

OPERATING INSTRUCTIONS (BAIN MARIES / HOT CUPBOARDS)



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1

Instructions for safe operation



This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.

- Children shall not play with the appliance

- Cleaning and user maintenance shall not be made by children without supervision



This appliance is in compliance with the 2002/95/EC, 2003/108/EC (RoHS) and 2002/96/EC (WEEE) directives and all their following amendments.

The appliance is supplied with a power cord. Remove it and connect it to the suitable power outlet.



Models MxV718, MIVxxx, MHVxxx, MJVxxx, MQVxxx this must be done by a qualified technician.



The power socket that your appliance will be connected must be provided with ground.



Models MFV718, MVV718 and MDV718 must be connected directly on 25A switch.

Models MIVxxx, MJVxxx, MQXxxx, MHVxxx must be connected with a three-phase switch or suitable switch.



If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

To protect against electrical leakage of other devices, bain maries are fitted with an equipotential connection in the side, marked by the symbol:

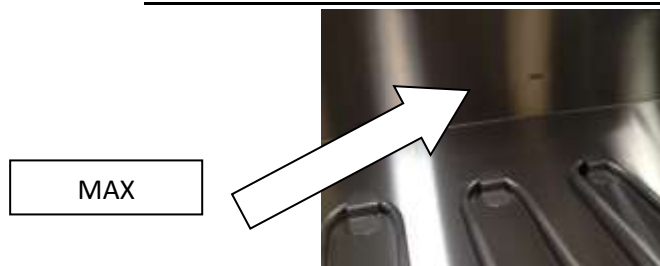


Models MF, MD, MV, MR, MI, MH, MJ and MQ are provided with a check valve before its discharge for connection to the water supply network system with maximum pressure 2000KPa.



Check that the water drain release is taped before filling up with water. The maximum water level allowed is signed inside the basin to all bain marie models.

The water level must not exceed the level indicator.



Never leave the appliance on without water!



In Bain Maries, check frequently that the heating resistance is covered completely with water. If the water is evaporated, the thermostat will indicate “ALE”, the buzzer will sound and the power will be cut off the resistance. In case you notice the opposite, do not add water while the appliance works, because the resistance can be damaged. Switch off the appliance and pour water after the heating resistance becomes cold.

2

Cleaning



Before cleaning, always disconnect the plug from the electrical supply.



For correct operation and protection of your appliance, **frequent cleaning** is recommended.

Do **not use sharp** or other similar objects which may damage your appliance.



Clean the inside and outside surfaces with a **mild soap** solution.

Do not use detergents or substances based on chlorine or acid solvents. These may cause corrosion of stainless steel surfaces.



Never clean the appliance with jets of water, whether direct or pressurized.

Periodically clean the bain marie resistance of the appliance using anti-calc powder, Otherwise the efficiency of the resistance will eventually decrease.

3

Maintenance



Before maintenance, always disconnect the plug from the electrical supply.

Check periodically the correct operation of the thermostats. Signs of boiling water in the basin means excessive temperature rise. Disconnect the device from the power supply and contact a **qualified technician**.



The device has not serviceable parts. For any problem contact a qualified technician.

4

Troubleshooting

In case of malfunction, contact the distributor of our company describing the problem, denoting the model and the serial number (S/N) of your appliance.

The identification tag bearing the technical characteristics of the device is located inside the device.



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Introduction

Thank you for purchasing this device. Selecting this device, you have chosen all the advantages of heating technology that can guarantee you quality, durability and reliability.

To familiarize yourself with all the features of your new appliance, please read carefully this manual.

We hope you will be satisfied with your new appliance.

Please retain this manual for use and installation. In case the device is sold to another owner, please accompany it with this manual.

6

Read carefully the following instructions before use

The appliance is used to preserve products to the suitable temperature by heating water in a waterproof basin, above which we place food containers. The water is heated via a resistance controlled by a thermostat. The bain-marie appliance can either be portable or based on neutral or heated cupboards, with or without display case.

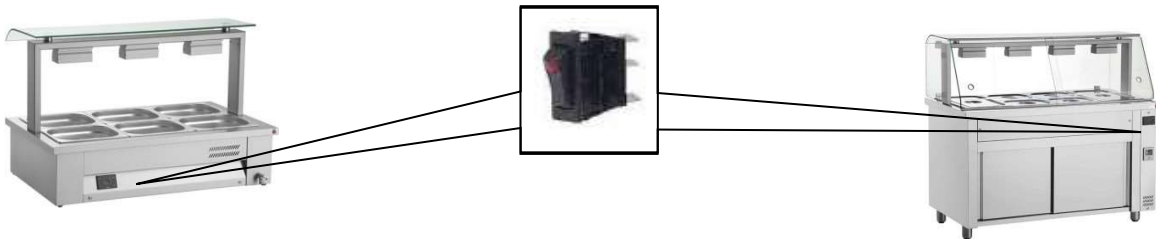
7

Starting Up

Press the on/off switch on the thermostat continuously. The thermostat will perform a self-check for a few seconds (countdown).



To turn on the lamp, use the switch to the right of the thermostat.



8

Turning the appliance off for long periods of time

In case turning the appliance off for long periods of time is required:

- ✓ Turn the appliance off.
- ✓ Disconnect from the electrical supply.
- ✓ Empty the appliance and clean it as indicated above.
- ✓ In case of spots or food rests wash with hot water before they get too hard to be washed out.

ATTENTION

Firmware V1

Read carefully these instructions before installing and using this device and keep them for future reference. Attention to installation and electrical wiring. Use this device only as described in this document and never use itself as a security device. The device must be disposed of in accordance with local standards for the collection of electrical and electronic equipment.



DESCRIPTION

LRB is a heating controller for heated cupboards and Bain-marie, suitable for all applications and has the following specifications: one NTC/PTC temperature sensor which controls the room temperature; 3 indication digits with resolution 0.5°C and 4 buttons; one digital input for water level control; a buzzer in case of an alarm; 2 relays: external resistance relay 30A 250VAC which is restrained on the plastic box of the controller with a holding frame and one ON/OFF relay 10A 250VAC.

THERMOSTAT'S DIMENSIONS

ATTENTION: Read carefully the technical specifications and make sure that the working conditions are appropriate. According to safety standards, the device must be fastened in such a way that it cannot be removed without the use of tools.



Dimensions are in mm. The device is mounted in panel hole 29x71mm and it is restrained with plastic side brackets.



INDICATIONS AND BUTTONS FUNCTION

Display indications	
	resistance ON
	fan ON
	alarm ON
	malfunction ON



Keyboard	
	enter/exit the parameter's menu confirm new value of a parameter
	display the parameter's value
	down arrow mute buzzer ON/OFF cabinet
	up arrow

For more indications regarding the alarms please see the alarm's table at page 2.

ADJUSTING ROOM'S TEMPERATURE – SET POINT

1. Press to display the first parameter **SPo**.
2. Press to display its value. With or change its value.
3. Press to save the new value. The cabinet is working properly with the new adjustment.


INDUSTRIAL FACTORY SETTINGS OF CABINET

If the alarm "**Pro**" appears on screen, please enter one of the following programs based on your cabinet's model:

1. Choose from the following table the corresponding program of your cabinet.
2. Press to display the first parameter **SPo**. Press once and the parameter **Cod** is displayed.
3. Press to display its value and press to enter the cabinet's program. Press to store the cabinet's program to parameter Cod.
4. Press again to exit the parameter menu. All appropriate settings are now stored and the cabinet is working properly.

Cabinet's model	Program
Bain-Marie (without water level sensor)	31
Heated Cupboard	32
Bain-Marie (with water level sensor)	33
Startup program	40

ON/OFF THERMOSTAT










- Press for 3 seconds  to activate or deactivate the cabinet.

WATER LEVEL CONTROL

When the water level of the cupboard drops below the electrode, the resistance relay switches OFF, the buzzers is activated and the alarm "ALE" appears on screen. Only when water is added and reaches the desired level, the alarm "ALE" disappears and the resistance relay switches ON based on the SPo.

PROGRAMMING A PARAMETER

ATTENTION: to gain full access to the parameter's menu, the 2nd parameter **Cod** must be adjusted to 22 (see parameter table page 2).

- Press  to enter the parameter menu.
- Choose the parameter you want to adjust by pressing  or  and press  to display its value.
- Press  or  to change its value and then press  to store the new value.
Press  if you want to cancel the new value and the parameter's name is displayed.
- Press  to exit the parameter menu.

TECHNICAL SPECIFICATIONS OF THE THERMOSTAT

Power supply: 230VAC 50/60Hz / Maximum power consumption: 3W

It is recommended using a power supply safety fuse: 0.5A (not included)

Room and evaporator temperature sensors NTC 10K 1% 25°C IP68 with rubber tube and temperature range -37÷+110°C (-34÷+230°F) or PTC 1K 25°C with metal tube and temperature range -50÷+110°C (-58÷+230°F) / Accuracy: ±0.5°C

Digital input for water level control / Alarm buzzer

2 relays: external resistance relay 30A res. 250VAC normally open contact / relay 10A res. normally open contact / Max current load 16A

Connections: cable cross section 2.5 mm² for all relays / cable cross section from 0.25 to 1.0 mm² for the sensor

Connections with terminal blocks using cable with cable cross section up to 2.5 mm² / It is recommended using a torque wrench with maximum torque 0.4Nm

Operating temperature: -15÷+55°C / Storage temperature: -20÷+80°C

Dimensions front 79x36mm and depth 79mm / Protection IP 65 front

The device is mounted on panel hole 29x71mm and it is restrained with plastic side brackets.

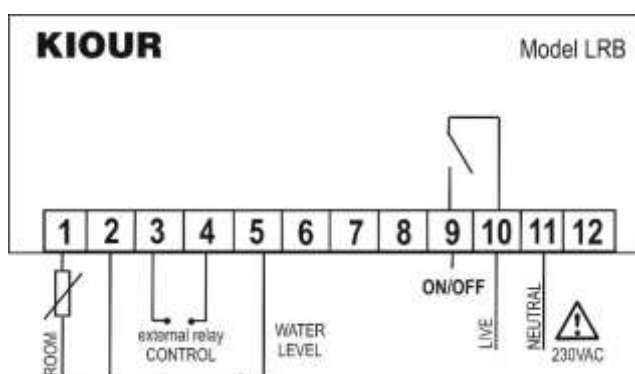
Firmware: V1

ELECTRICAL DIAGRAMS

ATTENTION: according to safety standards, the device must be properly positioned and protected from any contact with electrical parts. The device must be fastened in such a way that it cannot be removed without the use of tools. Disconnect the main safety switch of the installation before proceeding to any maintenance. Disconnect the power supply of the device before proceeding to any maintenance. Do not place the device near heat sources, equipment containing strong magnets, in areas affected by direct sunlight or rain. Prevent electrostatic discharges and sharp objects from been inserted to the device. Separate signal cables from power supply cables to prevent electromagnetic disorders. Signal cables must never be in the same pipe with the power supply cables.



Thermostat LRB



PARAMETER TABLE

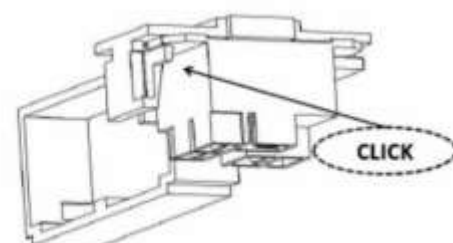
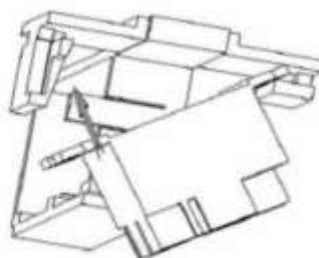
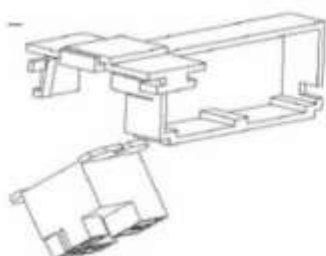
No	Code	description	min	max	UOM	INDUSTRIAL FACTORY SETTINGS			
						Bain-Marie (without water level sensor)	Heated Cupboard	Bain-Marie (with water level sensor)	Startup program
						Program 31	Program 32	Program 33	Program 40
1	SPo	SET POINT: room temperature setting	SLo	SHi	°C/°F	75	70	75	10
2	Cod	Access code to the following parameters Cod = 22.	0	255	-	22	22	22	22
3	SLo	Lower setting limit of SPo	-50.0	SHi	°C/°F	25	25	25	10
4	SHi	Maximum setting limit of SPo	SLo	150	°C/°F	90	72	90	90
5	diF	Differential of room temperature SPo (thermostat delay)	0.1	25.5	°C/°F	5	3	5	5
6	AJ1	Room sensor offset	-9.9	15.5	°C/°F	0	3	0	0
7	LAo	Relay ON/OFF operation and fan indication on screen 0 = relay ON and fan indication turns ON 1 = relay OFF and fan indication turns OFF	0	1	-	1	0	1	0
8	dEC	Temperature indication in integer or decimal form 0 = integer display 1 = decimal display	0	1	-	0	0	0	0
9	Sen	Sensor type NTC/PTC 0 = PTC 1 = NTC	0	1	-	0	0	0	0
10	C_F	Temperature measurement unit: toggling between °C/°F do not adjust the SPo automatically, it must be changed by the user 0 = °C 1 = °F	0	1	-	0	0	0	0
11	AtE	Water level control 0 = OFF 1 = ON	0	1	-	0	0	1	0
12	Pro	Cabinet's program is displayed (industrial factory settings) – the parameter cannot be programmed	-	-	-	31	32	33	40

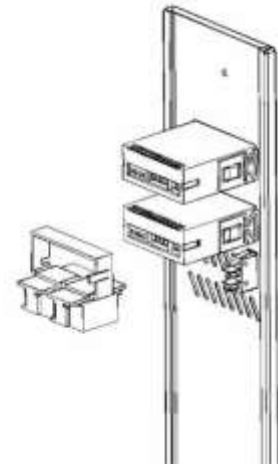
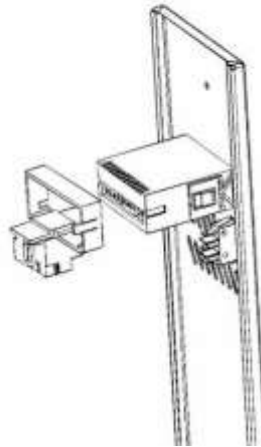
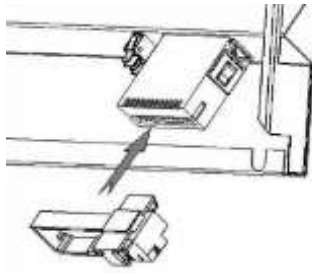
ALARM TABLE

1	LF1	Room sensor malfunction
2	ALE	Low water level alarm: the heating relay is switched OFF (see WATER LEVEL CONTROL page 2)
3	Pro	Enter program alarm: enter a program based on your cabinet model (see INDUSTRIAL FACTORY SETTINGS OF CABINET page 1)
4	EEr	Error in memory RAM: re-enter the SPo of the cabinet (see ADJUSTING ROOM'S TEMPERATURE – SET POINT page 1)
The alarms are automatically deactivated once the cause of the alarm disappears.		

RELAY HOLDING COMPONENTS

The relay holding components consist of a plastic frame and a plastic base restraint. Three relays can be restrained on the frame simultaneously. The relay is secured over the frame with the help of the restraint and then the frame is secured over the controller's shell. The connections of the relay should be facing down to be protected from falling liquid, as in the following pictures.





ELECTRICAL DIAGRAMS

Table B-M without glass

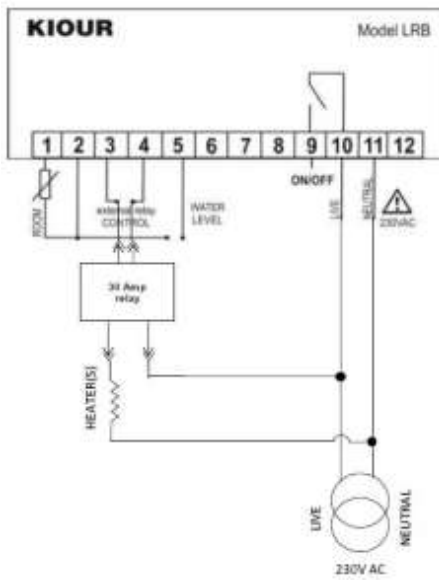
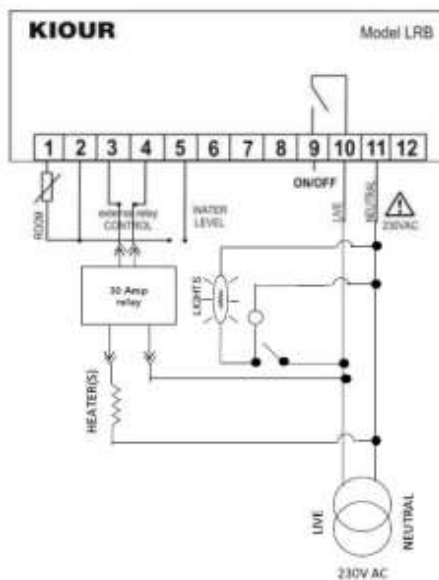
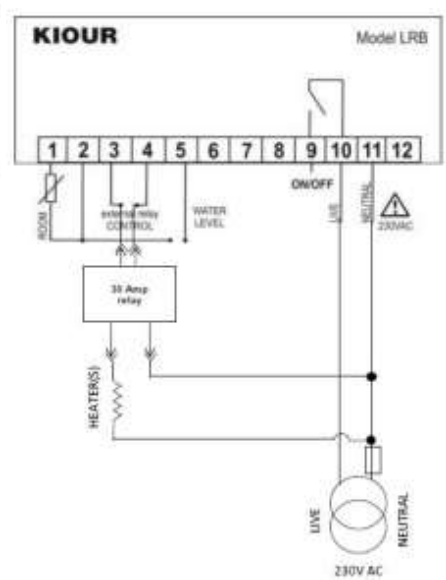


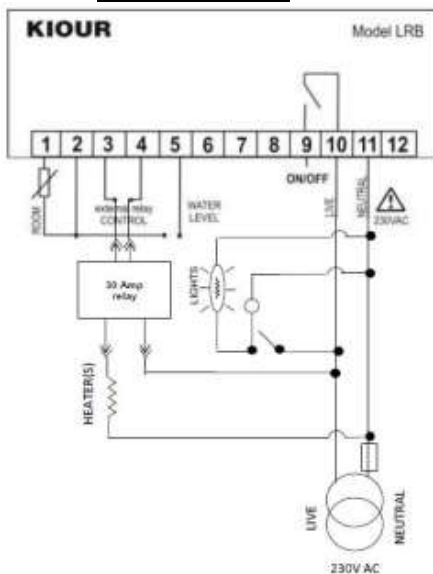
Table B-M with glass



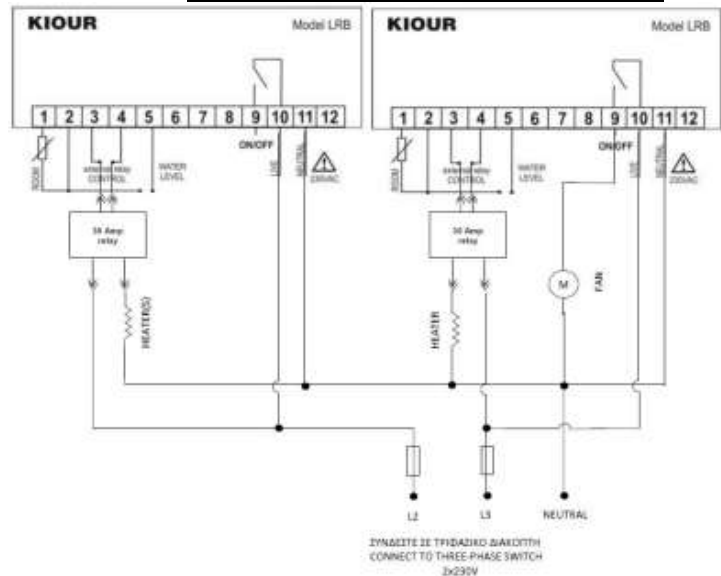
Floor B-M without glass



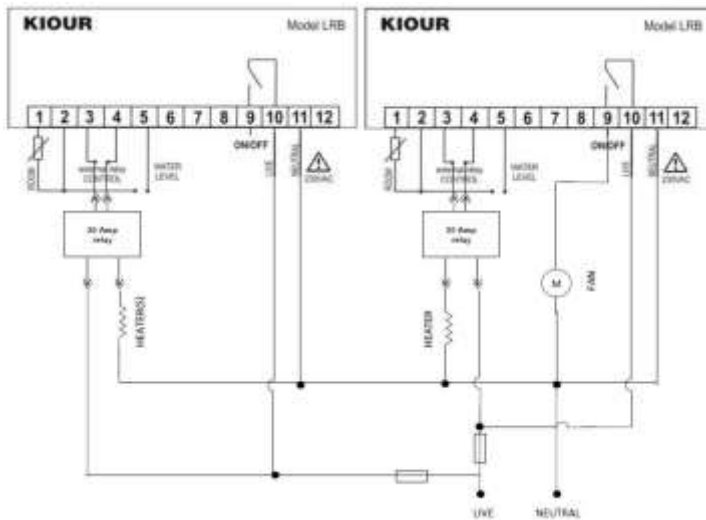
Floor B-M with glass



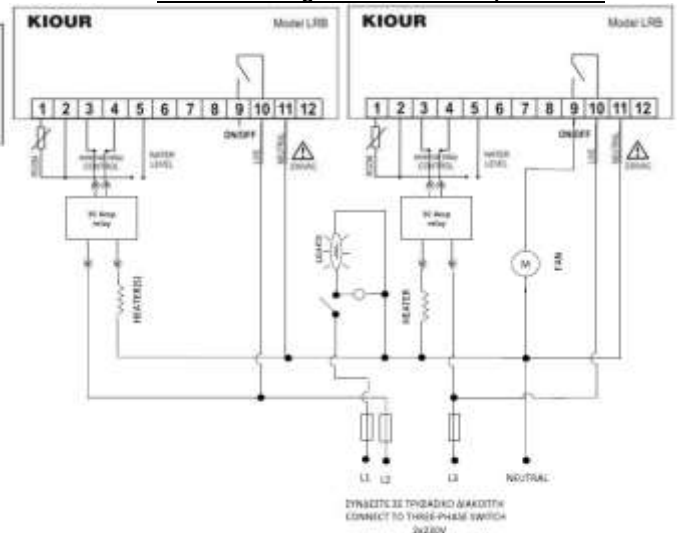
Floor B-M without glass with heated cupboard 3PH



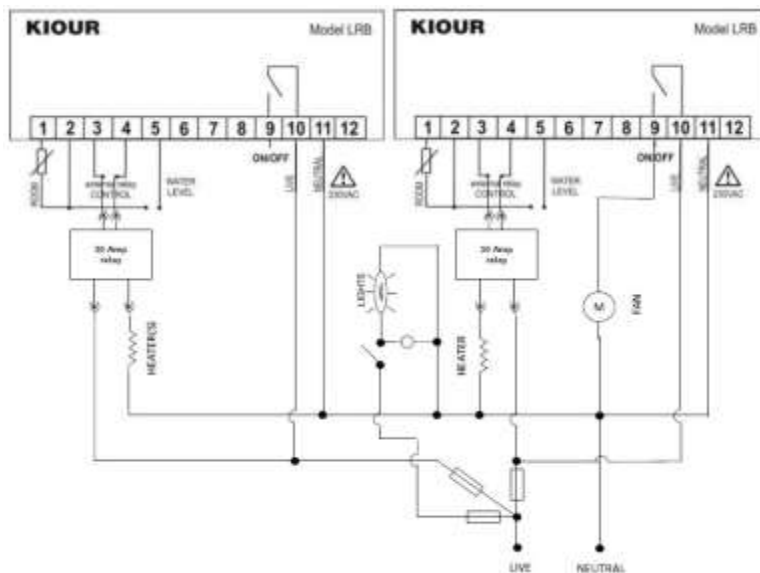
Floor B-M without glass with heated cupboard 1PH



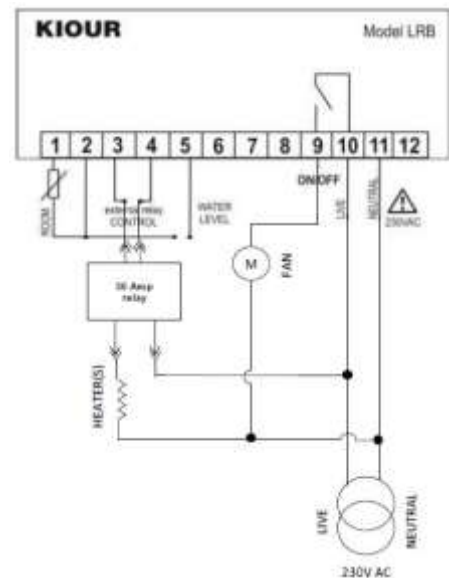
Floor M-M with glass with heated cupboard 3PH



Floor B-M with glass with heated cupboard 1PH



Heated cupboard



Made in Greece.

The device is under two year's guarantee. The guarantee is valid only if the manual instructions have been applied. The control and service of the device must be done by an authorized technician. The guarantee covers only the replacement or the service of the device. KIOUR preserves the right to adjust its products without further notice.

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