

## Model 42C-TL Trace Level NO-NO<sub>2</sub>-NO<sub>x</sub> Analyzer

### For High Sensitivity Air Monitoring

The Model 42C Trace Level represents the state-of-the-art in subambient chemiluminescence measurement. Due to a combination of hardware design, plumbing arrangement, and software development, the Model 42C Trace Level can achieve detection limits of 50 ppt or better without sacrificing fast response, ease-of-operation, or cost effectiveness.

Thermo Electron design engineers introduced a user interface which easily guides one through operation of the Model 42C Trace Level. This is accomplished via a four line by twenty character Vacuum Fluorescent Display and simple layout of easy-to-use function keys. The end result is a combination of self-explanatory display messages and intuitive function entries.

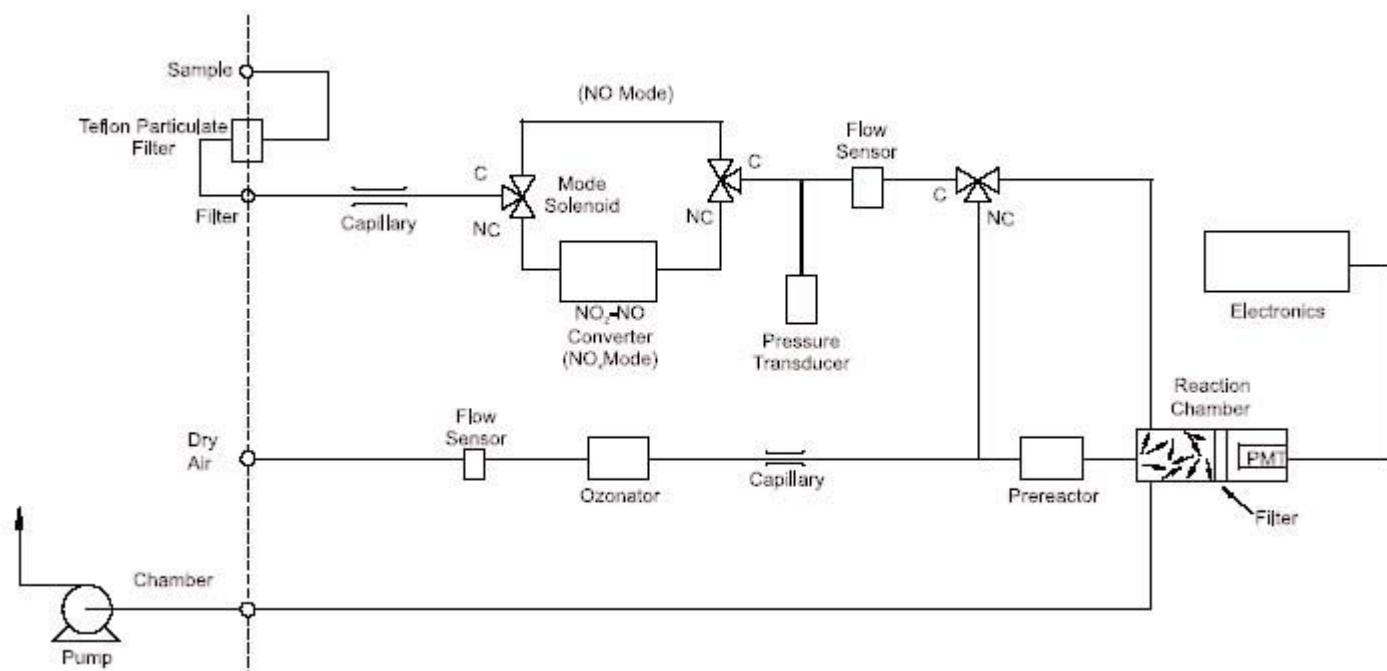
### Key Features

- Detection limits of 50 ppt or better
- Faster response time capability
- Rechargeable NO<sub>2</sub> converter
- Compensation capability for pressure and temperature
- Field programmable ranges
- Remote actuation of zero/span solenoid valves (optional)



Preset Ranges	0-5, 10, 20, 50, 100, and 200 ppb 0-10, 20, 50, 100, 200, and 500 µg/m <sup>3</sup>
Custom Ranges	0-5 to 200 ppb 0-10 to 500 µg/m <sup>3</sup>
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, NO <sub>2</sub> , and NO <sub>x</sub> , selectable voltage 4-20 mA, RS-232, RS-485

## Model 42C Trace Level - FLOW SCHEME



As illustrated in the Model 42C Trace Level flow schematic, sample gas enters through a flow control capillary and is directed to a mode (NO or NOX) control solenoid. When this solenoid is normally open, the sample bypasses the converter and is routed through to the normally open port of a converter output valve bleeding from the valve is avoided by having the converter output valve in this position.

The sample is then routed to the prereactor solenoid where it is sent either directly through the valve to the reaction chamber where it mixes with ozone to give an NO reading, or it is sent to the prereactor where it reacts with the ozone prior to the reaction chamber giving a dynamic zero reading for the analyzer. The prereactor is sized so that greater than 99% of a 200ppb NO sample will react prior to entering the reaction chamber, yet is small enough to allow potential interferants to pass through to the reaction chamber

### ABOUT THERMO

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