



GAS SENSOR MODULES · PRODUCT BRIEF

GSB-01

Three-Gas Industrial Monitoring Module

Rev A · August 2026 | **Category:** Gas Sensor Modules | **Interface:** Modbus RTU / G3-PLC

3 500 ppm 100% 2 comms

OVERVIEW

The GSB-01 combines NDIR methane sensing with solid polymer electrochemical detection of ammonia and hydrogen sulfide on a single board. Selectable Modbus RTU or Power Line Communications means it drops into existing infrastructure with no new wiring.

Each gas channel uses best-in-class Amphenol SGX sensing elements. The GSB-01 is a fully assembled, calibrated module — customize the sensor complement for other gas targets.

Simultaneous CH₄, NH₃, and H₂S monitoring with Modbus RTU or Power Line Communications — no new wiring required. CH₄ sensor is ATEX and IECEx certified for Zone 1/2 hazardous areas.

SENSOR SPECIFICATIONS

Sensor	INIR2-ME100-PC
Technology	NDIR infrared
Measurement Range	0–100% vol. CH ₄
Resolution	10 ppm
Sensitivity	—
Max Overload	—
LDL / Detectivity	100 ppm
T-90 Response	~19 sec
Operating Temp	-20°C to +50°C
Sensor Output	Analog + UART
Certifications	ATEX, IECEx

MODULE SPECIFICATIONS

Communications	Modbus RTU (RS-485) or Power Line Communications — field selectable
Connector	4-position screw terminal
Gas Channels	3 (CH ₄ , NH ₃ , H ₂ S) — customizable for other gas targets
Model	GSB-01 (Model 01 — production-ready configuration)

KEY CAPABILITIES

Methane (CH₄) — NDIR. Amphenol INIR2-ME100-PC. Non-dispersive infrared, 0–100% vol. CH₄, 10 ppm resolution. ATEX and IECEx certified for use in hazardous areas.

Ammonia (NH₃) — Electrochemical. Amphenol PS1-NH3-100 solid polymer electrolyte sensor. 0–100 ppm range, 20 ±10 nA/ppm sensitivity. HVAC plant rooms, agricultural, and industrial hygiene applications.

Hydrogen Sulfide (H₂S) — Electrochemical. Amphenol PS1-H2S-500. 0–500 ppm (1000 ppm overload), LDL ≤2 ppm, 1 ppm resolution. T-90 <30 sec. Sewage, utilities, and confined space monitoring.

Modbus RTU or Power Line Comms. Selectable RS-485 Modbus RTU or Power Line Communications — data over existing AC wiring with zero new cable runs. 4-position screw terminal. Uses the ARG G3-PLC Module for mesh PLC networking.

FROM SAFETY COMPLIANCE TO PROCESS CONTROL.

Safety & Leak Detection. Continuous monitoring for explosive, toxic, and asphyxiant gas hazards. Natural gas leak detection, sewage H₂S, confined space entry monitoring, OSHA PEL/IDLH compliance logging.

HVAC & Building Automation. Air quality and safety monitoring integrated directly into building systems. Parking garage detection, mechanical room safety, BMS integration via Modbus, demand-controlled ventilation.

Industrial Process Monitoring. Continuous gas monitoring in process environments and utilities. Chemical and pharmaceutical plants, agriculture and cold storage (NH_3), water treatment (H_2S).

Agriculture & Food Processing. Monitor ammonia in livestock facilities, cold storage, and food processing environments. Configurable thresholds and cloud alerts for remote monitoring.