Sulphur On-Line Analyzer

MOD-6400 Sulphur Analyzer utilizes field-proven ultraviolet (UV) fluorescence technology to continuous monitor the Total Sulphur content found in gasoline, diesel and other petroleum products. UV-Fluorescence is a non-consuming method of detection, eliminating the hassles associated with replacing tape cartridges, and enables detection as low as 10 ppb, depending on application, with stable, reproducible results.

System Advantages

The analyzer designed to meet technical requirements of ASTM D5453 and ASTM D6667. The undesirable sulfur compounds present (i.e. H2S, DMS, COS, CH3SH, CS2, etc) are converted into sulfur dioxide (SO2) under precisely controlled temperature and flow conditions.
$SO2 + hv1 \rightarrow SO2^* \rightarrow SO2 + hv2$

When SO2 is exposed to UV light energy, hv1, it creates an “excited” form of sulfur dioxide, SO2*. A molecule in a high, vibrational level of the excited state, SO2*, will quickly fall to its lowest vibration level by losing energy to other molecules through collision. Fluorescence occurs when the molecule returns to its electronic ground state. The intensity of the emitted light, hv2, is directly proportional to the total Sulphur content found in the sample.

The converted sample gas is passed from converter, through a dryer for water removal, and directly onto the UV Fluorescence Analyzer where the SO2 Analysis takes place and is conveniently displayed, as Total Sulphur, for the operator to view.

The Series MOD-6400 is a single or multi-stream analysis system solution which provides the end-user with a wide variety of links to ensure effective system operation. In addition to conventional 4-20mA outputs for tracking the Total Sulphur concentration, the MOD-6400 can also provide a number of discrete I/O’s as well as a bidirectional RS-232/RS-485 and Ethernet communication capability. This enhanced system communication capability allows the end-user to maintain an up-to-the-minute status of how the system is functioning and allow for a remote calibration or range change, should process changes so dictate.

Superior flow and temperature control of liquid-phase samples via Quartz Tube Converter Module Pyrolysis Technology ensuring high reliability and repeatability. Wide range of analyzer diagnostic capabilities to continuously provide plant operators with system status conditions.

MOD-6400 Sulphur Analyzer Specification

Converter Method	Quartz-Tube Module (QTM)
Analysis	Semi-continuous with updates every 2-6 minutes
Compliance	Designed to meet requirements of ASTM D5453
Area Classification	Zone 2 version with approved purge
Range	0-200 ppb to percent levels Total Sulfur (TS) - specify at time of order
Repeatability	±2% of full-scale, optionally ±1%
Response Time	90% of full-scale in less than 100 seconds
Operating Temperature	5-40°C
Zero and Span Noise	Less than 1% of full-scale
Zero and Span Drift	2% of full-scale per week, optionally 1%
Alarms	One system alarm and two concentration alarms. Form-C relays rated @ 3A 125VAC
Supply Voltage	110 or 220 VAC 50/60 Hz
Maximum Power Consumption	500 W
Outputs	4-20 mADC (isolated) RS-232 TCP/IP Ethernet (optional)
Maximum Load Impedance of 4-20 mA Output	500 ohms
Flow Rate	10 SCFH (5 LPM) standard
Utility Gases	• Air, <1 ppm sulfur (500 ccm nom, 40 psig) Hydrogen, <1 ppm sulfur (30 ccm, 40 psig) Nitrogen or air for purge • Zero and span calibration gases
Options	• Enhanced computer with diagnostic capabilities • ATEX Zone 1 approval • Enclosure air-conditioning for outdoor installations • ANACON software for remote diagnostics, validation, maintenance and acquisition

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