



IKOLINE ceiling infra-red electric heaters operation manual

The product is certified
CERTIFICATE OF CONFORMITY
No ROSS RU.ME79.B01369



ME79

ZAO "IKOLINE", Zheleznodorozhny, 2010.

ATTENTION!!!

READ THE OPERATION MANUAL THOROUGHLY BEFORE USING OF THE HEATERS.

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1. INTRODUCTION

Dear Ladies and Gentlemen!

We congratulate you on a happy choice of ecologically clean, super economic IKOLINE heater. We hope that it will please you, successfully having fitted in an interior of any premise, it will create a cosiness and comfort, and it will impart warmth to any cold like sun rays. This is achieved through the characteristics of the heater mentioned below.

Thermal rays of the heater heat up a floor and objects from which air is heated up in its turn. Rising to a ceiling, it gradually cools down, thus at a height of a head of a standing man the temperature of air turns out to be by 1-2°C below floor temperature. The surface of a plate faced to a floor heats up to 200°C depending on a model of the heater. At such temperature of 90 % of energy is transformed to a stream of the thermal beams diverging from a plate to a floor and objects being on it, and only 10 % of energy goes to direct heating of air touching a plate.

Heaters of IKO-06, IKO-10, IKO-13, IKO-22, IKO-33, models and their modifications are intended for heating of residential, office, administration, production premises and local working areas. For operation of heaters with a maximum of efficiency it is necessary to carry out selection of capacity for operation of the heaters on the basis of results of thermo technical calculation. Such calculation is carried out by the Seller free of charge according to the data on the premises stated by the Buyer in the questionnaire.

2. TECHNICAL DATA

Technical data on the model of heaters of “household IkoLine” (table No 1), “industrial IkoLine” (table No 2), “IkoLine for suspended ceilings of “Armstrong” type (table No 3) series are listed below.

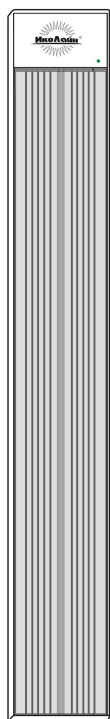


Table 1

Model	IKO-06	IKO -10	IKO -13
Power (W)	650	1100	1400
Voltage (V)	230	230	230
Current (A)	3,0	4,8	6,1
Overall dimensions (mm)	1000/160/40	1500/160/40	1500/160/40
Weight (kg)	3,9	4,7	4,7
Minimum height of suspension * (m)	2,8	3,1	3,1

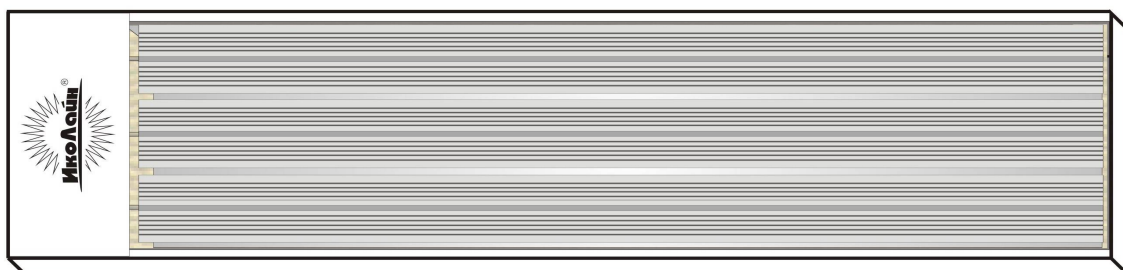


Table 2

Model	IKO -22	IKO -33
Power (W)	2200	3300
Voltage (V)	230	400
Current (A)	9,6	14,4
Overall dimensions (mm)	1520/298/46(75)	1520/438/46(90)
Weight (kg)	11	15
Minimum height of suspension * (m)	3,7	4,2

3. SCOPE OF DELIVERY

Model	IKO -06, IKO -10, IKO -13	IKO-22, IKO-33
Self-tapping screw with a drill 3.5 x 9.5	2	---
Self-tapping screw with pressure pad 4.2 x32	4	---
Dowel 6x30	4	---
Anchor 8x45 (8x40)	---	4
Mounting bracket	4	---
Heater	1	1
The complete set for wall mounting	---	---
Manual (Product's Certificate)	1	1

*- Optional

4. SAFETY MEASURES

The distance to heated objects should be not less than 0.5 m.

Use the heater only for its intended purpose.

Do not touch a heat-radiating plate of the heater during its operation.

Do not let a power cord contact with hot surfaces.

Do not wipe a heat-radiating plate of the heater with flammable liquids during operation.

It is not allowed to operate the heater without grounding (see section 7), as well as without electric protection against the increased currents and short circuit currents.

Connection should be carried out only by the qualified experts (see section 7) in conformity with the “Regulations for the design and construction of electrical installations” and “Safety Rules for Operation of Electrical Installations”.

It is not allowed using of the given heater with the programming unit, time register and any other device which automatically switches the heater on **if the heater is covered or misplaced.**

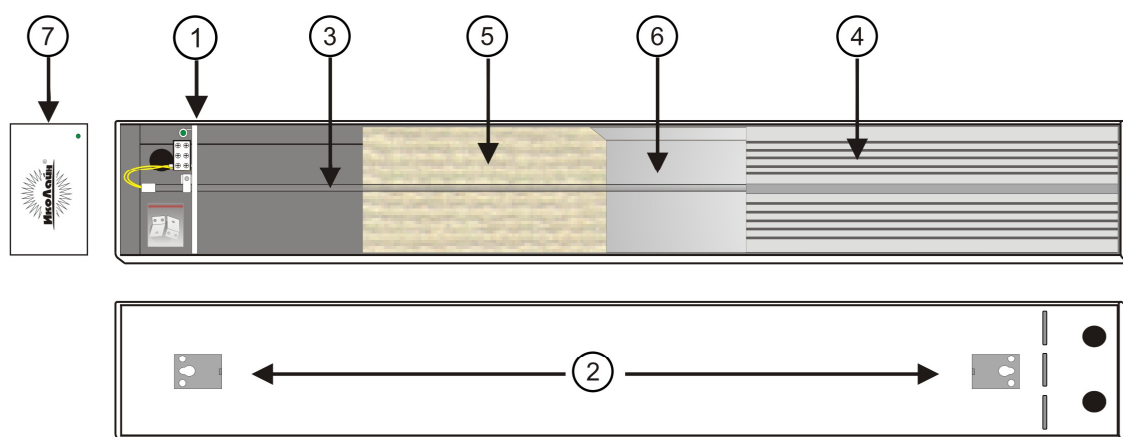
Connection of the heater to supply mains should be carried out directly to fixed wiring, it should be provided a disconnect switch with a contact gap not less than 3 mm at all poles in it, providing switching the device off from the power system.

The maximum permissible level (MPL) of intensity of a thermal irradiation at a height of a head of a man should not exceed 60 W/m^2 .

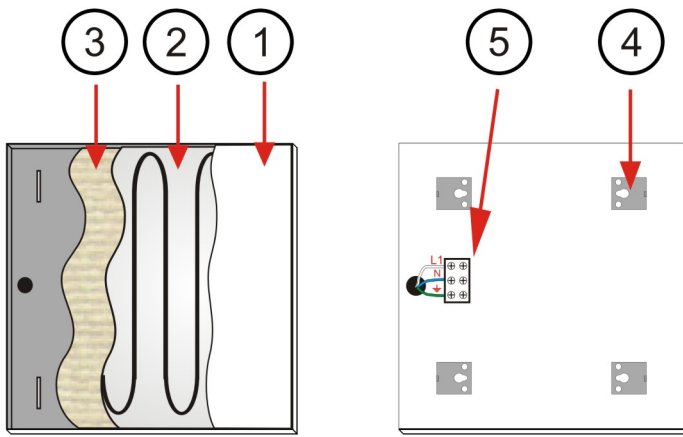
The heater should not be a source of pollutant emission at operation (under the condition of compliance with the requirements of the given manual).

5. DEVICE

The heater consists of a metal housing (1) covered with high temperature resisting enamel, with fasteners to the ceiling (2). The heating element TЭH (3) is mounted in the thermal-radiating plate (4), which faces to the floor. There is a high quality thermal insulator (5) and protective screen made of foil (6) between the housing and thermal-radiating plate. The cover (7) in the housing closes a terminal block for connecting of the heater to electrical network.



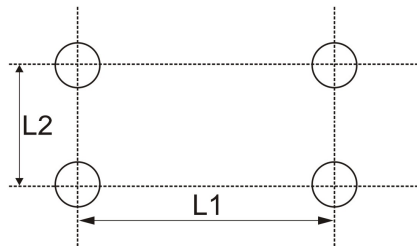
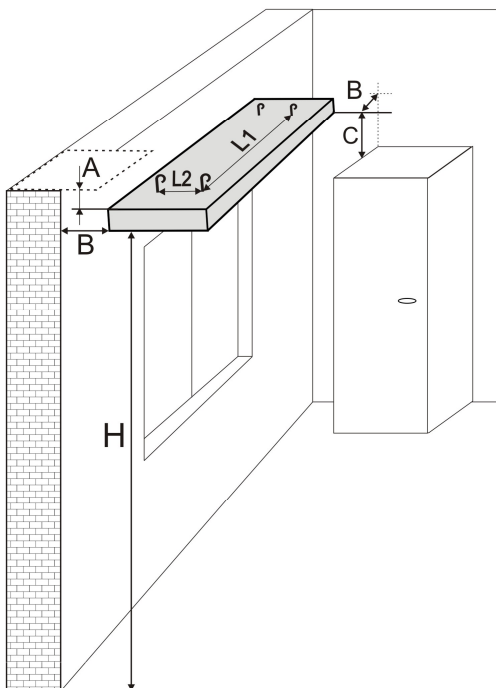
Heat-radiant IKO+04 panel for standard suspended ceilings of “Armstrong” type consists of the metal housing (1) covered by a thermostable powder paint, with fastening elements to a ceiling or to a wall (4). The heating element - thermal mat (2) is between the housing and a high-quality thermal insulator (3). There is a terminal block (5) for connection of the panel to an electrical network from the backside of a plate.



6. INSTALLATION

1. Attach the heater to a ceiling by means of an anchor bracket, self-tapping screws, bolt screws and dowels included in the complete set of delivery (according to the figures mentioned below).

ATTENTION! Standard bracket provides a safe suspension of the heater to a ceiling with a natural coating (wood, concrete, metal, etc.). At use of artificial ceiling coatings the application of standard brackets is allowed at thermal stability of a coating material not less than 80° C.



	L1, mm	L2, mm	H, m*
IKO -06	752	24	2,8
IKO -10	1252	24	3,1
IKO -13	1252	24	3,3
IKO -22	900	195	3,7
IKO -33	900	345	4,2

*- at a permanent standing of a man in full height under the heater

H - minimal height of suspension.

ATTENTION!

Distance in mm: up to a ceiling A (not less than 50), up to walls B (not less than 50), and up to objects C (not less than 500) located in the area of operation of the heater.

2. Install a thermoregulator on a wall at the height of 1 – 1.5 m from a floor. In order to prevent false operation do not install a thermoregulator in the area of direct influence of thermal rays of a heater or other sources of heat.
3. Wipe a thermal-radiating plate with spirit.
4. For installation of IKO+04 thermal-radiating panel it is necessary to place it instead of the standard panel of a suspended ceiling, having used, if necessary, brackets of the panel itself.

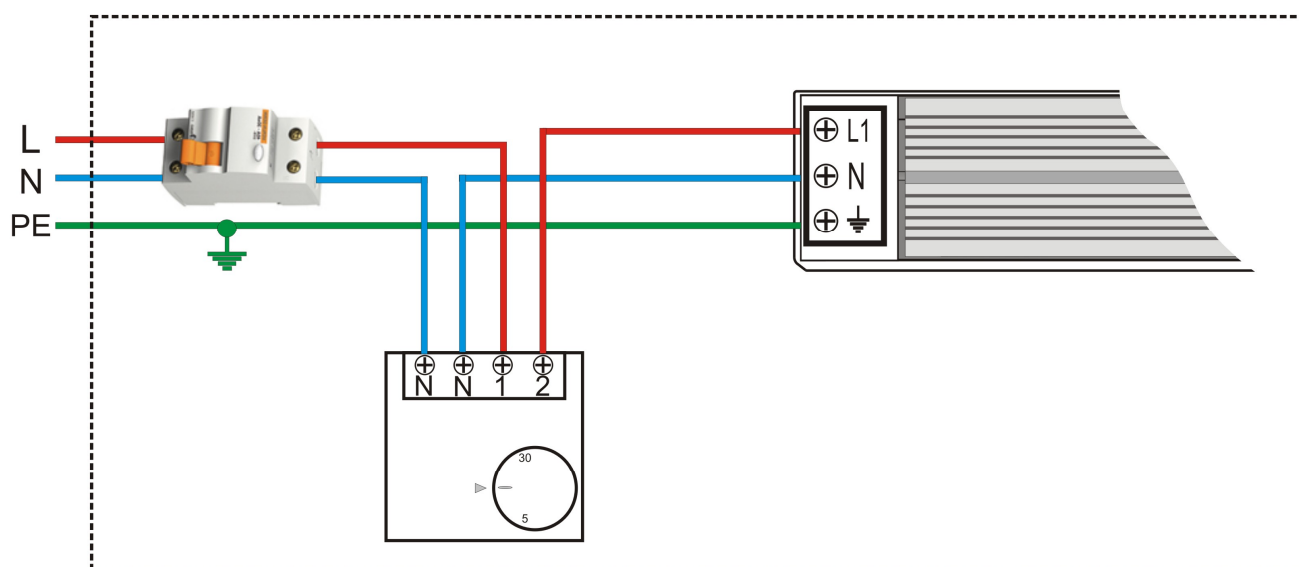
7. CONNECTION

Connection should be carried out by qualified specialists according to the chosen electrical scheme, depending on the overall power and models:

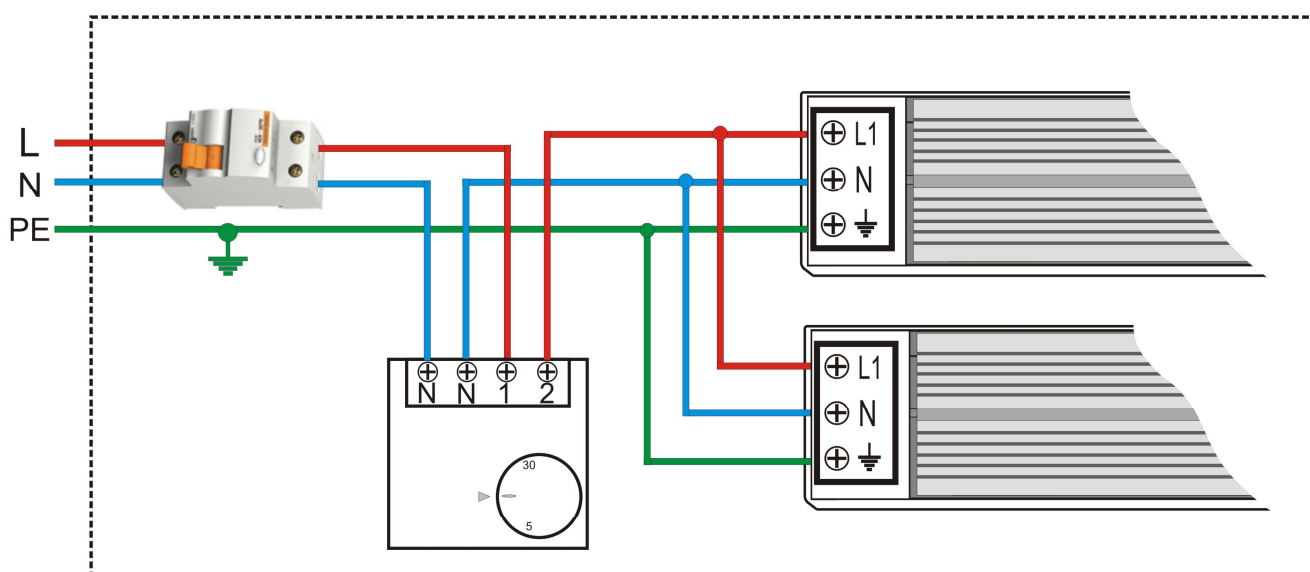
IKO -06/10/13/22 - schemes No 1-No 3;

IKO -33 - schemes No 4, No 5;

VARIANT OF CONNECTION of thermoregulator on a total loading up to 3.5 kW

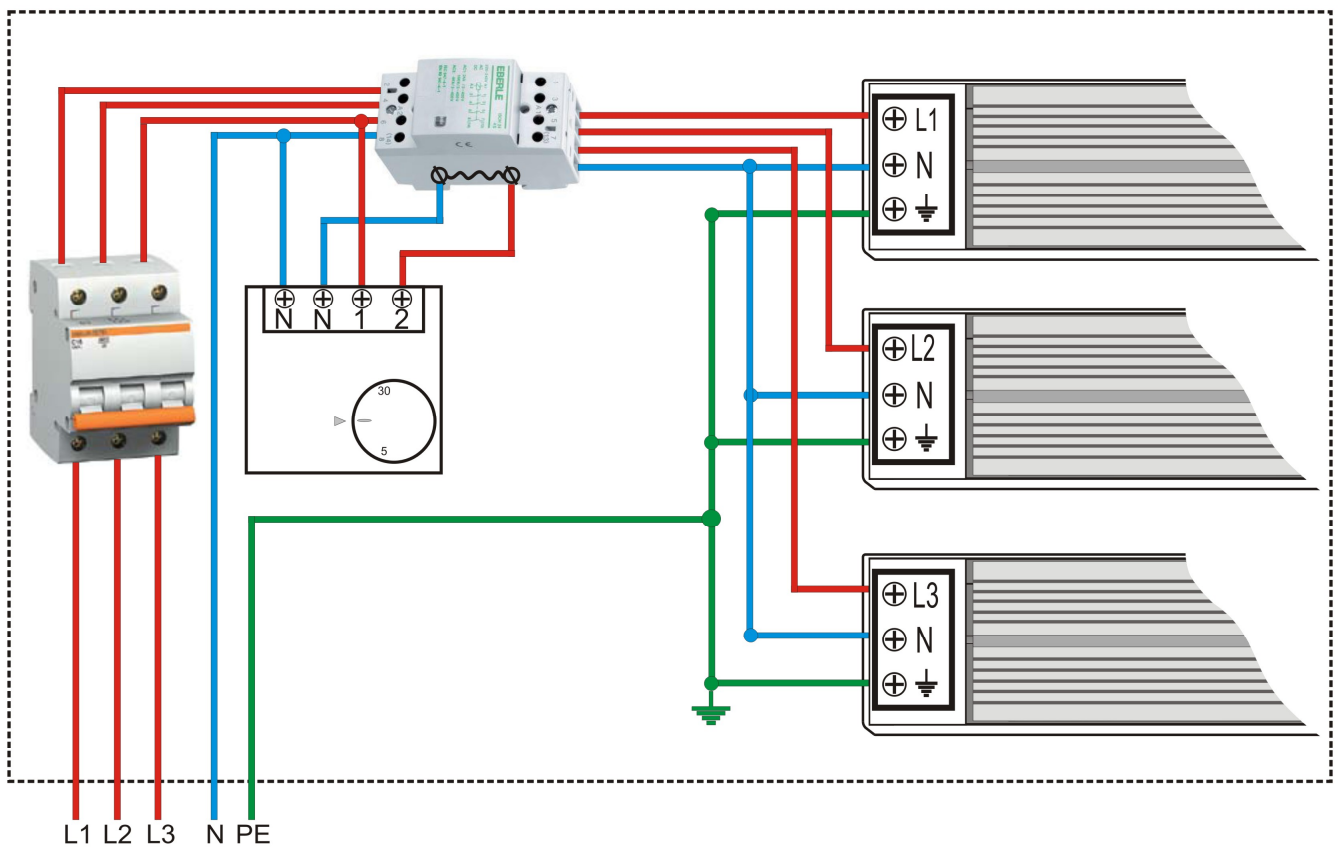


Scheme 1. Connection of the heater to network 230 V (1 phase).

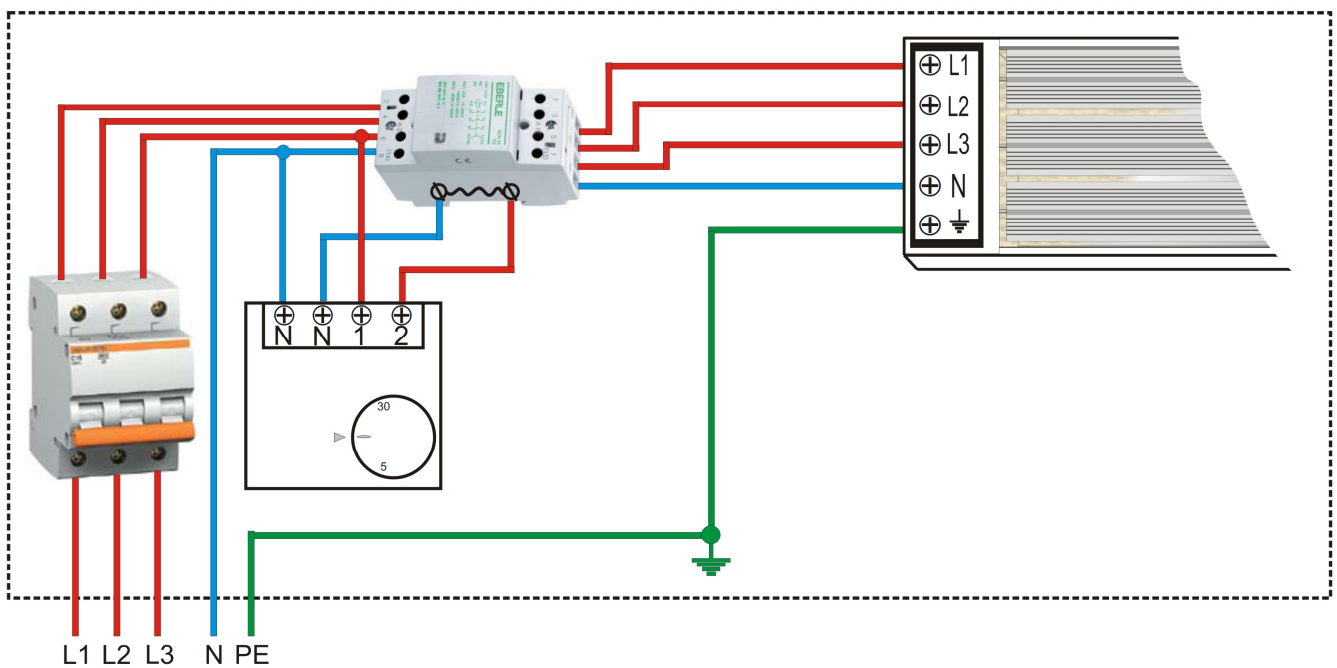


Scheme 2. Connection of the heaters to network 230 V (1 phase).

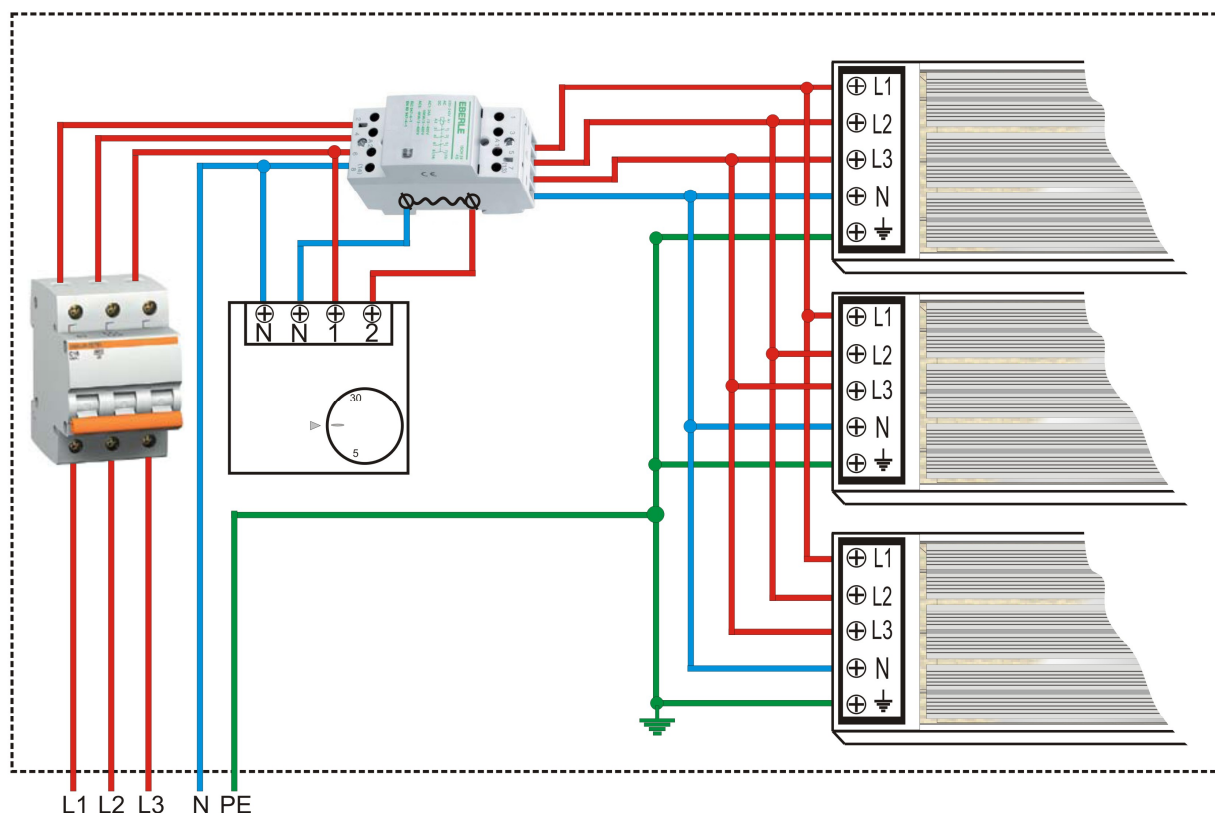
VARIANT OF CONNECTION of thermoregulator on a total loading more than 3.5 kW



Scheme 3. Connection of the heaters to network 400 V (3 phase).



Scheme 4. Connection of the heater to network 400 V (3 phase).



Scheme 5. Connection of the heaters to network 400 V (3 phase).

NOTE :

The thermoregulators of other types can be used in the given electrical schemes; their schemes of connection are given in the instruction of the manufacturer of a thermoregulator.

7. START-UP

1. Install the heater according to the installation scheme of the section 6 of the present manual.
2. Connect the heater according to the chosen connection scheme of the section 7 of the present manual.
3. It is necessary to wipe a heat-radiating plate with spirit after installation of the heater before the first start.
4. Once the heater is ready to work, turn the handle of the thermoregulator and set necessary temperature.
5. Time of coming of the heater to predetermined temperature regime is about 30 minutes.

ATTENTION! The non-hazardous smell of evaporative conserving agents of technical units can be generated at initial operation of the heater which will disappear during operation.

8. OPERATION AND MAINTENANCE SERVICE OF THE HEATER

IkoLine electric heaters do not practically require maintenance service. It is necessary to carry out two following items for its reliable operation (**only after switching-off from the electric network!**):

1. Wipe the dust with damp rags at pollution of the housing, and wipe the heat-radiating panel or a reflector with spirit.

2. Check serviceability of contacts of a power cable, a tightness of terminal plugs (once a year.) (**the Given item should be carried out only by qualified specialists!**)

Operation conditions of the heaters:

- Ambient air temperature: -500 °C... +500 °C;

- Relative humidity: 80 % max at the temperature of +25 °C.

ATTENTION! A slight crackling noise in the time of heating or cooling disappearing with a coming to operation mode can be heard during operation of the heater.

9. COMMON TROUBLES

Common troubles	Methods of elimination
1. The heater heats badly	- Check up the position of the thermoregulator's handle or a voltage value of the electric network.
2. The heater does not work.	-Check up, whether there is a pressure in the electric system. -Check up, whether there is no breakage in a power cable. -Check up reliability of fastening of wires in terminal clamps <u>(only the qualified specialists!)</u> -Check up working efficiency of the thermoregulator. -Call on the authorized dealers.

10. STORAGE REGULATIONS

The electric heater is the electrical device and as any device, it is necessary to preserve it against impacts, ingress of dust and moisture. It is necessary to handle with a heat-radiating plate especially carefully. In case of pollution of the plate, it is necessary to wipe it with spirit.

It is necessary to store the heater in an original packing, in the premise with a temperature interval from 00 °C up to +500 °C at humidity no more than 80 %.

11. WARRANTY LIABILITIES

The manufacturer guarantees absence of defects in a product operation during five years from the date of purchase - for IKO-** products and within first year - for IKO+0.4 product. If it will be found out defects in the work of the product due to the fault of the manufacturer within this warranty period, the selling organization (see section 15) will repair this product free of charge or will replace it under the following conditions.

Conditions.

1. The present guarantee is valid only upon presentation of the original waybill confirming the fact of purchase.
2. The present guarantee does not give the right to compensation and covering of loss which has resulted from alteration of the product without preliminary written consent of the manufacturer with the purpose of its bringing to conformity to local technical standards and safety regulations.
3. The present guarantee is void, if it is changed, erased, removed or the marking is unreadable on the backside of the heater.
4. The present guarantee is void in case of:
 - introduction of alterations in the product design on the part of the buyer;

- improper operation, unintended use of the product or using of the product out of accordance with the manufacturer's operation and maintenance manual as well as installation or operation of the product with infringement of technical standards and safety regulations;

-repair carried out by the representatives which have not been authorized by the service centers or dealers;

-accidents, stroke of lightning, flooding, fire and other reasons which are beyond the control of the manufacturer;

-defects received during transportation of the device by the customer (with the exception of the cases when it is made by the authorized dealers or the manufacturer);

-defects of the system in which the given product was used;

-operation at higher voltage (more than 10 % from nominal voltage) and at humidity more than 80 % at the temperature +250°C.

5. The manufacturer has the right to introduce alternations in the heater's design, which are not worsening it technical characteristics.

12. ACCEPTANCE CERTIFICATE

IKO -06	IKO -10	IKO -13
IKO -22	IKO -33	IKO -

IkoLine electric heater conforms to TU (technical specifications) 3468-001-96307737-06 (for IKO- **).

Date of manufacture: _____

Serial number:

The representative of the manufacturing plant quality control department:

13. CERTIFICATE OF SALE

The Seller: _____
(organization)

(organization address)

Date of sale: _____

Seller's signature: _____

STAMP HERE

14. WARRANTY CARD

A. The product is accepted for warranty service:

(by the organization)

(organization address)

Displaying of defect: _____

Delivery date: _____ Date of outgiving: _____

Signature: _____

STAMP HERE

B. The product is accepted for warranty service:

(by the organization)

(organization address)

Displaying of defect: _____

Delivery date: _____ Date of outgiving: _____

Signature: _____

STAMP HERE

Tear-off card A

The product is accepted for warranty service:

(by the organization)

(organization address)

Delivery date: _____

Serial number: _____

Signature: _____

STAMP HERE

Tear-off card B

The product is accepted for warranty service:

(by the organization)

(organization address)

Delivery date: _____

Serial number: _____

Signature: _____

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15. APPENDIX. The scheme of step-by-step installation of the heater.

