Sampling / Gas Conditioning System
SYCOS P-HOT (multi-analyzer version)

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Hot Gas Conditioning System

The SYCOS P-HOT "multi-analyzer version" has originally been designed for parallel wet chemical sampling – while measuring the same sample gas with advanced analysers, such as FTIR.

A single sample probe, heated sample line (gas-in), and filter can be used for sample conditioning of all the measurement methods. To optimize wet chemical sample collection while ensuring constant flow to the FTIR, the system has two independent pumps: one for the FTIR and one for the auxiliary outputs.

The gas flow to the FTIR as well as through the auxiliary outlets can be adjusted. Optional sample gas flow measurement can be used to measure the gas flow to the FTIR. Each auxiliary output is also equipped with check valve.

The auxiliary outlets have two modes of operation. Typically, wet chemical sample collection requires precision pumps – the bypass connector is open. If connector is closed, the flow is regulated with the adjustment valves.

All wetted parts* are stainless steel. The temperature is maintained above the sample dew point (H_2O / acids). Maximum temperature of the heated zone is 180°C.

*exception: pump membranes are PTFE

Automated protection: in case of an alarm, the system closes the sample inlet valves and immediately starts to purge with ambient air.

The control unit has advanced I/O communication capabilities. The Calcmet™ software can be used to record and store all the data.

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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:	max. 2x 2300 W, depending of the sample lines (without sample probe)

Hot Zone (Sample Conditioning Unit)

Temperature:	180 ºC, maximum
Pumps:	2 * KNF NO12: SS316, Membrane PTFE
Gas valve:	2 * Heated solenoid valve for sample gas, before each pump
Flow control:	Manual valves, adjustable (ca 0,5-6 l /min) 1 for FTIR outet 3 for aux outlets
Auxiliary outlets:	3 aux + 1 bypass
Filter:	GASMET CEM IIe filter. Sintered steel, 0.1 µm (optional bonded microfiber or PTFE)
Optional flow monitor:	Stainless steel. Principle is based on thermal dispersion with equal mass sensing. Configuration via RS232.

Gas connectors (Sample Conditioning Unit)

Sample gas inlet:	Quick-Lock OR 8 mm Swagelok
Sample gas outlet:	Quick-Lock OR 8 mm Swagelok
Auxiliary gas outlets:	8 mm Swagelok

Enclosure

Material:	Aluminium painted RAL 7035
Dimensions:	449 × 370 × 177 mm (2x)
Weight:	5 kg (Control Unit) 32 kg (Sample Condit. Unit)
Total dimensions:	449 x 370 x 354 mm
Total weight:	20 kg (without options)
CE label:	EMI guideline 89/336/EC

Control Unit

Control:	Touchscreen
Operation Modes:	Manual and automatic
Gas Connectors:	6mm Swagelok for - Purge, Zero, Safety, Span inlet - Gas outlet to the Hot Zone - Purge gas outlet to the FTIR
Flow meters:	Purge (for FTIR): 0,1 – 1 l/min Zero gas: 0,5 – 5 l/min Safety air: 0,5 – 5 l/min Span gas: 0,5 – 5 l/min
Standard valves:	Zero gas, safety gas
Optional valves:	Span gas
Optional I/O cards:	Up to five (5) cards DO, DI, AO, AI, relays-cards (2,4 or 8 channels per card)
Communication:	3x RJ45, 2x Sub-D 9 Pol, 2x Sub-D 25 Pol
Power connection:	2x CE13/14 with CEE-7

Heated sample line (external option)

Fittings:	Quick-Lock OR 8 mm Swagelok
Power supply:	230 VAC or 115 VAC
Power density:	100 Watts /meter
Sensor:	Pt100 (standard) /Type K
The maximum length of the heated line:	18 m + 2 m (230 VAC) 9 m + 1 m (115 VAC).

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