

# H<sub>2</sub>S-220

HIGH & LOW CONCENTRATIONS OF HYDROGEN SULFIDE

# H<sub>2</sub>S ANALYZER



## FEATURES

- Instantaneous reading of H<sub>2</sub>S
- No consumable reagents
- Diode array detection
- Unattended operation - very low maintenance
- No analyzer house
- Fiber optics probe- remote sensing
- Measures and correct for COS and mercaptans
- Wide wavelength range for a variety of concentration ranges
- No need to concentrate or dilute
- Direct measurement
- Output signals: 4-20mA, RS232 and Modbus (TCP/IP, Ethernet, serial)

The **H<sub>2</sub>S-220** is a diode array UV fiber optics process spectrometer. It is designed to address on-line applications that require reliable, accurate, rugged and maintenance free monitoring of H<sub>2</sub>S concentration. Either a fiber optics insitu probe or flow cell can be used.

### NO MOVING PARTS

In contrast to a filter based instrument, which measures at a few discrete wavelengths, the H<sub>2</sub>S-220 processes absorbance signals obtained from a complete high resolution spectrum.

The H<sub>2</sub>S-220 is a solid state analyzer adhering to the principle of no-moving parts in process applications.

### HIGH & LOW H<sub>2</sub>S CONCENTRATIONS IN ONE ANALYZER

No need to replace any components when moving from one concentration range to another, just a user defined settings of wavelengths to monitor. The wavelength range to monitor can be set to shift automatically upon change in concentration range. Either by receiving a signal from the DCS or in an auto detection mode. Figure 1 shows the absorbance spectra of H<sub>2</sub>S at different concentration levels

### ENCLOSURES

The H<sub>2</sub>S-220 is offered in two different enclosures: A general purpose A 316 Stainless Steel enclosure and a Class I Division I Groups B, C & D NEMA 4X / 7 Cenelec approved enclosure.

### PROBE

A bifurcated fiber optics cable is used to conduct light to and from the probe or flow cell. The insitu probe is inserted into a sintered metal filter to protect it.

### FLOW CELL

The flow cell path length depends on the H<sub>2</sub>S concentration range and range from 2 mm to 1 meter.

### SAMPLING SYSTEM

While a variety of flow cells optical paths and materials of construction are offered two basic standard sampling system designs are offered; An extractive aspirated system with a manual or automatic zero for gases and liquids, and a closed coupled extractive stack sampler with flow indication and automatic zero capability.

### THE ANALYSIS

An industrial PC is used for data processing and user interface. The H<sub>2</sub>S-220's user-friendly interface allows for modification of operational parameters including sampling system's relays (no need for a PLC), all the parameters can be modified through a touch screen interface.

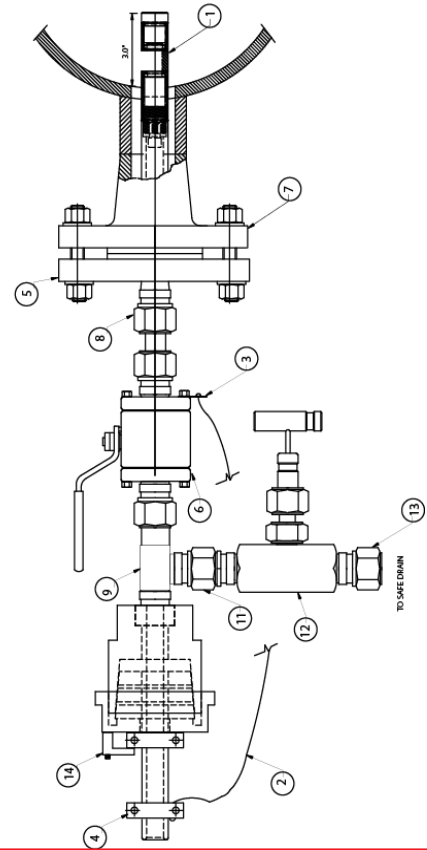
## APPLICATIONS

- H<sub>2</sub>S in natural gas
- SRU Acid Feed gas analyzer:
- Feed forwards control
- Acid gas
- Well head gas
- Sour gas pipelines
- Amine based tail gas
- High concentration H<sub>2</sub>S in feed gas streams
- H<sub>2</sub>S in amine analyzers in rich amine and in lean amine

## H2S-220 SPECIFICATIONS

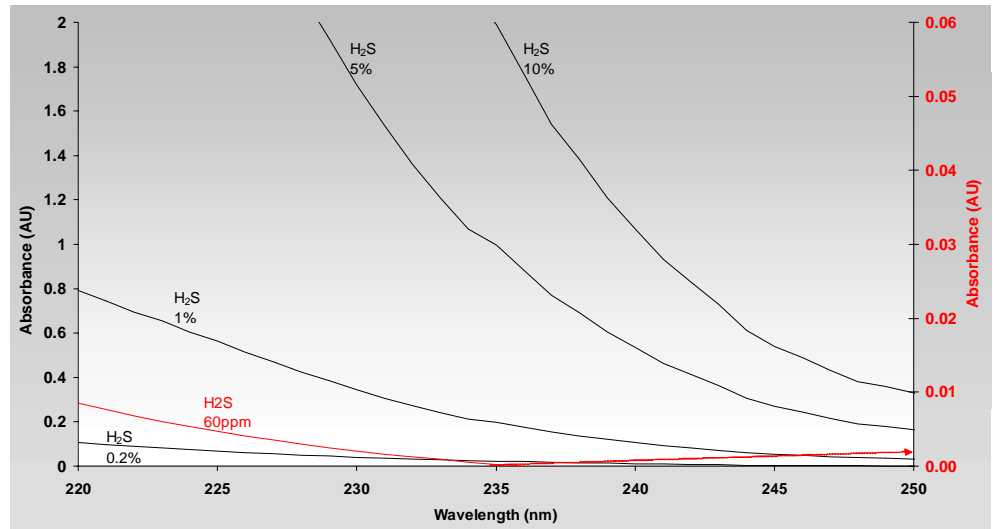
Measurement principle	UV absorbance
Detector	1024 elements diode array
Light source	Long life Xe lamp
Analysis method	Multi wavelength (allows for correction due to MeSH COS)
Other components	Measures and corrects for MeSH and COS
Flow cell	Fiber optics transmit light to and from cell (Fiber length depending on installation) (flow cell length depending on H2S concentration)
Repeatability	±0.5% of scale
Measurement range	10PPM to 100%
Accuracy	±1% of scale (for low PPM range ±2% of range)
Zero drift	2% for 24 hour (5% for low PPM range)
Response time	10sec (20 sec for low PPM scale)
Ambient Temperature	0-55C(32 to 130F) standard -20C to 55C (-4 to 131 F) optional
Flow cell	
Temperature	-50 to 300C (-60 to 570F)
Pressure	10 bar (147 psig)
Analog outputs	two galvanically isolated 4-20mA (additional channels are optional)
Digital communication	RS232 Modbus, TCP/IP Modbus
PLC	OPC server included
Fault relay	One SPDT alarm relay
Power	80 to 240 Volts AC 40 to 60 Hz, 20 Watts
Approvals and Certifications:	CEC Class I, Division 1, Groups C & D; Ex d IIB T3 NEC Class I, Division 1, Groups C & D; AEx d IIB T3 ATEX II 2G EEx d IIB T3 EMC and LVD Complies with all relevant European directives

## IN-SITU PROBE



## UV ABSORBANCE SPECTRA OF H<sub>2</sub>S

H<sub>2</sub>S : 60PPM to 10% . Zero on air. The program switches automatically, depending on concentration range, to a method where the wavelength to monitor are optimized for maximum signal to noise, allowing for one system to cover a very wide concentration dynamic range.



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