uludağ klima®

UserGuide
enclosurecooler

WE THINK ABOUT
FUTURE

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YouTube

WATCH for ALL DETAILS

Without Problem
Automotion Solution

Smart Enclosure Cooling Units..

about **us**

As **UludagKlima**, we are proud to be the first and only domestic manufacturer in the enclosure cabinet cooler producing industry in Turkey. Our company that related to air conditioner manufacturing business since 1998, started to mass production in the year 2000.

Since then our manufacturing capacity developed increasingly year by year. To day most of the large scale industrial establishmnets' enclosures are being conditioning by Uludag Klima products. UludagKlima increases the client potential every day with solutions based on customer - focused quality understanding.

Our manufacturing facility is deployed at Bursa Organised Zone.

%100
Customer Satisfaction.

The region's highest quality Enclosure Cooler production.

ENCLOSURE
COOLER

ENCLOSURE COOLING
SYSTEMS
—

Summer months approaches, temperature rises in Enclosures with this increase, un- scheduled downtime is inevitable. Against to this danger, precaution is our **Enclosure Cooling Units**.

ENCLOSURE COOLERS

TELECOM COOLERS

INDUSTRIAL COOLERS

KiOSK COOLERS

INSTALLATION
Wall **Mounted**

1 Paste the **Template**

Paste the mounting template that was sent in the package to the surface where the air conditioner will be installed.

2 Cutting the **Window**

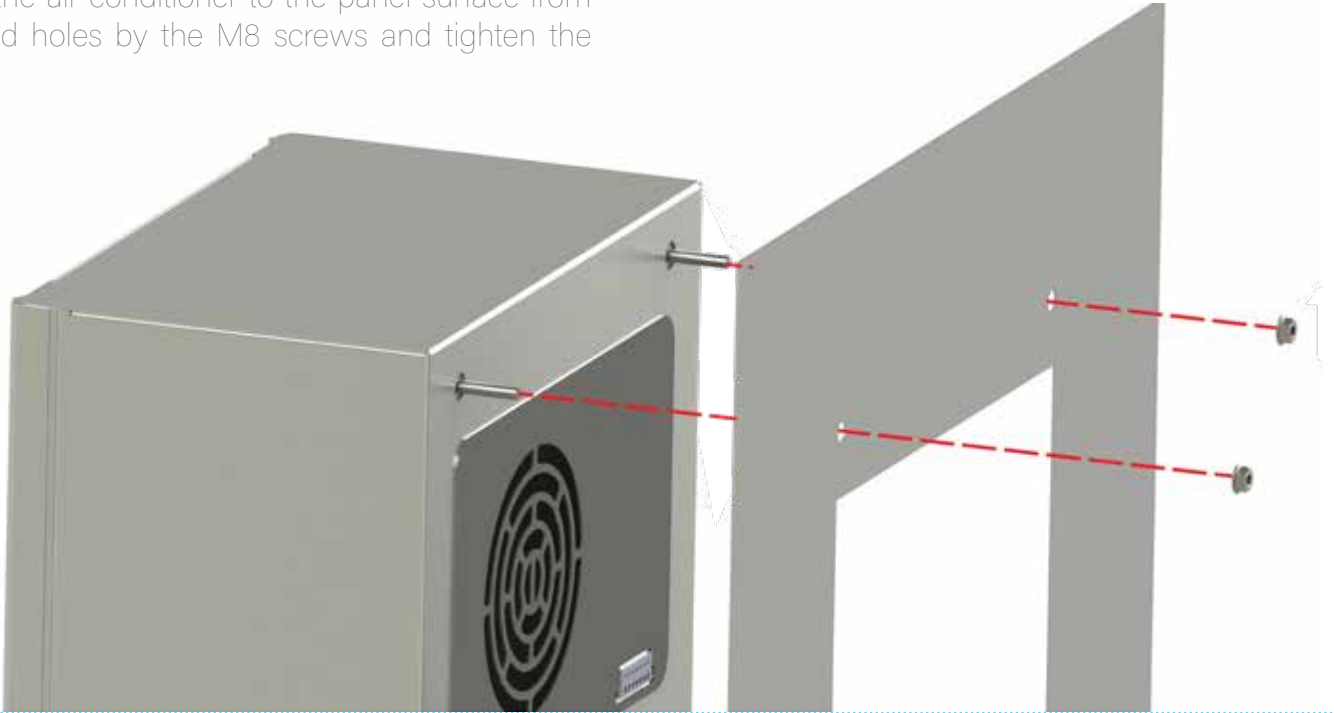Cut the window that shown in the template with a hand tool like jigsaw. and drill holes that shown on template.
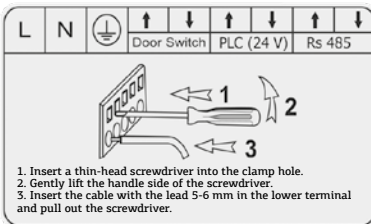
INSTALLATION
Wall **Mounted**

3 Fixing

Place the Air Conditioner on the surface that has holes and Fix the air conditioner to the panel surface from the drilled holes by the M8 screws and tighten the screws.
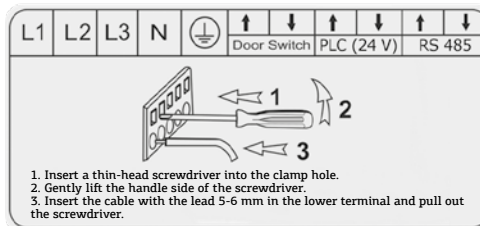
4 Energy **Supply**

Energize the cable shown in the illustration. The unit will start working with set to 34 °C.

220 V. MONOFAZE UNITS

1. Insert a thin-head screwdriver into the clamp hole.
2. Gently lift the handle side of the screwdriver.
3. Insert the cable with the lead 5-6 mm in the lower terminal and pull out the screwdriver.

380 V. TRIFAZE UNITS

1. Insert a thin-head screwdriver into the clamp hole.
2. Gently lift the handle side of the screwdriver.
3. Insert the cable with the lead 5-6 mm in the lower terminal and pull out the screwdriver.

INSTALLATION
Roof **Mounted**

1 Paste the **Template**

Paste the mounting template that was sent in the package to the surface where the air conditioner will be installed.

2 Cutting the **Window**

Cut the window that shown in the template with a hand tool like jigsaw. and drill holes that shown on template.

3 Fixing

Place the Air Conditioner on the surface that has holes and Fix the air conditioner to the panel surface from the drilled holes by the M8 screws and tighten the screws.

4 Energy **Supply**

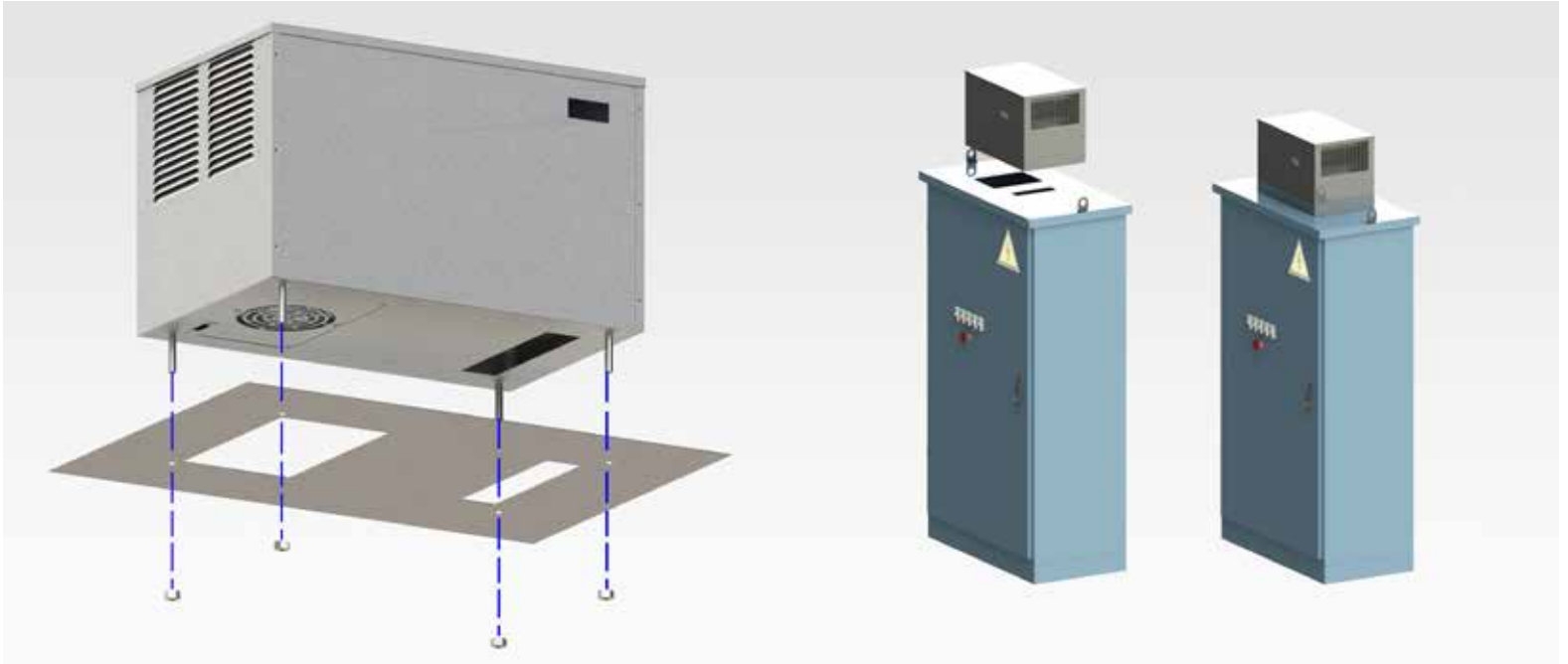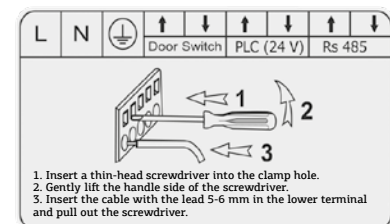Energize the cable shown in the illustration. The unit will start working with set to 34 °C.

L	N	⊕	Door Switch	PLC (24 V)	Rs 485

1. Insert a thin-head screwdriver into the clamp hole.
2. Gently lift the handle side of the screwdriver.
3. Insert the cable with the lead 5-6 mm in the lower terminal and pull out the screwdriver.

Digital Display
Enclosure **Cooler**

When pressed while in any menu, it returns to the main operation screen. If it is pressed for 5 sec., it turns ON/OFF.

SB-2
Condanser Sensor

TEMP flashes when the compressor is active.

CABIN TEMP **25.**3

Green Led: Error
Blue: Ethernet Connected
Yellow: Main Board

If pressed for 5 sec., the MENU-1 appears.

If pressed for 5 sec., Temperature Setting Menu appears.

If the R and SET buttons are pressed for 5 seconds, the MENU-2 appears.

- Cooling (compressor) runs when the enclosure internal temperature is higher than SET value + Hysteresis value.
- When the internal temperature of the cabinet reaches the SET value, the cooling (compressor) stops.

Our air conditioners
have a three-sensor monitoring system.

SB1 Environment Sensor:

Measures the air absorbed through the enclosure and allows the compressor to operate up to the set temperature. Cooling stops when the set temperature is detected in the environment sensor. When the set point + 4° difference is detected, the compressor is activated again and cooling starts.

SB2 Condanser Sensor:

The enclosure cooling system continuously checks the condenser surface by measuring it. Dusting on the condenser surface or if there is an extreme increase in outdoor temperature and the unit surface temperature exceeds 75°C, the system will turns off cooling to protect the compressor. Automatically fix the error if the condenser surface drops below 75°C and the enclosure cooling system resumes normal operation.

SB3 Evaporator Sensor:

The control unit continuously checks the evaporator surface by measuring it. If there is dust on the evaporator surface or a problem with the fan and the unit surface temperature drops below 3°C, it stops cooling to protect the compressor.

SB-1
Environment Sensor

SB-3
Evaporator Sensor

CONTROL
UNIT

230 V. Energy → L
→ N
Compressor ← L
← N
Evap.Fan ← L
← N
FreeCool Fan ← L
← N
Alarm ← COM
(Dry Contact) ← NO
← NC

RS-485
Internal Sensor
Evoperator Sensor
Condanser Sensor
Exterior Sensor
Water Level Check
Door Switch
Display Socket
Ethernet

MENU-1

SET ALARM / **ALARM ON**	Indicates Alarm Active / Disabled Status.
LIMIT TEMP / **LIMIT ON**	Set Lower Lock Changes State. (Lock: 26 °C)
BUZZER TONE / **TONE ON**	Changes The Key Sound. On / Off
SERIAL NO / **EA15XXXXXX**	The serial number of the unit Appears
TEMP SYMBOL / **Celcius**	The temperature unit appears.
SET DEFAULT / **PRESS OK KEY**	Returns to Default Settings
RESTART SYS / **PRESS OK KEY**	Restarts the System.
EXIT / **PRESS OK KEY**	Exit

MENU-2

Changes Operating Mode.
Cabinet / FreeCool / Tem / Heater / Water

CHANGE MODE / **TEMP.MON.**

On Door Switch, Stop Evap Fan (ON)	**DOOR EVP STATUS**
Door Switch Relay, Open/Close NO/NC (OFF)	**DOOR SWIT STAT**
Hysteresis for Set Value (4 °C)	**HYSTERS**
Show EVAP Value on Main Screen (OFF)	**SHOW EVAP SENS**
Show Condenser Value on Main Screen (OFF)	**SHOW KOND SENS**
Sensors 2 and 3 are ON	**SENSOR CONTROL**
Create High Temperature Alarm (OFF)	**HIGH TEMP SET**
High Temperature Alarm Point (SET+20 °C)	**HIGH TEMP POINT**
Modbus Communication Rate (9600)	**MODBUS BAND**
Modbus ID Select (1)	**MODBUS ID**
Automatic Reset on Failure (ON)	**AUTORESET STATUS**
Setpoint in Freecool and Heater Mode	**FC SET VALUE**
Compressor Activates Manually	**SERVICE MODE**
Ethernet Mode (Online / Offline)	**ETHERNET MODE**

When Ethernet Mode is OFFLINE;
Ethernet can be used for Modbus TCP communication

Language
Türkçe/English/Deutch

SET LANGUAGE / **ENGLISH**

Exit **EXIT** / **PRESS OK KEY**

Important Note: Use the **SET** key to change the value while in the parameter.

Failure Messages

WATER SENSOR ERROR: Sensor Break / No Contact

FREECOOLING SENSOR ERROR: Break / No Contact

CONDANSER SENSOR ERROR: Break / No Contact

EVAP SENSOR ERROR: Sensor Break / No Contact

CABINET SENSOR ERROR: Sensor Break / No Contact

DOOR OPEN ERROR: Door Switch (NO)

CF FAILURE : Cooling Error, Gas Leakage or Compressor Failure

HTC Failure : High Condenser Surface Temperature (>72 °C)

HTP Failure : High Temperature (Set + High Temp.Point) °C

LTE Failure : Low Evaporator Surface Temperature (<3 °C)

WATER Failure: It occurs water contact + 1 minute

Failure Codes
Maintenance Warnings

Uludag Klima | Enclosure Coolers
The air conditioner provides information to the user before failure by the error codes. When you see an error code, please do maintenance care.

CF - ER1
No Cooling

When the compressor works for 10 min., if the evaparator sensor value does not decrease more than 3 °C from the value at which the compressor is activated, the error occurs. Alarm relay is activated, Compressor stops. Cooling Error, Gas Leakage or Compressor Failure.

HTC - ER2
Condanser Sensor Alarm

When the condenser sensor value exceeds 75 °C. Alarm relay is activated, Compressor stops.
Reasons:A) The condenser unit is extremely dusty, sufficient air cannot be passed through. Clean the condenser unit with compressed air.   B) Condenser fan is defective.

LTE - ER3
Evaporator Sensor Alarm

Evaporator Sensor Alarm occurs, when Evaporator sensor value falls below 3 °C. Alarm relay is activated, Compressor stops. **Reasons**: A) The evaporator unit is extremely dusty, sufficient air cannot be passed through. Clean the evaporator unit with compressed air.   **B)** The evaporator fan is defective.

HTP - ER4
High Temperature Alarm

This alarm occurs when the cabinet internal temperature is greater than the 'Set + High Temp Point' parameter. It notifies that the internal temperature of the cabinet exceeds the alarm level, the alarm relay is activated. HIGH TEMP SET and HIGH TEMP POINT parameters can be set at **MENU-2.**

DOOR - AIN
Door Open

Door open alarm. When this error occurs, compressor and fan. Check the door switch cables from the power connection terminal. If you have not connected a door switch, enter menu-2 with the SET and R keys and change the Door Switch Relay parameter NO/NC.

OFF
StandBy / OFF Mode

If the Reset (R) button is pressed for 3 seconds, the device goes to OFF mode. If the Reset (R) button is pressed for 3 seconds while OFF is written on the display, the unit goes back into operating mode.

SB
Sensor Break / No Contact

Appears when there is a break or contact problem in the sensors.
SB-1 (Cabinet), **SB-2** (Condanser), **SB-3** (Evaporator).
Check the sensor connections on the electronic card.

Maintenance Manuel
Cleaning Steps

15-day period of your device in the condenser, evaporator maintenance has to be made in annual periods. Depending on the situation of environmental pollution, you must specify the period. (May extend or decrease)
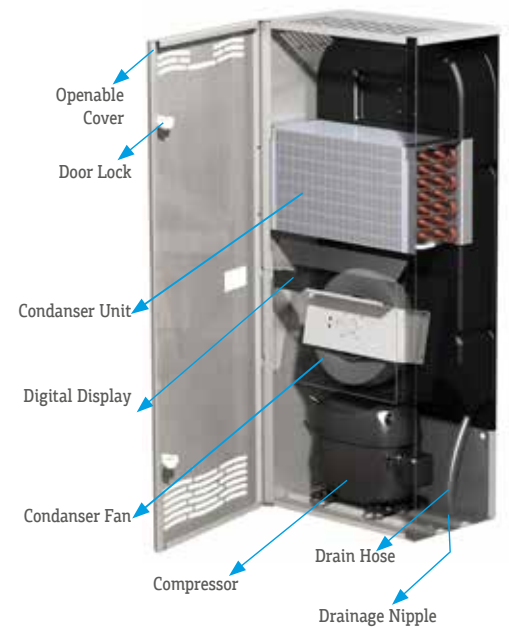
Condanser **Maintenance**

1- Turn off the power of the unit and open the front cover.

2- Clean the oil, dirt, dust etc. adhered to the condanser with compressed air. (Dirty inadequate heat transfer from the condenser, short-term failure of the device and high causes energy consumption. If it cannot be cleaned by air, use cleaning chemical such as solvent).

3- Clean the dirt on fan blades. (Causes to fan balance and to fail in a short time)

4- Check the drainage hose. If there is a breakage or blockage, remove it. (Otherwise there is a possibility of condensation water splashing into the cabinet)

5- Check the electrical connection cables (wear, friction, dislocation, causes malfunction of the unit)

6- Check the thermostat settings of the A/C. Make sure that it is within the set values recommended by the manufacturer. (34 ℃ - 38 ℃). Setting the inside of the enclosure too low will cause unnecessary energy consumption.

7- After making sure that the cover of the A/C is closed, turn on the energy. (If the cover is open, the unit doesn't work efficiently and cause accidents.)

Not: For "**Er2**" or "**HTC**" messages, do condenser maintenance.
Compressor and Condenser fan run at the same time. Make sure the condenser fan is turning while the compressor is working.

Openable Cover
Door Lock
Condanser Unit
Digital Display
Condanser Fan
Compressor
Drain Hose
Drainage Nipple

Evaporator **Maintenance**

1- Turn off the power of the unit, the vertical air conditioning units located above or behind the removed bolts and disconnect the fan iron.
2- The evaporator fan motor is stuck at the bottom of the oil, dirt, dust, etc. cleaned with compressed air.
3- The dirt on fan blades clean. In a short time to balance the fan and cause it to fail.
4- Evaporator pollution situation, the worse you think you can use a chemical cleaner. (Pour water to evaporator pan and, followed by water to make sure not clogged drain lines)
5- Check the electrical connection cable
6- Top / back to replace your metal. By making the final control device to give the energy
7- Check the thermostat settings for the device. In the heat value of the firm suggests that you pay attention to. (34 ° C - 38 ° C)
8- After making sure the lid closed, turn ON the A/C.

Not: For "**Er3**" or "**LTE**" messages, do evaporator maintenance. "
When the A/C is powered on, the internal EVAP fan operates regardless of temperature. Make sure the internal circulation fan is spinning.

Evap. Fan
Control Card
Fan Vent
Evaporator unit
Cold Air Blow
Screw Slot
Screw and Nut

GELECEĞİ
DÜŞÜNÜYORUZ
We think about
THE FUTURE

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