



Donaldson  
FILTRATION SOLUTIONS

# Compressed Air Filtration

## Oil/water separator for compressed air condensate

ultrafilter International® UFA-AC

### MAIN FEATURES & BENEFITS

- Purification unit for the separation of compressed air condensate and condensates with difficult separation characteristics (e.g. stable emulsions) via cross-flow filtration
- Physical separation principle guarantees residual oil content of < 5 mg/l in water
- Intelligent control concept with programmable controller for safe unit operation inclusive indication via text display. Malfunction monitoring via alarm messages with potential free contacts and optional external network connection
- Optimized cleaning by comparing of input/ output extends the cleaning intervals (saving of operating costs)
- High thermic and chemical resistant ceramic membrane with long service life
- Frost protection with integrated heater
- High-quality, corrosion resistant materials for vessels, pipings, pumps, sealings and valves



ultrafilter International®

### INDUSTRIES



- Surface finishing



- Machine building industry and plant engineering / construction



- Chemical industry

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Donaldson®  
Ultrafilter

## PRODUCT DESCRIPTION

### Filtrate quality

The physical separation principle guarantees a filtrate quality of less than 5 mg/L to residual oil content (measured acc. ISO 9377-2) in water, which is usually lower than the limit value legally prescribed.

### Function

A pressure relief chamber (1) separates condensate and expanding air. The condensate then passes a sedimentation compartment (3) – easy to remove and therefore easy to clean. In order to get a maximum separation, free oil is prematurely rerouted via an overflow (2) into a can (16). Two coalescence filter (4) reduce the oil content of the condensate again, before it is filtered off after buffering in an internal tank in the actual process vessel (9).

Oil and water are apart-filtered due to their different molecule sizes, i.e. oil molecules are held back, water molecules pass the filtration module (11).

So prepared condensate can be introduced without further procedures into the public sewer net.

### Maintenance

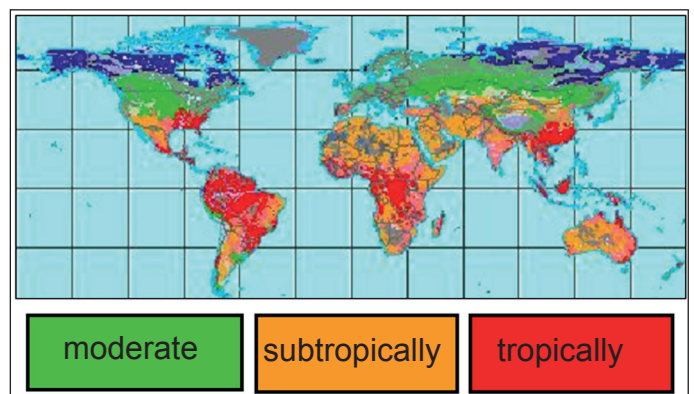
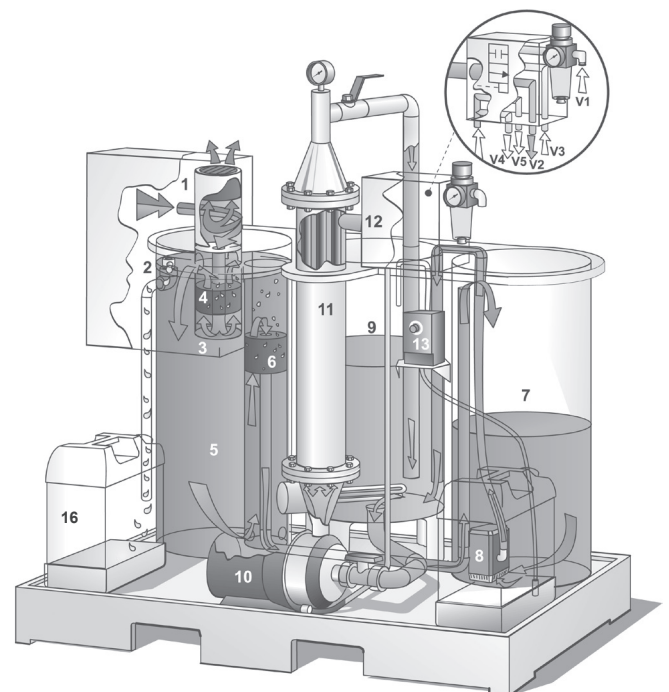
Remaining maintenance work is emptying the oil reservoir and the refill of the cleaner. All other ex-pirations were automated by the intelligent control. The LCD display indicates clear text information.

By the constant measurement of the current condensate entry the plant automatically adapts seasonal, production- or time of day-conditioned fluctuations. The most economical regeneration time of the filtration module is determined by an alignment of the condensate INPUT with the filtrate OUTPUT. The operating costs of the plant are minimized by the intelligent control.

### Typical applications for the oil/ water separators UFA-AC are:

- **Compressors for Compressed Air:**

Purification of air compressor condensate is particularly used with difficultly separable condensate, e.g. an emulsion.



## PRODUCT SPECIFICATIONS

Features:	Benefits:
Purification unit for the separation of condensate (oil/ water) via cross-flow filtration	Even condensates with difficult separation characteristics like stable emulsions can be separated very efficiently; residual content of water < 5 mg/l; test filtration possible at Donaldson laboratory possible on request.
Intelligent control concept	Intelligent controller for safe unit operation inclusive indication via text display. Malfunction monitoring (e.g. overflow and sensor monitoring) via alarm messages with potential free contact and optional external network connection.
Optimized cleaning	Comparison of INPUT / OUTPUT causes an extension of the cleaning intervals (saving of operating costs).
Ceramic membrane	High thermic and chemical resistant ceramic membrane with long service life and safe operation.
Frost protection	By decreasing to a minimum process temperature the heater is switched on automatically: the membrane is protected against freezing.
Corrosion resistant materials	Pipings and pump housings made of stainless steel, vessels made of chemical resistant polymers, sealings made of high resistant viton.
VITON sealing	Maximum safety for chemicals and often unknown compounds of condensate
Options	On demand the unit can be supplied with reasonable options like header tanks, catch pans, oil resistant float switches, network modules, further frost protection heaters.

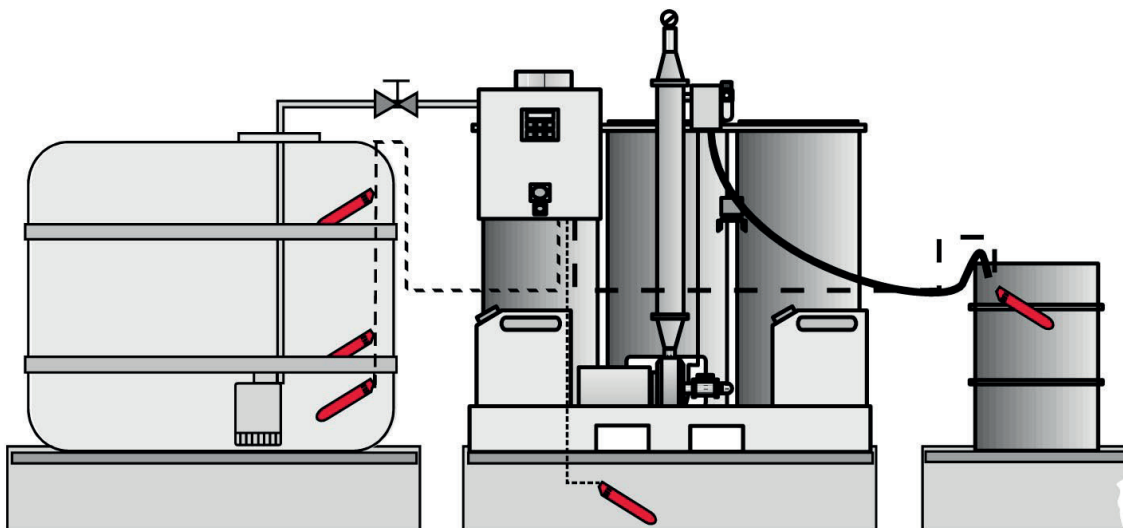
Materials:	
Vessel	PP recyclable
Filter / demister	PUR-foam
Membrane	Ceramic
O-Rings, sealing	VITON
Process pump	Stainless steel
Valve block	Aluminium
All sealings made of VITON	Only VITON guarantees highest possible safety for condensate with its various ingredients.
Consumption material	Different cleaning agents
Temperatures:	
Operating temperature	+1°C up to +70°C
PH-range of the membrane	1-14 up to +60°C

## PRODUCT SPECIFICATIONS

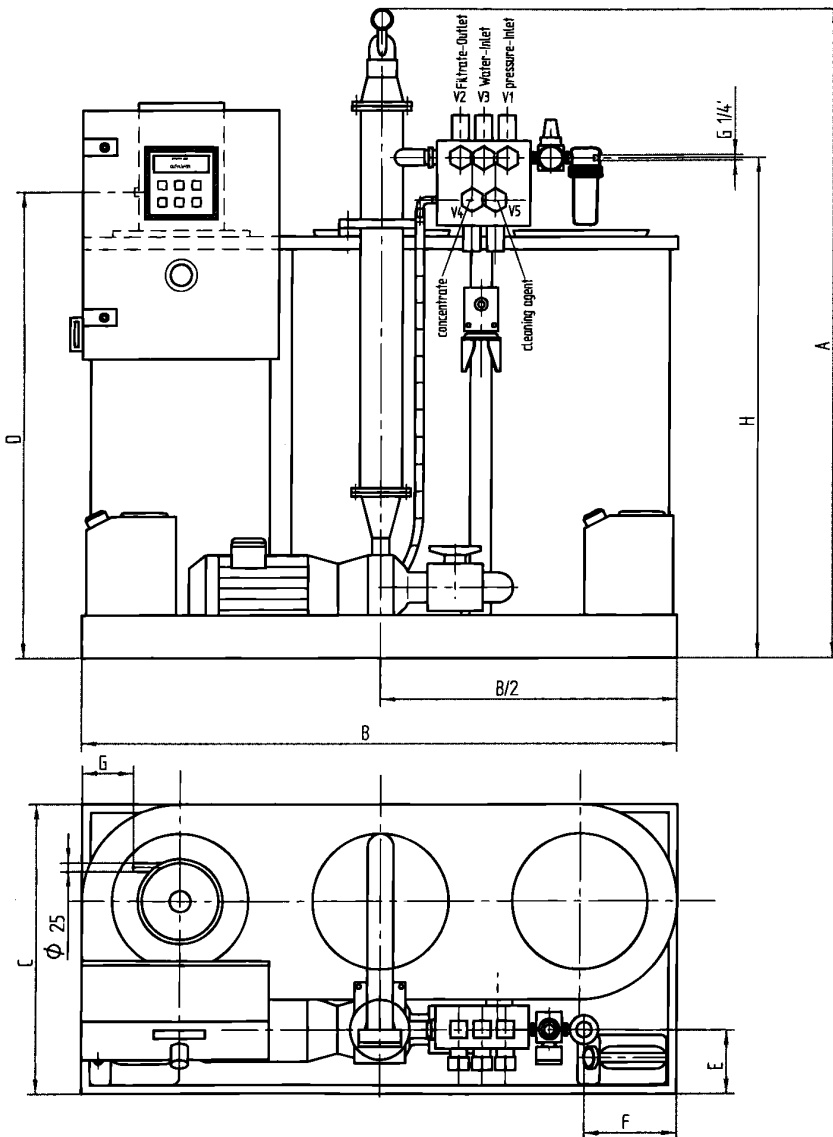
TYPE	Output* (l/h)	Compressor Performance (kW)	
		Continental Climate	Tropical Climate
UFA-AC	max		
0008	8	90	45
0016	16	160	90
0032	32	315	160
0064	64	710	315
0096	96	1025	550
0128	128	1420	710
0192	192	2050	1100
0256	256	2840	1420

\* related to 1 bar (abs) and 20 °C at intake of compressor and 7 bar (g) and 35 °C inlet temperature

## EXAMPLE OF A COMPLETE INSTALLATION



DIMENSIONS



V1 = compressed air:

V2 = filtrate:

V3 = water:

V4 = concentrate:

V5 = cleaning agent:

Pmin. = 5,5 bar;

G 1/4 at filter

G 1/2 in valve block

G 1/2 in valve block

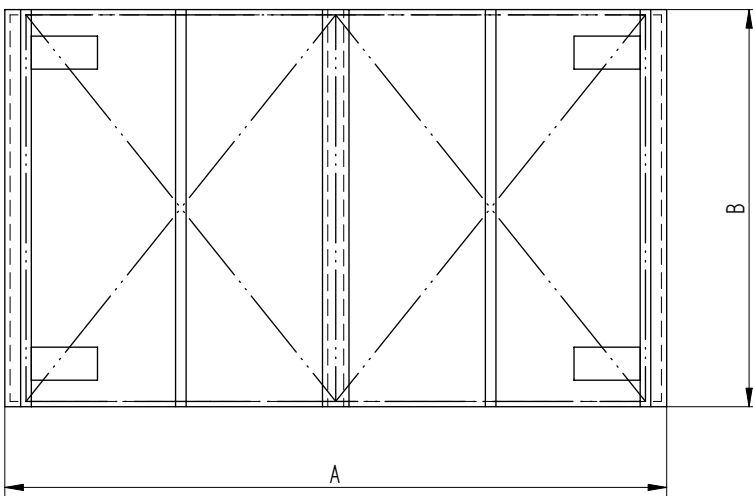
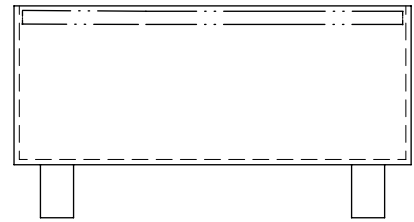
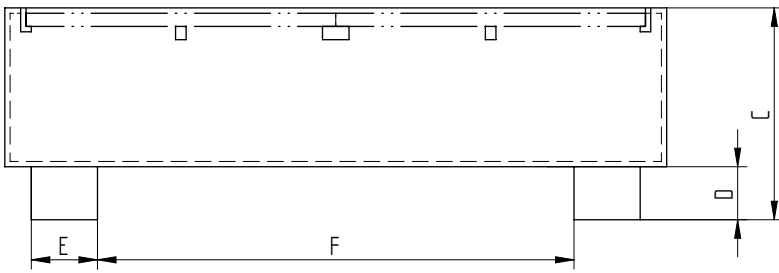
G 3/8 in valve block

G 3/8 in valve block

Type	Measurements					Volume	Electrical performance*
	A	B	C	D	G		
UFA-AC	mm	mm	mm	mm	mm	Housing	max.
	mm	mm	mm	mm	mm	Liter	kW
0008	1500	1050	700	1025	100	132	2.5
0016	1500	1050	700	1025	100	132	2.5
0032	1650	1500	800	1225	160	430	4.0
0064	1750	1500	800	1225	160	430	4.0
0096	1920	1660	900	1430	165	622	5.5
0128	2000	1840	960	1530	200	847	7.0
0192	2090	2060	1100	1630	275	1160	10.5
0256	2190	2300	1200	1800	320	1660	15.0

\* 3 x 400 V/ 50 Hz, alternatively 3 x 440 V/ 60 Hz available

CATCH PANS (OPTION)



To the overflow protection of the unit or a header tank, legally prescribed

Art. no.	Type	Dimensions mm						Gewicht kg	Volume l
		A	B	C	D	E	F		
331215	0008 /0016	1106	806	295	100	200	600	65	135
331216	0032 / 0064	1606	906	440	100	200	1100	120	430
331217	0096	1772	972	510	100	200	1266	145	630
331218	0128	1952	1072	550	100	200	1446	175	850
331219	0192	2172	1212	585	100	200	1666	210	1160
331220	0256	2412	1312	670	100	200	1906	260	1665
331221*	1100	1506	826	1035	100	200	1000	170	1100
331222*	1650	2106	826	1100	100	200	1600	235	1650

\* without grid