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## Operating instructions

### CAPBs<sup>®</sup> sens PT



 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 neutral gaseous 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 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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**WARNING    OVERPRESSURE / VACUUM**

If pressurized media are measured, hot, cold and/or toxic media can escape. Parts can be ejected.

- ▶ Take all required safety precautions.
- ▶ Verify that the measuring instrument and all parts included in the measurement are suitable for the measuring range.
- ▶ Connect the measuring point and the measuring instrument after you have unpressurised the measuring point.
- ▶ Secure the seal seat as well as all measuring lines and connection lines and all other parts of the measuring setup using appropriate means.
- ▶ Slowly apply pressure to the complete measurement setup; avoid sudden pressure changes and pressure surges.
- ▶ Slowly remove the pressure; avoid sudden pressure changes.

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 PT: pressure transmitter for measurement of neutral gaseous and liquid substances

Parameter		
Use	Measurement in the area of heating, ventilation, air conditioning (HVAC), neutral gaseous and liquid substances	Measurement in the area of heating, ventilation, air conditioning (HVAC), neutral gaseous and liquid substances
Measuring range	± 7 bar	± 20 bar
Measuring principle	Strain gauge	
Accuracy	±10 hPa or 1 % reading	±25 hPa or 1 % reading
Resolution	0.1 hPa (< 999.99) 1 hPa (>1,000)	1 hPa
Connections	2 x DN5	2 x DN5 coupling
Units	hPa, mbar, kPa, mmWs, mmHg, bar, inHg, psi	hPa, mbar, kPa, psi, bar
Max. overpressure	14 bar	35 bar
Operating temperature	0 °C to +40 °C	0 °C to +40 °C
Storage temperature	-20 °C to +60 °C	-20 °C to +60 °C
Dimensions W x H x D [mm]	80 x 42 x 35	99 x 42 x 35
CAPBs STm Hours of operation	Up to 32 hours of battery operation	Up to 32 hours of battery operation
Application programs	Pressure measurement, pressure loss measurement, tightness test	Pressure measurement, pressure loss measurement, tightness test



## 4 Operation

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

The connecting hoses should be vented during measurements with liquid media. In order to vent, connect the measuring device to the system and open the bypass using the rotary knob.

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### ATTENTION LIQUID AT THE CAPBs

- ▶ Ensure that no liquid reaches the CAPBs. In the event of differential pressure measurements, both pressure connections should be connected to the system that is being tested when venting. If only one pressure connection is attached to the system, the liquid should be led away via a hose so that venting can be carried out.

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Turn the rotary knob anticlockwise in the direction of "P=0":



The measuring system should be vented after a few seconds. Close the bypass again to measure. Turn the rotary knob clockwise in the direction of the "Pressure Measurement" symbol:



When venting is complete, the measurement can be carried out.

## 5 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.

## 6 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

## 7 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.

## 8 Warranty

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

## 9 Addresses

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