE CASES



## FACILITY MANAGEMENT

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

**Facility managers** leverage the **SEZO EL** 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, 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 EL** makes public institutions more *comfortable* and more *efficient*.

**Public facilities** like libraries, museums or city halls leverage **SEZO EL** 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 EL** makes school a *safe and comfortable place* for children and staff.

**School management** leverages **SEZO EL** to monitor *indoor air quality* inside classrooms. Paints or plastic toy parts can release volatile chemicals when exposed to heat. These can cause breathing problems, nausea, and pinched eyes – which is why it is important to regularly check the effectiveness of ventilation in school rooms.

The device is **battery-powered**, and can therefore be used *conveniently in various locations*. A single battery can last for up to 5 *years of constant usage*, making the usage hassle-free.

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 EL** 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 e.g. sound levels. **SEZO EL** device is powered by a 13000 mAh battery.

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 EL - TECHNICAL SPECIFICATIONS

<b>DESCRIPTION</b>	<ul style="list-style-type: none"> <li>- Compact low-power sensor device measuring environmental parameters, luminosity and noise with accelerometer, magnetometer, and motion detector</li> <li>- Suitable for indoor and outdoor environment monitoring</li> <li>- LoRaWAN networking technology for long transmission range and long battery life (up to 5 years)</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>	VOC concentration, temperature, humidity, atmospheric pressure, luminosity, noise level and motion (PIR)
<b>OPERATING TEMPERATURE</b>	-30 ÷ 60°C
<b>MEASUREMENT RANGE AND ACCURACY</b>	<ul style="list-style-type: none"> <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> <li>- Accelerometer: 0 ÷ ±157 m/s<sup>2</sup> , max. ±7%</li> <li>- Magnetometer: 0 ÷ ±49gauss, max. ±7%</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>	5x LS 14500 (13000 mAh), optional 10x LS 14500
<b>ENCLOSURE AND MOUNTING</b>	IP55, polycarbonate, four screw holes
<b>WEIGHT</b>	225 g with standard battery setup
<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.