Reference number: 100052

Datasheet enerSENSE Industry

We make sensing in buildings powerful, scalable & sustainable

Smart building sensors powered by indoor light

enerSENSE wireless industry sensor for temperature and humidity monitoring. Power is supplied by our proprietary indoor photovoltaic technology.

Easy installation without battery replacement. LoRaWAN communication for simple and scalable installations.

Applications

- Storage and production conditions
- Energy efficiency
- Workplace safety

Use cases

- Monitoring of temperature and humidity for logistics and production facilities
- HACCP reporting (incl. offset functionality for calibrations)
- Improving energy efficient operations of industry buildings

Powered by indoor light - no battery replacement or wiring

- Powered by indoor light through enerthing's proprietary photovoltaic technology
- Smart power management on device and cloud level for reliable and efficient operation
- Superior performance to battery-powered sensors

Sustainable

- Long product lifetime & elimination of maintenance processes
- Reduction of battery- and electronics waste
- Circular product design

Product features

Included sensors
Temperature
Humidity
Air pressure
Light
Acceleration / orientation

User interfaces
LED (RGB)
User-button

Device control
NFC configuration
Over the air configuration
Firmware up-date via app

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enerthing®

Specifications

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 end-device	
Supported LoRaWAN® features	OTAA, ADR, adaptive channel setup	
Supportet LoRaWAN® regions	EU863 – 870	
RF transmit power	+14 dBm	
Link budget	137 dB (SF7) to 151 dB (SF12)	
Energy Supply		
Photovoltaic module	Enerting's highly efficient indoor photovoltaic technology is optimized for artificial (LED or fluorescent) or ambient light indoors. Inhouse development and production of our proprietary technology in Germany.	
Minimum illumination conditions	Depending on device settings and environment < 100 lx possible	
Secondary battery (accumulator)	Storage 700 mAh rechargeable secondary battery (storage size customizable)	
Energy management circuit	Charge- and power management circuit with monitoring of battery voltage, PV module voltage and PV harvesting current	
Energy management software	Energy management incorporated in embedded software on the device and in the cloud	
Sensor Data logging & transmission		
Sampling interval	Configurable via NFC and downlink	
Data transmission interval	Configurable via NFC and downlink	
Sensors	**Feature**	**Range**
Temperature	Measurement range	-40° C to 85° C 0° C to 65° C full accuracy
	Accuracy	+/- 1° C
Humidity	Measurement range	10 % to 90 % RH
	Accuracy	+/- 3 % @ 20 % to 80 % RH
Pressure	Measurement range	300 to 1100 hPa
	Accuracy	1,0 hPa @ 0°C to 65° C
Light	Measurement range	0 - 83 k lux
	Accuracy	0,01 lx
Acceleration	Used for manipulation alarm (device has been touched / dropped / changed position / moved for >5sec)	

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Specifications

Interface & Feedback	
LEDs	RGB
User-button	Factory reset, etc.
NFC interface	For reading and changing device settings
Mechanical specifications	
Colour	Black
Dimensions	341 mm x 112 mm x 9mm (H x W x D)
Protection	IP65
Enclosure material	PMMA
Weight	379 g
Operating conditions	
Temperature	0° C to 50° C
Humidity	0 to 85 % RH (no condensation)
General	
Storage temperature	-30° C to +70° C
Warranty	12 months. For extended warranty periods, please contact us.
Expected lifetime	> 15 years
Made in	Germany

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Illumination condition indoors and available energy for powering your sensing device

We have engineered the enerSENSE device to harvest sufficient light for a variety of sensing applications under the consideration of typical illumination conditions in industry, logistics building and office spaces.

High quality data by Smart Power Management

We have implemented a smart power management on the device as well as on cloud level (optional). While the sensor is designed to provide the performance required in the specific application, more energy provided by better illumination conditions can also be exploited by generating better data. This can be more sensor data, higher resolution of said data, higher signal strengths or the ability for more frequent over the air changes of device parameters. Our smart power management enabled by additional internal sensors for monitoring energy flows is based on algorithms implemented on device level as well as on cloud level.

Customization

Applications often result in specific requirements.
We are open to customize our solution to your needs – just contact us!

Installation & commissioning

Device installation & commissioning can be done by the customers. For documentation please visit www.enerthing.com/support. For further assistance feel free to contact us at support@enerthing.com.

Disposal

According to the European WEEE directive, electrical and electronic equipment must not be disposed with consumers waste. Its components must be recycled or disposed apart from each other. Otherwise contaminative and hazardous substances can pollute our environment. You as a consumer are committed by law to dispose electrical and electronic devices to the producer, the dealer, or public collecting points at the end of the devices lifetime for free. Particulars are regulated in national right. The symbol on the product, in the user's manual, or at the packaging alludes to these terms. With this kind of waste separation, application and waste disposal of used devices you achieve an important share to environmental protection.

Declaration of conformity

Hereby the enerthing GmbH declares that enerSENSE sensors complies with the essential requirements and other relevant provisions of Directive 2014/30/EU and 2014/53/EU.

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