

Teledyne Analytical Instruments

Chemiluminescent CEM NO / NO₂ / NO_x Analyzer

Teledyne's Model 9110EH analyzer uses the field-proven chemiluminescent technique for monitoring high levels of oxides of nitrogen. User-selectable ranges of 0 - 5000 ppm make it ideal for a wide variety of applications including CEM, stack testing, cement kiln inlet for clinker quality control, and process control.

A choice of NO₂ to NO converters handles tough applications such as thermal DeNO_x and stack testing. Selectable measurement modes (NO only, NO_x only, NO / NO_x switching), auto ranging, and remote range control customizes the 9110EH for the end user.

The modular design offers top-mounted access to all components while hinged front and rear panels simplify module replacement. The unique modular sealed ozone generator provides improved voltage coefficient, safety and reliability.

A standard permeation dryer on the ozone generator means there is no desiccant to replace. In addition, the excess ozone is removed by catalytic reaction, eliminating the need for frequent charcoal scrubber replacement.

This instrument also offers a built in data acquisition capability using the analyzer's own internal memory. This allows the logging of multiple parameters including averaged or instantaneous concentration values, calibration data, and operating parameters such as pressure and flow rates.



Model 9110EH

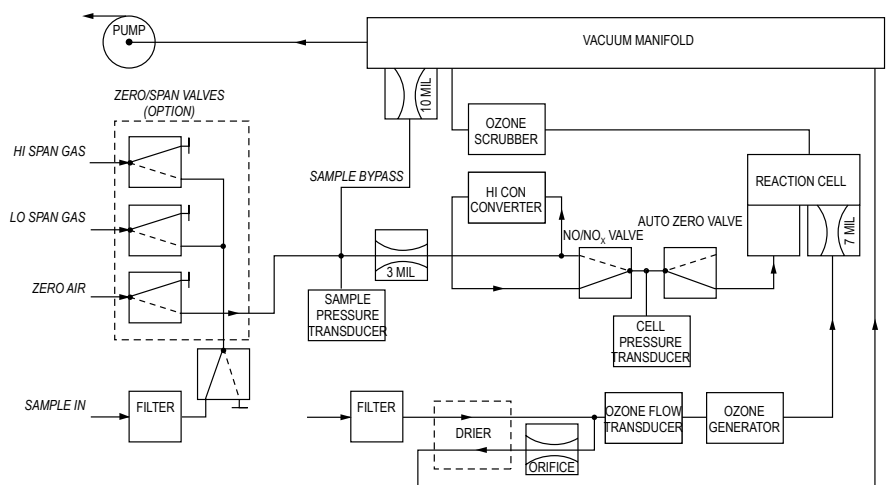
Stored data is easily retrieved through the RS-232 port or from the front panel, allowing the operator to perform predictive diagnostics by tracking parameter trends.

The 9110EH combines rugged construction, ease of use, powerful diagnostics, and outstanding performance for higher range applications.

OPTIONS

- O₂ sensor (paramagnetic) with a range of 0-25%

9110EH Schematic



MODEL 9110EH NO / NO2 / NOx Analyzer

FEATURES

- 0-5000 ppm ranges, user selectable in 1 ppm increments
- Independent ranges for NO, NO2 and NOx
- Auto ranging and remote range selection
- Microprocessor controlled
- NO, NOx only or single channel switching
- Continuous self-check with alarms
- Multi-tasking software allows viewing test variable while operating
- Bi-directional RS-232 for remote operation
- Adaptive signal filtering optimizes response time
- Temperature and pressure compensation
- Permeation ozone air drier
- Digital status outputs provide instrument condition

SPECIFICATIONS

Ranges: 0 - 5000 ppm full scale, user selectable;
Independent NO, NO2, NOx ranges and
autoranging supported

Units: ppm, mg / m3

Zero noise: < 20 ppb (RMS)

Span noise: < 0.2% of reading above 20 ppm (RMS)

Lower detectable limit (LDL): < 40 ppb (RMS)

Zero drift: < 20 ppb / 24 hours

Span drift: < 1% of reading / 24 hours

Lag time: 20 seconds switching mode,
< 6 seconds NO or NOx only mode

Rise and fall time: < 60 seconds to 95% (switching), 5
seconds NO only, 10 seconds NOx only

Linearity: 1% of full scale

Precision: 0.5% of reading

Sample flow rate: 290 cc / min (standard), 540 cc / min
(optional)

Operating temp range: 5 to 40°C

Dimensions: 7" H x 17" W x 23.5" D
(178 x 432 x 597 mm)

Weight: Analyzer – 44 lbs (20 kg);
External pump – 15 lbs (7 kg)

Power: 100V 50 / 60Hz, 115V 60Hz, 220V 50 /
60Hz, 230V 50Hz, 240V 50Hz, 250 watts
analyzer, 250 watts pump

Analog outputs: 10V, 5V, 1V, 100mV, selectable

Recorder offset: ±10%

RS-232: Standard, DB-9 connector

Status (digital): 12 outputs from optoisolator, included with
standard configuration

Current output: 0-20 mA, 4-20 mA isolated output
optional

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.

