

Manual

Dehumidifier

KT 520



Perfection on principle



EC – Declaration of Conformity

in sense of EC machine directive 2006 / 42 / EEC

Type of machine:

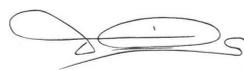
KT 520

is designed, constructed and manufactured in accordance with the above-mentioned directive, the directive for low tension 2014/35 EEC and EMV directive 2014/30 EEC. Rohs directive EEC 2011/65 and WEEE directive EEC 2012/19.

The following harmonized standards have been used:

- EN 60335-2-40 Standard for electrical dehumidifiers
- EN 60335-1 Directive of electrical appliances for use at home or similar purposes
- EN 6100-3-2 Electromagnetic Compatibility
- EN 6100-3-3 Electromagnetic Compatibility
- EN 55014-1 Electromagnetic Compatibility
- CISPR 14-1 Electromagnetic Compatibility
- EN 55014-2 Electromagnetic Compatibility
- CISPR 14-2 Electromagnetic Compatibility

Mönchengladbach,
22.01.2021



Managing Director

Place, Date

Signature

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1. GENERAL SAFETY INFORMATION

The operator must provide the user with the operating instructions and ensure that the user understands the contents.



WARNING
Risk of fire / flammable
materials



- The appliance contains a flammable refrigerant. Read the supplied instructions / warnings



- Read the operators manual.



- Read the service manual.

- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
- The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater).
- Do not damage or apply an open flame.
- Be aware that the refrigerants may not contain an odour.
- Appliance should be installed, operated and stored in a room with a floor area larger than 4 m².

WARNINGS



This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

- Compliance with national gas regulations shall be observed.
- R290 (Class A3, acc. ISO 817) has a low GWP (Global Warming Potential) of 3 and an ODP (Ozone Depletion Potential) of 0.
- The maximum refrigerant charge amount is 0,150 kg.
- Keep ventilation openings clear of obstruction.
- The appliance shall be stored so as to prevent mechanical damage from occurring.
- The appliance must be placed at least 50 cm from a wall or other objects.

- The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.
- Any person who is involved with working on or breaking into a refrigerant circuit should hold a current valid certificate from an industry-accredited assessment authority, which authorizes their competence to handle refrigerants safely in accordance with industry's recognized assessment specification.
- Servicing shall only be performed as recommended by the equipment manufacturer. Maintenance and repair requiring the assistance of other skilled personnel shall be carried out under the supervision of the person competent in the use of flammable refrigerants.

2. APPLIANCE RELEVANT SAFETY INFORMATION



ATTENTION

This dehumidifier must not be used in rooms under the following conditions:

- **potentially explosive atmosphere**
- **aggressive atmospheres**
- **featuring a high concentration of solvents**
- **an extremely high ratio of dust**

Keep unit grounded: Always operate the unit with a grounding plug and a grounded electrical outlet. A grounding plug is an essential safety feature that helps reduce the risk of shock or fire.

Protect power cord from damage: Never operate a unit with a damaged power cord, as this may lead to electrical or fire hazards. If the power supply cord is damaged, it must be replaced by a cord of the same type and amperage rating.

Extension cords: Extension cords must be grounded and able to deliver the appropriate voltage to the unit.

Handle with care: Do not drop, throw or crash the dehumidifier. Rough treatment can damage the components or wiring and create a hazardous condition.

Run on stable surface: Always operate the unit on a stable, level surface, for example the floor or a strong counter, so that the dehumidifier cannot fall and cause injury.

Keep out of water: Never operate the unit in pooled or standing water, as this may create a risk of injury from electrical shock. Do not store or operate outdoors. If electrical wiring or components become wet, thoroughly dry them before using the unit. If in doubt do not use the dehumidifier and consult a qualified technician or a vendors approved engineer.

Keep air intakes clear: Do not clog or block the air intakes by placing the dehumidifier too close to curtains, walls or anything that will restrict the air inlet. This may cause the unit to overheat and result in a fire or electrical hazard.

Keep filter clean: Always use a clean air filter. Do not allow any material to clog the filter, as this may cause the dehumidifier to overheat. Never use without a filter. Always check, and if necessary, clean the filter before switching the dehumidifier on. Do not allow oil, grease, or other contaminants to be drawn into the dehumidifier.

Keep electrical components dry: Never allow water inside the dehumidifier's electrical components. If these areas become wet for any reason, thoroughly dry them before using the dehumidifier. If in doubt do not use the dehumidifier and consult a qualified technician or a vendors approved engineer.

3. GENERAL ADVICE

Before putting your dehumidifier into operation for the first time, the instructions manual should be studied carefully.

After receiving the unit you should check your dehumidifier for any transport damage. In case of damage, you should inform the sender immediately.

Transport damages should be stated after unpacking the equipment. The respective seller or specialised reseller should be contacted immediately.

Keep the packaging for the dehumidifier in a safe place in order to be able to despatch the dehumidifier safely if it requires a service. In order to save space, you can simply cut through the adhesive tape using a knife and fold up the cardboard box.

4. DEHUMIDIFIERS PRINCIPLES

This dehumidifier is designed to reduce humidity from the air in a building or part of a building. The purpose is to prevent humidity damage, and to dry out wet materials such as carpet, floors, walls, furniture, contents, timber and structural materials.

This dehumidifier can prevent the formation of condensation, reduce air humidity and keep constant a desired relative humidity value. The time necessary for the dehumidifier to dry a room and reach the desired relative humidity depends on the environmental conditions prevailing within the room. For example the number of air changes with outside, any sources of moisture and the room temperature can all either speed up or slow down the dehumidification process.

The dehumidifier functions according to the condensation principle with heat recovery. The fan takes the humid air from the room in and across a filter and then through an evaporator. Here the air is cooled below dew point so that the water vapour of the air forms a condensate on the coils which flows into the water collecting tank. The cooled and dried air is heated again by a condenser. By recycling the room air through the dehumidifier over and over again the moisture content and relative humidity of the air is reduced.

5. INSTALLATION AND TRANSPORTATION

For installation and transportation, the following instructions must be considered:

- The air inlet and the air outlet must not be covered whilst the dehumidifier is in operation.
- Before any moving the dehumidifier it must be switched off by its ON-OFF switch. The mains plug is to be removed from the socket and the water tank should be emptied.
- For transportation the dehumidifier should be secured on a level base only and must be prevented from rolling around.
- The dehumidifier must always be transported vertically.
- This dehumidifier must be used exclusively for air dry.
- If the dehumidifier has been in a horizontal position for any time over a few minutes, you must let it stand in the upright position for at least 30 minutes before operating. This allows the oil to drain back into the compressor.

6. OPERATING INSTRUCTIONS

ATTENTION

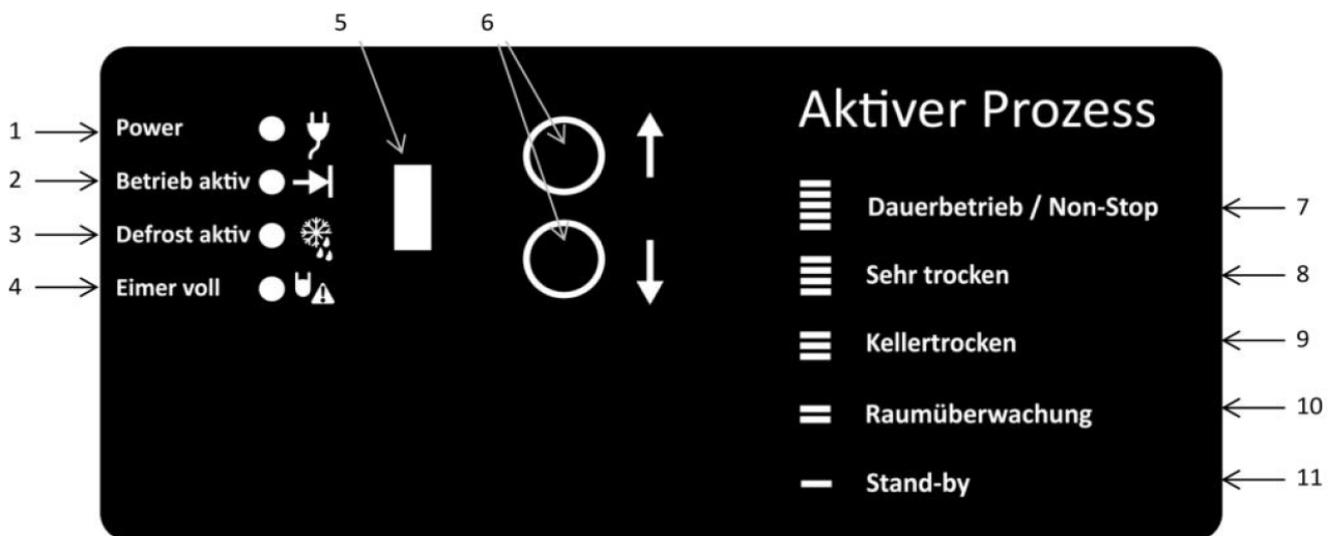


- Operate the dehumidifier only in the upright position.
- Plug into a standard outlet with the correct voltage and amperage for the unit.
- If the dehumidifier turns off for any reason, wait five minutes before turning it on again. This prevents the compressor from being damaged.
- Check dehumidifier daily for correct operation.
- Protect floor surfaces from water.

Please proceed as follows to start using this dehumidifier:

- After transported, the dehumidifier should stand in the upright position for 30 minutes. This is recommended to extend the compressor's operating lifetime.
- Plug in the dehumidifier into the mains.
- Check that the water tank is in correct position.
- The control panel must be illuminated after the device has been connected to the power supply.
- Set the humidity to the desired value.
- Check the proper operation of the fan and compressor before leaving the device unattended.

7. ELECTRONIC CONTROLS



This unit is equipped with an electronic control board. The meaning of each led and correspondent symbol on the control panel is the following:

- | | |
|--|--|
| 1 - LED lights up when the dehumidifier is connected to the mains | 7 - Setting for "permanent operation" mode |
| 2 - LED lights up when the setpoint is reached | 8 - Setting to dehumidify very dry |
| 3 - LED lights up during defrosting process | 9 - Setting to dehumidify cellar dry |
| 4 - LED flashes slowly when the water tank is full, flashes quickly if there is a defect | 10 - Setting to dehumidify room surveillance |
| 5 - LED bar shows the selected mode by pressing the buttons "6" | 11 - Setting for "standby" operating mode |
| 6 - Press the buttons to set the desired operating mode. | |

8. AUTOMATIC DEFROSTING SYSTEM

During normal dehumidifying operation, ice may form on the evaporator. This dehumidifier is equipped with an automatic hot-gas defrosting system and if ice is detected by the temperature sensor, it will defrost automatically according to the following principle:

- A temperature sensor measures the condition existing in the critical area of the evaporator;
- It transmits an electrical signal to the main electric board. It has been designed to avoid frequent defrost cycles and consequent loss of efficiency;
- The relay switches off the fan and simultaneously opens the solenoid valve;
- Hot gas is guided into the evaporator until the latter is completely free of ice;
- Subsequently, the dehumidifier will operate again in its normal mode when the temperature sensor measures $+7^{\circ}\text{C}$;
- The time between defrost cycles is 20 min. after.

9. WORKING MODE WITH DIRECT DRAINAGE

This dehumidifier is equipped with water collecting tank which is provided ex works with a threadplug for draining the condensate. In addition, a hose connection is included in the scope of supply for a 14-mm hose (9/16") with which the user can lead the condensate directly into a drain.

During normal operation, the device collects water in the water tank and stops operating when the float reaches the maximum water level. The corresponding LED on the control panel also lights up (see section 7).

To use the hose for draining the condensate, you should proceed as follows:

- Empty the water tank;
- Remove the plug from the bottom of the water tank;
- Fasten the 9/16" (14 mm) fitting in the bottom of the water tank;
- Attach the hose supplied with the dehumidifier to the 9/16" (14 mm) fitting;
- The end of the hose must always be at a lower level than the top of the water tank and headed to a larger vessel or directly to a drain. The hose must be headed downwards as it uses gravity to drain.

10. CONDENSATES PUMP WORKING MODE (OPTION)

- Switch off the dehumidifier and disconnect the mains plug from the socket;
- Remove the water bucket from the dehumidifier and empty it;
- Fit in an 8-mm-hose (inner diameter) with the desired length onto the water outlet of the submersible pump and make it pass through the hole in the left side panel and then install the pump inside the bucket;
- Plug in the pump to the pump socket located beneath the water pan in the right and return the bucket to its designated place;
- Extend the hose to an existing drain point or sewer;

- Plug in the dehumidifier and set the desired humidity level;
- Test if the pump is working and is draining out water by adding water to the bucket until you check that the water is being pumped out from the bucket.

11. ELECTRICAL CONNECTIONS

This dehumidifier was designed to operate in a 230 V ~ 50Hz electrical installation. Make sure that the electric sockets are connected to earth and that all safety precautions are taken.

12. OPERATING CONDITIONS

This dehumidifier can be operated within an ambient temperature range from +5°C to +32°C and with a relative humidity from 35 % to 90 %. It is suitable for application on construction sites, residential buildings, museums, archives, garages and storage rooms.

13. SPECIFICATIONS

Model		KT 520
Temperature range		+5 °C - +32°C
Relative humidity range		40% - 90%
Defrosting system		Hot gas
Rated voltage		220 - 240 V ~ 50 Hz
Power consumption	32°C – 80%	0,57 kW
Rated current		2,5 A
Air volume		520 m ³ /h
Contents water tank		5 ltr.
Refrigerant charge		R290 / 150 g 
Global warming potential (GWP)		3
Equivalent tons of CO2		0,00045t
Maximum permitted pressure		3,0 MPa
Hermetically sealed systems, filled with a flammable refrigerant		
Drying capacity (ltr./24h)	32°C – 80%	25
	20°C – 60%	12
	10°C – 60%	5
Dehumidifier dimensions W×D×H [mm]		330 x 355 x 570
Weight		25 kg
Electronic control		✓
Noise level		52 dB(A)

14. TROUBLESHOOTING

Trouble	Cause	Solution
Unit does not operate	No power to the unit	Plug in the unit; check power at outlet
	Completely filled water tank	Water tank must be emptied and installed again
Doesn't dehumidify	Ambient temperature is lower than +5°C.	Under this condition the dehumidifier becomes inefficient. It is recommended to switch off the dehumidifier
	Ambient temperature exceeds +32°C.	Under this condition the compressor is overloaded and switches off automatically. It is recommended to switch off the dehumidifier
	The ambient air humidity is lower than 35%	Under this condition the dehumidifier becomes inefficient. It is recommended to switch off the dehumidifier
	The air filter is strongly soiled	The air filter must be exchanged
	Not enough time to dry	Allow more time to dry
Compressor will not start	Overload protector is defective	Consult reseller or authorized workshop
The fan is out of operation	Fan not running	Consult reseller or authorized workshop
You can see an ice block on the evaporator	Defective control assembly	Consult reseller or authorized workshop
	The room temperature is lower than +5°C.	Assure that the device is only set up in rooms with temperatures above +5°C
Unit does not defrost	Defective temperature sensor	Consult reseller or authorized workshop
	Defective control assembly	Consult reseller or authorized workshop

15. MAINTENANCE

Always turn off the power and disconnect the main cable before performing maintenance procedures. All service procedures below are to be **executed with the unit unplugged**. Perform before each use or as needed.

INSPECT ELECTRICAL SYSTEM

Inspect the electrical cord for damage at regular intervals.

KEEP OUT DUST

Keep dust from surfaces and volumes to dry.

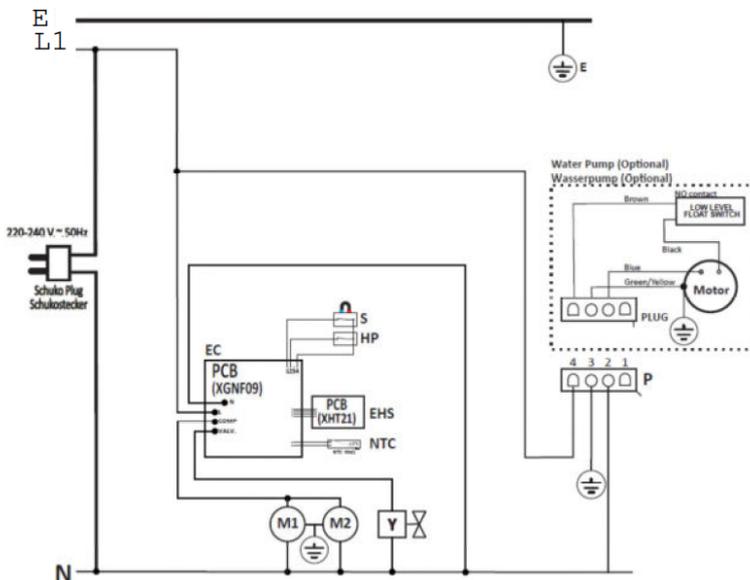
KEEP AIR FILTER CLEAN

Inspect air filter regularly so that it doesn't get clogged.

Remove the gross of the dust and dirt with a soft brush and then wash it with tap water and let it dry before inserting it again.

16. ELECTRIC DIAGRAMS

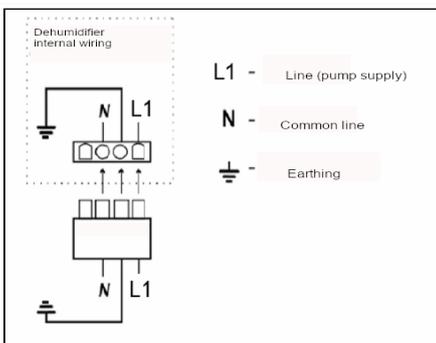
ELECTRICAL WIRING OF THE DEHUMIDIFIER



- E- Earthing
- N- Common line
- L1- Line
- EC- Electronic control
- EHS- Humidity sensor
- NTC- Defrost sensor
- S- Water level sensor
- M1- Compressor
- M2- Fan motor
- Y- Solenoid valve
- P- Plug water pump
- HP- Pressure switch

CONDENSATE PUMP WIRING (OPTIONAL)

In case of using a water condensates pump it must be connected to the socket located underneath the water pan of the dehumidifier, and only then it is possible to switch it on again.



The water pump is supplied by the **L1** and **N** wirings.

As the condensates starts to flow into the bucket and the pumps first float is activated, the pump starts to pump out the water. If somehow the hose gets clogged the water level will start to rise until the bucket float with the magnetic moves away from the level sensor, due to the rising of the water level, making the dehumidifier to stop by full bucket detection and consequently lighting up the full bucket led, which will force the user to check the bucket.

OBS.: Pump wiring must be connected according to this electric wiring diagram!

17. DISPOSAL



ronic equipment must not be treated as domestic waste. It must be disposed of
with Directive 2019/19/EU of the European Parliament and Council of 4th July
al and electronic equipment.

dispose this equipment in an appropriate manner, according to the relevant legal

ities or local store for recycling advice.

18.

SPARE - PARTS LIST KT 520

from serial no. 48436851

<u>Pos.</u>	<u>Part-No.</u>	<u>Description</u>	<u>Qty.</u>
01	3101200	Base plate	1
02	3101201	Frame	1
03	3101202	Air outlet grille	1
04	3101203	Air inlet grille	1
05	3101204	Housing	1
06	3101205	Compressor	1
07	3101206	Heat exchanger complete	1
08	3101207	Fan motor	1
09	3101208	Fan blade	1
10	3104554	Fan motor bracket	4
11	3101209	Fan resistor	1
12	3104703	Level sensor	1
13/a/b	3101210	Bracket sensor and float	1
14	3104552	Main cable with Schuko plug	1
15	3101211	Cable clamp	1
16	3101212	Air filter	1
17	3101213	Water tank complete	1
18/a/b	3101214	Kit / Plug, gasket, hose fitting	1
21	3101217	Nut	1
22	3101115	Wheel	2
23	3101119	Caster with bracket	2
25	3101219	PCB	1
26/27	3101220	Housing complete	1
28	3101222	Control panel sticker	1
29	3101223	HR sensor	1
32	3101226	Water pan	1
33	3101227	Cable gland	2
34	3101135	Handle	2
35	3104713	Solenoid valve coil	1
36	3104224	Solenoid valve	1
37	3101764	Pressure switch	1

