



**TELEDYNE INSTRUMENTS**  
*Advanced Pollution Instrumentation*  
A Teledyne Technologies Company

MODEL **100E**

# UV Fluorescence SO<sub>2</sub> Analyzer



EPA APPROVAL EQSA-0495-100  
MCERTS certified Sira MC050067/00  
EN Approval EN14212\*

The Model 100E uses the proven UV fluorescence principle, coupled with state of the art microprocessor technology to provide accurate and dependable measurements of low level SO<sub>2</sub>.

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 interferences. The multi-tasking software gives real time indication of a large number of operational parameters and provides automatic alarms if diagnostic limits are exceeded.

All instruments of the TAPI E Series include an extensive built-in data acquisition capability using the analyzer's internal memory. This allows the logging of multiple parameters including averaged and instantaneous concentration values, calibration data and operating parameters such as flow, pressure and lamp intensity.

Stored data are easily retrieved through the serial port or optional Ethernet port via our APIcom software or from the front panel, allowing operators to perform predictive diagnostics and enhanced data analysis by tracking parameter trends.

The Model 100E combines lighter weight, rugged construction, ease of use, powerful diagnostics, modular design and outstanding performance to yield the ideal tool for today's air monitoring requirements.

- ▶▶ **Ranges, 0-50 ppb to 0-20 ppm, user selectable**
- ▶▶ **Dual ranges and auto ranging**
- ▶▶ **Microprocessor controlled for versatility**
- ▶▶ **Multi-tasking software allows viewing test variables while operating**
- ▶▶ **Continuous self checking with alarms**
- ▶▶ **Dual bi-directional RS-232 ports for remote operation (optional RS-485 or Ethernet)**
- ▶▶ **Digital status outputs indicate instrument operating condition**
- ▶▶ **Adaptive signal filtering optimizes response time**
- ▶▶ **Temperature & Pressure compensation**
- ▶▶ **Internal Zero & Span check (optional)**
- ▶▶ **Internal data logging with 1 min to 365 day multiple averages**
- ▶▶ **Critical orifices provide flow stability**



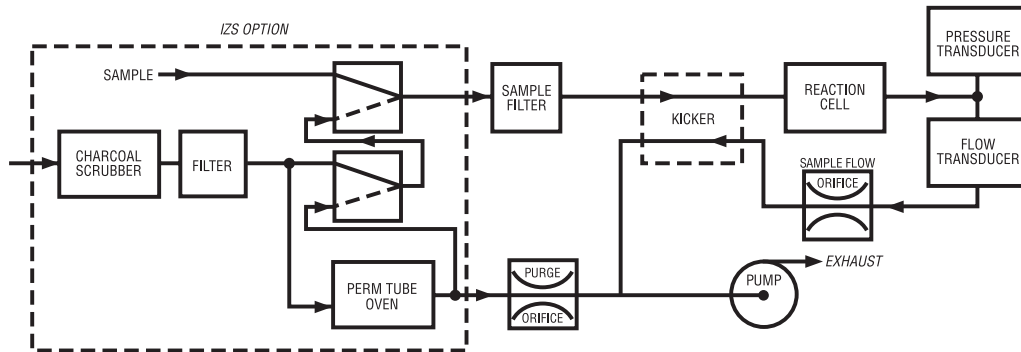
# MODEL 100E UV Fluorescence SO<sub>2</sub> Analyzer

## Specifications

Ranges:	0-50 ppb to 0-20,000 ppb full scale, user selectable. Dual ranges and auto ranging supported	Dimensions (HxWxD):	7" (178 mm) x 17" (432 mm) x 23.5" (597 mm)
Units:	ppb, ppm, µg/m <sup>3</sup> , mg/m <sup>3</sup>	Weight:	35 lbs (16 kg)
Zero Noise:	< 0.2 ppb (RMS)	Power:	100V - 120V, 220V - 240V, 50/60 Hz, 250W
Span Noise:	< 0.5% of reading (RMS) above 50 ppb	Analog Outputs:	10V, 5V, 1V, 0.1V, selectable
Lower Detectable Limit (LDL):	0.4 ppb	Recorder Offset:	±10%
Zero Drift:	< 0.5 ppb/24 hours, 1 ppb/7 days	Serial Outputs:	Serial Port 1: RS-232 (DB-9M) Serial Port 2: standard RS-232 or optional RS-485 (DB-9F), Ethernet
Span Drift:	< 0.5% of FS/24 hours, ≤1% of FS/7 days	Status (Digital):	8 outputs, 6 inputs (opto-isolated), 6 alarm outputs (optional)
Lag Time:	20 seconds	Current Output:	Optional 4-20mA, select up to three channels
Rise and Fall Time:	< 100 seconds to 95%	Approvals:	USEPA EQSA-0495-100 MCERTS certified Sira MC050067/00 EN14212* Approved, and others
Linearity:	1% of full scale		
Precision:	0.5% of reading above 50 ppb		
Sample Flow Rate:	650 cm <sup>3</sup> /min ±10%		
Operating Temperature Range:	5 - 40°C (with EPA Equivalency)		

NOTE: The values expressed above are in accordance with EPA definitions. All error specifications are based on constant conditions. Specifications exceed US EPA and Eignungsgeprüft requirements.

## Schematic



## How to Order

### Model 100E Fluorescence SO<sub>2</sub> Analyzer includes:

- Selectable voltage (specify below)
- Internal pump
- Auto ranging and dual ranges
- 47mm diameter particulate filter
- 8 isolated digital status outputs
- Dual bi-directional RS-232
- APIcom remote control software

### Specify input AC voltage & frequency:

- 100V - 115V    50Hz  
 220V - 240V    60Hz

### Specify output DC voltage:

- 10V    5V    1V    0.1V

### Calibration Options:

- TFE valves for selection of customer-supplied zero and span gas  
 Internal zero and permeation tube oven for calibration check. Requires perm tube (separate option)

### Additional Options:

- 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)  
 \*NO<sub>x</sub> optical filter (recommended for high NO<sub>x</sub> applications)  
 \*Required for EN14212 approved configuration

### Accessories:

- RS-232 Cable  
 Expendables Kit  
 Spare Parts Kit

Specifications subject to change without notice. M100E/11.07



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