

# Variable Speed Refrigeration Dryers

Optimised energy efficiency  
for a sustainable future.



Energy efficient compressed air treatment

## CD-VS Series

Cycling & Non-Cycling  
Refrigeration Dryers

# A Next Generation Energy Saving Variable Speed Refrigeration Dryer



**CD 21÷300 VS**

▶ **Flow rate**

1,260 ÷ 17,664 m<sup>3</sup>/h

## First-class air treatment efficiency

The low environmental impact R513A refrigerant gas combined with a variable speed operation is the height of technological evolution and maximises respect for the environment. By using inverters, it is possible to modulate the electrical power input by the scroll compressor and fans according to the thermal load required by the user.

### ADVANTAGES:

- Greater environmental friendliness;
- Reduced running cost;
- Optimised consumption and performance under all load conditions.

Many testing hours in our R&D laboratories have confirmed the reliability, robustness and performance of the new CD-VS range, made of high quality materials, mechanical and electronic components from leading international brands in the industrial refrigeration sector.

## Eco-friendly R513A refrigerant

The CD-VS refrigeration dryer series uses the environmentally friendly R513A refrigerant gas with low GWP, which is non-toxic and non-flammable, and makes it possible to install CD-VS units indoors. The CD-VS dryers wide operating limits meet the most diverse industrial demands.

### OZONE FRIENDLY

ODP (ozone depletion potential) = 0

### NON-FLAMMABLE GAS

ASHRAE category A1

### VERY LOW GWP

GWP (global warming potential)



REFRIGERANTS	GWP
R404A	3922
R410A	2088
R407C	1774
R134A	1430
R32	675
 <b>R513A</b>	<b>631</b>



Using environmentally-friendly R513A refrigerants with the lowest Global Warming Potential contributes to reducing greenhouse gas emissions.

## Variable speed

Variable speed dryers, using inverter technology for compressor and fans, can adapt their energy consumption according to the thermal load applied, and adjust the refrigerant flow rate to the **ALU-DRY heat exchanger**. With the new DMC55 controller and electronic EHGBV hot gas bypass valve, the user can choose between **Cycling** or **No-Cycling** operation for extremely low heat loads.



## DMC55 Electronic Controller

The CD-VS series is equipped with the DMC55 electronic controller, which has an intuitive user interface with its 4.3" capacitive touch screen display and multiple functions. The controller constantly monitors the operating pressure and temperature values and adjusts the compressor and fan speeds. This ensures an extremely stable dew-point under all operating conditions.

### THE NEW MAIN FUNCTIONS INTRODUCED ARE:

- Weekly on-off programming
- Display of instantaneous electrical power input
- Display of spare-parts list
- Dryer management via Modbus RS485 RTU communication (Industry 4.0 ready)

## Electronic hot gas by-pass Valve – EHGBV

The electronic hot gas bypass valve EHGBV directly controlled by the DMC55, introduced a **No-cycling mode**. This function allows maximum performance even in conditions of low thermal loads: the compressor, in this condition, never shuts down, remaining at minimum speed and delegating the cooling capacity control to the EHGBV, which guarantees continuous and stable regulation.

## Drain condensate system

To maximise the Energy Savings the full CD-VS range is equipped with Electronic Zero Loss Drain.

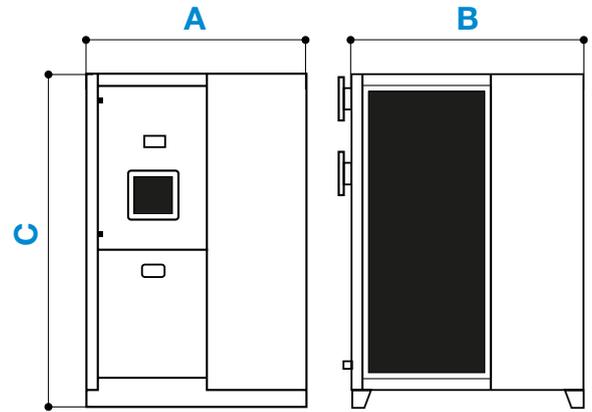
Energy Saving



## Five operating modes

The CD-VS range is equipped with intelligent/automatic management of five operating modes, which can be set directly from the controller display:

Operating modes	Dew Point (PDP)	Saving
<b>Performance</b>	++++	+
<b>Standard</b>	+++	++
<b>ECO</b>	++	+++
<b>ECOPLUS</b>	+	++++
<b>AODM</b> (Automatic Optimised Dewpoint Management)	 + ▲ PDP      ▼ PDP -	This mode optimises consumption and the dew-point according to the detected room temperature.



**Data refer to the following nominal conditions:**

Ambient temperature of 25°C, with inlet air at 7 barg and 35°C and 3°C pressure Dew Point.

**Max. working conditions:**

Ambient temperature 45°C, inlet air temperature 70°C and inlet air pressure 14 barg.

## Technical Data

Model	Refrigerant	Flow-Rate			Pressure Drop [bar]	Connections [Ø]	Power Supply [Ph/V/Fr]	Dimensions [mm]			Weight [kg]
		[m³/h]	[l/min]	[scfm]				A	B	C	
CD21VS	R513A	1,260	21,000	742	0.1	DN 80 PN16	3/400/50-60	790	1,000	1,465	249
CD30VS	R513A	1,800	30,000	1,060	0.12	DN 80 PN16	3/400/50-60	790	1,000	1,465	276
CD36VS	R513A	2,208	36,800	1,300	0.13	DN 80 PN16	3/400/50-60	790	1,000	1,465	296
CD40VS	R513A	2,400	40,000	1,413	0.09	DN 100 PN16	3/400/50-60	1,135	1,205	1,750	510
CD50VS	R513A	3,000	50,000	1,766	0.08	DN 100 PN16	3/400/50-60	1,135	1,205	1,750	590
CD60VS	R513A	3,600	60,000	2,119	0.12	DN 100 PN16	3/400/50-60	1,135	1,205	1,750	597
CD72VS	R513A	4,416	73,600	2,600	0.13	DN 100 PN16	3/400/50-60	1,135	1,205	1,750	669
CD90VS	R513A	5,400	90,000	3,178	0.12	DN 150 PN16	3/400/50	1,300	1,750	1,810	1,000
CD110VS	R513A	6,624	110,400	3,900	0.13	DN 150 PN16	3/400/50	1,300	1,750	1,810	1,110
CD120VS	R513A	7,200	120,000	4,238	0.12	DN 200 PN16	3/400/50	1,400	2,200	1,870	1,330
CD150VS	R513A	8,832	147,200	5,200	0.13	DN 200 PN16	3/400/50	1,400	2,200	1,870	1,510

On request models with 60Hz power supply.

Correction factor for operating pressure changes:										
Inlet air pressure [barg]	4	5	6	7	8	10	12	14		
Factor	0.77	0.86	0.93	1	1.05	1.14	1.21	1.27		
Correction factor for ambient temperature changes:										
Ambient temperature [°C]	≤ 25	30	35	40	45					
Factor	1	0.96	0.9	0.82	0.72					
Correction factor for operating pressure changes:										
Inlet air temperature [°C]	≤ 25	30	35	40	45	50	55	60	65	70
Factor	1.2	1.12	1	0.83	0.69	0.59	0.5	0.44	0.39	0.37
Correction factor for dew point changes:										
Dew Point [°C]	3	5	7	10						
Factor	1	1.09	1.19	1.37						

## OPTIONS & ACCESSORIES

**WC:** Water Cooling with shell & tube condenser

**BY-PASS:** By-pass group (only for CD21VS-CD36VS)

CompAir policy is one of continuous improvement and we therefore reserve the right to alter specifications and prices without prior notice. All products are sold subject to the Company's conditions of sale.