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## Operating instructions

### CAPBs® sens TK



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 measuring the temperature of gaseous, solid or liquid substances 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 per-

sons 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 CAPBs.

- ▶ 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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### CAUTION



### POINTED PARTS

- ▶ Verify that you handle the measuring instrument in such a way that no injuries can result.
- ▶ Refit the protective cap to the CAPBs sensor module after performing measurements.

Failure to follow these instructions can result in injury or 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 TK: Temperature



Parameter	TK10 / TK11	TK20	TK30 / TK35	TK40	TK50
Use	Measurement in the area of heating, ventilation, air conditioning (HVAC), neutral gaseous, solid or liquid substances				
Measuring range	-50 ... +1,150 °C	-50 ... +800 °C	-50 ... +1100 °C	-50 ... +400 °C	-50 ... +400 °C
Measuring principle	Thermocouple	Thermocouple	Thermocouple	Thermocouple	Thermocouple
Accuracy	±1.5 °C <sup>1)</sup>	±1.5 °C or 1 % of measured value	±1.5 °C or 1 % of measured value	±1.5 °C or 1 % of measured value	±1.5 °C or 1 % of measured value
Resolution	0.1 °C	0.1 °C	0.1 °C	0.1 °C	0.1 °C



Parameter	TK10 / TK11	TK20	TK30 / TK35	TK40	TK50
Connections	TK10: Type K Connection socket TK11: 2 x type K connection sockets	Insertion probe Ø 3 mm	Liquid probe TK30: Ø 1.5 mm TK35: Ø 3 mm	Air probe Ø 3 mm	Surface probe Ø 3 mm
Units	°C, °F	°C, °F	°C, °F	°C, °F	°C, °F
Operating temperature	0 °C to +40 °C				
Storage temperature	-20 °C to +60 °C				
Dimensions W x H x D [mm]	58 x 42 x 35	186 x 42 x 35	190 x 42 x 35	187 x 42 x 35	187 x 42 x 35
CAPBs STm hours of operation	Up to 45 hours of battery operation				
Application programs	Temperature measurement, TK11: Differential temperature measurement				

<sup>1)</sup> Depends on thermocouple used

## 4 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.

## 5 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

## 6 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.

## 7 Warranty

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

## 8 Addresses

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

## 9 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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