



DESICCANT DEHUMIDIFIER

MDC7500



TABLE OF CONTENTS

| | |
|--|----|
| 1 GENERAL INFORMATION | 3 |
| 1.1 Overview | 3 |
| 1.2 Mode of operation..... | 4 |
| 1.3 Scope of supply | 5 |
| 2 TECHNICAL SPECIFICATION | 6 |
| 2.1 General information..... | 6 |
| 2.2 Overall and installation dimensions..... | 7 |
| 2.3 The fans | 8 |
| 2.4 The desiccant rotor..... | 9 |
| 2.5 Reactivation heater | 10 |
| 2.6 Air filters | 10 |
| 2.7 Design features..... | 10 |
| 3 STORAGE AND TRANSPORTATION | 11 |
| 4 INSTALLATION | 12 |
| 4.1 Safety requirements | 12 |
| 4.2 Location..... | 12 |
| 4.3 Connection of air ducts..... | 17 |
| 5 OPERATION | 20 |
| 5.1 Start-up | 20 |
| 5.2 Maintenance | 21 |
| 6 ELECTRIC CIRCUIT and CONTROL SYSTEM | 22 |
| 7 THE BASIC TROUBLESHOOTING | 28 |
| 8 SPECIFICATION | 29 |
| 9 WARRANTY CONDITIONS | 30 |
| 10 CLAIMS SUBMISSION PROCEDURE | 31 |
| EC DECLARATION OF CONFORMITY | 32 |

1 GENERAL INFORMATION

1.1 Overview

Desiccant dehumidifier MDC7500 (hereinafter referred to as – the Unit) is designed for removing moisture from indoor air (buildings, warehouses, basements, pump stations, with special humidity and temperature parameters), and for the use in the drying processes. Desiccant dehumidifiers MDC have high performance and are indispensable at low temperatures and low relative humidity.

Dehumidifiers are equipped with desiccant wheel, wheel drive, heating element, fans, and air filters. The distinctive properties of the desiccant dehumidifier are high efficiency at low temperatures, achieving and maintaining very low humidity.

In addition to above mentioned, desiccant dehumidifiers are used to:

- prevent condensation
- improve the quality of the finishing works during apartment repairs due to drying without thermal movements in the covering products used for walls, floor and ceiling;
- eliminate the effects of the floods, dry new buildings;
- increase the shelf life of hygroscopic materials: drugs, detergents, building materials and other bulk materials;
- maintain a low level of humidity during the production of food items as well as products made of wood, rubber and plastic, during the manufacture of furs;
- maintain the marketable condition of clothing and packaging items;
- reduce the growth of bacteria, mold and fungus



The use of the equipment for other purposes or not following the instructions may result in personal injury and/or damage of the equipment.

1.2 Mode of operation

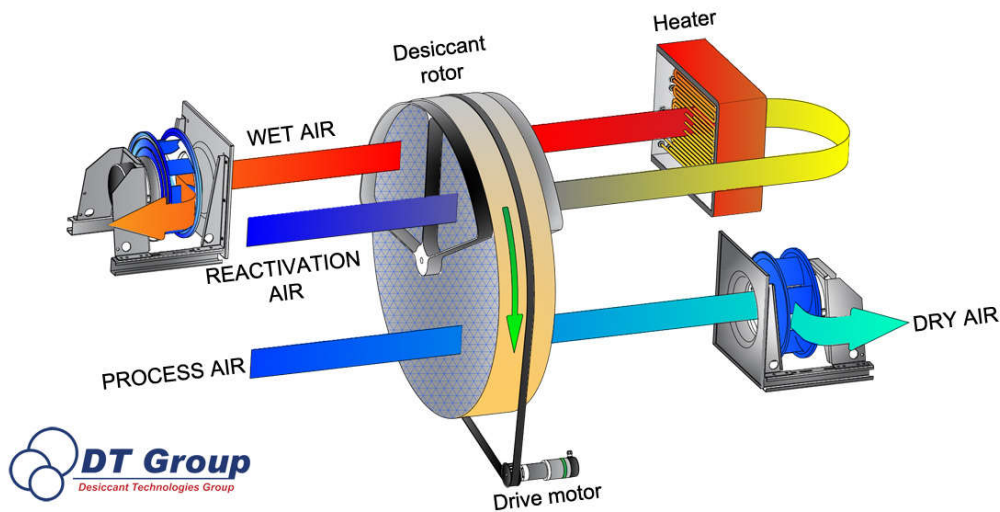


Figure 1.1 – Desiccant dehumidifier mode of operation

Desiccant dehumidifier mode of operation shown in Figure 1.1. The main element of the unit is the silica gel rotor (desiccant wheel). Its inner surface is in the form of honeycomb, which results in tremendous increase of active surface. It also promotes a laminar air flow through the rotor, which significantly reduces aerodynamic pressure loss.

The process air passes through 70% of the face area of the rotor and reactivation air passes through the 30% of the face area. When process air passes through the rotor, water molecules are absorbed by sorbent material. Reactivation air, simultaneously, is heated in the heater up to 90-140° C, which increases its moisture saturation rate. Reactivation air evaporates the water from the rotor. Afterwards the reactivation air, saturated with water vapor, is led away of the unit. This airflow also performs the cleaning of the rotor from possible contamination. Continuous rotation of the rotor provides non-stop process of adsorption/reactivation. In order to avoid the mixing of the both air flows special sector sealing materials are used. The absence of condensation during the process of dehumidification allows installation of the dehumidifier without the connection to drainage system.

This mode of operation provides heat recovery too. The desiccant wheel absorbs the heat while regeneration process. In this case, reactivation air is pre-heated then partially dehumidified and finally supplied via the heater in to the reactivation sector. This solution allows to reduce heater power consumption and consequently the temperature increase of the dry air.

1.3 Scope of supply

- ◆desiccant dehumidifier MDC7500 1 PCs;
- ◆technical datasheet 1 PCs;
- ◆packaging 1 PCs

2 TECHNICAL SPECIFICATION

2.1 General information

The casing of a dehumidifier is made from AluZinc sheet metal with isolation of 40mm that gives superresistance to atmospheric corrosion, and also increases durability. The casing is completely hermetic that allows locating a dehumidifier outdoors.

Connection of air ducts are made through round air ducts of the standard sizes. The electric panel is in a separate section of internal part of a dehumidifier, the control panel is placed on frontal part of a dehumidifier.

Average moisture removal of a dehumidifier makes 34 kg/h of moisture (at 20°C and 60% RH). The dehumidification capacity at other conditions is given in Figure 2.1.

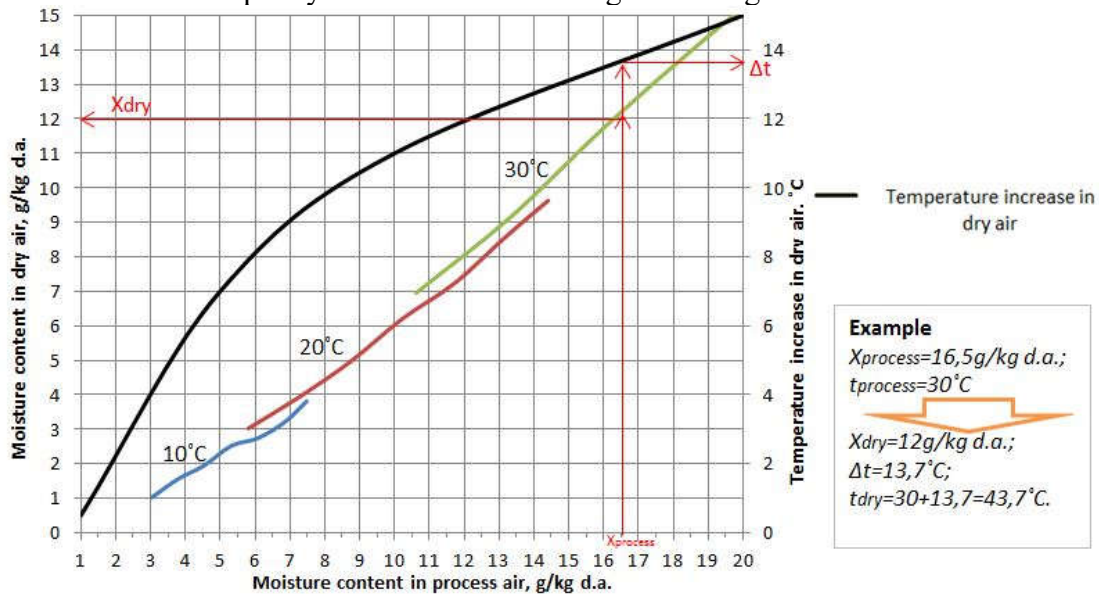


Figure 2.1: Performance curves of desiccant dehumidifier MDC7500

Technical data

| Process air | |
|-----------------------------------|-------------------------------|
| Nominal airflow | 7500 m ³ /h |
| Available static pressure | 400 Pa |
| Inlet air filter | Pocket G4 592x592x360 (2 PCs) |
| Reactivation air | |
| Nominal airflow | 1500 m ³ /h |
| Available static pressure | 300 Pa |
| Inlet air filter | Pocket G4 592x592x360 (1 PCs) |
| Nominal power supply | |
| Process air fans | 3.9 kW |
| Reactivation air fan | 2.5 kW |
| Reactivation heater | 36 kW |
| Total | 44 kW (3x400V, 50 Hz)/64A |
| Miscellaneous data | |
| Operating temperature | -30/+40°C |
| Max noise level without ductworks | 70 dBA |
| Weight | 850 kg |
| IEC protective class | IP55 |

2.2 Overall and installation dimensions

Overall and installation dimensions of the desiccant dehumidifier MDC7500 shown in the figure 2.1

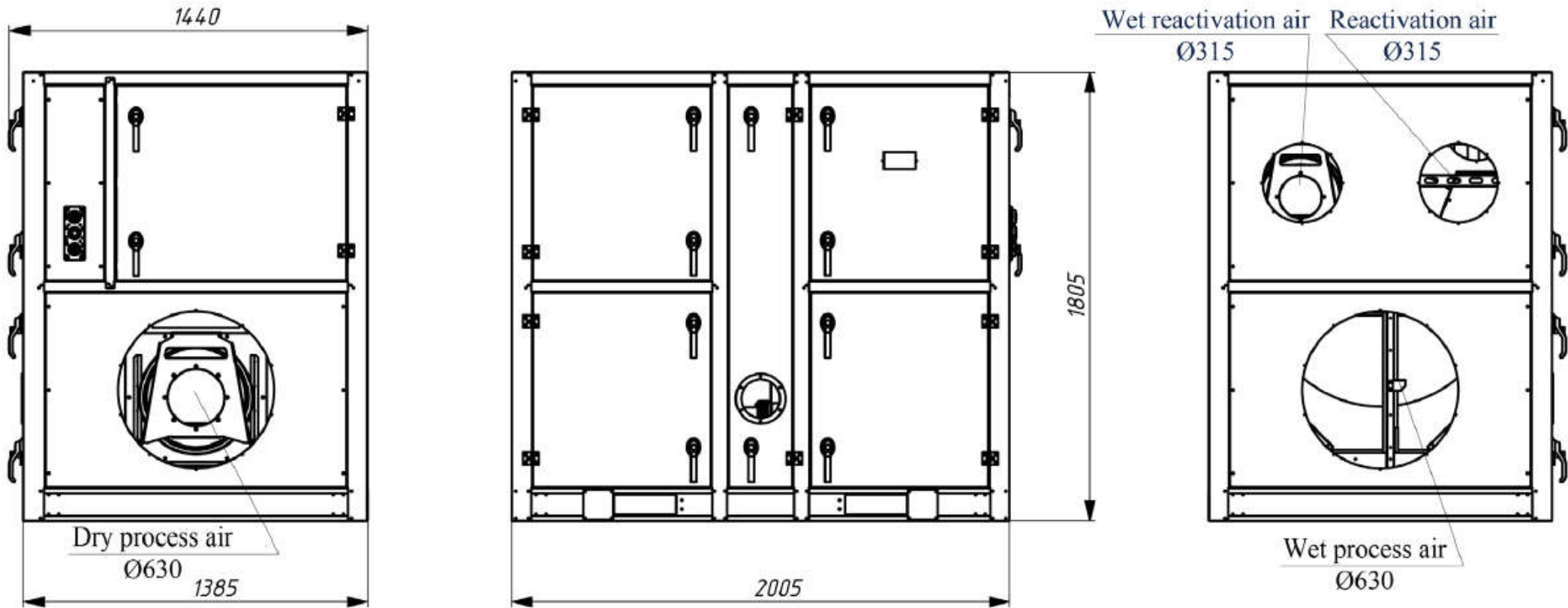


Figure 2.1 – Overall and installation dimensions of the desiccant dehumidifier MDC7500

2.3 The fans

The Device has modern EC fans. Energy efficiency of EC motors is many times higher in comparison with the AC motors. Low power consumption and easiness of management are the advantages of EC fans. EC technology is based on the use of the integrated electronic control system and allows the motor to operate always optimally. Integrated electronic control system can change the speed to meet the exact requirements for air flow and work with high efficiency.

The main advantages of EC fans:

- High efficiency (about 93%);
- Energy savings ensures lower operating costs by at least 30%;
- Low noise level at a relatively high power;
- Compact size at a relatively high power;
- The possibility of smooth and fine adjustments;
- The possibility of programming;
- Adjustment of capacity of the fan depending on the level of temperature, pressure, and humidity level;
- Protection of the engine against mechanical influences and electric overloads;
- Does not require service maintenance;
- Has long lifetime

The motors of EC series has higher reliability in comparison with the asynchronous motors with the frequency converter at voltage network fluctuations, and also, is resistant to voltage increases. The motors of the EC series smoothly stops and gives an alarm signal after network voltage lowering.

EC fans made in Germany are used in this Device. The impeller of the fan of unilateral suction is executed with backward curved blades. It has aerodynamically optimized shape of the blades of the impeller. The rotating vaneless diffuser increases efficiency and improves acoustic characteristics. The impeller is made of high-strength material according to ISO 1940. The fan has protection against overheating by active temperature control. Compliances to standards:

- isolation class is IP 54;
- tests of fans are carried out in chamber, according to DIN 24163, part 2 or ISO 5801;
- specifications conform to accuracy class 2, according to DIN 24166;
- the efficiency of the electric motor corresponds to the class IE4.

Technical data of the fans shown in tables 2.1, 2.2.

Table 2.1 – Technical data of the process air fans

| Parameter | Measurement unit | Value |
|-------------------------------|--|-----------|
| Phase | | 3~ |
| Operating voltage | V | 400 |
| Permissible operating voltage | V | 380...480 |
| Frequency | Hz | 50 |
| Speed | min ⁻¹ | 2810 |
| Power consumption | kW | 3.9 |
| Current consumption | A | 6.2 |
| Minimum ambient temperature | °C | -20 |
| Maximum ambient temperature | °C | +55 |
| Motor protection | integrated active temperature management | |
| Rated air flow | m ³ /h | 7500 |

Table 2.2 – Technical data of the reactivation air flow fan

| Parameter | Measurement unit | Value |
|-------------------------------|--|-----------|
| Phase | | 3~ |
| Operating voltage | V | 400 |
| Permissible operating voltage | V | 380...480 |
| Frequency | Hz | 50 |
| Speed | min ⁻¹ | 3640 |
| Power consumption | kW | 2.5 |
| Current consumption | A | 4.0 |
| Minimum ambient temperature | °C | -20 |
| Maximum ambient temperature | °C | +55 |
| Motor protection | integrated active temperature management | |
| Rated air flow | m ³ /h | 1500 |

2.4 The desiccant wheel

Silica gel rotor R7500 made in Europe is the principal element of the Device. Rotor by 80% consist of active silica gel and that provides their highest performance data.

Silica gel is a solid adsorbent, dried gel of polysilicic acid. Silica gel according to its structure is highly porous, formed by the smallest and spherical particles, chemical composition is silicon dioxide SiO₂ (silica).

The main advantages of silica gel are:

- inertness, chemical and biological harmlessness;
- high mechanical resistance to abrasion and crushing;
- low temperature is required for regeneration (90°C - 140°C) and, as a consequence, lower energy consumption;
- explosion and fire safety.

Silica gel rotor is resistant to acidic environment, and can be used for drying air with relative humidity up to 100%. This material is highly efficient in the attraction and retention of water molecules. The know-how techniques of rotor enables the manufacturing of products, capable to handle the saturated with moisture air without the risk of destruction. Effective and reliable rotor design provides unlimited uses. The rotor has bacteriostatic properties, so it can be used where there are high hygienic requirements. The adsorbing structure of the rotor can withstand a huge amount of adsorption-regeneration cycles, so the rotors are extremely durable, and their service life is 10-15 years. Special sealants in the places of air flow through the rotor are used to prevent mixing of process and reactivation air.

2.5 Reactivation heater

Tubular electric heating element of own production is used for heating of reactivation air in a dehumidifier. Tubular electric heating element is a thin-walled metal tube with a spiral from a high resistance wire. The free space of a tube is filled with the filler having good heat insulation and serving as isolation of a spiral from a tube wall. Crystalline magnesium oxide (periclase) is used as filler. The cover is made of steel 1.4878. The casing of a heater has isolation of 40 mm that reduces heat losses to a minimum.

Compared with other types of heaters, it differs by:

- possibility to operate it at direct contact with the heated environment;
- reliability at significant shock loads;
- absence of voltage on tubular electric heating element cover;
- the average operating time to failure makes not less than 10 000 hours of continuous work.

Heater has 3 capacity steps (12kW+12kW+12kW). Total heating capacity – 36 kW.

2.6 Air filters

Air filters are designed to clean the dehumidified and reactivation air. Pocket type filters have high filtration efficiency and longer service life than the panel. This unit is delivered with process air filter – G4 class; reactivation air filter – G4 class.

2.7 Design features

- The casing is completely hermetic and panels are made of 1,0mm AluZinc sheet metal with isolation of 40mm (rockwool). Powder painted panels (outside only); Rigid frame made of 1,5mm AluZinc sheet metal (powder painted completely).
- It is compact and lightweight.
- High efficiency at low temperatures and a low level of relative humidity in served rooms.
- Sufficient available static pressure to connect the dehumidifier to the duct system.
- Optional humidistat is an accessory.
- Highly efficient pocket filters.
- Easy access to internal components of the dehumidifier for maintenance.
- High efficiency of washable silica gel rotor.

3 STORAGE AND TRANSPORTATION

It is necessary to implement the following recommendations for storage of the Device before installation (if required):

- Do not remove the dehumidifier from the packaging;
- Place the dehumidifier in a horizontal position on a flat, firm surface; upturning on either side can cause irreparable damage to some components;
- Ensure the protection of Device against mechanical damage;
- Cover the dehumidifier in order to protect from dust, rain, frost, chemical aggressive environments, etc.
- Valid storage period for dehumidifier depends on the surrounding environment. The maximum storage period for the Device in a well-ventilated heated premises is 5 months;
- Never place heavy objects on the dehumidifier.

Devices are transported fully assembled or in separate parts (sections), packed in a protective film.

At transportation it is necessary to perform the following steps:

- It is necessary to make sure in completeness of the Device in the case of transportation in parts (sections);
- The Device may only be transported in a horizontal position;
- Special attention must be paid to prevent mechanical damage of the protruding parts;
- The Device can be transported by any type of transport, ensuring its safety and avoiding mechanical damage, according to the rules of cargo transportation for this transport.

4 INSTALLATION

4.1 Safety requirements

The requirements of this technical data sheet, „Electrical Installations Code," „Rules of the technical operation of electrical consumers", existing construction norms and regulations have to be fulfilled during installation and operation of the Device.

Desiccant dehumidifier MDC7500 is the electric equipment, therefore it is necessary to comply with safety rules on the treatment of electrical equipment. The Device should be used specifically on its purpose. It is forbidden to spend any works on the Device if it is connected to the power supply.



ATTENTION!

Never open the door if the dehumidifier is running. To avoid electrical shock, the replace of damaged power cables should be done only by qualified specialists.

Do not install the dehumidifier in the environment with corrosive chemicals, explosive and toxic gases, and high temperature vapor, in high temperature environment or extreme dust and dirt.

4.2 Location

The dehumidifier is designed for installation indoors and outdoors.



ATTENTION!

Do not install the dehumidifier in humid places where there is a risk of direct contact with the water to the device; in very dusty places and places with chemically aggressive environment.

The Device has to be placed thus that there was a possibility of an easy access to it and further opening of side doors for carrying out service for scheduled maintenance or repair of a dehumidifier.

The following options regarding the Device installation on the serviced premises are possible:

- ✓ Work of dehumidifier in "closed" circuit (indoor version), Figure 4.1;
- ✓ Work of dehumidifier on a "closed" circuit (outdoor version), Figure 4.2;
- ✓ Work of dehumidifier on an "open" circuit (indoor version), Figure 4.3;
- ✓ Work of dehumidifier on an "open" circuit (outdoor version), Figure 4.4;
- ✓ Work of dehumidifier on a "closed" circuit with the mixing of outside air (indoor version), Figure 4.5;
- ✓ Work of dehumidifier on a "closed" circuit with the mixing of outside air (outdoor version), Figure 4.6;
- ✓ Work of a dehumidifier on the "closed" scheme in the mode of "dehumidifying", Figure 4.7.

Figure 4.1 shows the installation of the dehumidifier inside serviced room when working on recirculation ("closed" circuit), i.e. the air is taken from the indoor volume, dehumidified and thrown back. Reactivation air is drawn outside the served room and ejected. In automatic mode the dehumidifier will work as long as it reaches the set point on the humidistat.

It is forbidden to use option of work of a dehumidifier on the "closed" circuit in the presence of particles or substances in internal air which can damage the Device elements.

Figure 4.2 shows the option of dehumidifier outside serviced room when working on recirculation. It differs from the first option (see Figure 4.1) only by the location of the dehumidifier.

Figure 4.3 shows indoor installation of the dehumidifier working on "open" circuit (in the mode of supply of fresh air), i.e. outdoor dehumidified air is blown into the premise. Reactivation air is taken from the outdoor and is thrown there back. This is useful if the inside air directly due to the presence of particles and substances in it that could damage the individual elements of the dehumidifier.

Figure 4.4 shows the outdoor installation of dehumidifier, working in the mode of fresh air supply. It differs from the third version (see Figure 4.3) only by the location of dehumidifier.

Figure 4.5 shows the indoor installation of dehumidifier when operating in recirculation mode ('closed' circuit) with mix of the outdoor fresh air. This is useful in situations where you must ventilate the room with fresh air, or create the overpressure in the served premises to prevent uncontrolled flow of outdoor air (infiltration). Outdoor air inlet duct must be equipped with manual or automatic air damper to adjust the amount of fresh air supply.

Figure 4.6 shows outdoor installation of dehumidifier when operating in recirculation mode ("closed" circuit) with mix of the outdoor fresh air. It differs from the fifth version (see Figure 4.5) only by the location of the dehumidifier.

Figure 4.7 shows the internal view of dehumidifier during the work in the recirculation mode with an intake of reactivation air from the room (the mode of "dehumidifying" of rooms). This is useful, for example, in cases of application of the Device for drainage of facilities after flooding, or before carrying out painting and decorating works.

Consult with our experts before selecting the options of operating mode and place of installation of the dehumidifier.

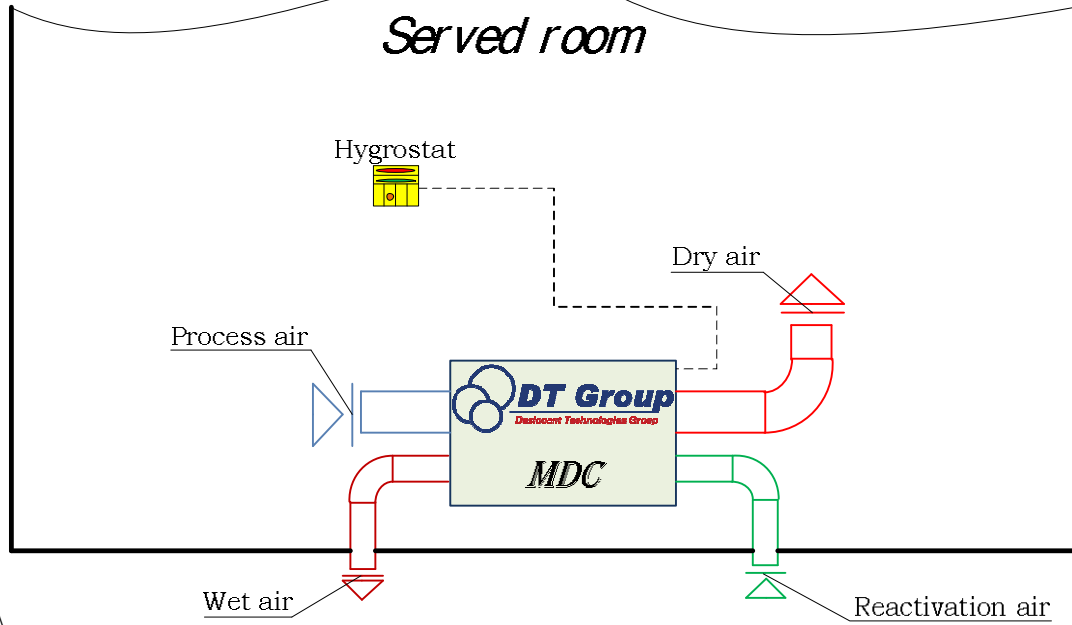


Figure 4.1: Work of a dehumidifier on the "closed" circuit (indoor version)

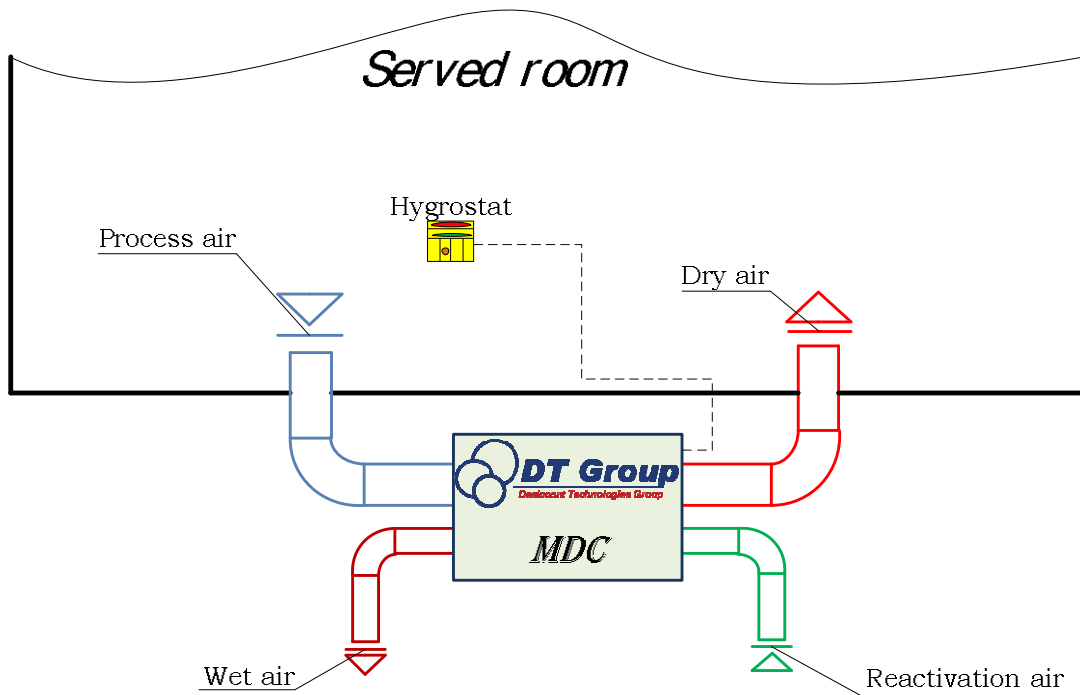


Figure 4.2: Work of dehumidifier on a "closed" circuit (outdoor version)

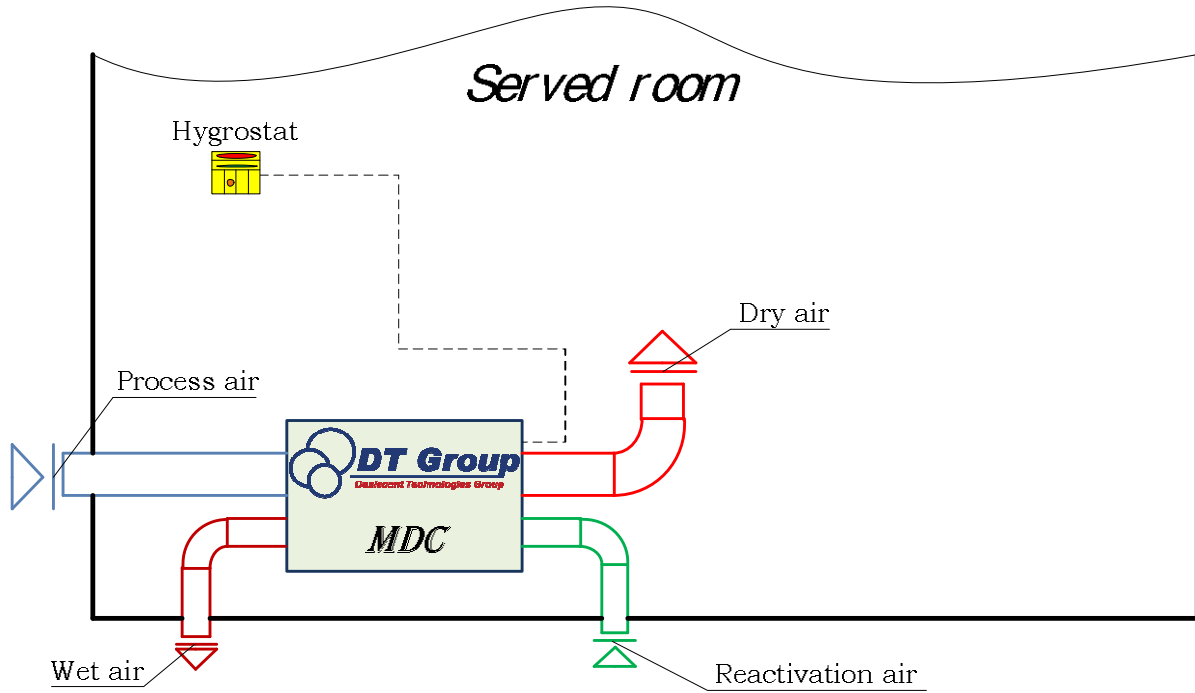


Figure 4.3: Work of dehumidifier on an "open" circuit (indoor version)

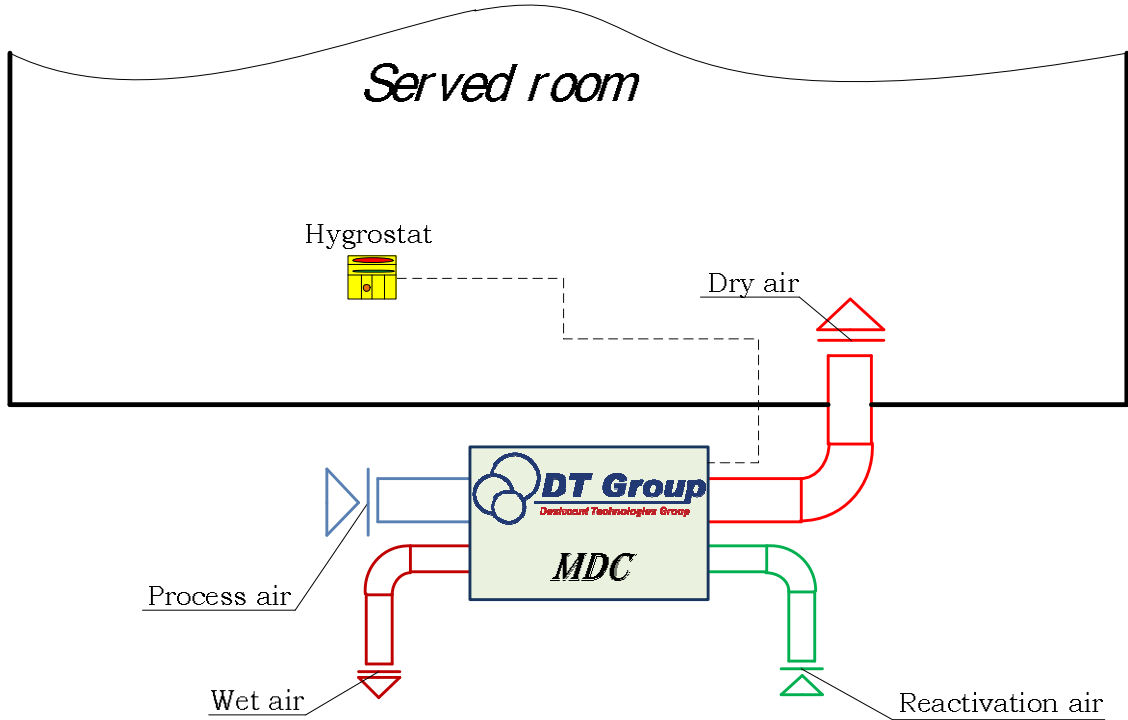


Figure 4.4: Work of dehumidifier on an "open" circuit (outdoor version)

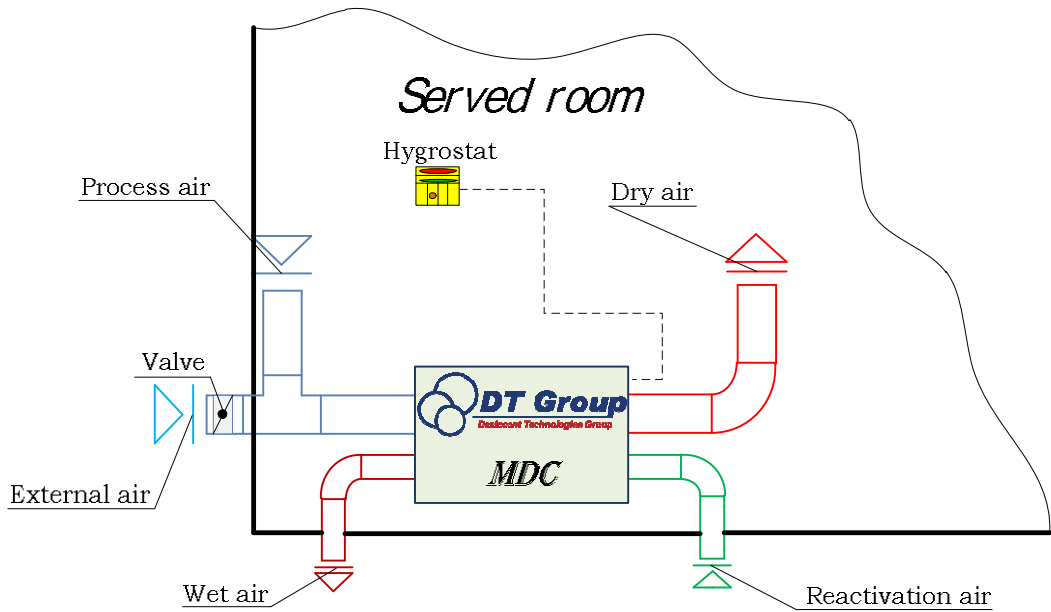


Figure 4.5: Work of dehumidifier on a "closed" circuit with the mixing of outdoor air (indoor version)

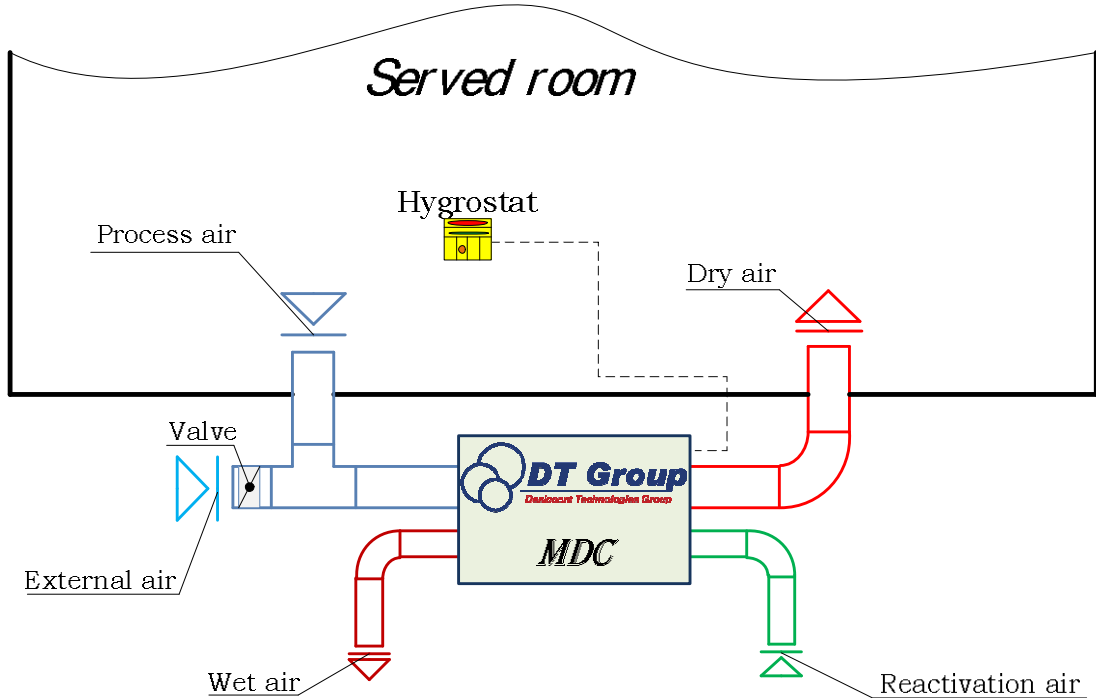


Figure 4.6: Work of dehumidifier on a "closed" circuit with the mixing of outdoor air (outdoor version)

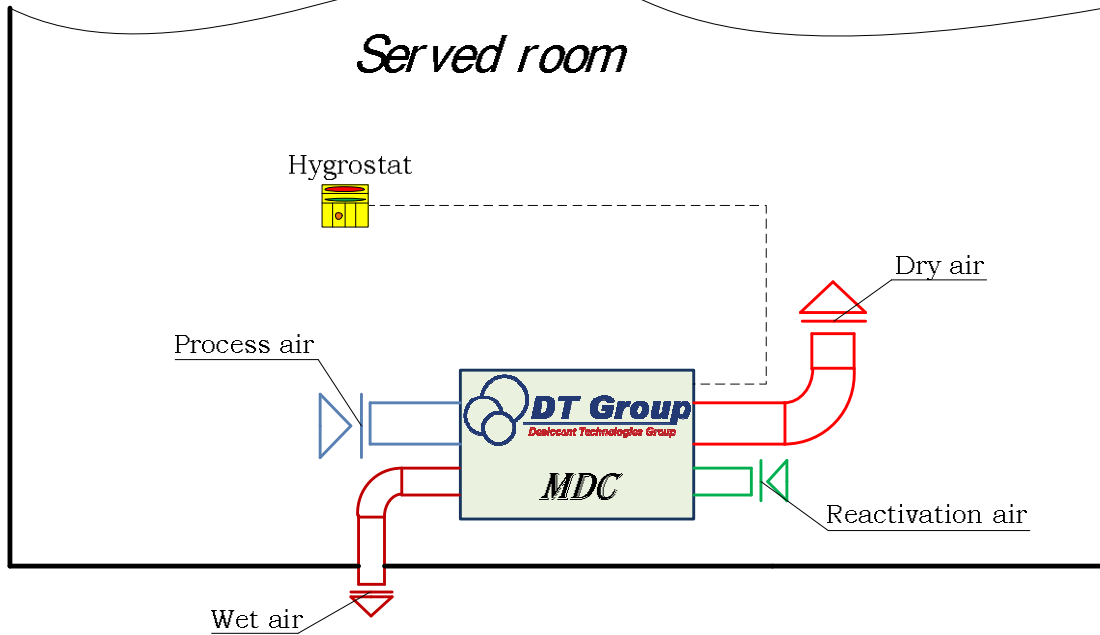


Figure 4.7: Work of a dehumidifier on the "closed" circuit in the mode of "dehumidifying"

4.3 Connection of air ducts

The length of the connected duct system should be as small as possible in order to minimize pressure loss. The pressure of the fan allows connecting rather complex systems of air ducts to a dehumidifier, but before you should consult with experts.

At design of a dehumidifier the special attention was paid to reduction of the vibrations arising during the operation of the equipment, but, nevertheless, it is necessary to use flexible connectors at connection of rigid air ducts.

To reduce the load of its own weight, air ducts, directly connected to the dehumidifier, need to be mounted on supports.

It is recommended to install dampers with manual or the electric drive on air ducts of dehumidified and reactivation air for prevention of an uncontrolled flow of air when the dehumidifier is switched off. It is possible to establish sound attenuators on the inlet and on the outlet of the process air. This is required to be done taking into account the requirements for noise level of the served room.

4.3.1 Air duct for process air intake

The intake port of the duct must be positioned high enough above the ground in order to prevent the system from dust, dirt and sand. Air intake must also be located away from the sources of possible contamination, such as: steam, exhaust gases and other harmful substances.

Outdoor air intakes are not allowed to place closer than 8m horizontally from the waste bin, parking cars zone, driveways, loading areas, sewer vents, tops of chimneys and other similar sources of pollution and odours.

It is necessary behind the intake to provide a chamber for settling large particles of dust, sand, etc. in areas with possible intensive transfer of dust and sand and position the bottom of air intake device not less than 3m above ground level.

4.3.2 Air duct for reactivation air intake

The requirements for connection of an air duct for intake of reactivation air are the same as to connection of an air duct for process air (see item 4.3.1).

4.3.3 Air duct for exhaust of wet reactivation air

Air duct for exhaust of wet reactivation air must be made of corrosion-resistant material (e.g., stainless steel). The air duct must withstand the temperature of air up to 60° C. The wet air exiting from the dehumidifier has very high moisture content, due to which it is high probability of condensation formation on the inner surface of the duct. In order to avoid this phenomenon it must be properly insulated.

Horizontal sections of the duct must be installed with a slope (greater than 2.5 cm per meter) from the dehumidifier (see Figure 4.8). If there are vertical air ducts, condensate drain trap is installed at the lowest point to drain the water in case of its occurrence (see Figure 4.9). The wet reactivation air exhaust should be done at least 2 m from the air intake devices of process and reactivation air.

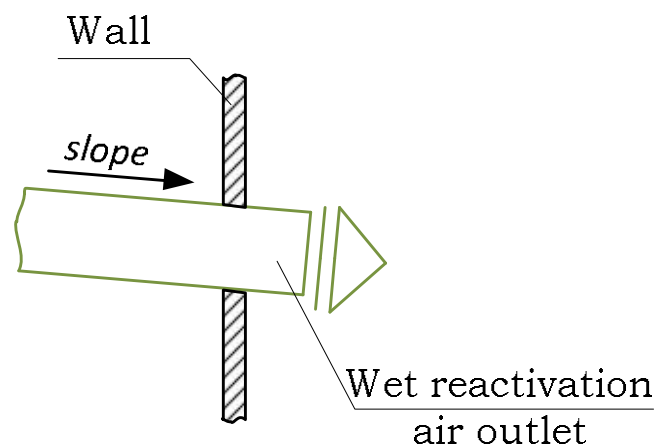


Figure 4.8: The example of laying horizontal air duct for the exhausted reactivation air

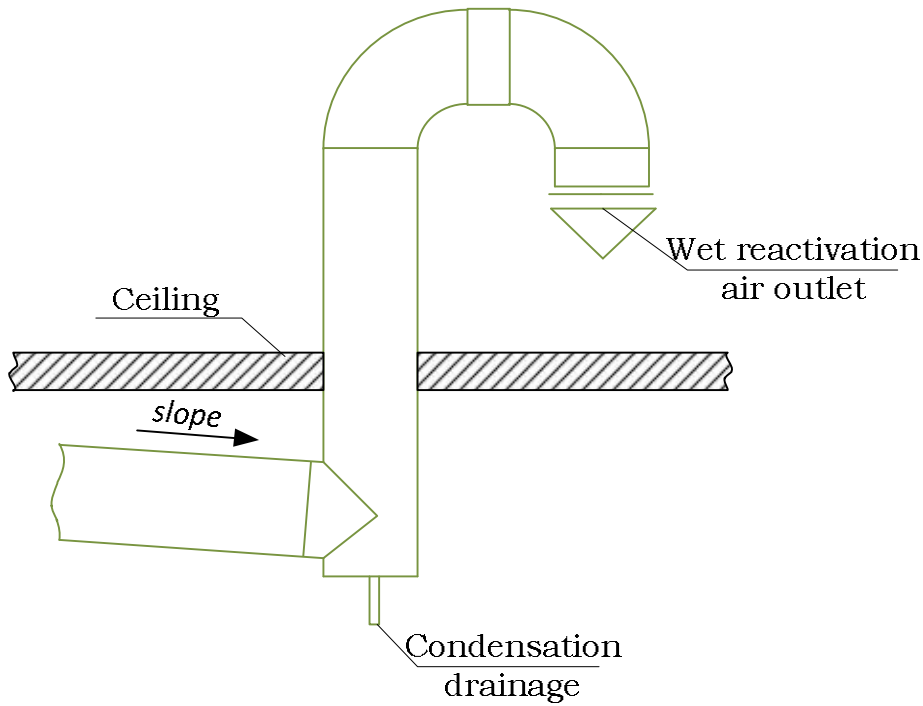


Figure 4.9: The example of laying vertical air duct for exhausted reactivation air

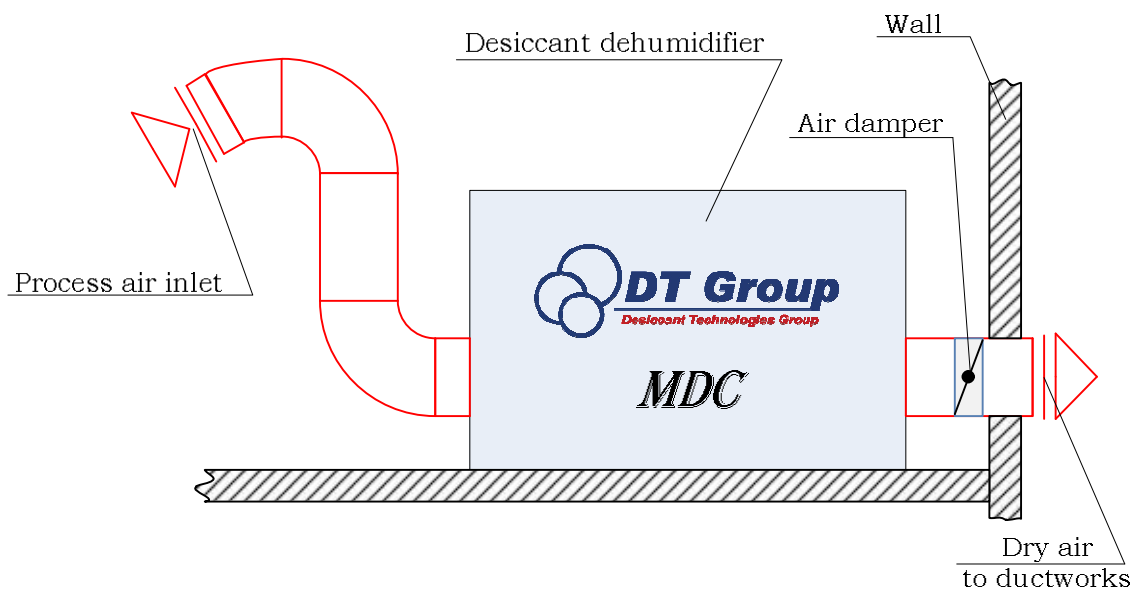


Figure 4.10: An example of laying air ducts for the process (dehumidified) air

5 OPERATION

Desiccant dehumidifier MDC7500 requires minimal maintenance. All components do not demand hard maintenance, i.e., lubrication or adjustment.

5.1 Start-up



Figure 5.1: View of control panel

Before start of the Device it is necessary to switch on power supply and transfer the mode switch to the desired position.

In case connection of the mains power performed correctly, the phase monitor KV1 (Diagram sheet Sh 101 (Electrical mounting plate) both LEDs will be ON. In case only one of LED is ON then it is necessary to check and change the mains power connection.

Never change the position of the air flow controller with potentiometers without prior consultation with the representative of the manufacturer, it can lead to equipment malfunction and failure of regeneration heater.

Functions of switches and indicators of the control panel are given in Table 5.1.

Table 5.1 Functions of switches and indicators of the control panel

| Switch / indicator | Function |
|-------------------------|---|
| Mode switch | <p>When the switch is in the position "MAN" (manual), the dehumidifier is running continuously at full power.</p> <p>When the switch is in position "AUTO" (automatic), the work of the dehumidifier is controlled via the external input signal.</p> <p>When the switch is in the "0" position (standby mode), the dehumidifier is switched off with a possible delay.</p> |
| Green light (OPERATION) | Light is on, when the Device is running in basic mode. |
| Red light (ALARM) | Light is on the alarm signal |
| Yellow light (STAND BY) | Light is on, when the device is in standby mode, ready to run |

5.2 Maintenance

The dehumidifier MDC7500 is designed for prolonged continuous use and has a high degree of reliability. As in case of use of any other equipment, periodic maintenance service for maintenance of a dehumidifier in an optimum condition which will ensure the efficiency of its operation is required.

Frequency of maintenance is primarily determined by the operating conditions and environment in which the dehumidifier is installed. Reduction of intervals of servicing is necessary also at intensive operation of a dehumidifier.

During the normal work of a dehumidifier it is necessary to carry out the following preventive actions:

- monthly check and, if necessary, replacement of filters;
- monthly check of rotation of a rotor;
- monthly check of degree of wear of the desiccant wheel belt.

In addition it is recommended to make periodic survey of all dehumidifier components for correctness of functioning and the absence of wear of moving parts. Such check allows ensuring the functioning of a dehumidifier with the maximal productivity without additional energy consumption.

Close windows and doors of the served room for ensuring high efficiency of dehumidification. Windows and doors should be open only to ventilate the room.

Use only specially designed tools for the maintenance.

6 ELECTRIC CIRCUIT AND CONTROL SYSTEM

The electric part of a dehumidifier and control system are made from high-quality components manufactured in Europe. Quality meets the international standards ISO 9001, ISO 14001 and other applicable standards.

The control system includes:

- protection of engines and cables against short circuit;
- protection of fans motors and heaters against thermal overload;
- a hygrostat for control and maintain of necessary humidity of air (option).

1 2 3 4 5 6 7 8 9 10

A

Electrical mounting plate

Electrical cabinet door

550 mm

B

C

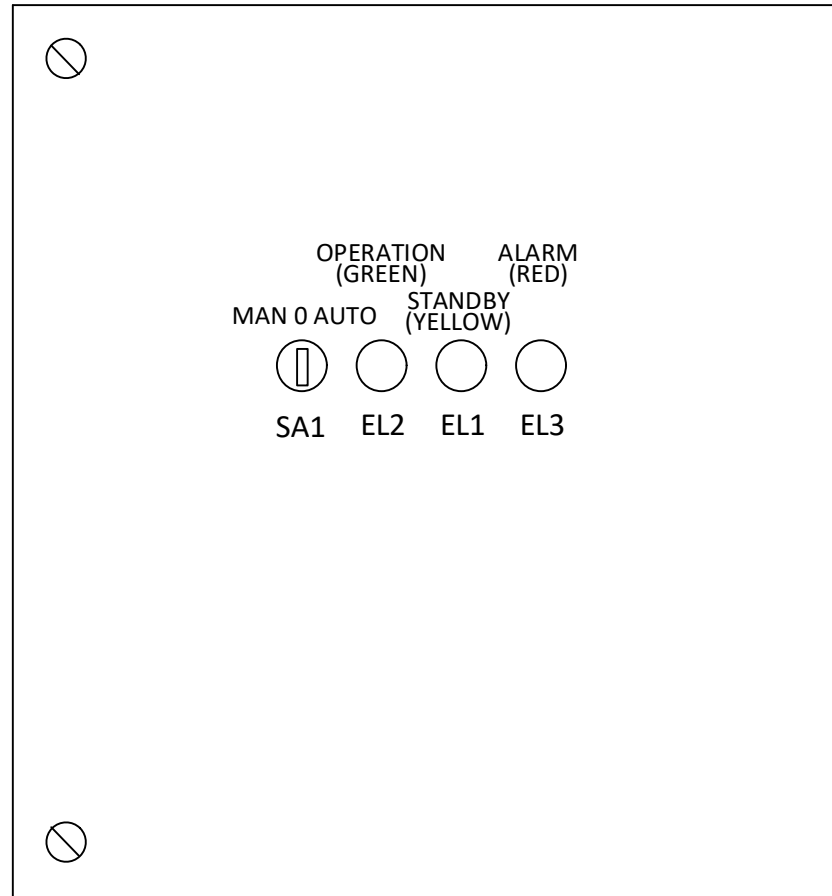
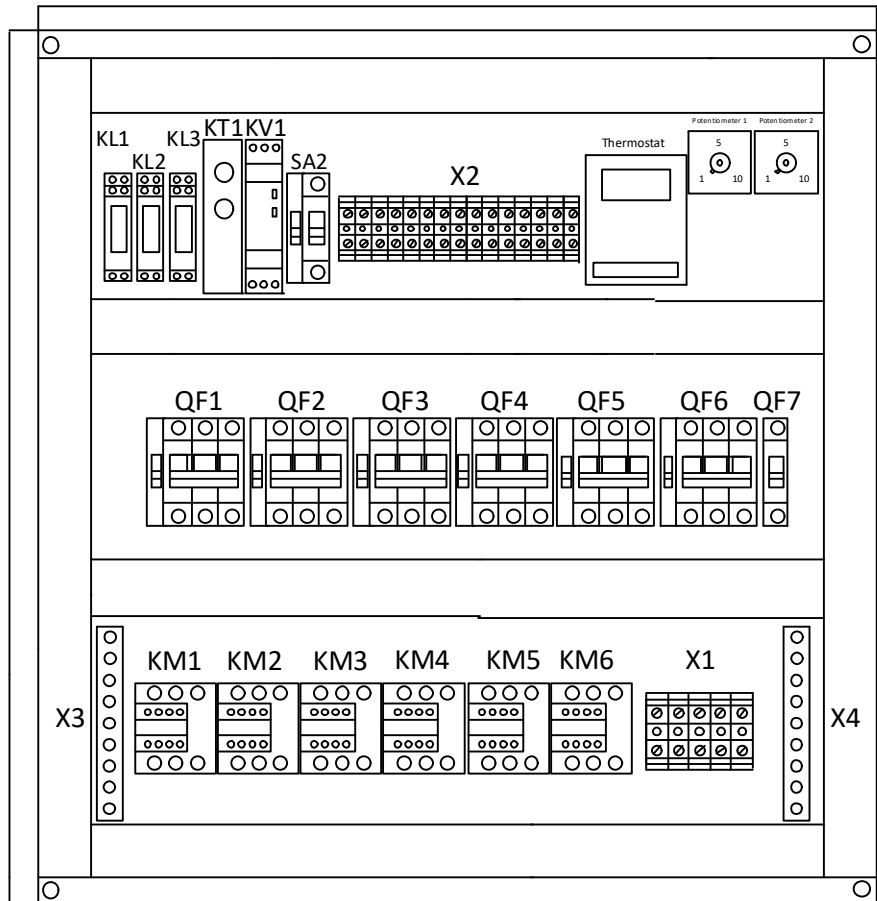
D

E

F

G

600 mm



H

| | | | |
|------|--------|------|-------|
| Rev. | Change | Date | Sign. |
| | | | |
| | | | |
| | | | |



Electrical mounting plate
Electrical cabinet door


MDC7500

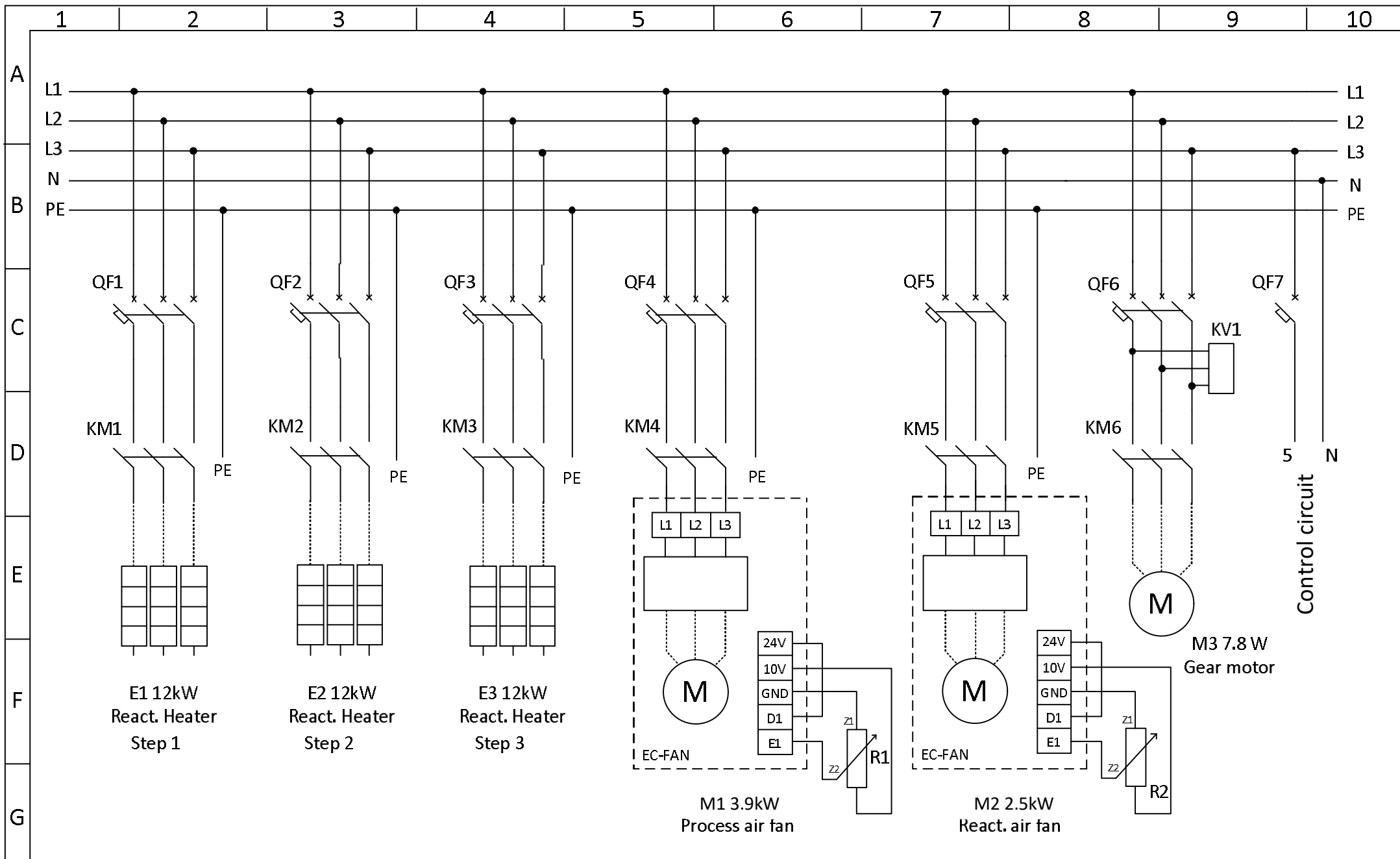
| | | |
|----------|------------|------|
| Scale | Date | |
| IP Class | Constr. | |
| Dwg no | Sh. 101 | Cont |

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|----|
| A | | | | | | | | | | |
| B | | | | | | | | | | |
| C | | | | | | | | | | |
| D | | | | | | | | | | |
| E | | | | | | | | | | |
| F | | | | | | | | | | |
| G | | | | | | | | | | |
| H | | | | | | | | | | |

| Pos. | No | Part | Type | Manuf. | Data |
|---------|----|------------------|-------------|--------------------|----------------------|
| QF1-QF3 | 3 | Circuit breaker | A9F79320 | Schneider Electric | C 20 3-pol |
| QF4 | 1 | Circuit breaker | A9F79316 | Schneider Electric | C 16 3-pol |
| QF5 | 1 | Circuit breaker | A9F74306 | Schneider Electric | C 6 3-pol |
| QF6 | 1 | Circuit breaker | A9F74302 | Schneider Electric | C 2 3-pol |
| QF7 | 1 | Circuit breaker | A9F79106 | Schneider Electric | C 6 1-pol |
| F1- F6 | 6 | Aux. contact | A9A26924iOF | Schneider Electric | 1NC 1NO |
| KV1 | 1 | Phase monitoring | P1-SU | Klemsan | 1NO |
| KM1-KM6 | 6 | Contactor | LC1E1210M5 | Schneider Electric | AC1 25A AC3 12A |
| | 6 | Aux. contactor | LAEN22 | Schneider Electric | 2NC 2NO |
| SA1 | 1 | Switch | M3SS4-10B | ABB | Man 0 Auto |
| | 3 | Aux. contact | MCB-10 | ABB | 2NC 2NO |
| KL1-KL3 | 3 | Relay | CR-P230AC2 | ABB | 8A 230V AC |
| KT1 | 1 | Modular timer | RE17RCMU | Schneider Electric | OFF DELAY 230V AC |

| Pos. | No | Part | Type | Manuf. | Data |
|------|----|---------------|-------------|--------------------|-------------------|
| SA2 | 1 | Switch | E213-25-001 | ABB | 1CO |
| EL1 | 1 | Ind. Lamp | XB7EV05MP | Schneider Electric | 230V AC Yellow |
| EL2 | 1 | Ind. Lamp | XB7EV03MP | Schneider Electric | 230V AC Green |
| EL3 | 1 | Ind. Lamp | XB7EV04MP | Schneider Electric | 230V AC Red |
| X1 | 3 | Terminals | IK100035 | Schrack Technik | 35 mm2 |
| X1 | 1 | N - terminal | IK101035 | Schrack Technik | 35 mm2 |
| X1 | 1 | PE - terminal | IK122016 | Schrack Technik | 16 mm2 |
| X2 | 18 | Terminals | IK100002 | Schrack Technik | 2.5 mm2 |
| X3 | 1 | N - terminal | IK021038I | Schrack Technik | 16 mm2 |
| X4 | 1 | PE - terminal | IK021039I | Schrack Technik | 16 mm2 |

| | | | | | | | | | | | |
|------|--------|------|-------|---|--|--|--|----------|---------|-----|------|
| | | | | | | | | Scale | Date | | |
| | | | | | | | | IP Class | Constr. | | |
| Rev. | Change | Date | Sign. |  | | | <div style="border: 1px solid black; padding: 5px; display: inline-block;">MDC7500</div> | | Dwg no | Sh. | Cont |
| | | | | | | | | | 102 | | |



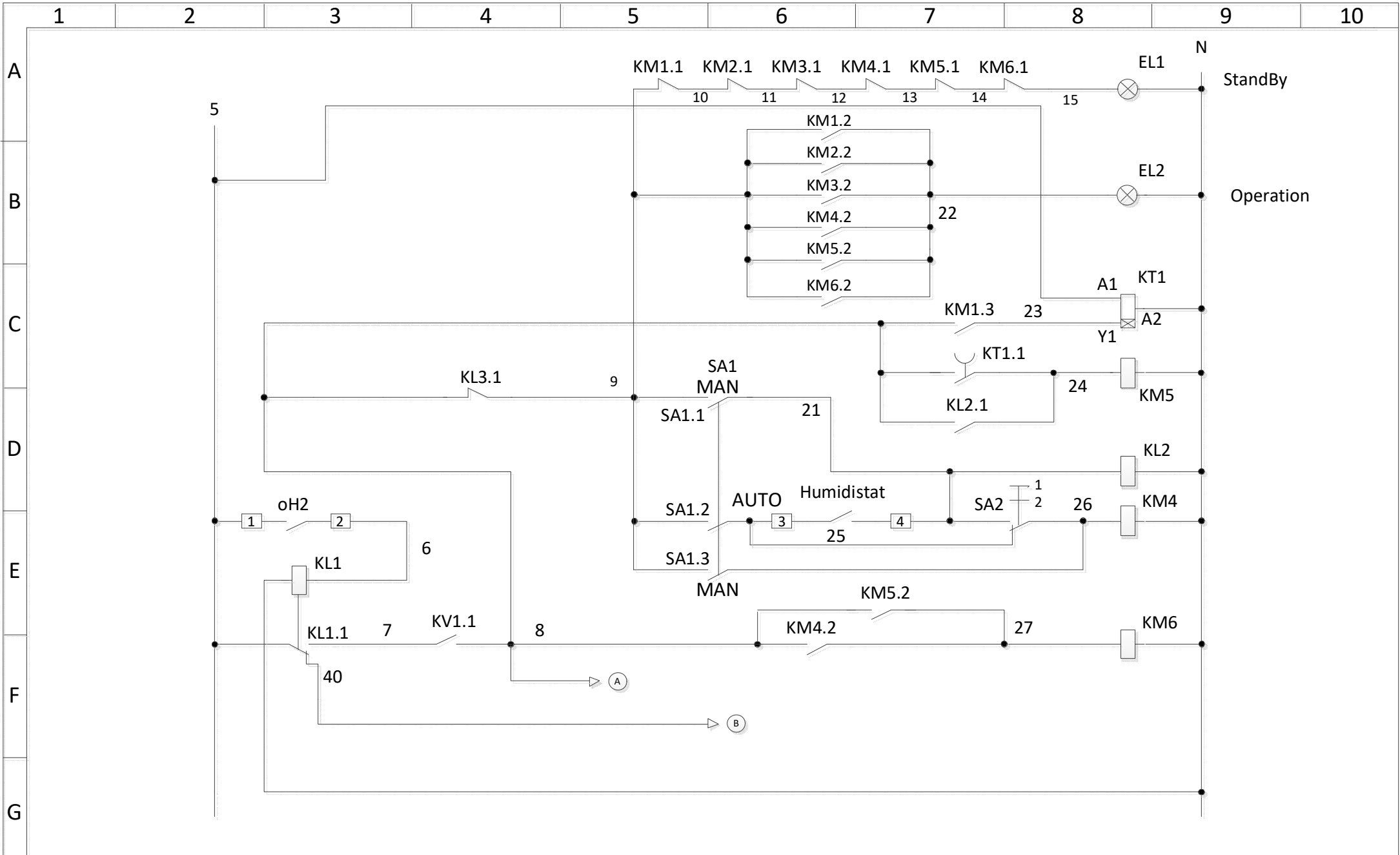
| | | | |
|------|--------|------|-------|
| | | | |
| | | | |
| | | | |
| | | | |
| Rev. | Change | Date | Sign. |



Power circuit

MDC7500

| | |
|----------|---------|
| Scale | Date |
| IP Class | IP 20 |
| Dwg no | Sh. 103 |
| | Cont |



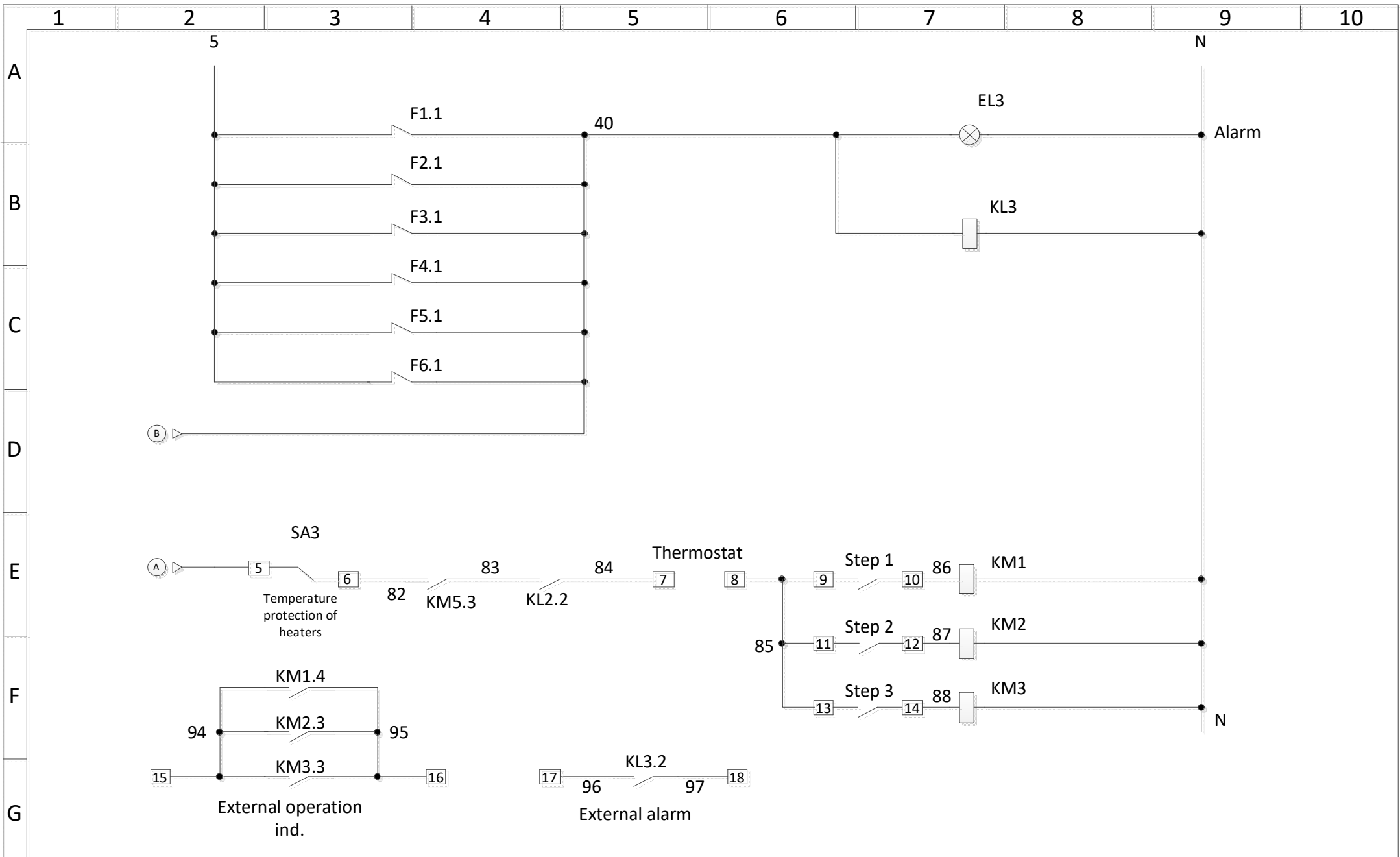
| | | | |
|------|--------|------|-------|
| | | | |
| | | | |
| | | | |
| | | | |
| Rev. | Change | Date | Sign. |



Control circuit

MDC7500

| | | |
|----------|---------|---------|
| Scale | Date | |
| IP Class | IP20 | Constr. |
| Dwg no | Sh. 104 | Cont |



| Rev. | Change | Date | Sign. |
|------|--------|------|-------|
| | | | |
| | | | |
| | | | |



Control circuit

MDC7500

| | | |
|----------|---------|---------|
| Scale | Date | |
| IP Class | IP20 | Constr. |
| Dwg no | Sh. 105 | Cont |

7 THE BASIC TROUBLESHOOTING

| Failure description | Possible cause | Solution |
|--|---|--|
| Dehumidification capacity decrease | Clogged air filters Reactivation heater does not work Reduced air flow Rotor does not rotate Process air mixing with reactivation air Changed air volume Changed the reactivation temperature Inner air mixing | Replace the filter Check fuses Check shutoff dampers Check belt tensioner Check consolidations of a rotor Check value of air volumes Check operability of the heater Check all sealings of a dehumidifier |
| The main circuit breaker does not work or switches off | Malfunction of the fan Too high air volume The rotor doesn't rotate The heater doesn't work | Check the fan Check air flow and shutoff dampers Check the drive rotor Check the heater of reactivation |
| The dehumidifier does not turn on | Interruption of electric circuit Malfunction of the control signal Phase failure Fault of control systems | Check automatic devices and an electric circuit Check the external start / stop signal Check automatic devices and sequence of phases Check all automatic components on working capacity |
| The rotor does not rotate | Slips a driving belt The driving belt is damaged Jammed rotor Malfunction of the rotor drive | Check the belt tensioner Replace a belt Check bearings and rotor seals Replace of the rotor drive |
| There is no process or regeneration air | Clogged air filter Fan is faulty Phase failure No air passing through the air ducts | Replace the filter Check the fan, the motor or the driving wheel of the fan Check the main circuit and the phase sequence Check the air ducts and shutoff dampers |

8 SPECIFICATION

| ITEM | MODEL | QTY |
|--------------------------|----------------------------------|-----|
| The process air fan | RH40C-7500 | 1 |
| The reactivation air fan | RH31C -1500 | 1 |
| Desiccant wheel (rotor) | R7500 | 1 |
| Heater | 36 kW | 1 |
| Rotor drive motor | Synchronous motor ASM | 1 |
| Rotor drive belt | 11249 L | 1 |
| Belt tensioner | 20L 100 | 1 |
| Process air filter | Pocket G4 (EN779) 592×592×360 | 2 |
| Reactivation air filter | Pocket G4 (EN779) 592×592×360 | 1 |

9 WARRANTY TERMS

The warranty period for the desiccant dehumidifier MDC7500 is 12 months from the date of sale.

- The manufacturer during the warranty period assumes liabilities on elimination of troubleshooting of the equipment that occurs due to factory defects of Device or its parts and elements.
- The basis for consideration of claims on implementation of guarantee certificates is the Claim. The order of submission and contents of the Claim are specified in section 10 of the present Technical data sheet.
- The executed guarantee service doesn't prolong a warranty period; a guarantee for the replaced parts expires with the termination of guarantee period on the Device.
- These conditions of a guarantee are valid for all contracts on acquisition of the Device of the Manufacturer if other conditions aren't defined in these contracts.

These warranties do not apply to:

- parts of the equipment and the consumables which are the subject to natural physical wear (filters, seals, belts, light bulbs, fuses, etc.).
- the Device damages, resulting from:
 - a) appearance of foreign subjects or liquids in Device;
 - b) natural phenomena;
 - c) influences of environment;
 - d) unauthorized access to nodes and details of the Device of the persons who aren't authorized on carrying out the specified works,
 - e) all mechanical damages and breakages that occurred as a result of non-compliance with the recommendations of this present technical data sheet, norms, standards and rules of work.
- Various modifications, changes of work parameters, processing, repairs and replacements of parts of the Device which are carried out without consent of the Manufacturer or his representative.

Warranty works:

- works within this guarantee are performed within 30 days from the date of submission of the claim. In exceptional cases this period may be extended, in particular when time for delivery of a necessary component is required;
- the parts which are dismantled from the Device within warranty repair and are replaced by new ones, are the property of the Manufacturer;
- Manufacturer has the right to refuse to carry out guarantee works or service, if the customer delays the payment for the equipment.

10 CLAIMS SUBMISSION PROCEDURE

- At detection of discrepancy of quality, the consumer is obliged to send the Claim to the Producer which is the basis for a decision on the validity of the claim which is presented.
- The Claim in writing should be provided to the Producer. It is permitted to provide a complaint by fax or e-mail. The claim has to contain type, serial number and date of purchase of the Device, and also the exact address of a place where the dehumidifier has been installed as well as phone numbers of the responsible person on site.
- The Claim has to contain also the description of problems with the Device, and moreover (if it is possible) list of the damaged parts.
- Quality claims are not accepted if the user (customer) violates the rules of transportation, acceptance, storage, installation and operation of the dehumidifier.

EC DECLARATION OF COMFORMITY

Date:20__/__/__

Manufacturer: UAB Desiccant Technologies Group

Address: Verkiu str. 5, LT-08218 Vilnius, Lithuania

Product: Desiccant dehumidifier MDC7500 (S/N_____)

Desiccant Technologies Group UAB, under sole responsibility, declares that the equipment listed above complies with following European directives :

2006/42/EC

Council directive on machinery

2006/ 95 / EC

Council Directive on the harmonization laws of Member States relating to electrical equipment designed for use within certain voltage limits (low voltage)

2004/108/EC

Council Directive of 15 December 2004 on the approximation of the laws of Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC (EMC)

Applied standards:

EN 61000-6-2 (EMC interference immunity)

EN 61000-6-3 (EMC interference emission)

EN 60335 part 1: 94+A1+A2+A11 to A16: 2001

Dainius Ramanauskas

General Manager



Desiccant Technologies Group, UAB

Verkiu str. 5, LT-08218

Vilnius, Lithuania

Phone: +370 610 65665

E-mail: destech@destech.eu

<http://destech.eu>