

# Efficient cooling for *demanding electromobility.*

Solutions for all systems involved in charging  
electric vehicles.

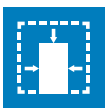
**ebmpapst**

engineering a better life





**Uncompromising cooling solutions for numerous applications *in the field of electromobility:***



Complete range of compact solutions with complete power density



Protection against external influences in every climate



Intelligent control, e.g. with PWM, 0-10 V or MODBUS



Unbeatably quiet



**From energy generation  
to consumers:**

*Heat is generated when processing,  
storing and using electricity, and it  
has to be dissipated. ebm-papst is  
your air moving solution partner to  
help you meet your cooling  
requirements.*

# A world *full of possibilities.*

## Charging stations for trucks

- + Min. charging capacity of 150 kW required
- + High cooling capacity in a small space
- + Variable frequency drive cooling
- + Cable cooling

## Battery cooling system in a forklift truck

- + Compact design
- + High power density
- + Protection against hazards generated by shock vibration
- + Wide temperature range

## Charging stations for passenger cars

- + Charging capacities of 50–150 kW
- + Electronics cooling
- + Variable frequency drive cooling
- + Cable cooling

## Quick-charge stations

- + High cooling capacity required in the shortest time
- + Battery load
- + Charging capacity over 200 kW
- + Variable frequency drive cooling
- + Cable cooling

## Variable frequency drive

- + Switching from AC to DC or DC to AC
- + Cooling required
- + For operating quick-charge stations

You can find out more about our solutions for e-mobility at [www.ebmpapst.com/chargingstation](http://www.ebmpapst.com/chargingstation)



## Power generation

- + Wind power or PV systems
- + Variable frequency drive cooling
- + Electronics cooling

## Charging stations for buses

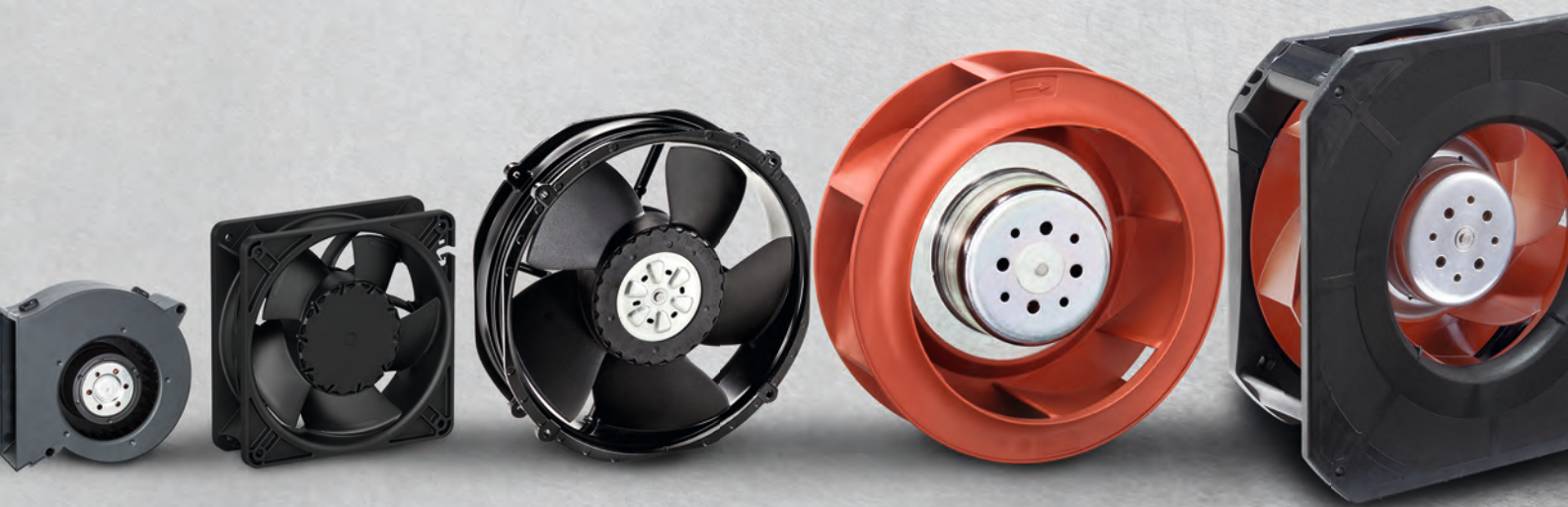
- + Efficient charging for large batteries
- + High charging capacities required
- + Quick charging at bus stops

## Battery storage

- + Line stabilization
- + Compensation of fluctuations
- + Storage is filled when there is excess power
- + Switch cabinet cooling
- + Battery cooling

**So many strengths.**

*And what you gain from it.*



## Extreme conditions require extreme protection

Our fan and compact fan solutions offer maximum operational reliability even in tough ambient conditions. They can withstand continuous temperature changes, sunlight and other weather conditions without any problems, making them ideal for outdoor applications. We can safely say this because we subject each of our solutions to these voluntary, extremely demanding tests:

- Shock and vibration test
- Corrosion test
- Highly accelerated life test (HALT)
- Temperature change rain test
- EMC test

Of course, all the solutions also feature electric overvoltage protection as well. All in all, this means that the technology can run reliably and without downtimes.



## Smart control

Imagine saving energy during every charging process. How does it work? Our intelligent control systems enable demand-based cooling. This means that the fan is controlled in such a way that it only ever delivers as much cooling capacity as the situation requires at any given time. This optimizes the energy consumption and not only reduces noise, but also ensures optimum performance of the charging station.

## Great variety and unbeatable efficiency

With around 20,000 different products, ebm-papst offers the right solution for every conceivable electromobility application. The portfolio includes axial, centrifugal and diagonal fans and compact fans, covering sizes from 25 to 1,250 mm and power ranges from 0.2 watts to 15 kW.

Cooling solutions from ebm-papst enable you to achieve optimum ecological and economic values. The durable DC and GreenTech EC motors ensure outstanding efficiency. This actively contributes towards saving resources. After all, increased efficiency leads to reduced costs and makes sustainability a double gift.



## Unbeatably quiet

Regardless of the location, charging stations and the associated technology should be well integrated into the environment. A high noise level is disconcerting and lowers the quality. Therefore, it is important to minimize the noise level wherever it occurs.

Thanks to our innovative DC and EC technology and aerodynamically optimized

components, our fans and compact fans are quieter than conventional systems, making them among the quietest on the market. This is also achieved through demand-based operation at partial load. And that is good to hear.



## So small and yet the greatest.

For decades, powerful fans and compact fans from ebm-papst have been the benchmark for all applications where installation space is extremely limited. Despite their small size, ebm-papst products deliver maximum performance. They

adapt perfectly to the cooling situation and can be intelligently networked with the relevant systems.



# When we talk about a large portfolio, we really mean it.

What are you looking for? ebm-papst fits with your power and provides you with the right product. Whether axial or centrifugal fans, or axial, centrifugal or diagonal compact fans, our comprehensive portfolio makes it easy for you and always offers you the right solution.

By the way: we ensure that every version is as compact as possible. And thanks to the electronics already installed, our products can be intelligently networked with your system and numerous additional functions.

## *Axial compact fans and axial fans*

As a real space-saving miracle, ebm-papst axial fans move high air flows and also work extremely reliably at high back pressures when required. Combined with ebm-papst GreenTech EC technology, intelligent sensors and control electronics, the fans are smart all-rounders.

**Technical values:**

Voltage: 5–110 VDC, 11–480 VAC

Air volume: 1 to 65,000 m<sup>3</sup>/h

Area of application: up to 1,500 Pa

## *Centrifugal fans and centrifugal compact fans*

Centrifugal fans are primarily used in applications where a higher back pressure has to be overcome. They are available with forward and backward-curved blades and in a scroll housing or as freewheel fans depending on the circumstance. In the case of centrifugal fans with external rotor motors, the motor is positioned in the impeller, ensuring not just optimum cooling of the motor, but also a particularly compact design.

**Technical values:**

Voltage: 6–72, 110 VDC, 85–480 VAC

Air volume: 1 to 30,000 m<sup>3</sup>/h

Area of application: up to 5,200 Pa







## And what are you planning?

Let's work together to find the best solution for your cooling challenges.

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Technical data and variants:  
[www.ebmpapst.com/chargingstation](http://www.ebmpapst.com/chargingstation)

# GreenIntelligence. *Making Engineers Happy.*



Why do our customers look so happy? Because when it comes to digitalization and sustainability, we provide them with a clear competitive edge with GreenIntelligence. The intelligent control and networking of fans and drives makes applications more powerful and efficient. Together with a long product life and highly efficient EC technology, we achieve lasting reductions in energy costs and emissions.

Our intelligent technologies combine high-efficiency ventilation and drive technology with sophisticated sensors and high-performance electronics – for everything from data collection and transmission through to server/cloud connection and data evaluation with application-specific algorithms. Together, we will develop the solution that sustainably lowers costs, saves energy and reduces emissions, whether that's demand-based operation, simple remote monitoring, or predictive maintenance. In this way, we can extend the service life of products and systems, reduce current consumption by up to 70% and help shrink your carbon footprint. Finally, we also improve conditions in living and working environments and help to increase the quality of indoor air.

**GreenIntelligence helps us turn our commitment to *Engineering a better life into reality.***

What exactly does this mean?  
Watch the video now:



**Liam** uses intelligent and sustainable technologies to optimize his applications and save time and money.



# ebm-papst. Engineering a better life.

## *Who we are.*

With over 20,000 different products, ebm-papst offers the right solution for just about any challenge. As the logical next stage in the development of our highly-efficient GreenTech EC technology, we believe that sustainably oriented industrial digitization offers the greatest future prospects for our customers. With GreenIntelligence, we already stand for intelligently interconnected complete solutions that are unrivaled worldwide.

Because it is our claim that each of our innovative hardware and software solutions is always more powerful, compact, efficient and more sustainable than its predecessor, we have grown over the years to become the global technology leader for ventilation and drive technology.

## *What drives us.*

But our consistent pursuit of efficiency and progress has even deeper roots. After all, there is something that excites us even more than our market position. It is the deep awareness that with our solutions we make the lives of many people around the globe more pleasant, safer and thus better. Our central drive for all our thoughts and actions is therefore **Engineering a better life**. It is the answer to the question why it is worthwhile for us to get up every day and give our best.

**ebmpapst**

engineering a better life

## *What you get out of it.*

- 1. Technological edge.**  
With our EC technology and GreenIntelligence, we combine the highest energy efficiency with the advantages of IoT and digital networking.
- 2. Our sustainable approach.**  
We assume responsibility with energy-saving products, environmentally-friendly processes and through social commitment.
- 3. System expertise.**  
As experts in advanced motor technology, electronics and aerodynamics, we provide perfect system solutions from a single source.
- 4. ebm-papst spirit of invention.**  
Over 800 engineers and technicians will develop a solution that precisely fits your needs.
- 5. Personal proximity to you.**  
Through numerous sales locations worldwide.
- 6. Our standard of quality.**  
Our quality management is uncompromising, at every step in every process.

[www.ebmpapst.com](http://www.ebmpapst.com)

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