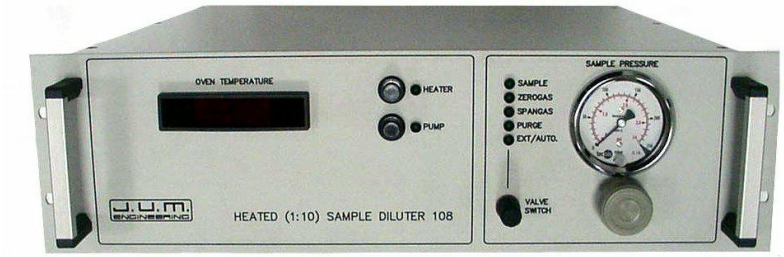
HIGH TEMPERATURE SAMPLE DILUTER **MODEL 108**



The sample injection method is used in this heated sample diluter for faster response and better span stability.

The Heated Sample Diluter Model 108 dilutes an introduced sample gas in a 1:10 (standard), or a 1:100 (optional) dilution rate to allow the linear measurement of hydrocarbon concentrations above several thousand ppm up to 10% and above

The Model 108 is also used to minimize negative effects due to highly concentrated interference compounds and contamination. Additionally, so called "memory effects" or hydrocarbon hang-up due to condensation of heavy hydrocarbons as well as other condensed impurities in the sample gas can be largely prevented.

A total hydrocarbon analyzer, placed downstream of the diluter will continuously draw a constant amount of zero or room air with its internal sample pump (required analyzer sample flow 2.3 -2.8 l/min!) through the diluter.

The internal sample pump of the diluter draws the sample into the diluter. The Model 108 is equipped with a backpurge cleanable, 2µm stainless steel sample filter.

Downstream of the internal sample pump is the actual dilution capillary setup which is controlled by recision flow/pressure regulation to ensure a constant flow of sample through the diluter capillary. The diluter capillary is calibrated to allow a flow of one tenth (or one hundredth) of the actual sample flow drawn by the analyzer. The necessary fine adjustment for each individual analyzer is accomplished by the use of the precision pressure regulator.

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Features

- All components in contact with sample fully heated and accurately controlled at 190°C
- Built-In air pressure pump and heated sample pump
- 1:10 dilution rate is standard
- 1.100 dilution rate is available instead of 1:10 as an option
- Standard, permanent installed sample filter to be cleaned by back purge with hydrocarbon free compressed air or with nitrogen.
- Optional available is an easy to change sample filter in stead of the back purge filter. It is accessible on the rear panel. No special tools required for filter changes
- Calibration valves for zero- and span calibration, standard manual turn switch and remote operation, e.g. PLC or PC
- Large oven temperature display with analog 0-5 VDC temperature output @ 10mV/°C
- Precision sample pressure regulator on front panel for precise and easy calibration
- Fast response

Applications

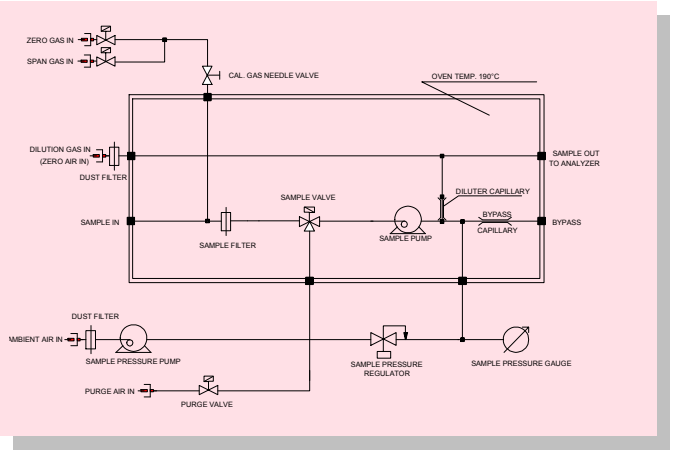
- Stack gas hydrocarbon emissions monitoring
- European-EPA and USA-EPA Method compliance monitoring of high concentration raw source hydrocarbons before a catalytic or thermal combustion
- Catalytic converter testing
- Flare gas HRVOC emissions monitoring

Principle of Operation

The sample injection method is used in our heated sample diluter.

The Heated Sample Diluter Model 108 dilutes an introduced sample in a 1:10 (or optional 1:100) rate to enable the measurement of total hydrocarbons with HFID analyzers in high concentrations above several 10.000 ppm. Additionally, so-called "memory effects" due to condensation as well as other condensed impurities accompanying measurements in such high concentration ranges can be largely prevented. A total hydrocarbon analyzer downstream of the diluter will continuously draw a constant amount of zero air or room air with its internal sample pump. The required sample flow drawn by the analyzer through the diluter is 2.3 - 2.8 l/min.

The internal sample pump of the diluter draws the sample which is to be diluted into the diluter. The Model 108 is equipped with a backpurgeable 2µm stainless steel mesh filter. Downstream of the internal sample pump is the actual dilution capillary setup which is controlled by a precision pressure regulator to ensure a constant flow of sample through the diluter capillary. The dilution capillary is calibrated to allow a sample flow of one tenth (or one hundredth) of the actual sample flow drawn by the analyzer. The necessary fine adjustment for each individual analyzer is accomplished by the use of the precision pressure regulator.



Technical Data	
Method	Continuous sample injection into a steady stream of zero gas or instrument air
Dimensions	
Width	483 mm (19")
Height	132 mm
Depth	460 mm
Weight	14 kg
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Line Voltage/Fuses	
230 VAC/50 Hz	4 A medium
115 VAC/60 Hz	6.3 A medium
. . . . .	
Sample Filter	
Type	Filter Cartridge, 2 µm mesh
Material Filter	Stainless Steel 1.4501
Seal	Viton® O-ring
Material Housing	Stainless Steel 1.4571
Sample Pump	
Type	Diaphragm
Material Head	Stainless Steel 1.4571
Material Chamber . . .	Stainless Steel 1.4571
Material Diaphragm . .	Viton®
Material Valves	Viton®
Sample Flow	max. 2.5 Liters/Minute
Oven	
Heater	500 Watts
Temperature	190°C (374°F)
Temperature Sensor . .	Thermocouple Type "J" (Fe-CuNi)

J.U.M. reserves the right, at any time and without notice, to change specifications presented in this data sheet and assumes no responsibility for the application or use of the devices described herein.

Technical Data continued...	
Supply Gas Plumbing	
Solenoid Valves	Brass
Plunger	Stainless Steel/Viton®
Seal	Viton® O-ring
Supply Voltage	24 VDC
Tubing	PA / Teflon® / Viton®
Fittings	Brass, Brass Ni-plated
Sample Gas Plumbing	
Sample Fitting	Swagelok®, 1/4", 316 SS
Tubing	Stainless Steel 1.4571, 1/4", 1/8"
Oven Fittings	Swagelok®, 1/4", 1/8" 316 SS
Supply Gases	
Cal. Gases	1 bar (0.1 MPa, 15 psig)
Sample	**NO PRESSURE!**
Purge Air	3.5 bar (0.35 MPa, 51 psig)
Dilution Gas	**NO PRESSURE!**

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