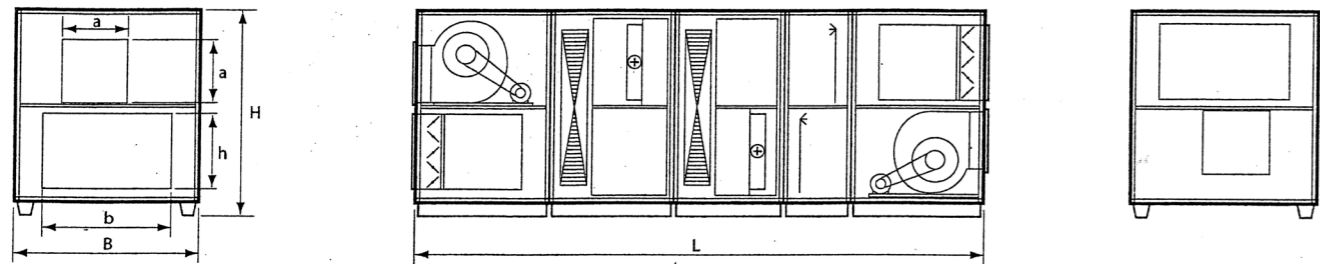


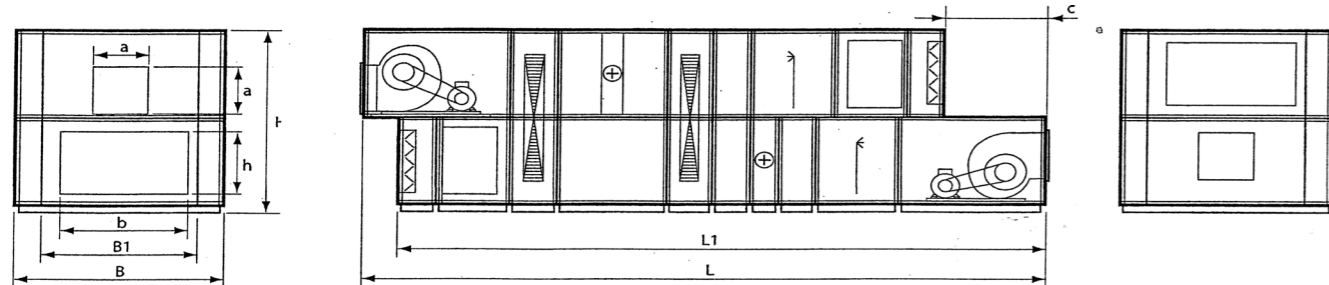
Weights and dimensions											
MCUI Sizes	Capacity m <sup>3</sup> /h	Weight kg	L mm	L1 mm	c mm	W* mm	W1 mm	H mm	a mm	w mm	h mm
2.2	8,000	1,600	5,366	--	--	1,616	1,616	1,816	600	1,200	600
2.9	10,000	1,890	5,666	--	--	1,816	1,816	2,016	600	1,400	800
3.6	13,000	2,240	5,816	--	--	2,016	2,016	2,332	700	1,600	800
4.6	17,000	2,600	6,166	--	--	2,316	2,316	2,552	800	1,800	1,000
5.2	19,000	3,700	7,670	7,086	1,188	2,516	1,716	2,932	800	1,400	1,000
6.3	23,000	4,400	8,190	7,406	1,388	2,716	2,016	2,982	900	1,700	1,200
8.0	29,000	5,300	8,796	7,868	1,568	3,008	2,008	3,578	1,000	1,700	1,200
10.0	36,000	6,600	9,196	8,086	1,768	3,308	2,608	3,578	1,100	2,000	1,400

\* For unit width in the rotor area see W1. The air capacity may vary by up to 20%.

**Unit size 2.2 to 4.8**



**Unit size 5.2 to 10.0**



with controls, a large power element for the chiller complete with electrical installation, a larger domestic transformer station for the high energy demand of the compressor unit, together with the higher energy provision costs that must be paid to the electricity board.

**Use Munters when planning your project**  
DesiCool® air conditioning systems are manufactured complete with all components at our own production sites in accordance with certified standards, and they include all control components such as control cabinets with Munters software, all sensors and drives, and of course the

RPM-regulated supply and discharge fans.

**Maintenance and servicing from Munters experts**

Of course, sometimes maintenance work has to be carried out, for example according to VDI 6022. Munters service department will gladly take care of any maintenance work to ensure that your system works reliably.

We can help you design your system, produce a profitability calculation, and plan your project. We will be glad to provide you with whatever information you require!

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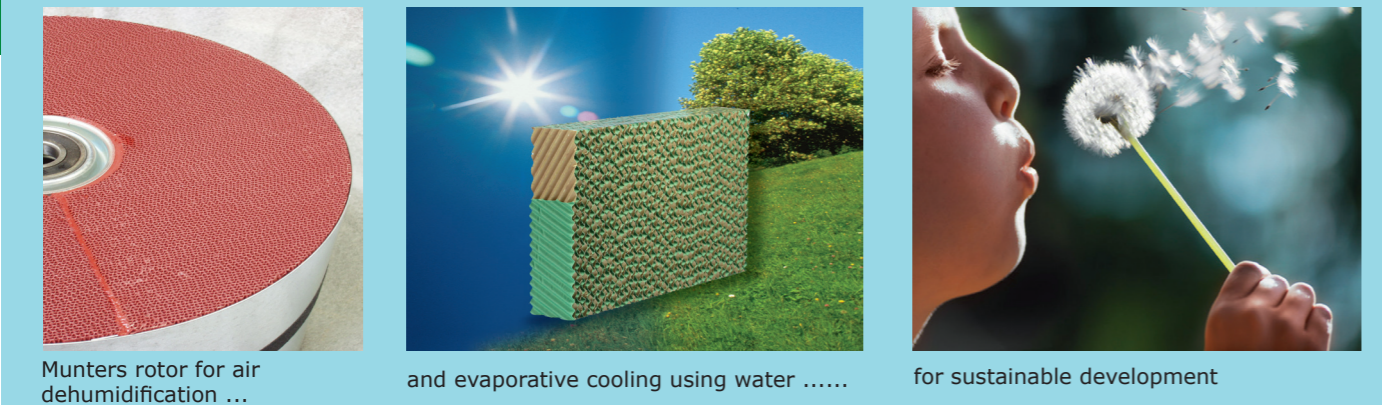
Air conditioning technology without refrigerants from Munters: DesiCool

Munters DesiCool® - Air conditioning for the future  
Perfect air quality and low running costs



# DesiCool® air conditioning without refrigerants - for a better indoor environment. Using hot water to dehumidify, evaporative cooling in the summer and up to 90% heat recovery in winter

2



In 1948, Carl Munters took the first steps towards his groundbreaking invention of the sorption rotor and evaporative cooler. These days they are core elements of Munters systems all around the world.

In 1994, Munters began developing sorption air conditioning systems, from the first DesiCool air conditioning system right up to current state-of-the-art technology. Munters has a successful history of research and development and today Munters is a well-known distributor of natural, refrigerant-free air conditioning technology – our list of clients speaks for itself.

The natural physical processes of air dehumidification, heat recovery and evaporative cooling make compressors and refrigerants unnecessary in all Munters air conditioning systems. Evaporative cooling is used instead of refrigeration, and Munters desiccant rotors take on the job of air dehumidification and heat recovery. The result is that sorption air conditioning units with evaporative cooling are the product of the future, because they do not require refrigerants

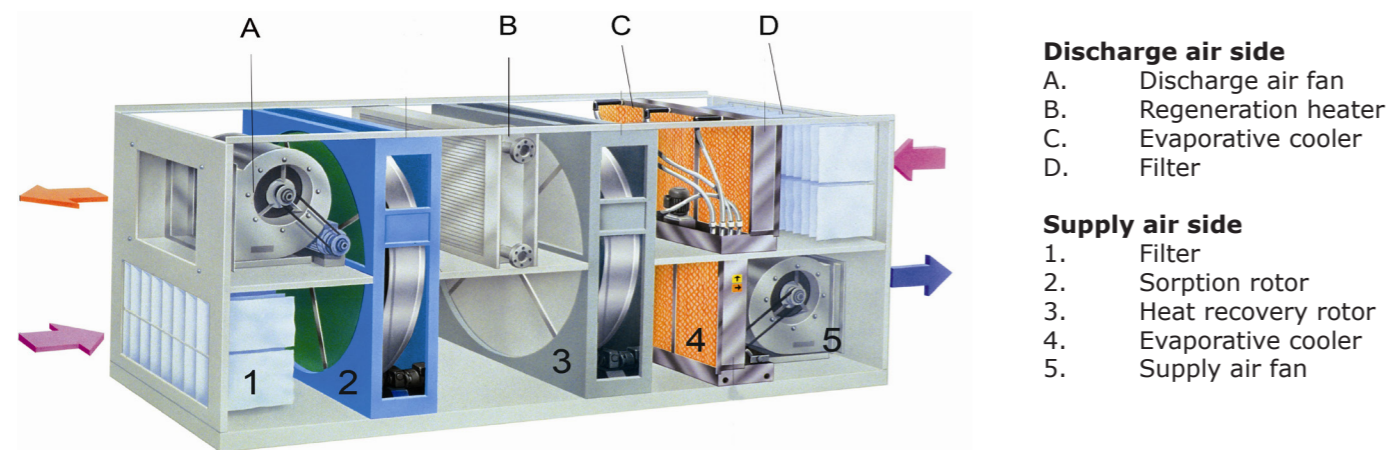
**DesiCool ensures a pleasant climate**  
It is in the summer when the sun shines that the most cooling is required. DesiCool only uses fresh external air (without air circulation) to provide a supply air temperature of approx. 18°C, even

when the temperature outside is 32°C and the relative humidity is 40%.

**DesiCool in the summer**  
The external air flows through an air filter (1) into the Munters sorption rotor (2). This removes part of the moisture in the air. This causes the air temperature to rise because the heat contained in the evaporating water is released (adiabatic behaviour). 1 g of water removed from the air raises the air temperature by 2.5°C for every kg of dry air. In the next stage Munters heat recovery rotor (3) removes part of this heat from the air and conveys it to the discharge air side. This cools down the now-drier supply air even more. The Munters evaporative cooler (4) then cools the air again down to the final required supply air temperature.

**The result of this is a supply air temperature of 18°C without the use of compressor cooling equipment, just using external air.**

First of all, the internal discharge air is cooled down in the evaporative cooler (C). The cooled discharge air then flows through the heat recovery rotor (3) and absorbs some of the heat that was removed from the supply air. This heats the supply air before it reaches the regeneration



3

heater. In the regeneration heater (B) the air temperature is raised to approx. 55°C so that the Munters sorption rotor is constantly kept dry (regeneration process). The exhaust air is then conveyed outside by the discharge air fan.

**Summer cooling driven by hot water**  
When there is surplus heat available in the summer, this can be used in a practical and environmentally friendly way – whether it be a case of renewable or natural heat sources, for example:

- Solar power plants
- Heat pumps
- District heating
- Hot water from heating systems
- Combined heat and power
- Process coolants
- ...and other available heat sources

Munters DesiCool® is based on natural basic principles: the humidification and dehumidification of air. First the supply air is dehumidified in the Munters rotor, and then it is cooled in the evaporative cooler. All this process requires is hot water up to 60°C for dehumidifying the air in the rotor, and water for the evaporative cooler.

**DesiCool in winter**  
In winter, when the air outside is cold, both Munters rotors (sorption rotor and heat recovery rotor) are used for heat recovery. This is up to 90% efficient. The evaporative cooler can also be used as a humidifier



**Munters evaporative cooler: hygiene certified**  
The Munters evaporative cooler in the DesiCool® system is hygiene certified in accordance with VDI 6022. All Munters air conditioning systems comply with basic DIN standards. This means that they provide excellent protection against possible health risks, such as contamination with Legionnaires' disease. There are, for example, no aerosols used in the system, because the water always leaves the Munters evaporative cooler in the form of a gas, i.e. as pure water vapour. There have not been any cases of Legionnaires' disease in any of the 60,000 installations that use a Munters air humidifier.

**Investment cost**  
When comparing prices, choosing a Munters air conditioning system is the same as opting for one of the many other conventional air conditioning systems. This does not just take into account the cost of cooling in conventional compressor systems, but also the cost of piping with insulation, a cabinet

Profitability calculation for the DesiCool system			
		Munters DesiCool	Air conditioning unit with compressor cooling and heat recovery 60%
<b>Operating hours per year</b>	[h]	8,400	8,400
<b>Fan</b>	Supply air [kWh]	12.8	13.6
	Discharge air [kWh]	13.0	11.9
<b>Cooling</b>	Rotor + 1 evaporative cooler [kWh/a]	206	-
	Heat recovery [kWh/a]	167	-
	Rotor + 2 evaporative coolers [kWh/a]	251	-
	Compression cooling [kWh/a]	-	84,566
	Secondary pumps [kWh/a]	-	2,216
<b>Electricity</b>	Regeneration heat for cooling [kWh/a]	3,343	-
	Water [m³/a]	109	-
	Heat recovery rotor [kWh]	2,188	-
<b>Heating</b>	Dehumidification rotor [kWh]	2,188	-
	Re-heater [kWh]	85,217	315,754
	Electricity [€/kWh]	0.11	0.11
<b>Prices</b>	Heat [€/kWh]	0.06	0.06
	Water [€/m³]	2.00	2.00
	Costs		
	Ventilation per year	€ 23,612	€ 23,591
	Cooling* per year	€ 486	€ 9,546
	Heating per year	€ 5,594	€ 18,945
<b>Yearly running costs</b>		<b>€ 29,895</b>	<b>€ 52,084</b>
	<b>Difference per year</b>		<b>€ 22,390</b>
	<b>Saving per year</b>		<b>43.0%</b>

\*These costs include all uses listed under "cooling"