

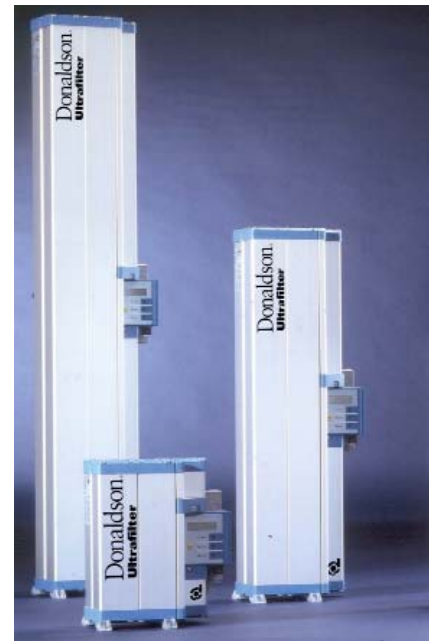
Ultrapure 2000 Standard Ultrapure 2000 Superplus Mini (Type 0005 to 0025)

Complete purification package including adsorption dryer, activated carbon adsorber, pre-, afterfilter and condensate drain

The Ultrapure 2000 breathing air systems are purification units based on adsorption dryers Ultrapac 2000 to supply breathing air in excess of all relevant international standards and medical prescriptions.

The purification consists of several stages:

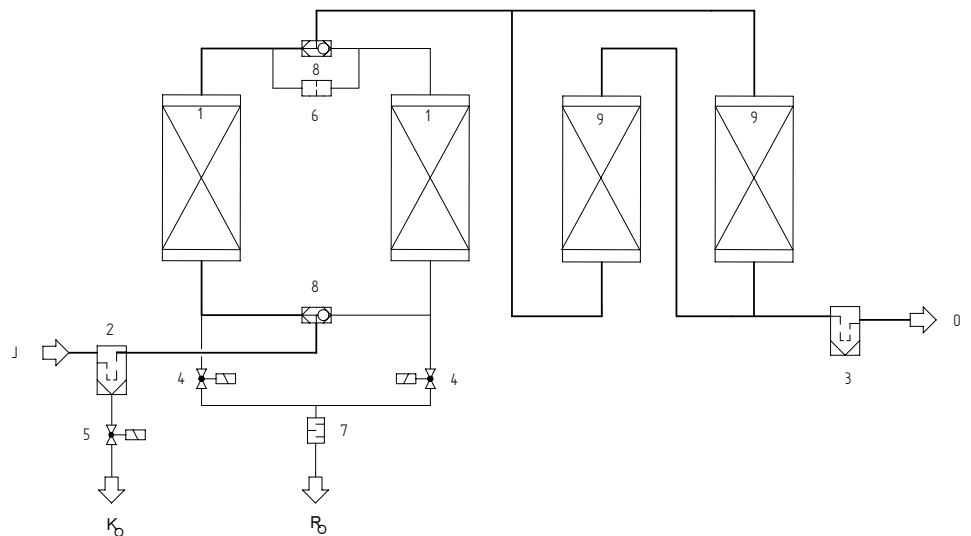
Compressed air is led through the inlet of the unit (J) and across the pre-filter (2). At this stage, the air is cleaned from particles and condensate. The condensate is removed via a membrane condensate drain (5). The following desiccant dryer reduces the water vapour content of the compressed air down to a pressure dew point of -40°C (equivalent to a remaining water content of 0.11 g/m^3). In the following purification stages (SP, AK, OX) (9) the content of CO_2 is adsorbed to a level far below 500 ppm the content of SO_2 below 1 ppm and the content of NO_x below 2 ppm. In the AK stage oil vapours, hydrocarbons, taste and odours are adsorbed to a level far below 0.003 mg/m^3 . In the OX stage a catalyst converts CO to CO_2 and thereby reduces the carbon monoxide level down below 5 ppm. The final particle filter (3) removes all particles which might be carried over from the adsorption and /or catalyst stages.



Ultrapure 2000 Superplus

Ultrapure 2000	Volume flow in m^3/h (1 bar, 20°C)*	Reg. air flow average in m^3/h (1 bar, 20°C)	Volume flow out (min.) m^3/h (1 bar, 20°C)	Pressure loss initial mbar
0005	5	0.85	3.94	80
0010	10	1.70	7.88	120
0015	15	2.55	11.82	145
0025	25	4.25	19.70	320

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



Ultrapure 2000 Standard Mini / Superplus Mini

Features Ultrapure 2000:	Benefits:
Purification package including adsorption dryer, CO-, CO ₂ -, NO _x - and SO ₂ removal, pre-, afterfilter and automatic condensate drain	Turnkey system, no additional installation costs; all components from one hand, therefore perfect technical match
Guaranteed and validated separation efficiency	Breathing air quality in excess of all relevant international standards, as e.g. Pharmacopée Européenne; DIN EN 12021 (DIN 3188); EN 737-3; BS4275; ANSI/CGA G.7.1; Z180, 1 M85; AS2299-1979; NZL5813
Adsorbent in cartridges	Easy storage, transport and installation; optimum fixation of desiccant; no risk of fluidizing of desiccant.
Compact, space saving design	Installation in smallest spaces, possible also as retrofit
Component exchange display	High operating safety, due to calculation of optimum exchange point for filter elements and desiccant cartridges
Unique Multifunction Block	All moving parts and all electronic components integrated in a function block, therefore easy and efficient maintenance

Features Ultrapure 2000 Superplus:	Benefits:
Intermittent operation standard	Link between dryer and compressor possible on central applications, therefore saving of regeneration air
Load dependent control	Adjustment of adsorption cycles to the actual inlet water load, therefore saving of regeneration air and reduction of operating cost
Self-Diagnosis-System	Sensor-controlled monitoring of regeneration air flow, therefore without-gap-monitoring of dryer functions and of system pressure.
Text Display	Display of all operating status, of fault indication and maintenance intervals in clear text messages
Info-Channel	Serial interface for transmission of alarm- and maintenance messages
Economizer-Function	Online calculation of optimum exchange point of filter elements by continuous evaluation of energy cost versus cost of replacement filter element

Sizing:													
f	4 bar(g)	5 bar(g)	6 bar(g)	7 bar(g)	8 bar(g)	9 bar(g)	10 bar(g)	11 bar(g)	12 bar(g)	13 bar(g)	14 bar(g)	15 bar(g)	16 bar(g)
25°C	0.69	0.82	0.96	1.10	1.24	1.38	1.50	1.50	1.50	1.50	1.50	1.50	1.50
30°C	0.69	0.82	0.96	1.10	1.24	1.38	1.50	1.50	1.50	1.50	1.50	1.50	1.50
35°C	0.63	0.75	0.88	1.00	1.13	1.26	1.38	1.50	1.50	1.50	1.50	1.50	1.50
40°C	0.48	0.58	0.68	0.77	0.87	0.96	1.06	1.16	1.25	1.35	1.45	1.50	1.50
45°C	0.38	0.45	0.53	0.60	0.68	0.75	0.83	0.90	0.98	1.05	1.13	1.20	1.28
50°C	0.30	0.36	0.42	0.48	0.54	0.60	0.66	0.72	0.78	0.84	0.90	0.96	1.02

Example: $\dot{V}_{nom} = 22 \text{ Nm}^3/\text{h}$, Inlet temperature = 30°C, Operating pressure = 10 bar (g)

$$\dot{V}_{corr} = \frac{\dot{V}_{nom}}{f}$$

$$\dot{V}_{corr} = \frac{22 \text{ m}^3/\text{h}}{1,50} = 14,66 \text{ m}^3/\text{h}$$

Calculated dryer size: Ultrapure 2000, type 0015

Product description:
Ultrapure 2000 Standard and Superplus: Complete purification package including adsorption dryer, CO-, CO ₂ -, NO _x - and SO ₂ removal, pre-, afterfilter and automatic condensate drain

Medium:
Compressed air

Operation pressure:
min. 4 bar (g), max. 16 bar (g)

Medium temperature:
min. 5 °C, max. 50 °C

Ambient temperature:
min. 4 °C, max. 50 °C

Compressed air consumption:
17% of the rated flow, in average

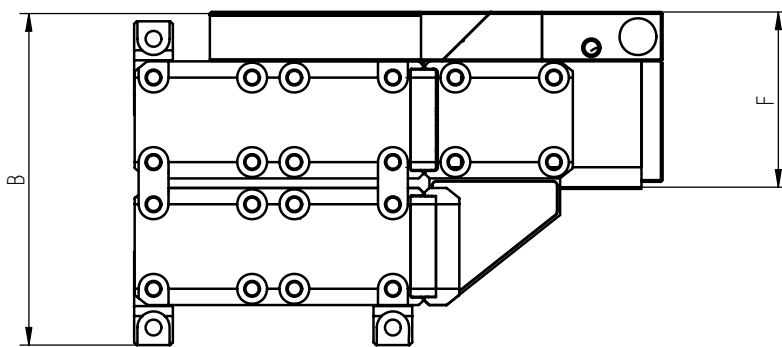
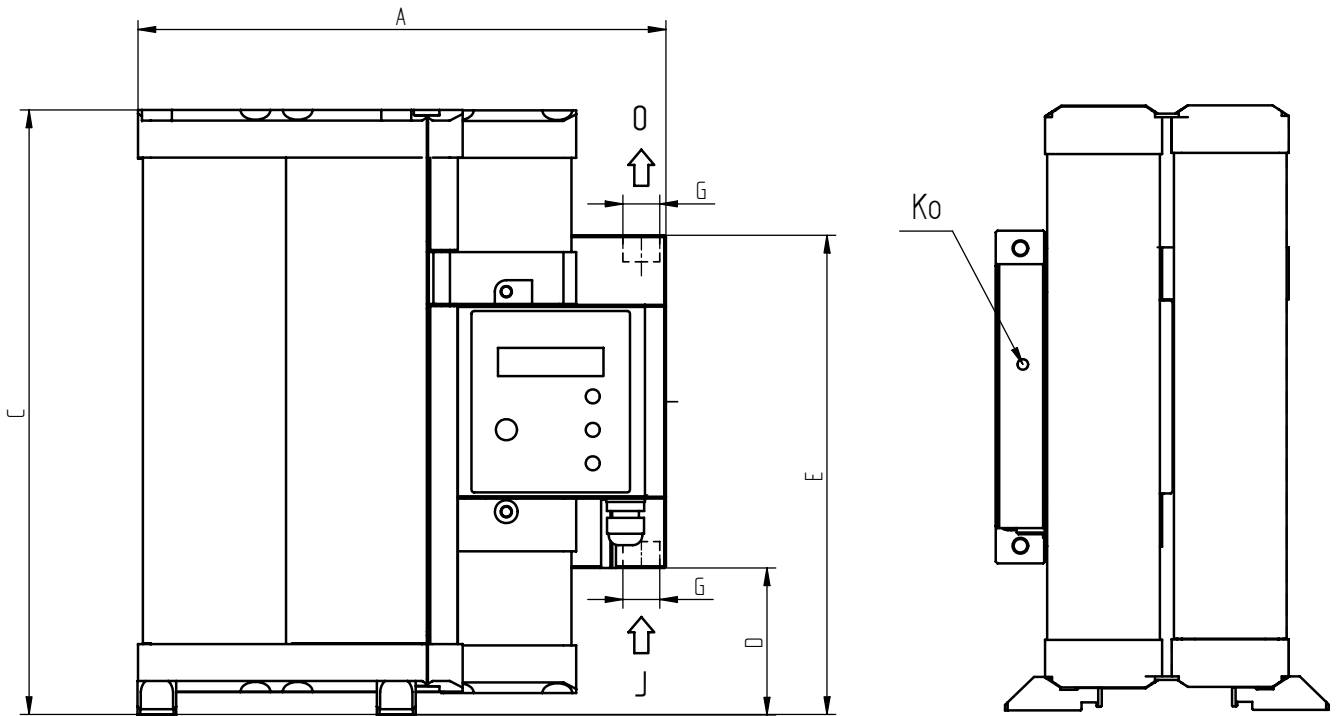
Power supply:
230 V/50 -60 Hz AC; 110 V/50 -60 Hz AC 24 V DC; 24 V AC on request

Power consumption:
approx. 4 W

Air quality related to standard inlet conditions:	
Particles	< 1 µm
Residual oil content	< 0.01 mg/m ³
Oil vapour and hydrocarbons	< 0.003 mg/m ³
Water vapour	DTP - 40°C (= 0.11 g/m ³)
CO ₂	< 500 ppm
CO	< 5 ppm
SO ₂	< 1 ppm
NO _x	< 2 ppm
Taste and odours	taste and odour free

Declaration of conformity:
acc. to 73/23/EC 97/23/EC

Ultrapure 2000 Standard Mini Ultrapure 2000 Superplus Mini



Ultrapure 2000 Mini							
Type	G "	A mm	B mm	C mm	D mm	E mm	F mm
0005	G 1/2	300	189	343	84	272	100
0010	G 1/2	300	189	591	208	396	100
0015	G 1/2	300	189	853	339	527	100
0025	G 1/2	300	189	1377	601	788	100