

Hydrogen Sulphide Analyzers

GPR-7500 & GPR-7100

The GPR-7500 analyzer utilizes the low-power electro-chemical sensor technology to provide a cost-effective and easy to maintain online-installation hydrogen sulfide measurement in a small package. The GPR-7100 is a portable H_2S analyzer version preferably used for spot checking the process or temporary usage during servicing or commissioning of an permanent installation gas analyzer. These advanced instruments from AII are agency approved for use in flammable gas streams.



Highlights

- ATEX & UL certified variants
- Accurate to < 2% (FS) with an LDL of 0.1 ppm H₂S
- · Dedicated sample handling systems are included
- Optional liquid drain system (for entrained liquids)
- 24 month typical sensor life (simple to exchange)
- Easy to use HMI for set-up, operation and field calibration

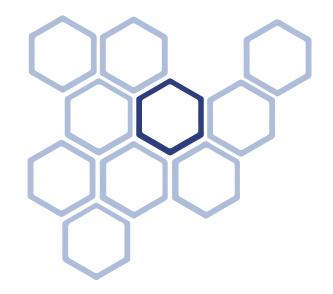
Applications

- Natural gas quality
- Biogas before and after the H₂S scrubber

Sensor technology

The electrochemical sensors for hydrogen sulphide combine small size, very good sensitivity and easy maintenance making the handling of an H₂S analyzer easy. Their main advantage is however the low power consumption which makes them perfectly suitable for battery-powered personal safety devices or portable instruments.

Like most of the toxic gas sensors Analytical Industries H_2S sensors require a small amount of oxygen to function properly and provide a signal. The output from the sensor is inherently linear, but has some cross-sensitivity to other gases, which must be accounted for when utilising the data from the analyzer.



Cross Sensitivity

Gas	Concentration	7HH	Gas	Concentration	7НН	
Carbon monoxide:	300ppm	≤1.5ppm	Hydrogen:	10,000ppm	<5ppm	
Sulphur dioxide:	5ppm	<1ppm	Hydrogen cyanide:	10ppm	0ppm	
Nitric oxide:	35pmm	<2ppm	Hydrogen chloride:	5ppm	0ppm	
Nitrogen dioxide:	5ppm	≤-1ppm	Ethylene:	100ppm	0ppm	
Chlorine:	1pp	≈0.2ppm				

Analyzer features and H25 scrubber options

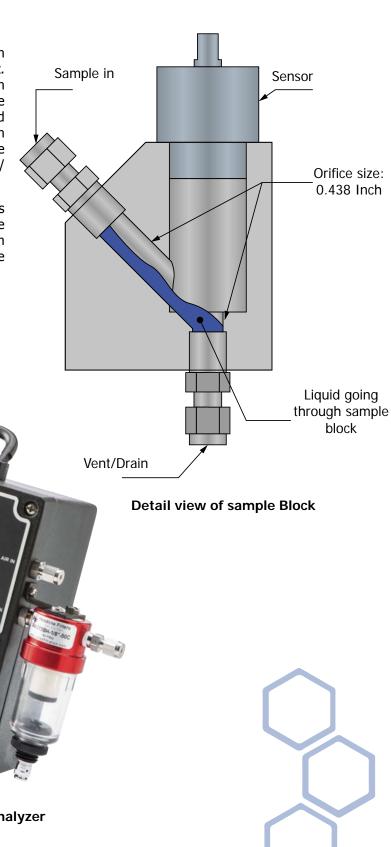
The analyzers are supplied as standard with an air pump for dilution of the sample (to provide the oxygen required for the measurement). Alternatively, a regulated supply of compressed air can be used instead, if convenient for the customer. A range of H₂S scrubbers are available to allow safe venting to atmosphere of the sample.



Liquid Drain

Samples (such as biogas) with entrained liquids can damage the sensor and cause analyzer and system upset. With the proprietary Analytical Industries' Liquid Drain System the problem can be easily handled. The sample gas enters the system from the top of the panel and flows down towards the sample block. The unique design allows the gas present in the sample to diffuse up to the sensor, while the unwanted liquids will flow out the vent/drain, protecting the sensor from liquid damage.

Note: This feature may impact the response time but is comparable to other sample systems designed to remove liquid carry over. Users selecting the Liquid Drain System are effectively protecting their process and reducing the cost of ownership and maintenance costs.



GPR-7100 Portable H₂S analyzer

Technical Specifications

	7100	7500 IS	7500 IS -LD	7500 AIS	7500 AIS LD	7500 AIS-S	7500 IS-S			
Measurement range	0-20, 0-50, 0-100 ppm		0-20, 0-50, (0-500, 0-1000		0-20, 0-50, 0-100 ppm					
Accuracy		±2% of selected range at constant conditions								
Response time		T90 < 60 seconds								
Sensitivity (LDL)		0.1 ppm								
Linearity	<2% of scale									
Sensor model	OSV-72-7HH-LM (standard ranges)		2-7HH (standard r 72-7H (up to 2000	OSV-72-7HH-LM (standard ranges)						
Sensor life at 25°C (77°F) and 1 atm	24 months									
Calibration interval	1-3 months - see manual for individual models									
Inlet pressure		atmospheric								
Sample flow rate	0.5 NI/m (1 SCFH)					None, measures H ₂ S in ambient air				
Auxilary air flow rate	0.5 l/m (1 SCFH) 1.5 Nl/m (3 SCFH) for high range sensor Instrument air required: regulated to 1 barg if internal pump not supplied									
Gas connections	1/8" Compression Type Fittings	1/4" Sample/Span; 3/8" Vent line.				None				
Wetted parts	Stainless steel									
Display		Graphical LCD 7 x 3.5cm (2.75 x 1.375"); resolution 0.1 ppm								
Enclosure	Painted aluminum NEMA 4X, 10.1 x 22.9 x 7.6cm (4 x 9 x 3")	NEMA	Type 3R for rain	Type 3R						
Weight	3.6kg (8 lbs)									
Signal output	0-1V	10 Kg (22 lbs) 4-20 mA or 1-5 V DC								
Alarms		None Two user configurable alarms: relays rated 3A at 100 V AC, palarm delays, alarm bypass for system fail alarm				orogrammable calibration and	None			
LED indicators	LOW BATT Warning; CHARGE mode									
Operating temperature	-10° to 45°C (14°F to 113°F)									
Power	Rechargeable battery, 8 hours day duty cycle		ransmitter, 12 V Pump	12-28 V DC Certified) 110-22 Certified) Transi optional	20 V AC (ATEX mitter, 12 V DC	12-28 V DC (UL or ATEX Certified) 110-220 V AC (ATEX Certified)	18-28 V DC			
Area classification	ATEX: II 2 G Ex ib IIB T4 Gb T _{amb} +5°C to +45°C	UL: United State	es: UL 1203, UL	913, UL 508						
		ATEX: ATEX: II Ex ib IIB T4 Gb T _{amb} -20°C to +5								

Analytical Industries Inc. 2855 Metropolitan Place, Pomona, CA 91767 USA Tel: 909-392-6900, Fax: 909-392-3665, www.aii1.com, e-mail: info@aii1.com