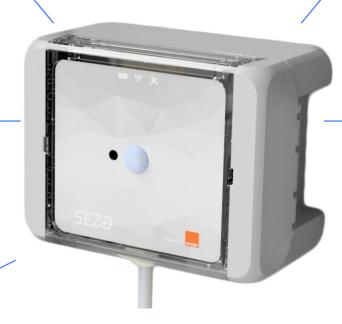# SEZO AM

measuring various parameters i.e. temperature, humidity, atmospheric pressure, sound level, suspended dusts (PM1, PM 2.5 and PM10), level of light

sending data to Orange Live Objects platform via LTE-M

integrated GPS (establishing location)

powered by AC230V, using a common power socket

PIR (infrared) sensor

OTA (over the air) configuration, no cables needed

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

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

The device can be adjusted to client's 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 light, air quality, as well as acoustic intensity).

The device is capable of sending data to the Orange Live Objects platform via LTE-M.

end device	IoT	environment monitoring
health & security	smart building	indoor/outdoor

PUBLIC INSTITUTIONS

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

Public facilities like libraries, museums or city halls leverage **SEZO AM** 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 LTE-M.

end device	IoT	comfort monitoring
health & security	smart building	indoor/outdoor

POTENTIAL USE CASES

SCHOOLS

SEZO AM makes schools a safer place for children and staff.

School management levarages **SEZO AM** 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 AM** 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 LTE-M* to the Orange Live Objects platform.

INDUSTRIAL PRODUCTION SITES

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

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

The device has an integrated PIR (infrared) sensor, commonly used in alarm systems and automatic lighting systems, so it can detect the presence of people. The built-in light sensor helps to monitor room lighting.

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

end device	IoT	schools
health & security	air quality	indoor/outdoor

end device	IoT	industrial
health & security	indoor	outdoor

SEZO AM - TECHNICAL SPECIFICATIONS

DESCRIPTION	- Compact sensor device measuring environmental parameters, luminosity, noise and air quality - Suitable for indoor and outdoor environment monitoring - LTE-M communication protocol, band B8 and B20 - GNSS geolocation (optional) - Integrated with Orange Live Objects Platform
MEASURED PARAMETERS	Temperature, Humidity, Air Pressure, Luminosity, Noise, Acceleration, Motion (PIR), Particulate matter
OPERATING TEMPERATURE	-30 ÷ 60°C
MEASUREMENT RANGE AND ACCURACY	- Temperature: -30 ÷ 60°C, typ. ±0.5°C, max ±2°C - Humidity: 0 ÷ 100%, typ. ±4%, max. ±7% @25°C - Air pressure: 300 ÷ 1100 hPa, typ ±1 hPa max ±3 hPa - Luminosity: 0 ÷ 1000 lx, typ. ±50 lx - Noise: 40 ÷ 100dB, ±6dB at voice frequency band - PM: 0 ÷ 500 µg/m3, ±10 µg/m3 @<100 µg/m3 (measurement disabled below -10°C and above 95% RH) - Accelerometer: 0 ÷ ±157 m/s^2 , max. ±7% - Magnetometer: 0 ÷ ±49gauss, max. ±7% - PIR motion detection: at least 5 meters range for human-sized object
COMMUNICATION PROTOCOL	LTE-M; microSIM (eSIM/Soft SIM options)
FREQUENCY AND TRANSMISSION POWER	LTE-M band, maximum 33 dBm
DATA TRANSMISSION INTERVAL	Default 15 minutes or event-triggered (configurable OTA)
POWER SUPPLY	100-240V 50Hz
ENCLOSURE AND MOUNTING	IP55, polycarbonate, four screw holes
WEIGHT	300g
PRODUCT DIMENSIONS	Length 113 mm, height 80 mm, width 60 mm

About WiRan

WiRan Sp. z o.o. is a company providing R&D services on a B2B basis 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.