



MODEL 201E

Chemiluminescent NH₃ Analyzer

for Ambient Air Quality Monitoring



0-50 ppb to 0-2,000 ppb ranges, user selectable

Microprocessor controlled

Multi Tasking software allows viewing test variables while operating

Continuous self checking with warning alarms

External converter

Designed to optimize response times

- Minimal surface area in contact with sample
- low absorption wetted parts
- heated sample manifold

Adaptive filtering optimizes response time

Temperature & pressure compensation

Internal data logging with 1 min to 24 hour averages

The Model 201E NH₃ analyzer measures ambient ammonia in selectable ranges from 0-50 ppb to 0-2,000 ppb using the chemiluminescence principle and an API-designed external ammonia converter and sampling system. Ranges are user selectable in 1 ppb increments and auto ranging is available.

Ammonia is difficult to measure accurately because of a tendency to be absorbed into other materials. The “stickiness” of the gas results in slow response times and inaccurate concentration values. The Model 201E has been designed to overcome the problems of ammonia gas analysis through increased flow, minimum surface area and selected construction materials.

In operation, sample gas is passed through the M501NH converter, which converts NH₃ and other compounds to NO, producing the total oxides of nitrogen (TN_X). In the next cycle the sample is routed through a molybdenum converter which converts nitrogen oxides (less NH₃) to NO, producing the TN reading. The difference between these readings (TN_X – TN = NH₃) provides a reading proportional to the NH₃ concentration. The analyzer software represents these values in the readout, and independent outputs are available for each of these values.

The Model 201E combines the performance advantages of Teledyne API's Model 200E NO/NO_X analyzer with a converter sampling system designed specifically for this application to produce the most accurate and dependable NH₃ measurement system available today.

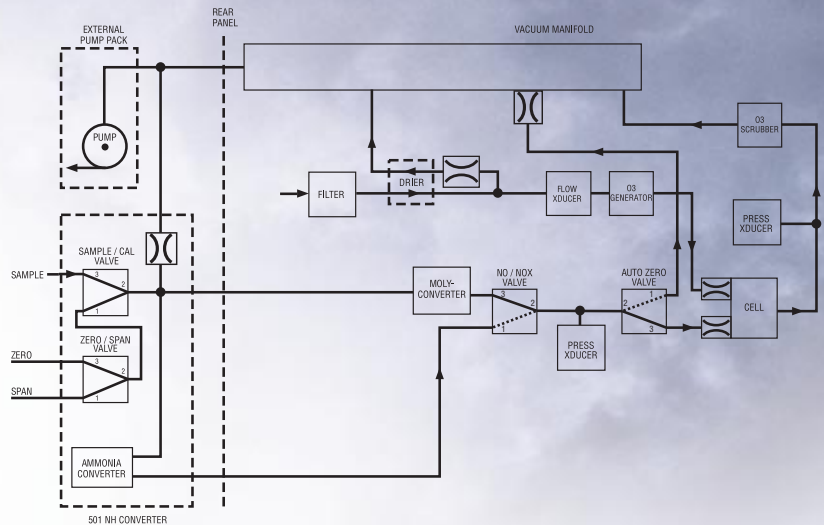
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SPECIFICATIONS

Ranges (measurable units):	0-50 to 0-2,000 ppb, operator selectable Dual ranges and auto-ranging supported
Units:	ppb, ppm, µg/m ³ , mg/g ³ operator selectable
Zero Noise:	<0.5 ppb (RMS)
Span Noise:	<0.5% of reading (RMS) above 50 ppb
Lower Detectable Limit (LDL):	1 ppb
Zero Drift:	0.5 ppb/24 hours, <1.0 ppb/7 days
Span Drift:	<1% of reading/24 hours, <2% of reading/7 days
Lag Time:	40 seconds
Rise and Fall Time:	90% in 120 seconds
Linearity:	<1% full scale
Precision:	0.5% of reading
Sample Flow Rate:	1,000cc/min ±10%
Operating Temperature Range:	10 - 30°C

Model 201E schematic



Dimensions (HxWxD):	Analyzer: 7" (178 mm) x 17" (432 mm) x 23.5" (597 mm)
	Converter: 7" (178 mm) x 17" (432 mm) x 21.5" (597 mm)
Weight:	Analyzer: 43 lbs (21 kg); Converter 20 lbs (9 kg) External Pump: 16 lbs (7 kg)
Power:	100V 50/60 Hz, 115V 60Hz, 220V 50/60Hz, 230V 50Hz, 240V 50Hz 250 Watts (analyzer), 250 Watts (pump)
Analog Outputs:	10V, 5V, 1V, 100 mV, 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 or 4-20 mA isolated outputs (optional)
Approvals:	CE

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

HOW TO ORDER

Model 201E Chemiluminescent Ambient level NH₃ Analyzer includes:

- Separate analyzer and converter modules
- External pump
- Digital status
- Auto ranging
- Ozone scrubber
- Permapure dryer
- Bi-directional RS-232

Specify voltage/frequency:

- | | |
|---|------------------------------------|
| <input type="checkbox"/> 100V/50hz | <input type="checkbox"/> 100V/60hz |
| <input type="checkbox"/> 220V/50hz | <input type="checkbox"/> 115V/60hz |
| <input type="checkbox"/> 230V/50hz (CE) | <input type="checkbox"/> 220V/60hz |
| <input type="checkbox"/> 240V/50hz | |

Specify output voltage:

- 10V 5V 1V 100mV
 0-20 mA or 4-20 mA non-isolated

Additional Options:

- Rack Mount (19") for analyzer and converter, with chassis slides
- Rack Mount only for analyzer and converter
- Isolated 0-20mA or 4-20 mA output (specify channels)
- Multi-drop RS-232 connection
- External charcoal scrubber for NO₂ removal (suggested when analyzer is not connected to external vent)

Calibration Options:

- Stainless steel valves for selection of customer-supplied zero & span gas
- Model 702 SS Dilution Calibrator for ammonia

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