

HEAT MANAGEMENT

Switch Cabinet Cooling

CO₂ Protecting the Environment – Who Would Have Thought It?

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At first glance the combination of environmental protection and CO₂ appears paradoxical. CO₂ is perceived as the greenhouse gas par excellence. However, when used as cooling agent in cooling units, it is considerably less harmful to the environment than those substances used previously. Pfannenberg presents the first product of this type.



Focusing on company philosophy of safety for man, machine and the environment: Nils Peter Halm, technical supervisor at Pfannenberg

As a cooling agent, the global warming potential of CO₂ is 1300 times less than that of the fluorinated hydrocarbons (FKW, e.g. R134a) used previously. As well as the environmental properties, there are also physical reasons in favour of using CO₂ as a cooling agent. The specific heat capacity of CO₂ is approximately 2.5 times greater, and its specific refrigerating capacity is about 5 times greater than R134a. This means that heat can be transported through pipes with smaller internal diameters, and a CO₂ compressor can be used that only requires a fifth of the displaced volume of an R134a compressor. The result is that significantly smaller cooling units can be manufactured.

Environmentally Friendly CO₂-Based Cooling Units for Switch Cabinets

For a long time the use of CO₂ as a cooling agent for cooling units was regarded as technically difficult to realise. The cooling technicians at Pfannenberg GmbH in Hamburg saw this as a challenge. A while ago they achieved a decisive breakthrough in the development of environmentally friendly CO₂-based cooling units for switch cabinets. In the meantime, the units have developed to such an extent that they are already successfully employed in industry.

For some months a CO₂-based Pfannenberg cooling unit has been used to cool a switch cabinet for the central production control of adhesive tapes at the Hamburg plant of the Beiersdorf subsidiary 'tesa'. This means that the multinational concern is successfully using Pfannenberg's innovative and environmentally friendly technology before official production has even begun.

Screw-Free Assembly of Cooling Units

At Pfannenberg, they are proud to be able to demonstrate the successful fruits of their complex and time-consuming development work over the last few years, particularly at tesa AG. As well as the environmental aspects, tesa employees have also been impressed by how user-friendly the units are. As with almost all Pfannenberg cooling units, assembly is possible without the use of any screws.

This has allowed Pfannenberg to build on its position as one of the leading technologies on the market in the area of cooling and climate control technology. For Nils Peter Halm, technical supervisor at Pfannenberg, the move was obvious: "With the development of new CO₂-based cooling units, we have done nothing more than follow our philosophy: safety for man, machine, and the environment."

Short Summary of Pfannenberg GmbH

Pfannenberg is a medium-sized company, which provides high-class electrical engineering for industry. It has sites in Hamburg, England, France, Italy, USA, Singapore, and Shanghai. The product portfolio comprises components such as system solutions for switch cabinet climate control, as well as optical and acoustic warning and emergency signals, with a focus on customer-specific solutions.

Links to this subject on the Internet
Everything you need to know about Pfannenberg and CO2 cooling units