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ERS Lite

LoRaWAN® Wireless Sensor

Description

ERS Lite is a sensor for measuring the indoor environment. It is enclosed in a room sensor box and is designed to be wall mounted. ERS Lite is completely wireless and powered by one 3.6V AA Lithium battery. Inside you will find two internal sensors for measuring indoor temperature and humidity.

Applications

- Indoor environment measuring
- Smart buildings
- Workplace management

Product features

- LoRaWAN Certified CM
- Temperature sensor
- Humidity sensor
- NFC for configuration
- Configuration over the air
- Discrete and minimalistic design

Device Specifications

Mechanical specifications	
Weight	60 g excluding battery / 80 g including battery
Dimensions	86 x 86 x 28 mm
Enclosure	Plastic PC/ABS

Operating conditions	
Temperature	0 to 40 °C
Humidity	0 to 85 % RH (non-condensing)

Device Power Supply	
Battery Type	1 x 3.6V AA Lithium Battery
Expected Battery Life	<10 years (Depending on configurations and environment)

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

Radio / Wireless	
Wireless Technology	LoRaWAN® 1.0.3
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, RU864, IN865
Link Budget	137 dB (SF7) to 151 dB (SF12)
RF Transmit Power	14 dB / 20 dB (Region specific)

Data types			
Type value	Type	Data size	Comment
0x01	Temperature	2	-3276.5 °C → 3276.5 °C (Value of: 100 → 10.0 °C)
0x02	Humidity	1	0 – 100 %
0x07	VDD (Battery voltage)	2	0 – 65535 mV
0x3D	Debug information	4	Data depends on debug information
0x3E	Sensor settings	n	Sensor setting sent to server at startup (first package). Sent on Port+1.

Sensors

Temperature

Resolution: 0.1 °C

Accuracy: ±0.2 °C (See figure 1)

Humidity

Resolution: 0.1 % RH

Accuracy at 25 °C: ± 2 % RH (See figure 2)
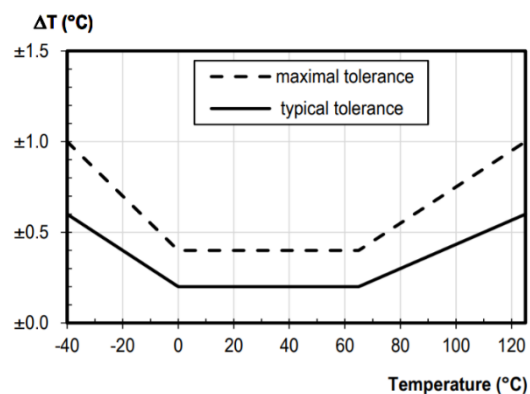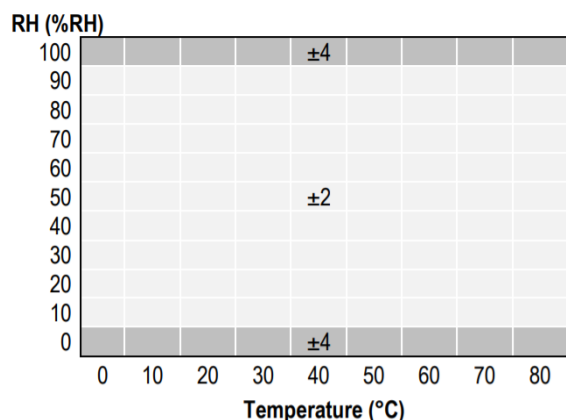
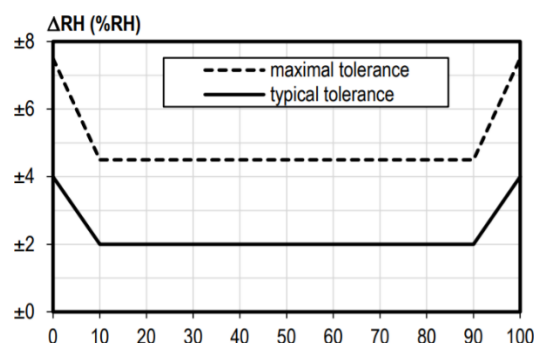Accuracy of humidity over temperature: See below

Figure 1

Figure 2