

# ADSORPTION DRYER

## B-DRY 110-1200

(Heatless regenerated adsorption dryer)



### DESCRIPTION

B-DRY 110-1000 adsorption dryers have been designed for continuous separation of water vapour from compressed air thus reducing dew point. Operation of dryer requires two columns operated alternately. Adsorption takes place under pressure in first column while second column regenerates with a portion of already dried compressed air at ambient pressure. A dryer consists of two columns, filled with desiccant beads, controller with LCD display, valves, manometers, support construction and suitable filter housings with the required filter element. Proven robust design enables efficient and reliable operation, fast installation and simple maintenance.

### DRYER RATING ACCORDING TO ISO8573-1

Solid particles <sup>(1)</sup>	Water <sup>(1),(2)</sup>	Oil <sup>(1)</sup>
2	1-3	1

<sup>(1)</sup>Typical result based on standard configuration and nominal operating conditions

<sup>(2)</sup>Depending on specific design. Class 2 when operated at nominal operating conditions.

### TECHNICAL SPECIFICATIONS

Operating pressure	4 – 16 bar
Operating temperature	1,5°C to 60°C
Pressure dew points	-40°C (-25, -70)
Voltage, Frequency	230V, 50/60Hz
Power consumption	<60W
Protection class (controller)	IP 65
Filter (inlet) <sup>(3)</sup>	Super fine coalescing; residual oil cont. <0,01mg/m3; 0,01µm
Filter (outlet)	Dust filter; 1µm
Dew point dependent control	OPTIONAL, Only available when dew point sensor is connected!
Relay output for dew point warning	OPTIONAL, Only available when dew point sensor is connected!
Digital input for stand-by	STANDARD, Open contact 24 VDC
Communication	Profinet or Modbus (TCP/IP), Web server

<sup>(3)</sup>If dryer is supplied without inlet filter compressed air class 1 (ISO 8753-1) for solid particles and oil should be provided to the inlet of the dryer.

### MATERIALS

Columns, construction, support	Steel
Column inner protection	/
Column and construction outer protection	Epoxy painted
Desiccant support screen	Stainless steel
Valves	Brass, aluminium
Sealings	NBR
Fittings, Screws, plugs	INOX, brass, steel (zinc plated)
Lubricant	Shell cassida grease RLS 2
Outside protection	Powder paint coated (Epoxy-polyester base)
Desiccant	80% Molecular sieve 4A, 20% Silica gel

### SIZES

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Model	Conn. IN & OUT <sup>(6)</sup>	Inlet flow [Nm <sup>3</sup> /h] <sup>(4)</sup>	Outlet flow [Nm <sup>3</sup> /h] <sup>(5)</sup>	A [mm]	B [mm]	C [mm]	Mass [kg]	Volume [l] <sup>(7)</sup>	Filter
B-DRY 110	G 1"	110	86,0	719±5	422	1647	140	20	AAF 0186
B-DRY 150	G 1"	150	117,5	707±5	422	1897	156	25	AAF 0186
B-DRY 200	G 1"	200	157,0	707±5	471	1664	196	36	AAF 0306
B-DRY 250	G 1"	260	204,0	707±5	471	1914	236	45	AAF 0306
B-DRY 300	G 1 1/2"	320	251,0	860±5	535	1742	274	57	AAF 0476
B-DRY 400	G 1 1/2"	410	321,5	854±5	535	1989	295	70	AAF 0476
B-DRY 600	G 1 1/2"	590	462,5	854±5	671	2051	392	102	AAF 0706
B-DRY 800	G 2"	770	603,5	1051±10	701	2080	507	134	AF 0946
B-DRY 1000	G 2"	1000	784,0	1051±10	701	2140	597	164	AF 0946
B-DRY 1200	G 2"	1152	903,2	1207±10	701	2185	TBA	215	AF 1506

<sup>(4)</sup>Refers to 1bar(a) and 20°C at 7 bar operating pressure , inlet temperature 35°C and pressure dew point at outlet -40°C

<sup>(5)</sup>Outlet flow refers to typical assumption during regeneration phase for operating at nominal inlet flow conditions. Outlet flow includes average air losses of approximately 17,3 %.

<sup>(6)</sup>Refers to inlet and outlet filter housing.

<sup>(7)</sup>Volume per vessel.

**PRESSURE EQUIPMENT DIRECTIVE PED 97/23/CE (Fluid group 2)**

B-DRY 110 to B-DRY 300	Category 2, Module H
B-DRY 400 to B-DRY 1200	Category 3, Module H

**CORRECTION FACTORS**

To calculate the correct capacity of a given filter based on actual operating conditions, multiply the nominal flow capacity by the appropriate correction factor(s).

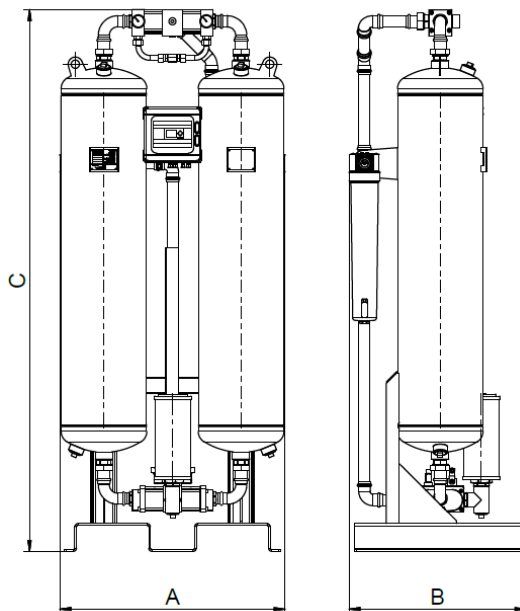
$$Corrected\ capacity = Nominal\ inlet\ flow\ capacity \times c_{OP} \times c_{OT} \times c_D$$

**OPERATING PRESSURE**

[bar]	4	5	6	7	8	9	10	11	12	13	14	15	16
[psi]	58	72	87	100	115	130	145	160	174	189	203	218	232
c <sub>OP</sub>	0,63	0,75	0,88	1	1,13	1,25	1,38	1,50	1,63	1,75	1,88	2,00	2,13

**OPERATING TEMPERATURE**

[°C]	25	30	35	40	45	50	55	60	<b>DEW POINT</b>			
[F]	77	86	95	104	113	122	131	140	[°C]	-25	-40	-70
c <sub>OT</sub>	1	1	1	0,97	0,87	0,80	0,64	0,51	[F]	-13	-40	94
									c <sub>D</sub>	1,1	1	0,7




**MAINTENANCE**

For maintenance, please follow operating manual. Check dryer operation weekly. Typical service interval:

- Filter elements: every 12 months in operation or sooner if required
- Silencers, valve components: every 24 months in operation or sooner if required
- Desiccant: every 48 months in operation or sooner if required

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	Our quality management system is certified by BUREAU VERITAS in conformity with ISO 9001:2008 Reg. number: 200285
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