

# INSTRUCTION MANUAL (translation of German original)

## Air dehumidifier

### Series AD 20

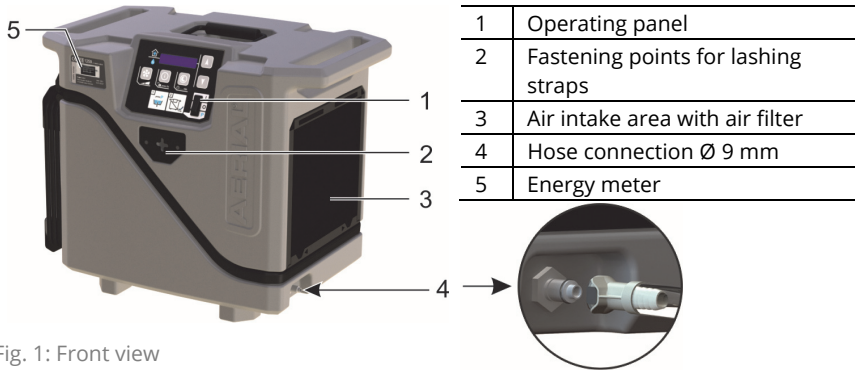


Fig. 1: Front view

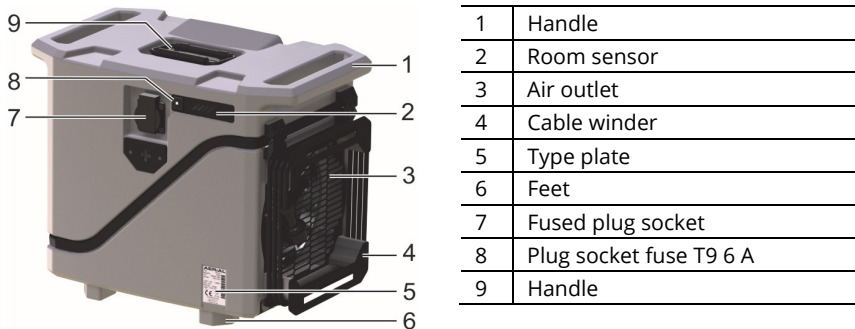


Fig. 2: Rear view

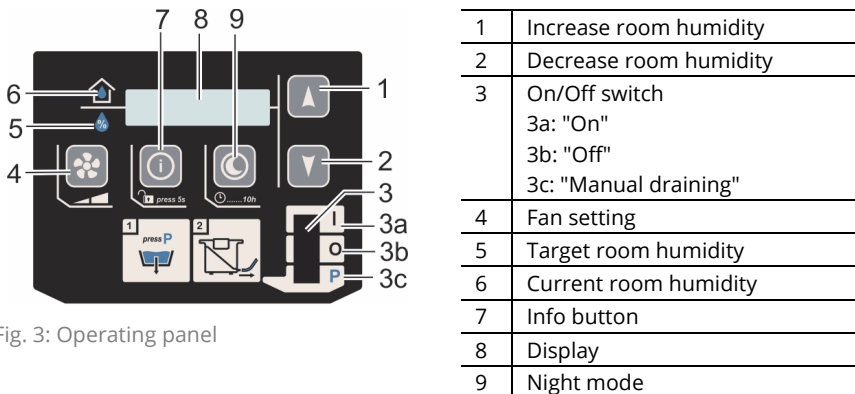


Fig. 3: Operating panel

1	Operating panel
2	Fastening points for lashing straps
3	Air intake area with air filter
4	Hose connection Ø 9 mm
5	Energy meter

1	Handle
2	Room sensor
3	Air outlet
4	Cable winder
5	Type plate
6	Feet
7	Fused plug socket
8	Plug socket fuse T9 6 A
9	Handle

1	Increase room humidity
2	Decrease room humidity
3	On/Off switch 3a: "On" 3b: "Off" 3c: "Manual draining"
4	Fan setting
5	Target room humidity
6	Current room humidity
7	Info button
8	Display
9	Night mode

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As of: 03\_2019

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## 1 Notes on this instruction manual

This instruction manual contains important information on how to transport, install, operate, store and dispose of the AERIAL air dehumidifier properly and safely. Therefore keep this instruction manual in a safe place.

## 2 Safety

### Designated use

Use the air dehumidifier exclusively for dehumidifying air at atmospheric pressure in enclosed indoor rooms.

The air dehumidifier is not suitable for users with restricted physical, sensory or mental abilities unless they are supervised or instructed in detail about how to use the air dehumidifier by a responsible

person. The air dehumidifier must not be used by children.

Each user must have read and understood the instruction manual.

Operating the dehumidifiers within the limits of designated use also involves observing the specified operating conditions (refer to page 5).

### Foreseeable misuse

Any use of the air dehumidifier not in conformity with or going beyond the designated use is regarded as misuse and will result in the forfeiture of all warranty claims.

## General safety instructions

### **WARNING! Explosion due to flammable refrigerant!**

- ↻ Do not use any other objects but those permitted by the manufacturer to accelerate the defrosting process.
- ↻ Keep the air dehumidifier only in rooms without permanent ignition sources (e. g. naked flames, any gas appliance or electric heater switched on).
- ↻ Do not drill into or scorch the air dehumidifier.
- ↻ Refrigerants are odorless!
- ↻ Install, operate and store the air dehumidifier in a room with a floor area larger than 4 m<sup>2</sup>.

### **WARNING! Electric shock from live parts!**

Spilling of condensate on live parts may cause fatal injury due to electric shock.

- ↻ Before moving the air dehumidifier:
  - Pump out residual water by pressing "P" on the operating panel. A small amount of water will remain in the air dehumidifier for technical reasons.
  - Switch the air dehumidifier off, and disconnect the power plug from the socket.

### **WARNING! Electric shock!**

- ↻ Work on electrical components may only be carried out by the manufacturer or authorized personnel.

### **WARNING! The air dehumidifier must not be used under the following conditions:**

- in rooms with potentially explosive atmospheres.

- in rooms with aggressive atmospheres, e. g. caused by chemicals.

- in rooms with water with a pH value outside the range from 7.0 to 7.4.

**Note:** In case of lower pH values there is risk of corrosion for all metals.

- In rooms with salt or liquids with a salt content > 1 %, e. g. brine baths.
- In rooms with ozone-treated air, high solvent concentration or extremely high dust load.

### **WARNING! Poisoning incidents, burns, crushing during maintenance work!**

- ↻ Work on internal components may only be carried out by the manufacturer or authorized personnel.
- ↻ Repairs or maintenance work may only be carried out by the manufacturer or authorized personnel.

### **ATTENTION! Material damage!**

- ↻ Use exclusively original spare parts or spare parts approved by the manufacturer.

In the event of any malfunction switch off and secure the air dehumidifier against unintended restarting.

## 3 Performance description

The air dehumidifier can prevent the formation of condensation water, remove excessive humidity and keep humidity at a defined constant level.

### Scope of delivery

- Air dehumidifier

- Condensate water drain hose 3 m with coupling
- one instruction manual

Optional accessories Lashing straps for transport and storage 6003-0048

## Device description

See Fig. 1 and Fig. 2 on page 1.

Via the 6 amp plug socket (Fig. 2, item 7) further devices can be connected.

The condensate is collected in an internal tank. When the fill level reaches a limit value, the draining pump will start to run. If the limit value is exceeded, the air dehumidifier will switch off indicating an error message.

## 4 Transport and installation

Observe chapter 2 "Safety".

### Transport

#### **WARNING! Crushing due to loss of stability!**

- The air dehumidifier should be transported upright.
- Always secure the air dehumidifier against tipping or slipping.
- Always place the air dehumidifier on a level and firm surface.

#### **WARNING! Tripping on drain hose!**

- Disconnect the drain hose from the air dehumidifier before transporting the device.

#### **WARNING! Crushing, cut injuries due to reaching into grille for the air filter during transport!**

- Always use the carrying handles to transport the air dehumidifier.
- Do not reach into the air filter on the rear side of the air dehumidifier.

#### **CAUTION! Crushing or other physical damage when moving or transporting the air dehumidifier!**

- Always use the carrying handles to transport the air dehumidifier.
- Avoid uncontrolled movements.

Procedure:

1. Notify obvious damage cases on delivery to the supplier.
2. Check the delivery for completeness.
3. Please contact your specialized dealer in case of any transport damage or incomplete delivery.

**Note:** Keep the packaging to ensure safe shipment of the air dehumidifier in case of any repair case. Otherwise remove the packaging material completely and dispose of according to the local regulations.

4. Use the carrying handles to transport the air dehumidifier to the place of installation.

### Installation

#### **WARNING! Tripping on connected drain hose!**

- Route the drain hose outside the walking area.
- Provide drain hose with safe and stable covers.

#### **CAUTION! Injuries due to loss of stability or uncontrolled movements of the air dehumidifier!**

- The air dehumidifier should be transported upright.

- Always secure the air dehumidifier against tipping or uncontrolled rolling off.
- Always place the air dehumidifier on a level and firm surface.

Procedure:

1. Install the air dehumidifier.
2. Ensure that the condensate is always reliably collected or discharged.

**Note:** Free air circulation must be ensured. Do not cover the air openings. The free space in front of the air outlet and the air filter must be at least 1°m.

## Operating conditions

Observe Specifications on page 12.

Do not immediately switch on the air dehumidifier after storing. The device needs some time to adapt to the room temperature, in particular in case of storing below 0°C.

## Electrical connection

Check the following points prior to electrical connection of the air dehumidifier:

- The mains voltage must be in conformity with the power supply values in the Specifications!
- Fuse socket and supply system sufficiently.
- Install a residual current circuit breaker in damp locations or on building sites!
- The coupler of the air dehumidifier must be suitable for the building socket outlet.
- The socket outlet used must be grounded.

Connect power cable to power outlet.

## Connect condensate drain hose

**ATTENTION! Material damage / insufficient performance due to improper connection of condensate drain hose!**

- Do not bend the hose.
- Do not place any objects on the hose.
- Check regularly whether condensate is properly discharged.

Procedure:

1. Attach condensate drain hose to pipe.
2. Lay the hose from the air dehumidifier to an outlet (maximum height difference: 3 m).

## 5 Operation and operator control

Observe chapter 2 "Safety".

### Operating elements

See Fig. 3 on page 1.

### Commissioning

Observe chapter 2 "Safety".

**Note:** Before commissioning and after transport, allow the air dehumidifier to rest in its final position for about 15 minutes. During this time, the oil distributed in the cooling system and churned up by transport flows back into the compressor.

Procedure:

1. Connect power cable to power outlet.
2. Make sure that the drain hose has been installed correctly and laid securely into a drain.
3. Switch air dehumidifier on.

## Operator control






Procedure:

1. Set the desired humidity via the arrow keys on the operating panel.  
The air dehumidifier will only start if the actual humidity is higher than the set value.
2. Select fan setting.



## Automatic defrosting:




During dehumidification ice may build up on the evaporator.

If the evaporator ices, the air dehumidifier will defrost automatically. The message "Defrosting" appears on the display. After defrosting the air dehumidifier works again in the standard dehumidification mode.

Button	Function	Display
	Press briefly: Lower the room humidity in 1 % steps (31 % - 70 % adjustable) < 31 % = permanent operation (room humidity is not taken into account) Press and hold: Lower the room humidity in 5°% steps	78 % 48 %      12345 h
	Press briefly: Increase the room humidity in 1 % steps (31 % - 70 % adjustable) Press and hold: Increase the room humidity in 5°% steps	78 % 49 %      12345 h
	Key lock activated if no key or button is pressed for 2 min. after switching-on. "Key lock" appears if then arrow key or fan setting key is pressed. Key lock deactivated by pressing info button	Key lock  Key lock deactivated
	Press 1 x Display of room temperature, room humidity and evaporator temperature Press 2 x Language display	80 % room 22C evap. -5C  Language German
	Select language (DE, EN, FRA, ITA, SWE, NOR, FIN) Wait 3 sec. until flashing stops-> language saved	Language English

When "Stop" or "Start" flashes on the display, operation is impossible.

Button	Function	Display
	Night mode activated Air dehumidifier runs 10 hours countdown mode at low fan speed, then at high fan speed	Night mode 09:59 45 % 364 h
	Changing the fan stages Stage 2: Increased fan performance Stage 1: Lower fan performance	Fan Stage 2  Fan Stage 1

Button	Function	Display
	Switching on the air dehumidifier	Start 45 % 12345 h
	Switching off the air dehumidifier	
	Manual draining After operation of the air dehumidifier press "P" until the condensate water pump is completely empty.	

## 6 Maintenance and service

Observe chapter 2 "Safety".

### **WARNING! Damage to health from dust!**

- ➔ Clean foam filter from both sides with a vacuum cleaner, if necessary wash and dry it.
- ➔ Clean the air dehumidifier with compressed air only in an open environment.
- ➔ wear protective mask and protective goggles during this work.

### **ATTENTION! Material damage!**

- ➔ Cleaning agents can cause damage to surfaces. Use only mild detergents.

### Cleaning and inspection

Check and clean your air dehumidifier regularly, in particular the air filter.

Procedure:

1. Switch air dehumidifier off.
2. Pull the power plug.
3. Clean the air filter, if necessary replace it.
4. Visual inspection: Drain nozzle and hose connected possibly.
5. Insert new or cleaned filter. Use only original filters to guarantee proper functioning of the air dehumidifier.
6. Connect power cable.
7. Switch air dehumidifier on, if required.

### Spare parts and customer service

If you have any question concerning the air dehumidifier, or if you need spare parts, please contact your authorized dealer or the customer service.

## 7 Troubleshooting

If malfunctions occur, please check at first the following points. If the fault cannot be located, please contact **AERIAL**.

### **WARNING!** Injury due to electric shock!

- ➔ The air dehumidifier may only be repaired by the manufacturer or authorized personnel.

### Fault messages

Display	Possible meaning	Remedy
<b>Fault</b>	Sensor problem loss of coolant fan defective compressor defective filter soiled*	<b>AERIAL-Service</b>  * Clean or replace filter, if required
<b>Pump defective</b>	Water level in pump tank too high	Clean pump Connect drain hose
<b>Room temperature</b>	Outdoor temperature < 1 °C or > 34 °C (fan stage 2) respectively < 1 °C or > 31 °C (fan stage 1)	Air dehumidifier will start up automatically, when the temperature is >5°C or <°30°C again.

### Faults

Problem	Possible cause	Remedy
Air dehumidifier shows poor or no humidification performance.	The ambient humidity is lower than 35% r.h. (rel humidity) or the ambient temperature is less than +1 °C. Under these conditions operation of the air dehumidifier is uneconomical.	Switch the air dehumidifier off. Tip: Set the hygrostat to an achievable value to ensure that the air dehumidifier will switch off in time in respect of the ambient humidity.
	The air filter is severely soiled. The air flow is insufficient. In the long run, soiled filters can cause damage to the air dehumidifier.	Clean or, if required, replace the filter. Tip: Perform maintenance regularly as described in chapter 6! Use only original <b>AERIAL</b> air filters.
The air dehumidifier is out of operation / Fan and compressor are not working.	Air dehumidifier switched off.	Switch air dehumidifier on.
	Air dehumidifier without power supply.	Check plug connection.
	The humidity set on the hygrostat has been reached.	The air dehumidifier will automatically re-start when 5% of the set humidity are exceeded.



Problem	Possible cause	Remedy
Severe icing of cooling coil (evaporator). An ice block builds up.	Automatic defrosting system defective	<b>AERIAL</b> Service.
The humidity set on the hygrostat is not achieved or the air dehumidifier does not automatically switch off.	Hygrostat set to a value < 45 % r. h.  The dehumidification capacity of the air dehumidifier is not sufficient for the room size.	Depending on the ambient conditions your air dehumidifier can reach a minimum value of 30°% r.°h. Set the hygrostat to an achievable value.  Check whether the room temperature and the room size are suitable for the air dehumidifier.

## 8 Shutdown, storage and disposal

Observe chapter 2 "Safety".

### Shutdown

Procedure:

1. Switch air dehumidifier off.
2. Empty pump by pressing "P".
3. Pull the power plug.
4. If necessary, cover the air dehumidifier with a cloth to protect it from dust.

### Storage

Procedure:

1. Store the air dehumidifier at a temperature of 0 °C to +40 °C.

The air dehumidifier can be stacked for storage.

#### **CAUTION! Injury!**

- ➔ Never stack more than four air dehumidifiers.
- ➔ Always secure the air dehumidifiers against tipping.

### Disposal



Do not dispose of the air dehumidifier with the domestic waste, but dispose of in accordance with the legal regulations.

## EU Declaration of Conformity

### EC Declaration of Conformity

according to EC machinery directive 2006/42/EC, Annex II, 1.A

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#### Manufacturer

Dantherm GmbH  
Oststrasse 148  
D - 22844 Norderstedt

#### Person established within the Community who is authorised to compile the technical documents

Manfred Föhlich  
Dantherm GmbH  
Oststrasse 148  
D - 22844 Norderstedt

#### Description and identification of the machine

Product	Air dehumidifier
Type	AD 20
Project number	Aerial AD 20
Function	The air dehumidifier serves for dehumidifying air at atmospheric pressure in enclosed indoor rooms. It can prevent the formation of condensation water, remove excessive humidity and keep humidity at a defined constant level. The air dehumidifier is intended for mobile or stationary use in indoor areas, on building sites, in water works, indoor swimming pools, garages and storage rooms.

#### It is expressly declared that the machine is in conformity with all relevant provisions of the following EC directives or regulations:

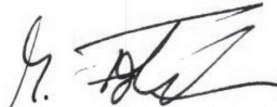
2006/42/EC	Directive 2006/42/EC of the European Parliament and of the Council of May 17, 2006 on machinery and amending Directive 95/16/EC (revised version)(1) Published in in L 157/24 dated 09-06-2006
2014/35/EU	Directive 2014/35/EU of the European Parliament and of the Council of February 26, 2014 on the harmonisation of the laws of the Member States relating to the making available of electrical equipment designed for use within certain voltage limits on the market Published in in L 96/357 dated 29-03-2014
2014/30/EU	Directive 2014/30/EU of the European Parliament and of the Council of February 26, 2014 on the harmonisation of the laws of the Member States relating to electromagnetic

compatibility (revised version)  
Published in in L 96/79 dated 29-03-2014

**Reference to the applied harmonised standards as referred to in  
Article 7(2):**

EN ISO 12100:2010-11	Safety of machinery - General principles for design - Risk assessment and risk reduction (ISO 12100:2010)
EN 60204-1:2006/A1:2009	Safety of machinery - Electrical equipment of machines - Part 1: General requirements
EN 378-2:2016	Refrigerating systems and heat pumps - Safety and environmental requirements - Part 2: Design, construction, testing, marking and documentation
EN 60335-1:2012/AC:2014	Safety of electric appliances for domestic use and similar purposes - Part 1: General requirements IEC 60335-1:2010 (modified)
EN 60335-1:2012/A11:2014	Safety of electric appliances for domestic use and similar purposes - Part 1: General requirements IEC 60335-1:2010 (modified)
EN 60335-2-40/A1:2006-04	Safety of electric appliances for domestic use and similar purposes - Part 2-40: Particular requirements for electrical heat pumps, air-conditioners and dehumidifiers














Norderstedt, 16.04.2019



Place, date

Signature  
Manfred Föhlich

## Specifications AD 20

	~220 V-240 V / 50 Hz / 350 W
	IP X1
	50 dB / A
	H / W / L: 420 / 320 / 500 mm
	16.4 kg
GWP / CO <sub>2</sub>	4 / 0.0005 t
	Rotary
	R1234yf / 0.14 kg
	+ 1 °C - + 34 °C
	35 % - 99 %
	3 m
	200 m <sup>3</sup> / h
	270 m <sup>3</sup> / h
 30 °C / 80 %	18 l / 24 h
 20 °C / 60 %	9 l / 24 h

CE

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