

DX4000 FTIR gas analyzer



Multicomponent FTIR Gas Analyzer

Gasmeter On-site Series includes portable multicomponent gas analyzers for demanding applications. The Gasmeter DX4000 incorporates a Fourier transform infrared, FTIR spectrometer, a temperature-controlled sample cell, and signal processing electronics. The analyzer offers versatility and high performance for all users.

The Gasmeter DX4000 is designed for short term on site measurements with wide dynamic ranges. It is an ideal tool to measure trace concentrations of pollutants in wet, corrosive gas streams. The sample cell can be heated up to 180 °C. Sample cell absorption path length is selected according to the application.

The Gasmeter DX4000 allows simple calibration using only single component calibration gases. The user can easily configure the analyzer for a new set of compounds.

General parameters

Measuring principle:	Fourier transform infrared, FTIR
Performance:	Simultaneous analysis of up to 50 gas compounds
Response time, T₉₀:	Typically < 120 s, depending on the gas flow and measurement time
Operating temperature:	Short term 0 - 40 °C long term 5 - 30 °C non-condensing

Storage temperature:	-20 - 60 °C, non-condensing
Power supply:	100-115 or 230 V / 50 -60 Hz
Power consumption:	Average 150 W, maximum 300 W

Spectrometer

Resolution:	8 cm ⁻¹ or 4 cm ⁻¹
Scan frequency:	10 scans / s
Detector:	Peltier cooled MCT
Source:	SiC, 1550 K
Beamsplitter:	ZnSe
Window material:	ZnSe
Wave number range:	900 - 4 200 cm ⁻¹

Sample cell

Structure:	Multi-pass, fixed path length 5.0 m
Material:	100 % rhodium coated aluminium
Mirrors:	Fixed, protected gold coating
Volume:	0.4 liters
Connectors:	Inlet Swagelok 6 mm Outlet Swagelok 8 mm
Gaskets:	Viton® O-rings
Temperature:	180 °C, maximum
Window material:	BaF ₂

Measuring parameters

Zero point calibration:	24 hours, calibration with nitrogen (5.0 or higher N ₂ recommended)
Zero point drift:	< 2 % of measuring range per zero point calibration interval
Sensitivity drift:	None
Linearity deviation:	< 2 % of measuring range
Temperature drifts:	< 2 % of measuring range per 10 K temperature change
Pressure influence:	1 % change of measuring value for 1 % sample pressure change. Ambient pressure changes measured and compensated

Electrical connectors:

Digital interface:	9-pole D-connector for RS-232 Analyzer is connected to an external computer via RS-232C cable. The external computer controls Gasmeter. Remote control connection for Portable sampling unit
Power connection:	Standard plug CEE-22
PSS connection:	Remote connection of PSS (Portable Sampling System)

Gas inlet and outlet conditions

Gas temperature:	Non-condensing, the sample gas temperature should be the same as the sample cell temperature
Flow rate:	120 - 600 liters per hour
Gas filtration:	Filtration of particulates (2 µm) required
Sample gas pressure:	Ambient
Sample pump:	External, not included

Electronics

A/D converter:	Dynamic range 95 dB
Signal processor:	32-bit floating point DSP 120 MFLOPS speed
Computer:	External, not included

Analysis software (for external PC)

Operating system:	Windows 7 (32-bit)
Analysis software:	Calcmet for Windows

Options

Sample cell:	Multi-pass, fixed path length 2.5 m or 9.8 m
Pressure measurement:	Inside sample cell
Analog signals (ext PC):	ADAM 5000/TCP module (for analog inputs, outputs, relays)
Sample cell gaskets:	Kalrez®
Trolley:	Wheeled cart for the analyzer and laptop computer

Enclosure

Material:	Aluminium
Dimensions (mm):	390 * 445 * 164
Weight:	13.9 kg
CE label:	According to EMI guideline 89/336/EC

