SIGNAL INSTRUMENTS

Data Sheet

Model 4000VML Heated Vacuum Chemiluminescent NOx Analyser

- Reference method technique for measuring NOx
- Suitable for very low concentrations
- No cross sensitivity to Ammonia
- Continuous NO/NO2/NOx output available

Overview

Heated vacuum chemiluminescence is the reference method technique for monitoring NOx (combined NO and NO2). The advantages of this technique are minimal quenching effects, and a heated reaction chamber allows processing of hot, wet sample gas.

The detection method is continuous with a fast response time making the 4000VML very effective for alarm status monitoring and other real time reporting.

Available with NO/NOx switching outputs or NO/NO2/NOx continuous outputs, the 4000VML is ideal for a wide range of applications from process monitoring to engine exhaust gas analysis.

Operation

The Model 4000VML is fitted with a carbon NOx converter to prevent NO generation from ammonia. This means that , unlike with stainless steel converters, there is no cross sensitivity to ammonia.

To further improve accuracy, the 4000VML is fitted with a neon ozoniser lamp. This does not produce NO from ambient air as a by-product, as can be the case with corona discharge types, leading to false readings.

The Model 4000VML has a user friendly interface with status pages for simple diagnostics. With automatic calibration settings and remote control capability, it is ideal for CEMs and other low maintenance applications.

Options

Also available, the Model 4000VMA is an ambient temperature non-vacuum analyser for applications where dry measurements are required.

For other concentrations the Model 4000VM is available.

The Model 4000VM can be used in conjunction with the Signal Model 410 converter to monitor ammonia.

Specification

Measurement technique	Heated, vacuum chemiluminescence
Measuring range	0-1ppm up to 0-1000ppm NOx
Response time	1.5 seconds to T_{90}
Bypass flow sensitivity	Less than 1% from 1 to 3L/min
Repeatability	Better than 1% range or 0.2ppm whichever greater
Temperature effect	Zero: Less than 0.5ppm per DegC Span: Less than 0.33% per DegC
Noise	Less than 0.02ppm or 0.1% range
Quenching	CO2: Less than 1% for 10% CO2 H2O: Less than 1% for 3% H2O
Linearity	2% of point or 1% FSD
Converter efficiency	Greater than 95%
Inlet pressures	Sample: 0 - 10psi Calibration: 7 - 30psi
Sample filter	replaceable PTFE 0.4micron
Remote control	AK protocol via RS232 port
Concentration outputs	0-10Vdc and 4-20mA analogue
Power	Switchable 110/230Vac 600VA maximum during warm up
Dimensions	19” rack mounting 3U high 19” x 133.5mm x 635mm
Ambient temperature	5 - 35 DegC
Services required	Air at 520ml/min with dew point less than -12 DegC
Options	Simultaneous NO/NO2/NOx output Model 410 Ammonia converter to monitor ammonia concentration. NOXGEN III converter efficiency tester

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