

# ADSORPTION DRYER

## HPR-DRY 400-3600 BVA

(Heat regenerated adsorption dryer)



### DESCRIPTION

HPR-DRY 400-3600 adsorption dryers are designed for continuous separation of water vapour from compressed air thus lowering the dew point. HPR-Dry dryers have two columns that operate alternately. Adsorption takes place under pressure in the first column while the second column regenerates (heated ambient air for desorption + ambient air in vacuum mode for cooling). A dryer consists of two columns, filled with desiccant beads, a blower, heater, controller with an LCD display, valves, manometers, and a support construction. A proven and 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>Dependant on a specific design. Class 2 when operated at nominal operating conditions.

### TECHNICAL SPECIFICATIONS

Operating pressure	4 – 50 bar	
Operating temperature (inlet)	1,5°C to 42,5°C (for temperature >35°C apply correction factor)	
Ambient temperature	1,5°C to 50°C (check also blower suction conditions)	
Pressure dew point	-40°C (lower PDP on request)	
Voltage, Frequency	400V, 50Hz	
Protection class (controller)	IP 54	
Communication (on request)	Optional: PROFIBUS, PROFINET	
Filter requirement (inlet)*	Super fine coalescing; residual oil cont. <0,01mg/m3; 0,01µm	
Filter requirement (outlet)*	Dust filter; 1µm	
Column insulation	OPTIONAL	
Valve position switches	OPTIONAL	
Communications module (PROFIBUS/PROFINET)	OPTIONAL	
<b>DRYER TYPES</b>	<b>BVA (standard)</b>	
Desorption	Blower ambient air (vac.)	
Cooling	Blower ambient air (vac.)	
Blower suction conditions max.	25% RH at 40°C	50% RH at 30°C
	37% RH at 35°C	70% RH at 25°C
		90% RH at 20°C
Compressed air losses	0%**	

\* Filters are included as standard but not mounted on the dryer

\*\*A small quantity of compressed air is used to re-pressurise the vessels, to operate the valves and to measure dew point

### MATERIALS

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

**SIZES**

Model	Conn. IN & OUT <sup>(5)</sup>	Inlet flow [m <sup>3</sup> /h] <sup>(3)</sup>	A [mm]	B [mm]	C [mm]	Mass [kg]	Vessel Volume [l] <sup>(6)</sup>	Blower power [kW]	Heater power [kW]	Filter
HPR-DRY 400	DN50	2200	1400	800	2270	1200	108	1,3	3,5	HF 070
HPR-DRY 600	DN50	3400	1500	810	2320	1680	167	1,6	5,5	HF 150
HPR-DRY 780	DN50	4500	1700	800	2350	2160	221	1,6	7	HF 200
HPR-DRY 1000	DN50	5300	1750	950	2380	2280	266	1,6	8	HF 200
HPR-DRY 1200	DN80	6600	1900	1000	2550	2640	333	1,6	10	HF 200
HPR-DRY 1600	DN80	9200	2150	1000	2620	3120	474	4	14	HF 200
HPR-DRY 2000	DN100	11200	2200	1200	2750	4080	583	4	17	HF 200
HPR-DRY 2500	DN100	14500	2430	1200	2750	4560	769	7,5	22	HF 240
HPR-DRY 3000	DN100	17150	2600	1200	2880	4800	917	8,5	26	HF 240
HPR-DRY 3600	DN100	21100	2800	1350	2850	5760	1146	8,5	32	-

<sup>(3)</sup>Refers to 1bar(a) and 20°C at 50 bar operating pressure , inlet temperature 35°C and pressure dew point at outlet -40°C

<sup>(5)</sup>Refers to dryer inlet and outlet connection without filters.

<sup>(6)</sup>Volume per vessel

**CORRECTION FACTORS**

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

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

**OPERATING PRESSURE**

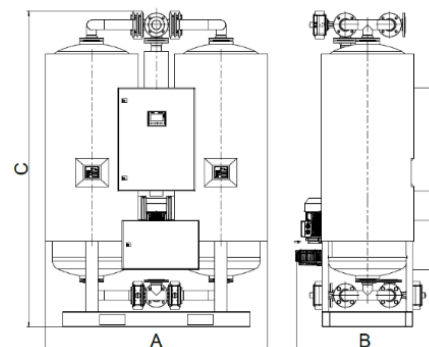
[bar]	15	20	25	30	35	40	45	50
[psi]	217	290	363	435	508	580	653	725
C <sub>OP</sub>	0,31	0,41	0,51	0,61	0,71	0,81	0,9	1

**OPERATING TEMPERATURE**

[°C]	25	30	35	40	42,5
[F]	77	86	95	104	108
C <sub>OT</sub>	1	1	1	0,7	0,52

**DEW POINT**


[°C]	-	-	-
[F]	-	-	-
C <sub>D</sub>	-	-	-



**MAINTENANCE**

For maintenance, please follow the operating manual. Check the dryer operation weekly.

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