Datasheet
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Display Series

LoRaWAN Wireless Sensor

Description

The ERS Display series of sensors are universal LoRaWAN® indoor climate sensors with a 2.1" E-paper display showing real-time sensor data. Depending on the model, the sensor measures temperature, humidity, light intensity, CO2 level, VOC level, sound level and detects motion. The ERS Display series are battery-powered devices and are 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

Product features

- LoRaWAN Certified CM
- 2.1 " E-paper display
- Temperature sensor
- Humidity sensor
- Light sensor
- Motion sensor (PIR)
- Occupancy
- CO2-sensor
- VOC-sensor
- Button
- NFC for configuration
- Configuration over the air
- Discrete and minimalistic design
- Traffic Light Indication
- Custom Interface

Device Specifications

Mechanical specifications	
Weight	53 - 60 g excluding batteries 70 - 95 g including batteries
Dimensions	76.2 x 76.2 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

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Storage Temperature	-40 – 85 °C

Device Power Supply	
Battery Type	2 x 3.6V AA Lithium Batteries
Expected Battery Life	Up to 10 years (Depending on 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	**EU868, IN865, US915, AU915, AS923, HK923, KR923**
Link Budget	137 dBm (SF7) to 151 dBm (SF12)
RF Transmit Power	Max 14 dBm EIRP

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

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

Conformity	
IC	ID: 26904-ERSD1
FCC	**ID: 2ANX3-ERSD1**
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
Production	Sweden, Latvia, Lithuania

Ordering Information

Art. No.	**Description**
ERSDLITE-L	ERS Display Lite LoRa
ERSDCO2LITE-L	ERS Display CO2 Lite LoRa
ERST-L	ERS Display Touch LoRa
ERSD-L	ERS Display LoRa
ERSDCO2-L	ERS Display CO2 LoRa
ERSDSOUND-L	ERS Display Sound LoRa
ERSDVOC-L	ERS Display VOC LoRa
ER14505	AA 3.6V Lithium Battery ER14505

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Product Information

Art Function	ERSDLITE-L	ERSDCO2LITE-L	ERST-L	ERSD-L	ERSDCO2-L	ERSDSOUND-L	ERSDVOC-L
2.1" E-paper display	×	×	×	×	×	×	×
Temperature	×	×	×	×	×	×	×
Humidity	×	×	×	×	×	×	×
Motion (PIR)				×	×	×	×
CO2		×			×		
Sound						×	
VOC							×
Button			×				
Traffic Light				×	×	×	×
NFC	×	×	×	×	×	×	×

Document Revision History

Version	Description	Date
1.0	First version	2024-09-06
2.0	Product Name update	2025-03-14

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