

**On-wall CO2 sensor and measuring transducer, self-calibrating, with multi-range switching and active/switching output**

Maintenance-free on-wall sensor **AERASGARD® ACO2-SD** with active output, automatic calibration (fixed), in an impact-resistant plastic housing with quick-locking screws, for determining the CO2 content of the air (0...2000 ppm/0...5000 ppm). The measuring transducer converts the measured values into a standard signal of 0-10 V.

Maintenance-free on-wall sensor **AERASGARD® ACO2-W** with active/switching output, automatic calibration (can be deactivated), in an impact-resistant plastic housing with quick-locking screws, optionally with/without display, for determining the CO2 content of the air (0...2000 ppm/0...5000 ppm). The measuring transducer converts the measured values into a standard signal of 0-10 V or 4...20 mA (switchable).

The sensor is used in offices, hotels, convention centres, apartments, shops, etc. for the purpose of evaluating the indoor climate. This enables energy-saving room ventilation on an as-needed basis, thereby reducing operating costs and improving well-being. One sensor for every 30 m<sup>2</sup> of room area is recommended.

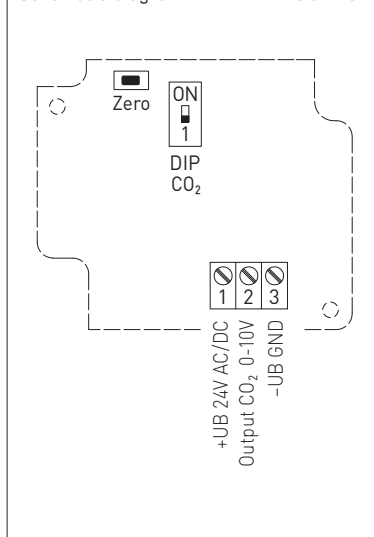
The CO2 measurement is performed using an optical **NDIR sensor** (non-dispersive infra-red technology). The detection range is calibrated for standard applications such as monitoring residential rooms and conference rooms.

For more information, see the start of the chapter.

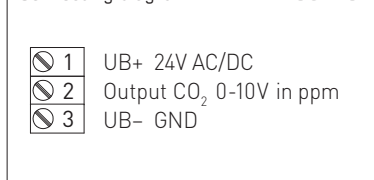
**TECHNICAL DATA**

|                         |   |
|-------------------------|---|
| Power supply:           | 24 V AC / DC (± 10 %)   |
| Power consumption:      | < 1.5 W / 24 V DC typical; < 2.9 VA / 24 V AC typical;<br>Peak current 200 mA   |
| Sensor:                 | optical NDIR sensor (non-dispersive infra-red technology),<br>with manual calibration (via zero button),<br><b>ACO2-SD</b> with automatic calibration (fixed)<br><b>ACO2-W</b> with automatic calibration (can be deactivated via DIP switches) |
| Measuring range:        | <b>Multi-range switching</b> (selectable via DIP switches)<br>0...2000 ppm; 0...5000 ppm  |
| Output:                 | <b>ACO2-SD</b> 0-10 V (fixed)<br><b>ACO2-W</b> 0-10 V or 4...20 mA, working resistance < 800 Ω<br>(selectable via DIP switches),<br>with offset potentiometer (± 10 % of the measuring range)   |
| Relay output:           | <b>ACO2-SD</b> without changeover contact<br><b>ACO2-W</b> with potential-free <b>changeover contact</b> (24 V / 1 A),<br>switchpoint adjustable  |
| Measuring accuracy:     | typically ± 30 ppm ± 3 % of measured value  |
| Temperature dependence: | ± 5 ppm / °C or ± 0.5 % of measured value / °C<br>(whichever is higher)   |
| Pressure dependence:    | ± 0.13 % / mm Hg  |
| Long-term stability:    | < 2 % in 15 years   |
| Gas exchange:           | by diffusion  |
| Warm up time:           | approx. 1 hour  |
| Ambient temperature:    | -10...+60 °C  |
| Response time:          | approx. 1 minute  |
| Electrical connection:  | 0.14 - 1.5 mm <sup>2</sup> , via screw terminals  |
| Housing:                | plastic, UV-resistant,<br>material polyamide, 30 % glass-globe reinforced,<br>with quick-locking screws (slotted / Phillips head combination),<br>colour traffic white (similar to RAL 9016)  |
| Housing dimensions:     | 126 x 90 x 50 mm (Tyr 2)  |
| Cable connection:       | <b>cable gland</b> , plastic (M 16 x 1.5; with strain relief,<br>exchangeable, max. inner diameter 10.4 mm) or<br><b>M12 connector</b> according to DIN EN 61076-2-101 (optional on request)  |
| Process connection:     | by screws   |
| Protection class:       | III (according to EN 60 730)  |
| Protection type:        | <b>IP 65</b> (according to EN 60 529)   |
| Standards:              | CE conformity, electromagnetic compatibility<br>according to EN 61 326, EMC Directive 2014 / 30 / EU  |
| Optional:               | <b>with display</b> (see <b>AERASGARD® AFTM-LQ-CO2</b> )<br>for displaying the actual CO2 content in ppm  |
| <b>ACCESSORIES</b>      | see table   |

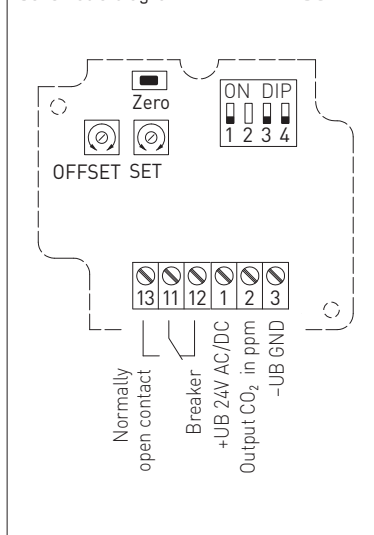
Schematic diagram **ACO2 - SD**



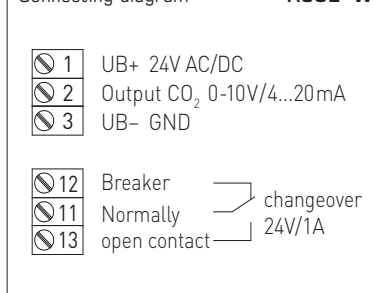
Connecting diagram **ACO2 - SD**



Schematic diagram **ACO2 - W**



Connecting diagram **ACO2 - W**

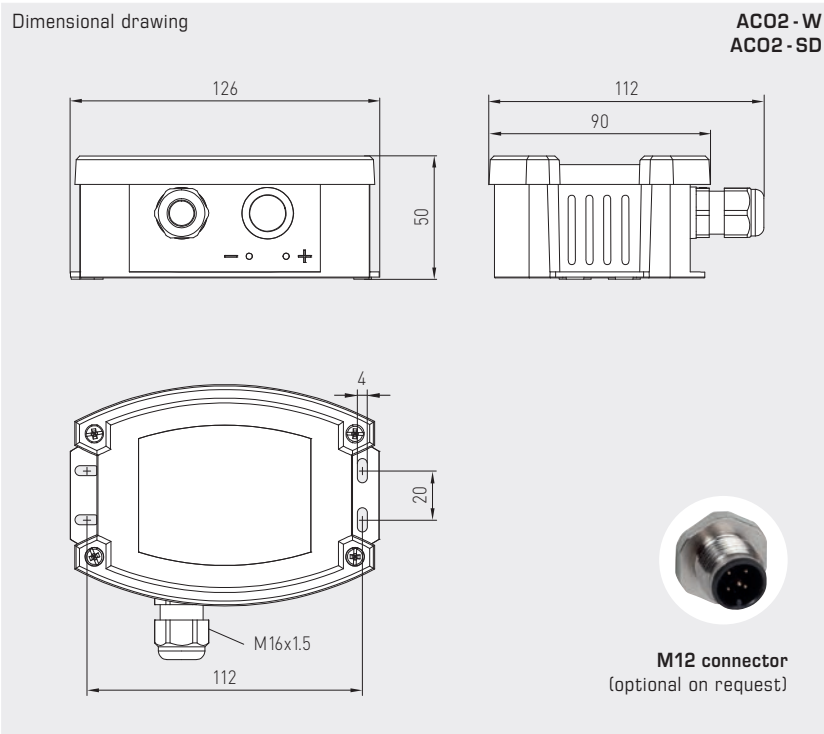




S+S REGELTECHNIK

AERASGARD® AC02-W  
AERASGARD® AC02-SD

On-wall CO2 sensor and measuring transducer,  
self-calibrating, with multi-range switching  
and active/switching output



AC02-W  
AC02-SD

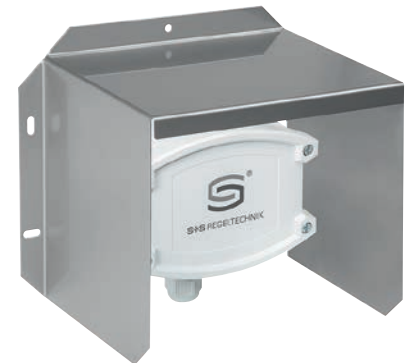


WS-03

Weather and sun protection hood  
(optional)

| DIP switch                          | AC02-W       |
|-------------------------------------|--------------|
| <b>CO2 content</b>                  | <b>DIP 1</b> |
| 0...2000 ppm (default)              | OFF          |
| 0...5000 ppm                        | <b>ON</b>    |
| <b>CO2 automatic zero point</b>     | <b>DIP 3</b> |
| deactivated                         | OFF          |
| activated (default)                 | <b>ON</b>    |
| <b>Output</b>                       | <b>DIP 4</b> |
| Voltage 0-10 V (default)            | OFF          |
| Current 4...20 mA                   | <b>ON</b>    |
| Note: <b>DIP 2</b> is not assigned! |              |

| DIP switch             | AC02-SD      |
|------------------------|--------------|
| <b>CO2 content</b>     | <b>DIP 1</b> |
| 0...2000 ppm (default) | OFF          |
| 0...5000 ppm           | <b>ON</b>    |



AERASGARD® AC02-SD On-wall CO2 sensor and measuring transducer, *Standard*  
AERASGARD® AC02-W On-wall CO2 sensor and measuring transducer, *Premium*

| Type / WG02B   | Measuring Range CO2   | Output CO2            | Equipment                   | Display | Item No.               | Price           |
|----------------|---|-----------------------|-----------------------------|---------|------------------------|-----------------|
| <b>AC02-SD</b> | (switchable)  | (fixed)               |                             |         |                        |                 |
| AC02-SD-U      | 0...2000 ppm /<br>0...5000 ppm  | 0-10 V                | –                           |         | 1501-7110-1001-200     | <b>252,15 €</b> |
| <b>AC02-W</b>  | (switchable)  | (switchable)          |                             |         |                        |                 |
| AC02-W         | 0...2000 ppm /<br>0...5000 ppm  | 0-10 V /<br>4...20 mA | changeover contact          |         | 1501-7110-7301-200     | <b>361,77 €</b> |
| AC02-W LCD     | 0...2000 ppm /<br>0...5000 ppm  | 0-10 V /<br>4...20 mA | changeover contact, display | ■       | see <b>AFTM-LQ-C02</b> |                 |
| Optional:      | Cable connection with <b>M12 connector</b> according to DIN EN 61076-2-101 (on request) |                       |                             |         |                        |                 |
| <b>Note:</b>   | This unit <b>must not</b> be used as safety-relevant device!                            |                       |                             |         |                        |                 |

| ACCESSORIES                               |  |  |  |  |                    |                |
|---|--|--|--|--|--------------------|----------------|
| <b>WS-03</b>                              | <b>Weather and sun protection hood</b> , 200 x 180 x 150 mm, stainless steel <b>V2A</b> (1.4301) |  |  |  | 7100-0040-6000-000 | <b>46,08 €</b> |
| For further information see last chapter! |  |  |  |  |                    |                |

