



# DFRB & DFRD series

**Air desiccant dehumidifiers**





## Description

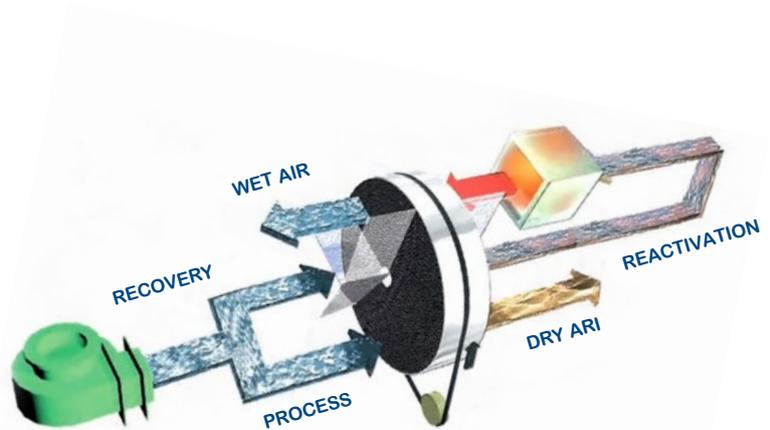
### DFRB series

Designed to occupy a minimum of space, these compact stainless steel units incorporate a silica gel desiccant rotor. This provides maximum efficiency in retaining molecules of water vapour extracted from process air flow while the rotation assures continuous and uniform drying. A series of metal plates inside the unit ensures that the air flow supplied by the fan goes through different areas of the rotor. The rotor cross section is divided into three sectors separated by special seals:

- One air stream (process air) passes through the largest of the three sectors of the rotor and leaves the unit as dry air with a reduced moisture content.
- A second air stream (reactivation air) is first heated by a PTC (\*) heater and is then able to penetrate the holes in the silica gel wheel, thereby extracting water vapour previously retained by the process sector and removing it to the outside air.
- This second or reactivation air flow passes initially through a heat recovery section which minimises the heat losses between the above two sectors which can result from rotation of the rotor. This reduces the power consumption of the heater and minimizes the temperature rise of the process air flow.

### DFRD series

When the required dry air conditions are really dry air conditions are really demanding, the process air can not be mixed with outside air which has too high a moisture content. For these demanding conditions the process and the reactivation air flows are kept separate by the use of two independent fans. With our DFRD series we can obtain very low dew point temperatures.



(\*) PTC –Positive Temperature Coefficient- heater or thermistor is a self-regulating semiconductor heating element that dissipates heat according to the air flow in contact with its elements, and this relates directly to the electrical power consumption of the unit. As drying capacity is proportional to reactivation power, by increasing or decreasing the heated air flow we can regulate the drying capacity of the unit. This effect can be clearly observed on the ammeter on the front panel.

Our DFRB series units are ideal for spaces where there is no ducted air conditioning or where the system requires additional control of air humidity.



## DFRB & DFRD series Typical applications



### CONTROL AREAS

Pharmaceutical industry, laboratories, test rooms, warehouses, museums, etc...



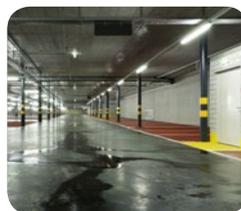
### TEMPORARY DRYING

Construction, building and repair work, assembly, etc...



### INDUSTRIAL PROCESSES

Requiring specific conditions of relative humidity.



### DAMAGE RESTORATION

Causes by floods, burst water mains, leaks, etc...



### COLD ROOMS

Where condensation on products is unacceptable and/or increases electrical consumption.

DFRB & DFRD serie technical information															
Model	Dry air	Available external pressure	Wet air	Available external pressure	Power (kW)			Power supply	Current (A)		Overall dimensions (mm)			Weight	Wn
	(m <sup>3</sup> /h)	(Pa)	(m <sup>3</sup> /h)	(Pa)	PTC heater	Motors	Total	Electric	Nominal	Magnetic	Length	Width	High	(Kg)	(Kg/h)
DFRB-016E	140	60	45	40	0,84	0,06	0,9	230V/1N/50Hz	3,9	4 x IN	305	460	390	15	0,5
DFRB-020E	150	100	40	50	1,2	0,2	1,4	230V/1N/50Hz	6	4 x IN	390	450	430	21	0,8
DFRB-026E	200	100	50	40	1,3	0,3	1,6	230V/1N/50Hz	7	4 x IN	390	450	430	22	1,2
DFRB-036E	300	250	90	40	1,8	0,4	2,2	230V/1N/50Hz	9,5	4 x IN	510	450	525	33	1,6
DFRB-045E	350	150	100	50	2,1	0,4	2,5	230V/1N/50Hz	11	4 x IN	510	450	525	35	1,9
DFRB-060E	500	150	180	100	3,4	0,2	3,6	400V/3N/50Hz	6	5 x IN	700	695	785	66	2,7
DFRB-090E	700	200	250	100	4,5	0,3	4,8	400V/3N/50Hz	7	5 x IN	700	695	785	75	4,2
DFRD-036E	300	300	90	100	2,4	0,5	2,9	230V/1N/50Hz	11	4 x IN	510	660	525	40	1,4
DFRD-045E	350	400	100	100	2,5	0,5	3	230V/1N/50Hz	12	4 x IN	510	660	525	45	1,7
DFRD-060E	500	350	150	320	4,5	0,5	5	400V/3N/50Hz	8	5 x IN	700	960	785	75	3
DFRD-090E	700	470	210	320	6,5	0,5	7	400V/3N/50Hz	11	5 x IN	700	960	785	85	4,2

1. Nominal drying capacity (Wn) for process and reactivation air inlet conditions: 20° C & 60% H.R.

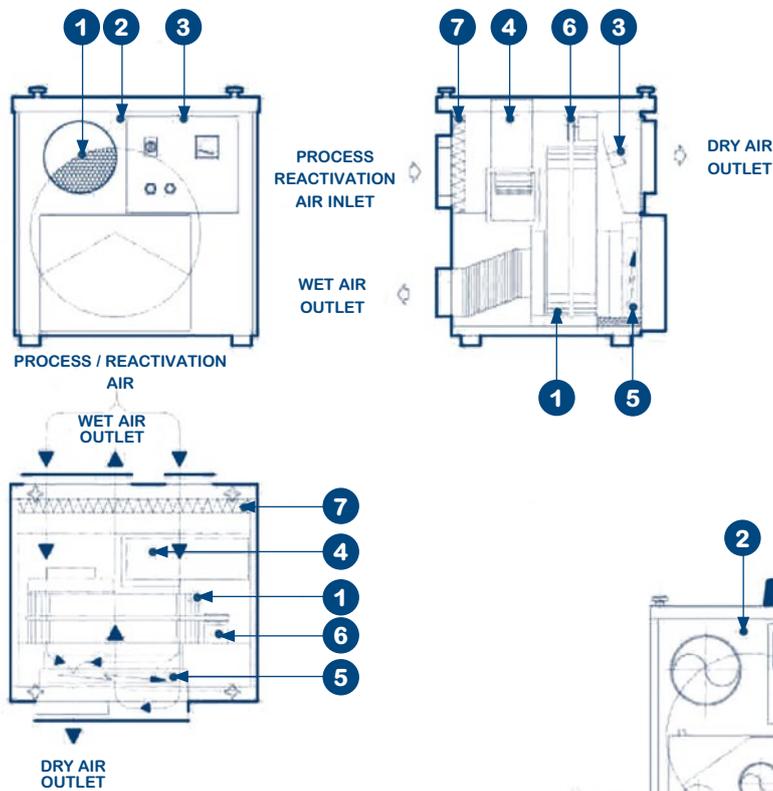
For different ones, please check specific model technical data sheet.

2. Units efficiency under nominal reactivation built-in heater power.

3. Technical data are subject to change without prior notice.

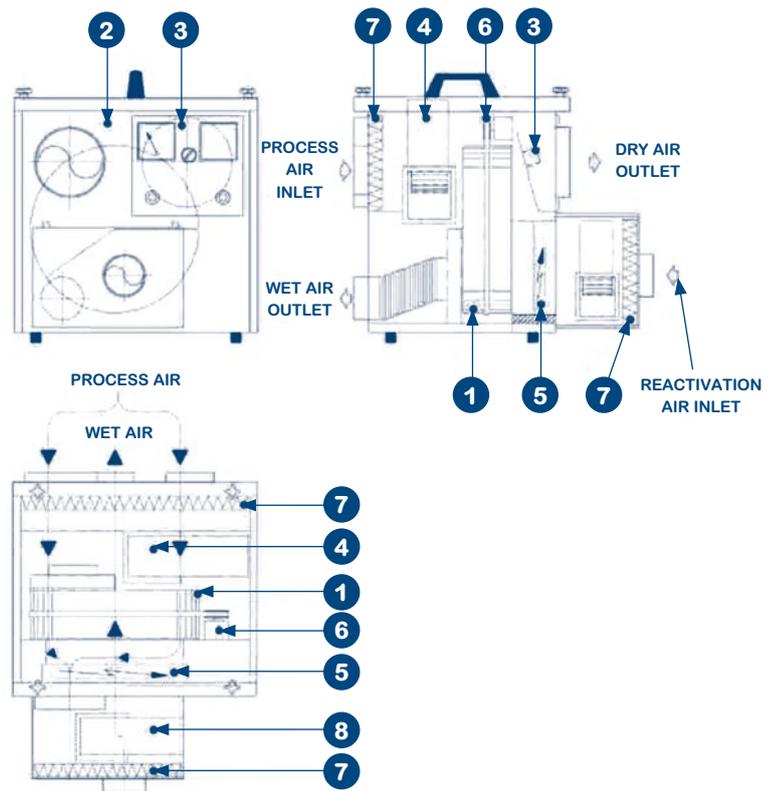


## Main component identification and airstreams layout



## DFRB series

1. Desiccant rotor.
2. Stainless steel casing.
3. Electrical control box.
4. Airfan.
5. Reactivation air heater.
6. Rotor driving device.
7. Air filter



## DFRD series

1. Desiccant rotor.
2. Stainless steel casing.
3. Electrical control box.
4. Process fan.
5. Reactivation air heater.
6. Rotor driving device.
7. Air filter.
8. Reactivation fan.