

EPO-V Electric Heater

Use, maintenance and installation manual

Content

Important notices	3
1. Intended use	4
2. Technical description	4
3. Storage and transport	4
4. Installation of the appliance	4
4.1. Safety instructions	4
4.2. Installation conditions	5
5. Electrical connection	5
5.1. Electrical connection.....	6
6. Commissioning	6
7. Operation and maintenance	7
8. Problems and failures - troubleshooting	7
9. Disposal	7
9.1. Packaging disposal.....	7
9.2. Disposal of disused heater	7
10. Repairs, spare parts	7
11. Warranty	7

Dear customer,

Thank you for choosing our product. We hope that you will be fully satisfied.

This manual contains all necessary instructions, information, advice and recommendations for the safe and correct operation of the appliance. Please, read this manual carefully and observe the instructions contained herein.

Important notices

- Electrical installation, commissioning and adjustment of the appliance may only be carried out by persons with appropriate electrotechnical qualifications.
- We recommend that you assign the electrical installation, commissioning and adjustment of the appliance to a specialised company.
- Before the installation and commissioning of the appliance read this manual carefully!!
- All accessories as well as the appliance must be installed and used in compliance with the project, technical conditions of the manufacturer and applicable legal regulations and technical standards.
- The appliance may not be installed and operated in the aggressive environment that could attack external and internal mechanical components.
- Before putting the appliance into permanent operation, an initial inspection report of the power supply of the appliance must be provided.

The manufacturer is not liable for damages resulting from the unprofessional installation and operation of the appliance in disagreement with the installation and operation manual and common practices in installing air-handling units and control systems.

1. Intended use

EPO-V series electric heaters are intended for the duct heating of air and for circulation hot-air heating. The heaters are to be installed in ducts and linked to DUPLEX heat recovery ventilation units providing the transport of air.

2. Technical description

EPO-V series electric heaters are supplied in two ranges – circular heaters with capacities between 0.9 kW and 12 kW and rectangular heaters with capacities between 15.0 kW and 54.0 kW.

As standard, both ranges feature heating radiators, power switching elements with so-called zero voltage switching (SSR), a built-in return safety thermostat for switching off the control circuit in the case when air temperature exceeds +70 °C, a built-in manual safety thermostat for switching off the control circuit in the case when air temperature exceeds +120 °C (manual reset), and control electronics allowing to switch on the electric heater via a 10-24 V DC control signal, using e.g. a pulse-width modulation (PWM) signal.

3. Storage and transport

The appliance may only be stored in dry, covered places with ambient temperature between -25 °C and +55 °C. During transportation the appliance must be protected against mechanical damage and leaking water.

During transportation the appliance must be secured against falling and the manner of transportation must eliminate the possibility of the appliance falling or unfastening during transportation.

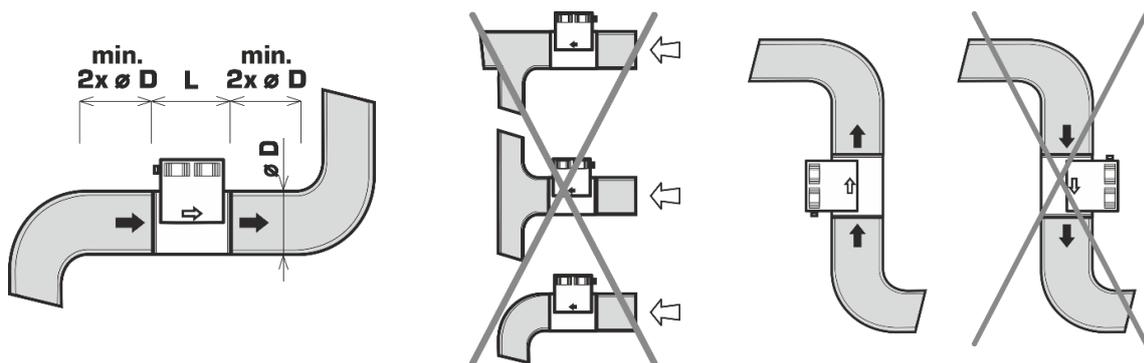
4. Installation of the appliance

4.1. Safety instructions

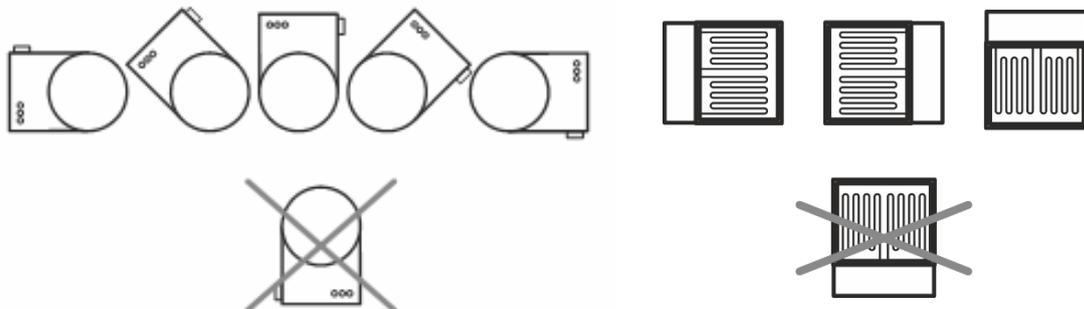
- The appliance is intended for a normal environment. The protection class of the electrical appliance is IP 43.
- The appliance complies with CSN EN 60335-1 A11, A1 and CSN EN 60335-2-30 A1 standards.
- The appliance must be placed at a safe distance (100mm) from flammable and easily combustible materials in accordance with applicable standards and regulations and must be installed onto non-flammable mats.
- The appliance must be anchored by means of independent fixing yokes or it must be on independent stands. During installation observe applicable standards and regulations and this manual.
- Ducts connected to the appliance must be made of non-flammable materials at the length of at least 2 metres on each side. Connections must be dismountable.
- During installation, no mechanical damage to the appliance may occur and extra care must be taken when handling the thermostats and radiators to protect them against damage. The deformation or interruption of the conductors must be avoided.
- Installation must be carried out in compliance with the installation instruction manual compiled by the designer of the air-handling appliance, while maintaining the number of workers or the use of a handling device, particularly when fixing the electric heater in place, the specified means of access and the installation space.
- When handling and installing the appliance observe all rules of safety at work (including safety at work in heights and work with suspended loads) and use suitable work and protective equipment.
- The lifting device and fastening devices may only be operated by persons qualified for such work.
- The appliance must be put out of operation prior to beginning works that may result in the change of environment where the heater is installed, e.g. when painting or gluing surfaces.
- Use suitable type of fire extinguisher (dry powder, snow, halotron) for extinguishing of the electrical appliance.

4.2. Installation conditions

- The appliance must be installed in one of the permitted positions; we recommend horizontal installation with the terminal block from above.
- The direction of air flow through the appliance must comply with the direction of the arrow on the surface of the appliance. No return air flow may occur in the appliance (against the direction of the arrow). The appliance must remain permanently accessible.
- After positioning the appliance in place, make sure it is stable and secure it in such a position against possible movement.
- The appliance must be installed into a duct of the same diameter.
- In front of and behind a circular heater there must be a straight duct whose length is at least double the diameter of the heater. In the case of a rectangular heater the length of the straight duct must be at least equal to the diagonal of the heater. Within this length there must be no widening or narrowing of the cross section, no junctions or bends in the duct (see the figure).



- Provided that the above conditions are met, two heaters may be connected in series one after another.
- If the heater is positioned horizontally the casing of the control unit must be above the heater or on its side, not underneath (see the figure).



- It is possible to provide the heater with thermal insulation (using insulation with fire resistance); however, the casing cover must remain permanently accessible. Coolers of the appliance must remain uncovered by the insulation.
- On the inlet to humid or aggressive spaces a return damper must be installed and no return air flow through the heater may occur. The intake air must not contain any dust, impurities or corrosive substances.

Note: For the latest product information and installation guidelines, please use the latest Duplexvent selection software version, go to your specific project and select Electric heating coil. This tab will then provide the latest data specific for the project and unit selected.

5. Electrical connection

- ! **The electrical connection, commissioning and adjustment of the appliance may only be carried out by persons with appropriate electrical qualifications.**
- Connection to the mains supply must be carried out in compliance with applicable regulations and standards. The heaters are designed for the TN-C, S network.

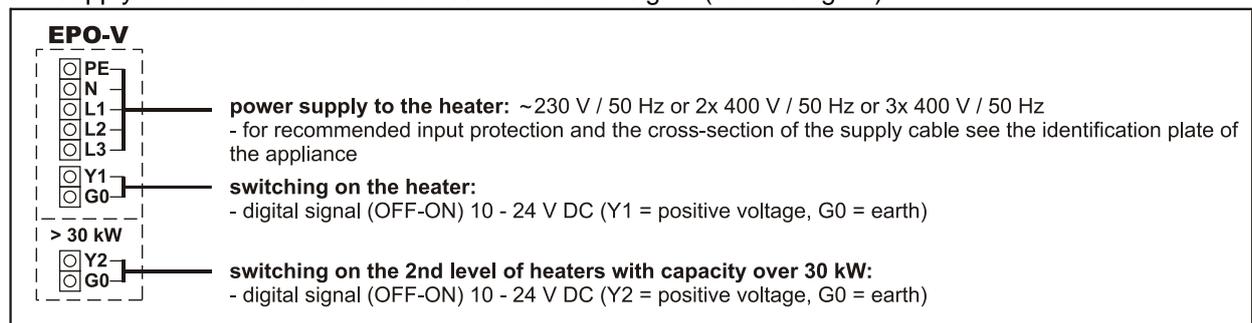
- The recommended size of the power supply line is in keeping with the basic method of the layout, arrangement and number of cables (independent and horizontal layout, calm air, ambient temperature 30 °C). The minimum cross section of the supply line is specified on the identification plate of the appliance.

! The dimensioning of the supply line must take into account the method of the layout, arrangement and number of cables.

- The power supply line of the appliance must include a switch-off device for disconnecting from the mains supply (the distance between its disconnecting contacts must be at least 3 mm in all poles). This disconnecting device must be installed suitably near the appliance.

5.1. Electrical connection

- As standard, EPO-V series electric heaters include a terminal block for connecting one power supply cable and one or two cables with control signal (see the figure).



- When the electric heater is used together with a DUPLEX unit with built-in control, this control ensures that all conditions for the safe operation of the heater are met.
- When the electric heater is used together with a DUPLEX unit without built-in control, its operation is allowed only when all conditions for its commissioning are met.

6. Commissioning

Before commissioning the appliance, the following must be ensured:

- Check whether all instructions from the above chapters were observed during the installation of the appliance and its connection to the mains supply or control systems.
- The operating temperature of the device is up to +40 °C at a relative humidity of up to 80 %.
- Check whether the minimum air flow through the appliance is maintained in all operating modes of the air-handling system. The minimum air flow rate is specified on the identification plate of the appliance.
- Check the correct setting of the run-down time of the fan that transports air through the appliance. The fan run-down time is specified on the identification plate of the appliance.
- Set the air-handling system in such a way so that return air flow through the appliance does not occur in any operating mode.
- Ensure sufficient filtration of air being heated, also for periods when the appliance is out of operation. The filtration class for air being transported must be at least G4 or higher.
- The appliance must always be connected to the supply voltage via recommended protection. The protection rate is specified on the identification plate of the appliance.
- Carry out an initial electrical inspection as per applicable standards. A written record of this inspection must be made.
- The appliance must be controlled by a supervising system that will not allow its operation if the set temperature is exceeded or if minimum air volume is not reached.

- !**
- The surface temperature of the appliance reaches up to 70 °C during operation (switching element coolers), after switch-off it can temporarily reach up to 120 °C. It is therefore necessary to take extra care. A safety warning sign is provided to warn of the danger of burning.

- ! The person commissioning the appliance must ensure the training of operating personnel and hand this manual over to them.

7. Operation and maintenance

The maintenance of the electric heater must be carried out in compliance with the operating instructions and suitable means of access to the air-handling system must be used (ladders, mobile steps, platforms etc.).

The inspection and maintenance of the electric device is carried out in accordance with applicable electric regulations and local operating instructions compiled by the user. The user must arrange for the regular electrical inspections of the electric appliance at set intervals in accordance with applicable standards.

8. Problems and failures - troubleshooting

The heater is not heating

- Due to excessive temperature the irreversible safety thermostat has opened (+120 °C). Reset the thermostat by pressing the red button on the heater cover.
- Check the power supply (protection, power supply line etc.).
- If you do not detect the cause of the failure, disconnect the appliance from the power supply and contact a service technician.

9. Disposal

9.1. Packaging disposal

Materials marked by the symbol  are recyclable.

PAP – corrugated cardboard
FOR – wood

PS – polystyrene
PP – polypropylene

PE – polyethylene

Dispose of such materials into appropriate containers in order to allow for their secondary utilisation.

Dispose of materials marked by symbol  at the waste disposal point designated by the city council!

9.2. Disposal of disused heater

Prior to disposing of the heater make this unusable. Old appliances contain also raw materials that can be recycled. Take the raw materials to the recycling point. It is preferable to dispose of the appliance at a specialized point to allow for recycling of the materials. Dispose of unusable parts of the appliance at a controlled dumping ground.

10. Repairs, spare parts

All guaranteed and post-guarantee repairs are carried out by a qualified company authorised by the supplier.

Service engineers have at their disposal an up-to-date list of spare parts. In case of doubt please contact the supplier.

11. Warranty

The appliance is subject to warranty as it is stated in general delivery and warranty conditions; these form a part of accompanying documentation.

The manufacturer is not liable for damages resulting from unprofessional installation and operation of the appliance in disagreement with the installation and operation manual and common practices in installing and operating air-handling units and control systems.

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80001647 - Issue 1 07/24