nekos
my home technology

KL – KH multiple

KH2, KH2R, KH4, KH4R, KH6, KH6R
KL2, KL2R, KL4, KL4R, KL6, KL6R

EN

INSTRUCTION MANUAL

MULTI-EXIT VENTILATON UNIT

Electrical feeding 110-240V~ 50/60Hz – 24V⎓

nekos products have been manufactured in accordance with safety standards and conforms to the stipulations of current standards in force.
When correctly assembled, installed and used according to the present instructions, they will not generate any danger for persons, animals or items.

Symbols used in the manual

	DANGER	*This indication draw the attention about potential dangers for safety and health of peoples and animals.*
	INFORMATION	*This information give further suggestions.*
	ATTENTION	*This indication draw the attention about potential dangers for the product itself.*
	WARNING	*This indication draw the attention about potential damages to goods.*
	ENVIRONMENTAL INSTRUCTION	*Environmental indication draw the attention about potential dangers for the environment.*

Contents

1. SAFETY INDICATIONS

1.1. General notes

***ATTENTION:* Before installing this appliance, ensure all safety indications have been read carefully and understood in order to prevent contact with electricity, injury or any other incident. The manual should be conserved for further consultation at a later date.**

The manufacturer accepts no responsibility for damage to people, animals or things incurred by improper use.

Use for any applications other than those indicated must be authorised by the manufacturer after technical review of the assembly.

The device is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lacking experience and knowledge. Do not allow children to play with the fixed controls and keep any remote-control units out of their reach.

Do not use solvents or jets of water to wash the appliance. The appliance should not be submerged in water.

1.2. Notes for functioning and use

This device is intended only and exclusively for the use for which it was designed, and the manufacturer cannot be held liable for damage due to improper use.

KH../R and **KL../R** have been designed and constructed exclusively to execute maneuvers for closing and/or opening windows, roll-up blinds, curtains and sunshades, assisted by the aid of sensors for rain and wind.

Specific use is reserved for automatic ventilation and air-conditioning of rooms, which is carried out through the connected motors; **any use for applications other than those specified must be authorized by the manufacturer, upon technical verification.**

The appliance must be installed by competent and qualified technical personnel. Improper installation and use make the unit dangerous for people and things.

An omnipolar general power switch with minimum distance of 3 mm between contacts should be installed upstream of the control line.

Before carrying out any cleaning or maintenance, make sure the equipment has been disconnected from the electricity supply.

***Attention:** in the event of breakage or malfunction, switch the appliance off at the general switch and call for the services of a qualified technician.*

Repairs should only be performed by qualified personnel at assistance centres authorised by the manufacturer.

In the event of any problems or queries, consult your agent or contact the manufacturer directly.

Always request original spare parts. Failure to respect this condition could compromise safety and invalidate the benefits contained in the warranty for the appliance.

The product must be disposed of in compliance with local environmental regulations and not as household waste.

2. CONSTRUCTION AND REGULATORY REFERENCES

This product was designed to be used with products suitably studied for the specific application. If assembled incorrectly, use of the product with other devices may result in damage or malfunctions.

The power supply system and electrical connection must comply with EU standards for electrical systems.

The equipment has electrical insulation class I and thus does require an earth wire.

All the devices connected to the control units must be manufactured according to current regulations.

3. TECHNICAL DATA

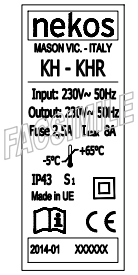
Model	*KH2 - KH2R KH4 - KH4R KH6 - KH6R*	*KL2 KL2R*	*KL4 KL4R*	*KL6 KL6R*
Power supply voltage of the station	100-240V~ 50/60 Hz			
Maximum current absorbed	0,35 A	1,4 A	1,9 A	2,8 A
Output voltage	100-240V~ 50/60 Hz		24V⎓	
Maximum current per module	2,5A (2,5A T fuse each module)			
Maximum output current	0,62 A	3,2 A	4,5 A	6,5 A
Insulation class	I			
Setup for connection to external devices	Wind sensor - Rain sensor - Daily timer - Local open-close command			
Operating temperature	-5 ÷ +60 °C			
Degree of protection	IP65			

The data provided in these illustrations is non-binding and subject to change, even without advance notice.

4. ID PLATE AND MARKING DATA

KH../R and **KL../R** have CE marking and are destined for use in the European Union without further requirements.

ID plate data are indicated on a polyethylene adhesive label applied externally on the outside of the container, printed in black on a grey background.



5. RECOMMENDATIONS AND INSTRUCTIONS FOR ASSEMBLY

THESE INSTRUCTIONS ARE INTENDED FOR TECHNICAL AND SPECIALIZED PERSONNEL. THUS BASIC SAFETY AND WORKING TECHNIQUES ARE NOT DISCUSSED.

In order to guarantee perfect operation of the system and facilitate installation, follow the instructions and warnings below.

Perform a thorough visual inspection of the device to ensure it wasn't damaged during transport.

To avoid the hazard of injury or death caused by the electrical current, always disconnect the voltage from the power supply line before carrying out any wiring or adjustment operation.

The electrical power supply system must be designed and implemented in compliance with current standards.

***Caution.** Check that the electric power supply used corresponds to that specified on the "technical data" label attached to the station.*

The rain and wind detectors are placed outside in direct contact with the weather, on the roof or in a similar position if possible.

When assembling the KL../R and KH../R stations, in order to guarantee perfect operation of the system and facilitate installation, follow the instructions and warnings below.

A. The rain sensor should be placed in a slightly inclined position in order to facilitate water run-off and in a position which is not protected from falling rain; positioning the sensor underneath trees is not recommended as this will alter the natural meteorological event.
B. The wind sensor should be placed far from obstacles that deform or protect against the wind flow; thus avoid placing the sensor near gutters, trees, walls, etc.
C. Select the most suitable location for the control unit based on the shape and structure of the building. The station does not require any maintenance, thus it can be placed in an out-of-the-way position, protected against direct weather exposure.
D. Position the box of the device in the selected position and use a pencil to mark the drilling hole on the support (wall or other).
E. Drill the hole using a drill bit with diameter corresponding to the selected plug or fastening screw.
F. Mount the equipment box and fix the screws definitively.
G. Drill the box to allow passage of the connection cables in the desired position using a Ø10 drill bit. Remove the electronic board from the box to avoid damaging it permanently when drilling.
H. Complete the path of the electrical connection cables. Make the electrical connections according to the wiring diagram provided on the following pages.
I. Perform the final test checking the intervention of the automatic devices. To make the rain sensor intervene, just touch the sensitive part with a finger. There is no danger of shock since this device is low-voltage. To make the wind sensor intervene, turn the fan for at least 5 seconds.

6. TECHNICAL OPERATING INFORMATION

6.1. General instructions

The control unit is composed of a "mother board" which is set up for insertion of "expansion module boards".

The “expansion module” boards differ depending on the control voltage of the motors. The modules can be for 24V⎓ motors or 100/240V~ 50/60Hz motors.
The control unit is set up for insertion of a maximum of 3 “expansion modules”.
Each expansion module can control a number of motors to be decided on the basis of their nominal absorption. In case of doubts take contact with the producer.

Caution: using 24V⎓ motors chose the unit with the suitable output power.

Model	*Number of expansion modules (Control voltage)*	*Number of exits provided for*
KH2 – KH2R	1 – (100-240V~ 50/60Hz)	2
KH4 – KH4R	2 – (100-240V~ 50/60Hz)	4
KH6 – KH6R	3 – (100-240V~ 50/60Hz)	6
KL2 – KL2R	1 – (24V⎓)	2
KL4 – KL4R	2 – (24V⎓)	4
KL6 – KL6R	3 – (24V⎓)	6

Caution: if 24V⎓ optional modules are inserted, check the sizing of the power supply unit to ensure it has a suitable Ampere range.

Each expansion module has inputs for manual open/close controls for each individual motor. We recommend the use of **n.o**. (normally open) type interlock switch buttons, see parameter P_07 for associated functions. The **KL..R** and **KH..R** models allow the use of the **PIK** radio remote control with 433.92 MHz proprietary protocol, as well as manual control.

6.2. Programming

6.2.1. Programming Display and Programming Menu

The following information and instruction are important for the functioning of the whole system.

A display is installed on the station whit a programming menu for all the station functions.
All the settings of the **PXXX** functional parameters must be made through the keys and display of the station, changing the preset values **F** [factory-set].

→ The **OK** key is used to enter the programming menu and confirm the setting of each individual parameter.
→ The **+** *(plus)* key is used to scroll up through the programming menu or increase the value of the parameter within the menu.
→ The **–** *(minus)* key is used to scroll down through the programming menu or decrease the value of the parameter within the menu.
→ The **+** *(plus)* and **–** *(minus)* keys pressed together are used to exit the programming menu.

IMPORTANT: the change of some parameters can compromise the functioning and the desired security level.

(display) 	*The initial menu is free of any writing when no input is active; otherwise it shows the activated function with the following messages:* – ***In01*** *- general Open* – ***In02*** *- general Close* – ***In11*** *- motor 1 Open* – ***In12*** *- motor 1 Close* – ***In21*** *- motor 2 Open* – ***In22*** *- motor 2 Close* – ***In31*** *- motor 3 Open* – ***In32*** *- motor 3 Close* – ***In41*** *- motor 4 Open* – ***In42*** *- motor 4 Close* – ***In51*** *- motor 5 Open* – ***In52*** *- motor 5 Close* – ***In61*** *- motor 6 Open* – ***In62*** *- motor 6 Close* – ***pk01*** *- channel 01 of the PIK radio remote control* – ***u Km*** *- wind speed* – ***r*** *- rain state* – ***cron*** *- timed thermostat / timer* *Pressing **+** (plus) and – (minus) together it’s displayed the total number of PIK radio remote control saved in the memory.*

-↑ +↓

P001	Wind sensor activation threshold (5 - 50) Km/h F[30]

-↑ +↓

P005	Rain sensor exclusion time (0 - 10) min F[0]

-↑ +↓

P006	Sensor priority (1 - 3) F[1]. Priority can be selected for only one sensor, where: • 1=rain • 2=wind, 3=timer

-↑ +↓

P101	Exit 1 work time (10 - 240) s F[60]

-↑ +↓

P102	Exit 1 reset time (0 - 60) min F[0] If F[0] the function is not on.

-↑ +↓

P103	Exit 1 Wind sensor function (0 - 2) F[0]. Set the action when active as follows: • 0=none • 1=open • 2=close

-↑ +↓

P104	Exit 1 Rain sensor function (1 - 2) F[2]. Set the action when the input is active, as follows: • 1=open • 2=close

-↑ +↓

P105	Exit 1 Timer function F[0]. Set the action when active as follows: • 0=none • 1=open • 2=close

-↑ +↓

P106	Exit 1 Aeration time (1-60)min F[10].

-↑ +↓

P107	Exit 1 Single manual command functioning mode F[0]: • 0=half-automatic mode • 1=dead-man mode, sensors and remote controls enabled • 2= dead-man mode, sensors and remote controls disabled

-↑ +↓

P201	Exit 2 Work time (10 - 240) s F[60]

-↑ +↓

P202	Exit 2 Reset time (0 - 60)min F[0] If F[0] the function is not on.

-↑ +↓

P203	Exit 2 Wind sensor function (0 - 2) F[0]. Set the action when active as follows: • 0=none • 1=open • 2=close

-↑ +↓

P204	Exit 2 Rain sensor function (1 - 2) F[2]. Set the action when the input is active, as follows: • 0=none • 1=open • 2=close

-↑ +↓

P205	Exit 2 Timer function F[0]. Set the action when active as follows: • 0=none • 1=open • 2=close

-↑ +↓

P206	Exit 2 Aeration time (1-60)min F[10].

-↑ +↓

P207	Exit 2 Single manual command functioning mode: • 0=half-automatic mode • 1=dead-man mode, sensors and remote controls enabled • 2= dead-man mode, sensors and remote controls disabled

-↑ +↓

P301	Exit 3 Work time (10 - 240) s F[60]

-↑ +↓

P302	Exit 3 Reset time (0 - 60)min F[0] If F[0] the function is not on.

-↑ +↓

P303	Exit 3 Wind sensor function (0 - 2) F[0]. Set the action when active as follows: • 0=none • 1=open • 2=close

-↑ +↓

P304	Exit 3 Rain sensor function (1 - 2) F[2]. Set the action when the input is active, as follows: • 0=none • 1=open • 2=close

-↑ +↓

P305	Exit 3 Timer function F[0]. Set the action when active as follows: • 0=none • 1=open • 2=close

-↑ +↓

P306	Exit 3 Aeration time (1-60)min F[10].

-↑ +↓

P307	Exit 3 Single manual command functioning mode: • 0=half-automatic mode • 1=dead-man mode, sensors and remote controls enabled • 2= dead-man mode, sensors and remote controls disabled

-↑ +↓

P401	Exit 4 Work time (10 - 240) s F[60]

-↑ +↓

P402	Exit 4 Reset time (0 - 60)min F[0] If F[0] the function is not on.

-↑ +↓

P403	Exit 4 Wind sensor function (0 - 2) F[0]. Set the action when active as follows: • 0=none • 1=open • 2=close

-↑ +↓

P404	Exit 4 Rain sensor function (1 - 2) F[2]. Set the action when the input is active, as follows: • 0=none • 1=open • 2=close

-↑ +↓

P405	Exit 4 Timer function F[0]. Set the action when active as follows: • 0=none • 1=open • 2=close

-↑ +↓

P406	Exit 4 Aeration time (1-60)min F[10].

-↑ +↓

P407	Exit 4 Single manual command functioning mode: • 0=half-automatic mode • 1=dead-man mode, sensors and remote controls enabled • 2= dead-man mode, sensors and remote controls disabled

-↑ +↓

P501	Exit 5 Work time (10 - 240) s F[60]

-↑ +↓

P502	Exit 4 Reset time (0 - 60)min F[0] If F[0] the function is not on.

-↑ +↓

P503	Exit 5 Wind sensor function (0 - 2) F[0]. Set the action when active as follows: • 0=none • 1=open • 2=close

-↑ +↓

P504	Exit 5 Rain sensor function (1 - 2) F[2]. Set the action when the input is active, as follows: • 0=none • 1=open • 2=close

-↑ +↓

P505	Exit 5 Timer function F[0]. Set the action when active as follows: • 0=none • 1=open • 2=close

-↑ +↓

P506	Exit 5 Aeration time (1-60)min F[10].

-↑ +↓

P507	Exit 5 Single manual command functioning mode: • 0=half-automatic mode • 1=dead-man mode, sensors and remote controls enabled • 2= dead-man mode, sensors and remote controls disabled

-↑ +↓

P601	Exit 6 Work time (10 - 240) s F[60]

-↑ +↓

P602	Exit 6 Reset time (0 - 60)min F[0] If F[0] the function is not on.

-↑ +↓

P603	Exit 6 Wind sensor function (0 - 2) F[0]. Set the action when active as follows: • 0=none • 1=open • 2=close

-↑ +↓

P604	Exit 6 Rain sensor function (1 - 2) F[2]. Set the action when the input is active, as follows: • 0=none • 1=open • 2=close

-↑ +↓

P605	Exit 6 Timer function F[0]. Set the action when active as follows: • 0=none • 1=open • 2=close

-↑ +↓

P606	Exit 6 Aeration time (1-60)min F[10].

-↑ +↓

P607	Exit 6 Single manual command functioning mode: • 0=half-automatic mode • 1=dead-man mode, sensors and remote controls enabled • 2= dead-man mode, sensors and remote controls disabled

-↑ +↓	
Add	Adds PIK radio remote control channel in the memory
-↑ +↓	
chc	Changes the association: PIK radio remote control channel No. → Motor No.
-↑ +↓	
dEL	Deletes 1 PIK radio remote control from the memory
-↑ +↓	
ReTx	Deletes all PIK radio remote controls from the memory (press twice and the message "**end**" appears)
-↑ +↓	
rESE	Restores the Default values of each parameter F[X] (press twice and the message "**end**" appears).

6.2.2. Errors table

(display)	*The following messages appear on the display in case of error:*
	– ***FULL** – radio remote control memory full* – ***Err** - the radio remote control is not recognized in either delete or write*

6.3. Settable functions

6.3.1. Open-close: individual and general manual controls (on the motherboard) – InXX

*For simplicity, from now on the **opening** of the window is associated with forward movement of the motor and **closing** of the window is associated with backward movement of the motor.*

The terminal block on the motherboard and expansion modules have manual control inputs (suitable for voltage-free **n.o.** type buttons) for opening and closing connected actuators. The operating mode for each output can be selected using parameter P _07.

The general open or general close control affects all outputs and has maximum control priority. However, it is also conditioned by the mode selected on the individual output: if P107=0 P 207=1 P307=**2** P407= 1 P507=1 and P607=1, then the general control will have mode **2** as its operating mode. Similarly, if P107=0 P 207=**1** P307=0 P407=**1** P507=**1** and P607=0, then the general control will have mode **1** as its operating mode. When the inputs are activated, the following message appears on the Display: "**inXX**". Operation of the individual manual controls is as follows:

- **0 = Semi-automatic mode**
  When the **n.o.** contact is closed - *and immediately released* – the input is activated and the station controls the forward/backward movement of the actuators for the "output work time" set in parameter P101,P201,P301,P401,P501 and P601.

- **1 = Deadman mode, sensors and radio remote controls enabled**
  When the contact is closed, the station controls the forward/back movement of the motor until the contact is released. All automatic opening/closing – restore function – ventilation function controlled by the sensors, remain active (if set). The radio remote control remains active.
- **2 = Deadman mode, sensors and radio remote controls not enabled**
  When the contact is closed, the station controls the forward/back movement of the motor until the contact is released. All automatic opening/closing – restore function – ventilation function controlled by the sensors, are disabled (blocked). The radio remote control is also disabled.

6.3.2. Rain sensor - Parameters P005, P104, P204, P304, P404, P504, P604

Upon activation of the rain sensor, the respective message "**r**" appears on the display,

- The RAIN input is set up to be connected to a device that detects rain and provides a voltage-free n.o. contact. The opening/closing action of the window can be set using the P104-P204-P304-P404-P504-P604 menu.

Supply voltage 24V⎓ for rain sensor	
Tension (V)	**Maximum Current (mA)**
24V⎓	100mA

Please contact Nekos technical office to use rain sensors other than NSR1

- In case of rain with the window closed, the window can be reopened by excluding intervention of the rain sensor for the time set in parameter P005.

***Caution**. If unit command comes from the remote control or parameter P_07=0 can be useful to set a value to force the opening in case of rain. If you do not want to use this function, leave the parameter P005 = 0.*

6.3.3. Wind sensor - Parameters P103, P203, P303, P403, P503, P603

Upon activation of the wind sensor, the respective message appears on the display: "**u XX**", where XX is the value of the detected wind speed expressed in Km/h.

The intervention threshold of the wind sensor is set by parameter P001 within the range **5 Km/h - 50 Km/h.**

The opening or closing of the windows can be set by the parameters P103-P203-P303-P403-P503-P603. Temporary wind gusts do not activate the function.

6.3.4. Cron / Timer input (on main board) - Parameters P105, P205, P305, P405, P505, P605

A "timer" command input of the voltage-free **n.o.** type is provided on the terminal block. The command comes from any device that has a voltage-free contact output, such as a timed thermostat, timer, clock, etc.

Activation of the timer command affects all the motor outputs of the associated modules: exit 1-exit 2 of the first module, exit 3-exit 4 of the second module and exit 5-exit 6 of the third module.

The opening or closing of the windows can be set by the parameters P105-P205-P305-P405-P505-P605.

6.3.5. Sensor priority – Parameter P006

By means of parameter P006, higher priority can be assigned to one of the sensors (wind-rain-timer) in case events occur simultaneously.

Attention. *In case events occur simultaneously, the unit will follow these priorities:*

1. *General manual command*
2. *Single manual command*
3. *Remote control*
4. *Sensors*
5. *Aeration*
6. *Restoration*

6.3.6. Exit reset time – Parameters P102, P202, P302, P402, P502, P602

After intervention of the sensors (rain, wind) and the reset time set by parameter P102 – P202 – P302 – P402 – P502 – P602 has passed, the window returns to the previous scenario.

Caution*.*
If you do not want to use this function, leave the parameter P102 – P202 – P302 – P402 – P502 – P602 = *0*

With P102 – P202 – P302 – P402 – P502 – P602 = 0, when one or more sensors intervene the window goes to the position instructed by the sensor with higher priority and remains there.

6.3.7. Output ventilation time – Parameters P106, P206, P306, P406, P506 and P606

The Ventilation function is for automatically ventilating the room. To activate this function, press the F1 and arrow ▲buttons in sequence on the radio remote control.

The window opens for the set time and then closes again automatically, unless other commands are given. If a rain sensor signal or a manual or radio-controlled command is given, the ventilation function is interrupted; to restore the function, the button sequence must be repeated.

The set time also includes the opening time of the motor.

6.3.8. Other parameters – Parameters P101, P201, P301, P401, P501, P601, Add, dEL, ReTx, rESE

- The parameter P101 – P201 – P301 – P401 – P501 – P601 is used to set the work time of the exit.

- The parameter “**Add**” of the menu is used to save one or more channels of the PIK radio remote control in the station.
- The parameter “**dEL**” of the menu is used to delete one or more PIK radio remote controls saved previously.
- The parameter “**ReTx**” of the menu is used to delete all PIK radio remote controls from the memory.
- The parameter “**rESE**” of the menu is used to restore the factory-set values (Default).

6.4. Saving a PIK radio remote control

This paragraph concerns only the KL_R or KH_R units equipped with PIK radio remote control.

The remote electronic control provided with KL_R and KH_R units is equipped with 30 selectable channels. Each command channel is connected to one unit exit. Opening/closure/stop of each exit can be commanded using arrow ▲/▼ and STOP buttons.

For more details on the characteristics and operation of the **PIK** radio remote control, consult the instructions manual provided with the radio remote control itself; *not all the functions of the radio remote control are listed in this manual.*

KL_R and KH_R units have the remote control NOT factory-programmed. Carry out memorizing procedure.

The KL_R or KH_R station can accept maximum up to 6 PIK radio remote controls.

Memorizing procedure:

- Equip yourself with the radio remote control, checking beforehand that it is working, has charged batteries and is in good condition.
- Select the “Add” item in the unit menu.
- Press the “OK” button.
- The message “Push” will appear on the display.
- On the PIK radio remote control *(see the instructions provided with the radio remote control)*, select any channel between CH1 and CH6 and press any one of the ▲/▼ ARROW or STOP buttons on the PIK for about 1 second.
- The “OK” message will appear on the unit display, indicating that the memorizing process was successful.
- The radio remote control is now saved and the motors are controlled by the respective channels. (CH1=exit 1; CH2=exit 2….. CH6=exitr 6)

In case of full memory “**FULL**” message appears on the display.
In case of remote control not associated “**Err**” message appears on the display.
Repeat the procedure for any other radio remote controls.

Advanced procedure: associate desired channels or free a channel (“chc” menu).

- Select the “**CHC**” item in the menu of the station.

- Press the “**OK**” button of the control unit.
- The message “**Push**” will appear on the display.
- Select the desired channel on the PIK radio remote control and press any one of the ▲/▼ ARROW or STOP buttons for about 1 second.
- The list of motors from MOT1 to MOT6 and NULL will appear on the display.

  If you want to “free” a certain channel of the PIK (e.g., make it usable for other applications), select “**NULL**”.
- Use the +/- buttons of the control unit to scroll through the exits and select the one you want to be associated with the selected channel.
- Press **OK**.

If CH1 is associated to exit 2, exit 1 can not be commanded from the remote control. To associate CH2 to exit 1 it’s necessary to repeat the advanced procedure choosing CH2 with exit 1. The procedure is repeated for possible other remote controls or channels.

6.5. Saving a radio remote control without access to the board

Saving a new radio remote control remotely, i.e. without access to the electronic board of the station, can occur only if the user already has a previously saved radio remote control.

Obtain the instructions manual of the PIK radio remote control for consultation.

The programming is achieved by carrying out the following procedure:

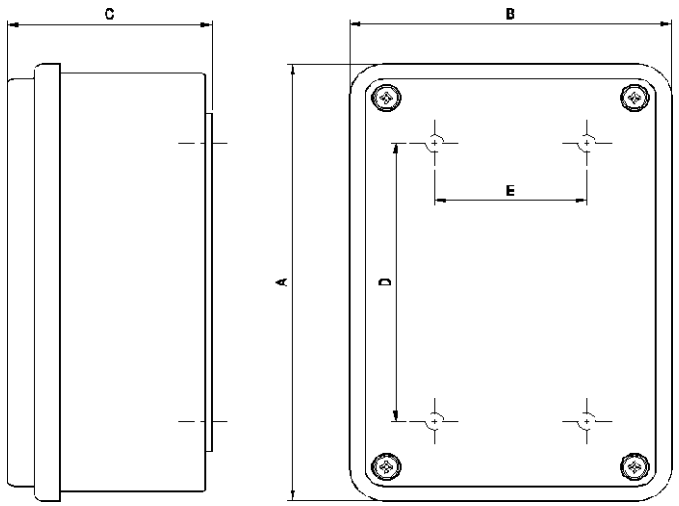
- Equip yourself with the PIK radio remote control to be saved and set it on any channel *(see the instructions of the radio remote control)*.
- Equip yourself with the already saved and operational radio remote control, press the following buttons in sequence: **F1**, **F2** and then **STOP**.
- Within 5 seconds, on the radio remote control to be saved, press one of the ▲ arrow, **STOP** or ▼ arrow buttons twice.
- Now the second radio remote control is operational.

7. OVERALL DIMENSIONS

The container box is made of impact-resistant ABS engineering plastic, RAL7035 grey colored, having a cover with gasket and IP65 degree of protection.

The feed-through holes for the cables, both those for the electric power supply and those coming from the sensors, as well as those going to the motors to be controlled, are not present on the box. The holes must be made by the installer as needed.

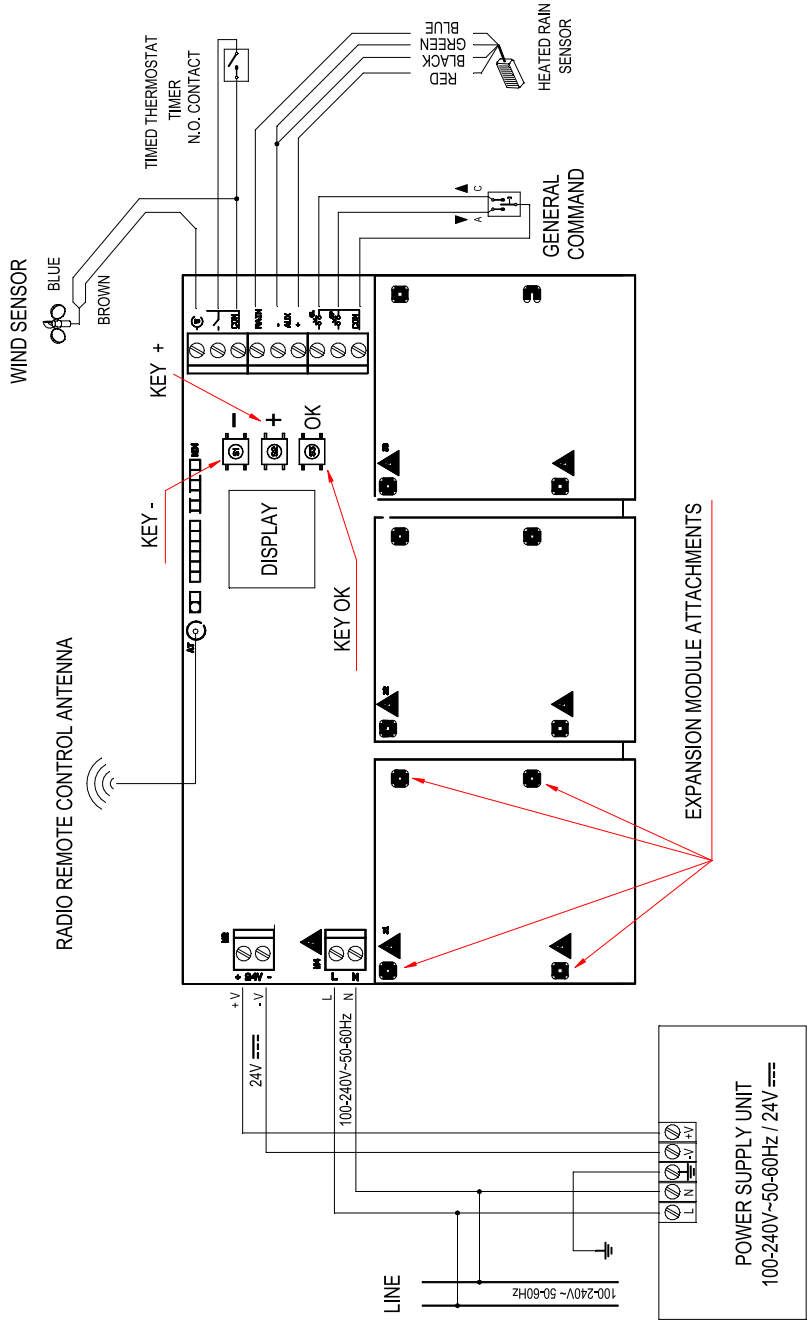
During the drilling of the holes, be very careful so as not to damage the electronic board.



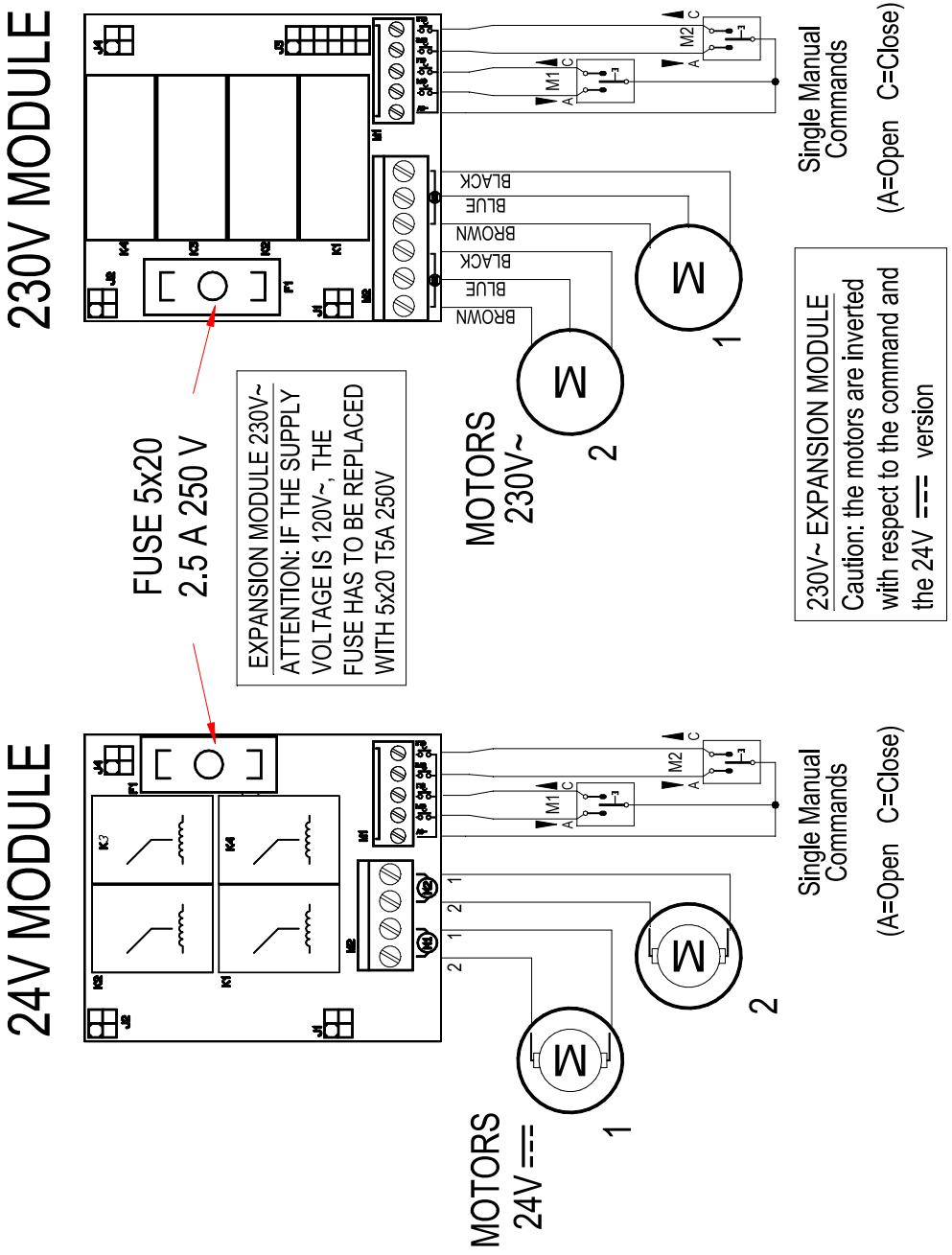
Dimension				
A	*B*	*C*	*D*	*E*
240	**190**	**120**	**220**	**152**

8. CONNECTION DIAGRAM OF THE STATION

Mother board schema



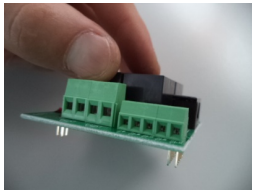
Expansion module schemes

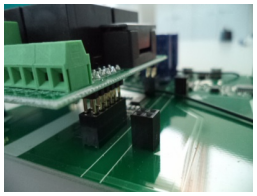


9. CONNECTION OF THE EXPANSION MODULES TO THE MAIN BOARD

Two types of expansion modules are available, modules for 24V ⎓ exits and modules for 100-240V~ exits.

Each module controls two exits separately.





If 24V⎓ modules are used, it is important that you check the power supply unit included in the supply; each 24V⎓ module requires an additional power of about 50W from the power supply unit.

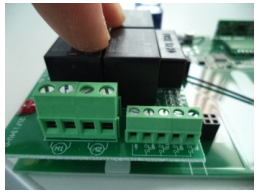
Example:

I purchase a KL4 station that includes two 24V⎓ modules, and I want to add an additional 24V⎓ module. So I have to switch the 100W power supply unit of the KL4 station with a 150W power supply unit.

The same KL4 station, with the addition of a 100-240V~ module, does not require any modifications of the power supply unit.

The 100-240V~ are powered directly from the mains network; in this case it's not necessary to check the available power of the power supply unit.

The 24V⎓ modules and the 100-240V~ modules can be positioned in the appropriate seats provided on the main board, regardless of the type of module.



It is advisable to check that each module contains a fuse for protection of the associated pair of motors.

For insertion of the modules in the seats provided, just insert the pin connectors in the appropriate seats, ensuring that the terminals face the exterior of the main board edge, see image to the side.

Caution.
The outputs of the modules of the 100-240V~ motors are inverted with respect to the modules of the 24V⎓ motors.
In case 100-240V~ module is used to command 120V~ motors its protection fuse has to be doubled (5x20 T5A 250V).

10. ENVIRONMENTAL PROTECTION

All materials used in the manufacture of this appliance are recyclable.

We recommend that the device itself, and any accessories, packaging, etc. be sent to a centre for ecological recycling as established from laws in force on recycling. The device is mainly made from the following materials: aluminium, zinc, iron, plastic of various type, cuprum. Dispose materials in conformity with local regulations about removal.

11. CERTIFICATE OF GUARANTEE

The manufacturer will guarantee good function of the appliance. The manufacturer shall undertake to replace defective parts due to poor quality materials or manufacturing defects in accordance with article 1490 of the Civil Code.

The guarantee covers products and individual parts for **2 years** from the date of purchase. The latter is valid as long as the purchaser possesses proof of purchase and completion of all agreed conditions of payment.

Guarantee of good function of appliances agreed by the manufacturer implies that the latter undertakes to repair or replace free of charge and in the shortest period possible any parts that break while under warranty.

The purchaser is not entitled to any reimbursement for eventual direct or indirect damage or other expenses incurred. Attempt to repair by personnel unauthorised by the manufacture shall render the warranty null and invalid.

The warranty does not cover fragile parts or parts subject to natural wear and tear or corrosion, overload, however temporary etc. The manufacturer will accept no responsibility for eventual damage incurred by erroneous assembly, manoeuvre or insertion, excessive stress or inexpert use.

Repairs performed under guarantee are always "*ex factory of the manufacturer*". Respective transport expenses (out/back) are the responsibility of the purchaser.

12. DECLARATION OF CONFORMITY

The undersigned,

Company name: **NEKOS S.r.l**

Postal address: **Via Capitoni, 7/5**

Postcode and city:

36064 Mason Vicentino VI

Telephone number: **+39 0424 411011**

E-mail address: **info@nekos.it**

declare that the document is issued under our sole responsibility and belongs to the following product:

Apparatus model / Product: **230V and 24V multi-exit ventilation unit**

Trademark: **NEKOS**

Model/Type: **KH2, KH2R, KH4, KH4R, KH6, KH6R, KL2, KL2R, KL4, KL4R, KL6, KL6R**

Batch: *see data label*

Serial number: *see data label*

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

- **2014/30/EU ElectroMagnetic Compatibility Directive (EMCD)**
- **2014/35/EU Low Voltage Directive (LVD)**
- **2014/53/EU Radio Equipment (RED)**
- **2011/65/EU Restriction of the use of certain hazardous substances Directive (RoHS Directive)**

The following harmonised standards and/or technical specifications have been applied:

EMC:
EN 61000-6-3:2007 + A1:2011
EN 61000-6-2:2005 + AC:2005

LVD
EN 60335-1:2012 + EN 60335-1/A11:2014

RED
ETSI EN 301 489-3 V1.6.1:2013, ETSI EN 301 489-1 V1.9.2:2011, ETSI EN 300 220-1 V2.4.1:2012, ETSI EN 300 220-2 V2.4.1:2012

RoHS
EN 50581:2012

Place: **Mason Vicentino**

Date: 14/06/2016

Signature: **Giuliano Galliazzo (*A.D. – President)***

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