SULPHUR DIOXIDE SO2 ANALYSER

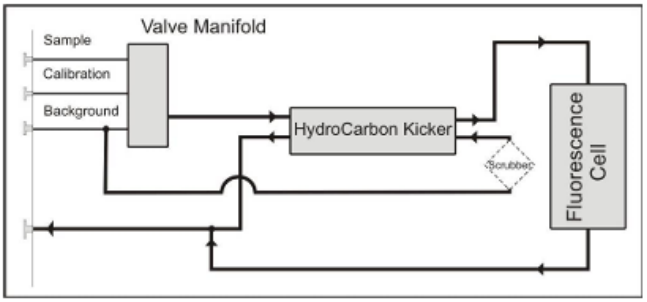
An Advanced Instrument for Real-time Monitoring of Sulphur dioxide.

INTRODUCTION:

The **Serinus® 50 Sulphur Dioxide (SO_2) Analyser**, manufactured by Acoem Australasia, is a high-performance gas analyser designed to provide accurate and reliable measurements of sulphur dioxide in ambient air. Utilizing the principle of UV fluorescence spectroscopy, the instrument ensures high sensitivity, low detection limits, and excellent stability, making it suitable for regulatory, industrial, and research applications.

The analyser is fully compliant with U.S. EPA and EN standards and integrates advanced features such as a dual hydrocarbon kicker, zero air scrubber, reference detector, and Kalman filtering to ensure optimal performance in varied environmental conditions.

FLOW & BLOCK DAIGRAM:



OBJECTIVES:

- **Precise SO_2 Monitoring.**
- **Characterization of SO_2 Sources and Emission Patterns.**
- **Study of SO_2 Interactions with Other Pollutants.**
- **Long-Term Monitoring for Trend Analysis.**
- **Climate and Health Impact Studies.**

DATA OUTPUT:

- **SO_2 Concentration Output (ppb or ppm).**
- **Source attribution analysis.**
- **Model validation and sensitivity studies.**
- **Long-term trend studies.**
- **Chemical transport modeling.**

KEY SPECIFICATION:

Range **:** 0-2- ppm (auto ranging)
Power **:** 100-240 VAC, 50-60 Hz (auto ranging)
Sample Flow Rate: 725 cc/min
Tempeture Range: 0-40 degree Celsius
Power consumption: 255 VA (max at start-up)
Precision: 0.5 ppb or 0.5 % of reading whichever is greater.
Response time: 60 seconds to 95 %
Span drift: 24 hours: < 0.5 % of reading or < 0.5 ppb whichever is greater.

MEASUREMENT AND WORKING PRINCIPLE:

The measurement of Sulfur Dioxide is based on classical fluorescence spectroscopy principles. SO2 exhibits a strong ultraviolet (UV) absorption spectrum between 200 to 240 nm. When SO2 absorbs UV at this wavelength, photon emission occurs (300 to 420 nm). The amount of fluorescence emitted is directly proportional to the SO2 concentration.

KEY FEATURES:

- **Real Time Monitoring- Data logging and remote viewing of over 200 operational parameters**
- **Low Power Demand- Reduce AQMS power usage due to the instrument low power demand.**
- **Ability to operate over a wide Tempeture range.**
- **Long life data storage- Removable flash memory stores ~10 years of data, including upto 12 individual parameters and event logs.**
- **Remote Application dashboard**.

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