

BlueRange CO₂ Sensor C1

Datasheet

Bluetooth based multisensor for the measurement of environmental parameters in buildings and industrial production, powered by Energy Harvesting - Photovoltaics.

Item number: BR-ES-2020-00001-1



BlueRange CO₂ Sensor C1

Overview

- Energy harvesting device utilizing photovoltaics sending sensor data via BLE
- Optimized for devices with BlueRange software
- Battery-free multisensory, CO₂, Temperature, Pressure, Humidity, Light
- Powered by indoor and outdoor light
- No battery or sensor replacement, maintenance-free operation

Specification, Characteristics

Type	Enerthing EnerSense CO ₂
Item number	BR-ES-2020-00001
Communication	
Firmware	Bluetooth Low Energy 5.0
	BlueRange (FruityMesh)
	Enerthing Smart Power Management
	Back-channel communication, OTA FW upgrade
Radio	
Module	Nordic SoC nRF52832 (MCU and transceiver)
Antenna	Ceramic SMD antenna
Energy Supply	
Energy harvester	Patented indoor light photovoltaic technology
Charge management	Power management circuit with reading of battery voltage, PV module voltage and net energy flow
Storage	90 mAh rechargeable secondary battery
Operating temperature	-5° to 50°C
Sensors	
CO ₂	0 to 5000ppm; accuracy +/-45 ppm or +/- 3%
CO ₂ sensor type	Near infrared measurement (NDIR)
CO ₂ calibration	Automatic
CO ₂ measurement interval	>200 lux 2 min <200 lux 3 min <50 lux 10 min
Temperature	-5°C to 50°C; accuracy +/- 1°C
Light Level	4 to 2000 lux
Humidity	10 % to 90 % RH; accuracy +/- 3 %
Pressure	300 to 1100 hPa; accuracy +/- 0,6 hPa
Enclosure	
Colour	White
Dimensions	162 mm x 114 mm x 20 mm (H x W x D)
Protection class	IP20

General	
Storage temperature	-30° to +70°C
Weight	120g
Lifetime	>10 years
Made in	Germany

Connection

The EnerSense CO₂ is connecting to a BlueRange BLE mesh network via Bluetooth Low Energy (BLE) transmitting in BlueRange standard.

The connection to a BLE mesh infrastructure is determined by the enrollment.

Functional Description

The EnerSense CO₂ is used for various types of IoT installations that use a Bluetooth Low Energy communication to send and receive sensor data.

The EnerSense CO₂ connects to a BlueRange mesh infrastructure node and is therefore able to transmit sensor data or receive firmware updates Over-The-Air (OTA).

Depending on the type of different use cases applied simultaneously, the data traffic adapts accordingly within the mesh and from the gateway into the connected cloud systems or server cluster. Since the EnerSense CO₂ itself is also a mesh participant, it must be within the communication range of at least one mesh node to be able to connect with the mesh.

Order Information

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In standard application used for BlueRange installations of BLE mesh infrastructure and comes with BlueRange Software.

One year legal warranty.

No cables needed, therefore no cables included.

Signs and certificates

	<p>WEEE directive 2012/19/EU Do not dispose of with household waste!</p>
	<p>CE certification – Conformité Européenne Declaration in accordance with EU Regulation 765/2008 that the product complies with the applicable requirements laid down in the Community harmonisation legislation on its affixing.</p>

Related Components

Our BlueRange Gateway is compatible with several **BlueRange Ready** components by other manufacturers. See examples below:

Vossloh-Schwabe Deutschland GmbH – Blu2Light series



All components of the Blu2Light series are fully BlueRange Ready and used to setup lighting installations.

The LiNA configuration and user apps are fully BlueRange integrated and completed

vossloh-schwabe.com/blu2light-indoor

Regent Beleuchtungskörper AG – Lightpad Tuneable series



Regent Lightpad Tuneable office luminaires connect to a BLE mesh via BlueRange Mesh.

These luminaires can be controlled and managed via an App and/or connect to a cloud via a gateway.

regent.ch/lightpad-tunable

Herbert Waldmann GmbH & Co. KG / LIZ – YARA series



The YARA luminaire series luminaires connect to a BLE mesh via BlueRange Mesh.

These luminaires can be controlled and managed via an App and/or connect to a cloud via a gateway.

waldmann.com/yara

Find more **BlueRange Ready** products at:

bluerange.io/components

Further information and tools

Please find our documentation on how to setup and enroll a BlueRange BLE mesh infrastructure at bluerange.io/developer.

Link to the BlueRange Provisioning App:



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General information on BlueRange

www.bluerange.io

Disclaimer

Subject to change without notice. All data without guarantee.

The data sheet refers to the current factory setting.

The function in installations with other devices must be checked in advance for compatibility.