



AERIAL®

Instruction manual

Dehumidifier **AD 550 / AD 650**
 AD 580 / AD 680



Valid: 02-2012

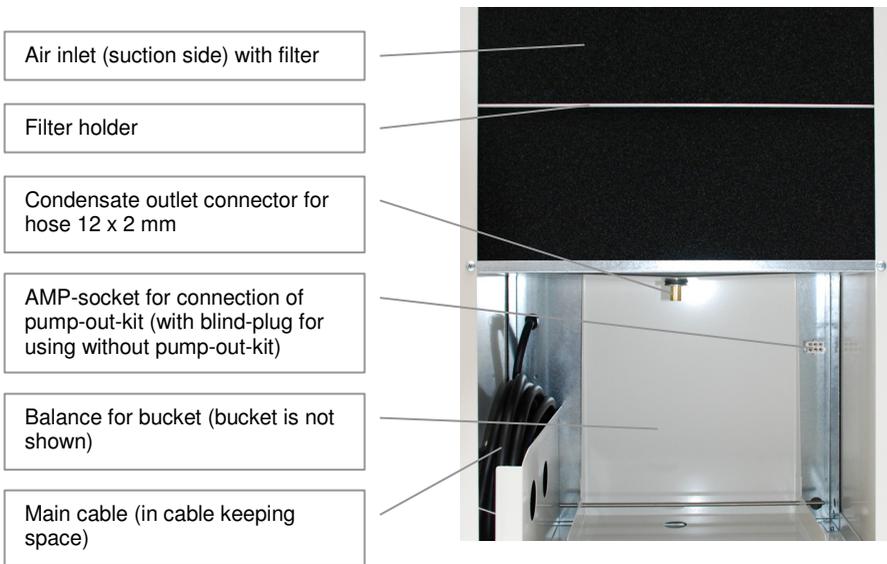


Index

1.	Illustration	
1.1.	View from the rear	3
1.2.	View from the front AD 550 / AD 580	3
1.3.	View from the front AD 650 / AD 680	4
2.	General advice	4
3.	Mode of functioning	5
4.	Safety	5 - 6
5.	Installation and transport	6
6.	Operation	
6.1.	Electrical connection	7
6.2.	Putting into operation	7
6.3.	Operation panel	8
6.4.	Hygrostat control	8 - 9
6.5.	Condensate outlet	9
6.6.	Pump out-kit (optional extra)	10
6.7.	Automatic defrosting	11
7.	Operating conditions	11
8.	Technical data	12
9.	Service and maintenance	13
10.	Trouble shooting	13 - 14
11.	Disposal	14
12.	Manufacturer's declaration	15

1. Illustration

1.1 View from the rear



1.2 View from the front AD 550 / AD 580



1.3 View from the front AD 650 / AD 680



2. General advice

You have bought an air dryer made by AERIAL thus deciding for a proven quality product "Made in Germany". If there are any questions, you will find some advice in this manual how to eliminate such difficulties as quickly as possible.

ATTENTION:

Immediately after receipt, you should check your air dryer for transport damage! In the case of damage, you should inform the forwarding agent, parcel service, post office etc. accordingly upon receipt, and make a note of it on the forwarding documents!

If a transport damage should be noticed after unpacking the equipment, please contact immediately your respective seller or specialized dealer.

Before putting your air dryer into operation for the very first time, these instructions for operation should be studied very thoroughly. Thus, you can make sure that this appliance will operate perfectly for a long period of time saving yourselves unnecessary repairs and expenses.

In the case of malfunction disconnect your appliance and ensure that it is not connected again by taking the mains plug out of the socket.

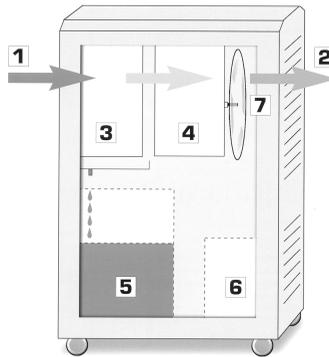
Please, keep the device wrapping in order to be able to send the device safe for guarantee repair. In order to save space you open simply the adhesive tape with a knife and you fold the carton

3. Mode of functioning

The AD-air dryer is built particularly for air drying in closed rooms. That dehumidifier can prevent the formation of condensation, eliminate too high air humidity and hold a specific air humidity constant. The time which the dryer requires in order to achieve a specific humidity depends essentially on the environmental conditions. The attainable humidity value is equally dependent on the environmental conditions.

The AD-dehumidifier works according to the condensation principle with heat recovery. The fan (shown indicatively below) suck the moist air through a cool register (evaporator). The air becomes so far chilled under the point of condensation here, that the moist air condense as water and flows into the water-collecting tank. The chilled and dried air is warmed up at the condenser again. Through the heat pump effect, the outlet air is some degrees warmer than the sucked room air. Useful energy can conducted up to 3-fold of the electrical power consumption. The absolute moisture of air is lowered continuously by the continuous circulation of the room air through the device. The surplus moisture is removed safely and efficiently.

- 1 – wet room air
- 2 – dry air
- 3 – evaporator
- 4 – condenser
- 5 – water tank
- 6 – compressor
- 7 – fan



4. Safety

The condensation dryers AD 5xx / AD 6xx are furnished with protective devices. The devices were subjected to a safety examination. Dangers threaten in the case of operating error or abuse

- for the user.
- for the machine and other real values.
- for the efficient work of the machine.

All persons who have to do with the installation, service and maintenance of the devices must be qualified correspondingly and consider this operating manual precisely.

Using as directed

The condensation dryers are intended for the drying of air with atmospheric pressure.

Risk by accessory

Hoses for condensate removal and air filters must be fit expertly and must not take the protective devices of the condensation dryers out of operation. The control elements must always remain freely amenable.

Authorized users

The service of the condensation dryers AD 5xx / AD 6xx may only be carried out by persons, that were instructed from the operator. The user is responsible in the field of action third parties compared to.

Responsibilities for different activities on the device must of course be determined and kept. Unclear competences are a safety hazard.

The operator must make the operating instruction available for the user and make sure that the user did understand the manual.

5. Installation and transport

The dehumidifiers of series AD 5xx / AD 6xx are conceived for the mobile or stationary employment. (wall bracket for AD 550 is deliverable as optional extra)

The devices AD 5xx and AD 6xx differ only concerning the transportation and setting up possibilities. Performance data are identical in each case.

The AD 550 and AD 580 is equipped with four castors (D= 75mm / 100 mm) and a grip to move.

The A 650 and AD 680 are equipped with a robust transport frame and two big wheels (D= 200 mm / 250 mm) for the easy and flexible transport (for example on building sites)

During the setting up and transportation of the dehumidifier, the following items are to be considered:

- That dehumidifier must be installed so that the air can circulate without obstruction through him. The air filter, the outlet grille of the front plate and the ventilation slot next to the operation panel must not be covered. The open space before the outlet grille, the air filter and the ventilation slot must at least conduct 1 meter.
- While using a wall bracket (only AD 550):
 - The wall bracket (optional extra) has to be arranged with a spirit level and fixed safe with the included mounting parts at a capable wall.
 - That dehumidifier must be installed so that the air can circulate without obstruction through him. (Air inlet (suction side) with filter = right side, air outlet with lamellae = left side, Operation panel in the front)
- Before every local alternation of the device, switch off the device at the on/off-switch, pull the power plug from the socket and empty the water tank! For the main cable you find a cable keeping space above the filter (see 1.1).
- The air dryer must be installed on a plane base only. It must be secured against rolling off!
- That dehumidifier can be transported upright or laid flat! The upright transportation is to be preferred if possible.
- The appliance must be used exclusively for air drying.

ATTENTION:

Do never pull or move the device at the power cable

6.Operation

6.1 electrical connection

Before connecting the air dryer, the following items must be checked:

- Does the mains voltage coincide with the voltage of the appliance?
- Adequate fusing of socket and supply system?
- Has a residual-current-operated circuitbreaker (r.c.c.b) been installed?
- If a cable drum is used: has it been unwound completely?
- Is the appliance connector suitable for the building socket?
- Is the socket provided with an earth connection?

ATTENTION:

Before putting the air dryer into operation, the technical data of the appliance should be compared to the conditions prevailing in the room of installation!

6.2 Putting into operation

ATTENTION:

Before putting the air dryer into operation, the instruction manual should be studied carefully. Thus, damages by a false or inappropriate operation as well as by inadequate environmental conditions can be avoided.

For using the air dryer, please proceed as follows:

- After having been transported, the air dryer should rest for about 15 min. During this period of time, the oil inside the refrigerating system, that was foamed during transport will return into the compressor. We recommend this procedure since it extends the service life of the compressor.
- Put the plug into a suitable socket.
- Check whether the bucket is placed in the unit or a drain hose has been fastened and laid appropriately.
- Switch on the unit by actuating the ON-OFF-switch.
- Set the required humidity value at the hygostat (please refer in this respect to 'Hygostat Control' - 5.4).
- If the existing humidity is higher than the set value, the air dryer will start to operate.
If the existing humidity is lower than the set value, the air dryer will not start to operate.

6.3 Operation panel



ATTENTION:

Make sure that the ventilation slot next to the operation panel is free and not covered. The air must be able to flow through this slid.

6.4 Hygrostat control

The air dryers of the AD-series dispose of a hygrostat for setting the required humidity value. This hygrostat is located in the operation panel of the unit. It makes that the air dryer cuts in as soon as the ambient humidity exceeds the preset value. If the humidity value falls below the set value, the hygrostat will switch off the unit.

The hygrostat is placed in the operation panel laterally at the unit.

Pos. 0 = Unit is switched off

Pos. 1 = Continues operation

80-100% = The dehumidifier switches off when a humidity of approx. 80 - 95% r.h. has achieved. And switches on again when humidity is higher than 80-95%.

60 - 80% = The dehumidifier switches off when a humidity of approx. 60 - 80% r.h. has achieved. And switches on again when humidity is higher than 60-80%.



40 - 60% = The dehumidifier switches off when a humidity of approx. 40 - 60% r.h. has achieved. And switches on again when humidity is higher than 40-60%.

20 - 40% = The dehumidifier switches off when a humidity of approx. 20 - 40% r.h. has achieved. And switches on again when humidity is higher than 20-40%.

The smooth setting option of the hygrostat makes a very convenient humidity control possible for you. If very precise values are requested, you should match the hygrostat with the information on a precise hygrometer.

Please consider:

Humidity values of a minimum of 40 % - 45 % r.h. can be achieved with a condensation dryer. An adsorption dryer is to be employed if lower values are required.

For this purpose, ask your technical consultant.

Optimal climate:

For living rooms, environmental conditions of 20 °-25 °C and 50 - 60 % r.h. are recommended.

For building drying, the hygrostat becomes turned at continues running (POS. I).

In the case of the drying rooms with wood equipment (e.g. floors) or paintings, antiques and similar things should not be fallen below a humidity of 55%.

Ask your technical consultant in the case of special applications.

6.5 Condensate removal

The dehumidifiers AD are serially equipped with water collecting bucket (AD 550 / AD 650 = 12 ltr / AD 580 / AD 680 = 16 ltr) and hose connector 12 x 2 mm.

The water bucket is in the device on a balance. The balance is activated by the weight of the full bucket and the device is switched off. Switch off the unit at the on/off-switch and empty the bucket. After the bucket is placed in the device again, turn on the device at the on-/off-switch.

A connection outlet 12 mm is placed above the bucket. Remove the bucket provided that you would like to guide the condensate directly into a drain. Attach a hose 12 mm to the drain and fix this with a hose clamp. Proceed cautiously in order not to burst the drain from the condensate tub.

Guide the hose with slope of the device into the drain away (at least 5 cm slope per meters).

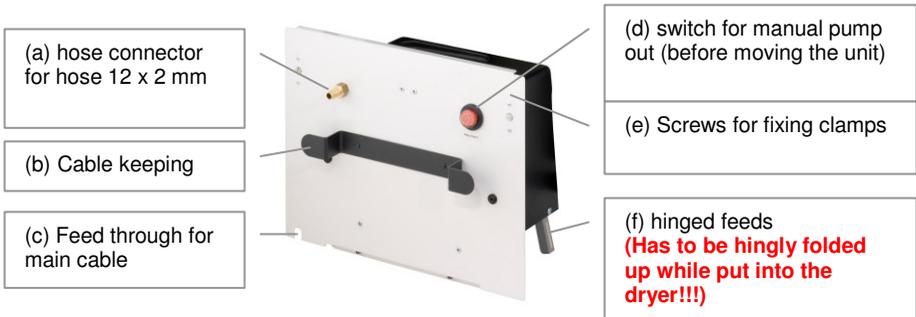
If the dryer is placed on a wall bracket or otherwise increased, the drain hose can be led by the opening in the balance downward.

ATTENTION:

Make sure that the condensate can always be handled safely.

6.6 Pump-out-kit (optional extra)

Optionally for AD 550 / 650 / 580 / 680 a pump-out-kit is deliverable. You can buy the “pump-out-kit” from your AERIAL-dealer as an optional extra. The pump out kit can be installed with few handles completely simply and removed again when desired.



- Remove the water collecting bucket.
- In the bucket space you find an AMP-plug socket, in that a blind plug is fixed. (see 1.1). Pull the blind-plug from it´s socket.
- **Keep this Plug! It is necessary for the using of the dryer without included pump-out-kit.**
- Connect the AMP-plug of the pump-out-kit with the AMP-socket in the dryer.
- Guide the main cable of the dryer out from the bucket space.
- Fold the hinged feeds (f) of the pump-out kit up!
- Push the pump-out-kit into the bucket space of the dryer. Make
- Guide the main cable through the feed through. (c).
- The pump-out-kit can be placed without energy expenditure in such a way into the bucket space that the back panel locks concisely with the housing of the dryer. **!!! Use no force or power!!!!**
- Turn the screws for fixing clamps (e) in clockwise direction, until the pump-out-kit is fixed in the bucket space.
!!! Do not use force or power!!! The screws must be movable completely simply. Otherwise the pump-out-kit is not placed correctly!!!
- Connect a condensate hose at the hose connector (a) and guide it away from the unit into a sump or to outside. The dryer is now ready to use with included pump. The pump is able to pump up to 4 mtrs.
- At the rear panel of the pump-out-kit is placed a red switch (d). With this the pump can be emptied manually, for example before transportation of the dryer. We recommend to pump out the pump-out-kit before every moving of the dryer, as otherwise water can flow beside the dryer.
- In order to remove the pump-out-kit, proceed in reverse order. Do not forget to put the AMP-blind-plug into the AMP socket again. Otherwise the dryer will not start.

6.7 Automatic defrosting

During air drying, ice may form at the evaporator. The volume of ice depends on the ambient conditions prevailing in the room to be dried.

The AD 550/650/580/680 is equipped with an automatic hot-gas defrosting. It ensures that, depending on the extent of ice formation, the appliance will be defrosted automatically according to the following principle:

- A temperature sensor measures the condition existing in a critical area of the evaporator.
 - It transmits the signal for defrosting to the DryLogic-electronic. The DryLogic finds out if defrosting is necessary, and it will start defrost-mode on its own.
 - During defrosting the compressor works and the fan does not work
- When the ice is defrosted, the dehumidifier will start again with dehumidifying.

7. Operating conditions

AD-condensation dryers are suitable for the effort on construction sites, in residential buildings, in swimming halls, in garages and storerooms. AD-condensation dryers work problem-free at the temperature range of +3 to +32°C and in the case of relative humidity from 40% to 95% r.h. .

The use in rooms with higher temperatures leads to disadvantages at the compressor. The use in rooms with lower temperatures is ineffective and can lead to icing.

Also the storage of the dehumidifier at inadmissible temperature conditions can lead to damages / problems while immediate switch-on. Therefore, make possible short time for adaptation for the device before switch-on.

ATTENTION:

The appliance must not be used under the following conditions:

- *in rooms of potentially explosive atmosphere*
- *in rooms of aggressive atmospheres, for example ammonia and wood acid*
- *In rooms with water which shows a pH-value outside of 7,0 to 7,4. **Remark:** In the case of lower pH-value, corrosion occurs at all metals and damages occurs at mortar containing materials. In the case of higher pH-value, it comes to irritation of skin and eye mucous membrane and extreme lime deposits.*
- *In rooms with salt or salty liquids. Salt content >1% (also sole baths).*
- *In rooms of air treated with ozone*
- *in rooms featuring a high concentration of solvents*
- *in rooms of an extremely high ratio of dust.*
- *Please consider also, that extremely air movements around the dryer can annoy or affect the function of the dryer as the air flow of the dryer can not flow as planned.*

In the case of doubtful operating conditions it is recommended to contact the Technical Department of Messrs. AERIAL or a specialized dealer.

Using an AD-air dryer under inadequate operating conditions will entail that the warranty becomes null and void.

8. Technical data

Among other things, many different components which are installed in the condensation dryer decide on the capacity of the device. Since these components can never be completely identical, in accordance to DIN EN 810 the capacity may deviate up to 5% of specified capacity.

General:

Operational range: +3°C up to + 32°C / 40% r.h. up to 95% r.h.
 Protection class: IP X4
 Voltage: 230 V / 50 Hz

Type		AD 550	AD 650	AD 580	AD 680
Air volume	cbm/h	660		820	
Power consumption	Max. Watt	1000		1250	
Noise level	dB(A)	53		55	
refrigerant (filling charge see type plate)		R407c		R407c	
Capacity at / power consumption at					
30°C / 80% r.F.	l/24h Watt	54,0 l/24h 900 Watts		78,0 l/24h 1250 Watts	
27°C / 60% r.F.	l/24h Watt	34,0 l/24h 780 Watts		52,0 l/24h 1090 Watts	
20°C / 60% r.F.	l/24h Watt	23,5 l/24h 660 Watts		35,0 l/24h 900 Watts	
10°C / 70% r.F.	l/24h Watt	14,0 l/24h 550 Watts		20,0 l/24 720 Watts	
Dimensions	mm	700 x 520 x 420	810 x 540 x 515	815 x 480 x 500	910 x 650 x 550
Weight	kg	40	42	55	58

9. Service & Maintenance

ATTENTION

When performing any repair or maintenance, the general safety rules and provisions must be adhered to!

In order to guarantee a troublefree function of the dryer the device should be cleaned regularly. The following procedure is recommended:

- Switch off the dryer
- Pull main cable from the socket
- Remove filter holder (see 1.1)
- Remove filter and clean or organize new one
- Remove cover (front/top-panel).
- Blow out device cautiously with compressed air. (wear protective goggles!) In this case, it might ensure that all components are cleaned. (Compressor, evaporator, condenser, ect.)
- mount cover (front/top-panel).
- Check hose connector and connected hose
- Clean case with moist cloth. Do not use aggressive detergent
- Insert new or cleaned filter. Use only original AERIAL-filter for problemfree working.
- Insert filter holder
- Put plug into socket
- Switch on the dryer

**This cleaning is without fail regularly required!
During construction site effort, after every effort or once a week!**

10. Trouble shooting

Weist der Entfeuchter einen vermeintlichen Defekt auf, überprüfen Sie bitte zunächst die folgenden Punkte. Sollte dies keine Abhilfe schaffen, wenden Sie sich an Ihren Fachberater.

Assign that dehumidifier a putative defect on, please, first check the following points. If this should provide no relief, please contact your technical consultant.

1) The dehumidifier shows a bad or no drying capacity

- The humidity is lower than 40% r.h. or the temperature in that room is lower than +3°C. The using of the dryer is uneconomical in the case of these conditions. It is recommended to disconnect the dryer. **Tipp:** Put the built-in hygrostat on an attainable value (e.g. approx. 50%r.F.), with it the dryer punctually may switch off.
- The air filter is soiled. The dryer does not receive air sufficiently. Clean the filter and/or install a new one. A soiled air filter can in the long run lead to disadvantages at the dryer. **Tipp:** Control the filter regularly. Do only use original air filters!

2) The fan of the dehumidifier does not work, the compressor still turns.

- The unit is in defrost mode. In this case the compressor still runs and the fan does not run. After some minutes, the unit will start with regular working.

3) The complete dryer is out of operation. Fan and compressor does not run.

- Is the dryer switched on? The On-/Off-switch must be in position `I` and must light up.
- Is the unit supplied with voltage? The On/Off-switch must light up in Pos. `I`. Check the main cable, an additional cable, the socket and the main fuse.
- The humidity value adjusted at the hygostat is achieved. The dryer will start again after exceeding the adjusted humidity.
- Water collecting bucket is full: The red neon lights up (see 6.3 „operation panel“). Empty the water bucket and put it back into the unit. (see 6.5 „condensate outlet“)
- The AMP-blind-plug is not fixed in the AMP-socket or a pump-out-kit is not installed correctly. (see 6.6 „condensate pump“)

4) Strong icing up at the evaporator.

- Put the dryer into a room with min. +10°C room temperature and wait until complete ice is defrosted. Switch on the unit again (in that room with min. +10°C) and let work for approx 3 hours. If there is icing up again, please contact your dealer. Otherwise make sure that the unit is only been used in rooms with more than +3°C. Also the storage of the dehumidifier at inadmissible temperature conditions can lead to damages / problems while immediate switch-on.

5) The humidity adjusted at the hygostat does not become achieved and/or the device does not switch off automatic.:

- Is the hygostat adjusted on a value lower than 40 – 45% r.h.? Humidity values with a minimum of 40 % - 45 % r.h. can be achieved with a condensation dryer. Adjust the hygostat to a reachable value.
- Is the unit with enough capacity for your application? The air changing, number of the persons in the room and open water surfaces decide on the humidity burden in the room. Let calculate the necessary capacity from your dealer
- Is there a lot of water in the walls or the floor? In that case the dryer needs some time to remove that water and to achieve an acceptable humidity in that room.

ATTENTION

The appliance must be repaired by trained and expert personnel only. In the case of interventions by unauthorized people, any and all warranty claims shall become null and void!

If you have any questions regarding defects and malfunctions of AERIAL-air dryers we recommend get in touch with your supplier.

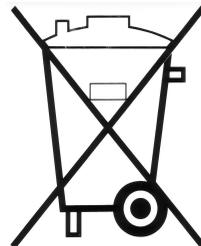
The producer AERIAL GmbH you reach under 0049-40-526879-0 or www.aerial.de

11. Disposal

Please do not dispose this unit with the domestic waste and please do not dispose this unit in the environment.

We dispose this unit for you – free of charge and environment-friendly. Please contact us!

Alternative your local waste management enterprise takes this unit for environment-friendly disposal.



12. Manufacturer´s declaration

(EU-directive 2006/42/EG)
(EU-directive 2004/108/EG)
(EU-directive 2006/95/EG)

manufacturer: AERIAL GmbH - Systeme zur Luftbehandlung
Oststraße 128, D-22844 Norderstedt

Product description: dehumidifier type AD 550 / AD 650
dehumidifier type AD 580 / AD 680

capacity: 54,0 l/Day / 78,0 l/day

The product described above is an ambient air dryer ready for connection.

Related standards:	EN ISO 12100	Safety of Machinery
	EN 61 000	Electromagnetic Compatibility (EMC) Basic Specification "Emitted Interference"
	EN 60335-2-40	Safety of electric appliances for domestic use and similar purposes

In the case of changings at the unit this manufacturer´s declaration becomes void.

Norderstedt, 01.02.2012

sign / stamp

Karsten Meier – General Manager

**AERIAL GmbH
Oststrasse 128
22844 Norderstedt
DEUTSCHLAND**

**Niederlassung Schweiz:
AERIAL GmbH
Täfernstrasse 22a
5405 Baden-Dättwil
SCHWEIZ**