

PRESS RELEASE

A milestone in industrial thermal management solutions: Pfannenberger celebrates the 60th birthday of the filter fan

The defining feature of today's 4th generation filter fans is the ease with which they can be installed, maintained and serviced.

Hamburg, 2 May 2018. The electrotechnology specialist Pfannenberger has a reason to celebrate: 60 years ago, in 1958, Otto Pfannenberger invented the filter fan, a milestone in the development of industrial thermal management. Much has changed since this invention and the 4th generation of filter fans from Pfannenberger is now in use. They are part of a huge range of different thermal management solutions that makes Pfannenberger one of the few specialists able to provide a suitable device for almost any industrial requirement anywhere in the world.

"Over the past 60 years, we have trodden a long, successful and highly innovative path regarding thermal management solutions. The 1st generation filter fans allowed us to become an established key supplier of thermal management solutions for electrical enclosures. Our portfolio has grown steadily over the years," says CEO Andreas Pfannenberger. In addition to 4th generation filter fans, this portfolio includes thermostats, heating and cooling devices and chillers. We are one of the few companies today which can cover the full spectrum of industrial thermal management requirements and help our customers to achieve a high level of availability with their systems."

Filter fans – a success story

Over the last few decades, the density of components in switching systems has increased constantly with the accompanying rise in electrical power loss in the housings. Thermal overload is the most frequent cause of failure in electronic systems because the likelihood of breakdown increases with the operating

temperature. Detrimental external factors such as dust, oil and moisture force designers to accommodate control systems in housings which they configure with IP 54 protection, which is why the correct thermal management in switching systems is very important.

Filter fans 4.0 – energy-efficient and cost-effective

Filter fans are all-rounders; they should be powerful, long-lasting, low-maintenance and unobtrusive. 4th generation filter fans are a combination of 11 carefully thought-out details which are protected by patents and which put Pfannenber ahead in thermal management innovation.

With its modular structure, the 4.0 filter fan is particularly maintenance-friendly. It should be quick and easy to change the filter medium as this procedure must be carried out frequently. Pfannenber has implemented a very robust and easy-to-use flap mechanism in the 4th generation of filter fans. The 4-corner fastening system allows them to be installed in the housing cut-outs without any tools. The generously sized seal is impossible to mislay and creates a secure connection to the housing of the electrical enclosure.

The low-profile, airflow-optimized design with its patented fins, a folded filter mat and higher protection class has improved the air-flow rate by 100% compared to filter fans of the previous generation. At the same time, the patented folded filter medium can absorb significantly more particles with its increased surface area and lasts 3 times longer than conventional filter media thus extending the maintenance intervals. 4th generation filter fans with a folded filter mat are particularly energy-efficient and cost-effective with a concomitant improvement in air-flow. Furthermore, the technology of the IP 54 versions has been upgraded to offer even higher protection from dirt particles thanks to class G4 filters.

Pfannenber produces 4.0 filter fans in the widely used light-grey RAL 7035 and in graphite black RAL 9011 so that they can easily blend with whatever design system builders prefer. Pfannenber filter fans are easily integrated in existing applications because the standard housing cut-outs are the same as the Pfannenber standard.

Filter fans – a cost-effective solution

Using filter fans for the thermal management of electrical enclosures is a particularly cost-effective solution. They consist essentially of a fan and a filter medium. Both are installed in an enclosed framework which is also used to attach the device to the electrical enclosure. Filter fans create high pressure in the enclosure with cool filtered outside air which escapes through an opening after it has absorbed the heat in the housing. Another filter, referred to as the exhaust filter, is fitted into this opening. The temperature of the exhaust air can optionally be recorded with a thermostat attached to the inner housing of the Pfannenber filter fan. This allows the filter fan to switch on and off as determined by the cooling requirements which has a positive impact on the energy efficiency of the thermal management system. Depending on their size, arrangement and the surrounding conditions, filter fans can remove a great deal of dissipated heat from the housing and can be used anywhere where the ambient temperature is lower than the nominal temperature of the switching system.

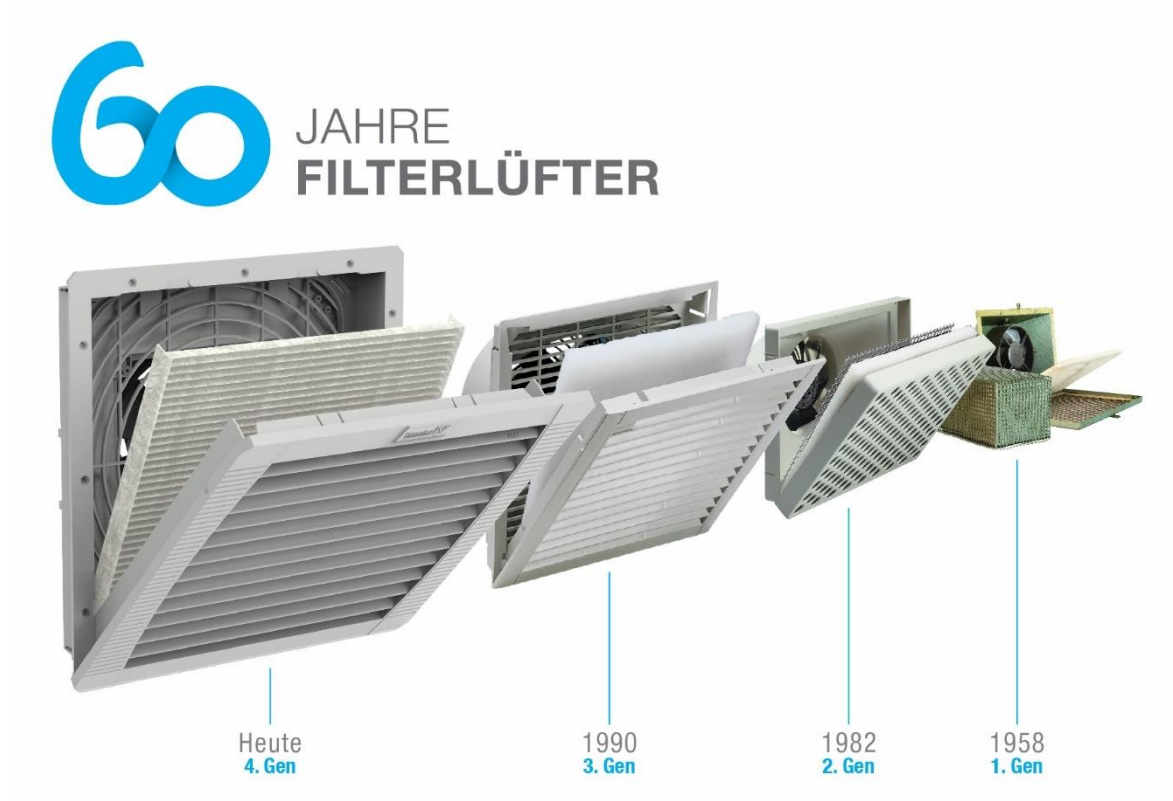
Environmentally friendly filter fans for EMC applications

Fitting EMC-protected Pfannenber filter fans is equally easy and they do not require the removal of paint and the application of conductive sealant to the electrical enclosure. Instead, Pfannenber uses a metal cage with spring contacts. This design is particularly kind to the environment as the materials can easily be separated for disposal. Coated plastic parts produced by other manufacturers need special treatment when they have reached the end of their working life.

PSS, Pfannenber's planning tool, helps with dimensioning

To allow the selection of the correct filter fan solution to deal with waste heat under a given set of conditions, Pfannenber offers some calculation software that is very easy to use. The Pfannenber Sizing Software (PSS) online planning tool helps to determine the correct thermal management solution for any application. It is also possible to choose other thermal management solutions from the wide range offered by Pfannenber. Air/air heat exchangers, active cooling devices, water cooling with air/water heat exchangers in combination with chillers and, last but not least, heating devices with which to prevent condensation.

Photos and photo captions:



60 years of the Pfannenberger filter fan: 4th generation filter fans are powerful, long-lasting and low-maintenance and have become an indispensable component in modern industrial thermal solutions.



Pfannenberger CEO Andreas Pfannenberger.

About Pfannenberg

Pfannenberg is a medium-sized company which provides innovative and high-quality electro-technology for industry. Today, the company belongs to the global players of this industry with its headquarters in Hamburg, Germany and its locations in Brazil, China, England, France, Italy, Russia, Singapore and the USA. The product portfolio comprises components and system solutions for the thermal management of electrical enclosures, chillers, visible and audible signaling technology and custom solutions. A special highlight in the Pfannenberg portfolio is the designed illuminations which are commissioned by architects, designers, and urban and spatial planners (www.art-illumination.com).

You can find more information about Pfannenberg on: <http://www.pfannenberg.com>

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