

OL0119-G3-xxx-yyy BLE CO₂ Traffic Light & Gas Meter



Item Number: 022100011901xxxx



Image similar



Safety and warning instructions

This electronic module must not be used if the safety of persons in the associated application depends on the correct functioning of the module (not a safety component according to the EU Machinery Directive).

Installation, replacement and maintenance of the measuring device may only be carried out by qualified personnel. Please read the documentation carefully before commissioning the measuring device and the associated software!

Technical data

Power supply	1 x Lithium-ion polymer rechargeable battery, 1.3Ah, 3.7V, permanently installed External DC power supply 5V/1A at built-in USB Micro-B socket for charging or continuous operation Charging time for a fully discharged battery is approx. 8 hours
Battery runtime	1 - 2 months, depending on usage type and device option
Measurement method	NDIR CO ₂ Sensor MOX Gas Sensor ¹ MEMS relative humidity and temperature ¹
Measurement channels and range	CO ₂ , 0ppm...5.000ppm IAQ ¹ 0..500 Rel. humidity ¹ 0%..100% Temperature ¹ -40°C..85°C

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V1.2
2021-10-06

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Measuring accuracy at 25°C ambient temperature	CO ₂ , +/- (50ppm +3% of reading) in the range 400ppm – 2000ppm Out of range +/- (50ppm +5% of reading) Specifications apply to proper use of automatic self-adjustment (see text) IAQ ¹ , +/-15% Inter-Instrument-Agreement Rel. humidity ¹ , +/-3% Temperature ¹ , +/-0.5°C	
NDIR sensor lifetime (see text)	>15 years with proper use of automatic self-adjustment (see text)	
NDIR calibration (see text)	Factory adjusted and linearized Continuously temperature compensated Additional automatic cyclic self-adjustment of the CO ₂ sensor over the entire lifetime	
MOX Gas Sensor lifetime ¹	>10 years in typical indoor ambient air	
MOX Gas Sensor calibration ¹	Automatic continuous self-adjustment of the IAQ	
Limit values for CO ₂ Traffic Light function	Green < 1000ppm Yellow 1000ppm – 1999ppm Red >= 2000ppm	Limit values can be adjusted according to factory default or with the help of an app ³ via Bluetooth
Display on the device (CO ₂ only)	Area backlit in red, green or yellow realizes the traffic light function Pulsed in case of battery operation, otherwise continuous lighting Acoustic alarm when the upper limit is exceeded (can be switched off)	
Display via app ^{2,3}	Continuous display of all internal measured values with additional color display of the limit values	
Measuring frequency (factory settings)	20s for measurements Display for green measuring range (also corresponds to "ready for operation") every 60s Display for yellow measuring range every 30s Display for red measuring range (+acoustic message) every 15s	
USB port for charging the battery	Side access to Micro-B socket for power	
Housing, mounting	ABS plastic, stainless steel table stand, wall mounting via integrated opening for screws	
Weight (without stainless steel base)	approx. 70g	
Abmessungen	99mm Ø, 31mm depth	
Protection class	IP30 (with wall mounting or use of stainless steel base) IP34 (for wall mounting with accessory OL0119IPX4 and battery operation)	
Temperature range Ta	Storage -40°C - 70°C Operation 0°C - +50°C	
RoHS Compliant	yes	

¹ Only with device option OL0119-G3-BLE-MOX

² Only with device option OL0119-G3-BLE und OL0119-G3-BLE-MOX

³ Currently only available for Android

Available device options:

Type designation	Features
OL0119-G3	CO ₂ Traffic Light with color display of the current CO ₂ concentration depending on threshold values. Acoustic alarm when the highest threshold is exceeded (can be switched off). Rechargeable battery operation (results in "flashing" display) for 1-2 months per full charge. Recharging via external USB DC power supply. Continuous operation via external USB DC power supply is possible, then the display changes from "flashing mode" to continuous light. Setting of internal parameters via app and Bluetooth interface.
OL0119-G3-BLE	Like OL0119-G3. In addition, the device works as a Bluetooth Beacon so that the internal CO ₂ measurement values can be read on any number of smartphones via a freely available app.
OL0119-G3-BLE-MOX	Same as OL0119-G3-BLE. In addition to the CO ₂ sensor, a MOX gas sensor for IAQ measurements is integrated as well as the measurement of rel. humidity and temperature.

Scope of delivery and accessories:

- The standard scope of delivery includes the device incl. the stainless steel base. The app is freely available (currently only for Android)
- USB cable and DC power supply can be ordered optionally
- The protective enclosure OL0119IPX4 can be ordered optionally. With its help, the device can be used in environments where splashing water is to be expected. However, the IP34 protection class then only applies to pure battery operation and wall mounting in the specified mounting direction

Intended use

The limit values for the assignment of the CO₂ concentration to the color display are preset ex works. If the highest limit value is exceeded, an acoustic warning signal can also be generated in addition to the color red (see below).

The device has a switch on the side with 3 positions. In the uppermost position the device is switched off, in the other two positions it is switched on, whereby in the lowest position the acoustic alarm is switched off.

All parameters relevant for operation, such as limit values, measuring frequency and warning signals, are preset ex works, but can be individually adjusted via Bluetooth using an app if required (currently only for Android).

The power supply comes from a permanently integrated LiPo rechargeable battery. This can be recharged by an external DC power supply via the integrated USB socket. The device can also remain connected to the external DC power supply in continuous operation (see below).

In pure battery operation, the display on the device always flashes only briefly. The color and flashing frequency are determined by the current CO₂ concentration according to the preset limit values. This operating mode results in maximum energy efficiency and thus long battery life. Nevertheless, the system reacts quickly when limit values are

exceeded. If required, the external power supply can also remain continuously connected to the instrument. In this operating mode, the display then changes from flashing to continuous operation. Otherwise, all functions remain unchanged.

The internal CO₂ sensor has a very high basic accuracy. To realize this, the measurements are continuously temperature compensated. In addition, the CO₂ Traffic Light also implements an algorithm for continuous self-adjustment over the entire service life so that the traffic light is maintenance-free. In order for the self-adjustment to work effectively, it must be ensured that the device is repeatedly exposed to unpolluted ambient air for several minutes over a period of 7 days. This usually happens automatically if the room in which the CO₂ Traffic Light is located is ventilated according to the general recommendations.

The basis for the self-adjustment is the value of 400ppm CO₂ which can generally be assumed for the ambient air. The results of the continuous self-adjustment are also stored retentively in the device and are thus available even if the device is switched off in between via the switch on the side.

However, it should be noted that the self-adjustment is only ever renewed in a fixed 7-day rhythm. During these 7 days, the device must remain switched on continuously.

If the device is switched off during this period, the 7-day cycle starts again from the beginning with the next switch-on. In extreme

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cases, i.e. when the device is switched on and off regularly, a new self-adjustment would therefore never take place!

If this cannot be avoided or it cannot be ensured that the device comes into contact with unpolluted ambient air in this 7-day cycle, then a manual adjustment can also be carried out at any time with the aid of the app.