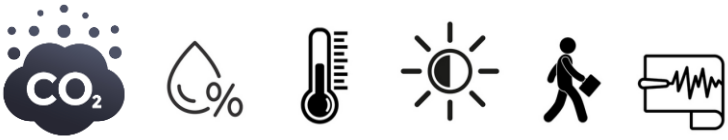
AL-602-04-868 EnoPuck CO2 WALL / CE

CO_2 - "traffic light" with multisensor, RGB LED, EnOcean, +12 V DC, for surface mounting
Item no. 12433

Interfaces:
Sensors for CO2, temperature, rel. humidity, acceleration / vibration, motion / PIR, buzzer
1x EnOcean bidirectional (internal antenna), power supply: +12 V DC, 100 mm x 28 mm



The CO2 traffic light type AL-602-04-868 EnoPuck CO2 WALL / CE can be used both as a stand-alone solution and in combination with building automation as a multisensor and LED light indicator.

The custom solution measures the CO2 value and displays it in the form of a traffic light (green / yellow / red); the limit values, colors and brightness of the LEDs can be configured at any time using the BL-PC-FLEX-2 software (factory default limit values = yellow from 1000 / red from 2000 ppm, others on request).

The technical data of the sensors are as follows:

- CO2: 0 - 2,550 ppm

In addition to its use as a pure CO2 traffic light, additional sensors are integrated:

- Temperature: 0 - 50 °C
- Humidity: 0 - 100%
- PIR sensor: 100 degree opening angle, range 3 to 5 meters
- Vibration: sensitivity 0.061 g
- Brightness: 0 - 64,000 lux

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All measured values are transmitted via EnOcean. The EnoPuck CO2 WALL is configured wirelessly using the BL-PC-FLEX-2 software. The only connection of the EnoPuck CO2 WALL is the +12 V DC power supply.

Technical data

: interfaces

Type	EnOcean
Quantity	1
Transmit/receive center frequency	868.3 MHz / ASK
Frequency range used	868.0 – 868.6 MHz
Maximum transmit power	Typ. 6 dBm @ 868.300 MHz
Receiver category according to EN	2

Sensors: CO_2

Measuring range	0 - 2,550 ppm
Accuracy	± 30 ppm abs., ± 3 % of measured value (@ 25 °C, range 400 - 10,000 ppm)
Repeatability	10 ppm
Temperature stab.	2.5 ppm / °C
Response time	Typ. 25 s

Sensors: Rel. humidity

Measuring range	0 - 95 %
Accuracy	± 2 %
Repeatability	0,1 %
Response time	Typ. 8 s

Sensors: Temperature

Measuring range	32 - 122 °F
Accuracy	± 0.5 °F
Repeatability	0.1 °F
Response time	Typ. 2 s

Sensors: Accelerometer

Measuring range	± 8 g
Sensitivity	0.061 mg

Sensors: Motion/ PIR

Detection angle	Radial, 100 degrees
Detection range	3 - 5 m

Sensors: Brightness

Measuring range	0 - 64,000 lux
Accuracy	± 10 %

User interfaces

Service button	Yes
Service LED	-
Buzzer	Yes

Housing / Connection technology

Connection technology	Supply cable on the back, 2x 0.5 sqmm, for +12 V DC power supply

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Housing	Plastic, PC, translucent, white

Power supply

Supply voltage	12 V DC
Power consumption	Typ. 1.5 W, max. 5 W

Environmental conditions

Operating temperature	0..50 °C
Storage temperature	-20..+70 °C
Humidity	0..99% relative humidity, non-condensing
Protection class	IP20

Dimensions and weight

Weight	150 g
Dimensions	Diameter: 100 mm, height: 28 mm

Tests / approvals

CE	2014/53/EU RED Directive 2011/65/EU + Annex 2015/863/EU RoHS 3 Directive

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Supported EEPs (EnOcean Equipment Profiles)

Transmit / TX

No.	EEP	Description	Tx-ID
1	A5-09-04	CO2 sensor (humidity, CO2, temperature)	Base ID + 100 (dec.)
2	A5-07-01	Occupancy sensor with supply voltage monitor (PIR, vibration)	Base ID + 101 (dec.)
3	A5-08-01	Brightness	Base ID + 102 (dec.)

Note:

The EnoPuck CO2 WALL transmits with the EnOcean base ID + 100 / EEP A5-09-04, with the base ID + 101 / EEP A5-07-01 and the base ID +102 / A5-08-01. It is therefore not necessary to configure or select the EEP.

Receive / RX

No.	EEP	Description
1	F6-02-01	Light and Blind Control - Application Style 1
2	F6-02-02	Light and Blind Control - Application Style 2
3	F6-02-03	Light Control - Application Style 1
4	A5-07-01	Occupancy with Supply voltage monitor
5	A5-07-02	Occupancy with Supply voltage monitor
6	A5-07-03	Occupancy with Supply voltage monitor and 10-bit illumination measurement
7	A5-06-01	Brightness sensor, range 300lx to 60,000lx
8	A5-09-04	CO2 sensor (humidity, CO2, temperature)

Brief description

Power supply

The **EnoPuck CO2 WALL** is supplied with a voltage of 12 V DC via an external +12 V DC power supply unit. The power consumption is typically 1.5 W.

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EnOcean

The integrated EnOcean transceiver enables bidirectional communication with sensors, a higher-level controller, the BL-PC-FLEX-2 configuration software and the EnOcean USB stick.

LED, RGB

The lighting is provided by RGB LEDs that shine into the housing from below.

How the EnoPuck CO2 WALL works

Measurement of CO2 concentration and color display (RGB)

The EnoPuck CO2 WALL continuously measures the CO2 concentration of the ambient air and switches the LEDs to green, yellow or red (or any self-configured color value, for example orange instead of red) when the configured limit values are exceeded.
The transmission interval of the CO2 measured value (as of every other measured value) via EnOcean can be configured using BL-PC-FLEX-2.

Recalibration of the CO2 measured value

If the EnoPuck CO2 WALL has been exposed to mechanical stress such as impacts, strong vibrations or a fall, the CO2 measurement may no longer be correct.
In this case, a manual calibration of the CO2 sensor in the EnoPuck CO2 WALL is required.
Please proceed as follows:

1. Find a suitable location where the EnoPuck CO2 WALL can measure the CO2 of the outside air (no drafts). Make sure that the device is never exposed to moisture or rain.

2. Supply the EnoPuck CO2 WALL via an external +12 V DC power supply unit. Do not disconnect the power supply until the end of the process.

3. Press and hold the service button for at least 8 seconds:

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- After 2 seconds, the EnoPuck CO2 WALL flashes red. This signals that the calibration will be carried out if you press the button again. If you release it now, the process is canceled.

- After 6 seconds, the EnoPuck CO2 WALL starts flashing blue.

3. The calibration process takes 10 minutes. You can now release the button.
Wait until the process is complete. The waiting time serves to establish the same CO2 concentration inside the EnoPuck CO2 WALL as in the outside air. At the end of this time, the value then measured is used as the reference value of 400 ppm. This is the typical CO2 concentration in outside air.

4. As soon as the calibration has been completed successfully, the EnoPuck CO2 WALL lights up green continuously.

5. Disconnect the EnoPuck CO2 from the power supply. After the restart, the EnoPuck CO2 WALL is ready for operation again.

6. In the event of an error, it lights up red continuously. In this case, please disconnect the EnoPuck CO2 WALL from the power supply and repeat the calibration process.

Measurement of rel. humidity, temperature

The EnoPuck CO2 WALL continuously measures the rel. humidity and temperature. The measured values are sent together with the CO2 value.

Detection of motion and vibration

The EnoPuck CO2 WALL uses an integrated acceleration sensor and a PIR sensor integrated in the top to continuously monitor its surroundings for motion or vibration, e.g. of the table top at the installation site. As soon as one of the two events (vibration and / or PIR detection) occurs, a "motion detected" message is sent immediately.

Measurement of the ambient brightness

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The EnoPuck CO2 WALL continuously measures the ambient brightness. The brightness measurement is made possible by the EnoPuck CO2 WALL automatically switching the LEDs off and briefly back on when the measured value is to be transmitted.

Receiving EnOcean radio telegrams

The EnoPuck CO2 WALL is configured wirelessly using the BL-PC-FLEX-2 configuration software.
It is recognized as such by the software and displayed in the project explorer.

If the three color channels of an EnoPuck CO2 WALL are controlled by a higher-level controller, all functions of the software are available.

Sending EnOcean radio telegrams

The measured values for humidity, CO2 and temperature are transmitted for each sensor at intervals that can be configured separately using the BL-PC-FLEX-2 software.

A motion detection message (vibration and motion detector) is also sent immediately.

Sending the teach-in telegrams

The EnoPuck CO2 has a service button inside the device. It is located on the side, approx. 3 cm to the right of the socket for the plug-in power supply, and can be operated with a paper clip, for example:

If the button is pressed **briefly 1x within 2 seconds**, a teach-in telegram for EEP A5-09-04 is sent after the 2 seconds have elapsed.

If the button is pressed **briefly 2x within 2 seconds**, a teach-in telegram for EEP A5-07-01 is sent after the 2 seconds have elapsed.

If the button is pressed **briefly 3x within 2 seconds**, a teach-in telegram for EEP A5-08-01 is sent after the 2 seconds have elapsed.

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Dimensions:

Diameter: 100 mm; height: approx. 28 mm

Ordering information

Part name	Part no.	Part description
AL-602-04-868 EnoPuck CO2 WALL / CE	12433	CO2 traffic light, EnoPuck CO2 WALL FCC, RGB LED, EnOcean 868 MHz, multi-sensors for CO2, humidity, temperature, vibration, PIR; supply voltage 12 V DC (+/-%), dimensions 100 x 28 mm, housing: PC white opaque; for external +12 V DC power supply (not included in delivery);

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Note:

This device is approved for operation within the member states of the European Union only.

EU declaration of conformity

DEUTA Controls GmbH hereby declares that the radio equipment type **AL-602-04-868 EnoPuck CO2 / CE** is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: www.deuta-controls.de under Service/Downloads (Doc. EUDC2024_107).
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