



Electric Combi Boiler User Manual



ÜNLÜSOY

Yapı Malzemeleri Sanayi ve Ticaret Ltd.
Pancar Organize Sanayi Bölgesi, 2. Etap No:2, Torbalı - İZMİR/TURKEY
Tel: +90 444 35 32, Fax: +90 232 469 2412
www.unmak.com



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This booklet covers:
ÜEK 9-12-18-24-30-36

INTRODUCTION



We would like to thank you for your choice of UNMAK brand, electric hot water combination boilers (electric boilers).

Please read the user manual carefully before installing and operating your product and keep the user manual for the duration of the product use. Do not touch or mix any part of the product except where permitted in the user manual.

The installation, maintenance and service of your device requires a specialized technical team.

These operating instructions and regulations must be observed in order to install the device, to select the location for installation, and to install the appliance.

Produced in different capacities from 9 kW to 36 kW, the heating elements on the Electric Combi boilers are arranged in sequence and each of them is activated gradually. Our combi boiler is designed for room thermostat use in order to benefit from energy savings. It is useful to use room thermostat for the lowest electricity consumption. Our electric boiler is an environmentally friendly device with small volume and high efficiency.

In our boilers with instant water heater, hot water supply has been provided with the application of plate heat exchanger and three-way valve system for the need of domestic hot water.

A leakage current relay is used in the electric boiler package, electrical installation, against electrical leakage. In case of any water leakage on the boiler and in case of electric leakage for any reason to the body, the combi is automatically deactivated by the leakage current relay.

The electric boiler water temperature is set on the electronic board according to the maximum 85 ° C. If the temperature increases as a result of any card failure, the safety thermostat on the electric combi boiler will cut off the system and stop the system in the range of 93 ° C - 95 ° C. There is also a 3 bar pressure sensor on the boiler. The mechanical safety valve is used as the second additional safety measure. This valve will protect the system by pushing out the excess water in the system due to overheating in the boiler or due to an excessive pressure in the first filling. It is appropriate to connect the hose coming out of the safety valve to any drain line.

The water level circuit is used in the boiler body in order to prevent water resistance of the heating elements on the boiler body. Control of waterless operation is done by electronic card. If the water level in the installation falls below the level of the sensor (mechanical pressure error), the boiler will be automatically deactivated. In this case, after the installation water temperature is reduced below 40 ° C, the boiler will start working again by adding 1.5 bar water to the installation.

During the first start-up and operation of the boiler, air may be generated at certain intervals. Automatic air separator is used at the top of the boiler in order to dispose of the generated air automatically.

With the closed expansion tank on the boiler, it is ensured that the installation works safely in a certain pressure range.

During the installation phase of the boiler you need to install electrical installations according to the recommended cable cross-sections. Cable sections and fuse amps are provided in the technical data sheet. On the main cable coming out from under the boiler body (Yellow-Green) the ground line is left. Be sure to connect the ground line.

The boiler is programmed to operate every 24 hours (Calcification, air etc.) even if the boiler is left in the combi-off position as long as there is a power supply.

UNMAK Electric combi boilers are hot water boilers with high efficiency and are designed to work only with electricity.

These devices are only used for heating of the heating system, not for use in direct water heating. The domestic hot water will only be as much as the amount of equipment supplied in the appliance. The energy required for domestic water will be taken from the energy of the device.



This product must be connected to the mains with the earth line and residual current relay!



Your user manual should be read carefully and stored with the associated warranty certificate for the life of the device.

SHIPPING and TRANSPORTATION

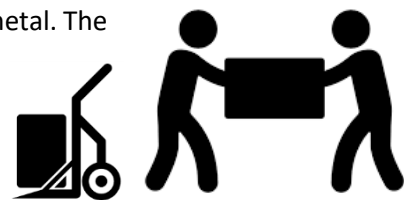
UNMAK electric combi boilers are manufactured from thick sheet metal. The devices are packaged in one piece. The device is delivered in a carton box with mounting brackets and apparatus for hanging.

In the box with the device, fuse box, leakage current relay, 2 pieces

$\frac{1}{2}$ " , non-asbestos gaskets for domestic water turns, 2 pieces $\frac{3}{4}$ " , non-asbestos gaskets for installation, 3 pieces of 8 triple screws and dowels.

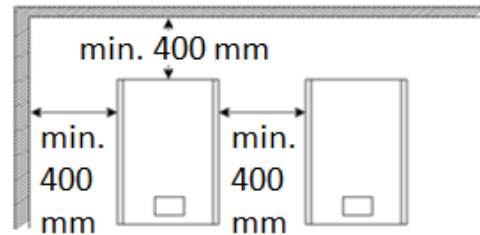
Safe transport of the product

Care should be taken when transporting the electrical boiler to the installation site. Therefore, it should be transported by two people or by means of suitable means of transport.





SELECTION OF INSTALLATION PLACE

Electric boilers do not require a chimney for installation, they can be installed in electrically suitable places. The minimum dimensions to be observed during installation are given in the figure below. If more than one combi boiler is connected, the space in which the boiler is installed must have sufficient free space for installation and maintenance of the boiler. For service needs, the heater must be far enough from the ceiling to be able to easily remove the heating elements. If a single boiler is used, it should be at least 40 cm from the wall and at least 30 cm from the ceiling. For the installation of two side-by-side combinations, the previous rule applies and in addition, the distance between the two coils must be at least 40 cm.



The base or wall where the boiler is to be placed must be flat and strong enough to carry the device. It should be hung to a stable and stable wall so that it does not come into the brick cavities. It should be ensured that the inlet and outlet pipes of the combi are connected as in the boiler connection diagram and there should be no water leakage. The connection of the phase and neutral inputs must be entered into the fuse and neutral terminal on the boiler as in the connection diagram. Phase and neutral inputs should be tightened too tightly and not loose. Combi and electrical connections must be made to qualified craftsmen. Safety fuse must be left within 50 cm to the side of the boiler.

 ***There should be no power line near the boiler, defective and suspicious for safety.***

 ***Leave enough space around the boiler for possible service intervention***

SAFETY PRECAUTIONS

The electrical installation of this product must be carried out by authorized personnel in accordance with the instructions given in this manual and the applicable local or national regulations.



THIS PRODUCT MUST BE EARTH!



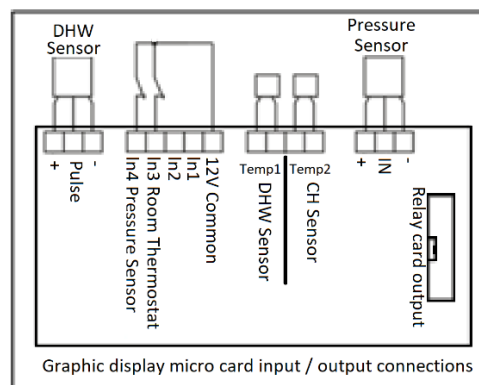
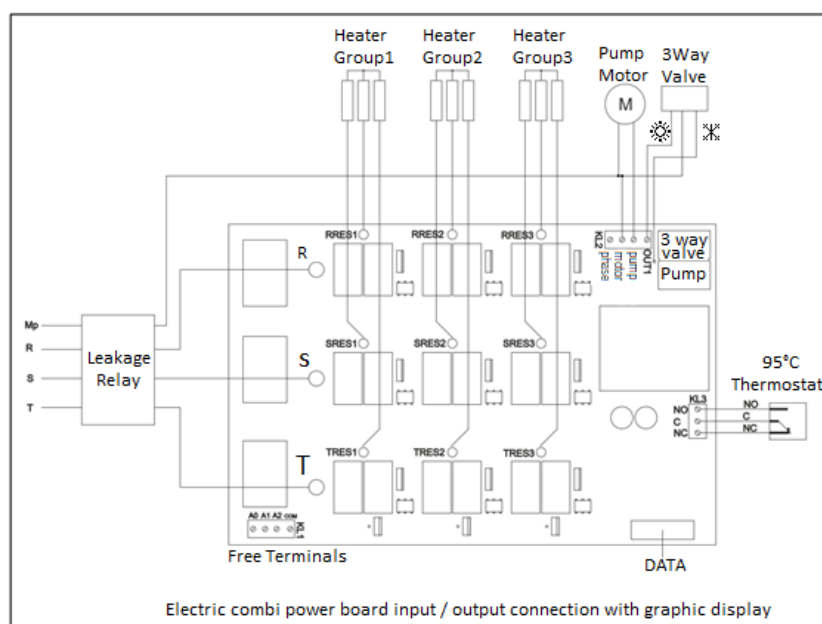
THIS PRODUCT MUST BE CONNECTED TO THE ELECTRICITY WITH A LEAD CURRENT RELAY!

The boiler must be connected to the electrical installation in accordance with the specifications in the manual and the relevant regulations.

The power source to which the boiler must be connected must be capable of feeding the boiler. To protect the appliance, the device must be connected to the power supply line (see TABLE I below) in proportion to the current of the device. The device must be connected to its own independent power line; the lighting should not be connected to the buzzer or the furnace line.

The protective grounding line must be connected to the exposed metal parts of the other devices in the installation location and to the local and national requirements for the grounding line to which the device is installed. To obtain maximum efficiency from the device, the shortest cable distance between the fuse board and the device must be used. Cable length is also important in terms of circuit break time and temperature limits. There is a maximum permissible cable length limitation in a line combination to be created for the current requirement, voltage drop and cable cross-section. If the cables are surrounded by thermal insulation, installed inside the wall, passed through a place with a temperature higher than 30 ° C or tied together, the amount of current passing through the cable is reduced. To achieve the same current values, a larger cable cross-section must be selected.

ELECTRIC INSTALLATION INSTRUCTIONS



THIS PRODUCT MUST BE EARTHED!



The boiler must be closed and should not be installed in living spaces.

COMBI FEATURES

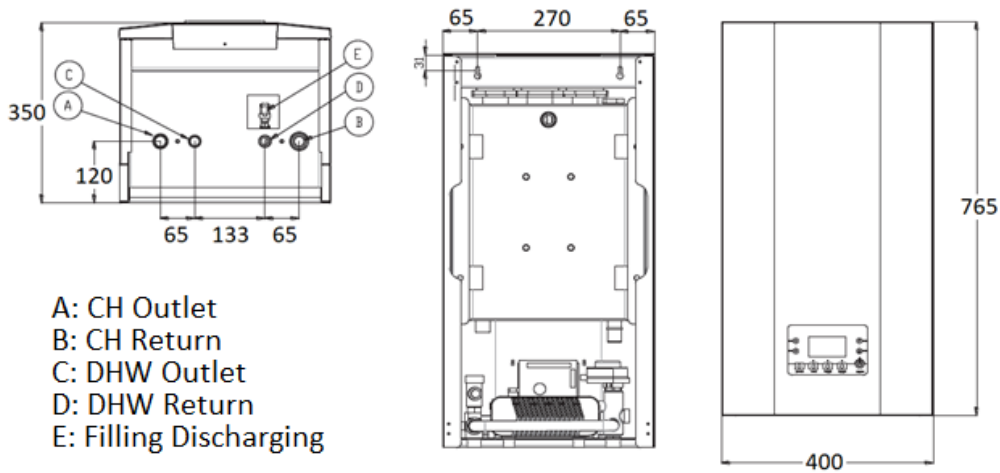


TABLE I: Cable cross-section areas and fuse power table according to the boiler powers

| MODEL | Power | | A | B | C | D | Cable Cross Section Area | Fuse Connection (A) | Voltage (V) |
|--------|-------|--------|----|----|----|----|--------------------------|---------------------|------------------|
| | kW | kcal/h | | | | | | | |
| ÜEK 9 | 9 | 7.740 | ¾" | ¾" | ½" | ½" | 3x10 | 63 | 230 Single Phase |
| ÜEK 12 | 12 | 10.320 | ¾" | ¾" | ½" | ½" | 4x6 | 25 | 400 Three Phase |
| ÜEK 18 | 18 | 15.480 | ¾" | ¾" | ½" | ½" | 4x6 | 40 | 400 Three Phase |
| ÜEK 24 | 24 | 20.640 | ¾" | ¾" | ½" | ½" | 4x6 | 63 | 400 Three Phase |
| ÜEK 30 | 30 | 25.800 | ¾" | ¾" | ½" | ½" | 4x10 | 63 | 400 Three Phase |
| ÜEK 36 | 36 | 30.960 | ¾" | ¾" | ½" | ½" | 4x10 | 63 | 400 Three Phase |

WARNINGS

Warning against Corrosion in Installation:

ÜNMAK electric combi boilers are extremely resistant to corrosion. However, all iron-based components in the heating installation (including installation pipes and radiators) must be protected against corrosion. Oxygen in the water is caused by oxidation of iron surfaces resulting in a loss of material and rust.

During the initial filling of the installation, the accumulated air must be evacuated. Usually, if the necessary precautions are taken after the first filling, there is no damage caused by the oxygen in the water. Oxidation is mostly caused by oxygen which is involved in the heating water during operation. Leaks in the system cause oxygen to be added to the heating water. Therefore, the lowest water pressure in the closed expansion tank system should be higher than the atmospheric pressure and the periodic control of the operating pressure is required.

Warning against Freeze Protection:

The heating installation must be completely isolated. The open areas of the installation should be isolated more than the interior parts.

Considerations in New Installations:

To minimize the addition of fresh water, system design and sizing should be done correctly. None of the materials used in the installation must have gas permeability. A maximum of 50 micron filters of synthetic or metal porous should be placed on the fresh water splice line. In systems with closed expansion tanks, the pressure must be above atmospheric pressure throughout the installation.

Important Considerations for Heating Systems Connected to Old Installations:

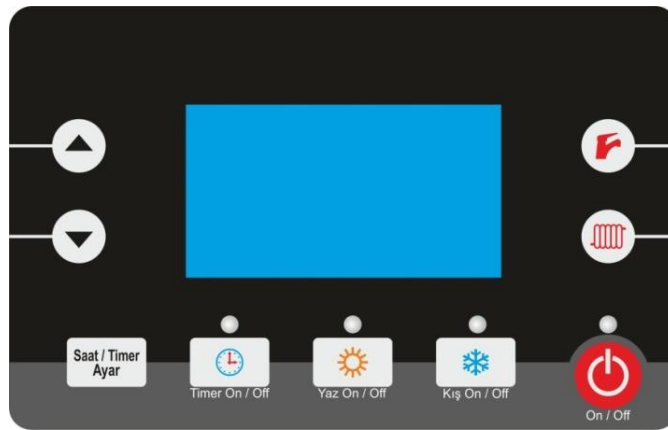
In a long-term heating system, a protective layer (black magnetite) is formed on metal surfaces in contact with water. When a new boiler is installed in the old system, the clean surfaces of the boiler will be the first place to start corrosion. Therefore, when a new boiler is connected to the old heating system, in addition to the measures to be taken for new systems, the following issues should be considered:

1. The old system must be thoroughly washed to remove debris and sediments from the boiler before it is connected.
2. A manual valve air separator must be installed at the top of the system.



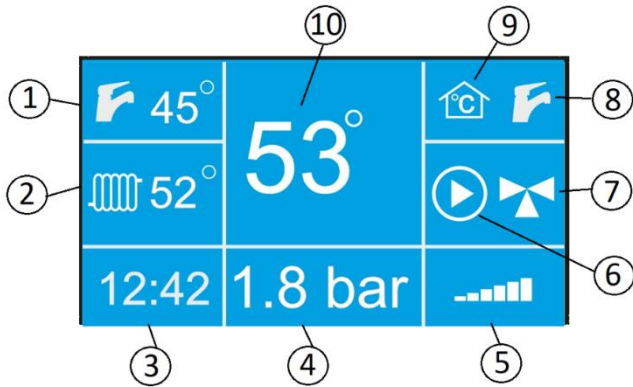
Before installing new equipment in the old heating installation, the installation must be washed several times with water.

CONTROL PANEL AND USER INTERFACE



Buttons and Descriptions

| | | |
|--|--|---|
| ON/OFF button | | Used to turn the device on and off. If you hold down this button for 4 seconds, the device is completely closed. Pressing the button again opens the device. |
| (+) (-) button | | It is used to decrease and increase the values in the new value input to the device. |
| Timer On/Off | | It is used to activate or deactivate the timer of the device. |
| Summer On/Off | | Used to operate the device in summer mode. When the button is pressed, the lamp on it is lit and the device is switched to summer mode. Puts the three-way valve into the summer position. When the tap is opened, it starts heating by gradually opening the heaters. During operation, heating is performed according to summer mode temperature set point. |
| Winter On/Off | | Used to operate the device in winter mode. When the button is pressed, the lamp on it switches to winter mode. Three-way valve takes the position of winter. It starts heating by gradually opening the heaters. During operation, heating is performed according to the winter mode temperature set point. |
| Domestic Hot Water Temperature Setting | | The temperature set values that you want the device to warm up for hot water are entered with these keys. After entering the desired value, press the up / down button to enter the value. Press the same key again to confirm the value. (The device automatically acknowledges itself if 5 seconds are left without pressing the keys). |
| Central Heating Temperature Setting | | For radiators, the temperature set values that you want the device to warm up are entered with these keys. After entering the desired value, press the up / down button to enter the value. Press the same key again to confirm the value. (The device automatically acknowledges itself if 5 seconds are left without pressing the keys). |



- 1- Summer mode set point
- 2- Winter mode set point
- 3- Clock
- 4- Pressure in the device

- 5- Operating heater stages
- 6- Pump working
- 7- Three way valve is open
- 8- DHW is open



- 9- Room thermostat is active
- 10- Water temp. in the device


START-UP


Check the electrical connections before the boiler is switched on for the first time. Check the cable cross sections and fuses that are suitable for the boiler (see Table I).

Check the boiler water level and pressure, check all connections and pipes for leaks. Do not add water if the boiler is cold.



To operate in winter;


Press the button  to set the desired temperature with  the button. The temperature you set will self-record after 5 s.

Press the button  to start the operation of the device. When the winter mode button is active, the led light will be on.

You can also adjust the operating temperature by pressing the button , you can get hot water when the tap is opened even if the appliance is in winter mode.

To operate in summer;

Press the button  to set the desired temperature with the buttons . The temperature you set will self-record after 5 s.



Press the button to start the operation of the device. When the summer mode button is active, the led light will light up.

The boiler pump will not operate while operating in summer mode. If there is a need for domestic hot water, the device and the pump will be activated.

Room Thermostat Input

There is a room thermostat input on the device to provide control from the building's heated room. If the room thermostat is connected to this input, the device will automatically switch on and off according to the temperature value at which the thermostat is set.

If the room thermostat is not used, this input of the device must be bridged.

TIMER AND CLOCK SETTINGS


To set the timer and clock, the device is switched off (display is turned ON and WINTER mode is off);









CLOCK SETTING
 TIMER SETTING
 TIMER DELETE

Press the button , menu will be appear.


To set the time;

By selecting CLOCK SET in the menu, press  button.

By setting   buttons, confirm with button 




By setting minutes   buttons, confirm with button 




To enter timer values;


Set TIMER from the menu and press  button.

Displays;

TIMER SET:1
 open close
 00:00 00:00
 Degree: 40

Timer menu. Then you can enter the values by using   buttons. (5 different timer values can be entered) and confirm  button.




Press the buttons   again to set ON, OFF and Degree. Confirm with the button .

To exit the menu, press  button.




Sample setting:

| TIMER SET:1 | | TIMER SET:2 | | TIMER SET:3 | |
|-------------|-------|-------------|-------|-------------|-------|
| open | close | open | close | open | close |
| 17:30 | 23:00 | 23:01 | 05:00 | 05:01 | 06:30 |
| Degree: 60 | | Degree: 40 | | Degree: 70 | |

In the introduction; The boiler will be switched on at 60 °C at 17:30, the boiler will start at 40 °C at 23: 01 and at 05: 01 it will turn to 70 °C and shut off at 06:30.

To delete the entered Timer values, select the TIMER DEL  button in the menu and press the  button. From the incoming screen, select YES  and press. All timer set values will be deleted.

To operate timer;

If you have set timer times from the Timer menu, press the  button to operate them. If the current time is in one of the timer range values you set,  the button will start to light in the timer mode and  the timer will start to flash.

Press  the button or  button to cancel the timer operation.

CARE AND BOILER CLEANING

Regular maintenance is required by expert teams according to the manufacturer's instructions for the efficient operation of your system.

Regular checks:

- The water level must always be checked. The pressure gauge must be marked after the first filling of the system. When the water is cold, the water pressure level should be checked. If the water level or pressure has fallen below the static pressure or system setting, water should be added to the system (when the appliance is cold). To protect the system and the device from corrosion, the water to be fed into the system must be softened according to local settings.
- Check the electrical cables for wear, peeling, or a problem due to external influences.

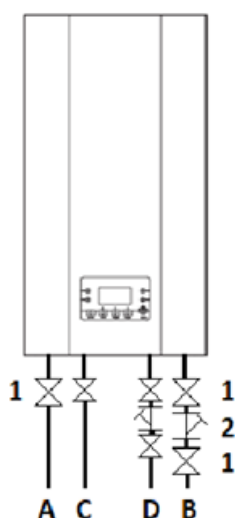
Cleaning the appliance:

- The outer skin panels of the device can be cleaned as required.

Maintenance:

Contracted service of the system before each working season; we strongly recommend that you call our authorized service to check the device, installation, electrical connections. Do not do any maintenance work without the help of an expert. At least once a year the authorized service must be checked and maintained. In electrical devices, loosening of connection points can occur over time. In order to avoid any problems, it is appropriate to carry out the aforementioned checks.

ASSEMBLY



- A: CH Outlet ($\frac{3}{4}$ ")
 B: CH Return ($\frac{3}{4}$ ")
 C: DHW Outlet ($\frac{1}{2}$ ")
 D: GHW Return ($\frac{1}{2}$ ")
 1: Ball Valve
 2: Filter

The boiler must be placed in a protected place against freezing. Precautions should be taken to prevent water from freezing, especially if it is not used for a long time in cold areas.

If the mains water is higher than 6 bar, pressure regulator must be placed in the domestic water inlet. If the water pressure of the domestic water is less than 0.8 bar, the pressure will not be sufficient.

It is compulsory to place a dirt trap (filter) at the entrance of the combi boiler from the radiators. The strainer will prolong the life of the combi boiler because it will hold possible particles that may come into the combi parts from the radiators.

INFORMATION ON USAGE ERRORS

| PROBLEM | CAUSE | SOLUTION |
|---|--|--|
| Insufficient heating | <ul style="list-style-type: none"> One of the electrical resistors may be burned or disabled. Pump may not be running Insufficiency of insulation | <ul style="list-style-type: none"> Call for service to check the resistance and connections. Call for service, check that the fuse of the appliance has been blown. Make sure there is electricity in the system. Increase the heat insulation of the space where the boiler is installed |
| Warming of radiators | <ul style="list-style-type: none"> Air in the radiator | <ul style="list-style-type: none"> Ventilate from radiator purifiers. Make sure that the automatic valve plug is not tightened. |
| Temperature sensor error (Heating installation) | <ul style="list-style-type: none"> The temperature sensor may be faulty or there may be a problem with the connections. | <ul style="list-style-type: none"> Check that the cable lugs are attached by disconnecting the power to the appliance. Call service |
| Temperature sensor error (domestic water) | <ul style="list-style-type: none"> The temperature sensor may be faulty or there may be a problem with the connections. | <ul style="list-style-type: none"> Check that the cable lugs are attached by disconnecting the power to the appliance. Call service |
| Mechanical pressure error | <ul style="list-style-type: none"> The pressure sensor may be faulty or have problems with the connections. | <ul style="list-style-type: none"> Check that the cable lugs are attached by disconnecting the power to the appliance. Call service |
| Excess heat error | <ul style="list-style-type: none"> The device water temperature may be over 85 °C or higher. | <ul style="list-style-type: none"> Wait for the temperature to decrease. Never cut off power to the device. |
| High pressure error | <ul style="list-style-type: none"> The water pressure inside the device is too high. | <ul style="list-style-type: none"> Drain the appropriate amount of water from the filling drain valve by observing the pressure in the manometer. |
| Low pressure error | <ul style="list-style-type: none"> The water pressure inside the device is too low. | <ul style="list-style-type: none"> Add the appropriate amount of water from the filling drain valve by observing the pressure in the manometer. |

ÜNLÜSOY YAPI MALZEMELERİ SANAYİ ve TİCARET LTD.

Pancar Organize Sanayi Bölgesi, 2. Etap No:2, Torbalı – İZMİR/TURKEY

Tel: +90 444 35 32, Fax: +90232 469 2412

www.unmak.com



ÜNLÜSOY YAPI MALZEMELERİ SANAYİ VE TİCARET LİMİTED ŞİRKETİ

İzmir Pancar Organize Sanayi Bölgesi,
10. Cadde, No:2, Torbalı – İZMİR/TURKEY

Tel: +90 444 35 32

www.unmak.com