VENTMATIKA

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ELECTRIC DUCT HEATERS GSIEKA NV PTC

User manual

Air tightness Class D EN 15727

Technical data
Mounting
Maintenance

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 transporting conditions. For unloading and storing use proper lifter to prevent product damage and employees injuries. Do not lift product by power supply cable, connection box. Avoid impacts and impact loads.

Until final installation 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 deformation 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 connection not less than 1 time per year.

QUALITY

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

INGRESS PROTECTION (IP) RATING

First Numeral Protection against contact and ingress of foreign bodies: most wires, small tools, etc.
Second Numeral Protection: no protection. Heaters type GSIEKA protection rating is **IP30**.

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.

Contents

Description

Electrical duct heaters GSIEKA are designed to heat fresh air in ventilation systems. Casing (protection class IP30) is made from Aluzinc coated steel which is high temperature proof. Connection ends have rubber seals for duct connection. Heating element tube is made from stainless steel AISI 304. The heater is equipped with 2 protection thermostats, one manual and one automatic. Inside the heater casing, screw terminals are provided for easy connection. 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.

Model marking

GSIEKA NV 100-0.9-1f PTC with integrated controller

1 2 3 4 5

1 – Control type:

NV – Potentiometer on the top of the heater casing for temperature control

2 – Duct diameter (mm)

100 – 100 mm

3 – Heating power (kW)

0.9 – 0,9 kW

4 – Input voltage:

1f – Single phase 230V

5 – Additional accessories:

PTC – Sensor for minimum air velocity detection

Product types covered

SKU	*Power (kW)*	*Diameter (mm)*	*Compatible with*
GSIEKA10009	0,9	100	VAM150FCVE (9)
GSIEKA15018	1,8	150	VAM250FCVE(9) VAM350FCVE
GSIEKA20024	2,4	200	VAM350-500J7VEB VAM500-650FCVE
GSIEKA25030	3,0	250	VAM650-800-1000J7VEB VAM1500-2000J7VEB VAM800-1000FCVE
GSIEKA35530	3,0	355	VAM1500-2000J7VEB–option plenum VAM1500-2000FCVE

Dimensions

SKU	A(mm)	B(mm)	C(mm)	D(mm)
GSIEKA10009	370	276	71	100
GSIEKA15018	370	276	71	150
GSIEKA20024	370	276	71	200
GSIEKA25030	370	276	71	250
GSIEKA35530	373	276	71	355

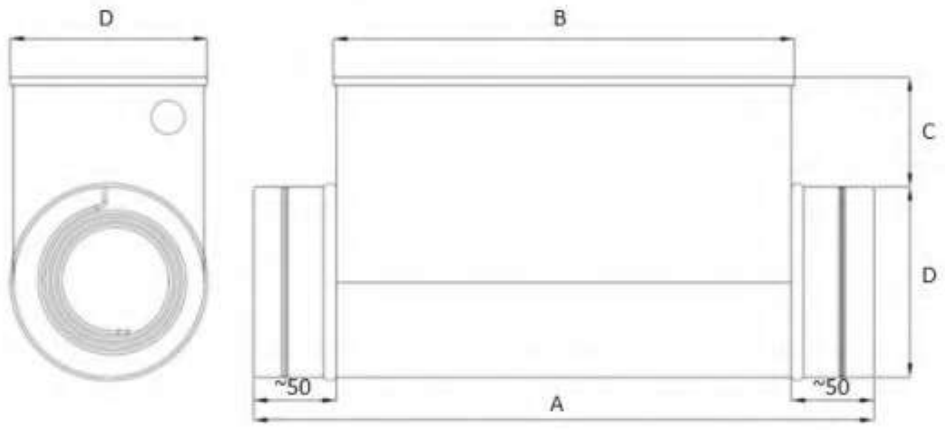


Fig. 1

Unit operation

Electrical duct heaters GSIEKA NV PTC are designed with integrated temperature control, potentiometer on the top of the heater casing for temperature setpoint, PTC (air flow) and temperature sensor.

When the heater's power supply is switched on, controller (EKR-KN) is in preparing mode for 30 seconds, LED 1 will flash once every 5 seconds. If there is air velocity (min. 1,5 m/s) in the duct after preparing mode, LED 1 will flash once per second and controller turns on the heating depending on demand. LED 2 lights continuously when heating. If there is no air velocity, controller doesn't heat till air velocity appears.

Heater GSIEKA NV PTC operates by the supply air temperature sensor (TJK 10K). Different setpoints of desired air temperature can be set on the potentiometer on the top of the heater casing. Temperature set point is -10°C-+50°C.

If LED 1 lights continuously, there is a failure of: PTC (air flow) sensor, supply air temperature sensor (TJ-K10K) or potentiometer on the top of the heater casing.

When the heater power supply is switched on, after power supply interruption or after any failure, controller is in preparing mode for 30 seconds.

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

Technical data

All heaters come with 2 protection thermostats:
1) Automatic reset – cut off temperature 50°C.
2) Manual reset – cut off temperature 100°C. Protection class IP 30.

GSIEKA	*Ø(mm)*	*(m^3/h)*	*(VAC/50Hz)*	*(kW)*	*(A)*
GSIEKA10009	100	45	1~230	0,9	4,1
GSIEKA15018	150	100	1~230	1,8	8,2
GSIEKA20024	200	170	1~230	2,4	10,9
GSIEKA25030	250	265	1~230	3,0	13,6
GSIEKA35530	355	535	1~230	3,0	13,6

Fig. 2

Transportation and storing

All products are packed by producer for normal transporting conditions. For unloading and storing use proper lifter to prevent product damage and employee injuries. Do not lift product by power supply cable, automation components. Avoid impacts and impact loads. Until final installation 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 than 1 (one) year.

Installation

Heater can be installed in any position ***(see Fig. 3 on page 7)*** except electrical connection box downward. If heater is installed in such way that can be accidental contact with heating elements, protective grill must be installed.

Air velocity through heater must be 1,5 m/s or higher.

Heaters cannot be installed in explosive and aggressive substances atmosphere. Heaters can be used only for clean air heating. Heaters intended for inside installation.

IMPORTANT:
The installation to the mains power supply may only be wired by a competent electrician. The power supply cable must be selected in the ratio with power of the heater. When installing these heaters, the standards and regulations in force in your country must be followed strictly adhered to. Within the installation an electrical isolation automatic circuit breaker (not included) must be present, to enable the installer to cut all power supply lines. Automatic circuit breaker must be selected regarding power and nominal current (see the electrical rating plate on the heater casing top) of the heater and should have characteristic 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 rating plate. The heater must be earthed.

1) Heater can be installed horizontally in any position except electrical connection box downward and vertically (only if the air flow direction upwards) ***(see Fig. 3 on page 7).***

2) The best position for the terminal box is on the side of the horizontal duct. Ensure access to the terminal box is available. Make sure that thermal insulation etc. does not cover the terminal box.

3) All heaters should be kept away from plastic conduits or materials easily damaged by heat.

4) When used in VAM installations keep a minimum of 2 meters of duct from the heater to the VAM unit. To install the heater, measure between the swaged rings and cut the spiral to suit. Use high temperature sealant and pop rivets to fix. Do not use flexible connectors directly onto the heater.

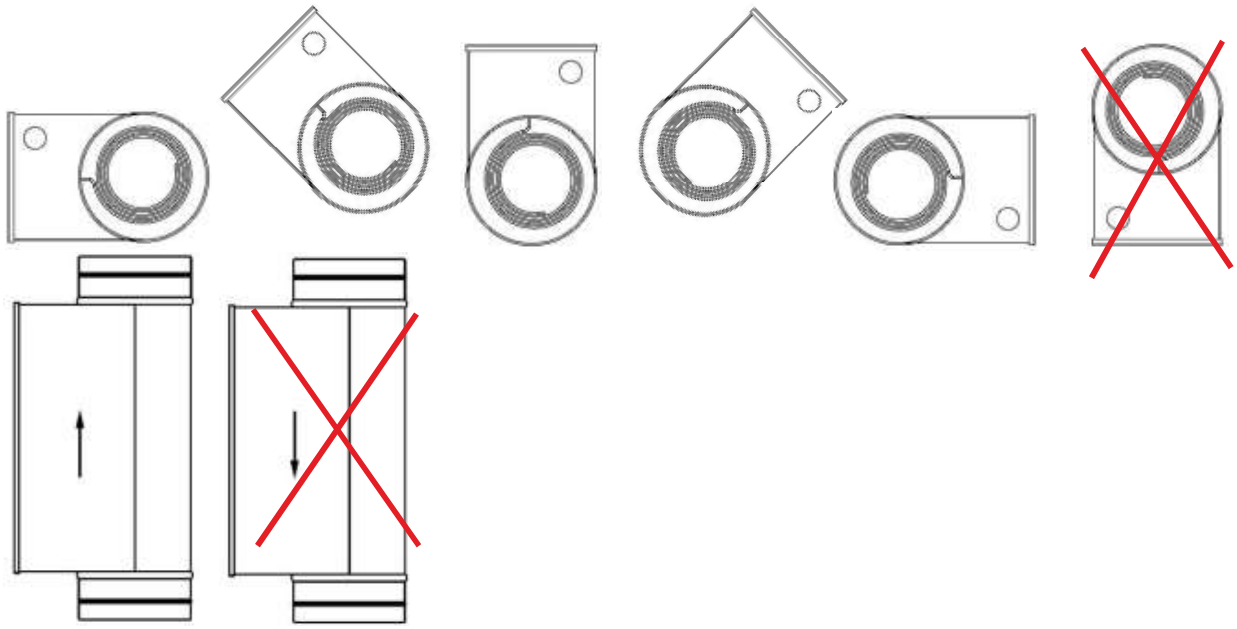


Fig. 3

5) Heater and VAM should each have a separate power supply.

We recommend installing the supply air temperature sensor in distance multiplied by the heater's diameter (3xD). For example: heater GSIEKA diameter 200 mm, sensor's installation distance will be: 3x200=600 mm ***(see Fig. 4)***.

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

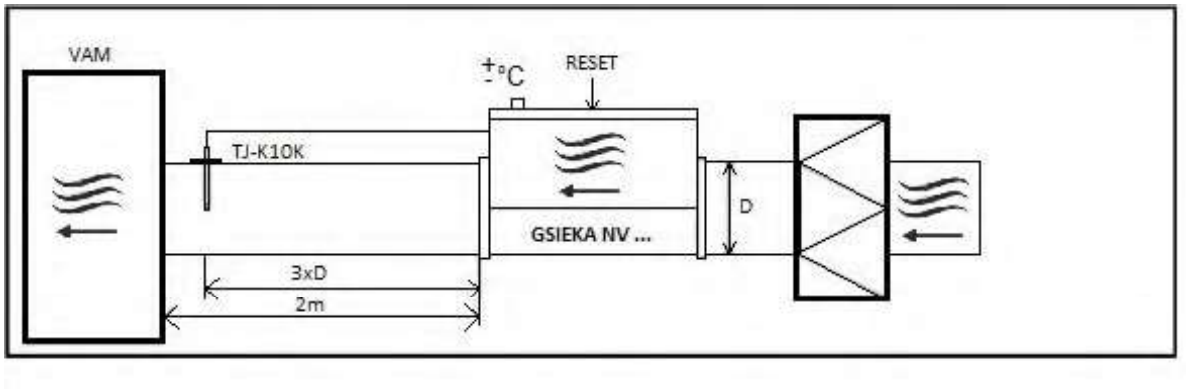


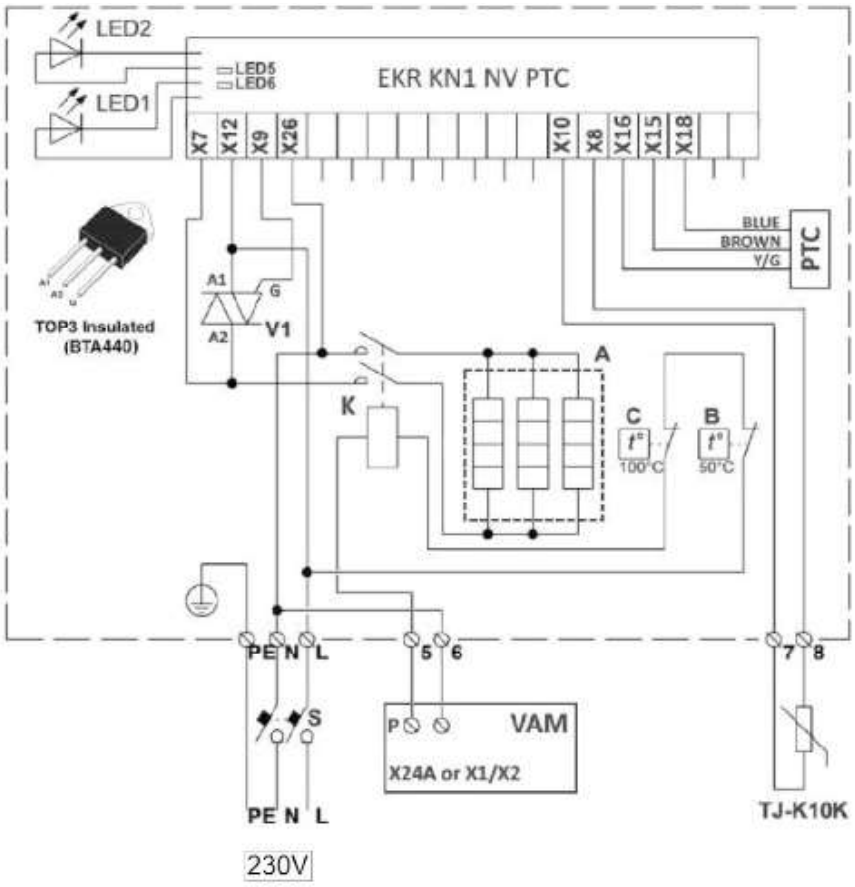
Fig. 4

Wiring/electrical diagrams & electrical wiring diagram marking

See Fig. 5 on page 8.

S – Automatic circuit breaker
RG1 – PCB of temperature controller
V1 – Triac
A1...A3 – Heating elements
B – Overheat thermostat with automatic reset
C – Overheat thermostat with manual reset
K1 – Contactor (relay)
PTC – Sensor for minimum air velocity detection
TJ-K10K – Supply air temperature sensor
VAM – Heat reclaim ventiliation unit

- SVAM150-250FCVE - heater option kit
  BRP4A50 - terminal 1-2
- VAM150-250FCVE9 - terminal X1-X2
- VAM350-2000FCVE - connector X24A
- VAM350-2000J7VEB - connector X24A



≤ 3,0 kW

Fig. 5

VAM remote control settings

Change following field settings to enable the used contact and to enable fan delay.

VAM150-250FCVE - 19(29)-08-04 must be activated to enable fan delay

VAM150-250FCVE9 - 18(28)-03-01 must be activated to enable X1-X2 output
- 19(29)-08-03 must be activated to enable fan delay

VAM350-2000FCVE - 18(28)-03-01 must be activated to enable X24A output
- 19(29)-08-03 must be activated to enable fan delay

VAM350-2000J7VEB - 18(28)-03-01 must be activated to enable X24A output
- 19(29)-08-03 must be activated to enable fan delay

Service

No special service is required for electrical heaters, only to check electrical connection, check if heating elements and PTC air flow sensor are clean not less than 1 time per year.

Troubleshooting

No heating from heater	1. Manual reset thermostat is cut off. In this case need to figure the cause of the overheating of the heater. Eliminate overheating cause, press „RESET“ button on heaters cover. 2. No power supply to heater – check all external electrical connection components (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. PCB fault. Contact manufacturer: quality@ventmatika.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. Triacs fault. 4. PCB fault. Contact manufacturer: quality@ventmatika.lt
Automatic circuit breaker switching off	1. Check circuit breakers data, it must correspond to heaters electrical data. 2. Check isolation of connection cables, wires, check is heater grounded. 3. Check power supply source data, it must correspond to heaters electrical data.
Protection thermostat 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 transporting, storing, installation and electrical connection 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. Manufacture is not responsible for damages which occur during transportation or installation.

Warranty claim form

- Warranty Claim Form has to be COMPLETELY filled out and sent to the producer by e-mail or fax.
- Product or product part serial number and production date must be indicated.
- All defective products or product parts should be returned to factory with the copy of this form.
- If the above mentioned point No. 3 cannot be fulfilled and there are serious reasons for that, all possible information (photos, descriptions and etc.) has to be sent with this form. Photos must be taken in such a way that product or product part label and possible defect part is clearly visible and identified.
- Warranty claim would not be accepted if product or product part is mechanically damaged or there were made any modifications to the product without written producer consent.
- An invoice has to be included to obtain warranty.

Latest revisions of the supplied documentation may be available on the regional Daikin website or via your dealer.
The original documentation is written in English. All other languages are translations.

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