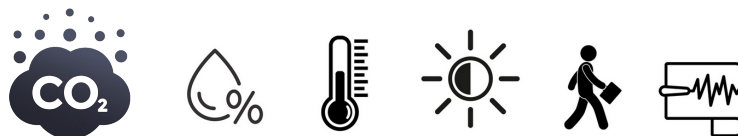# AL-602-04-868 EnoPuck CO2 WALL / CE

CO$_2$ – "traffic light" with multi-sensor, RGB-Led, EnOcean, +12 V DC, for on-wall mounting
Item nr. 12433

Interfaces:
Sensors for CO2, temperature, rel. Humidity, acceleration / vibration, movement / PIR, buzzer
1x EnOcean bi-directional (internal antenna), supply: +12 V DC, 100 mm x 28 mm

The CO2 traffic light of the type AL-602-04-868 EnoPuck CO2 WALL / CE offers the possibility of being used both as a stand-alone solution and in connection with building automation as a multi-sensor and LED light display.

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

The technical data of the sensors are as follows:

- CO2: 0 - 10,000 ppm

In addition to being used 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

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 power supply with +12 V DC.

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01.08.2022
Technische Änderungen vorbehalten

Paffrather Str. 140, 51465 Bergisch Gladbach
Hauptstraße 76, 32479 Hille
info@deuta-controls.de; www.deuta-controls.net

Tel.:+49 2202 285 57- 61
Tel: +49 5734 51466 - 0
Fax:+49 5734 51466 - 28

Technical data

Interfaces

Type	EnOcean
Number	1
Transmit / receive center frequency	868.3 MHz / ASK
Frequency range used	868.0 – 868.6 MHz
Maximum transmission power	Typ. 6 dBm @ 868.300 MHz
Receiver category according to EN 300200	2

Sensors: CO_2

Measuring range	0 – 10.000 ppm
Accuracy	± 30 ppm absolut, ± 3 % vom Messwert (@ 25 °C, Bereich 400 – 10.000 ppm)
Repeatability	10 ppm
Temperature stab.	2,5 ppm / °C
Response time	Typ. 25 s

Sensors: Rel. humidity

Measuring range	0 – 100 %
accuracy	± 2 %
Repeatability	0,1 %
Response time	Typ. 8 s

Sensors: Temperature

Measuring range	- 40 – 120 °C
Accuracy	± 0,5 °C
Repeatability	0,1 °C
Response time	Typ. 2 s

Sensors: Accelerometer

Measuring range	± 8 g
Sensitivity	0,061 mg

Sensors: Motion/ PIR

Detection angle	Radial, 100 degrees
Detection area	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	Power cord on the back side, 2x 0,5sqmm, with power connector (female), for +12 V DC power supply
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 RoHS directive
Approvals	EN 62368-1:2014 + AC:2015 ETSI EG 203 367 DIN/EN 55032 EN/IEC 61000-4-2 EN/IEC 61000-4-3 EN/IEC 61000-4-4 EN/IEC 61000-4-5 EN/IEC 61000-4-6

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Paffrather Str. 140, 51465 Bergisch Gladbach
Hauptstraße 76, 32479 Hille
info@deuta-controls.de; www.deuta-controls.dnet

Phone.:+49 2202 285 57- 61
Phone: +49 5734 51466 - 0
Fax:+49 5734 51466 - 28

Table of supported EEP (**E**nOcean **E**quipment **P**rofile)

Transmit / TX

Nr.	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.)

Notice:

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

Receive / RX

Nr..	EEP	Dexcription
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)

Short description

Power supply

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

EnOcean

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

LED, RGB

The lighting takes place via RGB LEDs, which shine into the housing from below.

Functionality of the EnoPuck CO2 WALL

Measurement of CO2 concentration and color display (RGB)

The EnoPuck CO2 WALL continuously measures the CO_2 concentration of the ambient air and switches the LEDs to green, yellow or red (or any self-configured color value, for example also orange instead of red) if the configured limit values are exceeded.
The transmission interval of the measured CO_2 value (as well as that of every other measured value) via EnOcean can be configured via BL-PC-FLEX-2.

Re-calibration of the CO2 measured value

If the EnoPuck CO2 WALL has been exposed to mechanical stress such as impact, strong vibration or a fall, the measurement of the CO_2 value may no longer be correct.
In this case, manual calibration of the CO_2 sensor in the EnoPuck CO2 WALL is required.
Please proceed as follows:

1. Find a suitable location where the EnoPuck CO2 WALL can measure CO_2 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. Do not disconnect the power supply until the end of the process.

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

- After 6 seconds the EnoPuck CO2 WALL starts to flash blue.

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

4. As soon as the calibration has been successfully completed, 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. Please disconnect the EnoPuck CO2 WALL from the power supply and in this case repeat the calibration process again.

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 movement and vibration

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

Measurement of the ambient brightness

The EnoPuck CO2 WALL continuously measures the ambient brightness. The measurement of the brightness is made possible by the fact that the EnoPuck CO2 WALL automatically switches the LEDs off and on again briefly when the measured value is to be transmitted.

Receipt of EnOcean wireless telegrams

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

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

Sending of EnOcean wireless telegrams

The measured values for humidity, CO_2 and temperature are transmitted for each sensor at separately configurable intervals using the BL-PC-FLEX-2 software.

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

Sending the learning telegrams

The EnoPuck CO2 has a service button in the device. This 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 **1x briefly within 2 seconds**, a learning telegram for the EEP A5-09-04 is sent after the 2 seconds have elapsed.

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

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

Dimension:

Diameter: 100 mm; height: approx. 28 mm

Ordering information

Part name	Part nr.	Part description
AL-602-01-868 EnoPuck CO2 WALL / CE	12433	CO2 traffic light, EnoPuck CO2 WALL, RGB-LED, EnOcean 868 MHz, Multi-sensors for CO2, humidity, temperature, vibration, PIR; Supply voltage 12 V DC (+/-%), dimensions 100 x 18 mm, Housing: PC white diffuse; for external power supply +12 V DC (not included);
AL-490-00-868 EnOcean USB-Stick 868,3 MHz CE	11227	EnOcean USB stick, 868.3 MHz for PC, to use the software BL-PC-FLEX-2or with VL-7xx HMI / operator panel, Ambient temperature: ... +40 ° C; 0..93% r.H .; internal antenna;

Note according to FuAG §20 Abs. 4:

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

EU declaration of conformity

DEUTA Controls GmbH hereby declares that the radio system type AL-602-04-868 EnoPuck CO2 WALL complies 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 in the Service / Downloads area (Doc. EUDC2022_312).

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Phone: +49 5734 51466 - 0
Fax:+49 5734 51466 - 28