

O DryAir4Food

Технические характеристики

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Dehumidification

CLEAN, DRY AIR FOR FOOD PRODUCTION

For installations of all sizes

- Maximum product quality
- Bactericidal control system
- Maximum humidity control

In the food industry, constant monitoring of the relative humidity level of the air is essential to ensure the highest quality of the finished product. **Dehumidifying the ambient air** with the highest degree of hygiene is crucial for the transport and storage of ingredients such as flour, cocoa, milk and flavourings. With particular reference to hygroscopic substances, it is essential that the product humidity is as desired for production under all environmental conditions.

Starting from a long experience in the food sector, the PiovanGroup has developed a **range of dehumidifiers** dedicated to the **food industry**. These dehumidification systems are specifically designed for the indirect contact of foodstuffs with process air. Specifically, the dry air avoids the stagnation of food ingredients on the walls, thus guaranteeing maximum hygiene and food safety, reducing system cleaning costs and increasing the quality of the finished product.

PiovanGroup dehumidifiers also **avoid the contamination of food powders** with external bacterial agents. Each dehumidification unit is in fact equipped with an **air sanitisation system** that prevents bacterial proliferation during the moisture removal phase. All the parts in contact with the process air are in stainless steel. Piovan dryers are also certified according to EC regulation 1935/2004.



DryAir4Food

DRYER FOR THE FOOD INDUSTRY

Up to 3,000 m³/h

- Extremely compact footprint
- Patented rotorsanitisation system
- Internal water circuitry

DryAir4Food is the dryer for ambient air dehumidification suitable for food processes that treat hygroscopic ingredients such as **sugars and food powders**, including flours and cocoa.

This dryer is equipped with **three filtration levels** and is suitable for indirect contact with food. As well as meeting the prerequisites common to all machinery in this industry, such as height-adjustable feet and IP54 control panel, DryAir4Food also features a **state-of-the-art control system** for “**Industry 4.0**”. The **process air flow control with inverter** and the **possibility of communicating with SCADA systems via the Profinet and Profibus communication protocols** are definite strengths that place this product at the leading edge of the technologies currently available on the market.

DryAir4Food

Dryer for the food industry

Benefits:

- Smaller footprint than the competition
- Use of materials suitable for contact with process air
- Water circuitry integrated in the machine
- Two selectable filtration configurations
- Height-adjustable feet for the food industry
- Profinet communication protocol (optional PLC version)
- Inverter (PLC version only)
- IP54 control panel
- Patented rotor sanitisation system



Starting from a solid experience in the treatment and storage of sugars and flours for human consumption, Penta – in cooperation with Piovan's R&D department – has developed DryAir4Food, the new dryer with three filtration levels, approved for indirect contact with food (complete configuration). As well as meeting the prerequisites common to all machinery in this industry, such as height-adjustable feet and IP54 control panel,

DryAir4Food also features a state-of-the-art control system, designed with "industry 4.0" in mind.

The process air flow control with inverter and the possibility of communicating with SCADA systems via the Profinet communication protocol are definite strengths which place this product at the leading edge of the technologies currently available on the market (PLC version only).

Main technical characteristics

The machine incorporates a silica gel sieve chamber. This takes the form of a wheel with a structure consisting of tiny channels, through which the air flows in contact with the silica gel, which absorbs the moisture from the air. The benefit of this technology is that it allows a continuous operation, unlike dryers with refrigeration circuit that cannot operate non-stop due to the need for defrost cycles.

At the high-end of the range, the **PLC** version is able to communicate with **SCADA** systems via Profinet systems (optional). This control system also includes an inverter installed on the machine to modulate the air flow. It is a solution designed for complex production contexts, where there is not just one conveyor system and the air is dried for

several production lines.

A version for production plants with centralised control is also available. In this version, all controls and the entire power supply system are controlled by a remote PLC, which is thus able to interface and integrate the machine in a much broader context, in which the machine becomes a mere field I/O unit.

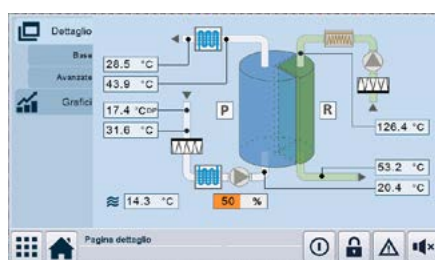
Configuration

The machine can be configured with two filtration levels: coarse (G4) and absolute (HEPA filter). To complete the package of optional extras, the dryer can be fitted with:

- alarm column with lights and buzzer;
- filter differential pressure switches;
- condensate pump;
- supply air temperature control;



Laboratory tests have confirmed DryAir4Food's suitability for indirect contact with food. What's more, process air cleanliness is guaranteed by a patented sanitisation system.



Dryair4food control panel

MODELS		DA4F400	DA4F800	DA4F1200	DA4F1800	DA4F2400	DA4F3000
Process flow rate	[m ³ /h]	400	800	1200	1800	2400	3000
Rated power	[kW]	8,0	15,0	23,0	35,0	46,0	58,0
Water flow rate*	[l/h]	5040	10800	12600	12600	18000	18000
Process connections Ø	[mm]	150	200	350	350	350	350
Regeneration connections Ø	[mm]	100	150	200	200	200	200
Water connections Ø	["]	1	1	1 ¼	1 ¼	1 ¼	1 ¼
Inlet liquid T	[°C]	5÷20					
Maximum glycol %	[%]	20%					
Process T without post	[°C]	35÷50					
Ambient T	[°C]	5÷40					
Ambient RH	[%]	30÷70					

* to guarantee Dew Point <0 ° C with water 8/13, environment at 40 ° C 70%

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