H$_2$S Sensor Solution

Datasheet – Rev. no. 10252024

- Water resistant H$_2$S sensor & IoT datalogger
- Rechargeable battery with backup
- Extra-long battery life
- User-friendly user interface
- Setup requires no programming
- Automatic teleoperator configuration

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H₂S Sensor Specifications

The cutting-edge H$_s$S sensors is developed for ensuring optimal operation in collection systems and air filters. It is an advanced and cost-effective solution for monitoring gaseous hydrogen sulphide (H$_2$S) in harsh environments. The unit is optimized for low power consumption enabling battery-driven applications where power is not accessible.
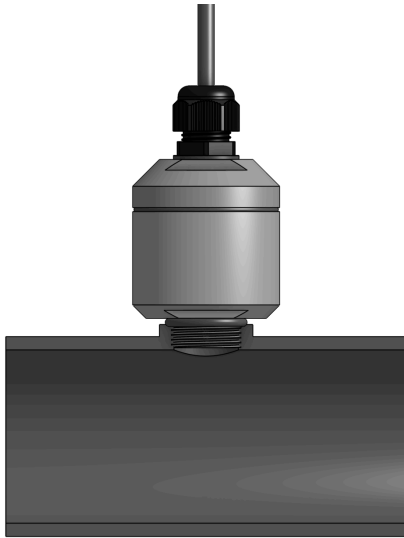
Overall

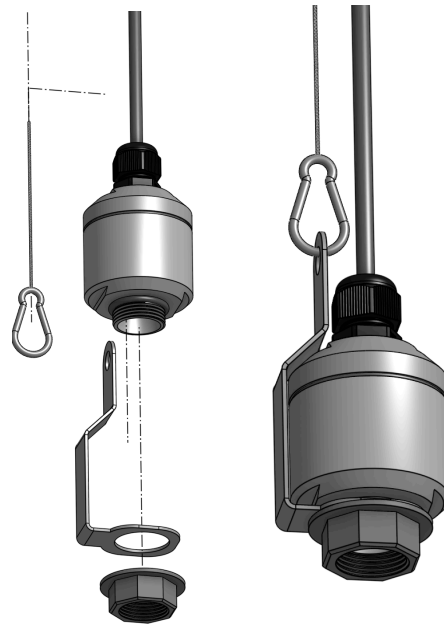| Parameter	Value
Expected lifetime	+10 years, with 6-12 months calibration / service interval
Guarantee	2 years
Measurement range	Available in two different ranges: High concentrations: **0 – 2000 ppm** Low concentrations: **0 – 50 ppm** (0 – 50 000 ppb)
Resolution	Depends on selected range: **0-2000 ppm**: 2 ppm **0-50 ppm**: 0.1 ppm (100 ppb)
Housing material	AISI 316 stainless steel
Operating conditions	**Temperature:** -4°F to 122°F │ -20°C to +50°C **Humidity:** 0-99%RH
Cable length	6.5 ft │ 2 meters
Compliance	Directive 2014/30/EU. DS_EN IEC 61326-1_2021

Mounting options

Pipes and air filters

The tip of the probe is a standard G3/4″ (BSPP) male pipe thread. Therefore, the probe can easily be installed into the side of a pipe using a G3/4″ adapter simply be screwing it into place. The probe is shipped with a high-quality O-ring for easy sealing of the connections.
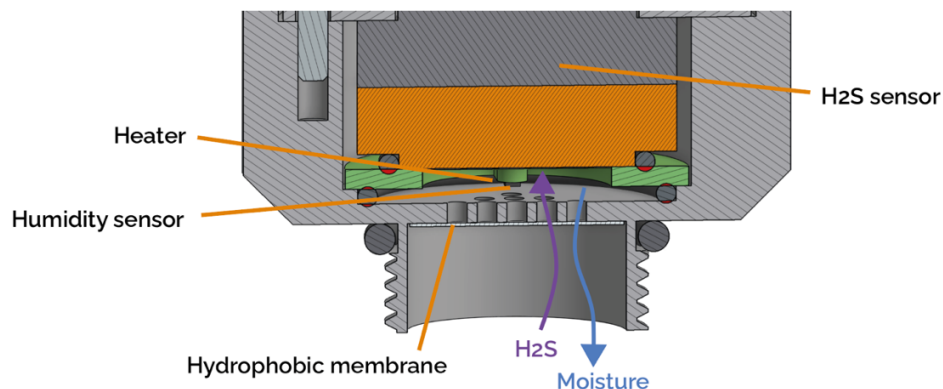
Sewers and manholes

For use inside sewers or other free-hanging applications, the probe is used with a dedicated cable mount designed for optimal cable relief. It is not recommended to suspend the probe directly in the cable with the cable mount.

Heating element

Inside all Consibio H2S sensors, is a dedicated heating element.

Once enabled, the heater will minimize the risk of condensed water formation on the sensor surface, and thereby ensuring the most robust measurements of H_2S.

Consibio LoggerPro™

Consibio LoggerPro™ is a modular industrial datalogger and controller capable of collecting and sending sensor data to Consibio Cloud (or self-hosted endpoints) and control actuators in a decentralized setup. All using the newest wireless technologies, completely plug&play.

Typical applications:

1. Permanent sewer and wastewater monitoring, where power is accessible.
2. Retrofit to remotely monitor and control 3rd party sensors or actuators.
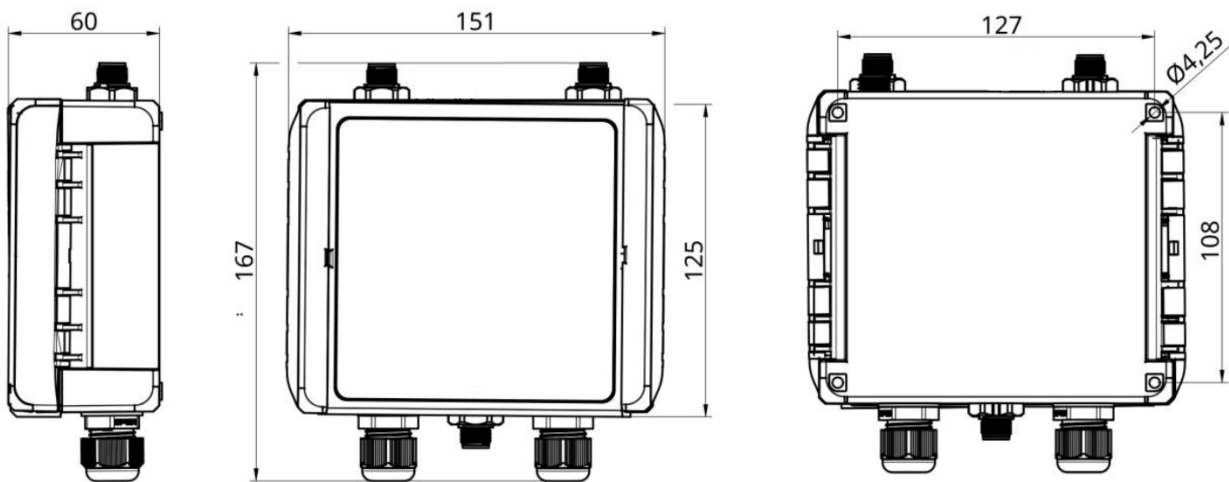3. Chemical dosing to prevent H_2S.
4. Odor and corrosion detection from H_2S.

Overall

Parameter	Value
Expected lifetime	+10 years
Connectivity	Cellular: LTE Cat-M1, NB-IoT (SIM included)
	WiFi: 2.4GHz (802.11 b/g/n)
	Optional: Satellite, LoRaWAN
Standards	DS/EN 61326-1:2013
Battery Life	Dependent on measurement and transmission intervals, typically up to 12 months of continuous operation.
Common sensors offered in solutions	Level and flow: VEGA C21 or Keller 36XW
	Odor and corrosion: Consibio H_2S Sensor
	Water Quality: Dependable on application, typically Xylem or InSitu

Cellular

Parameter	Value
Coverage	700+ vendors across 180+ countries
Network Selection	Automatic scanning and selection of the best network based on coverage
SIM Card	Included with a Consibio Cloud subscription; covers data in 180+ countries
Data Security	TLS 1.3 Protocol
Power Management	Smart power design with automatic switching between wired, rechargeable, and backup battery options

Mechanical

Parameter	Value
Operating Conditions	-20°C to +50°C (-4°F to +122°F), 0-100% RH
Dimensions	Length: 151 mm (5.94 in), Width: 125 mm (4.92 in), Height: 60 mm (2.36 in)
Housing Material	Polycarbonate (UV and weather-resistant)
IP-Rating	All components are at least IP67
Local interaction	"Wake up" button for manual activation
Antenna	Internal flexible antenna, option for external IP67-rated antenna

I/O Connections	Power: 5-pin M12 connectors at the top for 24VDC power supply Sensor/actuator connections: One 8-pin M12 connector, Two M16 cable glands
I/O Expansion Ports	Two internal expansion ports for modular and plug&play connectivity of sensors and actuators
Expansion Boards	RS485, RS232, SDI-12, 2x 4-20mA inputs, 2x 0-10V inputs, Analog outputs (4-20mA, 0-10V), Internal barometric pressure, Strain gauge interface, Pt100 temperature expansion, Thermocouple LoRaWAN, Satellite

Electrical

Parameter	Value
Wired Supply	24VDC or 6V solar panel; powers the device and recharges the Li-ion battery
Rechargeable Li-ion Battery	38Wh capacity, automatically recharged when wired supply is available
Backup Battery	60Wh primary Li-SOCl2 D cell, 10+ years lifespan without use
Battery Life	Dependent on measurement and transmission intervals, typically configurable for years of operation

Connect multiple sensors

The Consibio Logger is designed for maximum flexibility, allowing you to connect multiple sensors effortlessly. With the addition of our Smart Expansion Boards, you can integrate sensors using any protocol. This modular approach ensures that you can expand your monitoring setup without limitations, making it ideal for complex applications.

Common applications

- **Wastewater Systems**: Minimize overflow risks by tracking water levels, flow, and/or H_2S levels to manage surges, detect blockages, and optimize chemical dosing.

- **Pump Stations**: Monitor pump health using operational data, extending equipment lifespan and reducing unplanned maintenance.

- **Environmental Water Quality**: Measure dissolved oxygen, pH, salinity, and turbidity to protect ecosystems, prevent contamination, and comply with environmental standards.

- **Stormwater Management**: Real-time flow and water quality data enable proactive stormwater management, reducing pollution and overflow risks in urban areas.

Military grade enclosure and crossbeam

Durable enclosure and crossbeam for fast, simple and robust installation

The Consibio Logger Series can be supplied in a rugged enclosure designed for the harshest environments. The military grade enclosure in combination with the crossbeam simplifies installation and increases robustness for requiring applications like manholes and sewer systems.

Revision history

Version	Comments
2023-04-09	Initial version
2023-04-18	Updated information on rugged enclosure
2023-06-12	Updated information on heating element
2024-09-25	Added design
2024-11-11	Added new cases for monitoring