PROCESS

WESTERN RESEARCH®
PROCESS INSTRUMENTS

BULLETIN 930

ANALYZER SOLUTIONS FOR *YOUR* PROCESS!

Model 930 H_2S in Sulfur Pit Analyzer

THE NEED

In many sulfur recovery units, produced sulfur is stored in liquid form in sulfur pits. Operators are increasingly aware that sulfur pits present potential danger to plant personnel and overall plant safety. It is, therefore, critically important to monitor H_2S in the vapor space of sulfur pits to ensure that it remains below the Lower Explosive Limit (LEL) (4.3% by volume). Additionally, the presence of rising concentrations of SO_2 in the sulfur pit vapor space provides an early indication of smoldering fires. Therefore, on-line, continuous monitoring of SO_2 can enable detection of such fires before they get out of control.

Backed by over thirty years of process and analyzer experience in sulfur recovery, AMETEK Western Research developed the Model 930 H_2S Vapor Space Analyzer for sulfur pit storage applications. The AMETEK-designed Model 930 has been field proven as one of the industry's most reliable instruments for monitoring H_2S and SO_2.

DIRECT MEASUREMENT

The Western Research® Model 930 uses our proprietary high resolution UV technology in a dual beam, multiple wavelength configuration. Resolution better than 0.02 nm is provided by high intensity, line source lamps. These sources emit at a fixed wavelength providing great measurement stability, and emit low total power removing the potential for sample photolysis. The dual beam configuration, combined with the reference measurement, ensures low noise performance with minimal baseline and span drift.

The Model 930 analyzer samples the vapor space gas using proven technology. The sampling system has a sulfur knock-out at the probe to eliminate entry of excess sulfur vapor or liquid into the system. The sample is transported through an electrically traced sample line.

The Model 930 is a multicomponent analyzer that is configured for simultaneous measurement of both H_2S and SO_2. Sulfur vapor concentrations in the sample can also be monitored.

Model 930 H2S in Sulfur Pit Analyzer

APPLICATION

- **Sulfur recovery, storage, and de-gassing**

SUPERIOR BENEFITS

- **Simultaneous, accurate measurement of both H_2S and SO_2**
- **Output alarms for H_2S (LEL) and SO_2 (smoldering fire)**
- **Common design with Model 900 (air demand) and Model 910 (stack gas)**
- **Exceptional baseline stability and sensitivity**
- **Advanced Sulfur Removal (ASR) Probe prevents sulfur plugging**

AMETEK®

PERFORMANCE SPECIFICATIONS

Methodology: Multiple wavelength, high resolution, nondispersive UV

Typical Range: 0 to 4% H_2S, 0 to 2% SO_2

Accuracy: ±2% of reading SO_2; ±2% of reading H_2S

Repeatability: Less than 1.0% of reading SO_2; less than 1.0% of reading H_2S

Speed of Response: Standard, 90% rise time, 15 seconds (analyzer only)

Stability: .±0.4% of reading SO_2; ±0.4% of reading H_2S

Zero Drift: 24 hours ±2% of reading SO_2; ±2% of reading H_2S

Calibration: H_2S and SO_2 outputs, factory calibrated

Sensitivity: ±2% of reading SO_2; ± 2% of reading H_2S

Outputs: 4-to-20 mA H_2S, SO_2 (optional loop-powered 4-to-20 mA in place of self-powered)

Sample Transport: Air aspiration

Typical Flow: 0.1 to 0.2 CFM (3 to 5 l/min.)

Ambient Temperature: 5° to 50°C (41° to 122°F)

Instrument Air: Minimum 30 psig, flow 1 CFM Instrument quality air

Power Consumption: 500 W (excluding sample line and vent line)

Power:

Nominal	Voltage range	Frequency range
120 VAC	105 to 132 VAC	47 to 63 Hz
240 VAC	209 to 264 VAC	47 to 63 Hz

Communications: RS232 / RS422 / RS485 / Modbus

Physical Dimensions (H x W x D): 1554 x 1118 x 305 mm (61 x 44 x 12 in.)

Weight: 2115 to 160 kg (50 to 350 lbs.)

Approvals and Certifications:

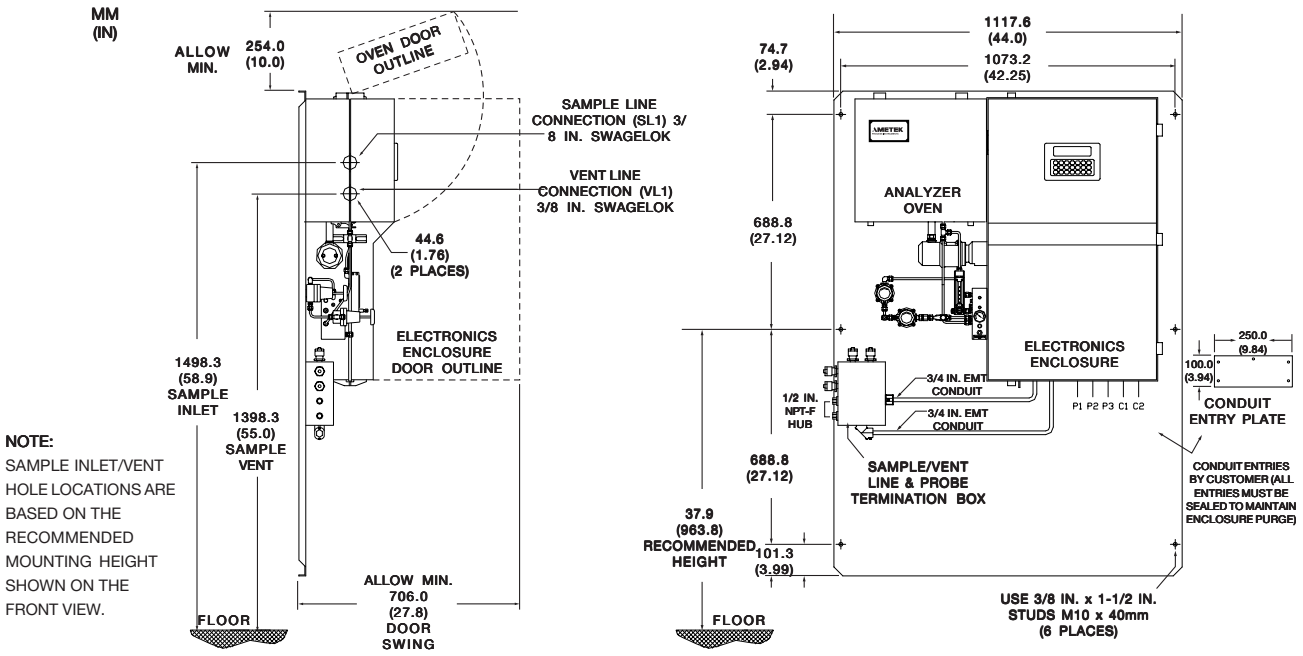
NEC/CEC Class I, Division 2, Groups C & D
CENELEC EEx pd IIB T3
Russian Ex Proof Certification; 1ExpydIIBT3
Russian Gosstandart Pattern Approval
Complies with all relevant European Directives

STANDARD FEATURES

Built-in resistance temperature device (RTD) control, with over-temperature protection of temperature zones for the oven, sulfur condenser, sampling line, and vent line

OPTION

Thermistor sensors



One of a family of innovative process analyzer solutions from AMETEK Process Instruments. Specifications subject to change without notice.

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