

Regulated Flow Unit

RFU 564



Regulated Flow Unit RFU 564 for supply of variable adjustable, time-stable air flow rates.

The Regulated Flow Unit RFU 564 was developed to provide variable adjustable and time-stable air flow rates for both under pressure (intake mode) and over pressure operation (supply mode).

Most aerosol analytical tasks for characterisation and testing require the supply or removal of defined air flow rates. Especially for frequently varying needs, users of aerosol technologies are confronted by the challenge to modify or design new test setups. For that matter, the process air flow respectively the main air flow is of fundamental importance to adjust required analytical parameters. Furthermore, the use of the Regulated Flow Unit RFU 564 reduces the need for numerous test stand components (blowers, pipes, valves, flow meters, filters).. Accordingly, the installation of aerosol analytical test setups becomes easier and faster.

Applications

- generation of well-defined air flow rates in test setups
- conditioning of aerosols (homogenisation, dilution, transport)

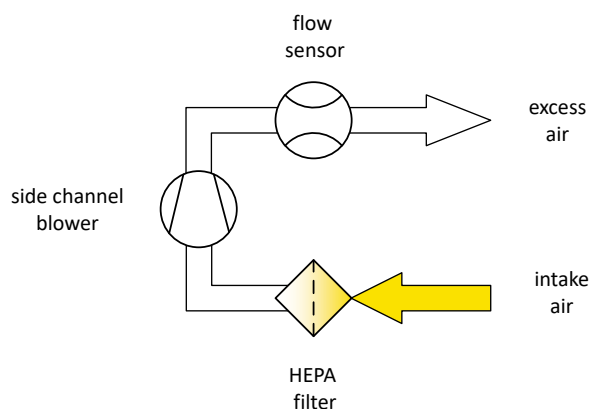
- dilution of environmental, process and test aerosols by external air supply
- preparation of particle-free environments (purging, evacuation), e.g., in isolators

Features

- regulated air flow generation to compensate changes in pressure conditions
- simple and fast start up via touch screen or serial interface
- compact design (ideal for mobile operation and on-table use)

Principle of operation

Air is drawn in at the inlet of the RFU 564 via a controlled side channel blower and passed through a high-performance filter (HEPA filter). Air flow regulation is based on a flow sensor that analyses continuously the excess air flow.



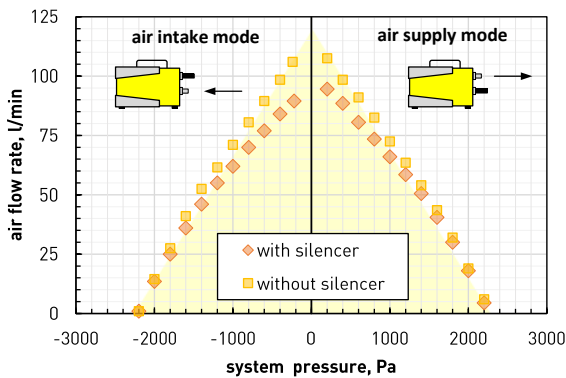
Functional principle of the RFU 564.



Specifications

Details

Depending on the particular task, the RFU 564 can be operated either via air intake mode or air supply mode. The system pressure in the test setup or the line system defines the feasible air flow range of the RFU 564.



Air flow rate characteristics of RFU 564 at empty HEPA filter for air intake mode (left) and air supply mode (right).

The adjustment of the required flow rate can be set via both the touch screen on the device and the serial interface.

On	Device Information	Remote	Back	On	Device Information
Set:	21 l/min	Serial no.:	5642002302	Set:	20 l/min
Act:	0 l/min	Built on:	24.12.2020	Act:	20 l/min
		Calib on:	24.12.2020		
		Cal. A:	1000		
		Cal. B:	0		
		Control:	700 l / l/min		
Deviation:	100 %			Deviation:	0 %
Temperature:	28 °C			Temperature:	28 °C

User interface of the RFU 564: tab for operational modus off (left), tab for operational modus on (right), device data (middle).

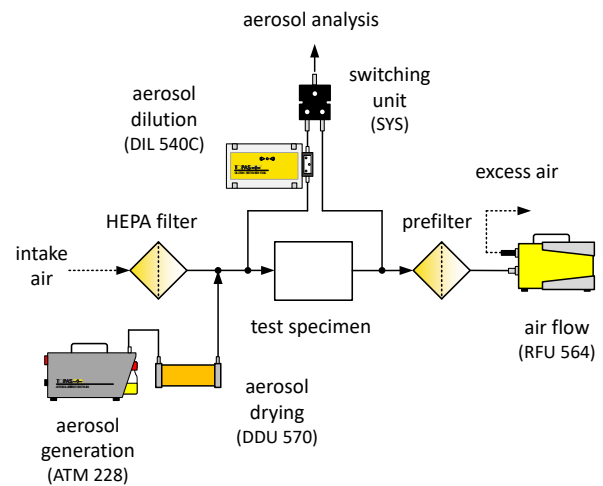
During operation, the touch screen shows the set value (control value), the actual value (measured value), the absolute deviation between actual value and set value as well as the temperature at the flow sensor.

Application example

The combination of the RFU 564 with other aerosol technologies enables the realisation of various experimental setups for diverse aerosol analytical tasks. This comprises setups for the characterisation, validation or calibration of aerosol

technologies like analytical instruments or conditioning systems.

Such setups can also be used for the characterisation of the particle separation in any test specimen like filters or separators.



Application example: Operation of RFU 564 for the aerosol analytical characterisation of any test specimen.

Technical specifications

setting parameter	air flow rate in l/min
setting range	0 ... 100 l/min
setting resolution	1 l/min
set up time	< 1 min
operating medium	air, nitrogen
hose connector	11 mm (inner diameter)
PC interface	RS232 (M9 IP67, 5 pole)
power supply	24 V DC (adaptor)
power consumption	≤ 23 W
noise emission	$L_{pA} \leq 75 \text{ dB(A)} \pm 3 \text{ dB(A)}$
dimensions (w × h × d)	300 × 200 × 140 mm
weight	3,9 kg

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QMS certified according to DIN EN ISO 9001.



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