klimexs®
Industrial Cooling Systems

ELEVATOR AIR CONDITIONER ASSEMBLY AND USER MANUAL

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PREFACE

This document, includes instructions for starting up, operating and maintaining the elevator air conditioner series available in the product pool of Uzman Teknik Klimexs Industrial Cooling Systems. It has been prepared for the purpose of giving information to the user.

Klimexs reserves the right to make changes on this document and does not assume the obligation to forward the changes to the user. You can contact Klimexs for the updated document.

Elevator air conditioners consist of ventilation and cooling systems parts. Factory assembled and shipped with correct lubrication, the oil and refrigerant charge has been tested in accordance with the procedure and is ready for installation.

The gas type used in elevator air conditioner series is R410A. Device control is provided by wall panel and remote control system It is recommended not to install the device in environments with corrosive atmospheres such as acid or alkaline gases and in environments with sea breezes.

SAFETY INSTRUCTIONS AND SYMBOLS

Identifies an exceptionally hazardous situation. Severe, irreversible injuries or death will occur if this notice is not observed.

Identifies an exceptionally hazardous situation in connection with electrical voltage. Severe, irreversible injuries or death will occur if this notice is not observed.

Identifies an exceptionally hazardous situation. Severe, irreversible or deadly injuries could occur if this notice is not observed.

Identifies a hazardous situation. Minor or moderate injuries could occur if this notice is not observed.

Notice is used to address practices not related to physical injury.

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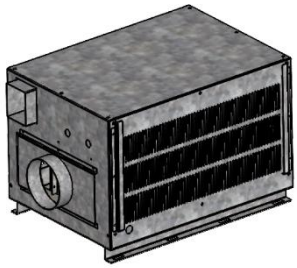
1. GENERAL INFORMATION



Uzman Teknik Klimexs Industrial Cooling Systems elevator air conditioners are especially designed for temperature conditioning in elevators located in office buildings, factories, hotels, residences etc., and are featured with compact structure, powerful function, reliable performance, and elegant appearance. It is always a right choice for different customers with various requirements.

1.1 Features

No Water Drop
No electricity heating in vaporizing the condensation water, safe and electricity saving; Multiple protection from water spilling over; Efficient heat-insulation soft duct, ensuring no frost on the surface; High quality anti-rust bottom water pan. In addition drainage system as a B plan.

Low Noise
International brand compressor, damping design, absorb vibration.

Efficient and Energy Saving
Thanks to the TXV used in the device design, the throttling process is carried out in a way that provides maximum energy efficiency. Therefore highly efficient compressor, advanced heat exchanger technology; Increased air flow design, overall system optimization to national energy conservation standards.

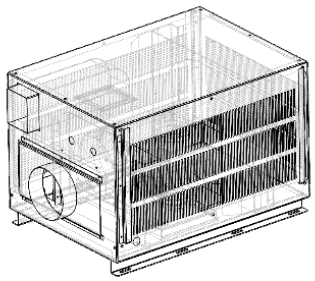
Environmentally friendly materials
The system uses the environmentally friendly refrigerant R410A whose ODP is zero, as well as the lead- free and other environmentally friendly refrigerant recovery materials.

Reliable operation
Rotary compressor, centrifugal evaporator fan, axial condenser fan, thermostatic expansion valve and connection pipes build up an enclosed system. Thanks to this compact structure, in case of malfunction in the system, the components will be checked and the problem will be solved in a short time. Scientific structure, reasonable internal arrangement, detachable filter screen, and easily effaceable heat exchangers make the service much easy. Devices provides safety in all extraordinary situations thanks to the high and low pressure switches

Long-distant air supply
The applied radial fan is so powerful to realize the long-distance air supply via the air duct.

Flexible operation
The smart remote control enables the air conditioner fully under your control.

1.2 Model List

Model	Cooling Capacity (kW)	Power Supply	Refrigearnt	Apperance
EC 2000	2	220 – 230 V	R410A	
EC 4000	4			

1.3 Scope of Delivery

The shipment consists of the following contents:

- Elevator cooling unit
- Elevator cooling unit quick guide
- Special accessories, if applicable (vents, flexible hoses, drainage pipe, reduction ducts)

NOTICE

In cases where device transfer is made by unusual methods such as airplanes and ships, cargo acceptance conditions are taken into account, due to security measures the shipment is made without gas charging.

1.4 Order Options

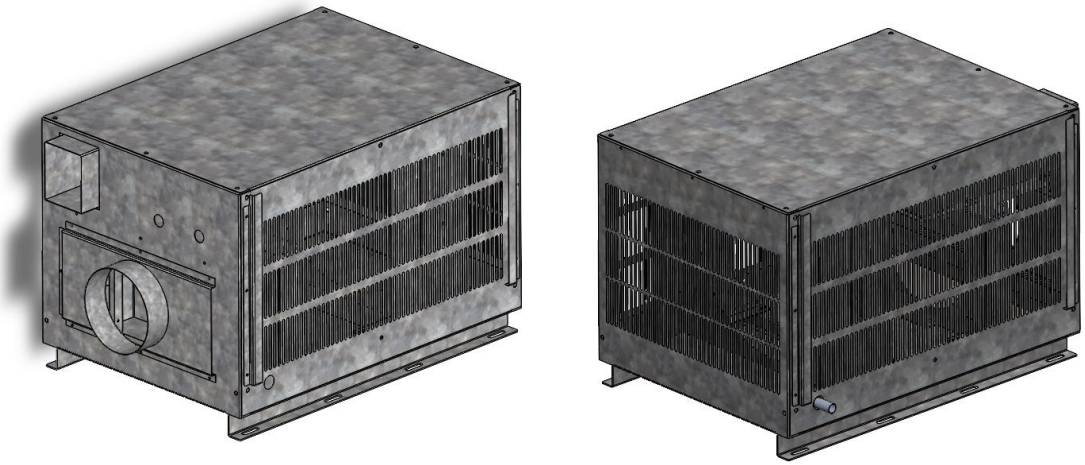
NOTICE

Spare parts from third-party manufacturers can damage the unit

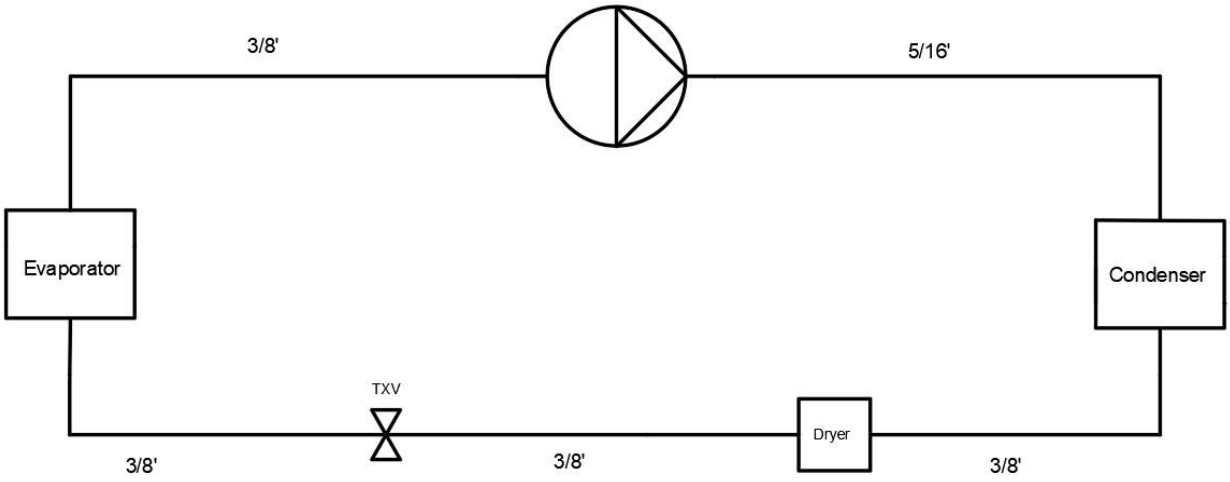
- Only original parts are subject to the manufacturer’s quality control.
- Only use originally manufacturer parts for safe and reliable operation.

1.5 Type Plate

1.6 Elevator Air Conditioner Unit View



1.7 Working Principle



As shown in the figure above, it is an enclosed system mainly consisting of a compressor, a condenser, thermostatic expansion valve and a condenser. The refrigerant in the evaporator will exchange heat with air in the elevator and evaporate. Then, the low pressure refrigerant vapor will be drawn into the compressor where it will turn to be high temperature and high pressure vapor and discharged out. The discharged refrigerant vapor then will be cooled in the condenser and turn to high pressure refrigerant liquid which via TXV will become the low temperature and low pressure wet vapor and enter the condenser again. This cycle will repeat again and again.

WARNING

Inappropriate use of the units can cause severe accidents. Elevator cooling units must only be used in stationary operation.

2. SAFETY AND WARNINGS

Read all operating instructions before starting up, operating and maintenance-repair operations. All occupational safety rules and warnings must be followed.

WARNING

The device contains high pressure. All operations must be carried out by qualified personnel.

DANGER

Electric shock is one of the most serious risks faced by a personnel. Electric shock can cause serious injury or death from a fall, either from the shock itself or from a reaction to the shock. Before the device is exemined, the power must be cut off and the examination should be carried out after that.

- Only use Uzman Teknik Klimexs Industrial Cooling Systems elevator air conditioners according to the instructions.
- Make sure that all relevant personnel can access the device operating instructions.
- Only use Uzman Teknik Klimexs Industrial Cooling Systems elevator air conditioners in their original condition without any unauthorized changes and in faultless technical conditions.
- Do not operate the device without making sure that all equipment in the system is working perfectly.

2.1 Considerations During Use

A prerequisite for safe use is knowledge of basic safety instructions. This user manual contains the most important points for the safe use of the product. The warnings in this manual are especially important for the related users and the devices in which the air conditioner is integrated. They must be taken into attention. Apart from this, all operating and accident prevention instructions required for the area of use must be observed.

2.2 Warnings

CAUTION

Make sure that the cabinet doors are closed while the elevator air conditioner is operating. Paying attention to this point contributes to energy efficiency.

CAUTION

It is essential that the user guide is always with the device. In addition to the user guide, there should be warnings against other accidents and dangers in the area where the device is located.

DANGER

It can be dangerous to use in corrosive and explosive (dusty, vaporous or gaseous) environments, application areas should be checked.

DANGER

Examination, maintenance and repair on the device should only be done after the device is disconnected from the energy. While the device is operating, the fans and gas installation should not be interfered. Interfering with the device while it is operating may cause an accident and serious injury.

2.3 Appropriate Use

CAUTION

Elevator air conditioners should only be installed in accordance with the installation conditions specified in the user guide and the specified safety rules should be followed.

NOTICE

The purpose of the elevator air conditioners is to keep the elevator cabinets within the specified temperature range. Elevator air conditioners are used out of purpose and in assembly that does not comply with the instructions, Uzman Teknik Industrial Cooling Systems cannot be held responsible.

3. TERMS OF WARRANTY AND LIABILITIES

NOTICE

The warranty does not apply or is voided in the following cases:

- In case the elevator air conditioner is not installed in accordance with the instruction
- Wrong product selection (capacity and feature)
- When the maintenance and repair of the elevator air conditioner is not done in accordance with the instructions.
- When the warnings regarding transportation, storage, start up, use, maintenance specified in the user guide are not taken into account.
- When changes are made to the elevator air conditioners without the manufacturer's allowance.
- In case of malfunctions and negativities caused by irrelevant people

4. SHIPPING AND STORAGE

- Elevator air conditioners should be transported in pallets with stretched
- There should be 2 elevator air conditioner in each pallet.
- Warning signs (top side, breakables, protect from getting wet, etc.) on the box should be observed and followed.

In the transportation of elevator air conditioners, the air conditioners should be transport by pallet trucks or similar transportation vehicles.

4.1 Checks to be Made by the Customer During Acceptance

The transferred elevator air conditioners and packages should be checked for damage and appearance.

4.2 Notification and Documentation of Transport Damages

Make sure that no damage has occurred during transportation. If damage is detected, document it immediately with drawings, photographs and written explanations to be made. Submit these documents to Uzman Teknik Industrial Cooling Systems as soon as possible.

4.3 Packaging

Packaging materials are environmentally friendly, reusable. The costs and responsibilities of special transportation and insurance conditions belong to the customer.

4.4 Loading on Vehicle

Elevator air conditioners should be loaded onto the transport vehicle in a way that they will not be damaged by paying attention to the warnings on the package. It should be placed by taking precautions against humidity, wetness, impact and overturning during transportation.

4.5 Hold – Storage

If the holding area has unsuitable conditions (moisture, heat and may be damaged), the environment should be made suitable and stored or a suitable area should be selected.

5. TRANSPORT AND INSTALLATION OF THE UNIT

5.1 Transport Of Unit

- Units are ready for transported by forklift or direct lifting and should be carried with the help of a sling or pallet truck for direct lifting. Klimexs recommends that autherized specialists be assigned to transport the device.

CAUTION

- Make sure that the necessary protection measures are taken between the device and the carrier so that the surface of the device is not damaged.
- Lifting should be done in a position where the weight will be centered during lifting.
- During lifting, the weight should be distributed equally to the four corners, and necessary safety precautions should be taken to prevent the device from tipping and sliding.

CAUTION

During the transportation and storage of the elevator air conditioner, the weight of each device and its damage-free conditions should be carefully considered and action should be taken.

5.2 Installation

5.2.1 Assembly Procedures

- Place the device on the surface to be mounted.
- Open sections for suction and discharge lines
- Mount the air conditioner to the cabinet with the mounting screws
- Give energy to the power socket on the device
- The device will start to operate at a set state, first the evaporator fan will be activated, then the condenser fan and compressor will be activated depending on the temperature values.

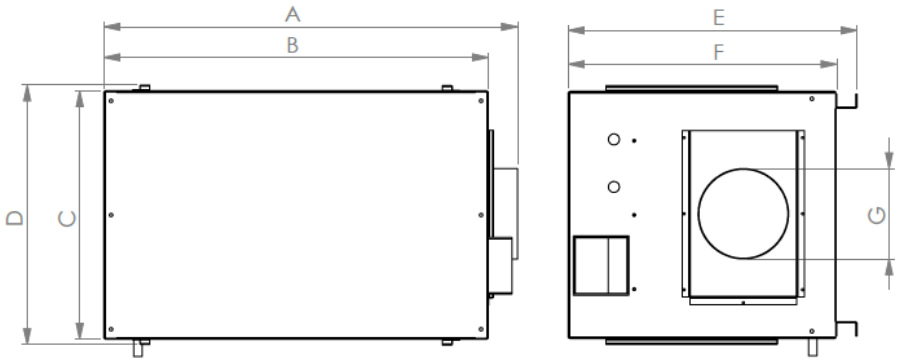
NOTICE

While installing the elevator air conditioner, care should be taken that the cold air does not come into contact with the nearby equipment. Otherwise, undesirable results may occur as the heat difference on the devices will cause condensation.

One of the wrong product choices and installations, Uzman Teknik Klimexs Industrial Cooling Systems cannot be held responsible.

Units are delivered in working condition by qualified Uzman Teknik Klimexs Industrial Cooling Systems personnel and with a minimum 1 year warranty. Installation should only be done by authorized expert personnel.

5.2.2 Installation Dimensions



Model	A	B	C	D	E	F	G
EC2000	760	700	495	515	475	430	150
EC4000	865	800	520	545	610	565	190

DANGER

In order for the condensed water in the device to reach the bottom of the condenser and evaporate, the device must be fixed flat on the floor. Make sure that the device is not mounted on an incline.

5.2.3 Installation Location

This air conditioner can be either ceiling or floor installed. During installation, make sure:

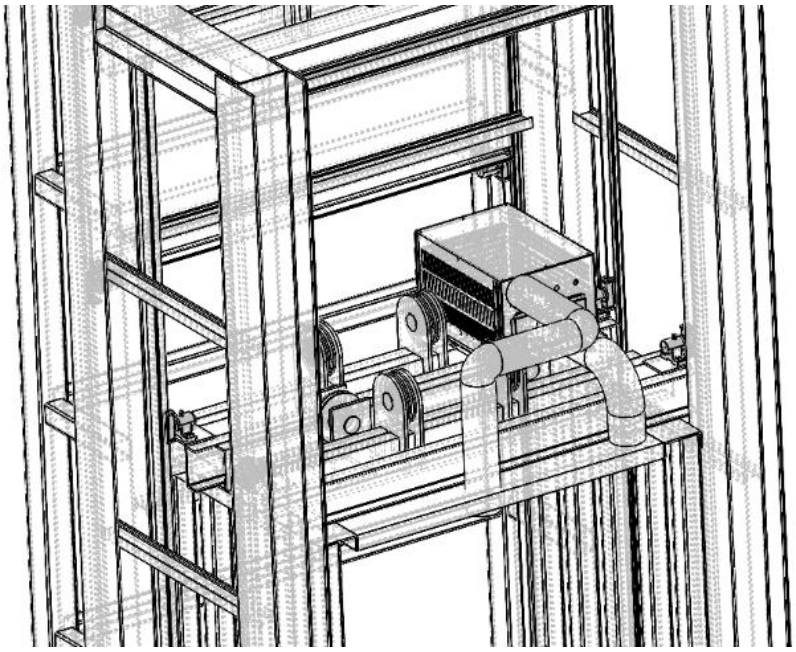
1) It is installed through the beam so as to reduce vibration and noise.
2) It is installed horizontally so that condensate will not flow out.
3) It is installed in the way that the supply air outlet and return air inlet are free of obstacles.
4) It is installed in the way that there is enough space for ventilation

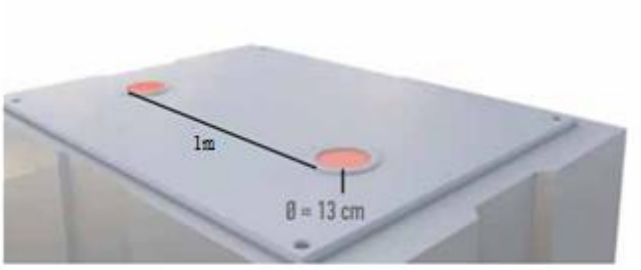
CAUTION

In order for the condensation water forming in the device to evaporate in a healthy way, it must reach the condenser easily. When placing, the device should be placed on a flat surface that can provide this.

Placement

Place the elevator air conditioner on the appropriate area above the elevator cabin.





Section

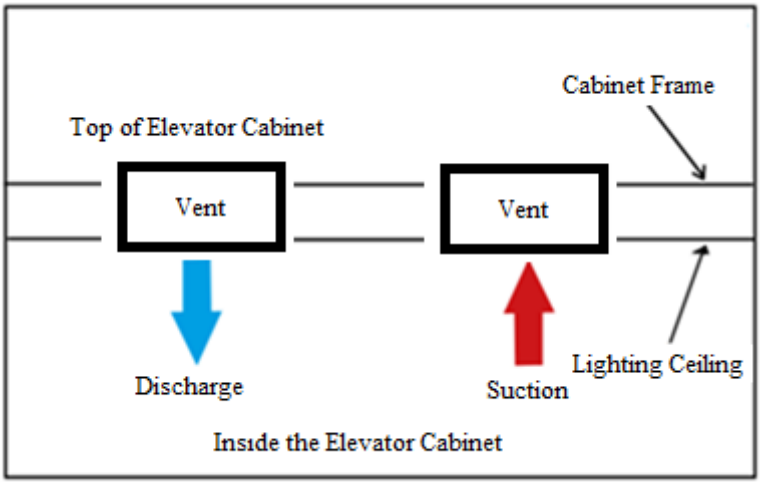
Drill 2 holes with a diameter of 15 cm for the vents in the ceiling of the elevator. Make sure that the distance between the two vents is at least 1m.

NOTICE

The holes must be drilled with the same centers in both the cabinet and the lighting ceiling. If it is opened only on the ceiling of the cabinet, the cold air from the air conditioner cannot pass into the elevator.

Vents

Attach the vents supplied with the air conditioner to the opening sections.



Flexible Hose
Connect the flexble air hoses supplied with the device. Complete the same process for both air channels.

NOTICE

Clamp the flexble hoses, vents and air conditioner connection points and make sure that there will be no air leaks.

Hose Connections
Condensate from cooling is destroyed by evaporation at the base of the air conditioner. However, there is a drainage pipe designed for safety so that water does not flow into the cabin in case of any trouble. Connect the water hose sent with the product to the discharge pipe on the side surface of the air conditioner. Hang the other end of the hose under the cabinet.

6 CONTROL MODULE

NOTICE

When the compressor is shut off, it needs 3 minutes to restart. Basic function for button on panel very easy to use

Turn on or off the air conditioner.

press temperature increase or temperature decrease 1°C.

control work mode in auto, cool and fan

IR lamp

NOTICE

In order for the device to detect the remote control, the remote must be directed to the IR part on the wall panel.

6.1 Other Remark

Fan Motor
when fan works, indoor fan motor cause fan. It stops, don’t cause any fan.

Defrost
While air conditioner is in defrosting state, set temperature shows ‘’OFS’’

Timer Function
When set up timer, the display panel will Show ‘’on’’ or ‘’off’’ on the upper right corner, and it will show the time of the timer

Backlight Function
The display panel has blue backlight, user can see clearly in long distance when air conditioner is turned on, you can control the backlight shine or not by light key. When air conditioner is turned off backlight does not shine.

Power Function
When air conditioner is turned on, power key will emit weak green light to instruct. And when air conditioner is shut off, power key does not shine. This feature is to prevent the backlight highlight the impact of sleep quality or the effect of watching television. It is very good for user.

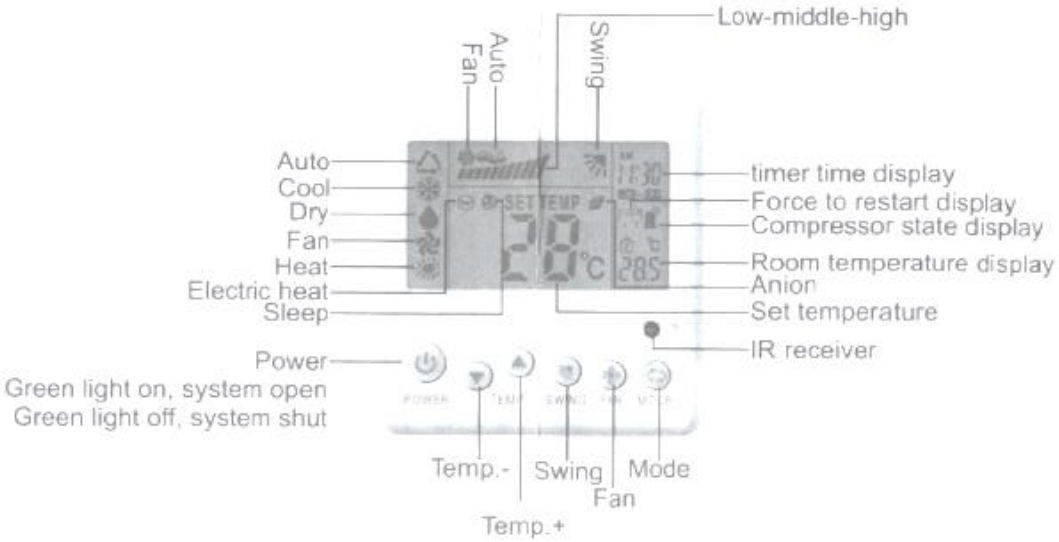
Even if the backlight turn off, but also to know whether the air conditioning is switched on or not**.** There is a mandatory start key in main PCB, and it works only in shutdown estate. Forced to start air conditioner, there is not protective time-delay for compressor. So please install and use it by certificated technician. When forced to start, LCD shows, if room temperature is lower than 25°C, valve will get power, if not, do not get power.

When forced to start, Room temp. zone shows current room temperature, set temp. Zone shows indoor machine’s coil pipe temperature. Timer zone shows outdoor machine’s coil pipe temperature. If connect sensors by mistake, it will show ‘’0C’’, if don’t connect or sensor is broken, it shows ‘’EE’’.

6.2 Connection of Sensor

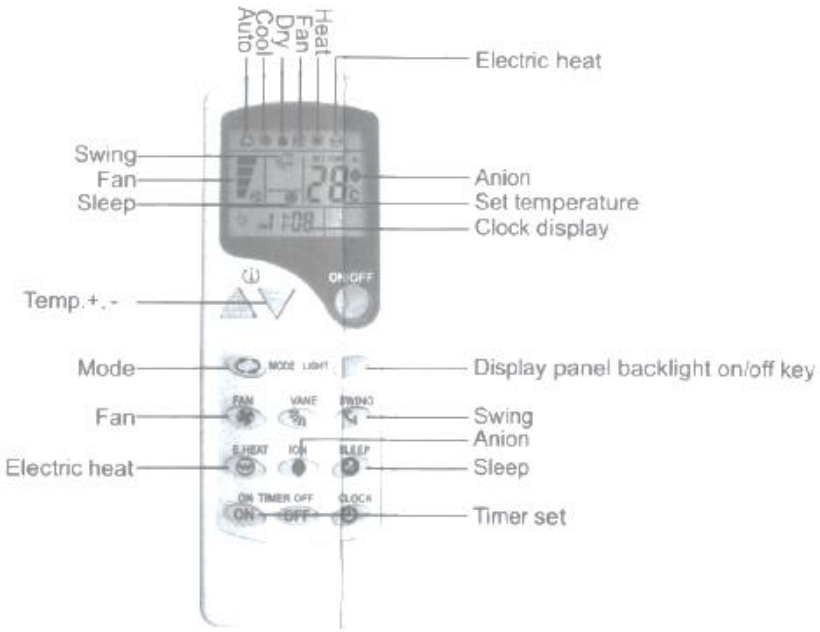
- RMT1 (room temperature sensor) - red
  Put this sensor in the air of fan entrance and do not touch with anything. If don’t connect RMT1 or error will affect the air conditioner work
- RMT2 (indoor coil pipe sensor) – White
  1. Put sensor in indoor coil pipe entrance and touch with coil pipe, it can protect indoor machine.
  2. When don’t connect RMT3, RMT2 has intelligent defrosting function.
- RMT3 (outdoor coil pipe sensor) – black extra
  1.Put sensor in the outdoor coil pipe, it can defrost accurately
  2.When don’t connect RMT3, control will auto defrost according to the testing temperature of RMT2

6.3 Instruction of Display Panel

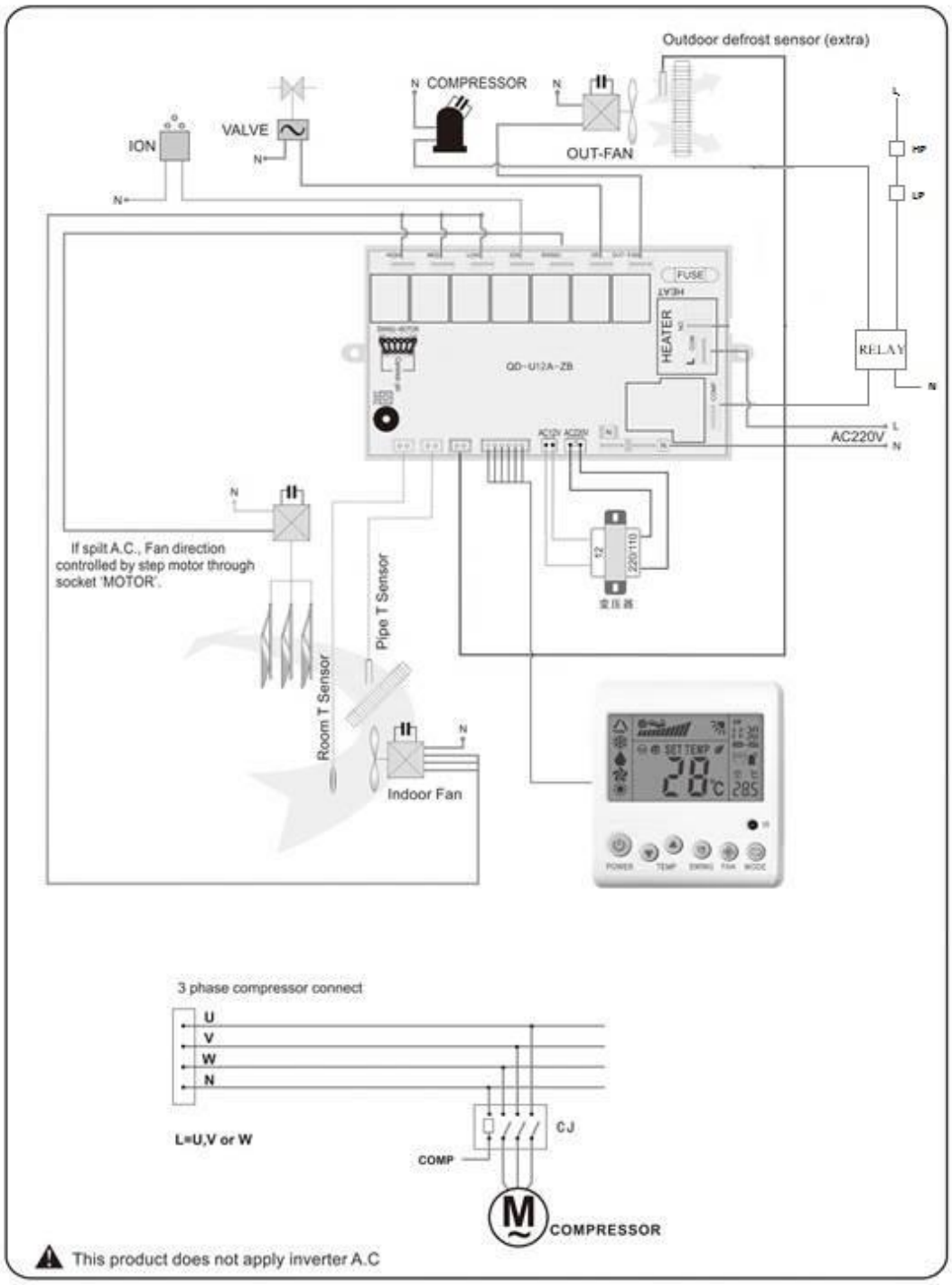


6.4 Instruction of Remote Control

- When the firs time remote control change the batteries, please set the time before. If the remote control does not use for a long time, please get out the batteries to avoid leakage liquid damaging it.
- This remote can set the power on and off precisely.



6.5 Wiring Diagram



WARNING

Avoid strong light before IR reciever effects.

7. START UP

Complete each item of this list after the unit is installed. When all is OK, the unit is ready for operation. Check that the installation voltage is compatible with the voltage of the air conditioner. Check the sequence of starting up steps.

DANGER

- Make sure that electrical connections are made only by carefully selected specialist personnel.
- Do not interfere to device without the circuit diagram.
- Make sure that the current type and voltage of the energy source corresponds to the indications on the product type plate and circuit diagram.
- Make sure that device power cable selected according to IEC or local standards. Pay attention to the ambient temperature when making the selection.
- Make sure that the grounding connection is made.

Check Before Starting Operation

- Check the voltages from the energy input.
- Check the calibration of electrical protection devices.
- Make sure the service pipe is completely open.
- Check the condenser and evaporator fans on the unit rotates freely.
- Check that the fins of the condenser and evaporator coils are clean and there is nothing blocking the air flow.

8. OPERATING THE SYSTEM

After the assembly and testing of the unit is completed, unit is sent to you as gas charged and ready to be operated.

Settings such as operating temperatures, operating pressure, target temperature values settings can only be changed by KLİMEXS engineers. In case of necessity, do not make any changes without consulting the Uzman Teknik KLİMEXS engineers.

- Supply energy to the device via the electrical network.
- Check the supply voltage is supplied to the power terminals.
- If there is no malfunction in the system, it will start to work automatically at the set value.
- Set the cabinet temperature to the temperature value you want to be at.
- Check the high and low pressure values after the unit starts to work.
- Check if the compressor is overheating.
- Check that the drainage water is evaporaing properly from the system.
- Check the sound level and shaking of the device.
- Check the tightness.

In addition to the air flow measurement, make a general check of the system, make sure that it is working properly.

CAUTION

To avoid injury from frostbite, do not allow refrigerant to come into contact with the skin.

8.1 General Functions

- After the installation work is completed, plug in the elevator air conditioner.
- The units operate continuously when the supply voltage is connected.
- The cooling units are equipped with an electronic and remote control unit. The temperature sensor detects the temperature of the intake air and enables the devices to be configured to operate in accordance with the paramaters suitable for the desired conditions.
- Ambient conditions and unit internal temperatures must comply with the values specified in the technical documentation of the device.
- Considering the operating range of the controller used, the ambient temperature should be less than 50°C.

8.2 Operation of Cooling Unit

- After connecting the voltage, the unit switches to operating mode. The cooling mode operates actively until the device reaches the set value.

8.3 Working Conditions

- The network voltage must be within the technical data range specified in the device information.
- Considering the cooling capacity of the device, a percentage deviation is allowed to the specified hysteresis range.
- When defining the cooling capacity, attention should be paid to requirements.
- Only the specified refrigerant can be used in the devices.

9. OPERATION MAINTENANCE AND REPAIR

9.1 Device Maintenance

Condenser maintenance of our device in monthly periods and evaporator maintenance in 3 month periods is required. Depending on the pollution of the environment, it is recommended to reduce these periods for efficient operation of the device. Please clean and maintain the air conditioner periodically to keep it run reliably and extend its service life, and special attention should be drawn to the key components.

Condenser
As dust accumulated on the fins of the condenser will affect the heat exchange efficiency and raise the pressure at the high side, it is necessary to check and clean them. When cleaning, the upper cover of the condenser should be removed.

Evaporator
As dust accumulated on the fins of the evaporator will reduce the air flow and lower the cooling capacity, it is necessary to clean them based on the actual condition.

Filter Screen
As dust accumulated on the filter screen will reduce the air flow and lower the cooling capacity, it is necessary to clean it frequently.

9.1.1 Condenser Maintenance

- Turn off the power of the device and open the panel.
- Clean the substances such as oil, dirt, dust stuck to the condenser with compressed air. (Dirty condenser causes insufficient heat transfer, failure of the device in a short time and high energy consumption. When necessary situations, use degreasing solvent in a rate and time that will not damage the device)
- Clean the dirt on the fan blades.
- Check the drain line. If there is any breakage or blockage, remove it. (Otherwise, there is a possibility of splashing condensation water into the panel.)
- Check the electrical connection cables. (Abrasion, friction, dislodgement cause short circuit to malfunction of the device)
- Check the controller settings of the device. Pay attention to the temperature values recommended by the seller company. (Cooling the inside of the panel below the requirement causes unnecessary energy consumption and rapid wear of the device)
- After making sure that the device and the panel are turned off, energize.

NOTICE

If your device shows a value above the temperature you set, perform condenser maintenance

9.1.2 Evaporator Maintenance

- Remove the screws around the fan inside the device and remove the fan grille.
- Clean the substances such as oil, dirt, dust stuck to the evaporator with compressed air. Check the drain line by pouring water into the evaporator pan and following the water.
- Clean the dirt on the fan blades.
- Check the electrical connection cables.
- Attach the fan grille that was removed in the firs operation and energize the device.
- Check the temperature settings of the device. Pay attention to the temperature values recommended by the seller company.

	Maintenance Items
Maintenance before Seasonal Operation	• Is the air inlet or outlet clogged? • Are the supply air pipe and the return air pipe tightened securely? • Is the air duct connected to the car top securely? • Is the power cable loosened? • Is the surface of fins accumulated with heavy dust or stains? If so, the heat exchange efficiency will be affected.
Maintenance in Seasonal Operation	• Dust from the elevator well is likely to attach on the filter screen, which will reduce the return air flow and cooling capacity. Therefore, it is suggested to clean the filter frequently. Once every week is preferred. • The filter screen is allowed to be cleaned by the vacuum cleaner or by rinsing. If the filter screen is quite dirty, use the lukewarm neutral detergent and dry it in shade.

9.1.3 Authorized Service

Before notifying the authorized service:

- If the device does not work, check the electrical connections.
- If there is electricity to the device but it does not work, check the electrical connections and controller values. (Operating temperature values must be below the ambient temperature.)
- If the device is running but does not blow cold air or blows enough, check whether the evaporator fan is working. If the fan is working; the evaporator is clogged. Clean the evaporator.

- If the device is working but is disabled after a short time, check the controller values. (Operating temperature values should be below ambient temperature.) Following this, make sure that the condenser fan is running. Make sure the condenser is clean. If it is not clean, clean it as in the conderser instructions.
- If the device is running but does not deactivate at all, check whether there is an outside air inlet to the panel, the covers of the panel may be left open. Check the controller settings of device and make sure that it is at the temperature values recommended by the seller company

Annual maintenance is recommended by an authorized service. Authorized service checks condenser air flow, operating temperatures, gas pressures and general condition of the system. Maintaining the system prevents the occurrence of time-consuming malfunctions and enables it to work more efficiently. All of the above-mentioned maintenance is for long-lasting and efficient operation of the device. Failures that may occur due to lack of maintenance are not covered by the warranty.

9.2 Repair Procedures

9.2.1 Leakage Test

Refrigerant leakage will not only directly affect the normal operation of the air conditioner but also do harm to the environment. When in contact with open fire, the refrigerant will give off toxic gas which will endanger surrounding creatures.

Once it is certain leakage exists, shut off the air conditioner immediately and then take a leakage test. If possible, it would be best to use the halogen leak detector to find where leakage is when it is certain that leakage exists.

9.2.2 Vacuuming

The degree of vacuum of the pipe system has direct influence on the normal operation of the air conditioner. The poor vacuum degree will lead to unusual high pressure at the high side, consume more energy or even damage the compressor. Therefore, the system should be vacuumed after the leakage tested as described in.

9.2.3 Refrigerant Charging

The amount of refrigerant in need should be calculated in accordance with the size and length of the liquid pipe. EC 2000 series should be charged with 1000 gr R410A gas. In order to guarantee only liquid refrigerant is charged in, the refrigerant tanks should be put upside down. Before charging, connect the manifold gauge and the refrigerant tank to the liquid and gas valves, and remember to drive the air inside the system out through the liquid refrigerant flow.

When the refrigerant is going to be charged into the air conditioner which is kept to be shut off, open the control valve at the refrigerant tank and charge the refrigerant into the system through the liquid pipe until required amount of refrigerant is in the system, and then close the liquid valve and the control valve of the refrigerant tank one by one. Additional refrigerant is allowed to be charged when the unit is operating at the service valve of the gas pipe.

Never charge oxygen, acetylene or other inflammable gas into the system for leakage test and air tightness test, but only compressed air, high-pressure nitrogen or refrigerant. The air conditioner is allowed to be started only when at least 60% required amount of refrigerant has been charged.

10 TROUBLESHOOTING

Symptoms	Possible Causes	Solutions
When energized, the air conditioner control unit does not give an alerting sound.	The power supply is not normal.	Test the power supply with an electric meter.
The cooling effect is poor, or the air conditioner repeats frequently starting and stopping.	1. The filter is clogged. 2. The temperature set point is too high. 3. The duct is clogged or damaged. 4. The temperature sensor is placed improperly so that it is often exposed to the cool air. 5. The air conditioner stops for the power voltage is too low.	1. Clean the filter. 2. Lower the temperature set point. 3. Check the duct. 4. Replace the temperature sensor. 5. Check the power voltage.

Much noise is generated	1. The power voltage is too low. 2. The air conditioner is put directly on the cabinet top	1. Check the power voltage. 2. Fix the air conditioner at the beam of the cabinet top.
There are water drips at the supply air outlet when the air conditioner is operating.	1. The cool air directly contacts the metallic wall and is condensed. 2.Too dirty filter causes the low temperature supply air. 3. The insulation of the duct is damaged	1. Check the insulation at the supply outlet. 2. Clean the filter. 3 .Check the insulation of the duct.
When restarting the air conditioner after power failure, it fails to work.	The compressor is in system protection for a few minutes	Start the air conditioner a few minutes later.
The control works slowly or the display is unclear.	Batteries of the control run out.	Change the battereis.

The air conditoner leaks.	The air conditioner is installed slantwise.	Adjust it horizontally as per instructions in this manual
The housing of the air conditioner is electrified.	The air conditioner is not grounded.	Ground the air conditioner.
The device does not work	There is a damaged or loose cable	Replace cable or tighten connection
The device does not cool even though it is running	1. Temperature setting too high	1. Check the temperature setting by reading the device controller section
	2. Wrong wiring	2. First, check that there is no loose connection. If the loose connection is fixed, check the entire cable line by referring to the electrical project.
	3. Compressor problem	3. Check the compressor cable connections. If it still doesn't work, replace it. If the compressor is running and not cooling enough, the suction line pressure may be high and the discharge line pressure may be low. Check and bring the pressures to the desired level.
	4. Problem in the refrigerant line	4. Check the cleanliness of the dryer. Replace the dryer if moisture, unwanted substance, or obstruction is observed in the refrigerant line. Vacuum and re-gas.

The device is not cooling efficiently	1. Operating limits exceeded 2. Reduced refrigerant 3. Contamination of batteries 4. Inefficient operation of evaporator and condenser fans 5. Evaporator air velocity too low	1. Check the ambient temperature and cooling load 2. Request support from authorized qualified personnel 3. Clean the batteries 4. Request support for the replacement and repair of fans from authorized qualified personnel. 5. Check motor speed and duct sizing. Generally, dirty filters reduce the air speed, check and clean the filters on a weekly basis.
Excessive condensation	1. Temperature settings too low 2. The cooled cabinet doors are not completely closed	1. Check the temperature settings 2. Check that the cooled cabinet doors are completely closed
Icing is observed on the evaporator	1. Missing refrigerant 2. Air velocity too low	1. The fluid charge amount in the system is incorrect, there may be a gas leak. Make a leak test and add fluid according to the value on the device label. 2. There may be a blockage in the line, check. Fan blades may be bent, check

The system is noisy	1. Due to the compressor	1. Check the chock connections of the compressor. Tighten if loose. Make sure that the compressor pipeline does not touch other equipment.
	2. Due to evaporator fan motor	2. Manually check the evaporator fan shaft. Is there a jam? Are there any bending or twisting of the fan blades? Replace the fan if the shaft is jammed or the fan blades are damaged.
	3.General vibrations and noises	3. Missing screws, loose connections can cause vibration and noise in the system.
Compressor is not running	1. The relay in the compressor broke the circuit	1. In this case, the thermic inside the compressor is very hot. Wait for the compressor to cool down. If the compressor has cooled down and the relay is still not reset, the relay may be faulty. Repair the compressor.
	2. Compressor windings make noise but do not turn	2. The rotor may be locked. Repair the engine.
	3. High pressure cuts the circuit	3. The unit may go into high pressure from an excess gas charge or condenser blockage.
Evaporator fan motor does not work	Current control	Does the motor fan spin manually? If it doesn't turn, replace the motor. Check the current by reading the current value from the motor type plate.