PRODUCT**DATASHEET**

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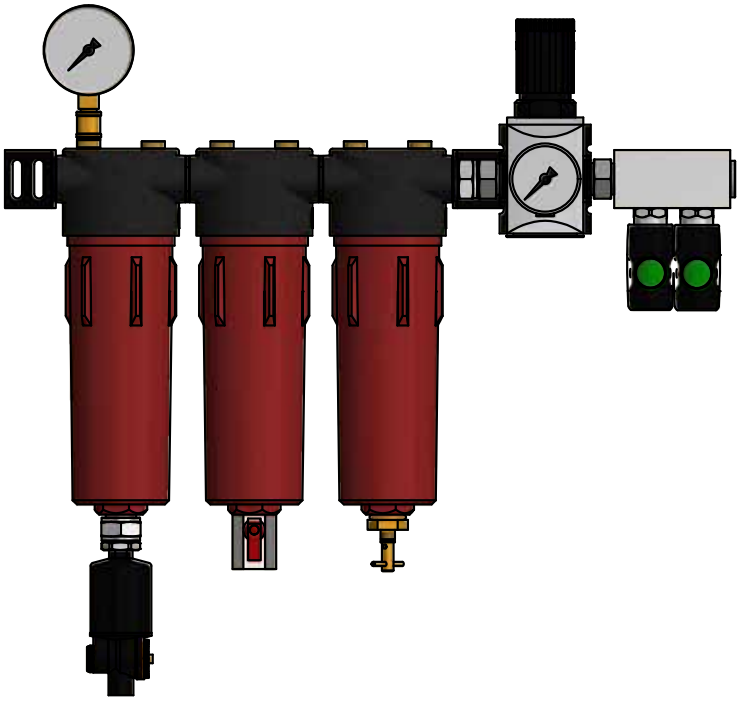
ECO**CLEAN**® PFU FILTER COMBO

Compressed air and technical breathing air for paint work

Clever combinations for filtration of particles, condensate and residual oil components

When doing paint work, you need clean compressed air: for operating the paint shop, for the supply of breathing air or for both purposes.



The KSI Filtertechnik provides all necessary components that are installed behind the compressor when buildung up a compressed air station. Refrigerant dryer, compressed air vessels, shut-off valves and various compressed air filters for cleaning air from condensate, oil components and particles of even smallest sizes ...

The necessary parts and requirements concerning a purification unit: KSI provides the components for the customized solution.

Functionality

To achieve a perfect painting result, compressed air preparation is absolutely indispensable: the air sucked in and then compressed by the compressor is always contaminated, for example by oil components from the compressor, by condensate and particles.

For processing breathing air, the compressed air, after being optimally pre-dried by means of a refrigerated dryer, passes through three filtration stages. It is possible to reduce the flow resistance up to 75% by the arcuate air inlet.

After the first filtration for particles up to 5 microns (including water separation function) and the second filtration stage with 0.01 micron, the air flows through an activated carbon filter: The end result is 100% technical particle-free and oil-free air.

In the practical **ECOCLEAN®** PFU 3 FILTER COMBO, KSI has brought together the necessary elements of (breathing) air preparation and supply for spray booths:

- **ECOCLEAN®** prefilter with automatic condensate drain
- **ECOCLEAN®** sub-micro filter
- **ECOCLEAN®** activated carbon filters
- pressure regulator
- outlet valves with safety couplings
- wall mounting brackets.

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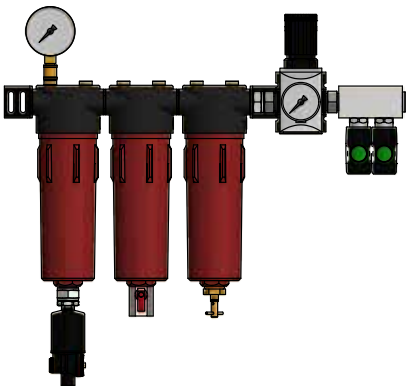
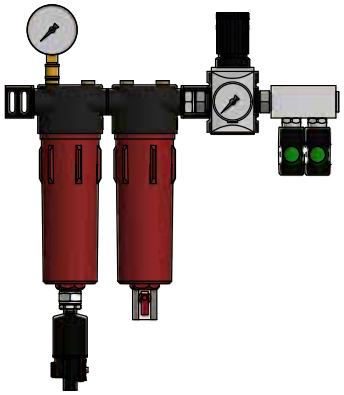
ECOCLEAN® · PFU FILTER COMBO

PFU filter combos





PFU3: For breathing air systems in critical environments 100% technical oil and particle free air

Applications

i.e. in paint booths

- for water and solvent based paint systems
- for respirator protection hoods without activated carbon adsorber

Scope of supply	
Ready-to-use filter combo composed of:	
1. stage	5 micron filtration with water separation functionality and automatic condensate drain
2. stage	0,01 micron filtration and ball valve
3. stage	activated carbon filtration and manual condensate drain
	manometer for display of inlet pressure
	pressure regulator
	2 outflows with safety couplings
	wall mounting brackets

PFU2: For paint work 100% technical oil and particle free air

Applications

i.e. preliminary works in paint booths

- for solvent based paint systems
- for respirator protection hoods with activated carbon adsorbers attached to the belt

Scope of supply	
Ready-to-use filter combo composed of:	
1. stage	5 micron filtration with water separation functionality and automatic condensate drain
2. stage	0,01 micron filtration and ball valve
	manometer for display of inlet pressure
	pressure regulator
	2 outflows with safety couplings
	wall mounting brackets

Type	Capacity*	Dimensions (mm)				Connection**	Connection**
						Inlet	Safety couplings
PFU3	216	504	21	476	122	½“	NW7
PFU2	216	412	21	476	122	½“	NW7

**calculated at 1 bar (abs.) and 20°C at 7 bar g working pressure*

**** Inlet connection also in ¾“ available without extra charge. Order nr.: PFU3-3/4 or PFU2-3/4**

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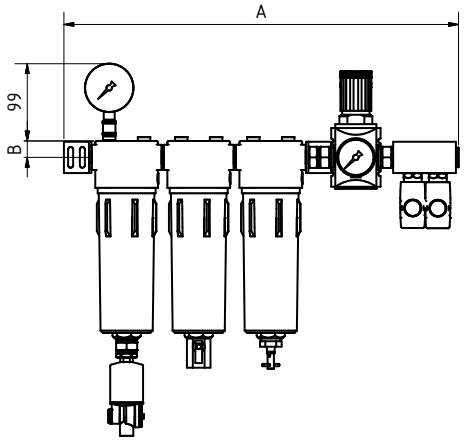
Specifications

Correction factors																
Operating pressure	bar ü	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	factor	0,38	0,50	0,63	0,75	0,88	1,00	1,12	1,25	1,37	1,49	1,62	1,74	1,86	1,98	2,10

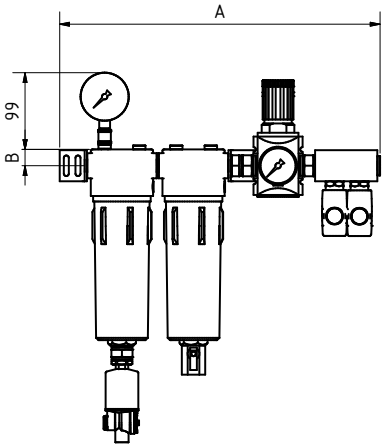
Please multiply the capacity of the filter by the correction factor in the above table. Example: Capacity PFU at 10 bar g - Capacity nominal (216 m³/h) x factor (1,37) = Capacity corrected (295,9 m³/h).

Specifications	
Max. temperature	80°C (activated carbon stage up to 60°C recommended)
Min. temperature	1,5°C
Max. operating pressure	16 bar g
Housing material	Aluminium, inside and outside protective coating
Colour	black and red powder paint / RAL 9005-RAL3003

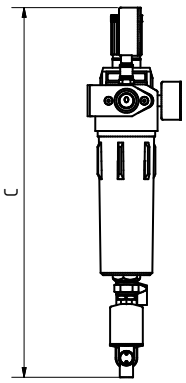
Dimensional drawings



PFU3



PFU2



PFU2 and PFU3

Approvals for pressure equipment

EU — **Approved for fluid group 2 according to Pressure Equipment Directive 2014/68/EU, module B+D (categorie IV)**

Quality management

Development/production — **DIN EN ISO 9001**

Air purity classes according to ISO 8573-1:2010

Particles — **Class 1**

Humidity (gaseous) — **n.a.**

Total oil — **Class 1**

Meets the requirements of EN 12021:2014 regarding particles, residual oil content and oxygen

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Options

Level-controlled condensate drain KONDRAIN® N1 and N5

- flexible connection, 90° turnable, enables to use it at various sites
- high-resistable Viton membranes => more safety and long lifetime
- maximum protection for membrane and function by integrated filter
- functionality test always available via test switch; also for manual emptying
- self control by intelligent control
- auto reset function provides operational safety
- potential-free alarm outlet (only KN5)
- permanent performance at condensates from 100% oil to 100% water
- ecologically & economically reasonable

KN1

KN5

1. Further options for the filter combo

Options	
DPN	differential pressure indicator
A4000	indicator for monitoring residual oil contents

2. KSI's further options for pre-processing

Options	
ECOCLEAN®	water separators
ECOTROC®	refrigeration dryers (strongly recommended!)
ECOCLEAN®	compressed air filters
ECOTROC®	ATC activated carbon adsorbers

Differential pressure indicator

Residual oil indikator

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Reliability

1. Optimum Operational Reliability

Filter Housing

A High-quality cast aluminum with anti-corrosion coating (on the inside and outside), plus an impact and scratch-resistant resin powder coating provide a corrosion-resistant filter housing.

B Condensate is continually removed via the automatic D150 (from GTF140: D200) condensation drain. As a user-friendly feature the internal pressure can be released via the condensate drain.

C Highest quality with every **ECOCLEAN®** filter verified as 100% leak-proof.

Filter Element

D Tie rod anchoring, proven in millions of applications, secures the position and the function of the filter element, even during common pressure shocks.

E A special compound adhesive securely fixes the end caps to the stainless steel support cages and the filter media.

F The **ECOCLEAN®** high performance media is securely fixed and supported between stainless steel support cages.

G The plasticizer-free plastic end caps prevent corrosion. This means no efflorescence and no increased bacterial growth.

High performance filter media

H The filter drainage layer made of special fleece stabilizes the filter media and prevents efflorescence and cracking - meaning it safely counteracts the loss of filtering action.

I The high-performance filter fleece has a high chemical, mechanical and thermal loading capacity (up to 120° C), and it is silicone-free.

Costs

2. Max. Cost Effectiveness

Filter Housings

A KSI high-performance filters lower energy costs drastically through minimized investment costs and low differential pressure, while providing maximum efficiency.

B The differential pressure indicator displays the most economical point in time for a filter element change, reducing operational costs.

C Ideally sized connections and optimized flow paths achieve high flow efficiency to avoid pressure losses that increase cost.

D **ECOCLEAN®** filter housings achieve up to 75% lower flow resistance compared to housings with right-angle flow paths.

Filter Element

E The specially designed interior and exterior **ECOCLEAN®** support cages achieve up to 45% less differential pressure as compared with conventional support cylinders.

Energy Saving Filter Media

F The KSI high-performance element achieves maximum filter surface area through the specially optimized winding of the filter media. The construction-based surface filtration, in contrast to the usual 2-layer pleated elements, achieves a significantly higher internal surface area (filter depth volume) for maximum depth filtration. Due to this very high depth filtration capacity of **ECOCLEAN®** filter elements the differential pressure rises very slowly giving longer life and reduced energy costs.

G The media depth volume ensures the highest contaminant removal, whilst allowing maximum filtration performance.

A hexagonal nut on the outside of the filter housing base facilitates quick and easy service.