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## Operating instructions

### CAPBs<sup>®</sup> sens GS



 Read instructions before using device!

 Observe all safety information!

 Keep instructions for future use!



# 1 About these operating instructions

These operating instructions describe the CAPBs sens sensor module. A CAPBs sens cannot be operated without a CAPBs handle. The CAPBs handle and a plugged in CAPBs sens sensor module form a measuring instrument (also referred to as "CAPBs" in these operating instructions). Read and understand the operating instructions for the CAPBs handle which you use together with the sensor module. These operating instructions are part of CAPBs sens sensor module.

- ▶ You may only use the measuring instrument if you have fully read and understood these operating instructions.
- ▶ Verify that these operating instructions are always accessible for any type of work performed on or with the measuring instrument.
- ▶ Pass these operating instructions as well as all other related documents on to all owners of the measuring instrument.
- ▶ If you feel that these operating instructions contain errors, inconsistencies, ambiguities or other issues, contact the manufacturer prior to using the measuring instrument.

These operating instructions are protected by copyright and may only be used as provided for by the corresponding copyright legislation. We reserve the right to modifications.

The manufacturer shall not be liable in any form whatsoever for direct or consequential damage resulting from failure to observe these operating instructions or from failure to comply with directives, regulations and standards and any other statutory requirements applicable at the installation site of the measuring instrument.

## 2 Information on safety

### 2.1 Safety messages and hazard categories

These operating instructions contain safety messages to alert you to potential hazards and risks. In addition to the instructions provided in these operating instructions, you must comply with all directives, standards and safety regulations applicable at the installation site of the measuring instrument.

Verify that you are familiar with all directives, standards and safety regulations and ensure compliance with them prior to using the measuring instrument.

Safety messages in these operating instructions are highlighted with warning symbols and warning words. Depending on the severity of a hazard, the safety messages are classified according to different hazard categories.



**WARNING  
WORD**



Type and source of the hazard are shown here.

► Precautions to take in order to avoid the hazard are shown here.

Consequences of failure to observe the instructions are shown here.

## 2.2 Intended use

These measuring instruments are intended for detection of flammable gases (methane) in the area of heating, ventilation, air conditioning (HVAC) or for equivalent applications.

When using the measuring instrument, perform all work and all other activities in conjunction with the product in compliance with the conditions specified in the operating instructions, as well as with all directives, standards and safety regulations applicable at the installation site of the product

## 2.3 Predictable incorrect application

These measuring instruments must never be used in the following cases and for the following purposes:

- Unprotected outdoor use
- Usage in hazardous area/potentially explosive atmosphere:  
If the product is operated in hazardous areas, sparks may cause deflagrations, fires or explosions.
- Use outside of the technical specifications and limit values
- Applications covered by the European Measuring Instruments Directive MID
- Applications which involve hazardous substances unless all applicable safety directive, standards and regulations are met
- Applications which involve special hygienic requirements, such as, but not limited to, the food and beverages industries, pharmaceutical industry, biotechnology industry
- Applications which are used for health-saving or life-saving purposes, such a medical technology

## 2.4 Qualification of personnel

Only appropriately trained persons who are familiar with and understand the contents of these operating instructions and all other pertinent documentation concerning the measuring instrument are authorized to work on and with this measuring instrument. These persons must have sufficient technical training, knowledge and experience and be able to foresee and detect potential hazards that may

be caused by using the measuring instrument. All persons working on and with the measuring instrument must be fully familiar with all directives, standards and safety regulations that must be observed for performing such work.

## 2.5 Modifications to the CAPBs

Only perform work on and with the measuring instrument which is explicitly described in these operating instructions.

Do not make any modifications to the product which are not described in these operating instructions.

## 2.6 Usage of spare parts and accessories

Usage of unsuitable spare parts and accessories may cause damage to the product.

- ▶ Use only genuine spare parts and accessories of the manufacturer.

## 2.7 Specific safety information

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### WARNING



### INCORRECT USE OF THE MEASURING INSTRUMENT

- ▶ Perform a risk assessment in view of the planned application, according to an approved risk assessment method.
- ▶ Implement the appropriate safety measures, based on the results of the risk assessment.
- ▶ Implement all safety measures in compliance with the conditions specified in the operating instructions as well as with all directives, standards and safety regulations applicable at the operation site of the measuring instrument and verify that all risks resulting from hazardous substances and all other hazards are excluded when using the measuring instrument.

Failure to follow these instructions can result in death, serious injury and equipment damage.

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## 3 Technical specifications

### 3.1 Approvals, conformities

- EMC Directive - 2014/30/EU
- RoHS Directive - 2011/65/EU
- WEEE Directive 2012/19/EU



### 3.2 CAPBs sens GS: Gas detector



Parameter	GS10
Use	Gas detector with diffusion sensor and flexible probe for detection of flammable gases in the ppm concentration range, for example leaks at equipment of pipes
Measuring principle	Semiconductor sensor (SnO <sub>2</sub> ) The measuring principle of the semiconductor sensor is based on changes of the electric conductivity caused by chemisorption on the surface of the heated sensor element.
Measurable gases	Flammable gases such as methane, propane, butane, hydrogen
Measuring range	0 ... 2,000 ppm methane CH <sub>4</sub>
Accuracy	±500 ppm
Detection sensitivity	> 50 ppm
Resolution	10 ppm
Unit	ppm
Operating temperature	0 °C to +40 °C
Storage temperature	-20 °C to +60 °C
Dimensions W x H x D [mm]	290 x 42 x 35
CAPBs STm hours of operation	Up to 12 hours of battery operation
Connections	Flexible probe



Parameter	GS10
Signals, alarm thresholds	The frequency of the audible signal at the CAPBs base handle STM increases with increasing gas concentrations. BlueLine measuring instruments also feature adjustable audible alarm thresholds.
Cross sensitivities	Flammable gases, for example petrol vapours, solvent vapours. Sensitive to humidity, temperature and oxygen changes. Non-flammable gases such as flue gases, tenside vapours (main component of detergents) can generate a positive or negative signal.
Sensor poisons	Alkaline and acid compounds, silicone, sulphur compounds, cyanide, halogenated compounds
Disturbances	Sensor diffusion can be impaired by pollution, for example, paints, lacquer, glue, fitting foam, etc. Low oxygen concentration in the air (< 19 %) reduces sensor sensitivity
Application program	Gas leak measurement

## 4 Operation

When the CAPBs is switched on, the measuring instrument performs zero calibration. Zero calibration must be performed in fresh air. If you want to take a measurement, verify that you only switch on the measuring instrument in fresh air.

You must subject the gas detectors to a visual inspection and to a function test each time before you start to work with them or on each day of use. Perform a function test with a suitable test gas.

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### DANGER EXPLOSION HAZARD



- ▶ If you measure a gas concentration of > 10 % lower explosive limit, immediately stop the work and leave the area.

Failure to follow these instructions will result in death or serious injury.

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The CAPBs is ready for operation approx. 30 seconds after you have switched it on.

Slowly move the peak of the sensor over the area where you want to measure the gas concentration.



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Always observe the measured values on the display of the display device and the audible signals of the measuring instrument while taking measurement.

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**DANGER**



**INCORRECT MEASURED VALUES AFTER EXCEEDING OF MEASURING RANGE**

- ▶ If a concentration above the maximum value of the measuring range was measured, the sensor requires a recovery time before it can deliver precise measured values again.
- ▶ If the maximum value of the measuring range was exceeded, immediately leave the area where the measured concentration occurred.
- ▶ If the maximum value of the measuring range was exceeded, perform a function test by taking a measurement at a point with a known, safe methane concentration and verifying that the known methane concentration is correctly displayed.
- ▶ Do not perform further measurements unless you have verified that the sensor delivers correct measured values.

Failure to follow these instructions will result in death or serious injury.

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## 5 Storage

Store the device in a dry location away from solvents.

## 6 Maintenance

The measuring instrument does not contain any parts that can be serviced or repaired by the customer.

Prior to performing a measurement, perform a visual inspection of the CAPBs for visible damage. Do not use damaged measuring instruments.

- Clean the measuring instrument after each use. Use a dry, lint-free cloth for cleaning.
- Use a slightly wetted cloth to remove pollution that cannot be removed with a dry cloth.
- Do not use cleaning agents for cleaning.



The CAPBs measuring instrument must be serviced by the manufacturer or an authorised service point at regular intervals. The service intervals depend, among other things, on the legal requirements and regulations.

## 7 Troubleshooting

Repairs may only be performed by specially trained, qualified staff.

Problem	Possible reason	Repair
Display device shows dashes, no measured values	Sensor inoperative	▶ Send the measuring instrument to the manufacturer
Other malfunctions	–	▶ Send the measuring instrument to the manufacturer

## 8 Decommissioning, disposal



Dispose of the product in compliance with all applicable directives, standards and safety regulations.

Electronic components and batteries must not be disposed of together with the normal household waste.

## 9 Warranty

See our terms and conditions at [www.afriso.com](http://www.afriso.com) or your purchase contract for information on warranty.

## 10 Addresses

The addresses of our worldwide representations and offices can be found on the Internet at [www.systronik.com](http://www.systronik.com)



# 11 Declaration of Conformity

## EG-Konformitätserklärung

Messtechnik für Industrie und Umwelt

## SYSTRONIK

Messtechnologie

EC Declaration of Conformity \* Certificat de conformité CE \* Dichiarazione di conformità CE

Als Hersteller erklären wir hiermit, dass unser Produkt  
We declare that our product \* Nous déclarons que notre produit \* Dichiariamo che nostro prodotto

### CAPBs®

TK10\_TK11\_TK20\_TK30\_TK35\_TK40\_TK50\_FP10\_AQ20\_AQ21\_PT70  
PS10\_PS20\_PS22\_PS33\_PS35\_PS40\_PS41\_PS42\_PS60\_PS61\_PS62  
GS10\_RH80\_CO30\_FT20 (FlowTemp ST) & ST/STm (BG10)

mit den Vorschriften folgender europäischer Richtlinien übereinstimmt  
conforms to \* conforme avec \* conforma a

2014/30/EU  
2014/30/EU

**Elektromagnetische Verträglichkeit**  
EC directive electromagnetic compatibility

EN 301 489-17 V2.2.1  
EN 60950-1:2006 +A11:2009 +A12:2011 +A1:2010 +A2:2013  
EN 62479:2010  
EN 61000-6-1  
EN 61000-6-3:2007+A1:2011 +AC:2012  
EN 50270-1

2011/65/EU  
2011/65/EU

**Beschränkung der Verwendung gefährlicher Stoffe (RoHS)**  
Restriction of the use of certain hazardous substances (RoHS)

2012/19/EU  
2012/19/EU

**Elektro- und Elektronik-Altgeräte (WEEE)**  
Waste Electrical and Electronic Equipment (WEEE)

### CAPBs®

ST/STm (BG10)

2014/53/EU  
2014/53/EU

**ETSI EN 300 328 V.1.9.1**  
ETSI EN 300 328 V.1.9.1

**Funkgeräte-Richtlinie (RED)**  
Radio Equipment Directive (RED)

Illmensee, den 21.02.2017

Dipl.-Ing. (FH) Richard Skoberla  
- Geschäftsführer / Managing Director -

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