

TELEDYNE ANALYTICAL INSTRUMENTS

Chemiluminescence NO / NO₂ / NO_x Analyzer

- 0-50 ppb to 0-20 ppm ranges, user selectable
- Independent ranges for NO, NO₂, NO_x
- Microprocessor controlled for versatility
- Multi-tasking software allows viewing of test variables while operating
- Continuous self checking with alarms
- Permeation drier on ozone generator
- Dual bi-directional RS-232 ports for remote operation (optional RS-485 or Ethernet)
- Digital status outputs provide instrument condition
- Adaptive signal filtering optimizes response time
- Temperature and pressure compensation
- Converter efficiency correction software
- Continuous automatic zero correction
- Catalytic ozone scrubber
- Internal zero and span check (optional)
- Internal data logging with 1 min to 365 day multiple averages (up to 1 million records)

The Model 9110E uses the proven chemiluminescence detection principle, coupled with state-of-the-art microprocessor technology to provide the sensitivity, stability and ease of use needed for ambient or dilution CEM monitoring requirements.

The analyzer uses multi-tasking software which allows complete control of all functions while providing online indication of important operating parameters.

Measurements are automatically compensated for temperature and pressure changes. In addition, stability is enhanced by an Auto-Zero circuit that continuously provides a true zero reference. The result is sensitive, accurate, and dependable performance under the harshest operating conditions.



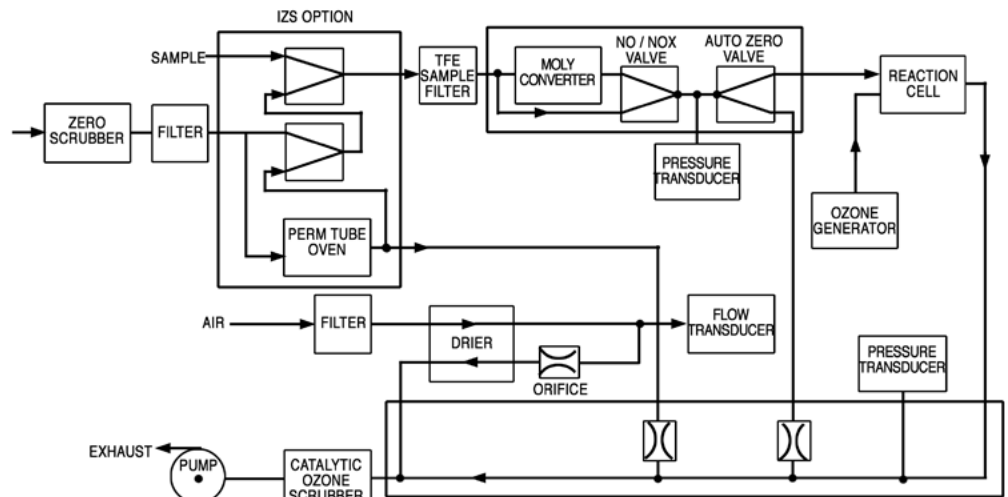
Model 9110E

All instruments in the 9110 Series include built in data acquisition capability using the analyzer's internal memory.

This allows the logging of multiple parameters (up to 1 million records) including averaged or instantaneous concentration values, calibration data, and operating parameters such as pressures and temperatures.

Stored data are easily retrieved through the serial or Ethernet port via APICOM or from the front panel, allowing the operator to perform predictive diagnostics and enhanced data analysis by tracking parameter trends. The Model 9110E 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.

9110E Schematic



MODEL 9110E NO / NO₂ / NO_x Analyzer

SPECIFICATIONS

Ranges:	0-50 ppb to 0-20,000 ppb full scale, user selectable; Independent NO, NO ₂ , NO _x ranges and autoranging supported
Units:	ppb, ppm, µg/m ³ , mg/m ³
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% of reading/7 days
Lag time:	20 seconds
Rise and Fall time:	<60 seconds to 95%
Linearity:	1% of full scale
Precision:	0.5% of reading
Sample flow rate:	500 cm ³ /min ±10%
Operating temp range:	5 - 40°C (with EPA Equivalency)
Dimensions (HxWxD):	7" (178) x 17" (432) x 23.5" (597 mm)
Weight:	Analyzer 40 lbs (18 kg); external pump 15 lbs (7 kg)
Power:	100V-120V, 220V-240V, 50/60Hz, 250W
Analog outputs:	Bipolar, 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
Status (Digital):	8 outputs, 6 inputs (opto-isolated), 6 alarm outputs (optional)
Current output:	0-20 mA or 4-20 mA isolated output (optional)
Approvals:	USEPA RFNA-1194-099, CE

STANDARD FEATURES

- External pump
- Permeation air dryer for ozone generator air supply
- Independent NO, NO₂, NO_x ranges
- Auto ranging
- 47 mm diameter particulate filter
- 8 digital status outputs, 6 inputs
- Dual bi-directional RS-232
- APICOM remote control software

CALIBRATION OPTIONS

- Dual calibration valves for selection of customer supplied zero and span gas
- Internal zero and permeation tube oven for calibration check (requires permeation tube, available as option)
- Triple gas valve manifold

OPTIONAL EQUIPMENT

- Rack mount brackets (19") with chassis slides
- Rack mount brackets only
- Isolated 0-20 mA or 4-20 mA output (specify up to three channels)
- Multi-drop RS-232 connection
- Ethernet port includes 7 ft. CAT-5 cable (disables one serial port)
- Permeation dryer for sample gas
- Permeation dryer combination for ozone and sample air

ACCESSORIES

- RS-232 Cable
- Expendables Kit
- Spare Parts Kit
- Chassis carrying handle
- Zero Air Scrubber

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.

TELEDYNE ANALYTICAL INSTRUMENTS

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Warranty

Instrument is warranted for 1 year against defects in material or workmanship

NOTE: Specifications and features will vary with application. The above are established and validated during design, but are not to be construed as test criteria for every product. All specifications and features are subject to change without notice.

