Product Specifications

Model 42C-Y NO_Y Analyzer

For Atmospheric Research and Urban Air Quality Monitoring

Utilizing traditional chemiluminescence techniques, the Model 42C-Y, measures NO_Y for such applications as atmospheric research and urban air quality monitoring. Like Thermo's complete line of air quality instrumentation, the Model 42C-Y is reliable, accurate, and is backed by over 30 years experience.

The Model 42C-Y is based on Thermo's Model 42C NO-NO_2-NO_X Trace Level Analyzer. The major difference is utilization of an external molybdenum converter which minimizes sample transport distances thereby allowing the Model 42C-Y to measure more NO compounds that would otherwise not be measured by using an internal converter.

NO_Y Monitoring Applications

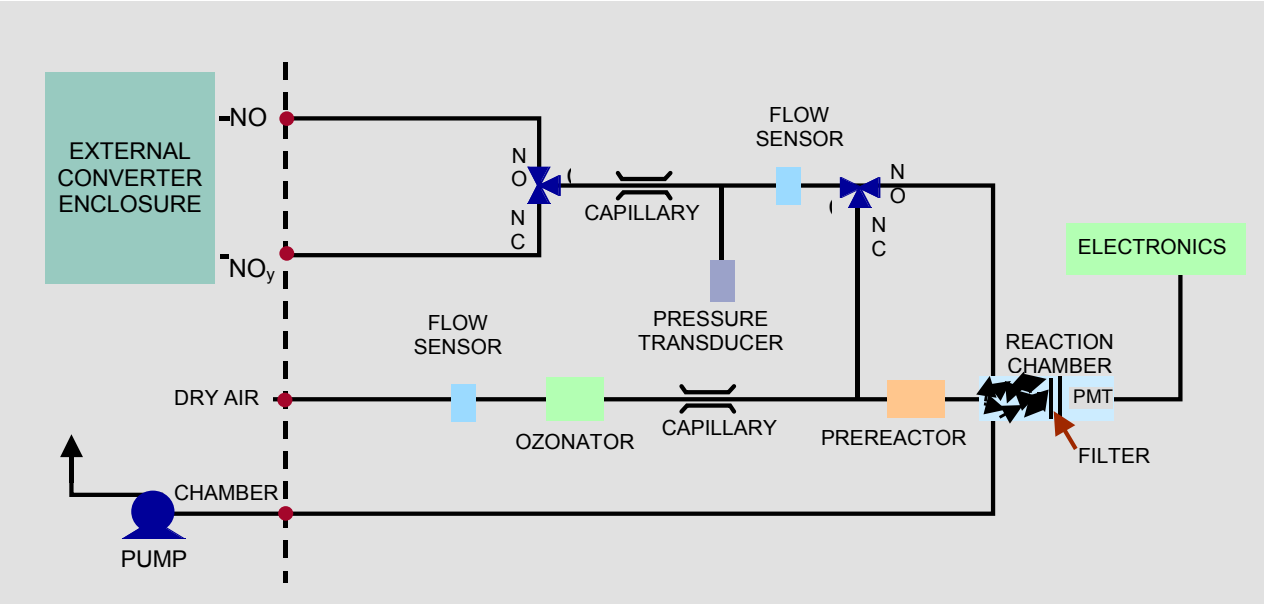
- Acid rain deposition / transport studies
- Stratospheric ozone depletion
- Understanding of tropospheric chemistry reaction pathways
- Validation of photochemical (smog) predictions
- NCORE Level 2 monitoring program

Preset Ranges	0-5, 10, 20, 50, 100, and 200 ppb 0-10, 20, 50, 100, 200, and 500 $\mu g/m^3$
Custom Ranges	0-5 to 200 ppb 0-10 to 500 $\mu g/m^3$
Linearity	+/- 1% of full scale
Zero Noise	25 ppt RMS (120 second average time)
Lower Detectable Limit	50 ppt RMS (120 second average time)
Zero Drift (24 hour)	Negligible
Span Drift (24 hour)	+/- 1% of full scale
Response Time (0-95%)	60 seconds (10 second average time) 90 seconds (60 second average time) 300 seconds (300 second average time)
Sample Flow Rate	1 LPM
Interferences	Propylene rejection ratio > 20,000:1 Ethylene rejection ratio > 40,000:1
Operating Temperature	15°C - 35°C
Power Requirements	90-110 VAC @ 50/60Hz 105-125 VAC @ 50/60Hz 210-250 VAC @ 50/60Hz 400 Watts
Size and Weight	16.75" (W) x 8.62' (H) x 23" (D), 60 lbs.
Outputs	NO, DIF, and NO_y, selectable voltage 4-20 mA, RS-232, RS-485

Comprehensive Service Solutions

To maintain optimal product performance, you need immediate access to experts worldwide, as well as priority status when your air quality equipment needs repair or replacement. Thermo Electron offers comprehensive, flexible support solutions for all phases of the product lifecycle. Through predictable, fixed-cost pricing, Thermo services help protect the return on investment and total cost of ownership of your Thermo Electron air quality products.

Model 42CY Flow Diagram



Principle of Operation

NO_Y is the sum of all reactive oxides of nitrogen (NO, NO_2, NO_3, N_2O_5, HNO_2, HNO_3, PAN, organic nitrates and aerosol nitrates). To minimize the loss of NO_Y prior to measurement, an external converter (moly) module that limits sample transport time and surface contact area is used.

After exiting the converter module, sample gas is routed to a mode (NO or NO_Y) valve within the analyzer module. When the solenoid is normally open (NO mode), sample that has bypassed the converter is sent to the reaction chamber. When the solenoid mode is normally closed (NO_Y mode), sample that has passed through the converter is sent to the reaction chamber for analysis.

A third mode routes the sample to a prereactor to create a dynamic zero reading for the analyzer. The prereactor is sized so that greater than 99% of a 200 ppb NO sample will react prior to entering the reaction chamber but is small enough to allow interferents (olefins) to pass onto the chamber.

The combination of the three modes generates three signals: NO, NO_Y, and the difference between the two (DIF).

TÜV MANAGEMENT SERVICE ISO 9001

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