

KSI ECOCLEAN® PFU Filter Combination



Rev 01_0120

Processing of Compressed Air and Technical Breathing Air for Paint Work



Clean air for proper painting

In the **KSI ECOCLEAN®** PFU filter combinations, KSI brings together the necessary elements to provide breathing and painting air. Because who paints properly, needs clean compressed air – whether for the operation of the paint shop, whether to provide breathing air for the painter, or for both applications.

Oil components, condensate, particles

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

For processing breathing air, the compressed air, after being optimally pre-dried by means of a refrigeration or adsorption

The ECOCLEAN® PFU Plus-Effects +++

- + industrial-grade filtration technology from the manufacturer with years of experience
- + technically silicone-free! None of the components used contains silicone or releases silicone-containing substances.
- + pressure reducer at the outlet ensures more effective separation in the filter stages
- + condensate drainage also possible at the finest filter stage
- + optional: level-controlled steam traps for energy-efficient condensate drainage without loss of compressed air
- + directly mountable by integrated wall bracket

dryer, passes through three filtration stages. It is possible to reduce the flow resistance up to 75% by the arcuate air inlet.

PFU Filter Combination

Clever combinations for filtration of particles, condensate and residual oil

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

KSI Filtertechnik provides all necessary components that are installed behind the compressor when building up a compressed air station: water separators, micro and submicro filters, refrigerant and adsorption dryers, activated carbon adsorbers, condensate drains and oil-water-separators.

The necessary parts and requirements concerning a purification unit: KSI provides the 100% technically silicone-free components for the customized solution.

All the components for a perfect painting result

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

For processing breathing air, the compressed air, after being optimally pre-dried by means of a refrigeration or adsorption 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 **KSI ECOCLEAN®** PFU 3 filter combination, KSI has brought together the necessary elements of (breathing) air preparation and supply for spray booths:

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

¹The operator must ensure that the air drawn in by the compressor is free of harmful gases, vapours and particles to such an extent that the requirements of DIN EN 12021 regarding carbon dioxide content and carbon monoxide content are met. The use of oxygen or oxygen-enriched air is not permitted.

KSI ECOCLEAN®

PFU Filter Combination



PFU₃ for breathing air systems



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-operate filter combination including:

- 1. stage** 5 microns filtration incl. water separation function and automatic condensate drain
- 2. stage** 0,01 micron filtration and automatic condensate drain
- 3. stage** Activated carbon filtration and manual drain
<0,003 mg/m³ residual oil content
Manometer for inlet pressure display
Pressure regulator
2 outlet valves with safety clutch
Wall mounting brackets

PFU₂ for painting work



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-operate filter combination including:

- 1. stage** 5 microns filtration including automatic condensate drain
- 2. stage** 0,01 micron filtration including automatic condensate drain
Manometer for inlet pressure display
Pressure regulator
2 outlet valves with safety clutch
Wall mounting brackets

Notice: Compressed breathing air must have a dew point low enough to avoid condensation and freezing. Under known temperature conditions, the pressure dew point must be at least 5 °C below the lowest temperature to be expected. Otherwise, the pressure dew point must not exceed -11 °C. The upstream connection of a refrigeration dryer (e.g. from our ECOTROC KTN series) or an adsorption dryer (e.g. from our ECOTROC ATK or ATT series) is therefore necessary.

If you have any further questions, please do not hesitate to contact us.

Specifications

| Typ | Leistung* | | Abmessungen (mm) | | | | Anschluss** | Anschluss** |
|------------------|-------------------|-----|------------------|----|-----|-----|-----------------|------------------|
| Type | Capacity* | | Dimensions (mm) | | | | Connection | Safety couplings |
| | m ³ /h | cfm | A | B | C | D | Eingang Inlet | |
| PFU ₃ | 216 | 127 | 446 | 24 | 547 | 128 | 1/2" | NW7 |
| PFU ₂ | 216 | 127 | 446 | 24 | 440 | 128 | 1/2" | NW7 |

*bezogen auf 1 bar (abs.) und 20°C bei 7 bar ü Betriebsdruck | calculated at 1 bar (abs.) and 20°C at 7 bar g working pressure

**Anschluss Eingang optional in 3/4" ohne Aufpreis erhältlich. Bestell-Nummer: PFU₃-3/4

**Inlet connection available in 3/4" without any extra charge. Order code: PFU₃-3/4

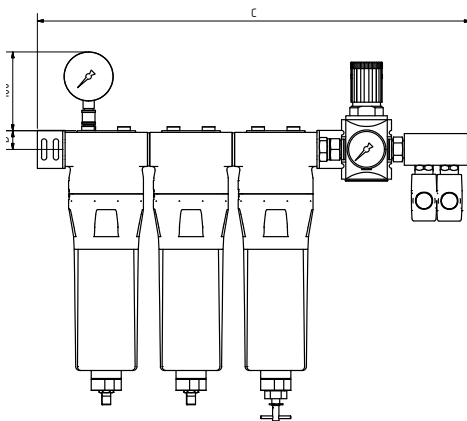
Specifications

| Spezifikationen | | Specifications |
|-------------------|--|-----------------------|
| Höchsttemperatur | 80°C | Max. temperature |
| Mindesttemperatur | 1,5°C | Min. temperature |
| Max. Arbeitsdruck | 16 bar ü/g | Max. working pressure |
| Material Gehäuse | Aluminium, KTL-Schutzschicht innen und außen <i>Aluminum, inside and outside cathodic dip-paint coating (KTL)</i> | Housing material |
| Farbausführung | schwarze und rote Pulverbeschichtung / RAL 9005-RAL3003 <i>black and red powder paint / RAL 9005-RAL3003</i> | Colour |

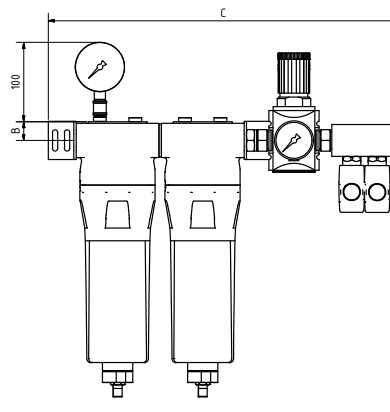
| Correction factors | |
|--------------------|--|
| Operating pressure | bar ü |
| | factor |
| | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 |
| | 0,38 0,50 0,63 0,75 0,88 1,00 1,12 1,25 1,37 1,49 1,62 1,74 1,86 1,98 2,10 |

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).

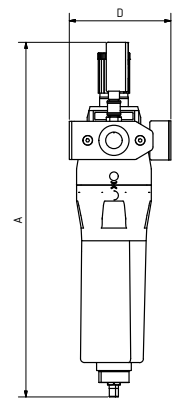
Dimensional drawings



PFU3



PFU2



PFU2 und PFU3

Approvals for pressure equipment

EU Approved for fluid group 2 according to Pressure Equipment Directive 2014/68/EU, module B+D (categoric 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.

KSI ECOCLEAN®

PFU Filter Combination



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



Differential pressure indicator



Residual oil indikator