



Desiccant dehumidifiers AD-200 / AD-400 / AD-550

» Manual



Rev. 6.14

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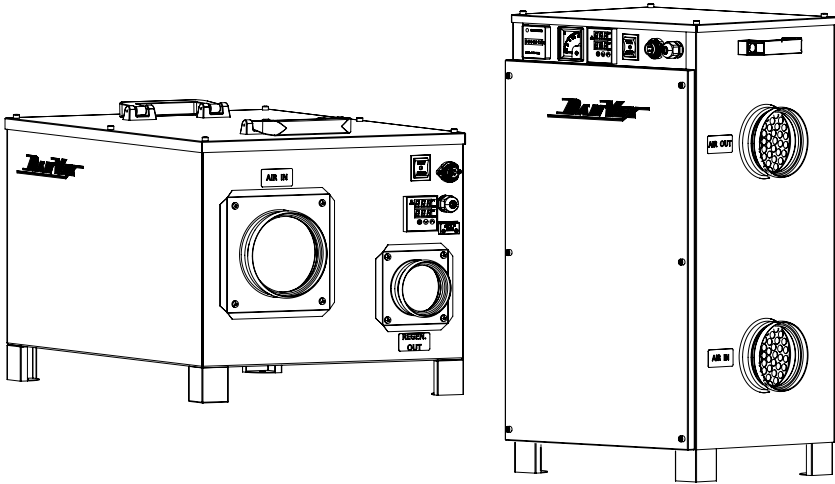
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SAVE THIS MANUAL FOR FUTURE REFERENCE

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Desiccant dehumidifiers AD-200 / AD-400 / AD-550



Introduction

Purpose

This user manual contains complete information about the dehumidifier model you have purchased, including details of its design, principle of operation, installation and operation instructions.

Content

General information about the management of the dehumidification process, the principle of operation and maintenance standards, system errors, diagnostics and troubleshooting.

Copyright

We reserve all rights to update and clarify the information contained in this manual.

Warning!!!

All electrical connections must be carried out by local specialists in accordance with current standards, otherwise there is a risk of death, injury, equipment damage and property damage!

Before starting work on electrical equipment, read this manual in order to avoid errors, which could result in death or equipment damage

1 SAFETY AND APPLICATION

1.1 Safety of use

All models of dehumidifiers in this series are manufactured in compliance with the requirements of European safety standards and current regulations; the requirements for the safety of the operator and equipment were taken into account during design and production. Each section of this manual provides safety information and describes in detail the circumstances that can lead to abnormal situations. Such information is marked with a warning label "dangerous".

This manual also provides complete information on how to maintain the dehumidifier. It is for guidance only and does not remove the operator's responsibility for compliance with personal safety requirements at work and local safety standards.

During the installation and operation of equipment, each employee must follow the instructions below:

- follow the descriptions and instructions in this manual to ensure the protection of the equipment;
- ensure the safety of yourself and others;
- the unit must be operated and maintained by professional technicians;
- electrical components must be serviced by authorized electricians;
- it is forbidden to install the dehumidifier in rooms equipped with explosion-proof devices;
- before opening any service panel, disconnect the device from the main power supply;
- the device must be cooled down for at least 15 minutes before maintenance;
- if no maintenance is being performed, the maintenance panel must be closed;
- the unit can only dehumidify at atmospheric pressure;
- do not use the unit without a filter; if the filter is not installed, the rotor will become dirty and stop working;
- it is forbidden to remove warning signs on the device;
- this manual must be kept with care;
- original spare parts must be used;
- written permission must be obtained for any adjustments or modifications.

1.2 Applications

The AD series dehumidifiers use a silica-gel coated composite adsorption rotor and are capable of effectively dehumidifying air at atmospheric pressure in a relative humidity range of 2 to 100% and an operating temperature range of -20°C to +40°C.

Adsorption dryers are widely used in the following areas:

- rooms and areas with low temperatures and low humidity;
- areas with relative humidity below 35% and low dew point;
- process air preparation systems;
- single pass airflow systems;
- manufacturing, packaging, storage, testing and research of pharmaceutical products;
- production and packaging of confectionery and food products;
- pneumatic conveying of powder materials;
- production of electronics;
- archival repositories of photographic materials and films;
- refrigerated warehouses;
- seed storages;
- "clean" rooms;
- pumping stations;
- injection molding production areas;
- ice areas;
- drying of tanks and ship holds;
- conservation of turbines in the prevention of corrosion at power plants
- and etc.

2 DEVICE INFORMATION

2.1 Standards

The design of the dehumidifier complies with protection class IP 44, IEC standard.

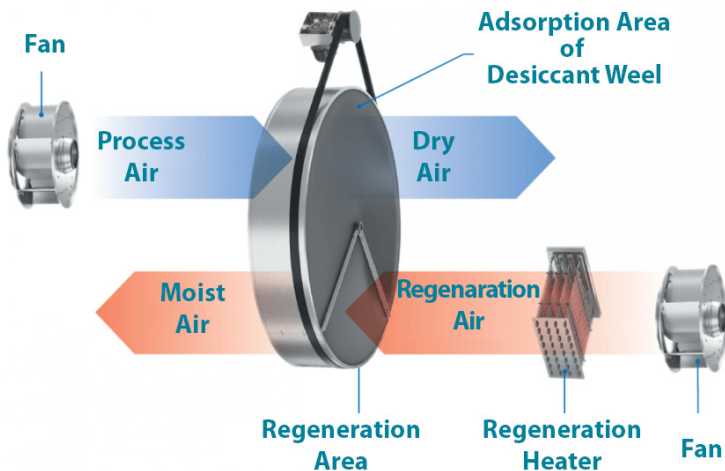
2.2 How it works

The main component of the installation is a honeycomb rotor, consisting of a special ceramic fiber and active silica gel. The two sides of the rotor are separated by special hermetic seals into two zones: the working zone, which is 3/4 of the rotor surface, and the regeneration zone, 1/4 of the rotor surface. When moist working air passes through the filter into the rotor, the moisture from the air is absorbed by the dehumidifying working sector of the rotor, and the dehumidified air is expelled from the other side of the rotor by the fan. At the same time, the regeneration air passes through the filter, heats up and enters the regeneration sector of the rotor. In this zone, the heated regeneration air removes from the rotor the moisture previously adsorbed by the silica gel, which is then removed in the form of steam from the dryer and into the street.

Schematic diagram of the operation of an adsorption dryer

Note:

the diagram does not show the obligatory filters for working and regeneration air



2.3 Construction

2.3.1 Hull

- compact stainless steel frame construction for corrosion resistance and effective insulation against condensation;
- removable panels providing access to internal components;
- well-designed layout and selection of units to ensure minimum head drop.

2.3.2 Conveying air circuit

- at the air inlet there is a filter class EU3 with the possibility of cleaning;
- centrifugal high efficiency low noise fan.

2.3.3 Regeneration air circuit

- at the air inlet there is a filter class EU3 with the possibility of cleaning;
- centrifugal, high-efficiency, low-noise, forward-curved fan.
- heating section using PTC heaters.

2.3.4 Rotor

- The rotor is the main part of the dryer. Its characteristics directly affect the performance and operation of the dehumidifier. The rotor is made of a special heat-resistant composite material. The composite material is a corrugated structure filled with a highly effective desiccant, forming many small air flow channels, contacting the air with a large area and increasing the dehumidification efficiency.

2.3.5 Rotor drive

- Rotation of the rotor at the desired speed can be achieved using an electric motor with a geared motor and a belt drive. The belt is located on the outer rim of the rotor and is driven by a geared motor pulley.
- The belt tensioner maintains proper belt tension to prevent belt slip page. The direction of rotation of the rotor and the condition of the belt need to be checked regularly.

2.3.6 Safety devices

- Motor protection against overload and short circuit: fan motors for working and regeneration air, rotor drive motor have overload and short circuit protection functions.
- Shutdown protection: When the dryer is switched off under normal conditions, the regeneration fan continues to run until the regeneration heater and rotor have cooled below 60°C.

3 Installation

3.1 Introduction

The information in this chapter describes the work required to install the device. Careful familiarization before installation will help you properly organize the installation work.

3.2 Transport and storage

To guarantee the quality and reliability of each dryer, we test all devices at the factory.

If the dryer is in storage:

- keep the original packaging;
- avoid physical damage to the equipment;
- store the dehumidifier indoors, protect it from dust, moisture and frost.

3.3 Check before installation

Remove the packaging and check the equipment: if damage is found, contact the supplier/manufacturer.

3.4 Moving

Before starting loading and unloading, check the weight of the equipment. It is recommended to use lifting devices (stacker or forklift) to move the equipment. Please note that the dryer must only be lifted properly to avoid tipping over and damage.

3.5 Place of installation and its arrangement

The dehumidifier is designed for indoor and outdoor use. To ensure proper maintenance for opening the service panels, it is recommended that when installing the dryer, leave a free space on all sides of about 800 mm.

The minimum width of the service space must not be less than the width of the dryer.

The unit cannot be placed in an explosive place, and also cannot work with air containing explosive substances.

For outdoor installation, measures must be taken to protect against rain, snow, dust

3.6 Support/ foundation

The dehumidifier should be installed in a horizontal position on a level ground or platform.

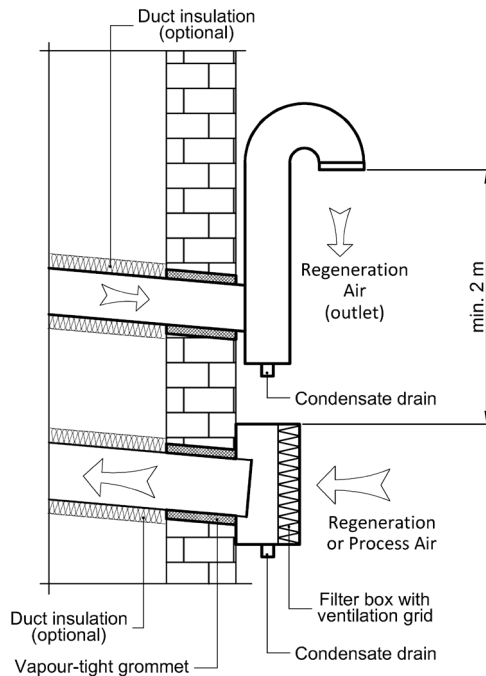
The installation location must have sufficient bearing capacity to support the weight of the installation. It is recommended to fix the dehumidifier to the base. Use a building level during installation.

3.7 Duct connection

The dimensions of the process and regeneration air ducts must comply with the recommendations of the ISO7807 standard. The air ducts are connected using an appropriate flange, while the bolt length should not exceed 20 mm. When connecting to the duct, consider the following factors:

- to reduce static pressure losses and not reduce dehumidification performance, shorten the length of the air ducts if possible;

- to guarantee the high performance of the dryer, all rigid (galvanized) duct flanges must be air tight;
- the air duct must have good thermal insulation to protect the inner metal part of the air duct from condensation and hence from corrosion;
- to reduce the level of noise and vibration from the air passing through the duct, use strong and soft, air tight adapters;
- the air duct leading directly to the dryer must be fully anchored to reduce stress and pressure on the flanges from the weight of the duct.



If air is taken into the dehumidifier from outside, the air inlet must be sufficiently high above the ground or equipped with an additional inlet filter to prevent dust and debris from being sucked in. The inlet must be away from possible sources of pollution such as exhaust gases, steam and harmful gases.

To prevent humid air at the outlet from humidifying the process air at the inlet, it is necessary to separate the inlet of external process air at a distance of at least 2 m from the humid air outlet. The design of the duct must prevent the penetration of rain and snow.

The regeneration outlet air is hot and humid. Condensation from it can easily form on the inside wall of the duct, so the duct must be laid with a downward slope away from the unit. In addition, a condensate drain hole with a diameter of 10 mm must be installed at the lowest point of the duct to prevent accumulation and stagnation of water.

The humid regeneration air duct must be insulated to prevent condensation on the inner wall of the piping when the dew point temperature of the air in the piping is higher than the outdoor air temperature, which can cause corrosion and water accumulation in the piping.

The dry air outlet of the dehumidifier can be equipped with a control valve that can be used to control the operation of the dehumidifier. If you want dry air to contain lower humidity, you must install a control valve at the dry air outlet. If maximum dehumidification capacity is not required, install a damp air outlet damper.

3.7.1 Connecting the air recirculation ducts

The unit can be installed in a room or a separate room where dehumidification is required. For best performance, the fan outlet must be equipped with a diffuser.

3.7.2 Connecting the regeneration air outlet ducts

Moist air must be vented outside. The length of the duct should be as short as possible to minimize the chance of damp air condensing. The duct must be slightly inclined towards the outlet to prevent condensate from flowing back into the dryer. If the regeneration duct is particularly long or must be installed vertically, it must be thermally insulated and a drain point provided at its lowest position. The air duct outlet must be equipped with a metal grill or mesh to prevent debris from entering.

3.7.3 Connecting the regeneration air inlet ducts

It is desirable to minimize the length of the regeneration air inlet duct as much as possible. To prevent debris from entering the air duct, equip a metal mesh at the inlet. In some conditions, other ducts may be used for the connection, and an air flow control valve must be installed on the duct to ensure correct adjustment of the regeneration air flow during the trial run.

3.7.4 Installing the dehumidifier in the room to be dehumidified

If the unit is installed in a room requiring dehumidification, the process air inlet does not necessarily require a duct connection. A protective mesh is required at the process air inlet. The dry air outlet must be ducted and separated from the air inlet of the dehumidifier so that the dry air can be evenly distributed throughout the room.

Air intake for regeneration should be carried out outside the room to be dried. Otherwise, due to rarefaction, an uncontrolled suction of moist air from the street or from neighboring rooms is possible into the room being dried. The regeneration air must be discharged outside.

3.7.5 Installing the dehumidifier outside the room to be dehumidified

When installing the dehumidifier in a separate technical room, at least three of the four inlets and outlets of the unit must be connected to air ducts.

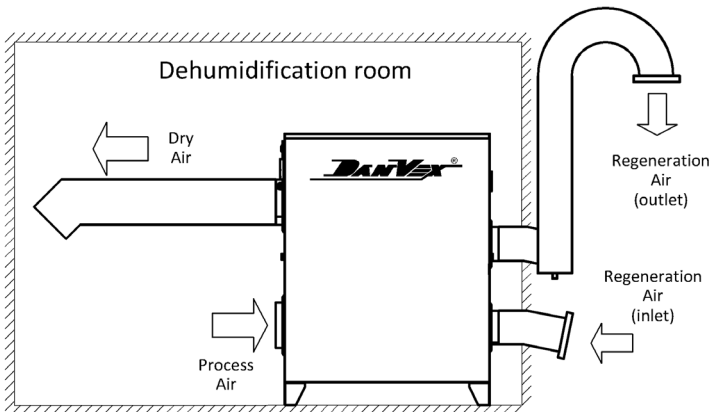
The working air ducts must take moist air from the room to be dried. The dehumidified air at the dehumidifier outlet and before being supplied through the air duct to the dehumidified room can be subjected to post-processing (for example, cooling by a third-party device) or sent immediately back to the dehumidified room without preparation.

Air intake for regeneration can be carried out both from the street and from the technical room. The release of regeneration air must be carried out to the street.

An air volume control valve can be installed on the process air duct to control the flow of dry air.

Indoor installation

The regenerative air inlet and outlet must be located outside the circuit to be dried. Dry air must be evenly distributed in the room to be dried, no duct connection to the process air inlet is required.

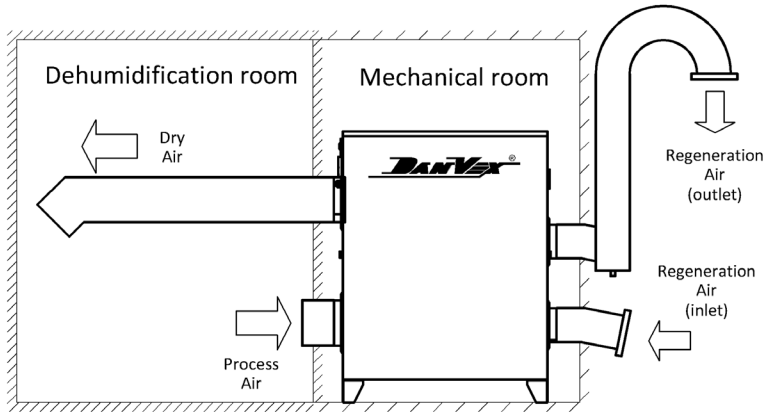


Installation diagram inside the dehumidification circuit

- If the regeneration air inlet and the regeneration air outlet are connected to the same area, the duct sockets must be at least 2 meters apart to avoid hot and humid air entering the regeneration air inlet.
- The regeneration air outlet must have a certain slope to ensure that hot and humid air can be evacuated smoothly.
- The need for ducting for process air inlet and outlet depends on the size of the interior space and the distance from the dehumidified area to the dryer.
- If the room temperature is low, such as in cold stores, the dehumidifier and air water must be thermally insulated to prevent condensation

Outdoor installation

The inlet and outlet of regenerative air must be separated in space. The air ducts for the supply of dehumidified air and the intake of dried air must be connected to the dehumidification zone (room), but the places of intake and supply must be separated.



Installation diagram outside the dehumidification circuit

- If the regeneration air inlet and the regeneration air outlet are connected to the same area, the duct sockets must be at least 2 meters apart to avoid hot and humid air entering the regeneration air inlet.
- The regeneration air outlet must have a certain slope to ensure that hot and humid air can be evacuated smoothly.
- The need for ducting for process air inlet and outlet depends on the size of the interior space and the distance from the dehumidified area to the dryer.
- If the room temperature is low, such as in cold stores, the dehumidifier and air water must be thermally insulated to prevent condensation.

3.8 Electrical connection



Be careful! All work on electrical equipment must be carried out in accordance with the standards of the country in which the equipment is used, and only by qualified experts!

- It is forbidden to connect the dehumidifier to the mains, the power and frequency of which are outside the nominal values of the dehumidifier;
- Before connecting to the power supply, check that the voltage and frequency fluctuations at the connection point do not exceed $\pm 10\%$;
- The equipment must be earthed and a power disconnect must be provided to ensure that the device is disconnected during inspection and maintenance.
- The fuse rating of the power supply must match the power and type of the device. The fuse must be installed near the device. The choice of power cable and main fuse must match the operating power of the dehumidifier.

3.9 Connecting external humidity sensors

The electrical wiring for the sensors can be pre-wired and provided with terminals for connecting external control components.

When installing a temperature sensor temperature and humidity (sensing element), its mounting position must comply with the following requirements:

- Temperature and humidity sensors should be installed at a distance of 1-1.5 m from the ground so that the sensor measures the humidity level in the area being dried;
- Sensors should be installed away from dry/moist air flow or air flow from the environment;
- Temperature and humidity sensors should be installed away from refrigeration equipment;
- Do not install the sensors in a place exposed to direct sunlight, as temperature changes may affect the measurement process.

The scheme for connecting an external temperature and humidity sensor to the controller is shown in the general wiring diagram of the installation. Characteristics of sensors and terminals for connection are also specified in the section with description of controller terminals.

3.10 Check before starting



All work on electrical equipment must be carried out by qualified personnel who are aware of the potential risks such as electric shock and heat

Before the first start-up, some checks must be carried out, and the power supply to the unit must be switched off.

Order and sequence of actions:

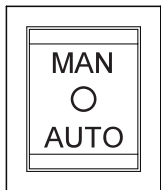
- Make sure the dehumidifier is powered off and that the dehumidifier's main switch is in the OFF position.
- Open the dryer's service panels and check that there are no foreign objects in the dryer.
- Check that all air dampers are open and that the passages are clean and free.
- Make sure the air filters are clean and installed.
- Turn, if possible, the fan impellers by hand and make sure they can turn freely.
- Check the internal fuse.
- Close the service panels and connect the dehumidifier to the mains.

4 OPERATION

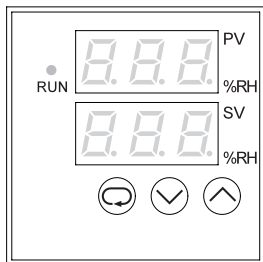
4.1 Elements of the control and monitoring panel

The dehumidifier is equipped with an automatic control system that ensures uninterrupted operation in the selected mode, as well as ease of operation and control.

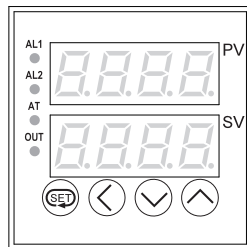
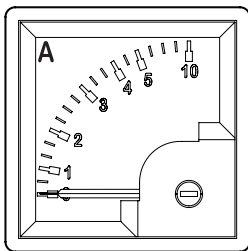
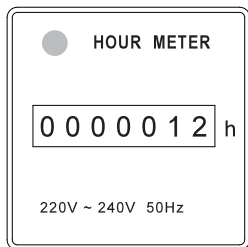
The dehumidifier has 2 modes of operation, the choice of which is carried out by the operator using **3 position switch** (Rocker Switch) on the control panel:



- **MAN** - manual control mode. The dehumidifier operates continuously without the humidity controller being activated and until it is turned off by the operator.
- **AUTO** - automatic control mode. In this mode, the dehumidifier is automatically controlled by the humidity controller depending on the set humidity value and the current values from the remote sensor, which is installed in the room being dried. The dehumidifier starts when the current humidity is higher than the one set in the controller and stops when the set humidity is reached.



The main control element of the dehumidifier in automatic mode is **humidity controller** (Humidistat). When the dehumidifier is operating in automatic mode, the upper panel displays the current humidity in the zone of installation of the remote sensor, the lower panel displays the humidity set by the operator.



Hour meter displays the total running time (for AD-200 and AD-550 models).

Ammeter displays the current in the recovery air heater circuit (for AD-200).

Thermal controller (Temp. Controller) regulates the temperature on the regeneration air PTC heater (for model AD-550). The upper digital display shows the current temperature of the heater, the lower display shows the set temperature.

It is forbidden to change the preset settings of the temperature controller during to avoid incorrect operation of the dehumidifier or its failure!

4.2 Humidity controller interface and settings

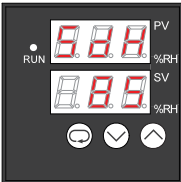
The humidity controller used in the dehumidifier is a versatile device and can be configured for use in a dehumidifier or humidifier. During the dehumidifier factory testing, the controller was configured to work correctly.

However, it is recommended to check the parameters at the first start and change them if necessary.

To set the parameters of the controller, 3 buttons are used: Setup (Set), Up (Up) and Down (Down). The top panel displays the setting parameter, the bottom panel displays the parameter value. Press the "Set" key (left) to set the parameters.

Main settings

Step	Range parameter	Description	Example Images
1st press buttons "Setting" ("Set")	1 - 99 %	<p><i>Setting the desired humidity value</i></p> <p>Press the "Up" or "Down" button to get the desired value. How to set the following parameters similar.</p>	
2nd press buttons "Setting" ("Set")	1 - 10 %	<p><i>Setting the response range at humidity monitoring</i></p> <p>Default value corresponds to "05"(5%). For example: set Sd=50%, SHC=05%. The dehumidifier will work until the humidity is reaches 45%, then turns off. When the relative humidity level in the drying zone reaches 50%, the dehumidifier will restart.</p>	
3rd press buttons "Setting" ("Set")	-20 - +20 %	<p><i>Humidity Sensor Calibration</i></p> <p>If you have a third party current humidity meter that you trust and in the same area/ conditions it shows a different value from the value on the controller display, do calibration according to your instrument.</p>	
4th press buttons "Setting" ("Set")	1	<p>Device address ID (not used). No change is required.</p>	
5th press buttons "Setting" ("Set")	1/0	<p>Universal parameter for dryer or humidifier, sets the type of operation when reaching the value of parameter Sd. CCo = 1 - for dehumidification mode(controller turns off the device when it reaches the specified humidity parameter); CCo = 0 - for humidification mode (controller starts the device when it reaches set parameter).</p>	

Step	Range parameter	Description	Example Images
6th press buttons "Setting" ("Set")		<p style="text-align: center;"><i>High humidity warning</i></p> <p style="text-align: center;">(default value is 85%)</p> <p>The dehumidifier will give an alarm if the current relative humidity reaches set value or higher. Under normal operating condition, the dryer should quickly reduce the level humidity. If the relative humidity level cannot be quickly reduced below the SdH value, the dryer is in trouble and needs to be checked.</p>	

4.3 Algorithm of operation of the dryer components

When turning on and off the dryer, the actuators have delays and sequence in starting and stopping:

- manual start of the dehumidifier by selecting the MAN or AUTO mode on the 3-position switch;
- start of the regeneration air fan and the rotor motor-reducer;
- start of the working air fan (depends on the selected mode and the set air humidity level);
- starting the regeneration air heater;
- operation of the dehumidifier in steady state;
- for the AUTO mode: when the set humidity is reached, the regeneration air heater and the working air fan are automatically switched off (the regeneration air fan and the rotor motor-reducer continue to work until the air temperature after the heater drops to 60°C), then the process of automatic start of the components is repeated;
- manual shutdown of the dehumidifier by selecting the OFF mode (middle position) on the 3-position switch;
- switching off the regeneration air heater and the working air fan (the regeneration air fan continues to operate until the air temperature after the heater drops to 60°C);
- shutdown of the regeneration air fan and rotor gear motor.

Starting and turning off the heater during the operation of the dehumidifier can be monitored by changes in the readings of the ammeter (for the AD-200 model) or the temperature controller (for the AD-400 model).

5 MAINTENANCE

5.1 Introduction

The dehumidifier can be operated for a long time with minimal maintenance required. Maintenance must be performed to ensure stable operation of the equipment. The frequency of maintenance depends on the operating conditions and the quality of the environment where the equipment is installed. The more dust in the process air, the more often maintenance is required. Thus, the maintenance cycle is determined by the actual environmental conditions. If maintenance is not performed properly, the performance of the equipment may be reduced.

Before opening the service panels, it is necessary to keep the equipment switched off for about 15 minutes so that the heater cools down completely.



Before carrying out any maintenance work, switch off electrical network equipment.

There is a high temperature zone inside the equipment (regeneration heater section), so it must be allowed to cool completely before servicing.

5.2 Filters

The dehumidifier is equipped with two independent filter elements - for filtering the working and regeneration air. Filters are installed at the inlet of the air duct and provide cleaning of the air entering the dehumidifier. Cleaning or replacement of filters should be carried out in accordance with the content of dust particles in the air. It is not allowed to operate the product without filter elements, as dust can get inside the dryer and damage the rotor. The filter elements are checked depending on the air quality, but at least once a month.

5.3 Rotor

Under normal operating conditions, maintenance of the rotor is not required. However, if the rotor needs to be cleaned, compressed air can be used. In case of serious contamination, flush the rotor with water, but frequent flushing is not recommended.

5.4 Gear motor

The rotor geared motor is equipped with bearings whose service life corresponds to the service life of the motor, so no additional maintenance is required. Status checks are carried out once a year.

5.5 Heating device

Additional maintenance is not required. The heating device is checked twice a year.

5.6 Drive belt

Check belt tension regularly. The appropriate tensioner is used to adjust the belt tension.

6. MAINTENANCE AND TROUBLESHOOTING

6.1 Frequency of inspection and maintenance

To prevent failure of units and assemblies of the dryer, it is necessary to periodically inspect:

Knot	3-6 months	12 months
Filters	Monthly filter cleaning. If the filter soiled replace it.	
Fan		Dust and debris in the cooling groove on the surface of the motor housing must be removed. Check terminals of engine wiring to make sure the wiring is not loose. Check fan bearing lubrication and add lubricating oil. Check fan impeller for damage. If there are signs of corrosion, take immediate action.
Electric motor rotor	Check the drive belt for damage and correct operation	Check motor wiring and make sure wiring is not loose. Check for signs of damage and overheating.
Heater	Remove debris and dust from the surface of the heater	
Rotor		Check for signs of overheating and blockage. Clean the dust from the surface of the rotor.
Seals	Check for signs of damage and displacement. If there is wear or damage, then a replacement is required.	
Sensors of temperature and humidity		Check the performance of all external temperature and humidity sensors and, if necessary, calibrate them.

There is high voltage inside the block. Before any maintenance work, check that the device is powered off.



There is a high temperature zone inside the unit (heating section of the regenerator) that needs to be cooled down before maintenance.

Adjustment, maintenance and repair of the device must be carried out by qualified personnel. Relevant personnel should be aware of the high temperature and high pressure inside the unit.

6.2 Troubleshooting

If the device fails, check the list of faults and the corresponding solutions for diagnosing and resolving them before contacting the supplier, as the problem can be easily fixed.

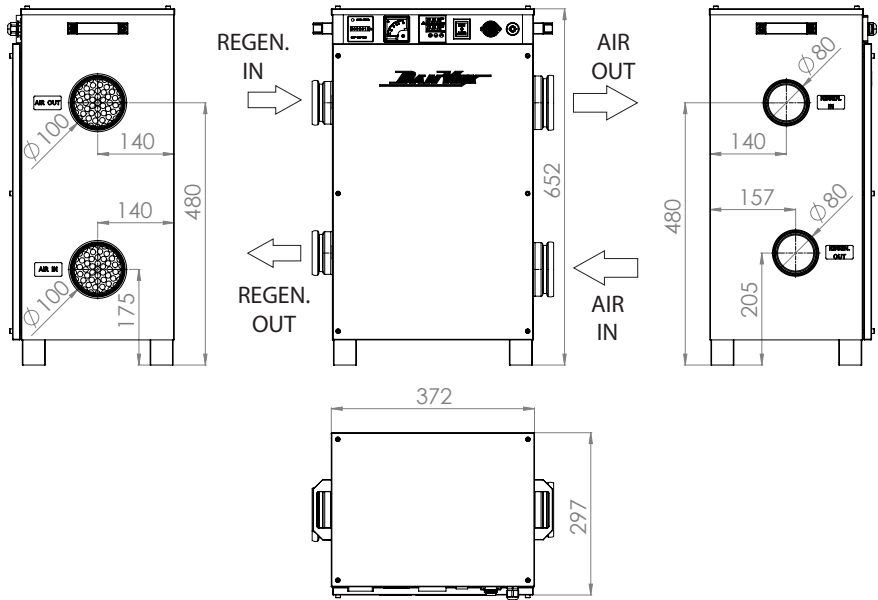
Malfunction	Possible reason of malfunctions	Sequencing for correction
Does not work or low performance	<ul style="list-style-type: none"> • the filter is clogged • malfunction of the electric heater • reduced airflow • regeneration temperature changes • air leaks 	<ul style="list-style-type: none"> • clean or replace filters • check if the fuse is good • check the air ducts and adjust the air flow • check the electric heater • check tightness of seals and panels
Malfunction of a breaker or a fuse	<ul style="list-style-type: none"> • the fan is damaged • rotor damaged • the electric heater is damaged 	<ul style="list-style-type: none"> • check the fan and its motor • check the rotor drive motor and belt • check the electric heater
The device does not starts	<ul style="list-style-type: none"> • no power supply • no control signal • phase short circuit • fuse failure 	<ul style="list-style-type: none"> • check the fuse • check external start/stop signal • check the machine and phase sequence • check electrical components
Rotor does not rotate	<ul style="list-style-type: none"> • the belt is slipping • the belt is torn or worn • the rotor is stuck • the rotor drive motor is damaged 	<ul style="list-style-type: none"> • check belt tension • replace the belt • check center bearing and outer rim • replace the gear motor assembly
Missing dehumidified air	<ul style="list-style-type: none"> • the filter is clogged • the fan is damaged • phase failure • the duct is blocked 	<ul style="list-style-type: none"> • clean or replace filters • check fan and motor • check the machine and phase sequence • check the air volume control and the air duct

7. DRYER SPECIFICATIONS

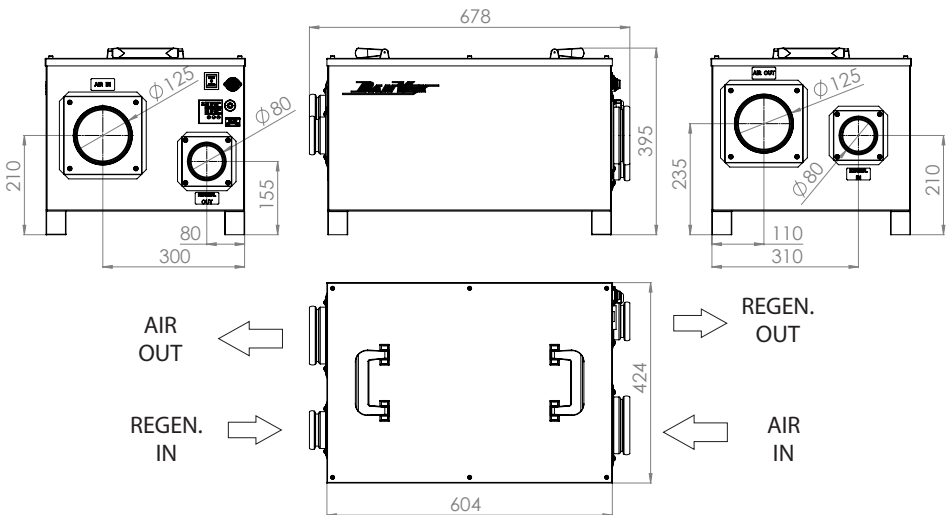
Model	AD-200	AD-400	AD-550
Performance (20°C/60%), kg/hour	0,6	2,2	3
Performance (20°C/60%), kg/day	14,4	52,8	72
Operating temperature range, °C	-20 .. +40		
Dehumidification range, RH%	2 - 100		
Working air, m ³ /hour	180-200	400	550
Static pressure, Pa	70	100	100
Regeneration air, m ³ /h	60	130	200
Static pressure, Pa	50	50	50
Operating current, A	6	10	20
Power consumption, kW	1,2	2	3,8
Voltage / frequency	230V / 50Hz	230V / 50Hz	230V / 50Hz
Noise level, dB	<45	<50	<65
Duct size working air, mm	D100	D125	D125
Duct size dry air, mm	D100	D125	D125
Supply duct size regeneration air, mm	D80	D80	D80
Exhaust duct size regeneration air, mm	D80	D80	D80
Filters: - working air; - air regeneration.	EU3 269*263*30 248*140*20	EU3 320*262*21 320*177*21	EU3 393*160*18 393*160*18
Hour meter	+	-	+
Degree of protection	IP 44		
Overall dimensions, mm (depth*width*height)	442*292*678	680*425*400	578*420*867
Weight, kg	30	34	60

8. OVERALL AND MOUNTING DIMENSIONS

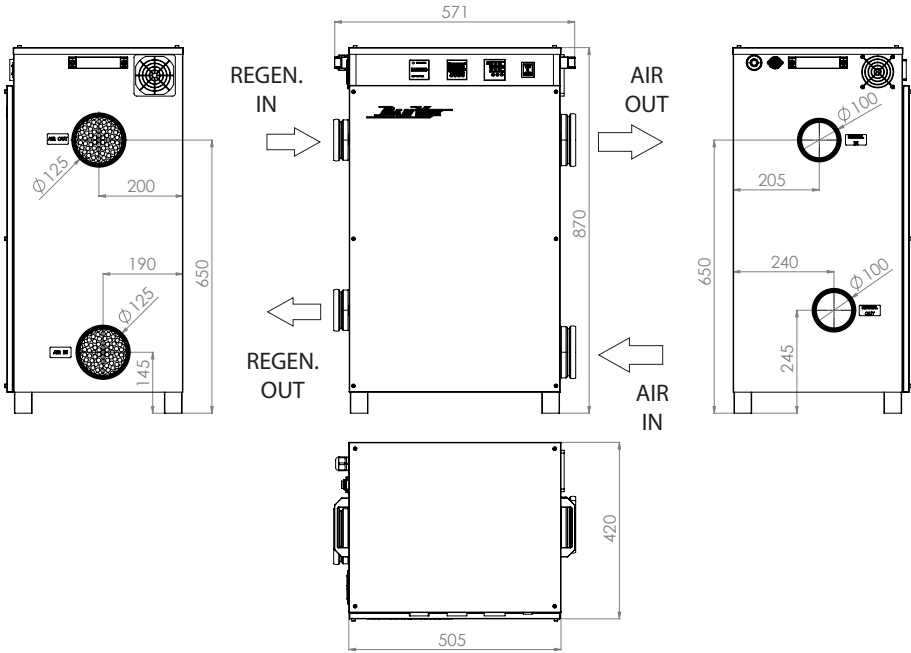
DanVex AD-200



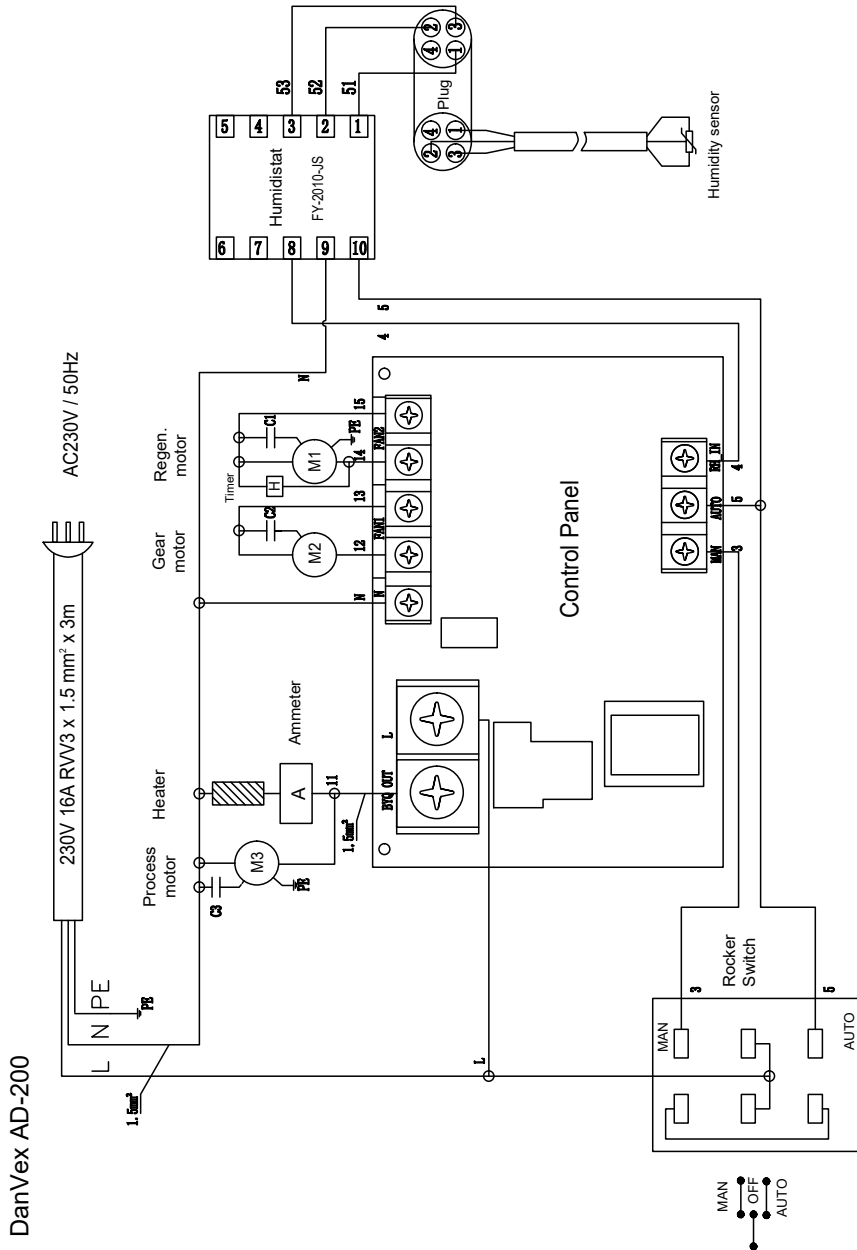
DanVex AD-400



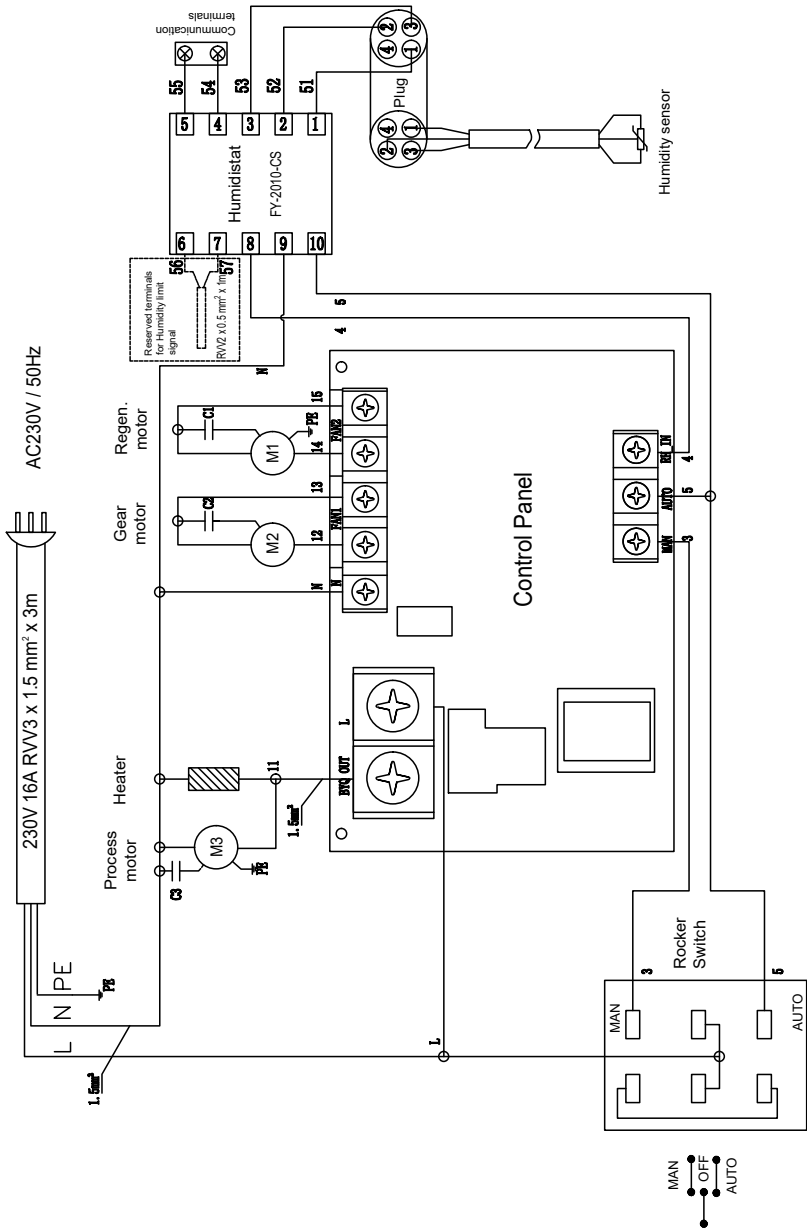
DanVex AD-550



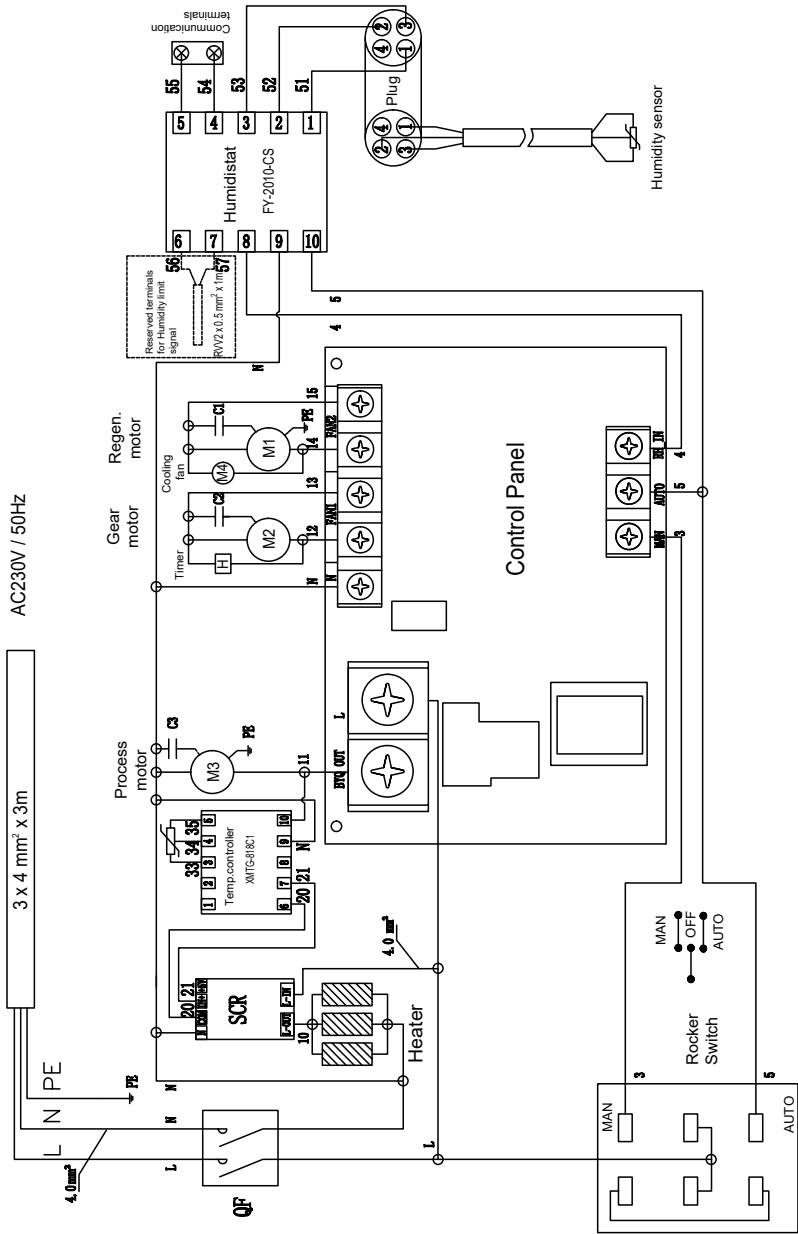
9. ELECTRICAL CONNECTION DIAGRAM

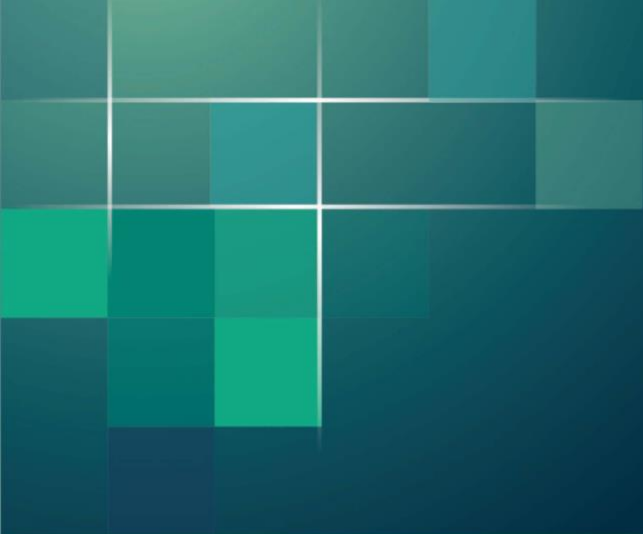


DanVex AD-400



DanVex AD-550





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