AMETEK®
PROCESS INSTRUMENTS

MEASURES: H_2

PRODUCT DATA SHEET

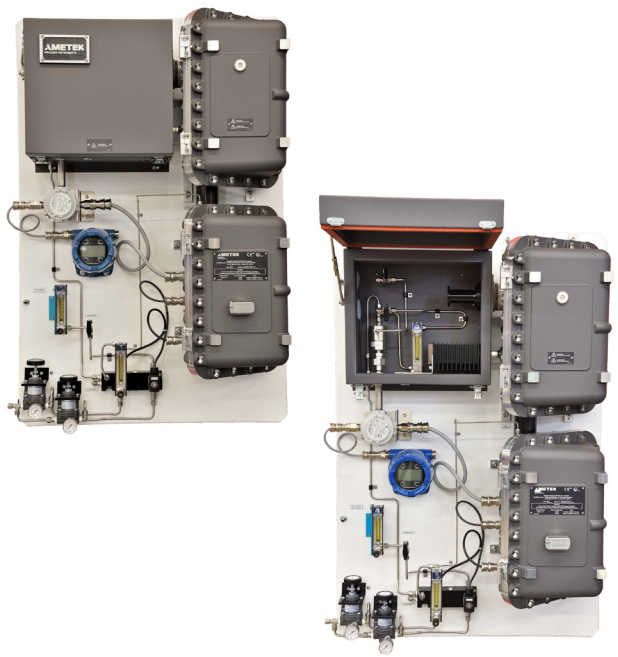
934 Single-Gas Analyzer

Measures hydrogen (H_2) in tail gas treating unit (TGTU) applications where hydrogen sulfide (H_2S) measurement is not required

The 934 is a rugged analyzer adapted from the 931/932 UV analyzer platform for the measurement of H_2 in TGTU applications, where the hydrogen sulfide (H_2S) measurement is not required. With a heated sensor and sample system to avoid any hydrocarbon or water condensation, the analyzer can be used for hot-wet H_2 measurement in TGTU applications with no water removal, and no pump.

Reliable dew point control

In addition to the heated sensor, reliable temperature control keeps the fully integrated sample system above the sample gas dew point temperature, avoiding the risk of plugging, contamination or flooding of the analyzer.



KEY BENEFITS

- Sample return to process (HAG probe option)
- Minimum sample conditioning
- Low-maintenance design
- Minimal calibration drift

APPLICATIONS

- Amine-based tail gas treating units
- Monitoring H_2 concentrations from cobalt molybdate catalyst beds
- Quench or absorber outlet

KEY MARKETS

- Sulfur recovery

PERFORMANCE SPECIFICATIONS

Methodology	Thermal conductivity detector (TCD)
Standard range	H_2: 0-5% or 0-10%
Optional measurements	Other ranges are available upon request Optional infrared sensor for total hydrocarbons Carbon dioxide: application specific Other measurements include carbonyl sulfide, carbon disulfide, H_2S and sulfur dioxide (using the Model 931 or 932)
Accuracy	TCD: H_2 sensor for TGTU applications: ±2% of full scale of standard range (0-10% H_2)
Linearity	Better than ±1% of full scale for H_2S
Zero drift	Better than ±2% of full scale, with auto-zero disabled over 24-hour period
Repeatability	Better than 0.5% of full scale of standard ranges
Speed of response	Typically, less than 30s to T90 (excluding sample system)
Number of gases	One
Zero gas	Nitrogen
Typical sample flow	2.5 L/min (5 SCFH)
Sample transport	Application-dependent (options include HAG probe)
Outputs	Up to four isolated 4-20 mA, loop or self-powered, 30 VDC Max; Four non-isolated 1-5 VDC; Five independent sets of SPDT, Form C, potential free alarm relay contacts, 2 A at 240 VAC
Digital communication	RS485 Modbus port; RS232/RS485 service port
Utility requirements	120 VAC (104 to 132 VAC), 47 to 63 Hz, <3A 240 VAC (207 to 264 VAC), 47 to 63 Hz, <2A
Power consumption	500 W max. (with heated probe and cell)
Ambient temperature	0 to 50˚C (32 to122˚F)
Physical dimensions (W x H x D)	780 x 1185 x 254 mm (46.65 x 30.7 x 9.97 in.)
Weight	Approximately 145 kg (320 lbs)
Approvals and certifications	CEC Class I, Division 1, Groups B, C, D; Ex d IIB+H_2 T3 NEC Class I, Division 1, Groups B, C, D; Class 1, Zone 1, AEx d IIB+H_2 T3 CEC/NEC Class I, Division 2, Groups B, C, D; ExP (unit verification) ATEX: II 2G Ex db IIB+H_2 T3 Gb IECEx: Ex db IIB+H_2 T3 Gb, Russian: 1ExdIIBT3 X GOST: 1ExdIIBT3 Complies with all relevant European Directive

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