COMPUTHERM KonvekPRO

Gas convector controller

Operating Instructions

A GENERAL DESCRIPTION OF THE GAS HEATER CONTROLLER

The **COMPUTHERM KonvekPRO** type gas heater controller is able to control the vast majority of the gas heaters available on the Hungarian market. It can easily be connected to any gas heater which regulates its own operation with a removable probe of the thermostat of the gas heater (a copper cartridge containing the expanding fluid connected to the thermostat with a capillary tube).

To establish the control system a two-wire room thermostat should be connected to the appliance. On demand the appliance can be controlled by integrating it into a smart home system. By warming up the probe of the gas heater it “deceives” the gas valve of the gas heater which shuts off and does not heat.

When the temperature in the room goes below the value set on the room thermostat then, based

on the signal received from the room thermostat, **KonvekPRO** stops heating the tube thermostat of the gas heater which cools down (for 3-6 minutes) below the temperature value set by the regulating knob of the gas heater so the gas heater switches on and starts to heat. When the temperature in the room reaches the value set on the room thermostat then the room thermostat sends a signal to **KonvekPRO** to warm up (for 1-1.5 minutes) the tube thermostat above the value set by the regulating knob of the gas heater and the gas heater stops heating.

Using **KonvekPRO** an automatic programmed heating system can be easily established in a room heated by gas heater. Besides, this product enables you to control your gas heaters remotely by using a Wi-Fi thermostat. With this product you can save considerable energy in addition to improved comfort.

We have designed **KonvekPRO** for gas heaters only. In Hungary gas heaters manufactured by FÉG

are used in the vast majority of households. The appliance, however, can also be operated with gas heaters of several other manufacturers (e.g. Pelgrim, Lampart, Demrad, etc.) which contain a tube thermostat (CR6 or EUROSIT 630 gas valve) similar to that of FÉG types.

More than one gas heater can be controlled by a single thermostat and as many KonvekPROs as the number of the gas heaters you want to control. If you want to control your heating system with a wireless room thermostat then you need only 1 wireless room thermostat and 1 receiving unit for every gas heater.

1. LOCATION OF THE APPLIANCES

The COMPUTHERM KonvekPRO gas heater controller should be located near the gas heater, fixed preferably to a wall at such a distance from the gas heater so that the metal probe therein can be connected to the controller. The room thermostat

is connected to **KonvekPRO** with 2 wires therefore it should be located at a distance that allows you to connect it and its location is accessible for adjustment. If you want to control **KonvekPRO** with a wireless thermostat then it is recommended that you locate the receiving unit of the thermostat in the vicinity of **KonvekPRO**. In this case the thermostat can be moved anywhere within the range.

<u>IMPORTANT WARNING!</u> For proper operation of the gas heater controller turn the temperature regulating knob in the gas heater to approx. 30 °C (in case of FÉG products it is grade 6-6.5 on a scale to 7).

2. PUTTING THE GAS HEATER CONTROLLER INTO SERVICE

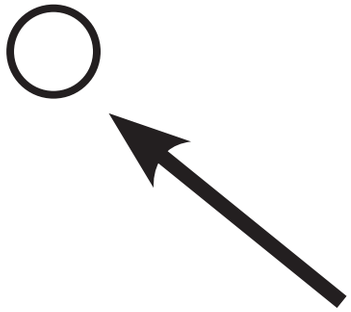
<u>Warning!</u> The appliances must be put into operation by a competent person!

WARNING! Any modification of the appliance poses a risk of electric shock or failure.

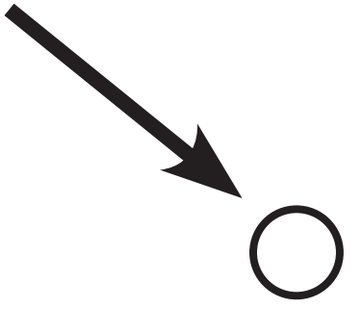
2.1. Get the things included in the package of COMPUTHERM **KonvekPRO** ready: appliance **KonvekPRO**, PSU, 2 dowels and 2 screws. You will also need a pencil, a drilling machine, small (flathead and Phillips) watchmaker's screwdrivers, a Ø6 mm drill bit and, maybe, a hammer.

2.2. Carefully lift out the probe on the back side of your gas heater from its socket. The probe is normally located on the back side of the gas heater, in rare cases it is beneath the cover at the end of an approx. 50 cm long copper pipe.

2.3. Find some place suitable for fixing **KonvekPRO** in the vicinity of the gas heater (wall, window frame), considering the length of the copper pipe that connects the gas heater and the probe.



Put the template to the place where you want to install **KonvekPRO**. Then perforate the template in the middle of the circles indicated by the arrows by means of a pencil.



It is expedient to find a place where **KonvekPRO** is exposed to radiant heat (from the gas heater) to the smallest extent possible. With the help of the actual size template shown on the previous page mark the hole locations for fixation.

2.4. Prepare the holes (Ø6 mm), put the dowels and screws into them so that 3-4 mm of the screws protrudes from the wall.

2.5. Insert the probe of the gas heater carefully into the **KonvekPRO**. The probe receiving socket of the **KonvekPRO** is universal and able to receive a Ø6-12 mm probe. When inserting the probe, make sure that the probe is always inserted perpendicularly to **KonvekPRO**, oriented to its right lower side viewed from the front so that it fits in the hole on the other (upper) side.

2.6. Place **KonvekPRO** onto the screws prepared on the wall and, with a cautious vertical motion, fix it in place. In case of correct installation **KonvekPRO** is seated stably against the wall surface.

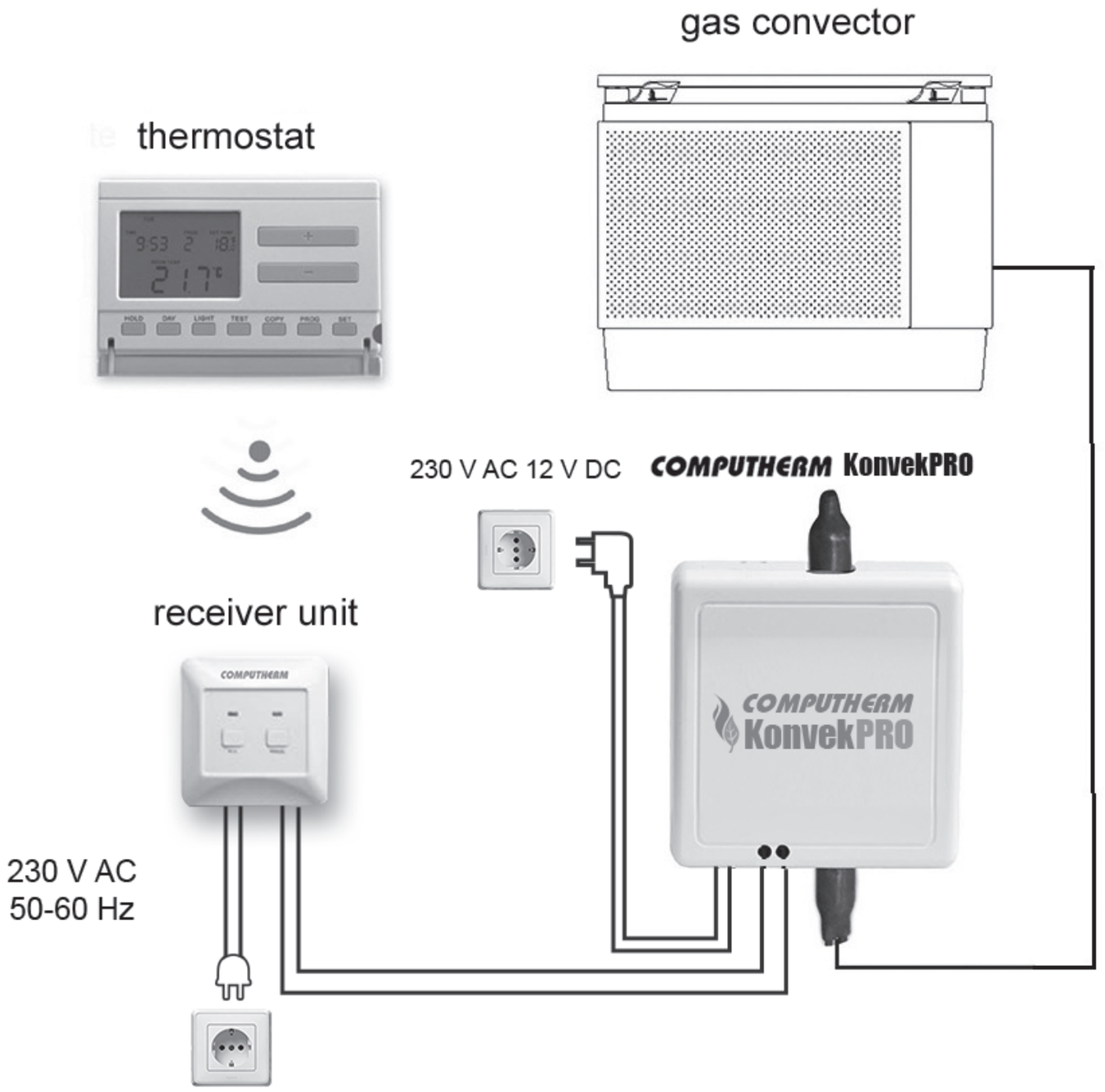
2.7. Connect the cable leading to the thermostat to **KonvekPRO**. Put a thin two wire cable into the thermostat connector located in the lower part of **KonvekPRO** then tighten the fastening screws with a small watchmaker's screwdriver, reaching through the holes on its top.

Several **KonvekPRO** can be combined and connected to a single thermostat but in this case you should ensure correct polarity: in this case make sure that the right-hand side cable of each thermostat connector located on **KonvekPRO**s to be combined is connected to the connector on the right side of the other **KonvekPRO**s while left cables are connected only to left connectors.

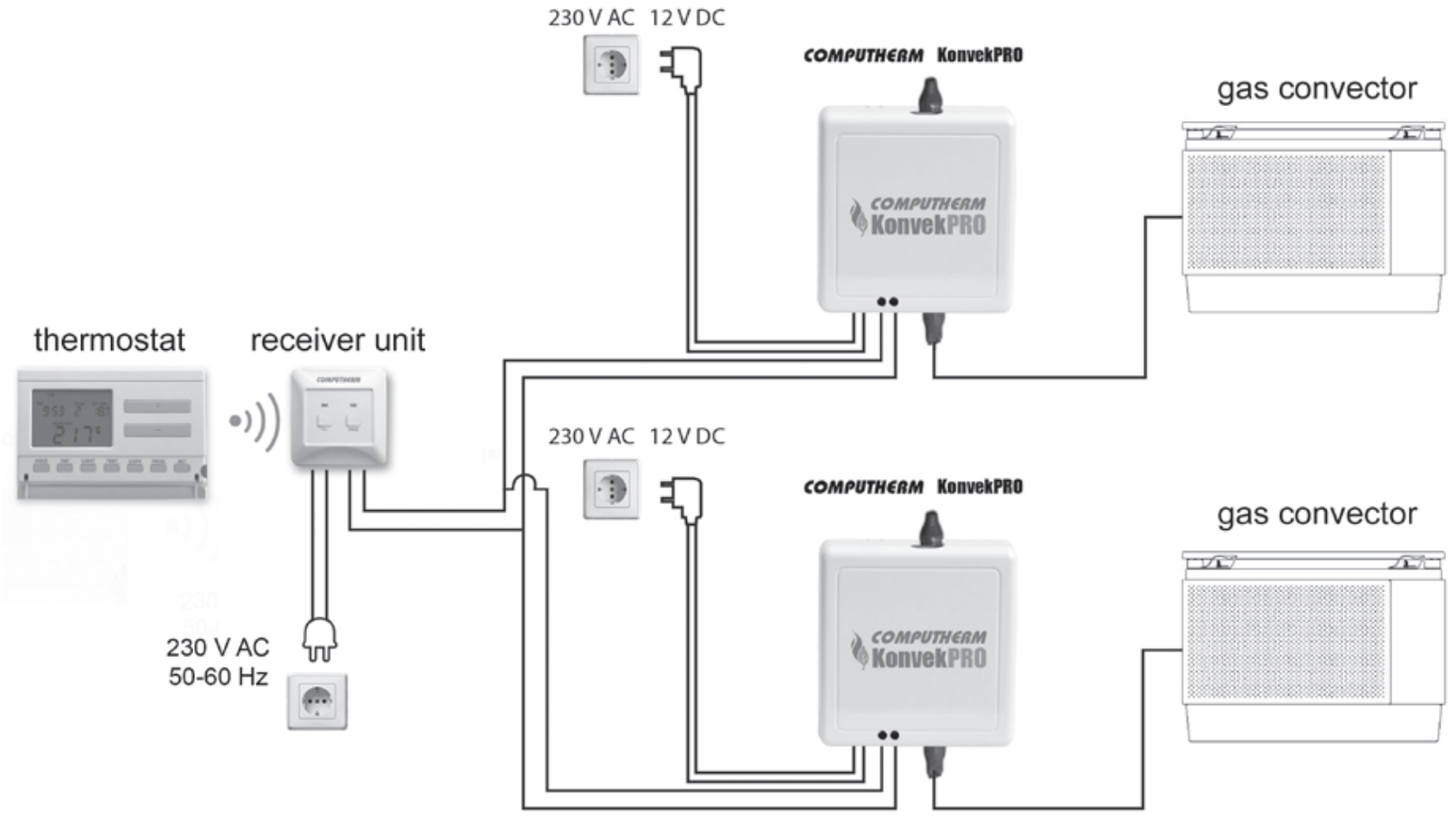
2.8. Install the thermostat (which is compatible only

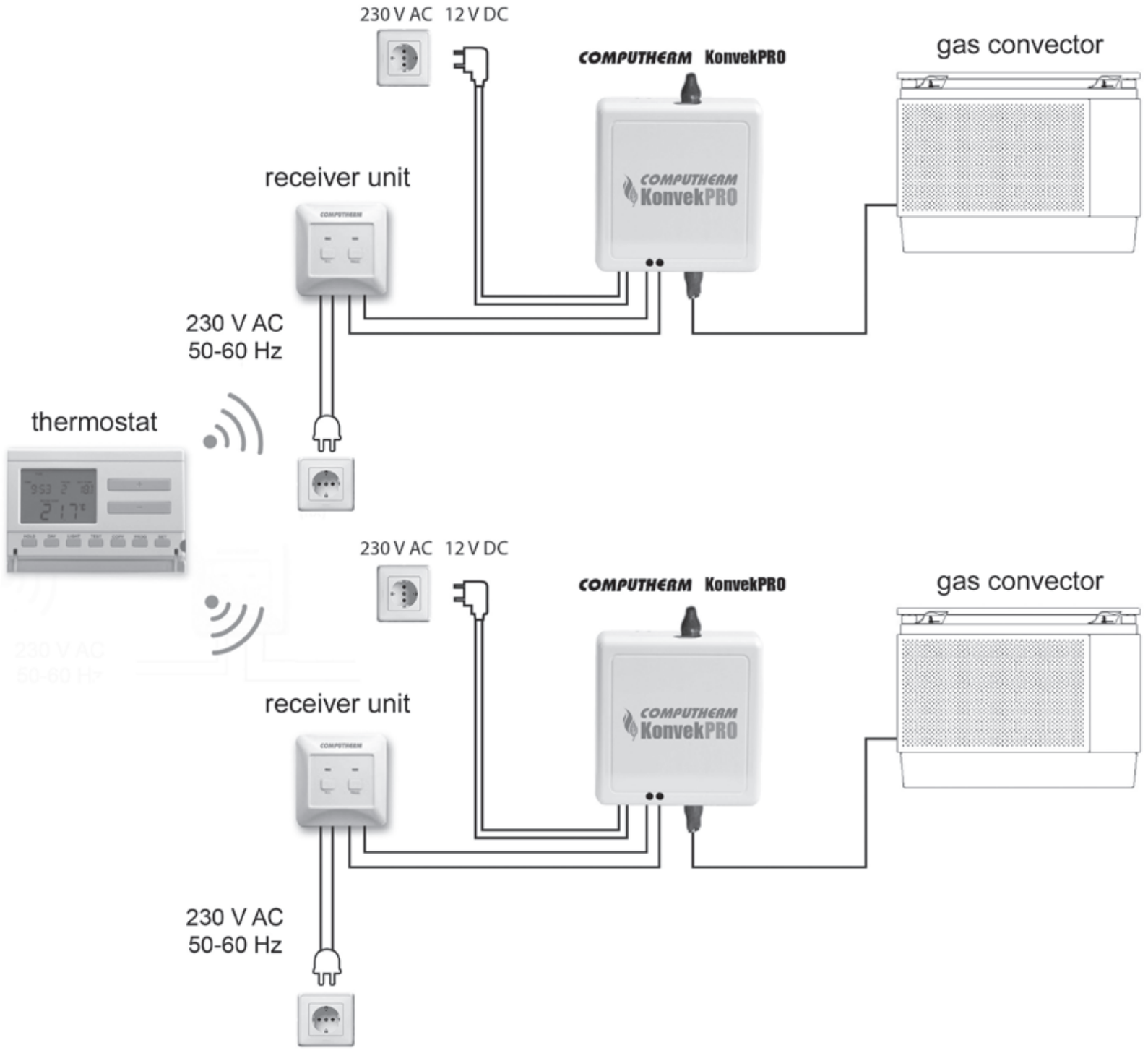
if it has a potential free make/break contact) according to the instruction manual provided with it and connect it to **KonvekPRO** with the pair of wires (to connection points 1 /NO/ and 2 /COM/ for **COMPUTHERM** room thermostats). For the RF type you should also connect a 230 V cable to points N and L of the receiving unit. In general it is expedient to locate the thermostat on the wall of a room where you stay regularly or a long period of time so that the thermostat is oriented in the direction of the natural ventilation of the room but is not exposed to draught or extreme heat (e.g. sunlight, refrigerator, chimney, etc.). Its optimal location is at a height of 1.5 m from the floor.

The following figure shows the control system for gas heaters:



If you want to control several gas heaters with a single thermostat you can choose between the following connection alternatives:



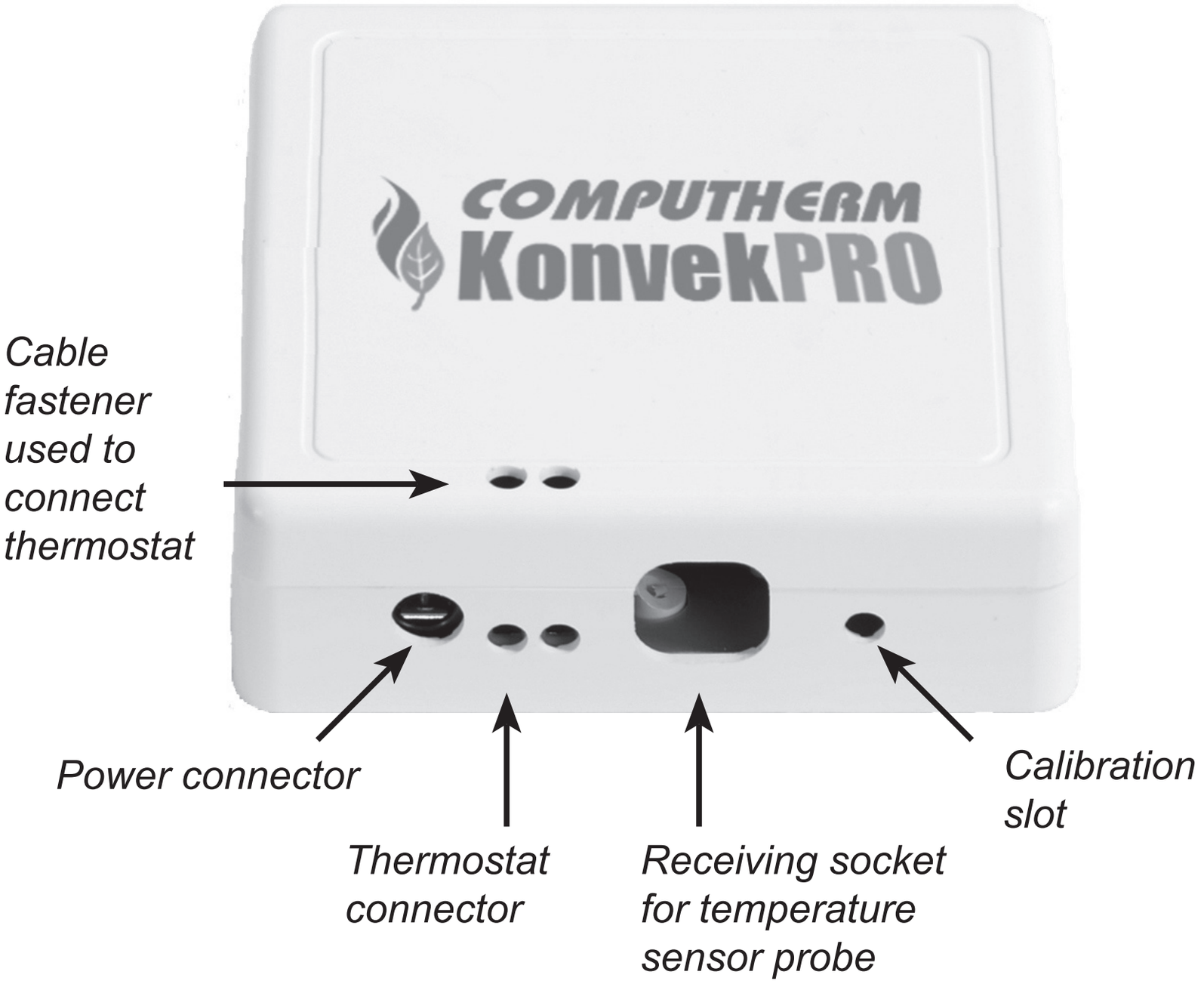

230 V AC
12 V DC
COMPUTHERM KonvekPRO
gas convector
receiver unit
COMPUTHERM KonvekPRO
230 V AC
50-60 Hz
thermostat
230 V AC
12 V DC
COMPUTHERM KonvekPRO
gas convector
receiver unit
COMPUTHERM KonvekPRO
230 V AC
50-60 Hz

2.9. Turn the temperature regulating knob on your gas heater up to 30 °C (in case of FÉG products it is grade 6 on a scale to 7).

2.10. Connect the mains power supply unit provided in the unit packet to **KonvekPRO** and energize it.

2.11. Put **KonvekPRO** into AUTO mode with the slide switch on the top of the appliance. The light of the orange-color LED on the top of the appliance provides feedback on automatic operation of **KonvekPRO**.

<u>Warning!</u> If you do not switch on KonvekPRO the gas heater will heat the room to the temperature set on its own temperature regulator (to approx. 31 °C in case of grade 6.5), irrespective of the temperature set on the room thermostat. After KonvekPRO is turned on, the appliance will control the operation of the gas heater based on the temperature set on the room thermostat.


COMPUTHERM
KonvekPRO
Cable fastener used to connect thermostat
Power connector
Thermostat connector
Receiving socket for temperature sensor probe
Calibration slot

3. OPERATING MODES OF THE GAS HEATER CONTROLLER

You can switch between control modes of the gas heater with the slide switch on the top of the appliance. The controller has the following modes:

- Manual mode (**MAN**; left position of the slide switch):
  In manual mode of the controller the gas heater works fully independently from **KonvekPRO** and the thermostat connected thereto. In such case the gas heater works in the traditional way and can be controlled with the temperature regulating knob therein instead of the thermostat.
- Automatic mode (**AUTO**; right position of the slide switch):
  In automatic mode of the gas heater is controlled automatically according to the settings of the thermostat connected to **KonvekPRO**.

The gas heater will heat when the thermostat gives a heat command.

4. MEANING OF THE SIGNS OF THE CONTROL LED OF THE GAS HEATER

The operating status of the gas heater controller is indicated by the lights of the orange and blue LEDs on the upper side of the device as follows:

- When the slide switch is „**MAN**” position on the left side:
  - When the blue LED is on then the controller works in manual mode.
  - When neither LED is on then power is not supplied to the controller.
- When the slide switch is „**AUTO**” position on the right side:
  - When the blue LED is on then the thermostat gives heat command and the gas heater is heating.

- When the orange LED is on then there is no need for heating according to the settings of the thermostat. Then the gas heater controller warms the temperature sensor probe of the gas heater with the result that it does not heat.
- When neither LED is on then there is no need for heating according to the settings of the thermostat. The controller has already warmed up sufficiently the temperature sensor probe of the gas heater so that that the gas heater does not heat and it does not warm currently.

5. ADJUSTMENT OF THE GAS CONVETOR CONTROLLER

No subsequent adjustments of **KonvekPRO** are normally necessary since these were carried out before shipment. If you deem that the operation of the device is unstable please follow the instructions below.

5.1. After you have completed installation, set the connected digital thermostat temporarily to a temperature considerable lower than that of the room to prevent it from switching the gas heater on.

5.2. Turn the temperature regulating knob of the gas heater to minimum setting (pilot flame).

5.3. With the orange LED thereon **KonvekPRO** indicates that it works and has started to heat the probe incorporated therein. When the LED goes out, the probe reached the temperature set on **KonvekPRO**. After a few minutes the LED is on then goes out again to keep the temperature at this value. This target temperature (switching threshold value) is set to approx. 30 °C by the manufacturer and this is suitable in the overwhelming majority of cases. But if not, with a screwdriver you can increase (clockwise) or decrease (anticlockwise) this threshold value in

the range between 25 °C and 35 °C through the calibration slot at the bottom of **KonvekPRO**.

5.4. Wait 20 to 30 minutes so that the system assumes its operating temperature.

5.5. Turn the temperature regulating knob of your gas heater very slowly towards higher temperatures. When the switching threshold value set on **KonvekPRO** is reached the gas heater ignites. This probably will happen near the maximum grade. If the gas heater fails to ignite then it means **KonvekPRO** has heated the probe above the temperature limit that can be sensed by the gas heater. It does not present any problem just the response time of the system (the period of time that elapses between the arrival of the heat command coming from the thermostat and the actual point of time when the gas heater switches on) is increased somewhat.

5.6. If the switching threshold determined this way is considerably lower than the maximum grade of the gas heater we propose to perform calibration of **KonvekPRO**. Turn the regulating knob of the gas heater to (near) the maximum grade. With a small (Phillip head) watchmaker's screwdriver, by reaching through the calibration slot at the bottom of **KonvekPRO**, adjust the potentiometer clockwise in very small increments and wait 4-5 minutes after every adjustment so that the system is stabilized to the new temperature. Turn the potentiometer until the gas heater just cannot switch on any longer at the set (near) maximum temperature. After you have determined (and set, if required) the switching threshold turn the temperature regulating knob of your gas heater to the next lower grade.

5.7. The respond time of the system is basically determined by the difference of

the temperatures of the stage set on the temperature regulating knob of the gas heater and of the switching threshold value and the temperature in the room. The farther the three temperatures are from each other, the slower will the system respond to the heat command given by the thermostat but possible operational instability decreases. If you want a quicker operation, please decrease the switching threshold value (calibration according to Section 6) by setting the gas heater to a stage below maximum. Remember that an unstable operation may occur if you set the switching threshold value or the grade of the gas heater too low.

5.8. Set back the digital thermostat to programmed operation and enjoy the comfort and warm.

6. TROUBLESHOOTING

Symptom	Possible cause	What to do
The thermostat fails to control the gas heater at once.	Some delay (max. 15 minutes) is normal owing to the operating principle of **KonvekPRO**. This will not affect the operation of the system perceptibly.	You have nothing to do because it is a part of normal operation.
The thermostat controls the gas heater after more than 15 minutes or controls it unstably.	The temperature regulating knob of your gas heater and/or **KonvekPRO** have not been set properly.	Please carry out the adjustments described in *Chapter 5*.
	The probe of the gas heater may have been damaged and some part of the alcoholic liquid therein has evaporated.	Replace the probe if it has been damaged.

Symptom	Possible cause	What to do
The thermostat does not control the gas heater at all.	The thermostat has not been connected to the gas heater properly.	Check the connection between **KonvekPRO** and the thermostat, especially that you have connected the appropriate connection points to **KonvekPRO**.
		Check LEDs on the top of **KonvekPRO** and the temperature of the probe that protrudes from **KonvekPRO**. In normal operation, when the gas heater is not heating, the probe is lukewarm (approx. 30 °C) and the orange LED alternately is on and goes out. If this is not the case remove the cable leading to the thermostat from the **KonvekPRO**. If the LED is on periodically and the probe warms up the defect is in the connection to the thermostat or in the thermostat. Try to connect the thermostat again, making sure that the two wires of the cable do not touch.

Symptom	Possible cause	What to do
The thermostat does not control the gas heater at all.	PSU of the KonvekPRO has not been connected properly.	Check that the PSU of the **KonvekPRO** is connected to the 220 V mains and to **KonvekPRO**.
Other case	Unknown	Turn to the shop where you bought the product or Quantrax Kft. for help.
If you have a digital hand instrument and some technical expertise, please check whether the PSU provided by **KonvekPRO** supplies 9 V or 12 V DC voltage (without load it can goes up to 15-20 V which is an absolutely normal level). Check the thermostat to be connected: the output of the thermostat is short-circuited in case of heating, otherwise a broken wire		

FREQUENTLY ASKED QUESTIONS

When you think that your appliance is operating incorrectly or encounter any problem while the appliance is being used then we recommend that you read Frequently Asked Questions (FAQ) available on our website, where we collected the problems and questions that most frequently occur while our appliances are being used, along with the solutions thereto:

http://www.quantrax.hu/gyik/

The vast majority of the problems encountered can be solved easily by using the hints available on our website, without seeking professional help. If you have not found a solution to you problem, please pay a visit to our qualified service.

Warning! The manufacturer does not assume responsibility for any direct or indirect damages and loss of income occurring while the appliance is being used.

TECHNICAL DATA

Technical data of KonvekPRO:

— **storage temperature:** -10°C … +40°C

— **DC adapter voltage:** DC 12 V, 500 mA

— **DC adapter connector:** 2.1 x 5.5 mm 

— **power input:** max. 3 W (effective 1,5 W)

— **diameter of the connectable temperature sensor probe:**

6-12 mm

— **heating range of the temperature sensor probe:**

24 °C – 38 °C

— **dimensions:** 83 x 83 x 36 mm

— **mass:** 115 g

The **COMPUTHERM KonvekPRO** type gas convector controller complies with the requirements of standards EU EMC 2014/30/EU; LVD 2014/35/EU and RoHS 2011/65/EU.

CE

RoHS

Manufacturer: **QUANTRAX Kft.**

H-6726 Szeged, Fülemüle u. 34.

Telefon: +36 62 424 133 • Fax: +36 62 424 672

E-mail: iroda@quantrax.hu

Web: www.quantrax.hu • www.computherm-hungary.hu

Country of Origin: China