

Model 7720FM Gas Filter Correlation Non-Dispersive Infra-Red N₂O Analyser



- High sensitivity
- Minimised CO interference
- Ultra low measuring range
- Complies with ISO21258

Overview

Non-dispersive infra-red absorption is a proven measurement technique for the quantitative determination of gases possessing heteroatomic molecules. This range of analysers also utilises a gas correlation rotary filter system for maximum sensitivity.

In addition to the usual filter wheel, the Model 7720FM is fitted with a gold nano-particle based catalytic filter to remove CO from the sample and reduce cross interference. This method is superior to traditional manganese and copper oxide filters as it is completely unaffected by moisture content in the sample. It also operates at room temperature which means increased lifetime and reliability along with lower power consumption.

Operation

A heated source provides infra-red radiation which is then interrupted by a rotating filter. The resulting series of pulses is directed through a cell containing the sample gas. A solid state detector responds to the variation in signal as the filter wheel rotates and the output is amplified and displayed.

A continuous nitrogen purge is provided to the measurement cell to maximise stability and reduce noise.

With fast response, high accuracy and repeatability and continuous measurement, the Model 7700FM is ideal for a wide range of applications from incinerators to combustion research. However it has been specifically designed with the automotive market in mind and complies fully with ISO21258 for N₂O measurement.

Options

Signal SIGEMS software is available for logging and control.

Specifications

Measurement technique	Non-dispersive infra-red absorption gas correlation rotary filter system
Measuring range	0-10ppm up to 0-100%
Lowest detectable limit	0.02ppm
Resolution	0.01ppm
Cross interferences	14% CO ₂ gives <6ppm 1% CO gives <2ppm 1% SO ₂ gives <0.5ppm 2% H ₂ O gives <0.01ppm
Response	T ₉₀ <85 seconds
Accuracy and repeatability	Better than 1% of range or 0.2ppm whichever is greater
Zero noise	<0.01ppm
Span noise	<0.1% of range
Linearity	Better than 0.5% of range
Ambient temperature effects	Zero: 0.2% per DegC Span: Less than 0.35% range per DegC
Zero drift	<0.02ppm per hour
Span drift	<0.1% range per hour
Concentration outputs	0-10Vdc and 4-20mA analogue
Range output	1-8Vdc
Remote control	AK protocol via RS232 port
Sample condition	Sample must not exceed 40DegC with dew point at least 10DegC below ambient
Power	Switchable 110/230Vac 200VA maximum during warm up
Services required	50ml/min N ₂ for continuous purge