



CO<sub>2</sub>

## MODEL 300E

# Gas Filter Correlation CO Analyzer

EPA APPROVAL EQOA-0992-087



**0-1ppm to 0-1000ppm, user selectable**

**Gas Filter Wheel for CO specific measurement**

**14 meter path length for sensitivity**

**Microprocessor controlled for versatility**

**Multi-tasking software allows viewing test variables while operating**

**Continuous self checking with alarms**

**Bidirectional RS-232 for remote operation**

**Digital status outputs provide instrument condition**

**Adaptive signal filtering optimizes response time**

**GFC wheel guaranteed against leaks for 5 years**

**Temperature & Pressure compensation**

**Internal data logging with 1 minute to 24 hour averages**

**APICOM remote operation software**

The Model 300E measures low ranges of carbon monoxide by comparing infrared energy absorbed by a sample to that absorbed by a reference gas according to the Beer-Lambert law. This is accomplished with a Gas Filter wheel which alternately allows a high energy light source to pass through a CO filled chamber and a chamber with no CO present. The light path then travels through the sample cell, which has a folded path of 14 meters.

The energy loss through the sample cell is compared with the zero reference signal provided by the gas filter to produce a signal proportional to concentration, with little effect from interfering gases within the sample. This design produces excellent zero and span stability and a high signal to noise ratio allowing extreme sensitivity. Multi-tasking software gives real time indication of numerous operating parameters and provides automatic alarms if diagnostic limits are exceeded.

Built-in data acquisition and internal memory allows logging multiple parameters including average and instantaneous values, calibration data and operating parameters. Stored data can be retrieved via the RS-232 port or from the front panel.

The Model 300E features rugged construction and is designed to perform with a minimum of attention. In the event maintenance is required, modular construction makes service a simple operation.

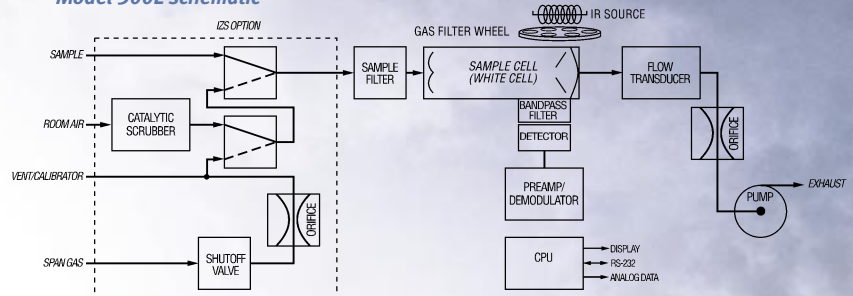


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# Gas Filter Correlation CO Analyzer

Model 300E schematic



### SPECIFICATIONS

<b>Ranges:</b>	0-1 ppm to 0-1,000 ppm full scale, user selectable. Dual ranges and auto ranging supported	<b>Dimensions (HxWxD):</b>	7" (178 mm) x 17" (432 mm) x 23.5" (597 mm)
<b>Units:</b>	ppb, ppm, $\mu\text{g}/\text{m}^3$ , $\text{mg}/\text{m}^3$	<b>Weight:</b>	40 lbs
<b>Zero Noise:</b>	< 0.02 ppm	<b>Power:</b>	100V-120V, 220V-240V, 50/60Hz, 250W
<b>Span Noise:</b>	< 0.5% of reading above 5 ppm (RMS)	<b>Analog Outputs:</b>	Bipolar, 10V, 5V, 1V, 0.1V, selectable
<b>Lower Detectable Limit (LDL):</b>	0.04 ppm	<b>Recorder Offset:</b>	-1% +10%
<b>Zero Drift:</b>	< 0.1 ppm/24 hours, 0.2 ppm / 7 days	<b>Serial Outputs:</b>	Serial Port 1: RS-232, DB-9M Serial Port 2: standard RS-232 or optional RS-485, DB-9F
<b>Span Drift:</b>	< 0.5% reading/24 hours, 1% reading / 7 days	<b>Status (Digital)</b>	8 outputs, 6 inputs (opto-isolated), 6 alarm outputs (optional)
<b>Lag Time:</b>	10 seconds	<b>Current Output:</b>	Isolated current loop output
<b>Rise and Fall Time:</b>	< 60 seconds to 95%	<b>Approvals:</b>	USEPA EQAO-0992-087, C E
<b>Linearity:</b>	1% full scale		
<b>Precision:</b>	0.5% of reading		
<b>Sample Flow Rate:</b>	800 $\text{cm}^3/\text{min}$ $\pm 10\%$		
<b>Operating Temperature Range:</b>	5 - 40°C		

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.

### CONFIGURATION

#### Model 300E Gas Filter Correlation CO Analyzers include:

- Internal pump
- Auto ranging and dual ranges
- 47 mm particulate filter
- 8 isolated digital status outputs
- 6 isolated digital inputs
- Bi-directional RS-232
- APICOM software

#### Supported voltages:

- 100V                       115V  
 220-240V

#### Supported frequencies:

- 50Hz     60Hz

#### Selectable output voltage:

- 10V     5V     1V     0.1V

#### Additional Options:

- Rack mount brackets (19") with chassis slides
- Rack mount only
- Isolated 0-20 mA or 4-20 mA output (specify up to three channels)
- Multi-drop RS-232 connection
- RS-485 communications
- Ethernet

#### Calibration Valves:

- Stainless steel valves for selection of customer-supplied zero and span gas
- Shut-off valve and flow control for external span gas cylinder
- Internal zero air scrubber

#### Accessories:

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

For more information on Teledyne API's family of monitoring instrumentation products, call us or visit our website at [www.teledyne-api.com](http://www.teledyne-api.com)

