EC Sense
Easy Gas Sensors

4S Sensor Flow Cap

Datasheet

Small Size

90°

Seal Design

Easy Gas Sensor Module Solutions
Easy to Use

Overview

The 4S Sensor Flow Cap is designed to simulate a small volume of gas diffusion space, which is better for sensor operation under stable conditions and good for measurements or calibrations.

The 4S Sensor Flow Cap is suitable for all EC Sense ES4, EC4 series sensors and gas sensor modules with ES4, EC4 sensors. It is used in the above products for testing, calibrating and building systems with flow or pump.

During product development, the 4S Sensor Flow Cap can be used for continuous testing as well as for gas calibration of the sensor or sensor module.

If the gas sensor or gas sensor module has been used for an extended period of time and calibration is necessary, the 4 S Gas Sensor Flow Cap can be used to calibrate the gas introduced into the product.

When setting up systems or instruments with a pump and with ES4 or EC4 gas sensors or gas sensor modules, the 4S Sensor Flow Cap can be selected for use with the gas chamber in the instrument.

4S sensor Flow Cap to fit ES4/EC4 sensor

4S sensor Flow Cap to fit CDS10-ES4/EC4 sensor

4S sensor Flow Cap to fit TB200B-ES4/EC4 sensor

4S sensor Flow Cap to fit TB420-ES4/EC4 sensor

Features

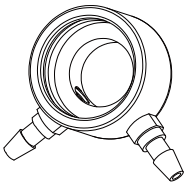
- **Due to the small volume of the internal space structure, the sensor and Flow Cap are close together to avoid gas leakage.**
  It can ensure that the gas can reach the gas sensor at the first time, which guarantees the response speed to the gas.
- **Inlet and outlet are on the side of the Flow Cap, and the position of the air inlet and outlet is a 90° angle.**
  This can prevent the airflow from directly impacting the gas collection surface of the sensor, which may cause physical damage to the sensor, or the increase of the pressure and the increase of the signal, and the unstable signal output caused by the unstable airflow.
  This can prevent the rapid loss of the measured gas as it enters the Flow Cap.
- **It is made by precision machining of corrosion-resistant ABS material, which can be used for the measurement of corrosive gases.**
- **The inner wall and the sensor arc surface are sealed and the inner wall is equipped with an embedded corrosion-resistant sealing O-ring, which enhances the air tightness and prevents air leakage.**
- **The inlet and outlet can be arbitrarily selected according to the actual application.**
- **The inner diameter of the inlet and outlet air nozzles and the volume in the sensor flow cover have been scientifically calculated and are suitable for applications in the flow range.**

Technical Specification

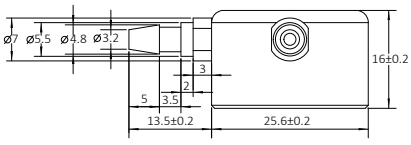
Material	Corrosion-resistant ABS material, RoHS compliant
Compatible gas sensor	ES4, EC4 series gas sensors
Compatible with gas sensor module	TB200B-ES4, TB200B-EC4
	TB420-ES4, TB420-EC4
	CDS10-ES4, CDS10-EC4
Compatible trachea specifications	Inner diameter 4mm, outer diameter 6mm
	It is recommended to use PTFE gas pipelines for corrosive and adsorbent gases. No requirements for other non-adsorbable and corrosive gases.
Applicable gas flow	50-1000 ml/min
Size	ϕ25.6*16 (±0.2)mm (without gas nozzle)
Weight	4.8g

Mechanical Diagram

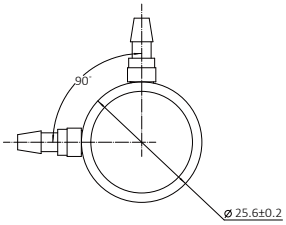
4S Sensor Flow Cap Mechanical Diagram unit: mm



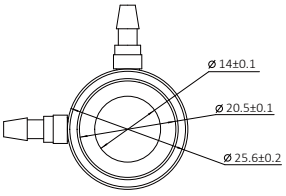
Product Schematic



Front View

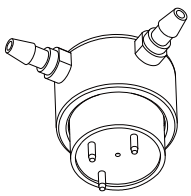


Top View

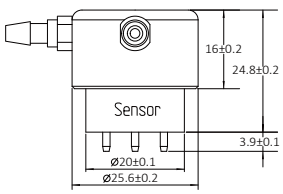


Bottom View

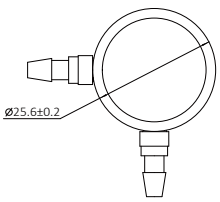
ES4 / EC4 Sensor with Flow Cap Mechanical Diagram unit: mm



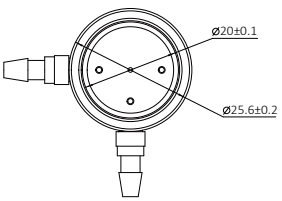
Product Schematic



Front View



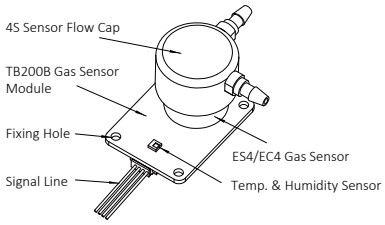
Top View



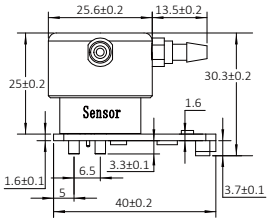
Bottom View

Mechanical Diagram

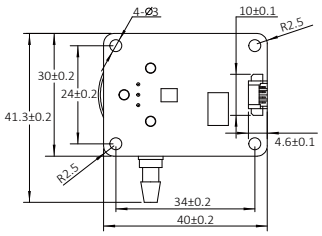
TB200B Gas Sensor Module with Flow Cap Mechanical Diagram unit: mm



Product Schematic

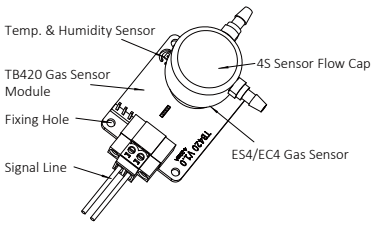


Front View

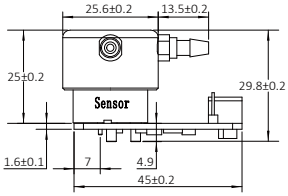


Bottom View

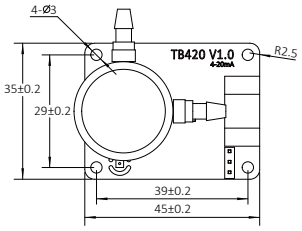
TB420 Gas Sensor Module with Flow Cap Mechanical Diagram unit: mm



Product Schematic

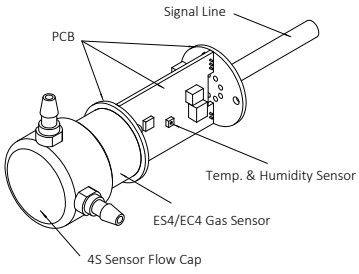


Front View

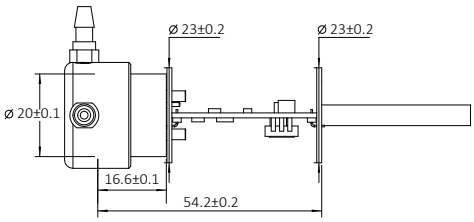


Top View

CDS10 Gas Sensor Module with Flow Cap Mechanical Diagram unit: mm



Product Schematic



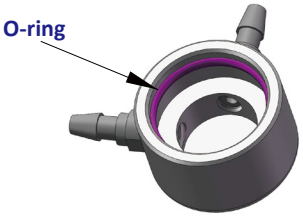
Front View

Order Information

Product	4S Sensor Flow Cap
Part Number	02-FlowCap-4S-01

User Guide

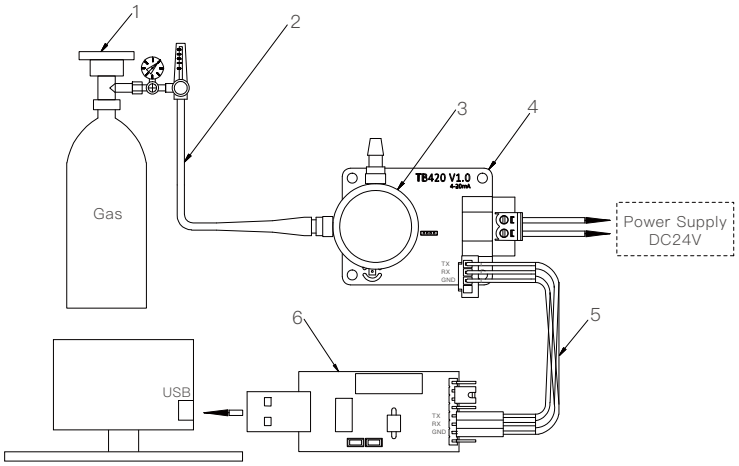
Pre-Use Check



- Test the two gas nozzles through the holes to confirm whether there is any blockage caused by transportation, improper storage, exposure to complex environments, etc. Ensure that the gas is passing through.
- Check that the O-ring inside of the sensor Flow Cap is installed in the correct position, has not dropped or is missing.

Usage Steps

- Install the adapted gas tube (see technical reference for the adapted dimensions) into the two gas nozzles of the Flow Cap.
- Align the opening of the Flow Cap with the sensor and slowly push it in.
- Connect the other end of the gas tube of any gas nozzle to the air outlet of the gas pump or flow meter.
- Start the gas pump or switch on the flow meter valve.



Notes

1: Gas Cylinder

2: Trachea

3: 4S Sensor Flow Cap

4: TB420 Gas Sensor Module

5: Cable

6: UART to USB Module (isolated)

Cautions

- No matter which gas nozzle is selected as the gas inlet, the flowmeter should be placed in front of the gas inlet, that is, "blow" into the Flow Cap.
- However, when connecting to a gas pump, the 4S gas sensor Flow Cap should be at the front end of the gas pump, and the gas inlet of the pump should be connected to the gas outlet end of the Flow Cap.
- If the intake gas tube is too long (> 1m), the gas concentration is low, or gas with strong absorption is introduced, the flow rate can be increased according to the test results and prolong the ventilation time to ensure the absorption saturation of the air path and Flow Cap and to ensure stable measurement.
- Always keep the exhaust vent clear, do not block it.
- If the test effect deviates significantly from the standard data, the above items should be checked one by one, which usually does not relate to the performance of the Flow Cap.

Disclaimer

The EC Sense performance figures stated above are based on data obtained under test conditions. EC Sense reserves the right to change design features and specifications without notice. We do not accept any legal responsibility for any loss, injury or damage caused thereby. EC Sense shall not be liable for any consequential loss, injury or damage arising out of the use of this document, the information contained therein or any omissions or errors herein. This document does not constitute an offer to sell and the data contained in it is for informational purposes only and cannot be regarded as a guarantee. Any use of the given data must be evaluated and determined by the user to comply with federal, state and local laws and regulations. All specifications outlined are subject to change without notice.

Warning

EC Sense gas sensor Flow Caps are designed to be used in a variety of environmental conditions. However, due to the material properties and to ensure normal use, users must strictly follow this article during storage, assembly and operation of this product as well as during general material application methods. The illegal application will not be covered by the warranty. Despite the high reliability of our products, we recommend inspecting the product before use to ensure field use. At the end of the product's service life, please do not discard any product parts in the household waste, instead dispose of them in accordance with local government waste recycling regulations.

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