

Datasheet

Subject to technical alteration
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Application

For detection of CO2 and temperature and humidity (optional) integrated in one unit.

Types available

SR04 CO2 xxx Wireless Room sensor CO₂, temperature + optional

| | |
|------------|--|
| <u>rH</u> | integrated sensor for rel. humidity |
| <u>LCD</u> | LCD-Display for indication of measuring values and setting of properties |
| <u>TLF</u> | 3 LEDs showing levels of CO ₂ concentration |

Security Advice – Caution



The installation and assembly of electrical equipment should only be performed by authorized personnel.

The product should only be used for the intended application. Unauthorised modifications are prohibited! The product must not be used in relation with any equipment that in case of a failure may threaten, directly or indirectly, human health or life or result in danger to human beings, animals or assets. Ensure all power is disconnected before installing. Do not connect to live/operating equipment.

Please comply with

- Local laws, health & safety regulations, technical standards and regulations
- Condition of the device at the time of installation, to ensure safe installation
- This data sheet and installation manual

Notes on Disposal



As a component of a large-scale fixed installation, Thermokon products are intended to be used permanently as part of a building or a structure at a pre-defined and dedicated location, hence the Waste Electrical and Electronic Act (WEEE) is not applicable. However, most of the products may contain valuable materials that should be recycled and not disposed of as domestic waste. Please note the relevant regulations for local disposal.

Remarks to Room Sensors

Location and Accuracy of Room Sensors

The room sensor should be mounted in a suitable location for measuring accurate room temperature. The accuracy of the temperature measurement also depends directly on the temperature dynamics of the wall. It is important, that the back plate is completely flush to the wall so that there is sufficient circulation of air through the vents in the cover, otherwise, deviations in temperature measurement will occur due to uncontrolled air circulation. The temperature sensor should not be covered by furniture or other objects. Mounting next to doors (due to draught) or windows (due to colder outside wall) should be avoided.

Surface and Flush Mounting

The measuring result is influenced by the thermal characteristics of the wall. A solid concrete wall responds to thermal fluctuations within a room in a much slower than a light-weight structure wall. Room temperature sensors installed in flush-mounted boxes have a longer response time to thermal variations. In extreme cases they detect the radiant heat of the wall even if the air temperature in the room is lower for example. The quicker the dynamics of the wall (temperature acceptance of the wall) or the longer the selected inquiry interval of the temperature sensor is the smaller the deviations limited in time are.

Application Notice for Humidity Sensors

Refrain from touching the sensitive humidity sensor/element. Touching the sensitive surface will void warranty.

For standard environmental conditions re-calibration is recommended once a year to maintain the specified accuracy.

When exposed to high ambient temperature and/or high levels of humidity or presence of aggressive gases (i.e. chlorine, ozone, ammonia) the sensor element may be affected and re-calibration may be required sooner than specified. Re-calibration and deterioration of the humidity sensor due to environmental conditions are not subject of the general warranty.

Information about Indoor Air Quality CO₂

EN 13779 defines several classes for indoor air quality:

| Category | CO ₂ content above the content in outdoor air in ppm | | Description |
|----------|---|----------------|-----------------------------|
| | Typical range | Standard value | |
| IDA1 | <400 ppm | 350 ppm | Good indoor air quality |
| IDA2 | 400.. 600 ppm | 500 ppm | Standard indoor air quality |
| IDA3 | 600.. 1.000 ppm | 800 ppm | Moderate indoor air quality |
| IDA4 | >1.000 ppm | 1.200 ppm | Poor indoor air quality |

Information about Self-Calibration Feature CO₂

All gas sensors are subject to drift caused by components. This fact results generally in the need to recalibrate the sensors regularly.

With dual channel technology Thermokon integrates automatic self-calibration for different fields of operation. In contrast to common used ABC-Logic sensors with self-calibration dual channel are suitable for applications operating 24 hours, 7 days a week as for example hospitals.

Manual calibration is not necessary!

Information about EasySens® (radio) / airConfig general usage



EasySens® - airConfig

Basic information about EasySens® radio and about general usage of our airConfig software, please download from our website.

Technical Data

| | |
|---|---|
| Measuring values | temperature, CO2, humidity (optional) |
| Radio technology | EnOcean (IEC 14543-3-10) |
| Frequency | 868 MHz |
| Power supply | 15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) |
| Power consumption | max. 1,5 W (24 V =) 3,6 VA (24 V ~) |
| Measuring range temp | 0..+51 °C |
| Measuring range humidity optional | 0..100% rH non-condensing (optional) |
| Measuring range CO2 | 0..2550 ppm |
| Accuracy temperature | $\pm 1\%$ of measuring range (typ. at 21 °C) |
| Accuracy humidity optional | $\pm 3\%$ between 20..80% rH (typ. at 21 °C) |
| Accuracy CO2 | ± 75 ppm or $\pm 10\%$ of measuring range (typ. at 21 °C) |
| Measuring interval | WakeUp time = 100 sec. (default) |
| Transmission interval | every 100 sec. at change > 1 K, $> 2,5\%$ rH or 50 ppm, otherwise every 1000 sec. |
| Calibration | self-calibration, Dual Channel |
| Sensor | NDIR (non dispersiv, infrared) |
| Display optional | 3 LEDs showing air quality (traffic light function 'TLF'), LCD 29x12 mm, monochrom (optional) |
| Enclosure | ASA, pure white |
| Protection | IP30 according to EN 60529 |
| Cable entry | breaking points top/bottom, rear entry |
| Connection electrical | terminal block max. 1,5 mm ² |
| Ambient condition | 0..+50 °C, max. 85% rH non-condensing |
| Weight | 90 g |
| Mounting | screw mounting onto flat surface |
| Notes | |



Declaration of conformity

The declaration of conformity of the products can be found on our website <https://www.thermokon.de/>.

Overview of the radio telegrams



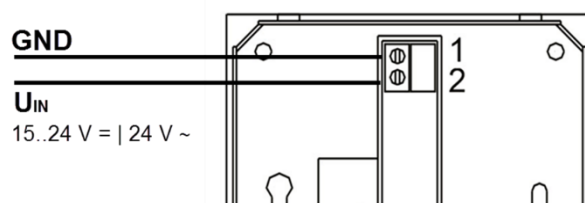
EEP

The structure of the data contained in the telegram can be found in the EEP (EnOcean equipment profile) list provided by the EnOcean Alliance.

SR04 CO2

A5-09-04

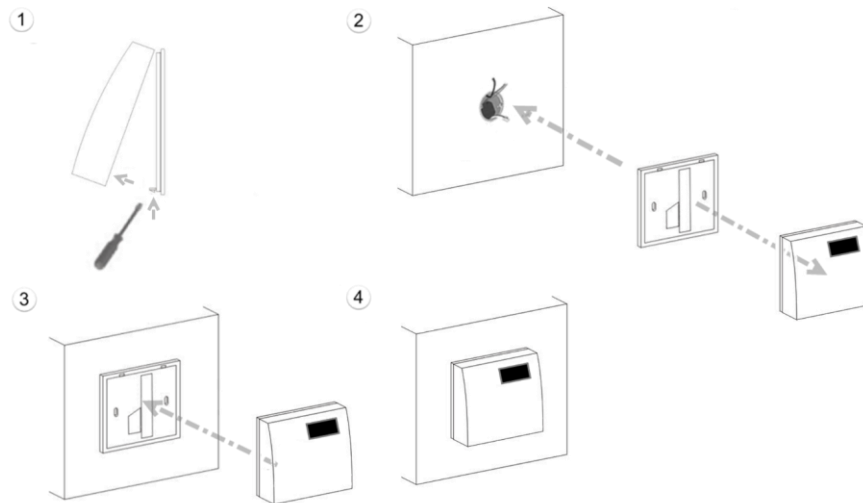
Connection plan



Mounting Advice

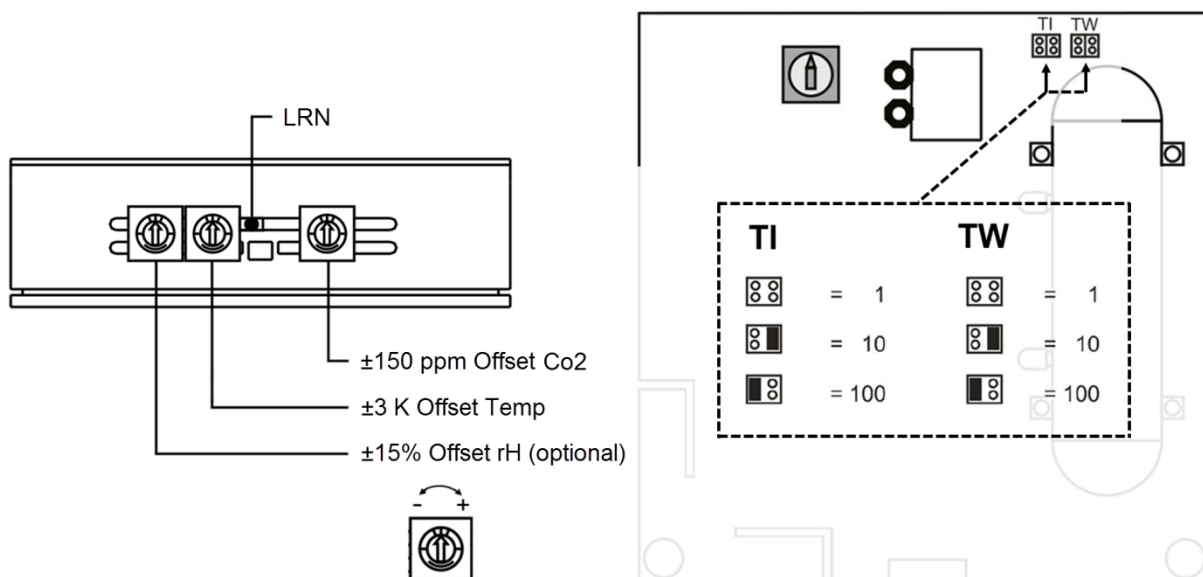
The device may be installed in a voltage free condition only.

The device can be installed on a flush-mounted box or directly onto the wall.
If installed on a flush-mounted box, seal the pipe to eliminate drafts.



Configuration

In order to assure a correct evaluation of the measuring values by the receiver, it is necessary to have the devices learned into the receiver. This is done automatically by means of a "learn button" (LRN) at the sensor or manually by input of the 32bit sensor ID and a special "learning procedure" between sender and receiver. The respective details are described in the corresponding software documentation of the receiver.



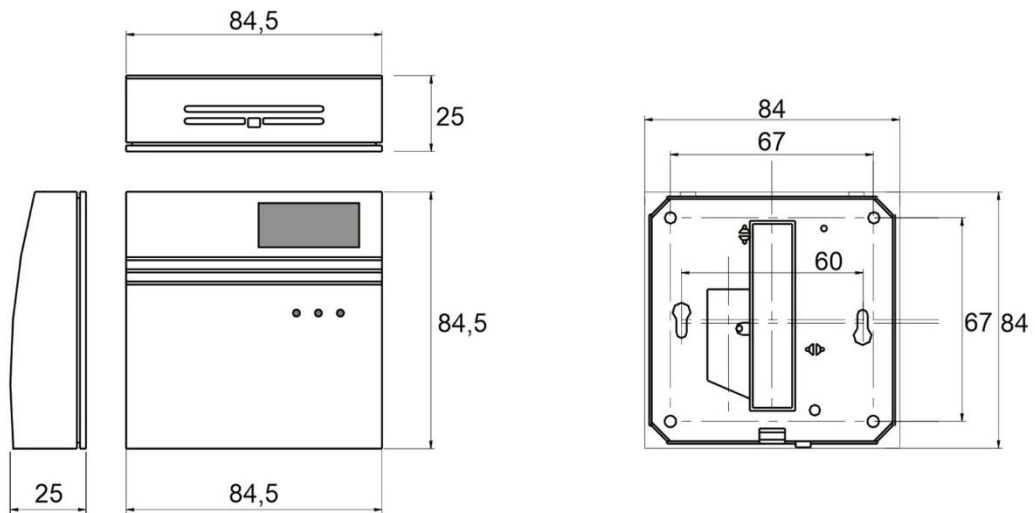
Pre-setting: (TW) T_wake up: 100, (TI) T_interval: 10

$T_{send} = 100 \text{ seconds wake up} * 10 \text{ interval} = 1.000 \text{ seconds} = \text{ca. } 16 \text{ minutes}$

TLF Traffic light function (optional)

The LEDs visualize the air quality

| | | |
|----------|----------------|---------------------|
| 0..33% | 0..750 ppm | green LED flashing |
| 34..66% | 751..1250 ppm | yellow LED flashing |
| 67..100% | 1251..2000 ppm | red LED flashing |

Dimensions (mm)**Accessories**

Raw plugs and screws (2 pcs. each)

Item No. 102209

EnOcean usb transceiver for airConfig/airScan (incl. licence) 868MHz

Item No. 566711