ASOMA

Model 682T-HP

On-Line High Pressure Sulfur Analyzer

The Model 682T-HP is designed for analysis of sulfur in highly viscous hydrocarbons. This system is ideal for processes where sample pressures are high and in situations where fouling of flowcell windows with paraffin or similar substances can occur.

The Model 682T-HP system is faster, more sensitive and more compact than previous systems and provides continuous, reliable detection of sulfur at pressures up to 800 psi. It can operate either as a stand-alone analyzer or can be tied in to plant-wide automation systems to provide real-time strategic measurements.

Among the key features of the analyzer are a fully integrated densitometer, automatic density compensation, touch-screen controls, password protected screens, and rapid update rates as frequent as one per every five seconds.

Operation of the analyzer is regulated by an integral processor. The processor monitors instrument parameters such as process temperature, density, and system diagnostics. It also provides a comprehensive suite of alarms and a standard platform for communicating to a plant-wide DCS. Due to its unique design and robust construction, the system has minimal, if any, sample conditioning and recovery requirements.

ASOMA Instruments was established in Austin, Texas, in 1979 as one of the first companies to offer low-cost benchtop EDXRF instrumentation. Throughout the next decade and a half, ASOMA became established as an industry leader with the development and release of the Models 100, 200 and 200T-series of XRF analyzers, as well as a complete line of on-line instrumentation for measuring liquids, solids and coatings.

Features and Benefits

- Ideal for analysis of crude and other highly viscous hydrocarbons, pipelines, terminals, blending
- Sample stream temperatures up to 392˚ F / 200˚ C
- Proprietary window in flowcell can withstand pressures in excess of 800psig/55 bar
- Certified to industry standards
- Large flowcell diameter (2 inches/5 cm) reduces interferences
- Analysis range for sulfur of 0.04-6.0%

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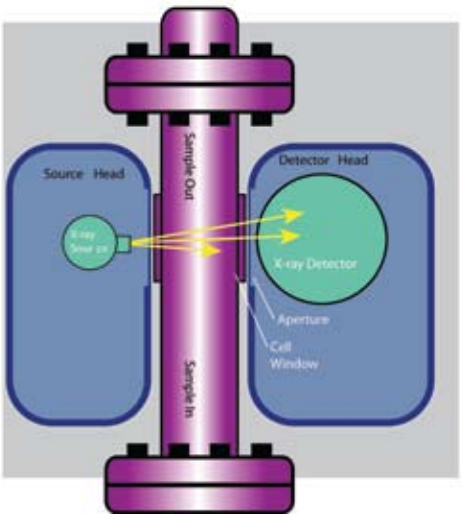
XRT On-Line High Pressure System

In the cross-section diagram (right), the sample flows through a flowcell. The sample is irradiated with a source of high energy x-rays which are absorbed by the sulfur atoms. A detector on the opposite side measures the x-rays that get through and that signal intensity is inversely proportional to the sulfur concentration.



Performance Specifications

Process Conditions

Normal Product: Crude oil, heavy hydrocarbons, bunker fuels

Sulfur Concentration: 0.04 - 6%

Pressure at flowcell: 800 psi (Consult AMETEK for special requirements.)

Flow rate at cell: Up to 200 liters/ minute

Temperature: 392ºF/200ºC (Consult AMETEK for special requirements.)

Density Gauge: Required (supplied by AMETEK or customer)

Ambient Temperatures: Minimum 15ºC, maximum 30ºC (For ambient conditions outside this range, consult AMETEK.)

Enclosures

Standard: Stainless steel, NEMA 4X (IP-65)

Dimensions: Controller 36x30x12 inch minimum

Purge: Type X for Class I, Division I, Groups A - D area classification, (ATEX Category 2) or Type Z for Class I, Division 2. Groups A - D area classification, (ATEX Category 3)

Optional: Heating and Air Conditioning System

Power: 115 or 230 VAC ± 10%, 50x60 Hertz, 80 W typical, 300 W max

Controller

Interface

Class 1 DIV 2

External Touch Screen Interface, Power Switch,

Valve Control Switch, Remote/ Local Control Switch,

Capture Enable.

Class 1 DIV 1

Internal Touch Screen Interface, Power Switch,

Valve Control Switch, Auto Start/ Stop Switch,

Capture Enable

Standard Outputs

4-20 mA for sulfur and density, dry contact for common alarm, enclosure safety alarm, data valid, in bounds signal, RS-485 serial data

Optional Outputs

Profibus, Modbus, Ethernet

Standard Inputs

Densitometer input, dry contact for analyzer stop/start, mode switching

Measurement Flowcell

Technique: X-ray Transmission (XRT)

Analysis Time: Nominally 100 seconds

Typical One Sigma Precision

±50 ppm @ 0.1 Wt% sulfur

± 30 ppm @ 3.2 Wt% sulfur (consult AMETEK for application)

X-ray Source: X-ray tube

X-ray Detector: High resolution gas filled proportional counter Leak Detection: Capacitive leak sensor

AMETEK®
PROCESS INSTRUMENTS

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REGISTERED ISO 9001 MANAGEMENT SYSTEM

F-0258 Rev. 1 (0609)

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

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