TOPAS®

Adsorptive Filter Test Rig
Series PAF

Adsorptive Filter Test Rig PAF 112, KITECH, Korea

Since 1995 Topas has been developing test stands for measuring the adsorption capacity or desorption behaviour of adsorptive filters. The design of the test stand, the test procedure and data aquisition have been based on the DIN 71460-2 standard.

The test section and associated ductwork are fabricated from stainless steel. Different sizes of filter media samples and elements can be tested and are mounted in a special adapter. A window in front of the test section allows visual observation of the sample during the test. A pair of mass flow controllers is used for metering gaseous components from gas cylinders and a new, sophisticated, dosing unit for liquid gas components has been developed specifically for this application. This is based on evaporation of a droplet spray atomized by means of a two-stream nozzle fed from a µl-dosing pump. The gas concentration can be measured downstream of the filter.

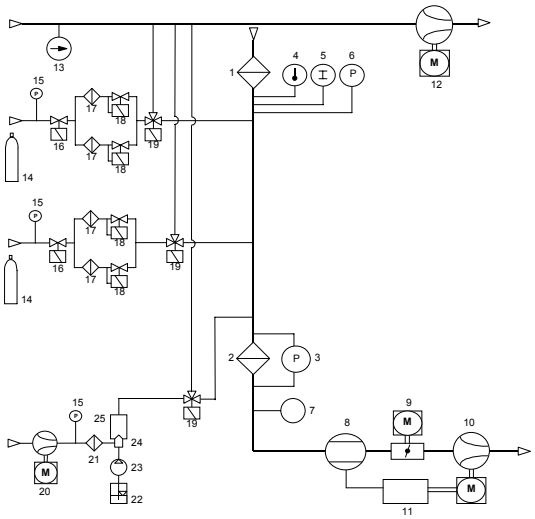
An exhaust system by-passing the test channel facilitates maintaining a very stable gas dosing even when the filter must be inserted or removed. This technique of a continuous exhaust also meets stringent safety requirements.

Main Components

- Test channel and rig
- Gas dosing system
- Exhaust system
- Flow meter
- Gas analyser
- Sensors
- Test stand control

Features

- Differential-Pressure measurement
- Adsorption/Desorption measurement
- Operator is guided through test routines
- Modular system
- Versatile
- State of the art



1	HEPA Filter EU13	11	Frequency converter	21	Inline filter
2	Test filter	12	Blower 2	22	Liquid reservoir
3	Differential pressure sensor	13	Exhaust flow detector	23	Micro dosing pump
4	Temperature sensor	14	Gas cylinder	24	Two stream nozzle
5	Relative humidity sensor	15	Manometer	25	Evaporation vessel
6	Atmospheric pressure sensor	16	Solenoid valve		
7	Gas analyzer	17	Inline filter		
8	Flowrate sensor	18	Mass flow controller		
9	Throttle valve	19	3way solenoid valve		
10	Blower 1	20	Piston compressor		

Schematic of the PAF 112 Adsorptive Filter Test Rig

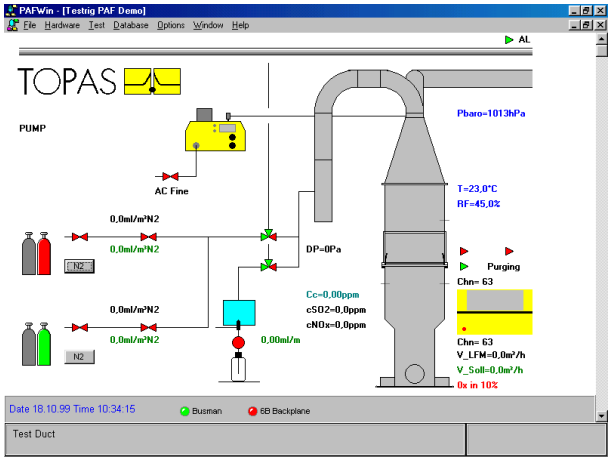
Specification

Control and Data Acquisition Software PAFWin

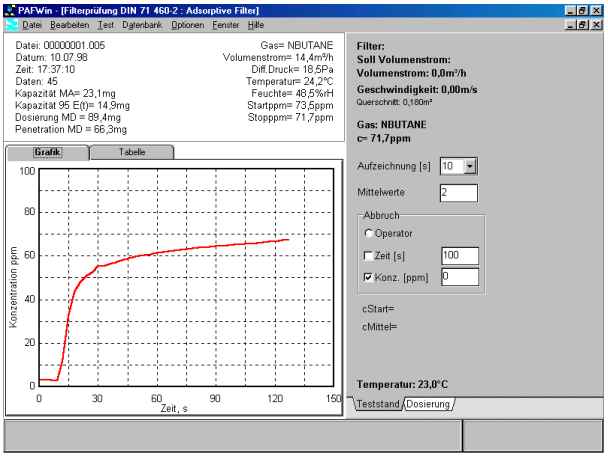
A new software package has been developed for control of the test stand and data acquisition. This user-friendly software runs under all Windows platforms and displays the actual status of the test rig.

Further main features are:

- Automatic test procedures in accordance with issued standards
- Manual control for service, calibration procedures and research applications
- Data monitor for long term investigations
- Sample and test data base
- Test dust data base
- Data analysis and statistical calculations
- Data copy & paste, Dynamic Data Exchange DDE



PAF112Win Test Rig Visualization



DIN 71460-2 Test Result (Penetration Curve)

Specifications Series PAF

Air flow	70...700 m³/h ±1%
Diff. pressure	0...1000 Pa ±2%
Filter adapter	300 × 600 mm
Sensors	Temperature, relative humidity, atmospheric pressure
Gases	• n-Butane 80 ppm (C_4H_{10}) • Toluene 80 ppm ($C_6H_5CH_3$) • Sulphur dioxide 30 ppm (SO_2) Ammonia 30 ppm (NH_3) • Nitrogen
Gas analyser	• FTIR spectrometer, Equinox 55 (IFS 28), Bruker • FID gas detector, Bernath Atomic • Other on request
Power supply	3 x 230 V AC, 16 A
Test rig dimensions	1800 mm x 1100 mm x 2500 mm

QMS certified to DIN EN ISO 9001.

12 100 11908 TMS

For more information please visit our website at www.topas-gmbh.de

Specifications are subject to change without notice.

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