

Dantherm[®]
CLIMATE SOLUTIONS



DESICCANT DEHUMIDIFIERS

TTR RANGE

INDUSTRIAL CLIMATE CONTROL SOLUTIONS

DANTHERMGROUP

DANTHERM TTR INDUSTRIAL DESICCANT DEHUMIDIFIERS

INTRODUCTION

The robust high-performance TTR dehumidifiers ensure efficient and permanent dehumidification, even at low dew points.

The TTR range is developed and manufactured in Germany using nothing but high-quality components supplied by leading component manufacturers.

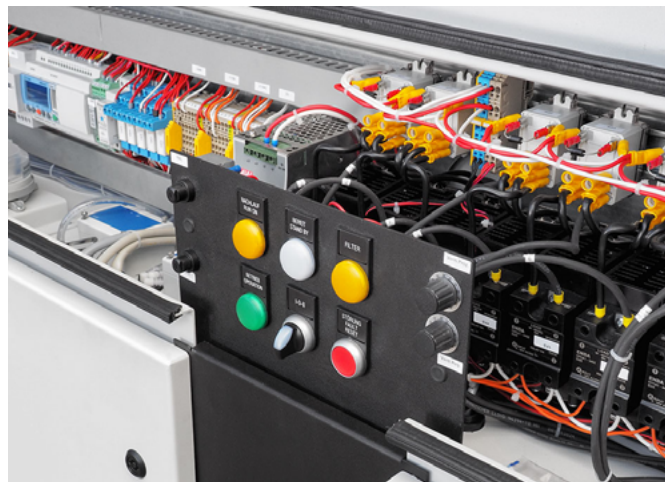
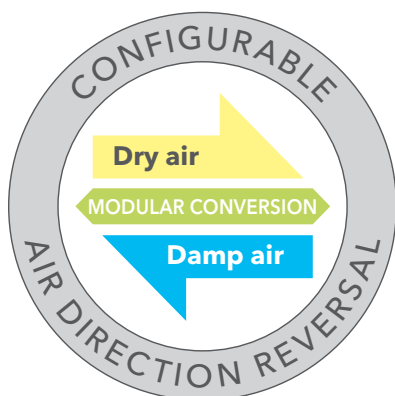
Thanks to the internal heat recycling process as well as the high level of resilience and performance of their special adsorption rotors, the desiccant dehumidifiers of the TTR series deliver great dehumidification performance with a low energy consumption.



Key features

- Professional quality "Made in Germany"
- Configurable air direction reversal for all models
- Equipped with manifold functions and extensive features as standard
- High economic efficiency due to modular assembly design
- Can be configured individually for any application due to a wide range of equipment options

HIGH-PERFORMANCE DEHUMIDIFIERS WITH A MAINTENANCE-FRIENDLY DESIGN



The configurable air direction reversal is a practical detail for stationary industrial applications, in particular those with pipe connections, because it makes it possible to integrate new or additional devices flexibly into existing process sequences. With the operator side always facing the user, the air flow direction can easily be adjusted to individual procedures by utilising the modular conversion capabilities. So blowing out dry air to the right and discharging humid air to the left – or the other way round – is possible thanks to the air direction reversal.

Based on the latest generation of efficient components from leading manufacturers, The TTR industrial desiccant dehumidifiers offer numerous extension options and have been designed with ease of service in mind.



All TTR units come equipped ex works with separate G4 air filters in Z-line design, both for process and regeneration air. A corresponding filter monitoring unit with warning light is also fitted as standard.

DANTHERM TTR INDUSTRIAL DESICCANT DEHUMIDIFIERS CUSTOMISED SPECIAL SOLUTIONS



TTR industrial desiccant dehumidifiers with hygienic design

On request, we configure special industrial desiccant dehumidifiers using a maximum of bacteriostatic materials for the pharmaceutical or food industry that both have very high hygienic requirements.

The entire process air conveying section is made exclusively of stainless steel and with its heat regeneration of over 120 °C, a non-corrosive sorption rotor ensures an environment hostile to germs for maximum hygiene.



Museums and archives

For exhibition or storage areas in museums, libraries or archives, room climate and air quality are the most important factors for preserving valuable exhibits or archives.



Shipbuilding and shipyards

Typical tasks in shipyards require high dehumidification performance at low temperatures. With integrated heat recovery and electronic energy management as standard, the Dantherm TTRs constitute an energy-efficient solution.



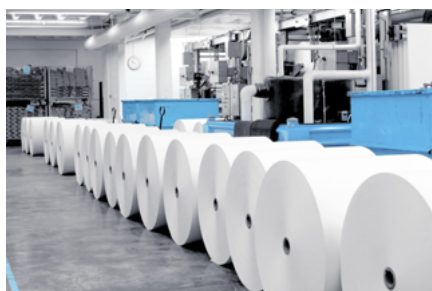
Agriculture and livestock farming

Animal stables are characterised by high levels of humidity caused by the excretions and vapours of the animals, cleaning and watering. Both stationary and mobile adsorption dehumidifiers are ideal for removal of the humid air.



Electronics and semiconductors

Moisture is the biggest threat in the production and storage of electronic components and semiconductors: high humidity causes corrosion and condensation moisture on surfaces leads to poorly adhering coatings of microchips or sensors. Keeping a constantly low air humidity is key.



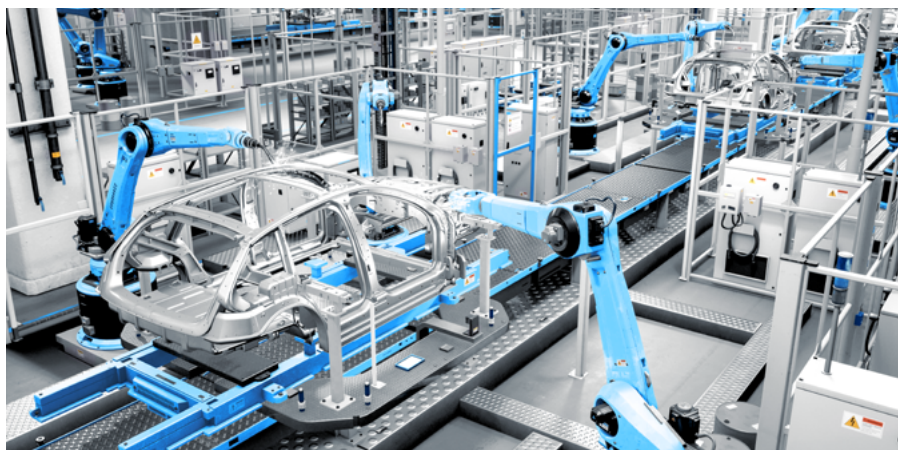
Pulp, paper and printing industry

Damage to pulp, finished paper products, printing plants and warehouses is mainly caused by excessive humidity. In addition to deteriorating the quality of the paper produced, excessive humidity also attacks the expensive machinery.



Plastics industry

In the production of plastic parts, excessive humidity and condensation causes material changes, clumping of granulate, corrosion of injection moulds and water impressions on surfaces. With the right air dehumidification solution in place, these issues can be avoided.



TTR industrial desiccant dehumidifiers for PWIS-free dry air

On request and for use in the automotive industry, especially in paint shops, we can deliver PWIS-free special models of our TTR desiccant dehumidifiers equipped with a special rotor made entirely of silicone-free components.

As is the case for all TTR units, this model's desiccant wheel is also washable and non-corrosive, it does not discharge any desiccant and resists air saturated with moisture.



Data centres

Optimal air conditioning is the basis for smooth continuous operation in data centres. Temperatures must be kept relatively low to avoid overheating.



Water supply and disposal

In the water treatment industry, our dehumidification solutions not only prevent condensation, corrosion or mould growth and protect electronic equipment, they also ensure that hygiene requirements are met and help reduce operating and maintenance costs.



Military and defence

When storing helicopters, vehicles, uniforms and ammunition for the military, it is important to maintain humidity levels to prevent mould, electronic failure, chemical reactions and corrosion.



Water damage restoration

In rooms that remain damp and cold for most of the year, or water damage in low temperatures, using adsorption dehumidifiers is the fastest and most efficient way to treat air. Regardless of temperature, they effectively remove moisture to prevent condensation problems.



Restaurants and canteen kitchens

Preparing food in industrial kitchens releases a lot of water into the ambient air. The following thorough cleaning of the worktops and equipment does the same. The resulting high relative humidity can be countered effectively using adsorption dehumidifiers.



Indoor ice rinks

In ice skating rinks, condensation inevitably forms due to the temperature difference between the air and the icy surface, especially if humid outside air constantly flows in through the cooling system. Desiccant dehumidifiers will distribute dry air over the ice to ensure great ice quality and avoid fog.

DANTHERM TTR INDUSTRIAL DESICCANT DEHUMIDIFIERS

CUSTOMISED SPECIAL SOLUTIONS

Need special desiccant dehumidifier models?

On request, we can manufacture desiccant dehumidifiers in special versions that are tailored to your needs, for example:

- TTR industrial desiccant dehumidifiers with hygienic design
- TTR industrial desiccant dehumidifiers for PWIS-free dry air
- TTR industrial desiccant dehumidifiers with extremely low dew point

Benefit from getting special models that are tailored to your needs planned, designed and manufactured in close cooperation with our specialists.



DANTHERM TTR INDUSTRIAL DESICCANT DEHUMIDIFIERS

STANDARD AND OPTIONAL FEATURES

As standard, all TTR units are equipped with numerous functions and features guaranteeing reliable operation, easy handling and a long lifetime requiring minimal maintenance.

Additional equipment options enable you to adapt the units to your specific requirements.

Specifications	TTR 800	TTR 1400	TTR 2000	TTR 2800	TTR 3700	TTR 5200	TTR 6600	TTR 8200	TTR 10000	TTR 12000	TTR 13500
Stainless steel housing	■	■	■	■	■	□	□	□	□	□	□
Steel housing, galvanised and painted	-	-	-	-	-	■	■	■	■	■	■
Wide-range voltage	■	■	■	■	■	■	■	■	■	■	■
Rotor rotation control (rotor and drive)	■	■	■	■	■	■	■	■	■	■	■
Overtemperature protection system with restart lock (regeneration air)	■	■	■	■	■	■	■	■	■	■	■
Operating temperature management (regeneration air)	■	■	■	■	■	■	■	■	■	■	■
Filter monitoring (per air current and collective warning light)	■	■	■	■	■	■	■	■	■	■	■
Duoventic control ¹	■	■	■	■	■	■	■	■	■	■	■
PLC control module Millenium	□	□	□	□	□	■	■	■	■	■	■
Flowmatic volumetric flow control	□	□	□	□	□	■	■	■	■	■	■
Configurable air direction reversal	■	■	■	■	■	■	■	■	■	■	■
Terminal external On/Off	■	■	■	■	■	■	■	■	■	■	■
Terminal hygrostat	■	■	■	■	■	■	■	■	■	■	■
Potential-free contacts (operation, fault, filter)	■	■	■	■	■	■	■	■	■	■	■

¹ Duoventic allows the independent adjustment of each fan's performance via a potentiometer without the need for customer-provided throttle units;

■ standard equipment; □ optional equipment

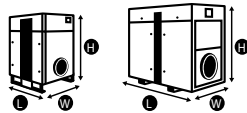


Caption

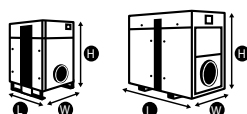
1. Lockable swivel castors at the front and trestle rollers at the rear
2. Stackable
3. Available with a stackable transport frame
4. Hygrostat control

DANTHERM TTR INDUSTRIAL DESICCANT DEHUMIDIFIERS

SPECIFICATIONS

Technical data		TTR 800	TTR 1400	TTR 2000	TTR 2800	TTR 3700
Article number		1 110 003 150	1 110 003 160	1 110 003 171	1 110 003 175	1 110 003 177
Dry air	Dehumidification performance ¹ [kg/h]	3.6	7.4	10.8	15.7	20.5
	Air volume free-blowing [m³/h]	950	1,750	2,350	3,150	4,300
	Air volume nominal [m³/h]	750	1,450	2,000	2,800	3,700
	Compression [Pa]	300	300	300	300	400
Regeneration air	Air volume [m³/h]	130	270	380	570	740
	Compression [Pa]	300	300	250	300	200
Principle of operation (see page 11)		TTR Trisorp Dual				
Operation range [°C/% RH]		-20 °C to +40 °C / 0 to 100 % RH (other operating ranges upon request)				
Heating [kW]		4.1	9.0	12.5	18.9	24.5
	Power input [kW]	4.9	9.8	15	21.6	28.8
Electrical values	Voltage [V, Hz]	3 x 380 ... 480, 50/60 + PE				
	Current consumption (@ 3 x 400 V) [A]	7.5	15.0	23.0	31.7	42.8
	Electrical connection [A]	16	16	32	32	63
Length [mm]		734	734	1,348	1,348	1,348
Width [mm]		649	649	769	769	769
Height [mm]		942	942	1,323	1,323	1,323
Weight [kg]		85	100	230	250	270
Connections dry air input/output ø [mm]		250 / 250	250 / 250	315 / 315	315 / 315	315 / 315
Connections regeneration air input/output ø [mm]		160 / 160	160 / 160	200 / 200	200 / 200	200 / 200

¹ Nominal data at 20 °C / 60 % RH

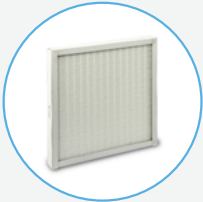
Technical data		TTR 5200	TTR 6600	TTR 8200	TTR 10000	TTR 12000	TTR 13500
Article number		1 110 003 182	1 110 003 187	1 110 003 190	1 110 003 192	1 110 003 195	1 110 003 197
Dry air	Dehumidification performance ¹ [kg/h]	29.1	37.2	46.2	55.1	66.5	74.6
	Air volume free-blowing [m³/h]	5,800	7,200	9,000	10,500	12,500	14,700
	Air volume nominal [m³/h]	5,200	6,600	8,200	9,800	11,800	13,300
	Compression [Pa]	400	400	400	300	300	400
Regeneration air	Air volume [m³/h]	1,050	1,330	1,660	1,970	2,380	2,670
	Compression [Pa]	300	300	300	300	300	200
Principle of operation (see page 11)		TTR Trisorp Dual					
Operation range [°C/% RH]		-20 °C to +40 °C / 0 to 100 % RH (other operating ranges upon request)					
Heating [kW]		36.0	45.0	57.0	66.0	81.0	90.0
	Power input [kW]	40.0	50.5	64.5	74.0	89.0	103.0
Electrical values	Voltage [V, Hz]	3 x 380 ... 480, 50/60 + PE					
	Current consumption (@ 3 x 400 V) [A]	60.0	73.5	93.5	108.0	129.0	150.0
	Electrical connection [A]	63	100	125	160	160	250
Length [mm]		1,919	1,919	1,919	2,032	2,032	2,032
Width [mm]		1,100	1,100	1,100	1,460	1,460	1,460
Height [mm]		1,680	1,680	1,680	1,802	1,802	1,802
Weight [kg]		680	720	750	900	1,000	1,100
Connections dry air input/output ø [mm]		500 / 500	500 / 500	500 / 500	Rectangular duct connection (optional 2 x 500 ²)		
Connections regeneration air input/output ø [mm]		300 / 300	300 / 300	300 / 300	400 / 400	400 / 400	400 / 400

¹ Nominal data at 20 °C / 60 % RH

² 2 x ø 500 mm with accessory hose adapter, see equipment options on page 7

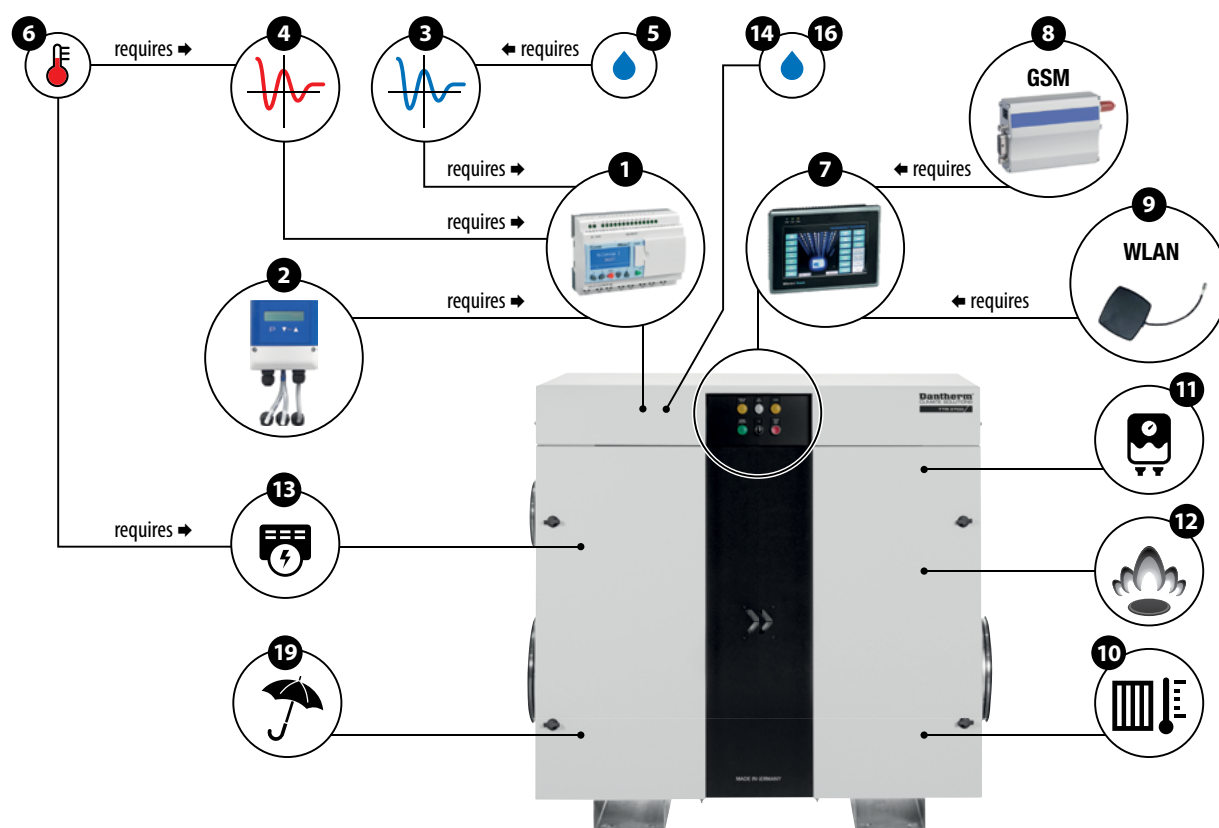
DANTHERM TTR INDUSTRIAL DESICCANT DEHUMIDIFIERS

EQUIPMENT OPTIONS

Illustration	Accessory	Description	Products	Code
	G4 Z-line filter	Process air	TTR 800 TTR 1400 TTR 2000 TTR 2800 TTR 3700 TTR 5200 TTR 6600 TTR 8200 TTR 10000 TTR 12000 TTR 13500	2 x Art. no. 7.160.000.404 2 x Art. no. 7.160.000.404 1 x Art. no. 7.160.000.428 1 x Art. no. 7.160.000.428 1 x Art. no. 7.160.000.428 2 x Art. no. 7.160.000.448 2 x Art. no. 7.160.000.448 2 x Art. no. 7.160.000.448 2 x Art. no. 7.160.000.495 2 x Art. no. 7.160.000.495 2 x Art. no. 7.160.000.495
		Regeneration air	TTR 800 TTR 1400 TTR 2000 TTR 2800 TTR 3700 TTR 5200 TTR 6600 TTR 8200 TTR 10000 TTR 12000 TTR 13500	1 x Art. no. 7.160.000.404 1 x Art. no. 7.160.000.404 1 x Art. no. 7.160.000.404 1 x Art. no. 7.160.000.404 1 x Art. no. 7.160.000.404 1 x Art. no. 7.160.000.448 1 x Art. no. 7.160.000.448 1 x Art. no. 7.160.000.448 1 x Art. no. 7.160.000.475 1 x Art. no. 7.160.000.475 1 x Art. no. 7.160.000.475
	F7 pleated filter cartridge	Process air	TTR 800 TTR 1400 TTR 2000 TTR 2800 TTR 3700 TTR 5200 TTR 6600 TTR 8200 TTR 10000 TTR 12000 TTR 13500	2 x Art. no. 7.160.000.409 2 x Art. no. 7.160.000.409 1 x Art. no. 7.160.000.429 1 x Art. no. 7.160.000.429 1 x Art. no. 7.160.000.429 2 x Art. no. 7.160.000.449 2 x Art. no. 7.160.000.449 2 x Art. no. 7.160.000.449 2 x Art. no. 7.160.000.496 2 x Art. no. 7.160.000.496 2 x Art. no. 7.160.000.496
		Regeneration air	TTR 800 TTR 1400 TTR 2000 TTR 2800 TTR 3700 TTR 5200 TTR 6600 TTR 8200 TTR 10000 TTR 12000 TTR 13500	1 x Art. no. 7.160.000.409 1 x Art. no. 7.160.000.409 1 x Art. no. 7.160.000.409 1 x Art. no. 7.160.000.409 1 x Art. no. 7.160.000.409 1 x Art. no. 7.160.000.449 1 x Art. no. 7.160.000.449 1 x Art. no. 7.160.000.449 1 x Art. no. 7.160.000.476 1 x Art. no. 7.160.000.476 1 x Art. no. 7.160.000.476
	Tronect SP-T Tronect TF-L	Dry air inlet / outlet Ø 250 mm Humid air inlet / outlet Ø 160 mm	TTR 800 / TTR 1400	6.100.001.202 Ø 255 mm 6.100.001.125 Ø 160 mm
		Dry air inlet / outlet Ø 315 mm Humid air inlet / outlet Ø 200 mm	TTR 2000 / TTR 2800 / TTR 3700	6.100.001.210 Ø 356 mm 6.100.001.200 Ø 203 mm
		Dry air inlet / outlet Ø 500 mm Humid air inlet / outlet Ø 300 mm	TTR 5200 / TTR 6600 / TTR 8200	6.100.001.216 Ø 525 mm 6.100.001.295 Ø 305 mm
		Dry air inlet / outlet Ø 2 X 500 mm Humid air inlet / outlet Ø 400 mm	TTR 10000 / TTR 12000 / TTR 13500	6.100.001.216 Ø 525 mm 6.100.001.212 Ø 425 mm

DANTHERM TTR INDUSTRIAL DESICCANT DEHUMIDIFIERS

ADDITIONAL EQUIPMENT OPTIONS



Additional equipment options (Article number)		TTR 800	TTR 1400	TTR 2000	TTR 2800	TTR 3700
1	PLC control module Millenium	6.100.010.401	6.100.010.401	6.100.010.401	6.100.010.401	6.100.010.401
2	Flowmatic S (requires 1)	6.100.010.405	6.100.010.405	6.100.010.405	6.100.010.405	6.100.010.405
3	Humidity control (requires 1)	6.100.010.415	6.100.010.415	6.100.010.415	6.100.010.415	6.100.010.415
4	Temperature control (requires 1)	6.100.010.416	6.100.010.416	6.100.010.416	6.100.010.416	6.100.010.416
5	Dew point sensor, -80 °C ... +20 °C (requires 3)	6.100.010.455	6.100.010.455	6.100.010.455	6.100.010.455	6.100.010.455
6	Pt100 temperature sensor (requires 1+4 and/or 10 or 13)	6.100.010.460	6.100.010.460	6.100.010.461	6.100.010.461	6.100.010.461
7	Touchscreen for device operation (requires 1)	on request	on request	on request	on request	on request
8	GSM remote connection (requires 7)	on request	on request	on request	on request	on request
9	WLAN remote connection (requires 7)	on request	on request	on request	on request	on request
10	Integrated heat exchanger module stainless steel	–	–	6.100.010.437	6.100.010.437	6.100.010.437
11	Steam heater for regeneration air	–	–	6.100.010.440	6.100.010.440	6.100.010.440
12	Gas heater for regeneration air	–	–	6.100.010.445	6.100.010.445	6.100.010.445
13	Electric reheater for dry air	6.100.010.450	6.100.010.450	6.100.010.451	6.100.010.451	6.100.010.451
14	External hygrostat HG 120	6.100.002.040	6.100.002.040	6.100.002.040	6.100.002.040	6.100.002.040
15	4-pin connector coupling for HG 120	6.100.002.039	6.100.002.039	6.100.002.039	6.100.002.039	6.100.002.039
16	External thermohygrostat HG 125, electronic	6.100.002.042	6.100.002.042	6.100.002.042	6.100.002.042	6.100.002.042
17	7-pin connector coupling for HG 125	6.100.002.046	6.100.002.046	6.100.002.046	6.100.002.046	6.100.002.046
18	Wheels (4 swivel castors with brake)	6.100.010.510	6.100.010.510	6.100.010.511	6.100.010.511	6.100.010.511
19	Weather protection equipment	6.100.010.520	6.100.010.520	6.100.010.521	6.100.010.521	6.100.010.521
20	Protective and transport frame, stackable, without castors	–	–	–	–	–
21	Castors for transport frame	–	–	–	–	–
22	Transport frame, stackable, with castors	6.100.010.480	6.100.010.480	6.100.010.485	6.100.010.485	6.100.010.485
23	Filterbox (external) for HEPA air filtration	7.240.000.015	7.240.000.015	7.240.000.015	7.240.000.015	7.240.000.015
24	Hose adapter (2 x Ø 500 mm)	–	–	–	–	–

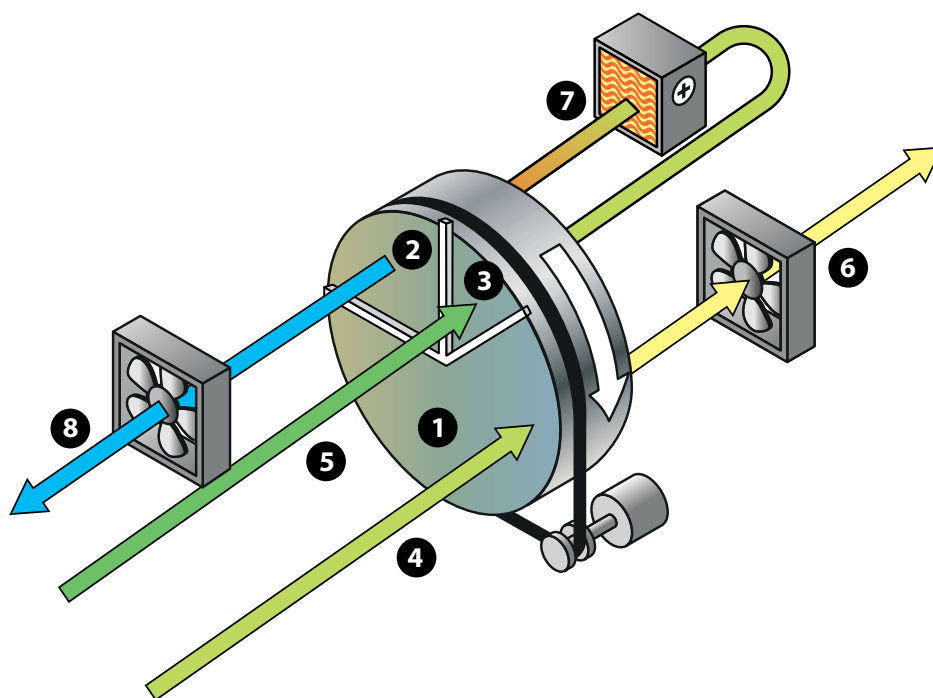
■ standard equipment; □ optional equipment; further equipment available upon request, e.g. frost-protected version for outdoor installation, cold room insulation and much more

DANTHERM TTR INDUSTRIAL DESICCANT DEHUMIDIFIERS

ADDITIONAL EQUIPMENT OPTIONS

Operation principles of the TTR desiccant dehumidifiers

Separate air flows of process and regeneration air implemented by one fan each. With purging sector for the heat recycling process for incoming regeneration air.



TTR-Trisorp-Dual 400 V Key for operation principles

1. Dehumidification sector
2. Regeneration sector
3. Purging sector for heat recovery

4. Process air
5. Regeneration air
6. Dry air
7. Heating
8. Damp air

Additional equipment options (Article number)	TTR 5200	TTR 6600	TTR 8200	TTR 10000	TTR 12000	TTR 13500
1 PLC control module Millenium	■	■	■	■	■	■
2 Flowmatic S (requires 1)	■	■	■	■	■	■
3 Humidity control (requires 1)	6.100.010.415	6.100.010.415	6.100.010.415	6.100.010.415	6.100.010.415	6.100.010.415
4 Temperature control (requires 1)	6.100.010.416	6.100.010.416	6.100.010.416	6.100.010.416	6.100.010.416	6.100.010.416
5 Dew point sensor, -80 °C ... +20 °C (requires 3)	6.100.010.455	6.100.010.455	6.100.010.455	6.100.010.455	6.100.010.455	6.100.010.455
6 Pt100 temperature sensor (requires 1+4 and/or 10 or 13)	6.100.010.462	6.100.010.462	6.100.010.462	6.100.010.463	6.100.010.463	6.100.010.463
7 Touchscreen for device operation (requires 1)	on request	on request	on request	on request	on request	on request
8 GSM remote connection (requires 7)	on request	on request	on request	on request	on request	on request
9 WLAN remote connection (requires 7)	on request	on request	on request	on request	on request	on request
10 Integrated heat exchanger module stainless steel	6.100.010.438	6.100.010.438	6.100.010.438	6.100.010.439	6.100.010.439	6.100.010.439
11 Steam heater for regeneration air	6.100.010.441	6.100.010.441	6.100.010.441	6.100.010.442	6.100.010.442	6.100.010.442
12 Gas heater for regeneration air	6.100.010.445	6.100.010.445	6.100.010.445	6.100.010.445	6.100.010.445	6.100.010.445
13 Electric reheater for dry air	6.100.010.452	6.100.010.452	6.100.010.452	6.100.010.453	6.100.010.453	6.100.010.453
14 External hygrostat HG 120	6.100.002.040	6.100.002.040	6.100.002.040	6.100.002.040	6.100.002.040	6.100.002.040
15 4-pin connector coupling for HG 120	6.100.002.039	6.100.002.039	6.100.002.039	6.100.002.039	6.100.002.039	6.100.002.039
16 External thermohygrostat HG 125, electronic	6.100.002.042	6.100.002.042	6.100.002.042	6.100.002.042	6.100.002.042	6.100.002.042
17 7-pin connector coupling for HG 125	6.100.002.046	6.100.002.046	6.100.002.046	6.100.002.046	6.100.002.046	6.100.002.046
18 Wheels (4 swivel castors with brake)	6.100.010.512	6.100.010.512	6.100.010.512	6.100.010.513	6.100.010.513	6.100.010.513
19 Weather protection equipment	6.100.010.522	6.100.010.522	6.100.010.522	6.100.010.523	6.100.010.523	6.100.010.523
20 Protective and transport frame, stackable, without castors	6.100.010.490	6.100.010.490	6.100.010.490	6.100.010.495	6.100.010.495	6.100.010.495
21 Castors for transport frame	6.100.010.501	6.100.010.501	6.100.010.501	6.100.010.502	6.100.010.502	6.100.010.502
22 Transport frame, stackable, with castors	–	–	–	–	–	–
23 Filterbox (external) for HEPA air filtration	7.240.000.015	7.240.000.015	7.240.000.015	7.240.000.015	7.240.000.015	7.240.000.015
24 Hose adapter (2 x ø 500 mm)	–	–	–	6.100.010.524	6.100.010.524	6.100.010.524

■ standard equipment; □ optional equipment; further equipment available upon request, e.g. frost-protected version for outdoor installation, cold room insulation and much more

DENMARK

Dantherm Denmark A/S
DK-7800 Skive
+45 96 14 37 00
sales.dk@danthermgroup.com

GERMANY

Trotec GmbH
52525 Heinsberg
+49 2452 962-0
vertrieb.de@danthermgroup.com

FRANCE

Dantherm Group SAS
69694 Vénissieux Cedex
+33 4 78 47 11 11

67850 Herrlisheim
+33 3 90 29 48 18
sales.fr@danthermgroup.com

SPAIN

Dantherm Group SP SAU
28108 Alcobendas, Madrid
+34 91 661 45 00

46980 Paterna, Valencia
+34 961 524 866
sales.es@danthermgroup.com

UNITED KINGDOM

Dantherm Group Ltd
Maldon CM9 4XD
+44 (0)1621 856611
sales.uk@danthermgroup.com

ITALY

Dantherm Group S.p.A.
37010 Pastrengo (VR)
+39 045 6770533
sales.it@danthermgroup.com

POLAND

Dantherm Group Sp. z o.o.
62-023 Gądki
+48 61 65 44 000
sales.pl@danthermgroup.com

NORWAY

Dantherm Group AS
3138 Skallestad
+47 33 35 16 00
sales.no@danthermgroup.com

SWEDEN

Dantherm Group AB
602 13 Norrköping
+46 (0)11 19 30 40
sales.se@danthermgroup.com

SWITZERLAND

Dantherm Group AG
CH-5405 Baden Dättwil
+41 43 500 00 50
sales.ch@danthermgroup.com

Dealer:

KEEP UPDATED
FOLLOW US ON:



desiccant@danthermgroup.com

danthermgroup.com