

# SR04 CO2

Combined wireless sensor CO2/temperature/rel. humidity

**thermokon**<sup>®</sup>  
Sensortechnik GmbH

## Data Sheet

Subject to technical alteration  
Issue date: 02.03.2016



## Application

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

## Types available

SR04 CO2 xxx	Wireless Room sensor CO <sub>2</sub> , temperature + <u>optional</u>
<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 <sub>2</sub> 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 CO<sub>2</sub>

EN 13779 defines several classes for indoor air quality:

Category	CO <sub>2</sub> 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 CO<sub>2</sub>

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<sup>®</sup> (radio)

Basic information about EasySens<sup>®</sup> radio, please download from the following link

[http://www.thermokon.de/ftp/info/Information\\_Radio\\_airConfig\\_en.pdf](http://www.thermokon.de/ftp/info/Information_Radio_airConfig_en.pdf)



## 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..+50 °C
Measuring range humidity	optional	0..100% rH non-condensing (optional)
Measuring range CO2		0..2000 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		$\pm 75$ ppm or $\pm 10\%$ of measuring range (typ. at 21 °C)
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 <sup>2</sup>
Ambient condition		0..+50 °C, max. 85% rH non-condensing
Weight		90 g
Mounting		screw mounting onto flat surface

## Overview of the radio telegrams

### EEP

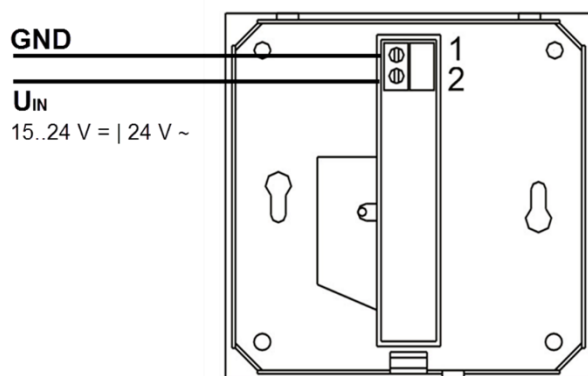
The structure of the data contained in the telegram can be found in the EEP (EnOcean equipment profile) list provided by the EnOcean Alliance: <http://www.enocean-alliance.org/EEP/>.



SR04 CO2

A5-09-04

## Connection plan

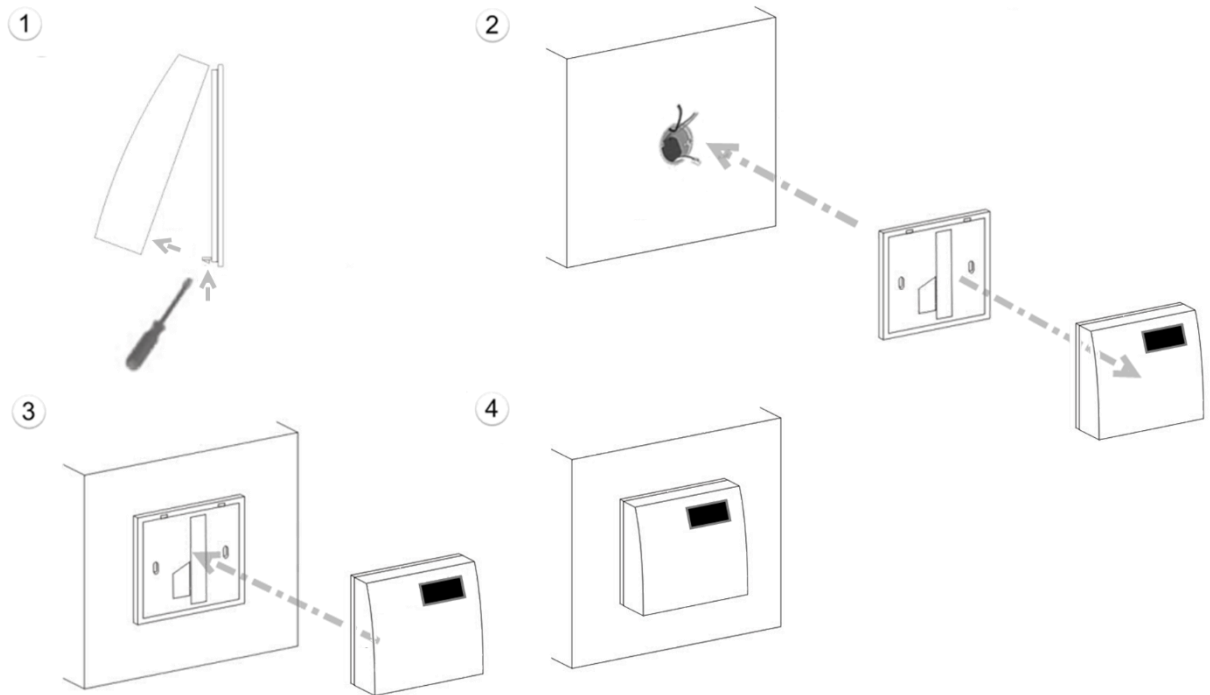


## Mounting Advice

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

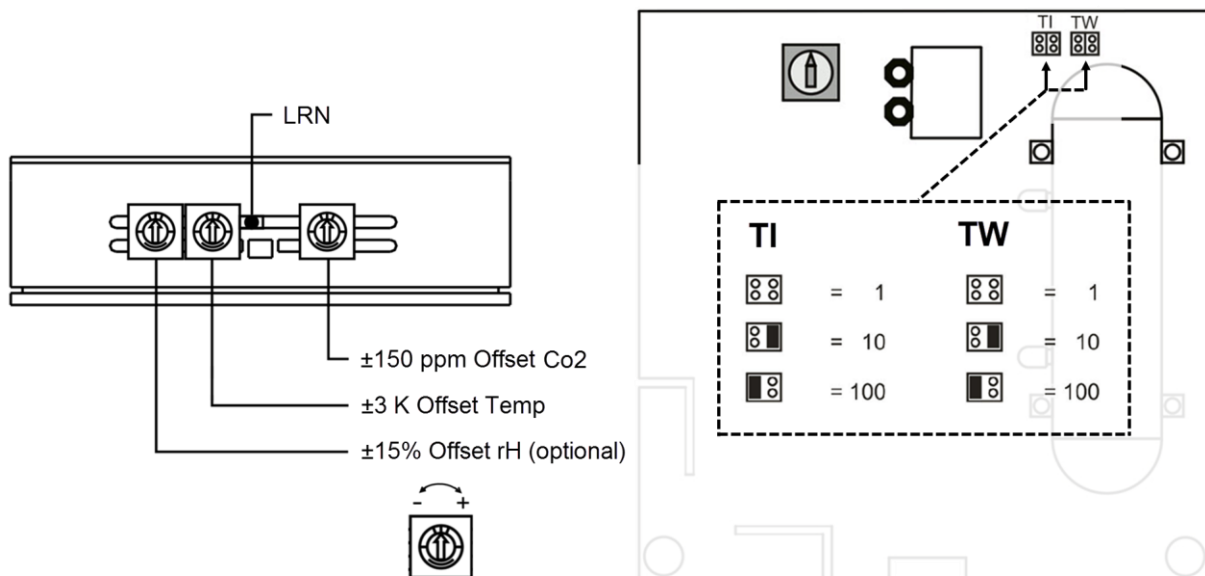
The device can be installed on a flush-mounted box or directly onto the wall.

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.

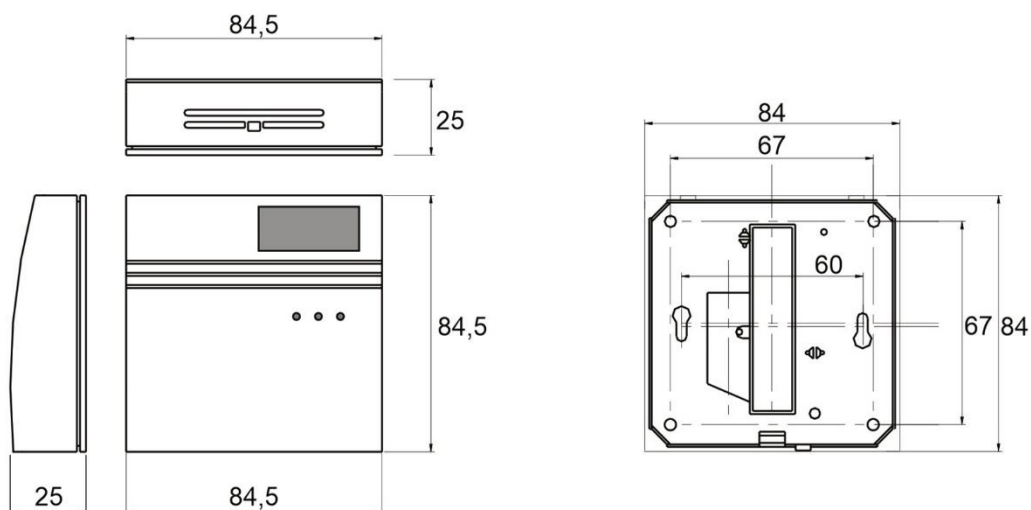


Pre-setting:

(TW) T\_wake up: 100, (TI) T\_interval: 10

T\_send = 100 seconds wake up \* 10 interval = 1.000 seconds = ca. 16 minutes

## Dimensions (mm)



## Accessories

Raw plugs and screws (2 pcs. each)

Item No. 102209