

ADSORPTION DRYER

HPR-DRY 400-3600 BVL

(Heat regenerated adsorption dryer)

DESCRIPTION

HPR-DRY BVL 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 is regenerated (heated ambient air for desorption + cooling with water cooled air in a closed loop). A dryer consists of two columns, filled with desiccant beads, blower, electric heater, air-water heat exchanger, controller with an LCD display, valves, manometers, and support construction. A proven and robust design enables efficient and reliable operation, fast installation and simple maintenance. At version BVLS electric heater is replaced by heat exchanger and steam is used to heat up the air for regeneration.

DRYER RATING ACCORDING TO ISO8573-1

Solid particles ⁽¹⁾	Water ^{(1),(2)}	Oil ⁽¹⁾
2	1-3	1

⁽¹⁾Typical result based on standard configuration and nominal operating conditions

⁽²⁾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	
Filter requirement (inlet)*	Super fine coalescing; residual oil cont. <0,01mg/m ³ ; 0,01µm	
Filter requirement (outlet)*	Dust filter; 1µm	
Column insulation	OPTIONAL (Required for ambient temp. <10°C)	
Valve position switches	OPTIONAL	
Communication	OPTIONAL (Modbus TCP/IP, Modbus RTU, Profinet, Profibus)	
DRYER TYPES	BVL (standard)	BVLS (regeneration with steam)
	Desorption	Blower ambient air (vac.) Blower ambient air (vac.) (steam heated)
	Cooling	Blower ambient air (vac.) Blower ambient air (vac.)
Blower suction conditions max.	80% RH at 35°C or 35% RH at 50°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 repressurise 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

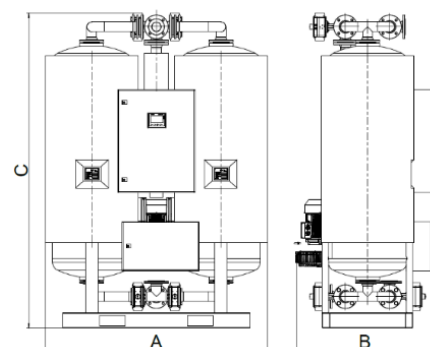
Model	Conn. IN & OUT ⁽⁵⁾	Inlet flow m ³ /h ⁽³⁾	A [mm]	B [mm]	C [mm]	Mass [kg]	Vessel Volume [l] ⁽⁶⁾	Blower power [kW]	Heater power ⁽⁷⁾ [kW]	Filter
HPR-DRY 400	DN50	2200	1400	1200	2300	1680	108	1,3	3,5	HF 070
HPR-DRY 600	DN50	3400	1500	1300	2350	2280	167	1,6	5,5	HF 150
HPR-DRY 780	DN50	4500	1700	1350	2350	2760	221	1,6	7	HF 200
HPR-DRY 1000	DN50	5300	1750	1300	2400	2880	266	1,6	8	HF 200
HPR-DRY 1200	DN80	6600	1900	1400	2500	3600	333	1,6	10	HF 200
HPR-DRY 1600	DN80	9200	2000	1500	2600	3840	474	4	14	HF 200
HPR-DRY 2000	DN100	11200	2250	1650	2750	5304	583	4	17	HF 200
HPR-DRY 2500	DN100	14500	2380	1750	2700	6000	769	7,5	22	HF 240
HPR-DRY 3000	DN100	17150	2570	1800	2850	6240	917	8,5	26	HF 240
HPR-DRY 3600	DN100	21100	2800	1800	2900	7488	1146	8,5	32	-

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

⁽⁵⁾Refers to dryer inlet and outlet connection without filters.

⁽⁶⁾Volume per vessel

⁽⁷⁾In case of BVAS version the same power should be considered but steam is used as an energy source. For electric connection just the power of blower must be considered.



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 FLOW CAPACITY x C_{OP} x C_{OT}

OPERATING PRESSURE

[bar]	15	20	25	30	35	40	45	50
[psi]	217	290	363	435	508	580	653	725
C _{OP}	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 _{OT}	1	1	1	0,7	0,52

DEW POINT

[°C]	-	-	-
[F]	-	-	-
C _D	-	-	-

MAINTENANCE

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

INFORMATION IN THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE

	Our quality management system is certified by BUREAU VERITAS in conformity with ISO 9001:2015 Reg. number: 200285	
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