

SEZA



# SEZO A1L

measuring parameters such as temperature, humidity, atmospheric pressure

sending data to Orange Live Objects platform via LoRaWAN

measuring sound level, suspended dusts (PM1, PM 2.5 and PM 10), level of light

powered by AC230V, using a common power socket



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 A1L** makes refineries and chemical production companies more *secure*.

**Facility managers** leverage the **SEZO A1L** 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 A1L** makes public institutions more *comfortable* and more *efficient*.

**Public facilities** like libraries, museums or city halls leverage **SEZO A1L** 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 built-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 A1L** makes schools a safer place for children and staff.

**School management** leverages **SEZO A1L** 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 A1L** measures particulate matter such as *PM10, PM2.5, and PM1.*

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 A1L** 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 A1L** 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 A1L - TECHNICAL SPECIFICATIONS

<b>DESCRIPTION</b>	<ul style="list-style-type: none"> <li>- Compact sensor device measuring environmental parameters, luminosity, noise and air quality with accelerometer, magnetometer 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>	Temperature, Humidity, Air Pressure, Luminosity, Noise, Particulate matter, acceleration, magnetic field, motion (PIR)
<b>OPERATING TEMPERATURE</b>	-30 ÷ 60°C
<b>MEASUREMENT RANGE AND ACCURACY</b>	<ul style="list-style-type: none"> <li>- Temperature: -30 ÷ 60°C, typ. ±0.3°C, max ±1°C</li> <li>- Humidity: 0 ÷ 100%, typ. ±4%, max. ±7% @25°C @20 ÷ 80% RH</li> <li>- Air pressure: 260 ÷ 1260 hPa, ±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>- 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)</li> <li>- Accelerometer: 0 ÷ ±157 m/s<sup>2</sup>, max. ±7%</li> <li>- Magnetometer: 0 ÷ ±49gauss, max. ±7%</li> <li>- PIR motion detection: 15m range for 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>	External AC adapter 100-240V 50Hz max. 1W, Europlug
<b>ENCLOSURE AND MOUNTING</b>	IP55, polycarbonate, four screw holes
<b>WEIGHT</b>	170 g (without AC adapter and power cable)
<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.