Open Wire Heating Elements

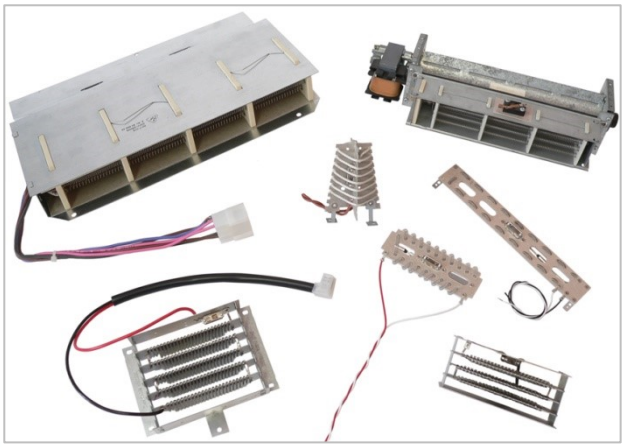
Heating Elements for Cross Flow Fans

Dear Customer,

we would like to use this opportunity to thank you for buying this product from Friedr. Freek GmbH.

Please read this document carefully before installing the heater in order to learn important facts regarding the product's safety and use.

More information about our products you can find on our website: **freek-heaters.com**.



Content:

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Download our contact details on your smart phone. Just scan the code with your QR Reader App.

Introduction

Open wire heating elements are the best solution for air heating when used in fans. Because of our longlasting experience in this field, we can offer you a series construction in most cases. To use our open wire heating elements in air, the installation of a cut-out is necessary (heat accumulation). The connection is done by a plug at the element (Faston 4,8 or 6,3) or by a cord set. The ceramic heating tapes are especially suitable for higher power densities and thus also higher temperatures.

Safety

As a manufacturer of heating elements, Freek is not responsible for the conditions in which its heating elements are installed and connected in the various customer-specific applications in which they are used, nor is it responsible for how the heating elements are controlled there. Rather, it is the customer's responsibility to be aware of and observe good engineering practice as it is recognised in the application and business markets in question. For example, many machines and their equipment are subject to the standard EN 60204 "Safety of machinery – Electrical equipment of machines".

Additionally, the customer is responsible for ensuring that electrical heating elements are only ever connected under the responsibility of a qualified electrician. This is because only a qualified electrician will know the risks associated with electrical heating elements, such as fire, explosion, combustion or electric shock, and – even more importantly – will know the safety measures that need to be put in place in order to prevent such events from occurring, even if the heating elements malfunction. Examples of these safety measures include protection against contact, thermal insulation, electrical insulation, temperature control, overtemperature prevention, earthing, residual current operated circuit breakers, overcurrent circuit breakers and miniature circuit breakers.

General Remarks & Handling

- Adequate air flow must be ensured. Otherwise, there is a risk of accumulated heat leading to the coil burn out.
- Depending on the ambient conditions, the heating coil may get fluffy, which in turn leads to overheating and burnout of the coil.
- Since the open coils are live, the customer must provide adequate protection against contact.
- Our heating elements are designed for being operated at defined voltages. Operation at higher voltages may reduce lifetime considerably or result in immediate failure (15% more voltage = 32% more power!).
- In every practice application there are working and environmental parameters which cannot be calculated exactly in theory. That is why we recommend generally to test our flat heating elements in the application under real working conditions before series use.

No warranty claims can be derived from these user instructions.