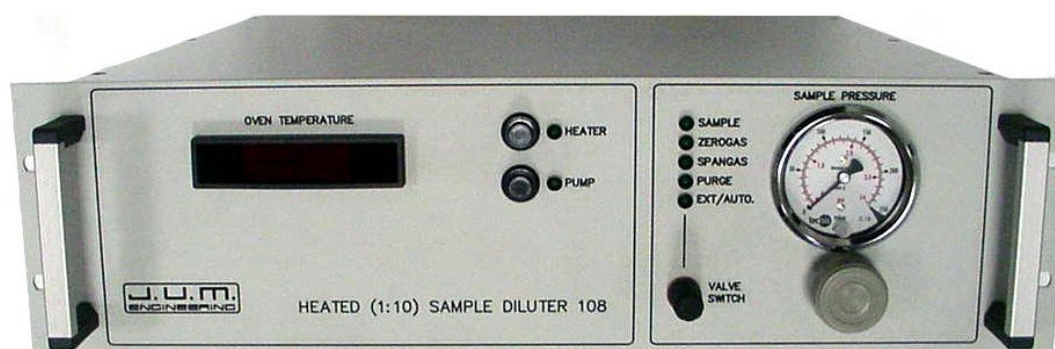


Heated Sample Diluter 108

The Heated Sample Diluter Model 108 dilutes an introduced sample gas of high concentration in a 1:10, or a 1:100 dilution rate to allow the linear measurement of total hydrocarbon concentration rates above several ten-thousand ppm, up to 10% and above. For fastest response and better span and zero stability sample injection is our method of choice in this decades time proven heated sample diluter.



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

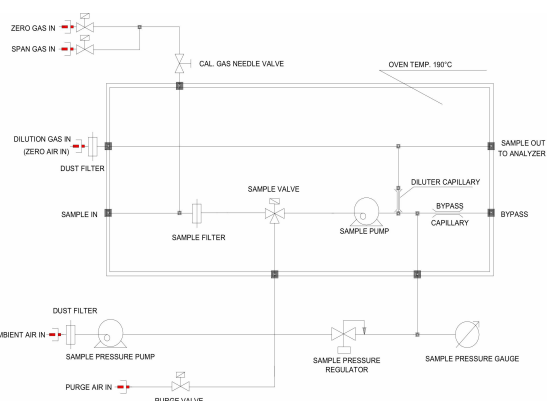
General:

A total hydrocarbon analyzer which is placed downstream of the diluter will continuously draw a constant amount of room air, instrument air or zero air through the diluter with the analyzer sample pump at a required analyzer sample flow rate of 2.3 -2.8 l/min. The internal sample pump of the diluter draws the sample into the diluter. The Model 108 is equipped with a high pressure back purge cleanable, 2µm stainless steel sample filter. Downstream of the internal sample pump is the actual dilution circuit setup which is controlled by precision 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.

Principle of Operation:

The sample injection method is used in our heated sample diluter. The 108 dilutes an introduced sample in a ratio of 1:10 (or 1:100) to enable the measurement of high total hydrocarbon concentrations with standard HFID analyzer. Concentration levels of above several 10.000 ppm up to the low percentage level can be measured at practical measurement ranges of a FID analyzer. So called "memory effects" due to the condensation of hydrocarbons as well as other condensed impurities accompanying measurements in such high concentration ranges can be largely prevented.

A total hydrocarbon analyzer operating downstream of the diluter will continuously draw a constant amount of zero air or low concentration ambient or outside air with its internal sample pump. The required sample flow which is drawn by the analyzer through the diluter should be in the range of 2,3 to 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 back purge 2µm stainless steel mesh filter. Downstream of its internal sample pump is the actual dilution capillary setup which is controlled by a high precision pressure regulator to ensure a constant flow of sample through the diluter capillary into the sampling tube which is connected with the analyzer's sample inlet. The dilution capillary is calibrated to allow a steady sample flow of one tenth, respectively one hundredth of the actual sample flow drawn by the analyzer. The necessary fine adjustment for each individual analyzer is accomplished by the adjustments of the precision pressure regulator.



Features

- x Very short response time
- x All components in contact with sample fully heated and accurately controlled at 190°C
- x Built-In air pressure pump and heated sample pump
- x 1:10 dilution rate is standard
- x 1.100 dilution rate is available as an option
- x Standard, permanent installed 2µ sample filter to be cleaned by back purge with hydrocarbon free compressed air or nitrogen
- x Disposable easy to change sample filter in stead of the back purge filter optional reflects approx. 20% price advantage
- x Calibration valves for zero- and span calibration. Standard manual turn switch and remote operation, e.g. PLC or PC
- x Large oven temperature display with analog 0-5 VDC temperature output @ 10mV/°C
- x Precision sample pressure regulator on front for precise and easy calibration
- x Fast response

Applications

- x Stack gas hydrocarbon emissions monitoring of high concentration at wet sample conditions
- x European and US-EPA Method compliance monitoring of high concentration raw source hydrocarbons
- x High THC concentration monitoring of raw exhaust before a catalytic or thermal combustion device
- x Catalytic converter testing
- x Petrochemical plants
- x Gas plants
- x Co-generation facilities
- x Flare gas HRVOC emissions monitoring
- x Utility boilers
- x Pulp mills
- x Waste-to-energy facilities
- x Incinerators
- x Gas Turbines
- x Refineries





Technical Specifications

Method	Continuous sample injection into a steady stream of zero gas, instrument air or ambient air
Sample Filter Back Purge	2µm stainless steel mesh low pressure drop
Sample Filter Disposable	2µm glass fiber cartridge low pressure drop
Heated Sample Pump	Diaphragm type, 2,5 liter/min, stainless steel, Viton° seals
Air Pressure Pump	Diaphragm type, 2,5 liter/min, POM, Viton° seals
Oven Temperature	190°C
Sample Gas Plumbing	Tubing and fittings Swagelok 316SS
Supply Gas Plumbing	PTFE and PA12 tubing and Ni plated brass fittings
Supply Gas Conditions	Zero and span gas: 1 bar, 0,1 MPa, 15 PSI Purge air: 3,5 bar, 0,35 MPa, 51 PSI Dilution gas: No Pressure Sample gas: No pressure
Voltage	230 VAC/50Hz, or 115 VAC/60 Hz
Dimensions	Width: 483mm (19"). Depth 460 mm. Height 132 mm
Weight	14 kg

Available Options

OVE 8	Quick change disposable 2 micron sample filter (no back purge) housed in the heated oven in stead of the back purge sample filter. Reflects a 20% price advantage
DRA 100	Sample dilution rate of 1:100

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