

## Mobile dehumidifiers

*Operation* · *Technology* · *Spare parts* 





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Carefully read this operating manual prior to commissioning/using the unit! This operating manual is a translation of the German original.

This manual is an integral part of the unit and must always be kept in the vicinity of the installation location or on the unit itself.

Subject to modifications; no liability accepted for errors or misprints!

## Air dehumidification

The correlations occurring when air is dehumidified are based on physical laws.

These are depicted here in graphical form in order to provide you with a brief overview of the principles of air dehumidification.

## The use of REMKO air dehumidifiers

- Even if windows and doors are well insulated, water and moisture are still capable of penetrating thick concrete walls.
- The water required for setting when producing concrete, mortar and plaster etc. may only be diffused after 1-2 months.
- Even moisture trapped in the masonry after a flood is released very slowly.
- The same is also true of moisture contained in stored materials for example.

The moisture (water vapour) released from parts of a building or materials is absorbed by the surrounding air. As a result, the moisture content increases, which ultimately gives rise to corrosion, mould, rot, peeling of paint and other unwanted damage.

By way of example, the diagram shows the corrosion rate of metal in different levels of humidity.



It is evident that the corrosion rate below 50 % relative humidity (RH) is low, and below 40 % is negligible.

The corrosion rate increases significantly above 60 % RH. This threshold for damage as the result of humidity also applies to other materials, such as powdery substances, packaging, wood and electronic units.

Buildings may be dried in a variety of ways:

#### 1. By heating and air exchange:

The air in the room is heated in order for moisture to be removed and then this air is fed outside. All of the energy that is involved is lost together with the moist air that is released.

#### 2. By air dehumidification:

The moist air that is present within an enclosed space is continuously dehumidified according to the condensation principle. With regard to energy consumption, air dehumidification has one distinct advantage:

Energy expenditure is limited exclusively to the air volumes present. The mechanical heat that is released by the dehumidification process is fed back into the room.

Under normal use, the air dehumidifier uses approximately 25 % of the energy that is required for the "heating and ventilating" principle.

#### **Relative air humidity**

Our ambient air is a gaseous mixture which always contains a certain volume of water in the form of water vapour. This volume of water is specified in g per kg of dry air (absolute moisture content).

## 1 m<sup>3</sup> of air weighs approx. 1.2 kg at 20 $^\circ\text{C}$

Depending on the temperature, each kg of air is only capable of absorbing a certain volume of water vapour. Once this capacity has been reached, the air is referred to as "saturated" and has a relative humidity (RH) of 100 %.

Relative humidity is understood to mean the ratio between the current quantity of water vapour in the air and the maximum possible quantity of water vapour at the same temperature.

The ability of the air to absorb water vapour increases as the temperature rises. I.e. the maximum possible (absolute) water content becomes greater as the temperature rises.



Temp.	Water vapour content in g/m <sup>3</sup> at humidity of							
°C	40%	60%	80%	100%				
-5	1.3	1.9	2.6	3.3				
+10	3.8	5.6	7.5	9.4				
+15	5.1	7.7	10.2	12.8				
+20	6.9	10.4	13.8	17.3				
+25	9.2	13.8	18.4	23.0				
+30	12.9	18.2	24.3	30.3				

### **Drying materials**

Building materials and structures are capable of absorbing considerable volumes of water, such as brick 90-190 l/m<sup>3</sup>, heavy concrete 140-190 l/m<sup>3</sup> and limestone 180-270 l/m<sup>3</sup>. The drying of moist materials such as masonry is effected as follows:

The moisture moves from the inside of the material to its surface



Evaporation occurs on the surface = transfer of water vapour to the ambient air The air containing water vapour is constantly circulated through the REMKO air dehumidifier. The air is dehumidified and, slightly heated, leaves the unit in order to re-absorb water vapour

In this way, the moisture contained in the material is reduced gradually *The material is dried!* 

The accumulated condensate is collected in the unit and drained off from there.



As it flows through or over the evaporator, the air stream is cooled to dew point. The water vapour condenses, and is collected in a condensate trap from where it is drained off.



## Water vapour

Because the capacity for the maximum possible volume of water vapour increases as the air is heated, the volume of water vapour contained remains constant and so relative humidity falls.

In contrast, because the capacity for the maximum possible volume of water vapour decreases as the air is cooled, the volume of water vapour contained remains constant and so relative humidity increases. If the temperature continues to fall, the capacity for the maximum possible volume of water vapour is reduced so much so that it is ultimately equal to the volume of water vapour contained in the air. This temperature is referred to as the dew point. If the air is cooled to below the dew point, the volume of water vapour in the air will become greater than the maximum possible volume of water vapour.

At this point, the water vapour begins to precipitate. This condenses to water and moisture is removed from the air.

Examples of condensation include steamed-up window panes in winter, or the moisture on the outside of a cold drinks bottle.



As the relative humidity of the air increases, so too does the dew point, making it easier for the temperature to fall below it.

#### **Condensation heat**

The Energy transferred to the air from the condenser consists of:

- 1. The amount of heat derived beforehand in the evaporator.
- 2. The electrical drive energy.
- 3. The condensation heat released by liquefying the water vapour.

Energy must be supplied when liquid is converted into a gas. This energy is designated as evaporation heat. It does not cause any increase in temperature, but is required to convert a liquid into a gas. Conversely, energy is released when gas is liquefied, this is designated as condensation heat. The amount of energy from evaporation heat and condensation heat is the same. For water, this is: 2250 kJ/kg (4.18 kJ = 1kcal)

From this it is evident that the condensation of water vapour causes a large quantity of energy to be released.

If the moisture that it is to be condensed is not introduced by evaporation in the room itself, but from outside, e.g. through ventilation, the condensation heat released contributes to the heating of the room. With drying operations, a heat cycle is created, whereby heat is consumed for evaporation and released for condensation. When dehumidifying fed air, a larger contribution of heat is created, which manifests itself as a temperature increase.

Generally speaking, the time required for the drying process is not only dependent on the output of the unit, but is determined to a greater extent by the speed at which the material or building section loses its moisture.

### Safety notes

The units have been subjected to extensive material, functional and quality inspections prior to delivery.

However, dangers can result from the units if they are used improperly or not as intended by untrained personnel.

## The following notes must be observed in full:

- The units may not be installed or operated in explosive environments
- The units must not be installed or operated in atmospheres containing oil, sulphur, chlorine, salt or dust
- Never stick foreign objects into the units
- The units must not be exposed to direct jets of water

- An unobstructed air inlet and air outlet must be guaranteed at all times
- The air-inlet grille must always be kept free of dirt and loose objects
- The units must not be covered during operation
- The units must be installed upright and in a stable position
- The units must not be transported while they are running
- The units may only be transported upright (water will escape otherwise)
- All electrical cables on the outside of the units must be protected against damage (e.g. by animals etc.)

Before each change of location, the condensate container must be emptied

### 

Extensions to the connection cable must only be conducted by authorised specialist electricians, taking into consideration the unit power consumption, cable length and local use.

### 

Work on the refrigerant system and on the electrical equipment must only be conducted by a speciallyauthorised specialist!



### **Unit description**

The units have been designed for universal and straightforward air dehumidification.

Their compact dimensions allow the unit to be transported and set up with ease.

The units operate in accordance with the condensation principle and are equipped with a hermetically sealed refrigerant system, heat gas defrosting, lownoise and low-maintenance fan and connection cable with plug.

Fully-automatic operation, a condensate container with integrated overflow protection in addition to connection ports for direct condensate drainage or a condensate pump connection help to ensure continuous faultfree operation.

The units conform to the fundamental health and safety requirements of the appropriate EU stipulations.

The units are dependable and offer ease of operation.

The units are used in all locations, where dry air is a must and where economic consequential damage (such as that caused by mould) must be prevented.

# The units may be used for the drying and dehumidification of areas such as:

- Living rooms, bedrooms, shower rooms or cellar rooms
- Laundry rooms, weekend homes, caravans
- Warehouses and laboratories
- Bathrooms, wash rooms and changing rooms etc.
- Cellar rooms, storage rooms

#### **Operating sequence**

The unit is ready for operation when the power key is pressed. The integrated hygrostat controls the unit's operation according to the settings.

In dehumidification mode, the fan extracts the moist room air through the intake grill with filter, evaporator and the condenser behind.

Heat is removed from the room air on the cold *evaporator*. The air is then cooled to below dew point. The water vapour contained in the room air is then deposited as condensate or rime on the evaporator fins.

On the *condenser* (heat exchanger), the cold and dehumidified air is warmed up again and discharged back into the room via the outlet grill with a temperature increase of around 5 - 10 °C above the room temperature. The processed, dry air then remixes with the room air.

Continuous circulation of the room air through the unit gradually reduces the relative humidity (% RH) in the room to the desired humidity level. Depending on the room air temperature and the relative humidity, condensed water will drip into the condensate trap and then into the condensate container below either continuously or only during the defrosting phases.

A float is installed inside the condensate container. In the event that the container is full, the float will activate a microswitch which will switch off dehumidification mode.

The units switch off and the "container full" indicator light on the control panel flashes. This extinguishes again when the empty condensate container is reinserted.

Dehumidification mode then starts after a switch-on delay of around 3 minutes depending on the requirements.

In unattended continuous operation with an external condensate connection, the condensate that occurs is drained continuously via a hose connection or pumped out using the integrated condensate pump if required.



### Set-up

For the best economic and safe use of the units, the following notes must be followed in full:

- The units must be set up in an upright and level position, to ensure that the condensate can drain freely
- To ensure optimum air circulation, the units should be set up in the centre of the room, where possible
- Ensure that the room air can be sucked in and discharged without hindrances
- Observe a minimum clearance of 50 cm from walls
- Units must never be set up in the immediate vicinity of heaters or other sources of heat
- Air circulation is improved if the unit is set up approx. 1 m above the ground

- The room being dried or dehumidified must be closed to the surrounding atmosphere
- Avoid having opened windows and doors etc., and avoid frequent entry to or exit from the room as much as possible
- The units may not be used in environments containing a great deal of dust or chlorine, or in places with atmospheres containing ammonia
- The output of the unit is entirely dependent on the conditions inside the room, room temperature, relative humidity and observance of the set-up instructions

## Commissioning

Before commissioning the unit or if local requirements dictate, the airinlet grill and air-outlet grill must be checked for contamination.

#### 🖔 ΝΟΤΕ

A contaminated grille or filter must be cleaned or replaced immediately.

## Important notes prior to commissioning

- Never use the mains cable as a pull cord
- After being switched on, the units operate fullyautomatically until switched off by the hygrostat or liquid level switch when the condensate container is full
- The condensate container must be inserted properly The unit cannot be operated if the condensate container is not inserted properly!
- If the units work in continuous operation with an external condensate drainage connection, refer to the relevant section on page 11



#### 🍟 NOTE

In order to prevent damage to the condenser, the units are equipped with a mechanism that prevents the compressor from being immediately switched back on after it is switched off. **The compressor does not switch back on until after a waiting time of approx. 3 minutes!** 



#### **Electrical wiring**

The units are operated with 230 V 50 Hz alternating current

The electrical connection is made using a built-in mains cable with earthed safety plug



#### 🖗 ΝΟΤΕ

The electrical connection to the units must be made at feed-points with residual current devices in accordance with VDE 0100, Section 704. When installing the units in extremely damp environments such as laundry rooms, showers etc., the unit must secured with a residual current device provided by the customer in accordance with the regulations.

Extensions to the connection cable may only be carried out by authorised electricians, subject to the length of the cable, connected load of the unit and taking into consideration how the unit is used at its location

#### 

All cable extensions must only be used in fully un-reeled or reeled off condition.

#### 🖔 ΝΟΤΕ

In room temperatures below **10** °C and relative humidity below **40** %, economical use of the unit can no longer be guaranteed.

#### 

The units are only permitted to be operated with the outlet grill clear in order to prevent overheating.

#### **Control panel**

All rotary knobs and the corresponding indicator lights are located on the control panel.



- ① "Container full" display
- <sup>(2)</sup> "Hot gas defrosting" display
- ③ "Timer activated" display
- Display for temperature indication and timer setting
- ⑤ Display to show and adjust the relative humidity
- 6 "Power ON/OFF" key
- $\odot$  Key for fan speed
- ⑧ Key for "1 to 24 hrs" timer (in 1 hour steps)
- Wey to adjust the hygrostat from 30 to 90 % RH in 5 % steps
  Step
- Changeover button to display in °C or °F

#### Switching the units on

Connect the unit's power plug to a properly installed mains socket

#### 🖔 ΝΟΤΕ

When the units are connected to the power supply, they beep quickly and the displays flash once.

- Press the power key [6]
- Use the [⑦] key to select the (min/max) air volume

#### Adjusting the humidity level

The unit's dehumidification power is entirely dependent on the conditions inside the room, the room temperature, the relative humidity and observance of the notes in the "Set-up" chapter. The higher the room temperature and relative air humidity, the higher the dehumidification power.

A relative humidity of around 45 to 60 % is recommended for living rooms. However, the air humidity should not exceed 40 to 45 % in warehouses, archives, etc. *Unit initial settings: Fan speed = min. Humidity = 60 % RH* 

- Use the [⑨] buttons to select the required humidity (% RH) The set value is shown on the display [⑤] for around 10 seconds
- The humidity level can be adjusted in 5 % steps from 30 - 90 % RH
- In normal operating mode, the display [⑤] shows the current humidity level in % RH
- The display [④] shows the current room temperature in °C or °F The display is changed over using the [⑩] key

#### 🖗 ΝΟΤΕ

At a humidity of < 30 %, the "LO" indicator is shown and, at > 90 %, the "HI" is shown on the display [\$].



#### 

#### Activating the timer

You can use the timer function to preselect automatic unit "ON/ OFF" switching functions for up to 24 hours (in 1 hour cycles).

#### Timer switching functions

Setting in running operation: After the selected number of hours, the unit switches **OFF**.

Setting if the unit is switched off (the power plug must be plugged in to a mains socket): *After the selected number of hours, the unit switches* **ON**.

You can use the [®] key to activate the timer function and the [®] keys to select the required times in 1 hour steps (maximum of 24 hours).

The entries flash on the display [④] for around 10 seconds.

Timer activation is indicated continuously by the indicator light [3] on the control panel.

#### 🖗 ΝΟΤΕ

If the unit is switched on via the power key, all set data is retained if the power supply is disconnected.

#### 🖗 ΝΟΤΕ

*The unit can be operated via an external timer if necessary.* 

#### Automatic defrost system

The moisture contained in the room air condenses when cooling and coats the evaporator fins with rime or ice depending on the air temperature and the relative humidity (% RH).

The automatic defrost system that is integrated in the unit switches the defrost cycle on if required.

The rime or ice that has accumulated on the exchanger surfaces is defrosted using heat gas as required.

This defrosting method is particularly fast and effective, and guarantees high dehumidification performance.

Dehumidification mode is only paused for a short time during the defrost phase.

The [2] indicator light indicates that the heat gas defrost cycle is active.

#### 

If the room temperature is sufficiently high (approx. 20 °C), rime is generally not formed on the fin surface, rendering defrosting unnecessary. Therefore, the air dehumidifier works economically.

#### Emptying the condensate container

Depending on the amount of condensate, the integrated condensate container must be emptied from time to time.

If the condensate container is full, unit operation is stopped and the [①] "Container full" indicator light flashes to indicate this unit condition.

1. Pull the full container forwards and out carefully.



2. Empty the container in a suitable location.

#### 🖔 ΝΟΤΕ

After being emptied, the condensate container incl. float must be checked for damage, contamination etc.

3. Re-insert the emptied and checked container carefully into the unit.

The "Container full" indicator light extinguishes and the unit continues to run automatically. (Observe the switch-on delay)

#### 🖗 ΝΟΤΕ

The unit can only be started up again once the condensate container has been inserted correctly.



### Shutdown

Press the power key [6]. -All displays and device functions are now switched off-

If the units are inactive for long periods, disconnect them from the mains power supply.



Empty the condensate container completely and dry with a clean cloth.

#### Beware of dripping condensate!

The units must be cleaned and dried completely before storing.

Each time before changing the location, drain residual condensate from the condensate trap. To do this, use the union nut [A] and the sealing plug [B] to open the condensate connection nozzle. Tip the unit slightly backwards to drain the residual condensate into a suitable container.

Then re-seal the condensate connection nozzle carefully in reverse order.

When storing the units, cover with a plastic sheet/foil if necessary and store in an upright position in a sheltered and dry location.

#### 🛱 ΝΟΤΕ

The units are only permitted to be stored upright in a suitable storage location that is protected against dust and direct sunlight.

#### Continuous unit operation with external condensate outlet

The units are equipped with a condensate connection nozzle on the rear.

A special (1m) drainage hose that is supplied can be connected here.

- 1. Unscrew the union nut [A] (turn anticlockwise).
- 2. Pull the sealing plug [B] out of the connection nozzle.
- 3. Push the drainage hose with the smooth end through the rear of the union nut [A].



4. Screw the drainage hose onto the connection nozzle using the union nut [A].



In unattended permanent operating mode, the condensate should preferably be drained into a lower-level drain. If using an external collection container (pan, bucket, etc.), the unit must be placed at a correct height.

#### 

Ensure that the drainage hose is placed at an incline to the drain to allow the condensate to drain without hindrance!

## Continuous unit operation via the internal condensate pump

For applications in locations without a drain, the devices are fitted with a condensate pump especially for this. You can use this to provide various condensate drainage options according to the local conditions. The patented condensate pump connectionpanel [KP] is located on the rear of the units. Carefully connect the connection adapter [SA] provided here.

#### 🖔 ΝΟΤΕ

The pump function is only possible via the connection adapter [SA] provided.



The hose supplied as standard has a length of 5 metres. The customer can extend this to 10 metres if required.

CAUTION! Do not kink the hose!

A height difference of up to 5 metres can be bridged using the integrated condensate pump.

#### **▲** CAUTION

After you plug in the adapters [SA], , the pump is immediately ready for operation and can convey water immediately if required.

### Unit transport

The units are equipped with four transport rollers and additional recessed grips for easy and convenient transport.

- Before each change of location, switch off the unit and remove the power plug from the mains socket
- Empty the condensate container completely

#### **ΝΟΤΕ**

Beware of dripping condensate. After switching off the units, the evaporator may continue to defrost under the influence of the ambient temperature.

If moisture residual remains on the evaporator or water remains in the condensate container, the units must only be transported in an upright position



- The transport rollers are only suitable for use on level and smooth ground
- The units must be carried when transporting on uneven surfaces

#### **▲** CAUTION

The mains cable must never be used as a pull cord or fixing device.

### Care and maintenance

### 🖞 ΝΟΤΕ

Regular care and maintenance is fundamental to a long service life and fault-free operation of the unit.

All moving parts have a lowmaintenance permanent coat of lubricant. The entire refrigerant system is designed as a maintenance-free, hermetically sealed system and may only be repaired by a specialist.

#### 

Before undertaking any work on the units, the power plug must be removed from the mains socket.

- Observe the regular care and maintenance intervals
- In accordance with the operating conditions, the units must, if necessary, be checked at least yearly by a specialist to ensure that they are in a condition that is safe to use
- Only clean the units with a dry or damp cloth
  Do not use a water jet!
- Never use abrasive or solventbased cleaners
- Use only suitable cleaners, even for heavy contamination
- Check the inlet and outlet grill for contamination on a regular basis

Clean or replace if required!

## Cleaning the condenser and evaporator

The unit housing must be opened to allow the inside of the unit to be cleaned and to provide access to electrical components.

#### 🖗 ΝΟΤΕ

Repair and maintenance work may only be carried out by authorised and qualified technicians.

Clean the condenser and the evaporator by blowing, vacuuming or using a soft brush Do not use water jets!

#### 🛱 ΝΟΤΕ

When cleaning the finned heat exchanger, particular care must be taken because the fine aluminium fins bend very easily and due to the possible risk of injury.

- Clean the interior surfaces on the units, the condensate pump float, the fan and the fan housing carefully
- Check all unit components for damage and repair if necessary
- Carefully refit all parts that were removed in reverse order

#### **▲** CAUTION

An electrical safety check must be carried out in accordance with VDE 0701 after any work on the units.



### Filter cleaning

To prevent damage to the unit, it is equipped with an intake grill with integrated air filter.

In order to prevent power losses or unit faults, the intake grill with filter must be inspected as required, but every 2 weeks at the latest, and cleaned if necessary.

- 1. Use the control panel ([<sup>®</sup>] key) to switch the unit off.
- 2. Remove the power plug from the mains socket.
- 3. Remove the condensate container [K].



4. Pull the filter [F] that is behind the intake grill downwards and out.

### 

The units are not permitted to be operated without the intake grill and air filter fitted! 5. Clean the air filter [F] with a soft brush or a vacuum cleaner.



 Heavier contamination may be remedied by washing the filter [F] in a lukewarm (max. 40 °C) soap solution.
Finally, always rinse the filter carefully with clear water and allow to dry!



- 7. Also check the intake grill [G] for contamination and clean the openings if necessary.
- 8. Before refitting the intake grill [G] and the air filter [F], ensure that they are completely dry and undamaged.

#### **ΝΟΤΕ**

Heavily contaminated or damaged air filters must be replaced with new parts. Only original spare parts may be used.

### Troubleshooting

The units are manufactured using state-of-the-art production methods and tested several times to verify their correct function.

However, if a functional fault should occur, the unit should first be checked in accordance with the following list.

#### 🖞 ΝΟΤΕ

Repair work may only be carried out by authorised and qualified technicians.

#### The unit does not start:

- Check for any timer programming Indicator light [③] illuminated?
- Check the power supply and the power fuse provided by the customer 230V/1~/50 Hz
- Check the power plug and the cable for damage
- Check the condensate tank's fill level and seating The [①] "Container full" indicator light must not flash!
- Check that the microswitch [MS] on the condensate container is functioning
- Check that the inlet and outlet are free Overheating!
- Check the fuse on the control board This work requires the unit to be opened and must therefore only be carried out by an authorised specialist company!

#### 

#### The unit runs but condensate is not formed

- Check the hygrostat's setting The set value must be lower than the actual relative humidity in the installation room!
- Check the intake grill and air filter for contamination Clean or replace if required!
- Have the heat exchanger fins checked for contamination This work requires the unit to be opened and must therefore only be carried out by an authorised specialist company!

## The unit is loud or condensate runs out

- Check whether the unit is on a stable and even base
- Check whether the unit is standing upright and stably
- Have the condensate trap or the discharge nozzle checked to see whether there are dirt deposits on them This work requires the unit to be opened and must therefore only be carried out by an authorised specialist company!

#### 

Work on the refrigerant system and on the electrical equipment must only be conducted by a speciallyauthorised specialist!

#### 🏹 Note on refrigerants

The units work with environmentally-friendly and ozone-neutral R410A refrigerant. The mixture of refrigerant and oil within the unit must be disposed of properly in accordance with the statutory or locallyapplicable regulations.



## Electrical wiring diagram



### **Intended** use

The units are designed exclusively for drying and dehumidification purposes on the basis of their structural design and equipment. The units must not be used for any other purpose.

The units are only permitted to be operated by people with the relevant training and understanding of how to handle them.

The manufacturer shall not be liable for damage resulting from non-observance of the manufacturer's specifications, the respective local legal requirements or from arbitrary alterations to the units.

#### NOTE Ϋ́

Operation that differs from that specified in this operating manual is prohibited. With non-observance, any manufacturer liability or guarantee claims are voided.

### Customer service and guarantee

As a prerequisite for any guarantee claims to be considered, it is essential that the ordering party or its representative complete and return the "Certificate of guarantee" to REMKO GmbH & Co. KG at the time when the units are purchased and commissioned.

The units were tested at the factory several times to verify their correct function.

However, if malfunctions should arise that cannot be remedied by the operator with the assistance of the troubleshooting section, please contact your specialist dealer or contractual partner.

## **Environmental** protection and recycling

#### Disposal of packaging

When disposing of packaging material, please consider our environment.

Our units are carefully packed and delivered in stable transport packaging and, if applicable, on a wooden pallet.

The packaging materials are environmentally-friendly and can be recycled.

By recycling packaging materials, you make a valuable contribution to the reduction of waste and conservation of raw materials. Therefore, only dispose of packaging material at appropriate collection points.

#### NOTE Ϋ́

Repair and maintenance work may only be carried out by authorised and qualified technicians.



The units are operated with environmentally-friendly and ozone-neutral R410A refrigerant.

The mixture of refrigerant and oil within the unit must be disposed of properly in accordance with the statutory or locally-applicable regulations.



#### Disposal of the old unit

At the end of its service life, this unit is not permitted to be disposed of in household waste. It must be taken to a special collection point for electrical and electronic units.

The materials are recyclable according to their labels.

By reusing, recycling substances or other forms of recycling for used devices, you make a valuable contribution to protecting our environment.

Please contact your local authority for information on the disposal facility responsible.



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## Exploded view of the unit





## Spare parts list

No.	Designation	ETF 360	ETF 460
		EDP:	EDP:
01	Base plate	1111850	1111850
02	Conveyor rollers	1111851	1111851
03	Compressor, cpl.	1111852	1111853
04	Mains cable with plug	1111854	1111854
05	Connection adapter (for condensate pump operation)	1111855	1111855
06	Condensate hose, linear m. (for condensate pump operation)	1111856	1111856
07	Complete connection panel (for condensate pump operation)	1111857	1111857
08	Condensate pump	1111858	1111858
09	Complete float (for condensate pump operation)	1111859	1111859
10	Microswitch (for condensate pump operation)	1111860	1111860
12	Solenoid valve, cpl.	1111861	1111861
13	Dry filter	1111862	1111862
14	Back wall	1111863	1111863
15	Fan housing	1111864	1111864
16	Fan wheel	1111865	1111865
17	Fan motor	1111866	1111866
18	Fan support plate	1111867	1111867
19	Support plate, top	1111868	1111868
20	Exhaust grille	1111869	1111869
22	Fin condenser	1111870	1111870
23	Fin vaporiser	1111871	1111872
24	Guide rails (set)	1111873	1111873
26	Temperature probe	1111843	1111843
27	Bracket for temperature sensor	1111875	1111875
28	Air filter	1111876	1111876
29	Unit front wall	1111877	1111877
30	Sensor board (humidity)	1111844	1111844
31	Operating board	1111845	1111845
32	Control panel (film)	1111880	1111880
35	Float housing	1111881	1111881
36	Float	1111882	1111882
37	Condensate container cpl.	1111883	1111883
38	Centre wall	1111884	1111884
39	Condenser (fan motor)	1111885	1111885
40	Protective housing (condenser)	1111886	1111886
41	Microswitch bracket	1111887	1111887
42	Microswitch	1111888	1111888
43	Condenser (compressor)	1111889	1111890
44	Board housing	1111891	1111891
45	Cover (board housing)	1111892	1111892
46	V2 control board with fan stop	1111846	1111846
Not illustrated	Fuse (on the control board)	1111895	1111895

When ordering replacement parts, please always state the EDP no. and unit number (see name plate)!

### **Maintenance protocol**



Unit type:	Unit number:																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Unit cleaned - outside -																				
Unit cleaned - inside -																				
Fan wheel cleaned																				
Fan housing cleaned																				
Condenser fins cleaned																				
Evaporator fins cleaned																				
Fan function checked																				
Air-inlet grid with filter cleaned																				
Unit checked for damage																				
Safety devices checked																				
All fastening screws checked																				
Electrical safety check																				
Test run																				
			•				•				-				-				-	

Comments: .....

1. Date:	2. Date:	3. Date:	4. Date:	5. Date:		
Signature	Signature	Signature	Signature	Signature		
6. Date:	7. Date:	8. Date:	9. Date:	10. Date:		
Signature	Signature	Signature	Signature	Signature		
11. Date:	12. Date:	13. Date:	14. Date:	15. Date:		
Signature	Signature	Signature	Signature	Signature		
16. Date:	17. Date:	18. Date:	19. Date:	20. Date:		
Signature	Signature	Signature	Signature	Signature		

Unit to be maintained only by authorised specialists in accordance with the statutory regulations.



### **Technical data**

Series		ETF 360	ETF 460
Operating range, temperature	°C	6 to 32	6 to 32
Operating range, humidity	% RH	40 to 100	40 to 100
Dehumidification capacity max.	l/day	36	46
At 30 °C/80 % RH	l/day	32.9	42.3
At 20 °C/70 % RH	l/day	17.4	24.6
At 15 °C/60 % RH	l/day	8.2	9.9
Hot gas defrosting		Series	Series
Max./min. airflow volume	m³/h	320/280	310/270
Condensate container capacity	I	6.5	6.5
Condensate pump		Built-in	Built-in
Hose length (condensate pump)	m	5 (10*)	5 (10*)
Delivery height (condensate pump)	m	5	5
Refrigerant <sup>1)</sup>		R 410A	R 410A
Refrigerant quantity	g	210	320
Power supply	V	230/1~	230/1~
Frequency	Hz	50	50
Max. rated current consumption	А	2.7	3.95
Max. power consumption	kW	0.55	0.89
Sound pressure level $L_{pA}$ 1m $^{2)}$	dB (A)	53/49	53/50
Depth	mm	280	280
Width	mm	390	390
Height	mm	600	600
Weight	kg	16.5	21
EDP		1610360	1610460

<sup>1)</sup> Contains greenhouse gas according to Kyoto protocol

<sup>2)</sup> Noise level measurement DIN 45635 - 01 - KL 3

\* Maximum permitted hose length (Ø 8x6)

## **REMKO INTERNATIONAL**

## ... and also right in your neighbourhood! Take advantage of our experience and advice



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#### Consultation

Thanks to intensive training, our consultants are always completely up-to-date when it comes to technical expertise. This has given us the reputation of being more than just an excellent, reliable supplier: REMKO, a partner who helps to solve problems.

#### Sales

REMKO offers not just a well established sales network both nationally and internationally, but also has exceptionally highlyqualified sales specialists. REMKO employees in the field are more than just sales people: above all, they must be advisers to our customers in air conditioning and heating technology.

#### **Customer service**

Our units operate precisely and reliably. However, in the event of a malfunction REMKO customer service is quickly on the scene. Our comprehensive network of experienced dealers guarantees quick and reliable service.

