

Portable Sampling System For FTIR Gas Analyser



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Analytical Technologies Limited

An ISO 9001 Certified Company

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The portable sampling system has been designed for portable emission monitoring measurements.

The portable sampling system is used for on-site measurements. It can be used for measuring trace concentrations of pollutants in wet, corrosive gas streams. The sample gas can be measured undiluted and without drying since the sample pump, heated filter and valve are located in a module that is heated to 180 °C. From the sampling system the gases can be directed into FTIR gas analyzer.

The portable sampling system includes power connections and temperature controllers for heated lines and heated module. The portable sampling system is connected to an external PC through FTIR gas analyzer and can be controlled by Calcmnet software.

The function of the portable sampling system is automatic, but sample pump and valve can be controlled also manually.

In the case of a power failure or if the temperature (pump, lines, sample cell) is below setting, the automatic 3-way valve switches sample gas to zero gas to prevent condensation. Sample pump cannot be switched on before all temperatures have reached the setting. In addition, the zero calibration of the FTIR gas analyser can be done automatically with the portable sampling system.

As an option, the sampling system can be equipped with a sample probe and/or heated lines.

The maximum length for the heated line is 19 m + 1 m with 230 VAC and 9 m + 1 m with 115 VAC power supply. There is also an optional integrated O₂ sensor that supplements the capabilities of the FTIR gas analyzers.

►► General parameters

Operating temperature	20 ± 20 °C, non-condensing
Storage temperature	-20 – 60 °C, non-condensing
Power supply	Separate models for 100-115 and 230 V / 50 -60 Hz
Power consumption	400 - 3600 W, depending of the sample lines (without sample probe)

►► Heated sample pump

Material	316 SS
Diaphragms	Teflon
Maximum flow	~4 l/min, constant
Temperature	180 °C, maximum

▶▶ Heated filter

Material	Bonded microfiber (sintered steel 0.1µ as an option)
Gas filtration	Filtration of particulates (2 µm)
Temperature	180 °C

▶▶ Temperature controllers

Material temperature range	0 – 180 °C
Display	Digital, 3 digits

▶▶ Valves

Pressure	0 - 2 bars
Temperature	60 °C maximum
Valves	Sample gas/zero gas

▶▶ Gas connectors

Sample gas inlet	One piece, 6 mm Swagelok
Sample gas outlet	One piece, 6 mm Swagelok
Zero gas inlet	One piece, 6 mm Swagelok

▶▶ Electrical connectors

Power connection	CEE7 standard European Schuko plug or fixed cable
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▶▶ Enclosure

Material	SS 316
Dimensions (mm)	400 × 300 × 210 mm
Weight	12.3 kg
CE label	EMI guideline 89/336/EC

►► Optional oxygen sensor

The O₂ concentration reading can be displayed on the Calcmet software

Principle	ZrO ₂ cell
Measuring range	0.1 – 25 %
Accuracy	< 2% from FS
Calibration	Single point calibration with air

►► Optional heated line

Tube size	4 mm, inner diameter
Core material	Teflon core
Operating pressure	Maximum 400 kPa
Temperature	Maximum 200 °C
Fittings	6 mm Swagelok
Power supply	230 VAC or 115 VAC
Power density	120 watts/meter

The maximum length of the heated line is 19 m + 1 m (230 VAC) and 9 m + 1 m (115 VAC).

►► Optional sample probe

Sample probe: PSP4000H

Power density	320 watts
Operating temperature	0 – 180 °C
Filter element	Ceramic (2 µm)
Dust loadings	< 2 g/m ³

Probe tube material: SS 316 Viton

Probe length	One (1) meter
Sample temperature	600 °C maximum
Sample pressure	1 bar maximum

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