

# DP product range

## Air dehumidifiers for industrial processes



Many configurations

Casing in stainless steel double skin

High performance desiccant rotor

High efficiency fans with EC motor

Programmable logic controller (PLC) with integrated controls (humidity, temperature and air flow)

Simple maintenance



### Description

The DP range of dehumidifiers is designed to meet the different needs of users in industry, particularly for production and packaging environments and drying processes.

DP rotary dehumidifiers operate using the solid adsorbent air dehumidification process. The DP are equipped with a continuously regenerated high performance PPS silica gel desiccant wheel. They also include a double skinned 30mm insulated stainless steel casing, fans with EC motor (electronic commutation), single or double stage filtration, a regeneration heating coil, a power and control panel controlled by a PLC.

### Operating principle

The DP system uses two independent, counter-current air flows through the slowly and continuously rotating desiccant wheel. The main flow, the process air to be treated, is dried.

The secondary flow, the regeneration air, is smaller in volume and is used to remove the moisture retained by the desiccant wheel. Two fans set the two air streams in motion.

Silica gel is a highly hygroscopic material capable of retaining water vapour from the ambient air. As the air passes through the wheel, it loses the moisture retained by the silica gel. The dry air can then be used directly.

The regeneration air removes the moisture retained by the silica gel from the wheel.



## Applications

The DP range is naturally used in all industrial process applications in the food, pharmaceutical, cosmetics and health care sectors, such as production and packaging environments and drying processes.

The units are designed to treat air and to be installed in environments between -15°C and 40°C.

The control of hygrometry makes it possible to :

- Increase the productivity of drying systems
- Reduce airborne contamination
- Improving the quality of hygroscopic materials
- Ensuring the fluidity of powders
- Avoid condensation
- Drying the products
- Improve product quality
- Increase profitability and reduce losses due to sticking and clogging
- Improving health, safety and working conditions



## Configuration

In addition to the adsorption air dehumidification system, the DP units can be configured with the following equipment and functions:

- |   |  |   |                                     |
|---|--|---|-------------------------------------|
| → | <b>Configurable access easement (left or right)</b>      | → | <b>Control</b>                      |
|   |  | • | Regeneration temperature            |
|   |  | • | External start and operation return |
| → | <b>Filtration</b>  | • | Rotor rotation guard                |
| • | Pre-filtration from G4 to F9                             | • | Operating time                      |
| • | Final filtration from F8 to H14                          | • | Filter guard                        |
|   |  | • | TCP IP communication with Ethernet  |
| → | <b>Regeneration heater</b>                               |   |                                     |
| • | Electric heater  | → | <b>PID control</b>                  |
| • | Air/steam heat exchanger                                 | • | Humidity                            |
| • | Air/water heat exchanger                                 | • | Process air flow rate               |
| • | Air stream gas burner                                    | • | Regeneration air flow rate          |
| → | <b>Integrated heating or cooling in additional units</b> | • | Pre-treatment temperature           |
| • | Chilled air/water heat exchanger                         | • | Post-treatment temperature          |
| • | Air/hot water or water/steam exchanger                   |   |                                     |
| • | Electric heater  |   |                                     |

Each DP is equipped with an electrical cabinet containing the power and control elements, including a PLC with a control screen.

The PLC manages the following functions:

- Start and stop sequence
- Machine safety
- Faults

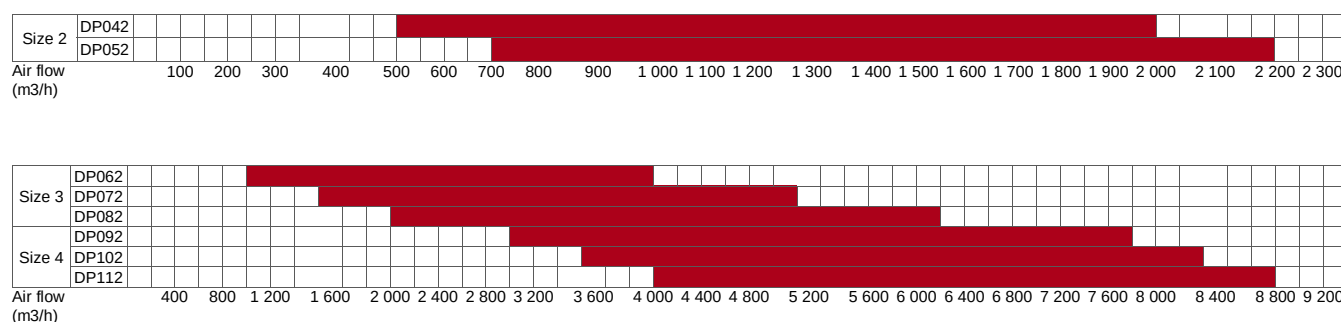
The following functions are available on the screen:

- Operating mode
- Faults
- Setpoints and control parameters

## Selection

The size of a DP unit depends mainly on the face speed of the air on the internal components, and therefore on the air flow rate to be treated.

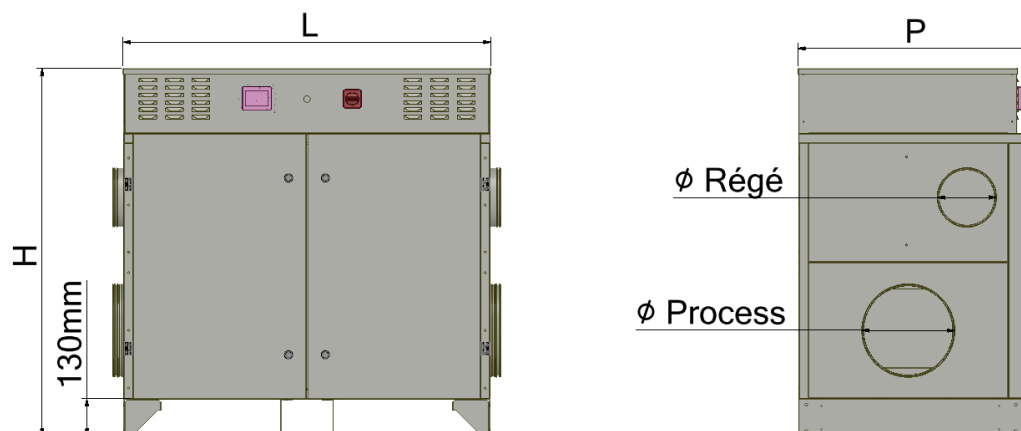
The following quick selection tables are based on the desiccant wheel alone.



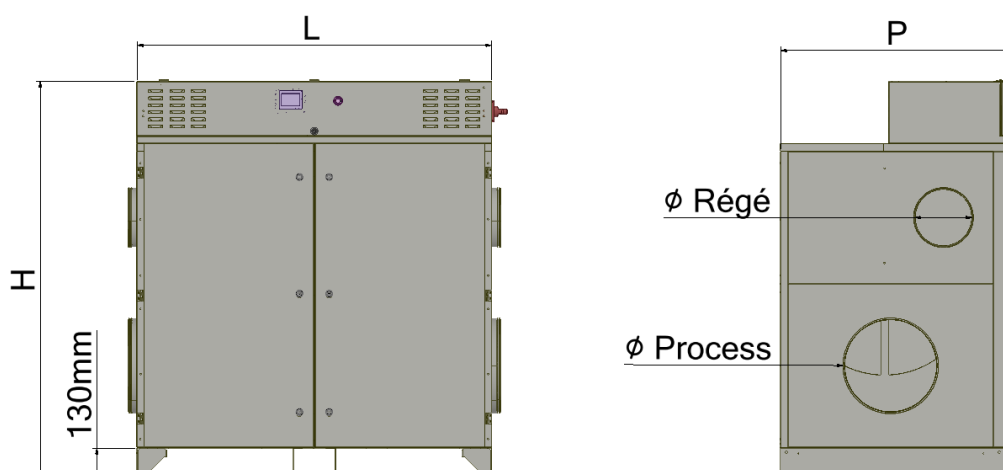
## Dimensions

The DP units consist of a central block and an electrical cabinet on the upper part, to which additional upstream or downstream modules (process air and/or dry air) can be added.

### Size 2



### Size 3 & 4



	Length	Height	Depth (P)	Ø process	Ø régénération
Size 2	1362	1253	810	315	200
Size 3	1636	1685	1025	400	250
Size 4	1946	1837	1298	630	315

Dimensions in mm