

Model 4670 H₂S in Rich Amine Analyzer

Features and Benefits

Lower plant operating costs through:

- ▶ Reduced regenerator steam consumption by using a lowered amine circulation rate that ensures operation at the optimum H₂S/amine loading

Lower analyzer maintenance costs through:

- ▶ Proven long term reliability
- ▶ A system designed for unattended operation

The Need

Substantial energy savings can be achieved in amine regeneration by controlling amine recirculation to ensure optimum H₂S loading. Continuous measurement of the H₂S in rich amine permits feedback control to the circulator thus ensuring optimum absorber efficiency.

UV photometry is complicated by the ever-changing composition of the aqueous amine solution. Degradation products, corrosion inhibitors, corrosion byproducts, and more, change as the amine is incessantly recycled. A simple and automatic means to compensate for these changes is required.

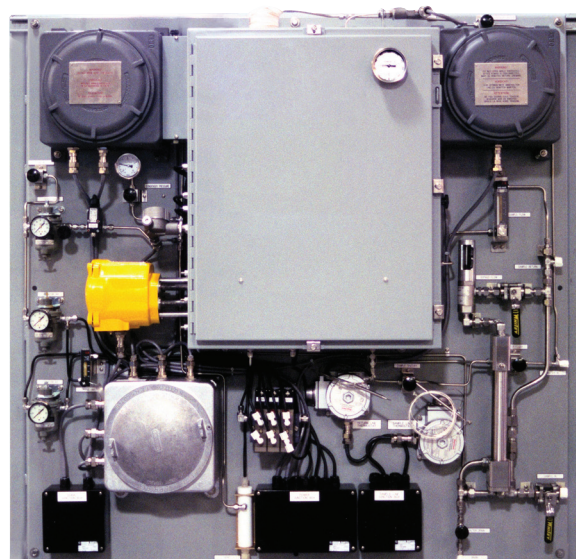
Method of Analysis

The simplest systems are the most reliable. That's why direct UV absorption measurement is used, without complicated dilution or reagent systems. The Model 4670 monitors the H₂S concentration in the rich amine exiting the contacting column. The amine is filtered to remove any solid contaminants present in the amine. The amine is then passed through a sample cell where the H₂S concentration is measured by the UV photometer. The sample is then returned to a point in the system with a lower pressure to ensure sample flow.

The Model 4670 solves the problem of accurate, continuous analysis by utilizing lean amine as its zeroing fluid. The rich amine sample flow is stopped

periodically, and lean amine is directed to the measurement cell. UV absorption is characterized and rich amine flow resumed. Through characterization of the lean amine, all background interferences in the amine solution can be subtracted from the rich amine. The resulting signal is mediated only by H₂S in the rich amine.

The unique AMETEK split-beam, single cell UV analyzer is highly stable and essentially drift-free. This rugged analyzer has no moving parts and a wide tolerance for varying ambient conditions. The system uses a filtration system field-proven to give reliable operation in excess of one year.



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Performance Specifications

Range: Typically 0 to 0.5 mol H₂S/mol amine; others available

Repeatability: ±0.5% full scale

Accuracy: ±2% full scale

Outputs

Two (2) 4 to 20mA, linear, isolated, 600-ohm load
One (1) digital, common fail-safe alarm for system fault
One (1) digital input for remote auto-calibration
One (1) RS-485 serial port

Ambient Temperature: -7°C to 50°C (20°F to 120°F)

Utilities Requirements

0.5 kVA, all worldwide power supplies acceptable

Instrument air at 140 to 700kPa (20 to 100 psig), at 3 ft³/hr (0.1 m³/hr)

Clean water at 70 to 350 kPa (10 to 50 psig) greater than sample **return pressure at 60 L/hr**

Electrical Classification Options:

CE

The analyzer's field unit is designed for use in NEC/CEC Class I, Division 2, Groups A,B,C,D, T6 to T4 areas. Optional versions are available for Class 1, Division 1, Group C, D or ATEX II 2 G IIC T3 areas.

The analyzer's controller is designated for use in Class I, Division 2, Groups A, B, C, D areas. It may be supplied in an ATEX II 2 G EEx d IIC T6 enclosure on special order.

The analyzer's power supply is only suitable for non-hazardous and Class 1, Division 2 area installations.

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

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