COMPRESSED AIR SYSTEMS

PRODUCT CATALOG

MMD SERIES MODULAR DESICCANT

The light weight modular design desiccant dryer series brings a new concept in compressed air technology, offering total installation flexibility to meet specific needs.

Mikropor's Modular Desiccant Dryers are less than half the weight and size of a traditional twin tower design, allowing even the largest models to be easily moved through a standard doorway. Mikropor's innovative Modular Air Dryers make it easier and more affordable than ever to deliver high-quality compressed air for virtually herever it's needed.

Mikropor Modular Desiccant Dryers have cosmetic beauty and can be located in clean, pleasant environments eyesore. Offered in sizes from 5 m^3/h to 400 m^3/h with dew point of -40°C to -70°C (optional) these dryers are equipped with everything you need, requiring only air inlet/outlet connections.

Using a highly engineered inlet and purge manifold design, Mikropor proudly offers one of the lowest pressure drop desiccant dryer in the industry.

- Small footprint, lightweight, advanced compact design
- Corrosion protected Aluminium construction
- Hassle-free, reliable electronic controls
- Can be floor, bench or wall mounted
- Quiet enough to be placed in any work environment
- Easy installation, easy maintenance

The new Modular Desiccant Dryers combine proven traditional dryer principles with the latest technology to provide unsurpassed efficiency, flexibility and world-renowned Mikropor reliability for your critical dry air applications.

Various Application Options

Modular Desiccant Air Dryers can be mounted to the wall with easy-to-use mounting brackets to free up additional space and can also be secured to the ground very easily.

Correction Factor for MMD Series

Pressure (bar)	F1	Inlet Temp. (°C)	F2
4.5	0.69	20	1
5	0.75	25	1
6	0.88	30	1
7	1	35	1
8	1.12	40	0.80
9	1.25	45	0.73
10	1.37	50	0.59
11	1.50	-	-
12	1.62	-	-
13	1.74	-	-
14	1.87	-	-
15	1.99	-	-
16	2.11	-	-

MMD SERIES MODULAR DESICCANT

Technical Specifications

Model	Capacity		Voltage	Connection Size	Max. Working Pressure (bar)	Dimensions			
	(m^3/h)	(cfm)				Width (mm)	Length (mm)	Height (mm)	Weight (kg)
MMD3	5	3	115-240V/50-60 Hz.	1/2"	16	320	336	558	17
MMD5	10	5	115-240V/50-60 Hz.	1/2"	16	320	320	633	19
MMD10	20	10	115-240V/50-60 Hz.	1/2"	16	320	320	908	27
MMD15	25	15	115-240V/50-60 Hz.	1/2"	16	370	350	808	31
MMD20	35	20	115-240V/50-60 Hz.	1/2"	16	370	350	1108	42
MMD25	45	25	115-240V/50-60 Hz.	1/2"	16	370	350	1258	48
MMD30	50	30	115-240V/50-60 Hz.	1/2"	16	370	350	1508	54
MMD40	70	40	115-240V/50-60 Hz.	1 1/2"	16	410	495	1250	71
MMD50	85	50	115-240V/50-60 Hz.	1 1/2"	16	410	495	1400	78
MMD60	100	60	115-240V/50-60 Hz.	1 1/2"	16	410	495	1750	92
MMD75	130	75	115-240V/50-60 Hz.	1 1/2"	16	430	622	1300	120
MMD100	170	100	115-240V/50-60 Hz.	1 1/2"	16	430	622	1450	133
MMD120	200	120	115-240V/50-60 Hz.	1 1/2"	16	430	622	1750	152
MMD180	300	180	115-240V/50-60 Hz.	1 1/2"	16	410	734	1499	186
MMD240	400	240	115-240V/50-60 Hz.	1 1/2"	16	410	889	1497	235
MMD HC 340	575	340	115-240 V / 50-60 Hz	2"	16	232	995	378	1654
MMD HC 400	680	400	115-240 V / 50-60 Hz	2"	16	232	1335	378	1554
MMD HC 500	850	500	115-240 V / 50-60 Hz	2"	16	232	1505	378	1654
MMD HC 590	1000	590	115-240 V / 50-60 Hz	2"	16	232	1675	378	1754
MMD HC 735	1250	735	115-240 V / 50-60 Hz	3"	16	232	1675	378	2054
MMD HC 890	1500	890	115-240 V / 50-60 Hz	3"	16	232	1845	378	2054
MMD HC 1060	1800	1060	115-240 V / 50-60 Hz	3"	16	232	2015	378	2054

HIGH CAPACITY MMD-HC SERIES

Pressure Dew Point	Nominal Inlet Temperature	Nominal Working Pressure	Maximum Inlet Temperature	Maximum Working Pressure	Maximum Ambient Temperature
-40°C / -70°C (opt)	35°C	7 bar	50°C	16 bar	50°C

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO7183.

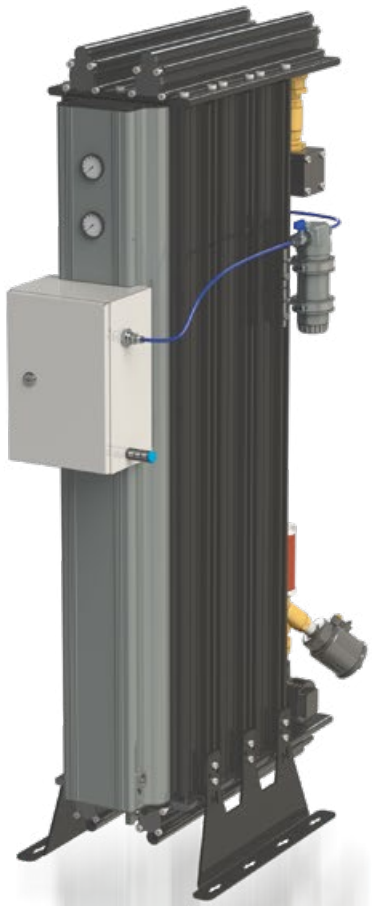
PLC Monitor

The Mini PLC is a user-friendly controller and shows the working action simultaneously. It is possible to get an alarm signal. Dew point control and monitoring are possible with a dew point sensor.

MMD-P SERIES PNEUMATIC MODULAR DESICCANT

The water inside the compressed air is always a problem. Atmospheric air includes water vapor, oil, and dust particles inside it. When the air is compressed the particles inside the air are also densified and produced unwanted condensate inside the compressed air. This condensate is generally acidic, and it could easily harm the pneumatic component of the system. It can damage the piping line and cause gas leakage, damage the end-product quality, or create undesired maintenance costs. For preventing these kinds of problems compressed air dryers should be used.

Mikropor Modular Pneumatic Compressed Air Dryer- MMD-P produces -40°C dew point compressed dry air without needing any power supply. MMD-P doesn't need any electrical connection for producing dry compressed air. For that reason, it can install in any place.



Advantages

- **No Electricity Required**
  - It could be installed in almost any industrial location as they do not require additional energy to operate. It could also be used in a hazardous area.
- **Low Cost**
  - Require no electricity thus lowering operating costs. Also, it needs only pre-defined maintenance.
- **High Efficiency**
  - It can supply dry compressed air immediately. It removes the water vapor and lowers the dew point to -40°C (optionally -70°C).
- **Compact Design**
  - It could be placeable in narrow spaces due to its modular design.

As operating in environments prone to explosive substances, it is imperative to adhere to the EU ATEX directives. The entities in charge must evaluate the premises for potential areas where explosive gas or dust mixtures could form. If deemed necessary, these areas should be categorized into specific zones. This zone classification enables the selection of appropriate machinery and equipment suitable for operation in those designated areas. The labels provided below outline the zone classifications within an installation where potentially explosive atmospheres might arise and labeling of hazardous locations, the classification of explosion groups and temperature classes, differentiation of gases, mists, and dusts.

User			Appropriate machinery and equipment		
Gas Zone	Dust Zone	Presence of a potentially explosive atmospheric environment	Equipment group*	Equipment category	Application Area (not mining)
0		Constantly, often, approx. >1000 h/year	II	1G	Gases, mist, vapor
	20		II	1D	Dust
1		Occasionally, sometimes, approx. 10 – 1000 h/year	II	2G	Gases, mist, vapor
	21		II	2D	Dust
2		Rarely, infrequently, in the event of an error, approx. <10 h/year	II	3G	Gases, mist, vapor
	22		II	3D	Dust

* Equipment group states that the equipment is for use in areas that might be dangerous due to an explosive atmosphere/conditions.

In this context, Mikropor kindly states that the MMD-P Series is approved according to ATEX 2014/34/EU Directive with the scopes stated below. The classifications shown below show the approved protection classes of the MMD-P Series.

II 2G Exh IIC T6
II 2D Exh IIC T85

Technical Specifications

Model	Capacity		Connection Size
	(Nm^3/h)	(scfm)	
MMD-P-3	5	3	1/2"
MMD-P-5	10	5	1/2"
MMD-P-10	20	10	1/2"
MMD-P-15	25	15	1/2"
MMD-P-20	35	20	1/2"
MMD-P-25	45	25	1/2"
MMD-P-30	50	30	1/2"
MMD-P-40	70	40	1 1/2"
MMD-P-50	85	50	1 1/2"
MMD-P-60	100	60	1 1/2"
MMD-P-75	130	75	1 1/2"
MMD-P-100	170	100	1 1/2"
MMD-P-120	200	120	1 1/2"
MMD-P-180	300	180	1 1/2"
MMD-P-240	400	240	1 1/2"

Pressure Dew Point	Nominal Inlet Temperature	Nominal Working Pressure	Maximum Inlet Temperature	Maximum Working Pressure	Maximum Ambient Temperature
-40°C / -70°C (opt)	35°C	7 bar	50°C	16 bar	50°C

* Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO7183.

Correction Factor for MMD-P Series

Pressure (bar)	F1	Inlet Temp. (°C)	F2
4.5	0.69	20	1
5	0.75	25	1
6	0.88	30	1
7	1	35	1
8	1.12	40	0.80
9	1.25	45	0.73
10	1.37	50	0.59
11	1.50	-	-
12	1.62	-	-
13	1.74	-	-
14	1.87	-	-
15	1.99	-	-
16	2.11	-	-

MMD-VP SERIES VACUUM MODULAR DESICCANT

kW Saver

It is highly crucial to have clean and dry air in the system to have profitable and efficient manufacturing worldwide. Mikropor MMD-VP Series Modular Vacuum Purge Heatless Desiccant Air Dryers remove water vapor from compressed air, stop corrosion, and inhibit the growth of micro-organisms in critical applications.

Mikropor MMD-VP Series Modular Vacuum Purge Heatless Desiccant Air Dryers supply high-quality dry air which has -40 °C dew point or optionally -70 °C dew point to the system with affordable prices and reliable way. In that way, the production machine has a longer life, minimum maintenance costs, and processed product is produced in a healthy and safe way. The new vacuum purge technology decreased air loss during the regeneration process and make the production more cost-efficient way.

Application Areas

- Food & Beverage
- Pharmaceutical
- Automotive
- Electronic
- All industries which needs air quality is -40°C dew point or optionally -70°C dew point

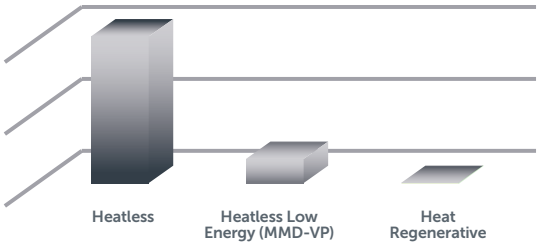
Advantages

- **High-Quality Dry Air according to Standards**
  - Includes pre and post air line filtration
  - Dew point in Class 1 and Class 2 quality in accordance with ISO8573.1
  - Suitable for all industrial applications
  - -40°C dew point can be achieved (optional -70°C)
- **Modular Design**
  - It has a lightweight and compact design compared to traditional dryers
- **Low Energy Heatless Technology**
  - 13% more air can be usable due to new vacuum technology
  - Energy consumption can be lower 60% compared to the heatless dryers and 40% lower energy consumption against heat regenerative dryer
- **Lower Total Cost of Ownership**
  - Low operation costs
  - Longer lifetime of parts and shorter maintenance times

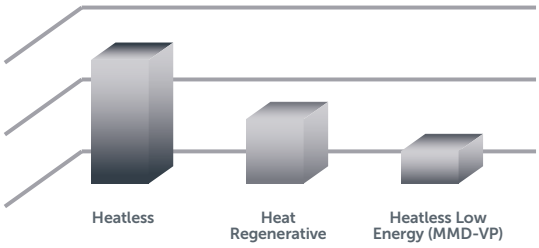
MMD-VP SERIES VACUUM MODULAR DESICCANT

kW Saver

Dry Compressed Air Loss



Power Consumption



Features

- **Standard Properties**
  - Corrosion protected aluminum construction
  - Lightweight with a compact design
  - High-efficiency regeneration due to the vacuum pump addition
  - High crush strength adsorption material
  - User-friendly controller
  - Easy installation and maintenance
- **Optional Properties**
  - PLC touch screen monitoring and controller
  - Dew point sensor

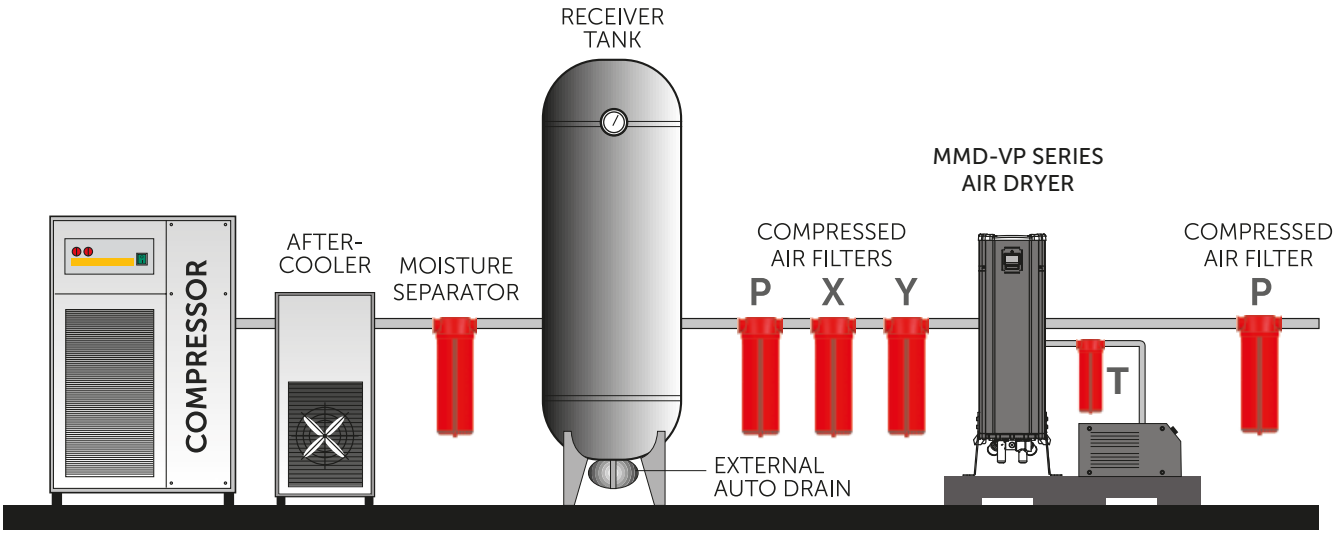
Working Principle

In that MMD-VP system, two towers allow for continuous adsorption of water vapor from compressed air by using the hygroscopic desiccant with high crush strength and a high surface/ volume ratio. Firstly, pre-filtered compressed air flows into one of the towers. In that tower, water is held at high pressure. After the adsorbent has been saturated. Then, the adsorption of water vapor is switch over to the other tank and the second tank starts to adsorption. Meanwhile, the regeneration process started in the first tank by depressurizing the tower without the use of heat.

The wet bed is dried by a small portion of dry air from the outlet at near atmospheric pressure and with help of a vacuum pump. The output of the dried air efficiency is increased by using the vacuum pump. Just only 2% of dried air need to be used for the regeneration process of dried air. After the regeneration process will be finished and the adsorption process will be taken over in the first tank again. With that cycle -40°C (-70°C optional) dew point can be achieved continuously.

Working Principle

AIR LINE DESIGN



Technical Specifications

Model	Flow Rate (m³/h)	Vacuum Pump (kW)	Connection Size	Voltage	Max. Working Pressure (bar)	T Filter Model
MMD-VP-60	100	1.1	1 1/2"	400/3/50	16	GON-150 T
MMD-VP-75	130	1.1	1 1/2"	400/3/50	16	GON-150 T
MMD-VP-100	170	1.25	1 1/2"	400/3/50	16	GON-150 T
MMD-VP-120	200	2.2	1 1/2"	400/3/50	16	GON-150 T
MMD-VP-180	300	2.2	1 1/2"	400/3/50	16	GON-150 T
MMD-VP-240	400	2.2	1 1/2"	400/3/50	16	GON-150 T
MMD-VP-340	575	3	2"	400/3/50	16	GON-150 T
MMD-VP-400	680	3	2"	400/3/50	16	GON-150 T
MMD-VP-500	850	4	2"	400/3/50	16	GON-300 T
MMD-VP-590	1000	4	2"	400/3/50	16	GON-300 T
MMD-VP-735	1250	5.5	3"	400/3/50	16	GON-300 T

Correction Factor for MMD-VP Series

Inlet Temperature (°C)	F1	Pressure (bar)	F2
20	1	4.5	0.69
25	1	5	0.75
30	1	6	0.88
35	1	7	1
40	0.8	8	1.12
45	0.73	9	1.25
50	0.59	10	1.25
-	-	11	1.5
-	-	12	1.62
-	-	13	1.74
-	-	14	1.87
-	-	15	1.99
-	-	16	2.11

To determine the correct model, dryer flow rate should be divided by multiplication of the related F1 and F2 values.

Correct Model = (Dryer Flow Rate) / [(F1) . (F2)]

Example for Choosing the Correct Dryer:

If a compressor delivers 400 m³/h at 6 bar and the inlet temperature is 40°C. Please choose your dryer as follows;

400 / (0.88*0.8) = 568 m³/h

So, the correct dryer for this application is MMD-VP 340.

MDA SERIES HEATLESS DESICCANT

Mikropor MDA Heatless Desiccant Air Dryers provide constant -40^{0}C (-70^{0}C Optional) pressure dew point. These dryers are designed to supply clean and very dry compressed air for critical applications. Pre-filters and after-filters are standard on all Mikropor Heatless Air Dryers to keep the air stream clean and maintain the integrity of the desiccant medium. A very reliable electronic controller is utilised so the dryer operates perfectly through its service life. MDA Heatless Desiccant Dryers are equipped with special valves and high quality desiccants in order to assure performance and provide the lowest pressure drops available in the market.

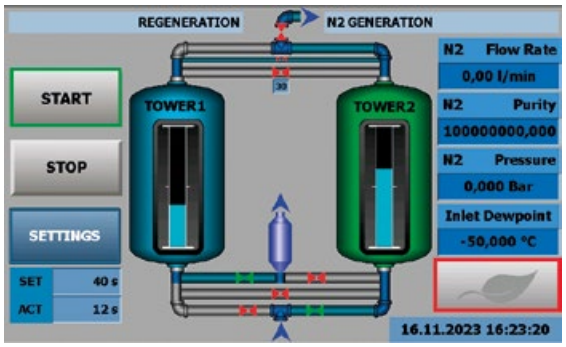
Principle of Operation

The twin tower design allows for continuous adsorption of water vapor from compressed air by using the hygroscopic desiccant with high crush strength and a high surface/volume ratio. Drying is accomplished by passing compressed air through one desiccant bed adsorbing moisture while the other is being simultaneously regenerated with the expanded purge air.

Regeneration of desiccant is accomplished without the use of heat. The wet bed is dried by diverting a small portion of the super-dry air from the outlet at near atmospheric pressure. The purge flow rate is adjustable to suit the specific outlet conditions (desired dew point). The super dry air flows in a counter direction through the wet bed, sweeping all the water vapor previously absorbed by the desiccant. MDA ensures pressure equalization in the twin towers prior to switching.

This prevents line surge and minimizes desiccant attrition. The tower being reactivated will be gradually re-pressurized at the end of its reactivation cycle before switch over takes place. Purge flow and de-pressurization are in downward direction, counter to the drying air flow.

This saves ENERGY and helps the world become more "GREEN"



HMI Touch Screen PLC

Mini PLC

PLC is Standard

The standard controller of the series is Mini PLC with capable of displaying PSA working parameters. The touch screen HMI, as optional controller, is capable of displaying the cycles as well as the valves as they operate in real-time. This is also capable of showing dew points. User-friendly multi-lingual HMI helps the end users understand the system's operation and identify any issues easily.

Correction Factor for MDA Series

Pressure (bar)	F1	Inlet Temp. (°C)	F2
4.5	0.69	20	1
5	0.75	25	1
6	0.88	30	1
7	1	35	1
8	1.12	40	0.80
9	1.25	45	0.73
10	1.37	50	0.59

All desiccant dryers are designed according to Pneurop conditions as per ISO 7183.

Ordering

If a compressor delivers 850 m^3/h at 9 bar pressure and 45°C inlet temperatures please choose your dryer as follows; 850/1.25/0.73 = 931 m^3/h the correct dryer for this is MDA1000

Activated Alumina

In order to achieve consistent dew point, Mikropor uses a mixture of adsorption media in its heatless range of desiccant dryers. Activated Alumina, Molecular Sieve and Silica Gel are used in varying ratios depending on the application.

MDA SERIES HEATLESS DESICCANT

Technical Specifications

Model	Connection Size	Inlet Flow Rate		Voltage	Max. Working Pressure (bar)	Pressure Drop (mbar)	Total Weight (Packed) (kg)	Activated Alumina (kg)	Dimensions (mm)		
		(m^3/h)	(cfm)						Width	Length	Height
MDA 130	1"	130	80	230/1/50-60	10	≤130	160	40	600	814	1312
MDA 185	1"	185	100	230/1/50-60	10	≤130	180	54	600	808	1566
MDA 250	1"	250	150	230/1/50-60	10	≤130	200	75	760	772	1580
MDA 300	1 1/2"	300	200	230/1/50-60	10	≤130	250	100	690	900	1558
MDA 360	1 1/2"	360	215	230/1/50-60	10	≤130	250	100	690	900	1558
MDA 440	1 1/2"	440	250	230/1/50-60	10	≤130	340	1250	698	900	1759
MDA 575	1 1/2"	575	300	230/1/50-60	10	≤130	500	151	680	900	1991
MDA 680	2"	680	400	230/1/50-60	10	≤130	535	202	680	960	2216
MDA 850	2"	850	500	230/1/50-60	10	≤130	750	264	857	1016	2277
MDA 1000	2"	1000	600	230/1/50-60	10	≤130	755	357	1010	1075	2386
MDA 1250	DN80/PN16	1250	700	230/1/50-60	10	≤130	1000	404	1100	1294	2413
MDA 1500	DN80/PN16	1500	800	230/1/50-60	10	≤130	1050	454	1010	1300	2547
MDA 1800	DN80/PN16	1800	1000	230/1/50-60	10	≤130	1215	566	1110	1513	2479
MDA 2200	DN80/PN16	2200	1250	230/1/50-60	10	≤130	1550	708	1110	1460	2793
MDA 2700	DN80/PN16	2700	1500	230/1/50-60	10	≤130	1890	852	1252	1533	2831
MDA 3200	DN100/PN16	3200	1750	230/1/50-60	10	≤130	2240	954	1212	1653	3054
MDA 3600	DN100/PN16	3600	2000	230/1/50-60	10	≤130	2330	1070	1210	1653	3268
MDA 4400	DN100/PN16	4400	2500	230/1/50-60	10	≤130	3000	1436	1535	1905	2910
MDA 5000	DN150/PN16	5000	3000	230/1/50-60	10	≤130	3180	1670	1714	1843	3382
MDA 6300	DN150/PN16	6300	4000	230/1/50-60	10	≤130	3450	2016	1693	2114	3328
MDA 7200	DN150/PN16	7200	4500	230/1/50-60	10	≤130	3600	2446	1795	2518	3047
MDA 8800	DN150/PN16	8800	5000	230/1/50-60	10	≤130	3850	2906	1795	2518	3341
MDA 10800	DN200/PN16	10800	6000	230/1/50-60	10	≤130	4200	3354	1875	2583	3747
MDA 12500	DN200/PN16	12500	7360	230/1/50-60	10	≤130	6470	3894	1935	2545	4175

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO7183.

Efficiency Rating	X Pre Filter	Y Pre Filter	P After Filter
	1 micron particle removal and 0.5 mg/m^3 oil removal	0.01 micron particle removal and 0.1 mg/m^3 oil removal	5 micron particle removal (Removes desiccant particles after the dryer)

Pressure Dew Point	Nominal Inlet Temperature	Nominal Working Pressure	Maximum Inlet Temperature	Maximum Working Pressure	Maximum Ambient Temperature
-40°C / -70°C (opt)	35°C	7 bar	50°C	10 bar	50°C

*For special requirements please contact the Technical Teams.

MBP SERIES HEATED DESICCANT

A centrifugal blower and high efficiency heater eliminate the use of valuable compressed air for desiccant regeneration. The completely automatic drying system uses blower to pull ambient air and pass it through the heater. This hot air stream flows opposite to drying flow direction. Hot air above 200°C regenerates the moisture inside desiccant bed and strips it completely of all moisture. The advanced control system monitors the dew point and adjusts the heating/regeneration accordingly thereby providing valuable energy savings.

- Dew point monitoring and control
- Computer Control-Display Status
- Display Alarms-Display Pressure
- Remote Start/Stop-Low Pressure Alarm
- Minimum pressure monitoring valve
- High pressure switches and alarms
- Externally heated or heatless dryer functions integrated to the MBP

Qualified for Energy Technology List ™

Correction Factor for MBP Series

Pressure (bar)	F1	Inlet Temp. (°C)	F2
4.5	0.69	20	1
5	0.75	25	1
6	0.88	30	1
7	1	35	1
8	1.12	40	0.80
9	1.25	45	0.73
10	1.37	-	-

Technical Specifications

Model	Capacity (m^3/h)	Connection Size	Max. Working Pressure (bar)	Pressure Drop (mbar)	Voltage	Average Power (kw)	Fuse Amp.	Activated Alumina (kg)	Dimensions (mm)		
									Width	Length	Height
MBP 850	850	2"	10	≤130	400/3/50	10.49	36	264	1290	1180	2299
MBP 1000	1000	2"	10	≤130	400/3/50	11.28	36	357	1200	1310	2415
MBP 1250	1250	DN80	10	≤130	400/3/50	10.83	50	404	1610	1270	2468
MBP 1500	1500	DN80	10	≤130	400/3/50	12.14	50	454	1610	1270	2563
MBP 1800	1800	DN80	10	≤130	400/3/50	15.21	65	566	1563	1515	2479
MBP 2200	2200	DN80	10	≤130	400/3/50	19.31	70	708	1563	1455	2789
MBP 2700	2700	DN80	10	≤130	400/3/50	26.06	87	852	1615	1514	2836
MBP 3200	3200	DN100	10	≤130	400/3/50	25.04	87	954	1710	1660	3054
MBP 3600	3600	DN100	10	≤130	400/3/50	33.90	121	1070	1710	1660	3268
MBP 4400	4400	DN100	10	≤130	400/3/50	37.84	121	1436	1975	2492	2910
MBP 5000	5000	DN125	10	≤130	400/3/50	46.25	136	1670	2045	2560	3382
MBP 6300	6300	DN150	10	≤130	400/3/50	62.29	170	2016	2090	2963	3328
MBP 7200	7200	DN150	10	≤130	400/3/50	69.38	170	2446	2020	3363	3047
MBP 8800	8800	DN150	10	≤130	400/3/50	75.15	250	2906	2020	3363	3341
MBP 10800	10800	DN200	10	≤130	400/3/50	94.60	280	3354	2492	3481	3765

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO7183.

Pressure Dew Point	Nominal Inlet Temp.	Nominal Working Pressure	Max. Inlet Temp.	Max. Working Pressure	Max. Ambient Temp.
-40°C	35°C	7 bar	45°C	10 bar	40°C

-70°C (optional)

MRD SERIES RAILWAY DRYER

Usage of compressed dryer air is highly important for sustaining reliable, cost-effective, and trouble-free working conditions in railway systems.

In railway systems compressors generally stayed underneath the train. Naturally, they intake the air from the surrounding which contains dust, water, and oil as a contaminant. When the air is compressed, the contaminants also stay inside the compressed air and with subsequent cooling water condensate in the airline system. That liquid form of water and dust particles coming from the surrounding area, mixed with lubricating oil of compressor or the oil which comes from the surrounding air and create sludgy acidic condensate. That condensate follows the airline and directly goes through the pneumatic systems like pneumatic train doors, brakes, horns, and pantographs. The importance of the dryer and filter become predominated at that point. Without these drying and filtration procedures create malfunctioning of the system followed by unwanted maintenance procedures.

Mikropor overcomes these problems with the new engineered Mikropor Railway Dryer - MRD Series. Modular type desiccant air dryer supply -40°C dew point compressed air with a help of high-efficiency pre-filtration and dust filtration system after the adsorption chambers. At the very beginning, the water separator removes excess liquified water from the compressed air. The remaining water, oil, and particles inside the air will be removed by the relative pre-filter. With these pre-filters particles can down to 1 micron and oil removed down to 0.01-micron level.

After the filtration, compressed air enters one of the modules which is filled with adsorbent granules. These special granules absorb the water and water vapor in the compressed air and help to supply -40 °C dew point dry compressed air to the system. After a while, these granules are getting saturated, and it requires regeneration. At that point drying procedure switch to the other adsorbent chamber and the first chamber regenerates the granules using the pressure swing adsorption method (PSA). With continuing this cycle continuous dried compressed air is supplied to the system.

Modular type desiccant air dryer: Supply -40°C dew point compressed dry air with PSA method.

Most of the liquid water, oil and dust contaminations are removed with pre-filtration system.

MRD SERIES RAILWAY DRYER

Application Areas

MRD System is applicable to use in metros, high-speed trains,
regional & commuter trains, locomotives, etc. It could be used in the system like;

- Braking System
- Pneumatically Operated Doors
- Pantograph Operation
- Track Cleaning
- Maintenance

Advantages of MRD Series

- High-efficiency air treatment system with pre-filtration for bulk water, oil and particles
- Compact, lightweight modular design
- Low noise emission
- Wide operating temperature range
- Immediately ready for operation even in cold conditions
- It could be used oil-free compressors and also oil-lubricated compressor

MRD Series - Technical Specifications

Nominal Air Flow Rate	0.75 Nm^3/min	Heater	24 W
Max. Operating Pressure	10 bars	Supply Voltage	24 VDC
Min. Operating Pressure	2 bars	Connection Size	½"
Max. Working Temperature	50°C @10 bar	X-Y-P Filters- GO	GO100
Min. Working Temperature	-40°C	Water Separator-GWS	G100WS

Reference Conditions

Inlet Compressed Air Pressure (bar)	Inlet Compressed Air Temp. (°C)	Ambient Temp. (°C)
7 bar g	35°C	25°C

Correction Factors for MRD Series

Inlet Temperature (°C)	F1	Pressure (bar)	F2
20	1	4.5	0.69
25	1	5	0.75
30	1	6	0.88
35	1	7	1
40	0.80	8	1.12
45	0.73	9	1.25
50	0.59	10	1.25
-	-	11	1.50
-	-	12	1.62
-	-	13	1.74
-	-	14	1.87
-	-	15	1.99
-	-	16	2.11

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