VENTMATIKA

www.ventmatika.com

ELECTRICAL CIRCULAR DUCT HEATERS

EKA

Air tightness Class D EN 15727

Technical data
Mounng
Maintenance

Thank you for your purchase of this product. This manual describes how to use and install the supplied product. Be sure that you have read and understood its contents before using the heater.

The electrical heater's model and serial number are located on the label of the product.

WARNING! SAFETY REQUIREMENTS

Improper use of this heater can result in serious bodily injury due to hazards of fire and explosion, burn and electrical shock.

Use only with **electrical voltage** and **frequency** specified **on model label**. Do not perform any service with heater plugged in. Serious injury or death may occur if personnel come in contact with high voltage lead.

Parts of the heater become very hot when operating and immediately after operating. Severe burns may occur if the heater is not allowed to cool down properly before servicing.

TRANSPORTING AND STORING

All products are packed by producer for normal transporng condions. For unloading and storing use proper lifter to prevent product damage and employees injuries. Do not lî product by power supply cable, connecon box. Avoid impacts and impact loads.

Unl final installaon store products in dry place with humidity not more 70% (20°C), average ambient temperature must be 5-40°C. Storing place must be covered from water and dirt. Avoid long term storing. It is not recommended to store products more then 1 (one) year.

RECEIVING AND HANDLING

Inspect heater for any possible shipping damage. Inspect heater element wire for any deformaon that could cause a short circuit or ground. Make sure that casing of the heater is not damaged.

SERVICE

No special service is required for electrical heaters, only to check electrical connecon not less than 1 me per year.

QUALITY

We care about quality. 100% of heaters are tested before shipment.

DISPOSAL

Important environmental information about this product.
This symbol on the device or the package indicates that disposal of the device after its lifecycle could harm the environment. Do not dispose of the unit as unsorted municipal waste; it should be taken to a specialized company for recycling. Respect the local environmental rules.
If in doubt, contact your local waste disposal authorities.

WEEE

Table of contents

Descripon 4
Installaon and electric al connecon 5
Dimensions 7
Technical data 8
Model marking 10
Overheang pr otecon 11
Heaters EKA with integrated controller 11
Descripon of oper ang EKA NV 11
Descripon of oper ang EKA NI 11
Descripon of oper ang EKA NIS 12
Descripon of oper ang EKA NV ... (PT C...PS) 12
Descripon of oper ang EKA NI ... (PT C...PS)* 12
Descripon of oper ang EKA NIS ... (PT C...PS)* 13
Descripon of oper ang EKA NV ... 2NT C* 13
Descripon of oper ang EKA NI ... 2NT C* 13
Descripon of oper ang EKA NV ... PT C/2NTC* 14
Descripon of oper ang EKA NI ... PT C/2NTC* 14
Service 15
Troubleshoong 15
Warranty 15

Description

Electrical duct heaters EKA are designed to heat fresh air in venla on systems. Casing (EKA protecon class IP 44, except EKA Type NV which protecon class IP 30) is made from Aluzinc coated steel which is high temperature proof and with rubber seals for duct connecon. Tube of heang element is made from stainless steel AISI 304. There are 2 protecon thermostats and screw terminals for easy connecon installed in the heaters.

Heaters can be installed horizontally with the electrical connecon box facing upwards or sideways and verc ally (only if the air flow direcon upwards). Heaters can't be installed in explosive and aggressive substances environment. Heaters can be used only for the clean air heang or preheang. Heaters intended only for inside installaon. If heater is installed in such way that can be accidental contact with heang elements, protecv e grill must be installed. The air velocity in the duct of the heater must be 1,5 m/s minimum. The maximum temperature of the output is 50 °C.

Heaters EKA with integrated temperature controller EKR-K... ***(See Fig. 1)*** can be controlled in five different ways depending on control type:

Type EKA NV – potenomet er on the lid of the heater ***(See page 11)***.

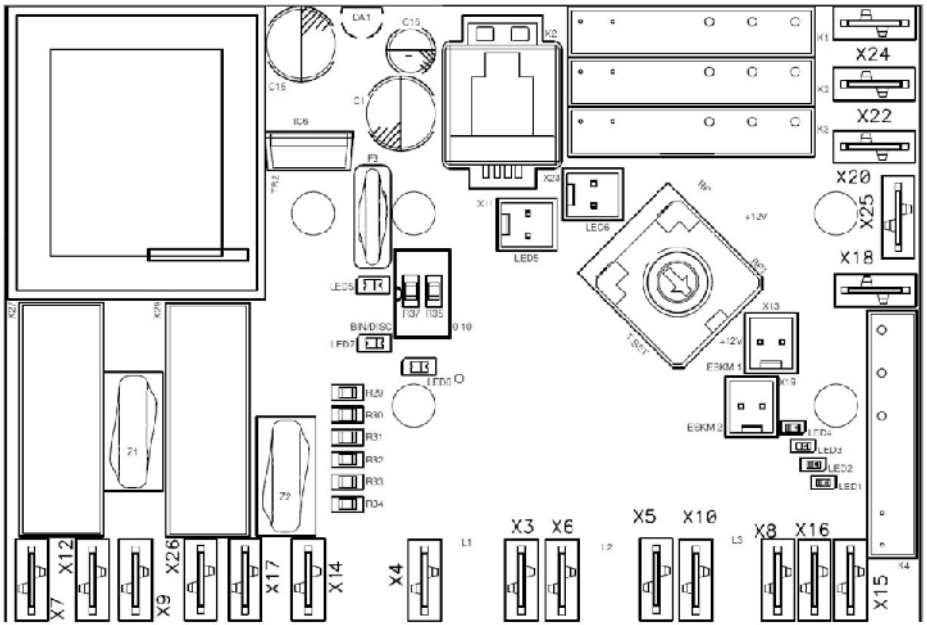
Type EKA NI – external wired remote setpoint knob (TR5K) for temperature control ***(See page 11)***.

Type EKA NIS – external wired remote 0...10V signal for temperature control ***(See page 12)***.

Type EKA ESKM – external wired remote PWM (ON/OFF: ON(6...24)VDC) signal for temp. control

Electrical duct heaters EKA with integrated temperature controller EKR-K... works by PID regulator. That enable fine temperature control. Controller EKR-K... controls load by Triacs without moving parts, which causes no-noise commutaon.

Fig. 1

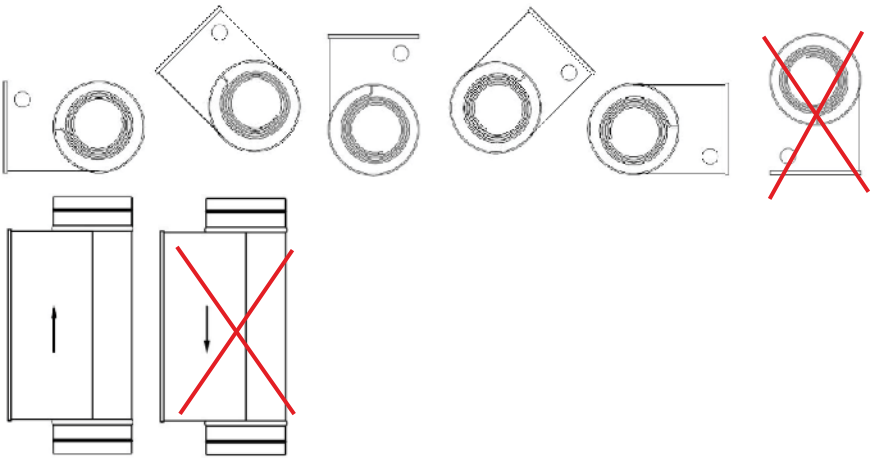


View may vary depending on type EKR-K.

Installation and electrical connection

Electrical duct heaters EKA can be installed horizontally in any posion except electrical connecon box downward and verc ally (only if the air flow direcon upwards) ***(see Fig. 2)***.

Fig. 2



IMPORTANT:

The installaon to the mains power supply may only be wired by a competent electrician. The power supply cable must be selected in the rao with power of the heater. When installing these heaters, the standards and regulaons in force in your country must be followed strictly adhered to. Within the installaon an electrical isolaon automac circuit breaker (not included) must be present, to enable the installer to cut all power supply lines. Automac circuit breaker must be selected regarding power and nominal current (see the electrical rang plate on the lid of heater) of the heater and should have characterisc B. Connect the heater to the mains power supply, check that the voltage, frequency, power and current are the same as those indicated on the electrical rang plate. The heater must be earthed.

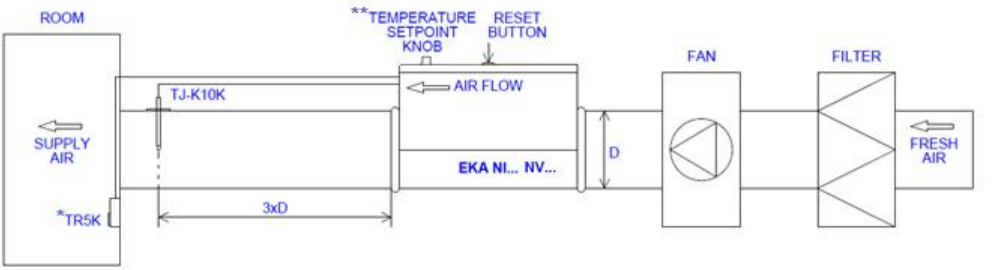
We recommend install supply air temperature sensor in distance mulplied by the heater's diameter (3xD). For example: heater EKA diameter 200 mm, sensor's installaon distance will be: 3x200=600 mm.

Fig. 3. Mounting example EKA NV/NI...

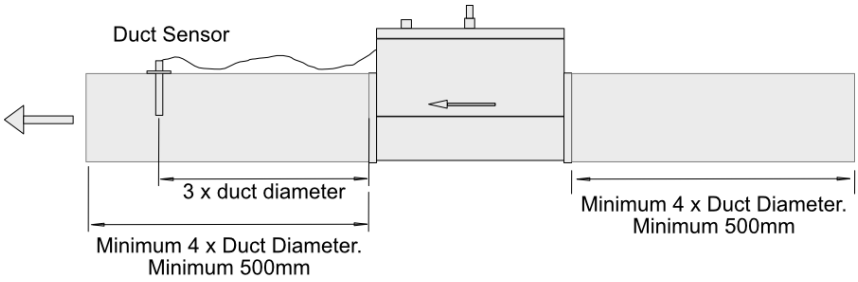
**- TR5K is used in EKA NI heater version.*

***- Temperature set point knob is used in EKA NV heater version.*

Fig. 3



Guidelines for electric heater installation



The heater installation is required to be within a straight section of metal duct.
There is a minimum length requirement of 4 x duct diameter (aboslute min length of 500mm) to be installed on each side of the heater.
No bends or other angled fittings can be added within the minimum straight length of duct from the heater.
No bends or other angled fittings can be added within the minimum straight length of duct preceeding the heater.

Duct Sensor Probe

The duct sensor is required to be fitted in the straight duct at a distance of 3 x duct diameter.
e.g. for 125mm duct, probe distance = 375mm.
for 150mm duct, probe distance = 450mm.
for 250mm duct, probe distance = 750mm.
The duct sensor probe should be installed at a depth of 1/2 the duct diameter.
e.g. for 125mm duct, probe depth = 62mm (approx).
for 150mm duct, probe depth = 75mm.
for 250mm duct, probe depth = 125mm.

Remote Thermostat Controller

For models supplied with a remote thermostat controller, these need to be mounted in the property and not at the heater.
It is recommended that the remote thermostat controller is positioned in a centralised area of the deomestic dwelling or in the main living area if preferred (same principle used as a central heating thermostat).
The same guideline on position within a room for a central heating thermostat should be followed.

Fig. 4. Mounting example EKA NIS/ESKM…

**- External control signal (0…10VDC) is used in EKA NIS type heater.*

***- External PWM control signal ON/OFF: ON (6…24VDC) is used in EKA ESKM type heater.*

Fig. 4

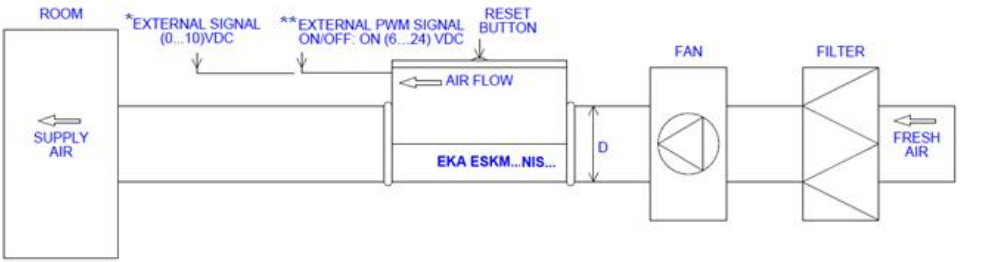


Fig. 5. Mounting example EKA NV/NI…2NTC…

**- Temperature set point knob and TR NTC10 are used in EKA NV 2NTC heater version.*

***- TR5K NTC10 is used in EKA NI 2NTC heater version.*

Fig. 5

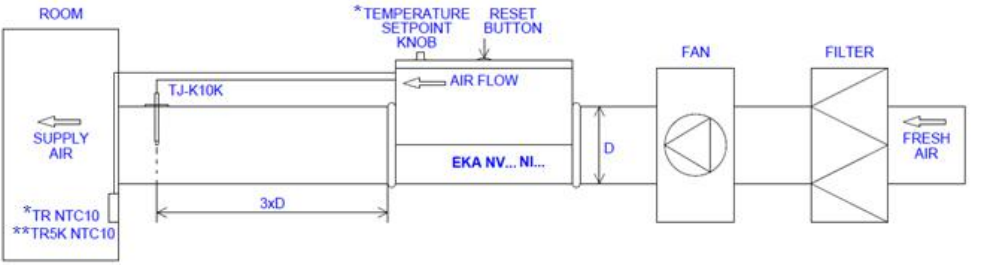


Fig. 6. Mounting example EKA NV/NI… (Preheater)

***- TR5K used only in EKA NI pre-heater version.*

**- Temperature set point knob used only in EKA NV pre-heater version.*

Fig. 6

AHU – Air handling unit

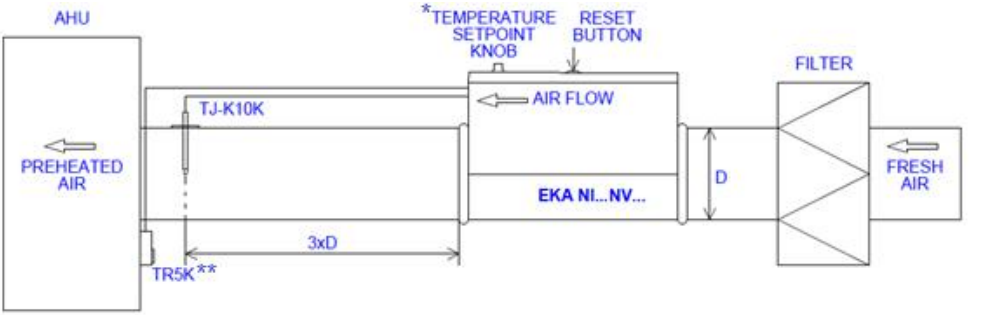


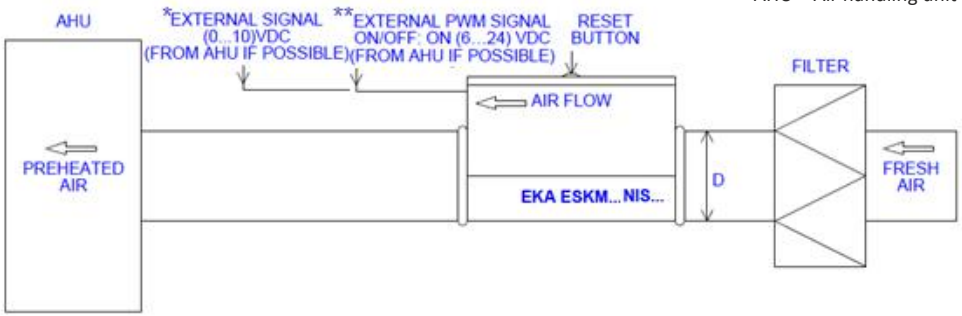
Fig. 7. Mounting example EKA NIS/ESKM... (Preheater)

**- External control signal 0...10VDC (from AHU if possible) is used in EKA NIS type pre-heater.*

***- External PWM control signal ON/OFF: ON 6...24VDC (from AHU if possible) is used in EKA ESKM type pre-heater.*

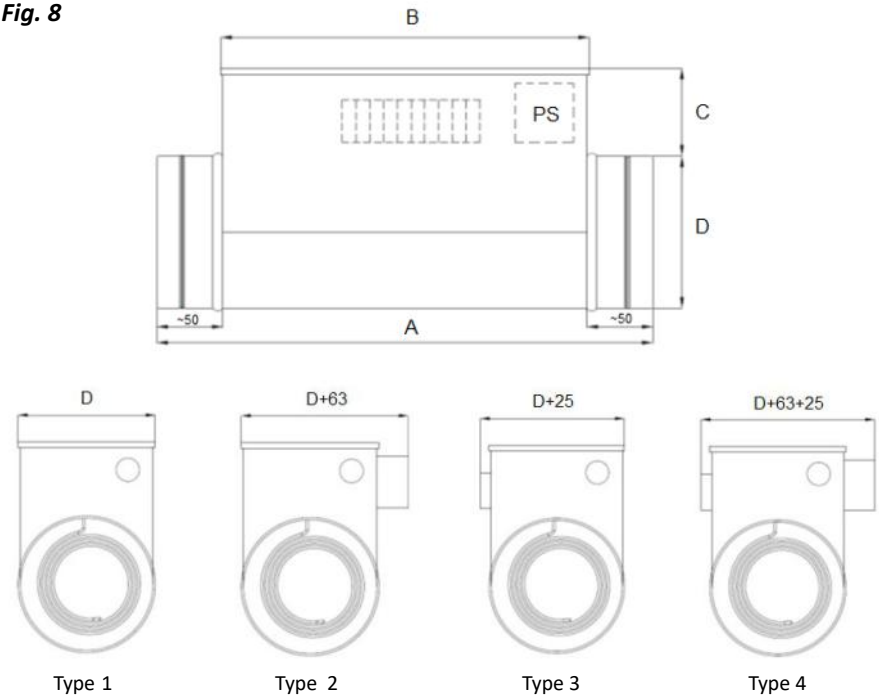
Fig. 7

AHU – Air handling unit



Dimensions

Fig. 8



Type 1 – Standard EKA heater dimensions;
Type 2 – EKA heater with external pressure relay dimensions;
Type 3 – EKA heater with external cooling radiator dimensions;
Type 4 – EKA heater with external cooling radiator and pressure relay diemensions.

Heater type	A(mm)	B(mm)	C(mm)	D(mm)
EKA 100	370	276	71	100
EKA 125	370	276	71	125
EKA 150	370	276	71	150
EKA 160	370	276	71	160
EKA 200	370	276	71	200
EKA 250	370	276	71	250
EKA 250-12kW	500	402	71	250
EKA 250-15kW	630	532	71	250
EKA 315	373	276	71	315
EKA 315-12kW	500	402	71	315
EKA 315-15kW	630	532	71	315
EKA 315-18kW	630	532	71	315
EKA 355	373	276	71	355
EKA 355-12kW	500	402	71	355
EKA 355-15kW	630	532	71	355
EKA 355-18kW	630	532	71	355
EKA 400	373	276	81	400
EKA 400-12kW	500	402	81	400
EKA 400-15kW	630	532	81	400
EKA 400-18kW	630	532	81	400
EKA 400-21kW	770	672	81	400
EKA 400-24kW	880	782	81	400
EKA 450	373	276	81	450
EKA 500	373	276	81	500
EKA 500-12kW	500	402	81	500
EKA 500-15kW	630	532	81	500
EKA 500-18kW	630	532	81	500
EKA 500-21kW	770	672	81	500
EKA 500-24kW	880	782	81	500

Technical data

EKA	ø(mm)	Min. airflow (m^3/h)	Power supply (VAC/50Hz)	Power (kW)	Available heatng elements (kW)
EKA 100	100	45	1~230	0,3...1,8	0,3
EKA 125	125	70	1~230	0,3...3,6	0,3/0,6
EKA 150	150	100	1~230	1,2...3,0	0,6/1,0
EKA 160	160	110	1~230	0,3...7,2	0,3/0,6/1,0/1,2
			2~400	1,0...6,0	1,0
			3~400	3,0...6,0	1,0
EKA 200	200	170	1~230	0,3...7,2	0,3/0,6/1,0/1,2
			2~400	1,0...6,0	1,0
			3~400	3,0...9,0	1,0/1,5
EKA 250	250	265	1~230	0,3...7,2	0,3/0,6/1,0/1,2
			2~400	1,0...9,0	1,0/1,5
			3~400	3,0...9,0	1,0/1,5
EKA 250-12kW	250	265	3~400	12,0	1,0/1,5
EKA 250-15kW	250	265	3~400	15,0	1,0/1,5
EKA 315	315	425	1~230	0,6...9,0	0,6/1,0/1,2
			2~400	1,0...9,0	1,0/1,5
			3~400	3,0...9,0	1,0/1,5

EKA 315-12kW	315	425	2~400	12	1,0/1,5
			3~400	12	1,0/1,5
EKA 315-15kW	315	425	2~400	15	1,0/1,5
			3~400	15	1,0/1,5
EKA 315-18kW	315	425	2~400	18	1,0/1,5
			3~400	18	1,0/1,5
EKA 355	355	535	1~230	0,6...9,0	0,6/1,0/1,2
			2~400	1,0...9,0	1,0/1,5
			3~400	3,0...9,0	1,0/1,5
EKA 355-12kW	355	535	2~400	12	1,0/1,5
			3~400	12	1,0/1,5
EKA 355-15kW	355	535	2~400	15	1,0/1,5
			3~400	15	1,0/1,5
EKA 355-18kW	355	535	2~400	18	1,0/1,5
			3~400	18	1,0/1,5
EKA 400	400	680	1~230	0,6...9,0	0,6/1,0/1,2
			2~400	1,0...9,0	1,0/1,5
			3~400	3,0...9,0	1,0/1,5
EKA 400-12kW	400	680	1~230	9	1,0
			2~400	12	1,0/1,5
			3~400	12	1,0/1,5
EKA 400-15kW	400	680	1~230	12	1,0
			2~400	15	1,0/1,5
			3~400	15	1,0/1,5
EKA 400-18kW	400	680	2~400	18	1,0/1,5
			3~400	18	1,0/1,5
EKA 400-21kW	400	680	3~400	21	1,0/1,5
EKA 400-24kW	400	680	3~400	24	1,0/1,5
EKA 500	500	1060	1~230	0,6...9,0	0,6/1,0/1,2
			2~400	1,0...9,0	1,0/1,5
			3~400	3,0...9,0	1,0/1,5
EKA 500-12kW	500	1060	1~230	9	1,0
			2~400	12	1,0/1,5
			3~400	12	1,0/1,5
EKA 500-15kW	500	1060	1~230	12	1,0
			2~400	15	1,0/1,5
			3~400	15	1,0/1,5
EKA 500-18kW	500	1060	2~400	18	1,0/1,5
			3~400	18	1,0/1,5
EKA 500-21kW	500	1060	3~400	21	1,0/1,5
EKA 500-24kW	500	1060	3~400	24	1,0/1,5

This declaraon is in c onformity with the requirements of the standards:
LST EN 60335-2-30:2010+AC:2010+A11:2012+AC:2015 (EN60335-2-30:2009+ AC:2010+ A11:2012+ +AC:2014);
LST EN61000-4-2:2009 (EN61000-4-2:2009);
LST EN 61000-4-3:2006+A1:2008+A2:2010 (EN 61000-4-3:2006+A1:2008+A2:2010);
LST EN 61000-4-4:2013 (EN 61000-4-4:2012);
LST EN 61000-4-5:2014 (EN 61000-4-5:2014);
LST EN 61000-4-11:2004 (EN 61000-4-11:2004);
LST EN 61000-6-2:2005 (EN 61000-6-2:2005);
LST EN 61000-3-2:2014 (EN 61000-3-2:2014);
LST EN 61000-6-3:2007 + A1:2011 (EN 61000-6-3:2007 + A1:2011);
LST EN 61000-3-3:2014 (EN 61000-3-3:2013).

and therefore complies with the essential requirements and provisions of the (LVD) 2014/35/EC, (EMC) 2014/30 EC, (RoHS) 2011/65/EU and REACH.

The CE mark is affixed.

Model marking

EKA 100-0.3-1f without integrated control

1 2 3

1 – Duct diameter (mm)

100 – 100 mm	160 – 160 mm	355 – 355 mm	450 – 450 mm
125 – 125 mm	200 – 200 mm	400 – 400 mm	500 – 500 mm
150 – 150 mm	315 – 315 mm	450 – 450 mm	

2 – Heating power (kW)

0.3 – 0,3 kW ... 24.0 – 24,0 kW

3 – Input voltage:

1f – Single phase 230V
2f – 2-phase 400V
3f – 3-phase 400V
3f – 3-phase 230V *(on request)*

EKA NV 100-0.3-1f PTC/2NTC with integrated controller

1A 1B 2 3 4

1A – Control type:

NV – Potenomet er for temperature control is on the lid of the heater
NI – External wired remote setpoint knob *(TR5K)* for temperature control
NIS – External wired remote *(0…10) VDC* signal for temperature control *(analog input)*
ESKM – External wired remote PWM *(ON/OFF: ON (6…24) VDC)* signal for temperature control

1B – Duct diameter (mm)

100 – 100 mm	160 – 160 mm	355 – 355 mm	450 – 450 mm
125 – 125 mm	200 – 200 mm	400 – 400 mm	500 – 500 mm
150 – 150 mm	315 – 315 mm	450 – 450 mm	

2 – Heating power (kW)

0.3 – 0,3 kW ... 24.0 – 24,0 kW *(NV, NI, NIS)* >15 kW with mounted addional step
0.3 – 0,3 kW ... 15.0 – 15,0 kW *(ESKM)*

3 – Input voltage:

1f – Single phase 230V
2f – 2-phase 400V
3f – 3-phase 400V

3f – 3-phase 230V *(on request)*

4 – Additional accessories:

PS – Differenal pressure switch for air flow detecon
PTC – Sensor for minimum air velocity detecon
PTC/PS – Sensor for minimum air velocity detec on and diff. pressure switch for air flow detec on
PTC/K – Sensor for minimum air velocity detec on and contactor for overheang proteco n
2NTC – 2 sensors for the air temperature measuring
PTC/2NTC – Sensor for min. air velocity detecon and 2 sensors for the air temperature measuring

Overheating protection

Two overheat protecon thermostats are installed in the electrical circular heater EKA. The first one with automac reset, turns off the heang when the temperature reaches 50 °C and turns on when the temperature drops below 50 °C. The second with manual reset, turns off the heang when the temperature reaches 100 °C. In this case need to figure the cause of the overheang of the heater. Eliminate overheang cause, press „RESET“ bu on on heaters cover.

Addional overheang thermostat (with automac reset) is installed in the EKA heater with ESKM to protect the ESKM controller. This thermostat turns off the heang when the temperature reaches 70 °C and turns on when the temperature drops below 70 °C.

Heaters EKA with integrated controller

Table 1. Technical characteristics of controller EKR-K...

Power supply depending on model	single phase 230V / 2 - phase 400V / 3 - phase 400V
Power consump on in standby mode	0,1VA
Ambient temperature	0...50 °C
Relav e humidity	Max. 90 % RH *(non-condensing)*

Description of operating EKA NV ...

Electrical duct heaters EKA NV ... are designed with integrated temperature control, one temperature sensor, setpoint potenomet er knob is integrated on the heater lid.

When the heater power supply is switched on, LED 6 on the controller (EKR-K...) PCB ***(see Fig. 1 on page 4)*** flashes once every 8 seconds if setpoint is 0 °C and every second if setpoint is higher than 0 °C. If controller turns on the heang depending on the demand, LED 5 lights ***(see Fig. 1 on page 4).***

Heaters EKA NV ... operates by the supply (TJ-K10K) air temperature sensor. Setpoint temperature (0...30) °C.

There can be set the different desired (setpoint) air temperature by potenomet er on the top of the heater casing.

> ***IMPORTANT:*** *If failure appears, power supply must be switched off and only then performed fault elimination works.*

Description of operating EKA NI ...

Electrical duct heaters EKA NI ... are designed with integrated temperature control, one temperature sensor, wired remote control panel (TR5K) for temperature setpoint.

When the heater power supply is switched on, LED 6 on the controller (EKR-K...) PCB ***(see Fig. 1 on page 4)*** flashes once every 8 seconds if setpoint is 0 °C and every second if setpoint is higher than 0 °C. If controller turns on the heang depending on the demand, LED 5 lights ***(see Fig. 1 on page 4).***

Heaters EKA NI ... operates by the supply (TJ-K10K) air temperature sensor. Setpoint temperature (0...30) °C.

There can be set the different desired (setpoint) air temperature by wired remote control panel.

If LED 6 lights connuously it means that there is a failure of: supply (TJ-K10K) air temperature sensor or wired remote control panel TR5K.

> ***IMPORTANT:*** *If failure appears, power supply must be switched off and only then performed fault elimination works.*

Description of operating EKA NIS ...

Electrical duct heaters EKA NIS ... are designed for the heaters power (0...100) % control by analog signal input (0...10) VDC.

When the heater power supply is switched on, LED 6 on the controller (EKR-K...) PCB ***(see Fig. 1 on page 4)*** flashes every second. If controller turns on the heang depending on analog signal, LED 5 lights ***(see Fig. 1 on page 4)***.

Description of operating EKA NV ... (PTC...PS)

Electrical duct heaters EKA NV ... (PTC...PS) are designed with integrated temperature control, PTC (air velocity), PS (air pressure) and temperature sensors, setpoint potenomet er knob is integrated on the heater lid.

When the heater power supply is switched on, controller (EKR-K...) is in preparaon mode for 30 seconds, LED 1 flashes once every 5 seconds. If air velocity is detected by PTC sensor (rapid LED 1 flashes when Min. 1,5 m/s is detected) and air pressure is greater than min 20kPA after preparaon mode ends, LED 1 will start to flash once every second and controller will inia te the heang based on demand, LED 2 is indicang when heang is inia ted. If there is no air velocity detected and or there is not enough pressure in the duct, controller will not inia te the heang unl air velocity and or pressure is detected. Heaters EKA NV... (PTC...PS) operates by the supply (TJ-K10K) air temperature sensor.

EKA NV ... PTC ... setpoint temperature (0...30) °C

EKA NV ... PTC/PS setpoint temperature (-10...50) °C

There can be set the different desired (setpoint) air temperature by potenomet er on the top of the heater casing.

Pre-heater casing and air duct before pre-heater should be insulated with rock wool 10cm (R~2,4m²K/W).

Depending on the mounng posion of the heater in the duct relav e to the motor (pre- or post-motor), the pressure hose must be placed on the "-" or "+" pipe, respecv ely.

IMPORTANT: *If failure appears, power supply must be switched off and only then performed fault elimination works.*

Description of operating EKA NI ... (PTC...PS)*

Electrical duct heaters EKA NI ... (PTC...PS) are designed with integrated temperature control, PTC (air velocity) PS (air pressure) and temperature sensors, wired remote control panel (TR5K) for temperature setpoint.

When the heater power supply is switched on, controller (EKR-K...) is in preparaon mode for 30 seconds, LED 1 flashes once every 5 seconds. If air velocity is detected by PTC sensor (rapid LED 1 flashes when Min. 1,5 m/s is detected) and air pressure is greater than min 20kPA after preparaon mode ends, LED 1 will start to flash once every second and controller will inia te the heang based on demand, LED 2 is indicang when heang is inia ted. If there is no air velocity detected and or there is not enough pressure in the duct, controller will not inia te the heang unl air velocity and or pressure is detected.

Heaters EKA NI ... (PTC...PS) operates by the supply (TJ-K10K) air temperature sensor.

EKA NI ... PTC ... setpoint temperature (0...30) °C

EKA NI ... PTC/PS setpoint temperature (-10...50) °C

There can be set the different desired (setpoint) air temperature by wired remote control panel.

Pre-heater casing and air duct before pre-heater should be insulated with rock wool 10cm (R~2,4m²K/W).

Depending on the mounng posion of the heater in the duct relav e to the motor (pre- or post-motor), the pressure hose must be placed on the "-" or "+" pipe, respecv ely.

IMPORTANT: *If failure appears, power supply must be switched off and only then performed fault elimination works.*

* - non standard opon. For more informaon please contact sales@ventmak a.lt

Description of operating EKA NIS ... (PTC...PS) *

Electrical duct heaters EKA NIS ... (PTC...PS) are designed for the heaters power (0...100) % control by analog signal input (0...10) VDC, with integrated PTC (air velocity) and PS (air pressure) sensors.

When the heater power supply is switched on, controller (EKR-K...) is in preparaon mode for 30 seconds, LED 1 flashes once every 5 seconds. If air velocity is detected by PTC sensor (rapid LED 1 flashes when Min. 1,5 m/s is detected) and air pressure is greater than min 20kPA after preparaon mode ends, LED 1 will start to flash once every second and controller will inia te the heang based on demand, LED 2 is indicang when heang is inia ted. If there is no air velocity detected and or there is not enough pressure in the duct, controller will not inia te the heang unl air velocity and or pressure is detected.

Pre-heater casing and air duct before pre-heater should be insulated with rock wool 10cm (R~2,4m²K/W).

Depending on the mounng posion of the heater in the duct relav e to the motor (pre- or post-motor), the pressure hose must be placed on the "-" or "+" pipe, respecv ely.

IMPORTANT: *If failure appears, power supply must be switched off and only then performed fault elimination works.*

* - non standard opon. For more informaon please contact sales@ventmak a.lt

Description of operating EKA NV ... 2NTC*

Electrical duct heaters EKA NV ... 2NTC are designed with integrated temperature control, two temperature sensors, potenomet er on the top of the heater casing for temperature setpoint.

When the heater power supply is switched on, LED 6 on the controller (EKR-K...) PCB ***(see Fig. 1 on page 4)*** flashes depending on the operang mode. If controller turns on the heang depending on the demand, LED 5 lights ***(see Fig. 1 on page 4)***.

Heaters EKA NI ... 2NTC can operate in two modes:

1.Control by the supply air temperature sensor (TJ-K10K), when the first (1) switch of JP1 -(R37) ***(see Fig. 1 on page 4)*** is in posion ON. LED 6 flashes twice per second. Set point temperature (0...30) °C.

2.Control by the supply (TJ-K10K) and by the room (NTC10) air temperature sensor, when the first (1) switch of JP1 - (R37) ***(see Fig. 1 on page 4)*** is in posion OFF. LED 6 flashes once per second. Setpoint temperature (15...30) °C. In this mode is preprogrammed the minimum (15°C) and the maximum (45°C) temperatures of supply air. The room air temperature sensor is mounted in the wired remote control panel TR5K NTC10.

Depending on the operang mode there can be set the different desired (setpoint) air temperature by wired remote control panel TR5K NTC10.

IMPORTANT: *If failure appears, power supply must be switched off and only then performed fault elimination works.*

* - non standart opon. Fore more informaon please contact sales@ventmak a.lt

Description of operating EKA NI ... 2NTC*

Electrical duct heaters EKA NI ... 2NTC are designed with integrated temperature control, two temperature sensors, wired remote control panel (TR5K NTC10) for temperature setpoint.

When the heater power supply is switched on, LED 6 on the controller (EKR-K...) PCB ***(see Fig. 1 on page 4)*** flashes depending on the operang mode. If controller turns on the heang depending on the demand, LED 5 lights ***(see Fig. 1 on page 4).***

Heaters EKA NI ... 2NTC can operate in two modes:

1.Control by the supply air temperature sensor (TJ-K10K), when the first (1) switch of JP1 -(R37) ***(see Fig. 1 on page 4)*** is in posion ON. LED 6 flashes twice per second. Set point temperature (0...30) °C.

2.Control by the supply (TJ-K10K) and by the room (NTC10) air temperature sensor, when the first (1) switch of JP1 -(R37) ***(see Fig. 1 on page 4)*** is in posion OFF. LED 6 flashes once per second. Setpoint temperature (15...30) °C. In this mode is preprogrammed the minimum (15°C) and the maximum (45°C) temperatures of supply air. The room air temperature sensor is mounted in the wired remote control panel TR5K NTC10.

Depending on the operang mode there can be set the different desired (setpoint) air temperature by wired remote control panel TR5K NTC10.

IMPORTANT: *If failure appears, power supply must be switched off and only then performed fault elimination works.*

* - non standart opon. Fore more informaon please contact sales@ventmak a.lt

*Description of operating EKA NV ... PTC/2NTC**

Electrical duct heaters EKA NV ... PTC/2NTC are designed with integrated temperature control, PTC (air velocity) and two temperature sensors, potenomet er on the top of the heater casing for temperature setpoint.

When the heater power supply is switched on, controller (EKR-K) is in preparaon mode for 30 seconds, LED 1 flashes once every 5 seconds. If air velocity is detected by PTC sensor (rapid LED 1 flashes when Min. 1,5 m/s is detected) after preparaon mode ends, LED 1 will s tart to flash once every second and controller will inia te the heang based on demand, LED 2 is indicang when heang is inia ted. If there is no air velocity detected, controller will not inia te the heang unl air velocity detected.

Heaters EKA NV ... PTC/2NTC can operate in two modes:

1.Control by the supply air temperature sensor (TJ-K10K), when the first (1) switch of JP1 -(R37) ***(see Fig. 1 on page 4)*** is in posion OFF. LED 1 flashes once per second. Setpoint temperature (0...30) °C.

2.Control by the supply (TJ-K10K) and by the room (NTC10) air temperature sensor, when the first (1) switch of JP1 -(R37) ***(see Fig. 1 on page 4)*** is in posion ON. LED 1 flashes twice per second. Setpoint temperature (15...30) °C. In this mode is preprogrammed the minimum (15°C) and the maximum (40°C) temperatures of supply air. The room air temperature sensor is mounted in the wired panel TR NTC10.

Depending on the operang mode there can be set the different desired (setpoint) air temperature by potenomet er on the top of the heater casing.

IMPORTANT: *If failure appears, power supply must be switched off and only then performed fault elimination works.*

* - non standart opon. Fore more informaon please contact sales@ventmak a.lt

*Description of operating EKA NI ... PTC/2NTC**

Electrical duct heaters EKA NI ... PTC/2NTC are designed with integrated temperature control, PTC (air velocity) and two temperature sensors, wired remote control panel (TR5K NTC10) for temperature setpoint.

When the heater power supply is switched on, controller (EKR-K...) is in preparaon mode for 30 seconds, LED 1 flashes once every 5 seconds. If air velocity is detected by PTC sensor (rapid LED 1 flashes when Min. 1,5 m/s is detected) after preparaon mode ends, LED 1 will s tart to flash once every second and controller will inia te the heang based on demand, LED 2 is indicang when heang is inia ted. If there is no air velocity detected, controller will not inia te the heang unl air velocity detected.

Heaters EKA NI ... PTC/2NTC can operate in two modes:

1.Control by the supply air temperature sensor (TJ-K10K), when the first (1) switch of JP1 -(R37) ***(see Fig. 1 on page 4)*** is in posion OFF. LED 1 flashes once per second. Set point temperature (0...30) °C.

2.Control by the supply (TJ-K10K) and by the room (NTC10) air temperature sensor, when the first (1) switch of JP1 -(R37) ***(see Fig. 1 on page 4)*** is in posion ON. LED 1 flashes twice per second. Setpoint temperature (15...30) °C. In this mode is preprogrammed the minimum (15°C) and the maximum (40°C) temperatures of supply air. The room air temperature sensor is mounted in the wired remote control panel TR5K NTC10.

Depending on the operang mode there can be set the different desired (setpoint) air temperature by wired remote control panel TR5K NTC10.

IMPORTANT: *If failure appears, power supply must be switched off and only then performed fault elimination works.*

* - non standart opon. F ore more informaon please c ontact sales@ventmak a.lt

Service

No special service is required for electrical heaters, only to check electrical connecon not less than 1 me per year.

Troubleshooting

No heang fr om heater	1. If the manual protecon is acv ated, check for a fault before pressing the RESET bu on. If the fault is identified after it has been recfied, pr ess the RESET bu on using a screwdriver or similar object. 2. No power supply to heater – check all external electrical connecon c omponents (relays, switches). 3. Temperature sensor fault. Check sensor resistance, it must be 10kΩ at 25°C. 4. Pressure switch fault. Check if pressure in system is set correctly (check the pressure when air flow is not less than 1,5m/s). 5. If LED 1 lights connuously it means tha t there is a failure of: PTC (air velocity) sensor, supply (TJ-K10K) or room (NTC10) air temperature sensor, potenomet er on the top of the heater casing, wired remote control panel TR5K. 6. When the heater power supply is switched on, after power supply interrupon or after any failure, controller is in preparing mode for 30 seconds. 7. PCB fault. Contact: quality@ventmak a.lt
Heater gives full output, not by set point	1. Temperature sensor fault. Check sensor resistance, it must be 10kΩ at 25°C. 2. Air flow sensor fault. Check sensor resistance. It must be 22Ω between X15...X16 and 10Ω between X15...X18. Sensor must be clear. 3. When the heater power supply is switched on, after power supply interrupon or after any failure, controller is in preparing mode for 30 seconds. 4. Triacs fault. Contact: quality@ventmak a.lt 5. PCB fault. Contact: quality@ventmak a.lt
Automac cir cuit breaker switching off	1. Check circuit breakers data, it must correspond to heaters electrical data. 2. Check isolaon of c onnecon c ables, wires, check is heater grounded. 3. Check power supply source data, it must correspond to heaters electrical data.
Protecon thermos tat cut off	1. Low air flow speed through heater. Check filters, fans, ducts of system. 2. Pressure switch fault. Check if pressure in system is set correctly (check the pressure when air flow is not less than 1,5m/s).

Warranty

1. Manufacturer declares **2 years** warranty term from the date of manufacturer's invoice. Warranty is applied in case if all requirements of transporng , storing, installaon and electrical connecon are fulfilled.

2. In case of damaged or faulty product during warranty term customer must inform producer in 5 days and deliver product to manufacture as soon as possible at customer's costs. In other case warranty is not valid.

3. Manufacturer is not responsible for damages which occur during transportaon or installaon.

Manufacturer:

VENTMATIKA UAB

Metalistu str. 2A-1, 78107 Siauliai

Lithuania

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