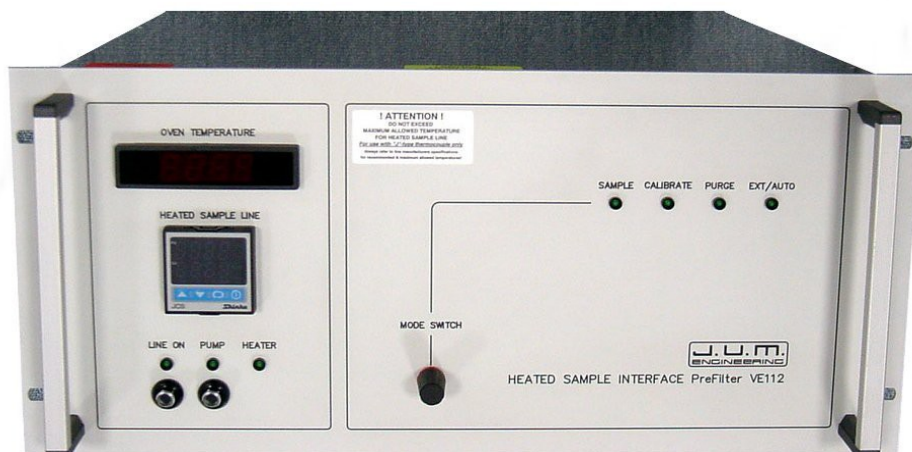


All Heated Sample Filter and interface **PRE FILTER 112**

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Gas analyzers for emissions measurement are typically exposed to heavy soot dust and condensed hydrocarbon contamination. Therefore it is absolutely necessary to fine filter the sample gas stream and prevent HC memory effects in the entire sample train. The J.U.M. Engineering PreFilter[®] 112 is an efficient, all heated and low pressure drop interface and sample filter for removing solids from a gaseous sample. It utilizes an all stainless steel 2µm mesh filter and an all stainless steel valve in a thermostatically controlled oven to prevent the loss of high molecular weight hydrocarbons and condensation of water. The VE 112 is probably the smartest and lowest cost solution to design a complete multi component CEM.



The Model VE 112 can be installed as a complete sample filter and interface directly in the analyzer rack. With its back purge system for the permanently installed sample filter the VE 112 offers extended up times at comparatively low maintenance cost. The sample probe and sample line are always automatically cleaned from particulate matter & condensed hydrocarbons with every filter back purge cycle. In most cases, a stack probe filter is no longer needed. A calibration gas inlet offers the capability to test and calibrate the complete analyzer circuit.

Our proprietary rear panel adapter plate system allows cold-spot free coupling of a heated sample line inside the heated oven without the need of special tools.

General:

Gas analyzers for emissions measurement are typically exposed to heavy soot, dust and condensed hydrocarbon contamination. Therefore it becomes necessary to filter the sample gas stream with a low porous sample filter at the sampling probe.

With its high pressure back purge feature for the sample filter the PreFilter® 112 is an efficient, all heated and low pressure drop sample filter for removing solids from a gaseous sample installed at the point of the analyzer installation. It utilizes a stainless steel 2µm large surface stainless surface mesh filter and valves in a thermostatically controlled oven to keep the sample filter and the sample line free from particles and organic substances that can condense and therefore distort the hydrocarbon measurement results.

The fully heated VE 112 can be installed as a complete open bypass sample interface directly in the analyzer rack to provide sample gas to multiple emissions gas analyzers at atmospheric pressure conditions. With its high purge pressure of 4bar (0.4 MPa) back purge system for the permanent installed sample filter, the VE 112 offers excellent system up times at comparatively low maintenance cost; Which every filter back purge cycle the sample line and sample probe is automatically cleaned from dust and condensed hydrocarbons. In absolutely most cases, a stack probe filter is no longer needed as proven during an US EPA aptitude test.

A calibration gas inlet offers the capability to test and calibrate the complete analyzer circuit. Our proprietary rear panel adapter plate system allows cold-spot free coupling of a heated sample line inside the heated oven without the need of special tools.



Rear panel shown with optional heated sample line controller connections



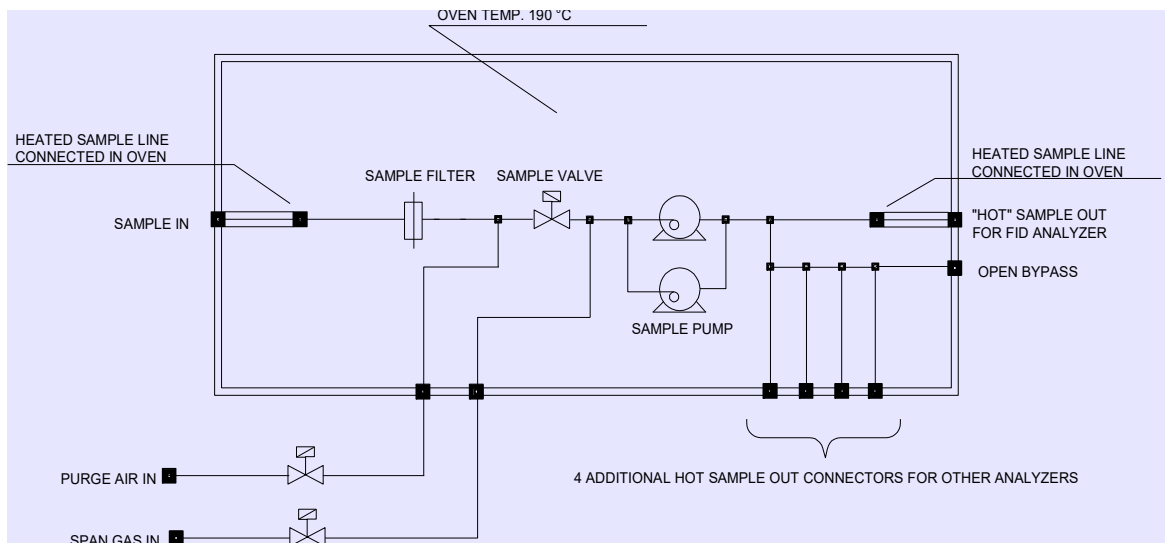
Detail of all sample outlet capabilities; Connect HFID plus 4 other measuring or sampling devices, all @ atmospheric pressure.

Main Features

- x One sample inlet, one cold spot free main sample outlet with capability to couple heated sample line inside the heated oven
- x Four additional regular heated sample outlets
- x All sample contacting components inside the heated chamber
- x Oven temperature 190°C (374°F)
- x Permanent heated stainless steel sample filter, 2 micron mesh
- x Sample filter back purge system, allows sample filters to be cleaned without dismantling
- x With every back purge cycle the heated sample line and sample probe is also back purge cleaned at the same time
- x Programmable automatic sample filter back purge timer optional
- x Remote control for valve operations sample, calibrate and filter back purge is standard
- x Integrated 12 lpm heated sample pump (two capacity alternatives)

Major Applications

- x The VE 112 is a Complete Sample Interface Solution, using only one heated sample line to feed up to 5 analyzers
- x For feeding continuous sample in multi component analyzer stack gas emissions monitoring systems for one THC monitor, one sample conditioner with all NDIR monitors and four more additional monitors or sensors
- x Stationary or transportable CEM mounted in a trailer or truck as used by stack testing companies
- x Diesel or gasoline raw exhaust analysis and stationary diesel engines exhaust analysis
- x Diesel or gasoline cold start testing
- x Jet engine raw exhaust testing
- x Removing particles from a gaseous sample where condensation of heavy hydrocarbons is not desirable



Complete Flow Diagram shown with Back Purge Sample Filter

Technical Specifications

Sample filter material	4543 stainless steel mesh
Filter pore size	2 Micron
Sample valve	4571 stainless steel / Viton [®]
Purge air valve	4571 stainless steel / Viton [®]
Calibration gas valve	Brass / stainless steel plunger / Viton [®]
Sample pump	4571 stainless steel / Viton [®]
Sample pump Capacity	12 liter per minute free flow @ operating temperature
Oven Temperature	190° Celsius
Oven Temperature Output	0 to 10 VDC
Power Requirements	230V/50Hz 850 Watt
Ambient Temperature	5 to 42° Celsius
Dimensions (width x depth x height)	19" (483 mm) x 460 mm x 221 mm
Weight	25 kg (55 lb.)

Viton[®] is a registered trademark of DuPont Dow elastomers

Available Options

- TPR 11 External temperature controller for J.U.M. heated sample lines TJ 100 or other brand with "J" type thermocouple
- APO 11 Built in automatic programmable back purge timer for sample filter. Controls back purge sequence and back purge time from 1 minute to 10 hours
- EPC 11 Remote control for sample pump on/off
- PP 25 Internal heated sample pump for 25 liters per minute free flow @ operating temperature (Requires larger enclosure)

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