ECOTECH

WORLD CLASS environmental MONITORING

EC9850TS

Total Sulfur Analyser

The EC9850TS Total Sulfur Analyser combines microprocessor control, high performance, total reduced sulfur converter and fluorescence detection to measure total sulfur (TS). Total sulfur represents the sum of SO_2 and all total reduced sulfur (TRS) species.

TS concentration is automatically corrected for gas temperature/pressure and can be displayed in units of ppm, ppb, $\mu g/m^3$ or mg/m^3.

The TRS converter uses a high temperature thermal oxidizer to oxidize all sulfur species to SO_2. The output from the converter is SO_2 and all the TRS converted to SO_2.This output is then measured by fluorescence detection which utilises the resultant emitted radiation produced by SO_2 molecules when excited by UV radiation. The UV radiation excitation is measured by a reference detector and the fluorescence radiation is measured by a photomultiplier tube. The output signal is the ratio of these two measurements which accounts for any effects due to variable lamp intensity or optical interference.

Features

- Internal hydrocarbon scrubber removes interfering components prior to sample measurement.
- Analyser uses a custom designed zinc lamp UV source. The single spectral line at 214nm reduces interference due to water vapor .
- Auto zero function periodically checks and corrects for background illumination thereby virtually eliminating zero drift.
- Inbuilt data logger uses Flash ROM to store up to 175 days of 5 minute data averages.
- Stored data can be retrieved via RS232, USB interface or the optional Ethernet connection and uploaded to a TCP/IP network.
- Ethernet option facilitates data download from an analyser connected to the internet via a standard web interface. This feature also supports remote access to instrument parameters and the status screen .
- Complies with U.S. EPA Automated Equivalent Method EQSA-0193-092

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Specifications

Ranges :	Auto-ranging 0-20 ppm
Resolution:	0.1ppb
Analogue Out:	0 - full scale from 0 - 0.050 ppm to 0 - 20 ppm with 0%, 5%, 10% offset. Auto-ranging between two user specified full-scale values
Noise (RMS):	0.25 ppb or 0.1% of concentration reading (1) (2)
Lower Detectable Limit:	0.5 ppb with Kalman filter active(2)
Zero Drift:	Temperature dependent, 0.1 ppb/°C Time dependent, at fixed temperature: 24 hours: Less than 1 ppb, 30 days: Less than 1 ppb
Span Drift:	Temperature dependent, 0.1%/°C Time dependent, at fixed temperature: 24 hours: 0.5% of reading, 30 days: 0.5% of reading
Temperature/Pressure Compensation:	Temperature/Pressure compensation with selectable reference temperature of 0ºC, 20ºC, 25ºC at 101.3 kPa.
Lag Time:	Less than 20 seconds (2)
Rise/Fall Time:	95% of final value less than 120 seconds (2)
Precision:	Better than 0.5 ppb or 1% of reading (1)
Sample Flow Rate:	0.5 SLPM
Sample Pressure Dependence:	All readings compensated. A 5% change in pressure produces less than 1% change in reading
Temperature Range:	5°- 40 °C
Power:	99-132 VAC; 196-264 VAC; 47-63 Hz.
Converter:	120 VAC, 50/60 Hz, 360 VA; 240 VAC, 50/60 Hz, 180 VA.
Weight:	Analyser: 25kg; Converter: 11kg
Analogue Outputs:	Jumper selectable voltage outputs for 100mV, 1V, 5V, 10V with menu selectable zero offset of 0%, 5%, or 10% or menu selectable current output 0-20 mA, 2-20 mA, 4-20 mA
Digital I/O DB50:	Multidrop RS232 port shared between analyzers for data, status and control. DB50 with discrete status, user controls and analogue output and USB port.
Communication Port:	Rear panel multi-drop RS232 port shared between analysers for data, status and control and front panel service RS232 port. Plus USB interface and optional Ethernet connection to a TCP/IP network via an RJ45 connector.
Data Logging:	Supports internal data logging capability with storage up to 175 days of 5 minute data stored in flash ROM.
Data Storage selection:	Instantaneous data selectable period from: 1,3,5,10,30, or 60 minute intervals Average data selectable period from: 1,3,5,10,15,30 minutes, 1,4,8,12, or 24 hours

Total Reduced Sulfur Converter

Converter Efficiency:	98%
Operating Temperature:	800-900°C
Converter Capacity:	0-20 ppm

(1) Whichever is greater with Kalman filter active
(2) Analyser specific

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