Datasheet
Publish Date: 2024-09-06

ERS2 Series

LoRaWAN Wireless Sensor

Description

The ERS2 Series of sensors are universal LoRaWAN® indoor climate sensors. The sensor measures, depending on model, temperature, humidity, light intensity, CO2-level, sound-level, volatile organic compounds (VOC), occupancy and detects motion. ERS2 is a battery-powered device and is designed to be wall-mounted. The sensors are equipped with NFC (Near Field Communication) for easy configuration with an NFC-enabled smartphone.

Applications

- Indoor environment measuring
- Smart buildings
- Workplace management
- Room occupancy

Product features

- LoRaWAN Certified CM
- Temperature sensor
- Humidity sensor
- Light sensor
- Motion sensor (PIR)
- Occupancy
- CO2-sensor
- VOC-sensor
- NFC for configuration
- Configuration over the air
- Discrete and minimalistic design
- Traffic Light Indication

Device Specifications

Mechanical specifications	
Weight	53 – 60 g excluding batteries 70 – 95 g including batteries
Dimensions	76.4 x 76.4 x 22.5 mm
Enclosure	PC + ABS
Protection class	IP20

Operating conditions	
Temperature	0 to 50 °C
Humidity	0 to 85 % RH (non-condensing)
Operating Altitude	0 – 2000 m
Pollution Degree	Degree 2
Usage Enviroment	Indoor
Storage Temperature	-40 – 85 °C

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Device Power Supply	
Battery Type	1 or 2 3.6V AA Lithium Batteries depending on model
Expected Battery Life	Up to 10 years (Depending on model, configurations and environment)

Radio / Wireless	
Wireless Technology	LoRaWAN® 1.0.4, Regional Parameters RP002 – RP1.0.3
Wireless Security	LoRaWAN® End-to-End encryption (AES-CTR), Data Integrity Protection (AES-CMAC)
LoRaWAN Device Type	Class A/C (configurable) End-device
Supported LoRaWAN® features	OTAA, ABP, ADR, Adaptive Channel Setup
Supported LoRaWAN® regions	US902 – 928, EU863 – 870, AS923, AU915 – 928, KR920 – 923, IN865
Link Budget	137 dBm (SF7) to 151 dBm (SF12)
RF Transmit Power	14 dBm / 20 dBm (Region specific)

Device Logging Function	
Sampling Interval	Configurable via NFC and downlink configuration
Data Upload Interval	Configurable via NFC and downlink configuration

Sensor Characteristics	
Temperature Range	0 to 50 °C
Temperature Resolution	0.1 °C
Temperature Accuracy	Accuracy: ±0.2 °C
Humidity Range	0 – 85 % RH
Humidity Resolution	0.1 % RH
Humidity Accuracy	± 2 % RH at 25 °C
Light Range	4 – 2000 lx
Light Resolution	1 lx
Light Accuracy	± 10 lx
CO2 Range	400-10000 ppm
CO2 Resolution	1 ppm
CO2 Accuracy	400-5000 ppm: ±30 ppm, ±3 % of reading (15-35 °C, 0-80 % RH) 5001-10000 ppm: ±10 % of reading (15-35 °C, 0-80 % RH)
Sound Range (Average)	31 – 75 dB SPL
Sound Range (Peak)	59 – 100 dB SPL
Sound Resolution	1 dB
Sound Accuracy	± 5 dB
VOC Range	0 – 60000 ppb
VOC Resolution	0 ppb – 2008 ppb: 1 ppb 2008 ppb – 11110 ppb: 6 ppb 11110 ppb – 60000 ppb: 32 ppb
VOC Accuracy	Typ. 15 % of measured value
Heat Map Viewing Angle (Eye)	60°x60°
Heat Map Accuracy (Eye)	± 2.5°C

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User Interface	
LED	Functionality configurable via NFC and downlink configuration
App Support	Sensor Settings (Using NFC)

Conformity	
IC	ID: 26904-ERS02
FCC	ID: 2ANX3-ERS02
EMC	2014/30/EU
RED	2014/53/EU
LVD	2014/35/EU
RoHS	2011/65/EU + 2015/863
LoRa	1.0.4

Country of origin	
Product & Firmware Development	Sweden
Plastic casing	Sweden
Assembly	Sweden, Latvia, Lithuania

Ordering Information

Art. No.	Description
ERS2Lite	ERS2 Lite
ERS2CO2Lite	ERS2 CO2 Lite
ERS2	ERS2
ERS2CO2	ERS2 CO2
ERS2SOUND	ERS2 Sound
ERS2EYE	ERS2 Eye
ERS2VOC	ERS2 VOC
ER14505	AA 3.6V Lithium Battery ER14505

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Product Information

Art Function	ERS2 Lite	ERS2 CO2 Lite	ERS2	ERS2 CO2	ERS2 Sound	ERS2 Eye	ERS2 VOC
Temperature	×	×	×	×	×	×	×
Humidity	×	×	×	×	×	×	×
Motion (PIR)			×	×	×	×	×
CO2		×		×			
Sound					×		
Occupancy						×	
VOC							×
Traffic Light			×	×	×	×	×
NFC	×	×	×	×	×	×	×
Battery slots	1	2	2	2	2	2	2

Document Revision History

Version	Description	Date
1.0	First versoin	2024-09-06

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