COMPRESSED AIR TECHNOLOGY

Desiccant Dryers

DB SERIES

BENEFITS AND FEATURES

- External-heat regeneration system
- No loss of compressed air for regeneration or cooling
- Pressure drop lower than 0.1 bar at full capacity
- Sophisticated PLC control and communication unit
- Parallel drying phase for steady dewpoint performance
- Low maintenance and long-life desiccant

Design specifications of DB series:

- Fully-automatic and continuous cycle control
- Steel support frame with foundation holes
- Pressure vessels according to various industrial design codes and regulations
- „Heavy-duty“ blower system
- Easy-access to the heating system and the single-replaceable elements
- Control box with IP54 rating
- Temperature and pressure indicators on both vessels
- Compressor Start-Stop function linked into drying cycle
- Dewpoint-controlled cycle with indication and dewpoint setting
- PLC (Siemens S-series) controls offering:
  - Fully automatic cycle
  - Alarm indication for all important dryer functions
  - Memory of alarm history
  - Fast-run cycle test
  - Display of required service intervals
  - Communication port to remote systems (optional)
- Thermal insulation of all hot parts
- Top-to-bottom flow direction avoiding fluidisation of adsorbent bed
- HQ-Delsorb adsorbents for most economical use
- Epoxy painting RAL 9001
- All butterfly valves for lowest pressure drop

Available options according to customer specifications, such as:

- Installed filtration package
- By-pass over complete dryer
- Different PLC types
- Outdoor installation
- Pressure dewpoint -70°C
- Steam regeneration system
- Other options available on request

General Data	
Medium	Compressed air
Housing	Steel support frame
Colour	Epoxy-painting RAL 9001 (white)
Location	Indoors

Design Data	Min.	Nom.	Max.
Operating pressure	5 bar (g)	7 bar (g)	10 bar (g)
Inlet temperature	+5°C	+35°C	+45°C
Ambient temperature	+0°C	+25°C	+35°C @60% RH +30°C @80% RH

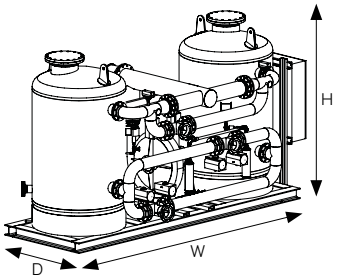
● standard ○ optional – not available

Model	Flow Rate*	Dimensions			Weight	Connection (Flange)	el. Connection	Power		Power Consumption**
	20°C/1 bar(a)	Width	Depth	Height				Fan	Heating	
	m³/h	mm	mm	mm	kg		V/Ph/Hz	kW	kW	kW
DB-22	710	2,160			1,400				9	6.6
DB-23	985	2,230	1,590	2,925	1,500	DN 80		3	13.2	9
DB-24	1,675				2,000				21.3	15
DB-25	2,180	2,420			2,400				32.4	19.3
DB-26	2,595	2,730	1,890	2,985	2,900	DN 100		5.5	40.8	23
DB-27	3,385	2,830			3,500				55.8	29.8
DB-28	4,620	3,640	2,550		4,700		400/3/50	7.5	66.3	40.6
DB-29	5,540	3,840	2,450	3,270	5,900	DN 150			80.1	49.1
DB-30	6,860	3,940	2,520		6,900				96.9	60.4
DB-31	8,310	4,040			7,700			11	102	74.8
DB-32	9,370	5,380	2,425	3,035	10,500				114	84.1
DB-33	10,885				11,500	DN 200			132	98.1
DB-34	11,915	5,580	2,545	3,085	12,500			15	144	107.3
DB-35	13,550	5,625	2,595		13,500				162	121.4

* Nominal dryer capacity according to DIN ISO 7183. pressure dew point -40°C / 100% RH

** Power consumption at full load (design conditions)

The capacity of the dryer is based on the intake volume of the compressor at 20°C, 1 bar(a) | Technical data and specification are subject to change without prior notice



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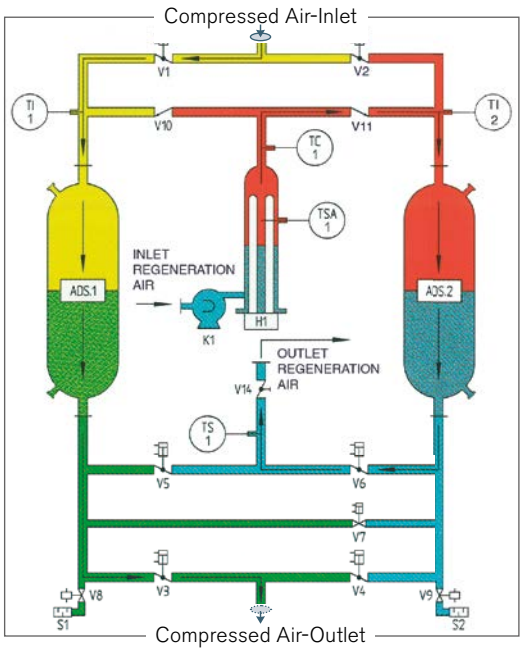

Drying and regeneration principle

Drying and regeneration cycle of DB dryers:

- Drying time is 6 hours minimum.
- The dewpoint controller will extend until complete saturation is reached
- Depressurisation time lasts 10 minutes
- Heating period is temperature controlled and depends on the load
- Cooling with ambient air during 75 minutes
- Pressuration time of regenerated adsorber lasts 10 minutes
- Stand-by time until adsorption time of drying adsorber is completed
- Change-over period of parallel drying for 10 minutes

Top to bottom flow direction in all cycle phases offers the following advantages:

- No desiccant fluidisation at compressor start-up
- The fan is not loaded with warm, humid and dusty regeneration air
- No ambient moisture reaches the outlet of the dryer
- No compressed air is needed to support the cooling process
- Compression heat of the fan is used for regeneration

Correction factors for inlet temperature and operating pressure (F_1)							
		Inlet pressure bar (g)					
Inlet temperature		5	6	7	8	9	10
°C	30	0,97	1,13	1,30	1,49	1,62	1,78
	35	0,69	0,85	1,00	1,12	1,25	1,37
	40	0,43*	0,60	0,74	0,85	0,95	1,02

For other operating conditions or special conditions please contact your local sales representative.

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