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Operating Instructions for Heating Register

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Operating Instructions for Electrical Heating Registers

1. Pre-operational Technical Requirements:

Before connecting the heating register, the voltage stated on the type plate is to be compared to the supply voltage. Heating registers are wired in either one or several vector groups with each vector group having 3 supply terminals when connected to rotary current, 2 supply terminals when connected to direct or alternating current plus 1 supply terminal for earthing.

Only a specialist is allowed to connect a heating register to the main supply. This is subject to the regulations according to DIN 57 100, part 420/VDE 0100. Here the respective inspections, such as a safety temperature controlling and limiting, flow controlling, etc., have to be carried out.

2. Start-up:

Since we do not know the installation conditions, we kindly ask you to note the following when high temperatures occur in the connection box:

In the case of high temperatures of the emerging air or unfavourable conditions (e.g. reduced air volume or during circulating air mode), the temperature in the connection box may rise to a level where the use of commercial rubber-insulated wiring is no longer appropriate (evaluation of this conditions can only be done on-site).

In this case, heat-resisting wiring such as silicone, teflon or fiberglass-coated wiring must be used.

It is, by no means, allowed to operate our heating registers without the indicated air speed. Any data given in our drawings are binding. Should the heating register be operated without air, damages may occur.

3. Switching-off:

When the heating register is switched off, it has to be guaranteed that the ventilator will run for at least 10 additional minutes.

The heat exchanger and the limiting device must be adjusted to the desired temperature of the emerging air. The heat limiting device is to be set at a higher level than the temperature of the emerging air.

In case of a power failure, the heating rods may become hot on the surface. This will not cause any damage to the heating register, but in the worst case, the wire leading to the heating register may be damaged.

Following a power failure, we recommend opening the wiring box and checking the connections and thermostats.

4. Operating Conditions:

Heating registers are custom-made units, which are purpose-made for the customers' particular operating conditions. When ready for dispatch, they will be furnished with the complete documentation of the respective unit (operating instructions, declaration of conformity, dimension sheet, circuit diagram, etc.).

These data and operating conditions can be applied only for the one heating register for which they have especially been made. These have to be adhered to in order to guarantee the usage of the heating register as declared.

The normal environmental conditions, normal operating conditions, normal operation methods and normal operating modes according to DIN VDE 0100 can be applied as a pre-condition for the use of the heating register, if not mentioned otherwise in the reference material.

5. Repair:

When given the identification number of the machine, we will be able to supply spare heating rods within a few days. A works electrician will then be able to carry out the repair work himself. Carrying out repair and maintenance work is only allowed with the electricity switched off. The electrical equipment has to be safeguarded against restoring power according to DIN VDE 0105. Furthermore, it must be observed that the heating rods have cooled down sufficiently before the repair work can be started. Repair work may only be carried out by the respective specialist who will insert and connect the equivalent heating rod exactly the same way he has detached the defective element. Whenever there is no specialist available and, in particular, for larger heating registers, it is advisable to have the repair work carried out by us. Any heating register sent in for repair will be ready for dispatch as good as new and properly tested after only a few days.

6. Long-term Inspection and Maintenance:

Servicing heating registers is basically not necessary. It is enough to check, from time to time, whether all screwed-joint connections are still tightened on the connection cable and whether the cable insulation is crumbling. The only maintenance work to be done is cleaning, if the medium to be heated bears much dirt and dust. We recommend cleaning by means of compressed air. Air filters built-in in front of or behind the heating register have to be cleaned regularly.

Should the heating rods be scaled on the outside due to overheating, it is to be expected that scale will have developed on the inside as well, which may peel off by means of shaking. Therefore, when scaled heating rods have been detected, it is recommended to send the heating register to us for maintenance work.

7. Use of Thermostats:

Thermostats and air current controllers which are marketed and built-in are only mechanically integrated in the heating register. The setting and adjusting of temperatures or flow rates has to be carried out by the customers, for the customer alone knows all the necessary operational data and operating conditions (flow of the current, keeping to the required air volume, etc.). It is due to this that pre-setting the heating register makes no sense.

Thermostats are not pre-set ex factory, therefore, on-site adjustment is necessary.

Temperature limiter (TB) with n.c. (break) contact and lock out are set approximately 5 - 10 K above the operating point.

8. Declaration of the Manufacturer Concerning the Guideline for Machines:

The final machine, into which heating registers or heating rods are assembled as components, may not be operated before it meets the protective requirements and recommendations of the guideline for machines concerning the whole machine.

Safety Regulations Concerning Operating Instructions

1. Directions for the Operational Mode:

Heating registers are to be applied solely for heating fresh air, circulating air or process air (normal operating modes according to DIN VDE 0100).

The protection against accidental contact must be checked electrically as well as furnished and guaranteed thermally on-site.

2. Mounting Position of the Electrical Heating register:

Unless other instructions are made available, heating registers are produced for horizontal assembling. We basically prefer horizontal assemblage with the connection box at the side. By request, we also produce for vertical assemblage of the heating register.

3. Directions for Assembling and Disassembling:

In general, the connection of the electrical mains is subject to the directive 2014/35/EU and DIN VDE 0100, in particular with respect to the dimensioning of any electrical equipment connected to the heating register, the deliberate setting into operation, a safety shutdown and a safe disconnection from the sources of energy. When assembling the heating register, the electric supply may only be installed when all the work concerning mechanical assembling has been finished. Disassembling has to be carried out in reverse order. Mechanical disassembling may not be started before the electric supply has been completely disconnected. Before disassembling can be started, it has to be checked whether the heating rods have cooled down sufficiently.

Basically, any work concerning electric supplies may only be carried out by specialists subject to the regulations according to DIN VDE 0100 or DIN VDE 0110. Special attention has to be paid to the connection of the protective conductor to the designated binding post in the switch box. Any mechanical work must also be carried out by a specialist.

4. Directions for Protection Against Accidental Contact:

Normally, it is intended to assemble the heating register into a channel, with which it is durably joined (screwed joint). If this is not the case and one side of the heating register remains open or unprotected, the customer himself has to take action to protect against accidental contact. It has to be ensured that people cannot touch the heating rods of a heating register. Such a protection is to be realised by assembling a grid at the open side of the heating register. There is hardly any danger arising from the casing of the heating register, for it is electrically earthed by means of an earthed conductor. Should the casing heat up too much, depending upon the assembling situation and local technical data, an on-site insulation against heat is to be attached independently.

5. Directions for Repair and Maintenance:

Any repair and maintenance work may only be carried out with the electricity switched off. The electrical installation must be safeguarded against restoring power according to DIN VDE 0105. Additionally, it has to be checked that the heating rods have cooled down sufficiently before the work can be started.

Manufacturer

For further inquiry and for carrying out repair and maintenance work, we offer our services to you. In so doing, please state the heating register number as given at the end of the operating instructions. The complete operating instruction guide is valid solely for the specific heating register, of which the number is stated.