

## EC9842

### AMMONIA ANALYSER

The EC9842 Chemiluminescence  $\text{NH}_3$  Analyser combines a high performance ammonia converter and proven chemiluminescence detection to measure ammonia ( $\text{NH}_3$ ), oxides of nitrogen ( $\text{NO}_x$ ) and total nitrogen compounds ( $\text{N}_x$ ).  $\text{N}_x$  is the sum of  $\text{NO} + \text{NO}_2 + \text{NH}_3$  i.e. total oxides of nitrogen including ammonia.

To measure  $\text{N}_x$  concentration,  $\text{NO}_2$  and  $\text{NH}_3$  are converted to  $\text{NO}$  in a quartz converter heated to  $750^\circ\text{C}$ . In a separate reaction,  $\text{NO}_x$  ( $\text{NO} + \text{NO}_2$ ) is passed through a molybdenum converter heated to approximately  $325^\circ\text{C}$ . The resulting  $\text{NH}_3$  concentration is determined by subtracting the  $\text{N}_x$  result from the  $\text{NO}_x$ .

The 9842 displays  $\text{N}_x$  ( $\text{NH}_3 + \text{NO}_2 + \text{NO}$ ),  $\text{NO}_x$  ( $\text{NO} + \text{NO}_2$ ) and  $\text{NH}_3$  ( $\text{N}_x - \text{NO}_x$ ) concentrations. Units can be displayed in ppm or ppb.

### FEATURES

- High temperature external  $\text{NH}_3$  converter uses Pt catalyst with a conversion efficiency of  $\geq 92\%$ .
- $\text{NO}_2$  to  $\text{NO}$  converter has less than 3% conversion for  $\text{NH}_3$ .
- $\text{NH}_3$  ranges 0-50 to 2000 ppb. (other ranges are available on request)
- EC9842 analysers have independent  $\text{N}_x$  and  $\text{NH}_3$  analogue output channels.
- Inbuilt data logger uses Flash ROM to store up to 135 days of 5 minute data averages.
- Stored data can be retrieved via RS232, USB interface or the optional Ethernet connection and uploaded to a TCP/IP network.
- Ethernet option facilitates data download from an analyser connected to the internet via a standard web interface. This feature also supports remote access to instrument parameters and the status screen.



## SPECIFICATIONS

### Ranges display:

Auto-ranging configurable 0-50 ppm/0-2000 ppb.

### Resolution:

0.0001 ppm.

### Analogue out:

0 - full scale from 0-50 ppm/0-2000 ppb with 0 %, 5 %, 10 % offset. Auto-ranging between two user specified full-scale values. Zero offset on NO<sub>x</sub> and N<sub>x</sub> channels: + 100 ppb.

### Noise (RMS):

0.25 ppb of concentration reading with Kalman filter active.

### Lower detectable limit:

0.5 ppb with Kalman filter active.

### Zero drift:

0.2 ppb per °C. Time dependent at fixed temperature. 24 hours: less than 1 ppb.

### Span drift:

0.2 % per °C. Time dependent at fixed temperature. 24 hours: 0.5 % of reading; 30 days: 1 % of reading.

### Temperature/Pressure compensation:

Temperature/Pressure compensation with selectable reference temperature of 0 °C, 20 °C, 25 °C at 101.3 kPa.

### Precision:

Better than 0.5 % of reading with Kalman filter active.

### Linearity:

<1 % of FSD.

### Sample flow rate:

0.355 cc/min.

### Sample pressure:

All readings compensated. A 5 % change in pressure produces less than 1 % change in reading.

### Temperature range:

5 °C to 40 °C.

### Data logging

Supports internal data logging capability with storage up to 135 days of 5 minute data stored in flash memory.

### Power:

99-132 VAC, 196-264 VAC 47-63 Hz.

### Converter:

120 VAC, 50/60 Hz, 360 VA, 240 VAC, 50/60 Hz, 180 VA.

### Weight:

Analysers: 27.7 kg (61 lbs), Converter 11kg (25 lbs).

### Analogue outputs:

Jumper selectable voltage output of 100mV, 1V, 5V, 10V, with menu selectable zero offset of 0, 5 or 10 % or menu selectable current output 0-20mA, 2-20mA, 4-20mA.

### Digital outputs:

Multidrop RS232 port shared between analysers for data, status and control. DB50 with discrete status, user controls and analogue output.

Converter efficiency: 92 %

Operating temperature: 450-600 °C

### Flow rate:

0.120 to 0.355 litres/minute.

## OPTIONS

- Rack mount kit assembly (19")
- External ozone resistant charcoal scrubber
- External sample pump 115V 60 Hz
- External sample pump 220V 50/60 Hz
- Ethernet connection to a TCP/IP network via an RJ45 connector.

### For your local certified distributor visit:

[www.ecotech.com/distributors](http://www.ecotech.com/distributors)

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