Dryer Systems

Breathing Air Units

Ultrapure

ALG 35 S

MAIN FEATURES & BENEFITS

- Breathing Air System with adsorption dryer, CO - CO_2 – NOx – and SO_2 removal, pre- and afterfilters and automatic condensate drains.
- Guaranteed and validated separation efficiency
- Optimal adaptation and generous dimensioning of the components, long life-times of the processing stages, low differential pressure of the unit; result: low operation costs
- All units in cabinet construction

ALG 35 S

INDUSTRIES

- Medical application

- Paint and finish industry

- Machine building industry and plant engineering / construction

Donaldson Filtration Deutschland GmbH
Büssingstr. 1
D-42781 Haan
Tel.: +49 (0) 2129 569 0
Fax: +49 (0) 2129 569 100
E-Mail: CAP-de@donaldson.com
Web: www.donaldson.com

PRODUCT DESCRIPTION

At the inlet (J) compressed air reaches a two stage filter combination (6,7). In this stage the air is separated from particles and condensate. The condensate is drained off the system via the electronic condensate drain (12).

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/m3). In the following processing stages (SP, AK, OX) CO_2 is reduced below 500 ppm, SO_2 is reduced to a level below 1 ppm and the content of NOx below 2 ppm.

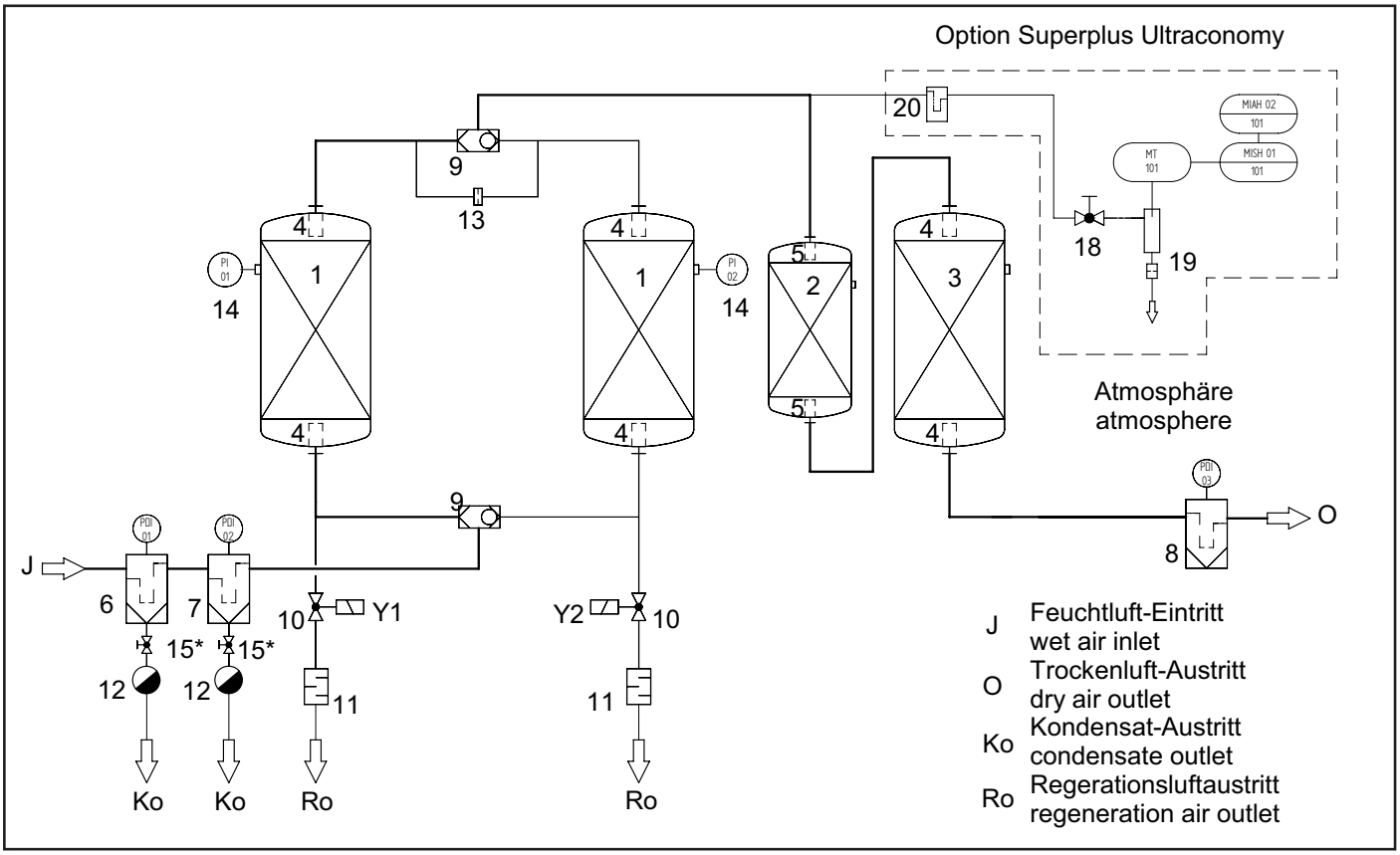
In addition to that oil vapour, hydrocarbon, tastes and odours are held back in the AK-stage up to a residual content below 0,003 mg/m³.

In the OX-stage the existing CO is transformed into CO_2 through a catalytic reaction. In this way the CO content is reduced to < 5 ppm.

In the after filter (dust filter) possible abrasion of the absorbent is removed.

Typical applications for the breathing air units are:

- **Breathing air:**
  Removal of oil and particles as well as tastes and odours, CO, CO_2, SO_2 and NO_X



PRODUCT SPECIFICATIONS

Features:	Benefits:
Breathing air package incl. absorption dryer, CO, CO_2 -, NOx and SO_2 removal, pre- and after filter and automatic level controlled condensate drain	Turnkey system, no additional installation required, all components from one hand, technically perfectly matched to each other
Guaranteed and validated separation efficiency	Breathing air quality in compliance with all relevant international standards, e.g. Pharmacopée Européenne; DIN EN 12021; DIN EN ISO 7396-1; BS4275; ANSI/CGA G.7.1; Z180, 1 M85; AS2299-1979; NZL5813
All dryers are in cabinet construction	Optimum protection against mechanical damage and against dirt
Display of the operating status by LED	High operating safety, since all operating status can be detected easily at any time
Intermittend operation standard	Link between dryer and compressor possible on central applications, therefore saving of compressed air
Optimal adaptation and generous dimensioning of the components	Long life-times of the processing stages, low differential pressure of the unit; result: low operation costs
Superplus Version including dewpoint dependent capacity control and text display	Saving of energy and operational cost due to adaption of the purge air consumption to the actual operating conditions. Indication of current dewpoint and function status as well as alarm and service messages on LCD text display in clear text ensures high operating safety of the adsorption dryer.

Technical Data	
Operating pressure:	min. 4 bar (g) / max. 16 bar (g)
Ambient temperature:	min. +4°C / max. +50°C
Medium temperature:	max. +50°C
Medium:	Compressed air
Power supply:	230 V or 115 V AC / 50 – 60 Hz or 24 V DC
Power consumption	approx. 40 W
Declaration of Conformity	
Type 35 S:	acc. to Directive 2014/35/EU
Pressure vessel – design, manufacture, testing	
Adsorber:	acc. to Directive 2014/29/EU
Filter:	acc. to PED 2014/68/EU

PRODUCT SPECIFICATIONS

ALG	Nominal flow inlet m^3/h (1 bar, 20°C)*	Regeneration air flow average m^3/h (1 bar, 20°C)	Air outlet (min.) m^3/h (1 bar, 20°C)	Pressure drop new mbar	Prefilter (Afterfilter) M (V)
35 S	35	7	28,5	160	0070

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

residual content of impurity at standard condition at the entry	
Particle	category 2, ISO 8573-1
Oil (liquid phase)	< 0,01 mg/m³
Oil vapour and hydrocarbon	< 0,003 mg/m³
Water vapour	DTP -40°C (= 0,11 g/m³)
CO_2	< 500 ppm
CO	< 5 ppm
SO_2	< 1 ppm
NOx	< 2 ppm
tastes and odours	tasteless and odourless

SIZING

Operating pressure bar (ü)	4	5	6	7	8	9	10	11	12	13	14	15	16
Correction factor overpressure (fp)	0,63	0,75	0,88	1,0	1,12	1,25	1,38	1,50	1,63	1,75	1,88	2,0	2,13

Entrance temperature °C	20	25	30	35	40	45	50
Correction value temperature (f_T)	1,1	1,1	1,1	1,0	0,8	0,7	0,5

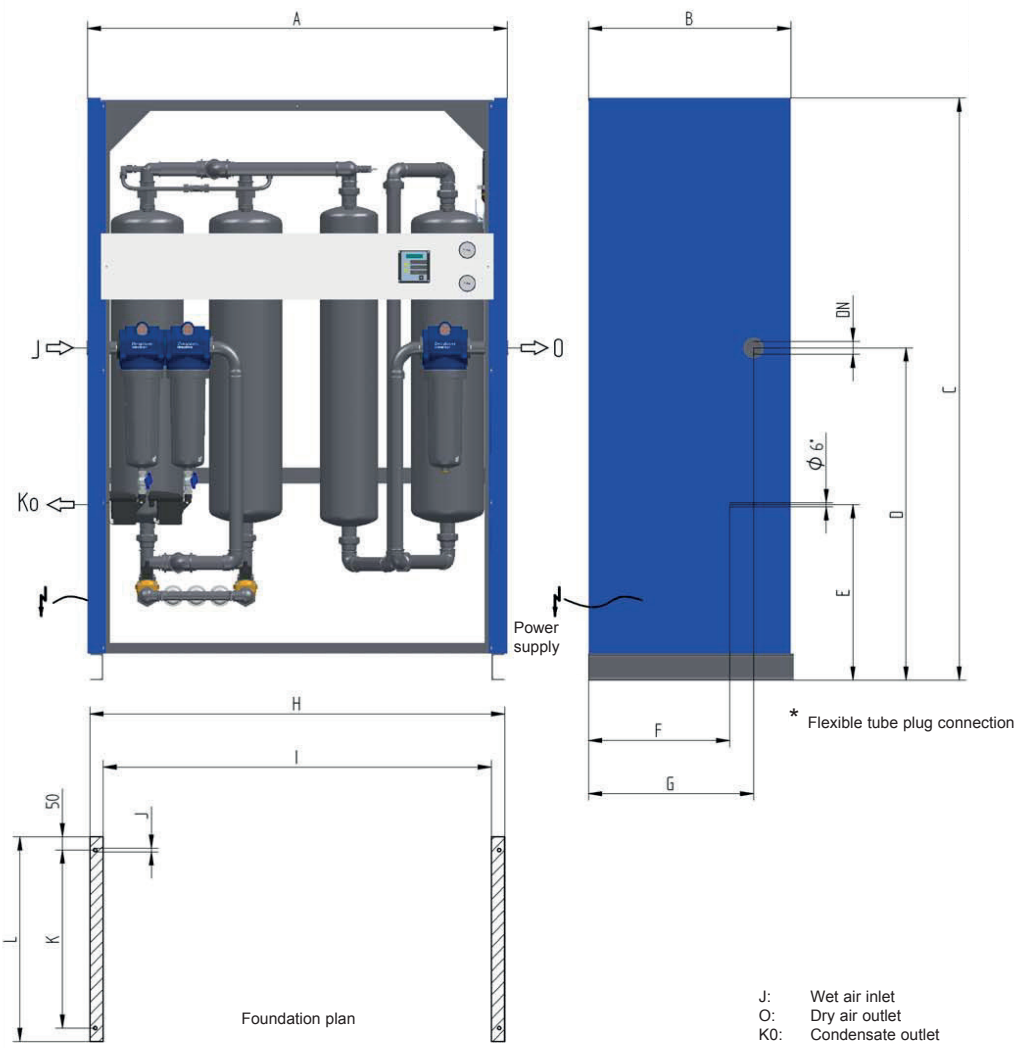
Example:

$\dot{V}_{nom}$ = 50 m³/h, inlet temperature = 30°C, operating pressure = 10 bar (g),

$$\dot{V}_{korr} = \frac{\dot{V}_{nom}}{f} = \frac{50\ m^3/h}{1{,}38 * 1{,}1} = 32{,}94\ m^3/h$$

Calculated dryer size:
ALG, type 35 S

DIMENSIONS



Type	DN "	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm	L mm	Weight kg
35 S	G 1/2	650	340	1060	700	310	255	255	640	620	6.5	215	315	70