



## **MVSD SERIES VARIABLE SPEED REFRIGERATED AIR DRYERS**

Manufacturing Forward





Mikropor began its journey in 1987 with a passion to create “Tomorrow’s Technology” and has become one of the leading manufacturers of atmospheric air filtration solutions and compressed air treatment systems for a variety of industries.

By closely following the latest developments in technology, Mikropor’s “Best in Class” products and solutions are appreciated by customers in more than 100 countries.

The company’s sustainable growth has been provided by its passion for innovation and commitment to quality, as well as its dedication to technology. Mikropor is an environmentally conscious company that values people, while developing products that extend the needs and expectations of customers.

With this mission, Mikropor continues to become one of the most recognized brands in the world by expanding its global penetration in the field of technological filtration and contributes to a healthier planet.

[www.mikropor.com](http://www.mikropor.com)

# MVSD SERIES VARIABLE SPEED REFRIGERATED AIR DRYERS

Mikropor's next generation MVSD Series compressed air dryer, combines the most advanced technologies in the industry. With Variable Speed technology, the new R513a refrigerant, and hermetically sealed refrigerant cycle, this machine provides your facility the maximum efficiency, low energy consumption, and environmentally friendly solution.

## Key Features




- |   |   |
|---|---|
|  Environmentally Friendly                |  Electronic Zero-Loss Drain                        |
|  Low GWP Refrigerant with R513a          |  EC (Electronically Commutated) Fan                |
|  Variable Speed (DC Inverter) Technology |  Less Refrigerant Gas                              |
|  Hermetically Sealed Refrigerant Cycle   |  Refrigerant-Oil Separator                         |
|  Integrated Filters                      |  Condenser Filter                                  |
|  Touch Screen                            |  10 Year Warranty on Aluminum Plate Heat Exchanger |



Key features are standard for every MVSD models.

With all specifications combined, MVSD Series answers many specific requirements of the industry and customers by all itself.

## Optional Features

- |   |  |  |
|---|--|--|
|  Integrated Web Services, WiFi & GSM Modules |  TCP/IP Communication |  BACNET, SNMP, MODBUS |
|  Data Logger                                 |  Dew Point Sensor     |  |

## Built on Years of Accumulated Expertise, Mikropor Delivers Striking Improvements in Energy Efficiency

Variable Speed refrigerated air dryers automatically adjust the speed of the compressor and fan motor according to the actual air demand. This ensures that only the required amount of energy is consumed, preventing unnecessary power usage.

### Environmental Improvement

- The use of environmentally friendly R-513A refrigerant further enhances energy efficiency and reduces environmental impact. With our Microchannel Condenser, we use %35 less refrigerant gas in MVSD. That means 35% less carbon emissions.



### Cost Savings Keep the Power

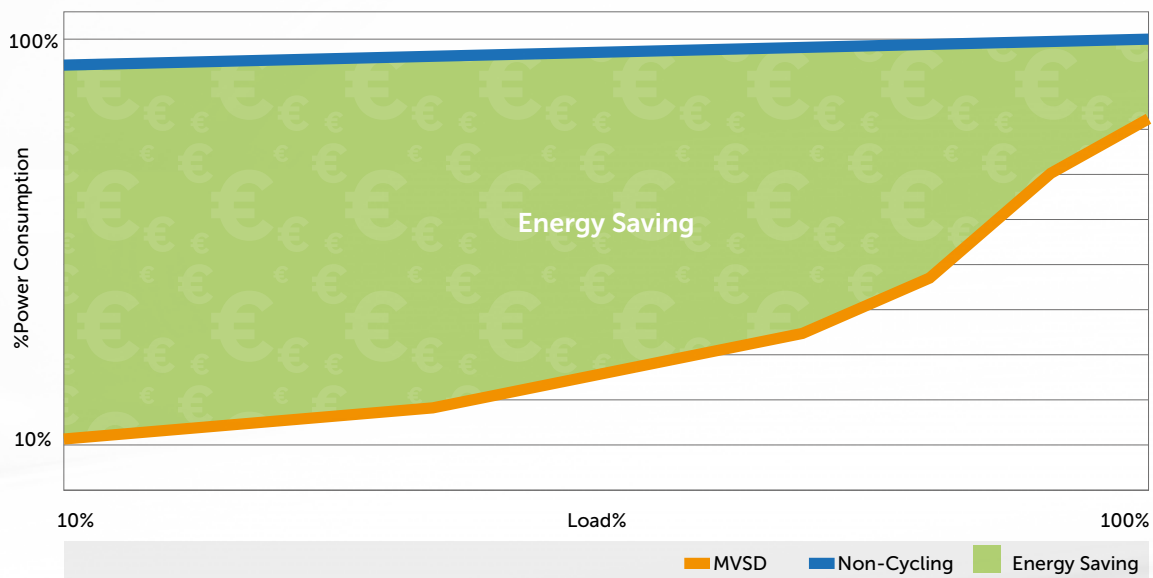
- Real-time factory tests show that MVSD consumes up to three times less energy compared to non-cycling units.
- Thanks to the hot gas bypass line, we prevent issues such as freezing and ensure reliable operation for many years.
- High performance when needed, and low energy consumption when demand is low.
- Prevents excessive operation, reducing electricity costs significantly.
- Less mechanical stress means longer equipment lifespan.



## MVSD SERIES VARIABLE SPEED REFRIGERATED AIR DRYERS

We offer maximum energy savings with less refrigerant gas, an oil separator, a condenser filter, and integrated filters. While traditional fixed-speed dryers operate at full capacity all the time, variable speed models ramp up only when necessary. This results in both lower energy usage and a more sustainable operation.

Power Consumption Compared to Non-Cycling Refrigerated Air Dryers



With Mikropor's innovative design, the compressor can operate at a minimum level (as low as 17% capacity), ensuring maximum efficiency while maintaining low power consumption.



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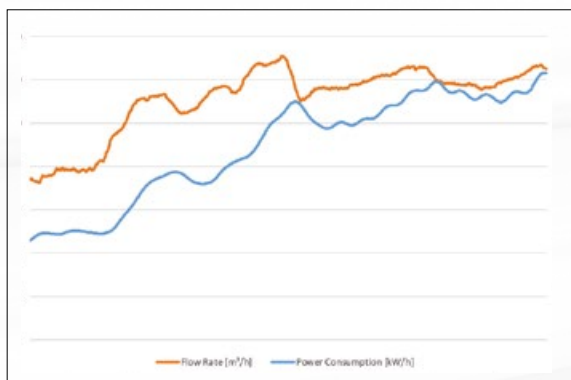
## Electronic Zero-Loss



Electronic zero-loss drains increase energy efficiency by discharging condensate without losing compressed air. Since the compressed air loss from the system is eliminated through the discharge, annual 3-5% air loss is also prevented as a supportive energy saving to the dryer energy savings.

## Variable Speed (Inverter) Technology

Variable Speed (Inverter) Technology is a complete solution for energy efficiency. By automatically and precisely adjusting motor speed according to the system's actual needs, it provides up to %70 savings under partial load conditions. It minimizes the effects of pressure fluctuations and maintains system operating conditions consistently at design values, delivering high performance. The soft start and stop feature reduces mechanical wear on equipment, extending its lifespan and significantly lowering maintenance costs. Compared to other compressors, it offers quieter operation. With energy savings and low carbon emissions, it contributes strongly to both operational costs and environmental sustainability.



## Refrigerant - Oil Separator



Mikropor's Oil Separator, developed by Mikropor through advanced engineering, is a critical component that separates oil from the refrigerant and returns it to the compressor.

This ensures optimal compressor lubrication while keeping mechanical wear and temperatures under control. By preventing oil from reaching the evaporator and condenser, it improves heat transfer, enhances system performance, and contributes to energy efficiency. Operating with up to 99% efficiency, it delivers reliable and consistent performance. It minimizes maintenance requirements and extends the service life of the cooling system.



## Microchannel Condenser

Thanks to its flat, multi-channel tubes and integrated fins, it offers a much larger heat transfer surface compared to conventional condensers. This accelerates heat rejection, increases system efficiency, and reduces energy consumption. Its compact and lightweight design simplifies installation, while the 30% less refrigerant charge minimizes environmental impact. Made from aluminum resistant to galvanic corrosion, it delivers long-lasting and reliable performance.

## Power+ DC Inverter for BLDC Compressors



Power+ Inverter (PS2) is a high-tech drive solution specifically developed for BLDC Refrigerant compressors. Its advanced design optimizes system performance and enhances energy efficiency; both active and passive filters minimize harmonic effects, preventing electrical fluctuations

and potential performance losses. In the event of a fault, the Class B certified software and integrated STO safety module ensure compressor safety and maintain uninterrupted system operation

## EC Fan



EC (Electronically Commutated) fan technology has been developed as a solution for the need of variable speed control. Although AC fans can be controlled with drivers, this method is inefficient and may reduce the fan's lifespan. Fan control is of

critical importance in air dryer systems. With self-regulates it's speed, requiring no additional driver. EC fans provide maximum efficiency and energy savings with high reliability and performance.

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## Controller

Thanks to Mikropor's user-friendly touch controller, the machine's real-time energy efficiency can be conveniently monitored. In addition, the operating capacities of the fan motor and compressor, as well as temperature values, can be easily tracked. Machine warnings and maintenance alarms are displayed on the touch screen. Easy access to the weekly work schedule, energy-saving monitoring screen, and graphical working trends provides ease of operation to user.

## Correction Factors

Inlet Temperature (°C)	F1	Ambient Temperature (°C)	F2	Pressure (barg)	F3
30	1.29	20	1.05	4	0.80
35	1	25	1	6	0.94
40	0.92	30	0.98	7	1
45	0.78	35	0.93	8	1.04
50	0.65	40	0.84	10	1.11
60	0.45	45	0.76	12	1.16
-	-	50	0.7	14	1.22
-	-	-	-	16	1.25

## Technical Data

Model	Capacity (m³/h)	Voltage	Connection Size	Filter Quantity and Type	Replacement Filter Element Kit	Pressure Drop (mbar)	Control Type	Dimensions		
								Length (mm)	Width (mm)	Height (mm)
MVSD 1200	1200	400V / 3Ph / 50Hz	2"	Integrated - GKON 1205 X/Y	MKON1205 KIT	170	Variable Speed	800	950	1530
MVSD 1800	1800	400V / 3Ph / 50Hz	3"	Integrated - GKON-HC 1805 X/Y	MKON-HC1805 KIT	255	Variable Speed	800	950	1530
MVSD 2775	2775	400V / 3Ph / 50Hz	3"	Integrated - GKON-HC 2775 X/Y	MKON-HC2775 KIT	310	Variable Speed	1185	795	1845
MVSD 3915	3915	400V / 3Ph / 50Hz	DN100 Flange	Integrated - GKO 5850 X/Y	MKO 5850 KIT	380	Variable Speed	1200	1030	1945

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