TELEDYNE INSTRUMENTS
Advanced Pollution Instrumentation
A Teledyne Technologies Company

MODEL **108E**

Total Sulfur Analyzer

- **0-50ppb to 20,000 ppb ranges as SO_2, user selectable**
- **Microprocessor controlled for versatility**
- **Multi-tasking software allows viewing of test variables during operation**
- **Auto Ranging, Dual Range and remote range selection**
- **Continuous self checking with alarms**
- **Dual Bi-directional RS232 ports for remote operation (optional RS-485 or Ethernet)**
- **Digital Status outputs provide instrument operating condition**
- **Internal Data logging with 1 min to 365 day multiple averages**
- **Continuous Automatic Zero correction**
- **Adaptive signal filtering optimizes response time**
- **Temperature & pressure compensation**
- **Critical orifices provide flow stability**
- **APIcom remote operation software**

The TAPI Model 108E is designed to measure mixed sulfur impurities, collectively referred to as Total Sulfides (TS), in air or carbon dioxide (CO_2) gas. Since there is no SO_2 scrubber in the system, the instrument reading is the sum of the oxidized sulfur compounds and SO_2.

The Model 108E consists of a modified M100E UV Fluorescence SO_2 Analyzer, with special software and a M501TS high temperature thermal oxidizer. Sulfur compounds are heated as they pass through the converter and are oxidized into SO_2.

When analyzing CO_2, which generally contains no oxygen, there is an assembly to add air, giving approximately 6% oxygen to the sample before it passes through the converter. This dilution of the sample gas is corrected in the calibration procedure. The added oxygen allows the sulfur compounds to be oxidized to SO_2 making the M108E respond to the total number of sulfur molecules in the sample gas. SO_2 is unaffected by the converter.

The M108E uses the proven UV fluorescence principle, coupled with state of the art microprocessor technology to provide accurate and dependable low level measurements of TS. Exceptional stability is achieved with the use of an optical shutter to compensate for PMT drift and a reference detector to correct for changes in UV lamp intensity. A hydrocarbon “kicker” and advanced optical design combine to prevent inaccuracies due to interferents. The multi-tasking software gives real time indication of operational parameters and provides automatic alarms if diagnostic limits are exceeded.

MODEL **108E**

Total Sulfur Analyzer

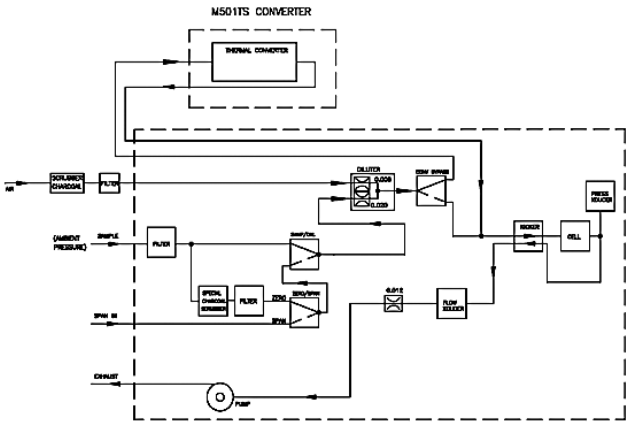
Specifications

Ranges:	0-50 ppb to 0-20,000 ppb full range as SO_2, user selectable; Dual ranges and auto ranging supported
Units:	ppb, ppm, µg/m³, mg/m³
Zero Noise:	< 0.2 ppb (RMS)
Span Noise:	< 0.5% of reading (RMS) above 50 ppb
Lower Detectable Limit (LDL):	0.4 ppb
Zero Drift:	< 0.5 ppb/24 hours, 1 ppb/7 days
Span Drift:	< 0.5% of reading/24 hours, 1% reading/7 days
Lag Time:	20 seconds
Rise and Fall Time:	< 120 seconds to 95%
Linearity:	1% of full scale
Precision:	0.5% of reading
Sample Flow Rate:	650 cc/min ±10%
Operating Temperature Range:	5 - 40°C
Minimum Conversion Efficiency:	H_2S: 98%, COS: 90%, CS_2: 90%

Dimensions (HxWxD):	7" (178 mm) x 17" (432 mm) x 23.5" (597 mm) eachh for analyzer and converter
Weight:	Analyzer – 39 lbs (17.4 kg) Converter – 24 lbs (11 kg)
Power:	100V-120V, 220V-240V, 50/60Hz, 440 Watts (analyzer and converter)
Analog Outputs:	10V, 5V, 1V, 0.1V, selectable
Recorder Offset:	±10%
Serial Outputs:	Serial Port 1: RS-232, DB-9M Serial Port 2: standard RS-232 or optional RS-485, DB-9F, Ethernet
Status (Digital)	8 outputs, 6 inputs (opto-isolated), 4 alarm outputs (optional)
Current Output:	Optional 4-20mA, select up to three channels
Approvals:	CE

NOTE: The values expressed above are in accordance with EPA definitions. All error specifications are based on constant conditions.

Schematic



How to Order

Model 108E Total Sulfur Analyzer includes:

- Modified M100E UV Fluorescent Analyzer
- M501TS High Temperature Thermal Converter
- Pump
- Auto ranging and dual ranges
- 47mm particulate filter
- 8 digital status outputs, 6 inputs
- APIcom remote control software

Specify input AC voltage & frequency:

☐ 100V-115V ☐ 50hz
☐ 220V-240V ☐ 60hz

Specify output DC voltage:

☐ 10V ☐ 5V ☐ 1V ☐ 100mV

Optional Equipment:

- ☐ Rack mount brackets (19") with chassis slides
- ☐ Rack mount brackets only
- ☐ 4-20mA outputs (specify up to three channels)
- ☐ Multi-drop RS-232 connection
- ☐ Ethernet port, includes 7 ft. CAT-5 cable (disables one serial port)
- ☐ Internal zero/span (IZS) Option with H_2S permeation tube
- ☐ External M702 calibrator for blending tanks of H_2S span gas with process CO_2

Accessories:

- ☐ RS-232 Cable
- ☐ Expendables Kit
- ☐ Spare Parts Kit

Specifications subject to change without notice. M108E/08.07

TELEDYNE INSTRUMENTS
Advanced Pollution Instrumentation
A Teledyne Technologies Company
9480 Carroll Park Drive ■ San Diego, CA 92121-5201
Ph. 858-657-9800 Fax 858-657-9816
Email api-sales@teledyne.com

For more information about the Teledyne API family of monitoring instrumentation products, call us or visit our website at

www.teledyne-api.com

CERTIFIED QUALITY MANAGEMENT SYSTEM ISO 9001:2000 ANAB DNV