Compact fans for DC axial fans

Version 2016-01

ebmpapst

The engineer's choice

GREEN TECH

Trendsetter in fan technology

Uncompromising quality made by ebm-papst

Among the best.
Trendsetting with innovative technologies. Listening to customers' needs. Developing new ideas to meet requirements and realizing them with pioneering spirit. This philosophy has made ebm-papst the leading technology pioneer in the world of fans.

A brand in that decades of application expertise gained from large-volume fan production and because we are in a position to produce highly efficient quality products. Our intelligent solutions for electronics cooling make sure that you are always one step ahead of the competition thanks to innovative, reliable, top-quality technology. Of course they are readily available at fair market prices.
And if required, tailor-made right down to the last detail. In other words, if you need fans that do not yet actually exist, contact us.

Insist on ebm-papst.

Table of contents of PDFs on this homepage

ebm-papst company profile

The entire world of ventilation and drive engineering. This is the world of ebm-papst. More than 12,000 people – in Germany and throughout the world – develop, produce and sell our motors and fans. Our global presence and unique range of products, based on a quality standard that surpasses all others, have made us the world market leader in motors and fans. Our daily work is determined by a keen awareness of our customer's needs and constant striving to arrive at the perfect application solution for a wide variety of different industries.
Those who know us know the high standards we apply to our work and know our creed: to be as close to our customers as possible and to simply be the best in terms of innovation and reliability.

Our history – Our drive

Rooted in ebm, PAPST and mvl, the three leading innovators in the development and production of motors and fans, ebm-papst has established itself as the world market leader. Now as ever, our legendary inventive spirit shines through in products that set standards in many industries worldwide. We are proud to say that, despite difficult competition, our performance has always been exemplary and outstanding in business, in our personal relationship with our customers, and of course with respect to technology and engineering. For decades, we have contributed to the world of air technology and drive engineering with both small revolutions and large milestones. To maintain this advantage in skills and knowledge to reach maximum quality and thus the highest degree of customer satisfaction, our employees around the world put their passion and dedication to work for you.

Passionately involved in R&D

Our catalogs only show you the results of our constant work in R&D: products of highest quality and reliability. After all, it is our passion to constantly try something new and improve what we have. We take advantage of the latest development methods and state-of-the-art technology, and invest heavily in R&D facilities. Best of all, though, we rely on excellently trained and skilled engineers and technicians to be at your service in R&D and Sales & Distribution.

Producing and safeguarding high-quality products and services

This is our promise without any compromise. Whether produced in one of our six factories in Germany or one of our eleven international production sites, our products always have the same high level of quality. This quality control is something you can definitely rely on throughout all the stages of the process, from customer service, development, and material selection, to the best certified suppliers, parts production, and final delivery. Furthermore, our products have to pass the most rigorous tests under all realistic operating conditions: continuous stress test, salt spray test, vibration test, or precision noise measuring, just to mention a few. And the product gets clearance for serial production only after all the desired characteristics have been determined to be just right. Environmental care is another priority with ebm-papst. This is why we have developed our product line in EC technology, which makes for very low power consumption. Our manufacturing philosophy is focused completely on environmental care in production, recycling, waste, and wastewater disposal.

Global Domestic

In order to be the world specialist for customized solutions, you need strong partners. Global Domestic – being present all over the world and being a national company in each individual country – is how we have established ourselves in all important markets on this globe with our successful subsidiaries. And so you will always find ebm-papst close to home, speaking your language, and knowing the demands of your markets. Besides, our worldwide production alliance serves as a basis for competitive pricing. Our global services and logistic services ensure short response times, IT networking, and just-in-time delivery.

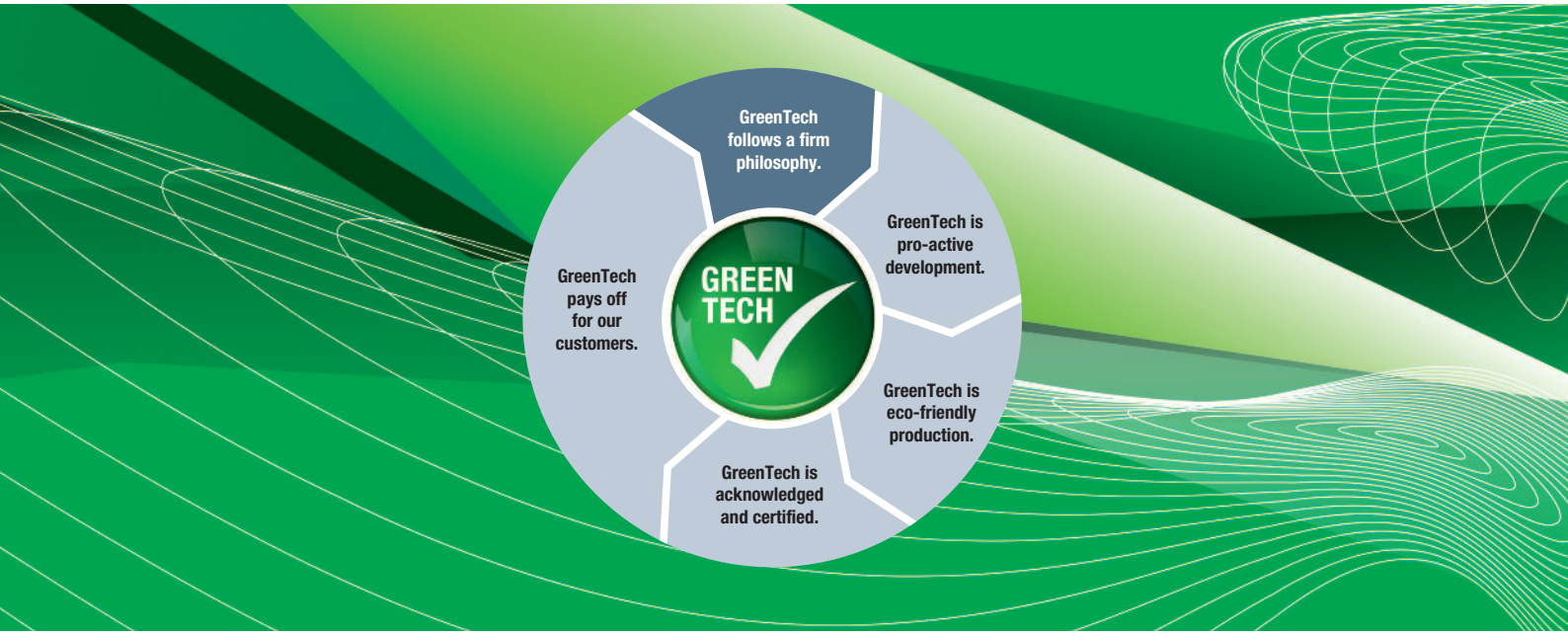
All our efforts are documented in a comprehensive quality management system, both for products and services. Being certified as complying with the tough requirements of the international standards DIN EN ISO 9001, ISO/TS 16949-2 and of standard DIN EN ISO 14001 is just one seal of approval we have received for our constant efforts to provide only the best quality products and services.

Sustainability is at the core of our thinking and action. As a matter of principle!

Environmental compatibility and sustainability have always been at the core of our thinking and action. Which is why we have been dedicated for decades to the simple but firm principle of one of our company founders, Gerhard Sturm: "Every new product we develop must be economically and ecologically superior to its predecessor." We use the name GreenTech to express our company philosophy.

GreenTech is proactive development.
Even in the design phase, the materials and processes we use are optimized for the greatest possible environmental sustainability, energy balance, and wherever possible, recyclability. We continually improve the material and performance of our products, as well as the flow and noise characteristics. At the same time, we reduce energy consumption significantly. Close cooperation with universities and scientific institutes and a professorship we sponsor in the field of power engineering and regenerative energies allow us to profit from the latest research findings in these disciplines while preparing highly qualified young academics for the future at the same time.

GreenTech is eco-friendly production.
GreenTech also stands for maximum energy efficiency in our production processes. Here, the intelligent use of industrial waste heat and groundwater cooling, photovoltaics, and of course, our own cooling and ventilation technology, play a very important role. For example, our most modern plant consumes 91% less energy than currently specified and required. This way our products contribute to protecting the the environment, from their origin to their recyclable packaging.



GreenTech is acknowledged and certified.
Our entire production chain can stand up to critical scrutiny by environmental specialists and the public.
This supports our position as Germany's most sustainable company 2013, as does the DEKRA Award 2012 we received in the category "Umwelt Herausforderung Energiewende" (Environment Challenge: Transition to more sustainable energy systems), to name only a few of a large number of examples. The environmental advantage gained in the performance of the products developed from our GreenTech philosophy can also be measured in our compliance with the most stringent energy and environmental standards. In many instances, our products are already well below the thresholds energy legislation will impose a few years from now.

GreenTech is a good investment for our customers.
Innovative EC technology from ebm-papst is at the heart of GreenTech. As the core element of our most efficient motors and fans, this technology allows efficiencies of up to 90%, saves energy at a very high level, extends the service life significantly, and makes our products maintenance-free. Not only do these values benefit the environment, but every cent also pays off for the user! All ebm-papst products, even those with applications that are not (yet) ready for GreenTech EC technology, have an attractive link between economy and ecology that holds great promise for the future.

Expertise and technology

Drive know-how

For the past 60 years, all conceivable types and applications of drive engineering have played an essential role at ebm-papst. A commitment that is the foundation for the development of optimum drive solutions regardless of the type of fan and its use. DC and EC fans are generally equipped with electronically commutated external rotor motors. In order to save as much space as possible, commutation electronic components are integrated in the hub of the fan. Our AC fans are driven mainly by shaded-pole or capacitor motors based on the external rotor principle. In the 3900 and 9900 range of particularly slim fans, internal rotor motors are used.

Smooth operation

Our aerodynamically optimized design and high mechanical precision produces outstanding noise properties in series production. The "soft" commutation electronics of DC and EC fans produce a very smooth operation. By avoiding steep switching edges when the individual coils are switched, this reduces the structure-borne noise from the motor. Computer-aided measurements and series of analyses performed in a state-of-the-art sound measuring chamber are conducted on each fan model from the very beginning.

Long service life

The bearing system plays a vital role both in the long service life and the smooth operation of device fans. The Sintec compact bearing provides most of the device fans with a proven bearing system. Constant low noise during the entire operating time and considerably lower shock sensitivity are the outstanding features of this bearing technology. In addition, with regard to temperature endurance, Sintec compact bearings can be used without problems in most applications.

Despite the slightly greater noise and shock sensitivity of ball bearings, this bearing technology should be given preference for fans exposed to extreme thermal and adverse application conditions (e.g. extreme environmental conditions, critical installation position, etc.). The service life data provided in this catalog is based on extensive service life tests and mathematically / scientifically proven service life calculations. Our product descriptions are updated continuously with all relevant data obtained from long-term tests.

Aerodynamics

With the aid of state-of-the-art computer programs, we are able to optimize the fan impellers and the inner shape of the housing. Air output and available motor performance are matched exactly to the size of fan. This guarantees the low noise that is typical for ebm-papst, even at high back pressure.

Sturdy construction – in metal or plastic

Fans of all-metal construction: sturdy and resistant. The housing is made of an aluminum alloy. The metal surfaces that are subject to corrosion are permanently protected by an impact- and abrasion-resistant electrophoretic baked enamel. This particular version is very recyclable. Fans with fiberglass-reinforced plastic housing and impeller: Excellent stability and low weight distinguish this highly efficient fan design. Combinations of metal housing and plastic impeller combine the advantages of both types of design.

Product images

The dimensioned drawings and product photos that appear in the catalog are for orientation purposes and may differ in some details from the actual product design.

Product liability

Motors and fans from ebm-papst are components intended for proper installation. The customer bears responsibility for the overall end product.

Safety is included

It goes without saying that all ebm-papst fans conform to the approval requirements of the VDE (Association of German Electrical Engineers)and the standards and regulations of UL and CSA. All fans conform to the European Standard EN 60335 or EN 60950 plus those of the UL (Underwriters Laboratories) and CSA (Canadian Standards Association). With few exceptions, our DC fans are designed to meet the requirements of protection class 3 / protection class voltage. AC fans for protection class 1. ebm-papst fans meet the highest requirements of electrical safety. All design variants feature reverse polarity and locked-rotor protection.

Quality in detail

It is the important details that reveal the meaning of the words "made by ebm-papst": Consistent adherence to development and design processes and a goal-oriented commitment to quality along the entire process chain are the foundation for the above-average service life of our fans. 100,000 hours and above are no longer an exception.
The no-compromise ebm-papst quality assurance spans over all process levels – from the choice of materials and the use of carefully selected, certified suppliers, from the production of parts up to the final assembly. These details combine to result in reliable fan products with an above-average service life.

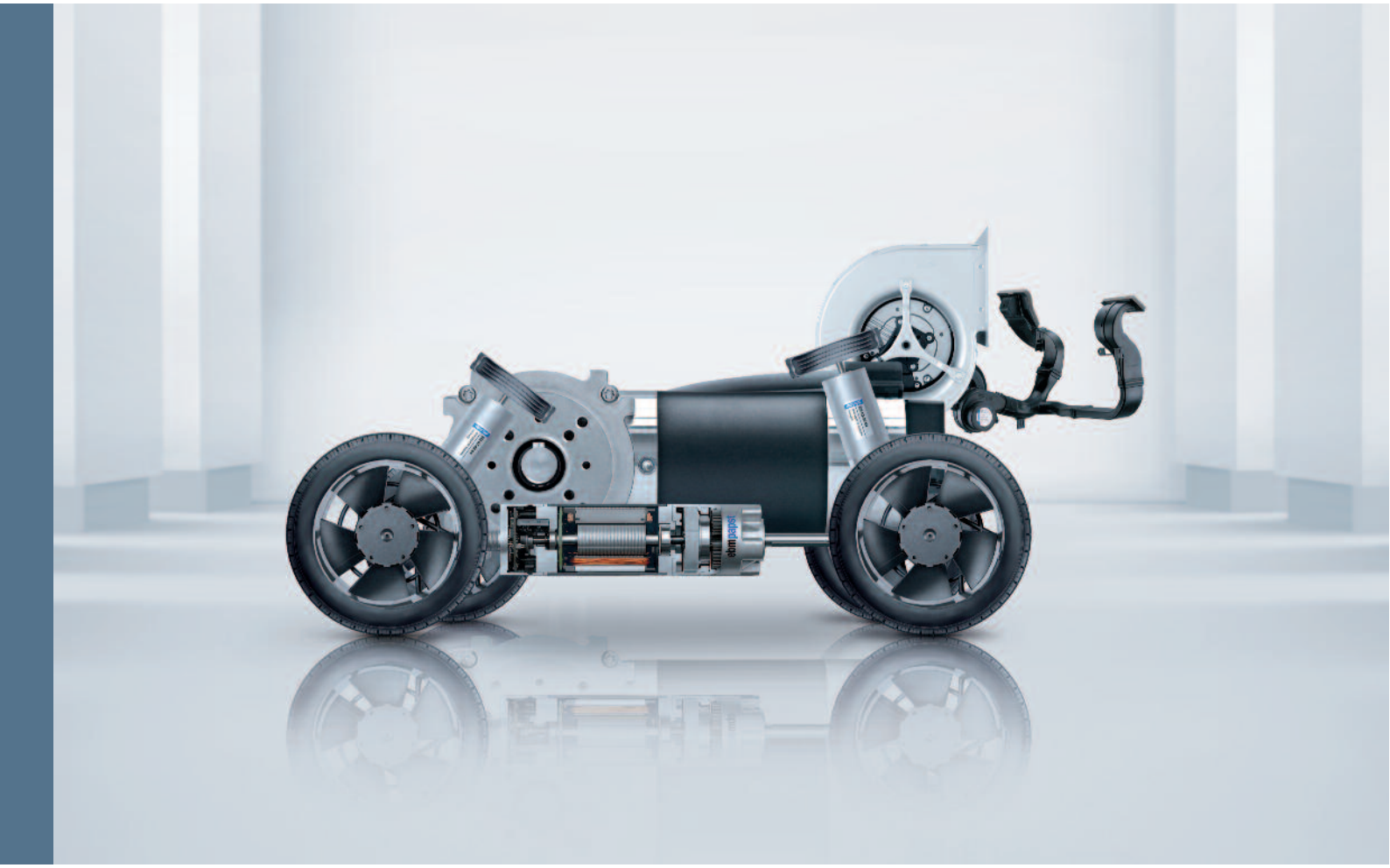
ErP Directive

All products with power consumption between 125 W and 500 kW are subject to the European "Energy-related Products Directive" (ErP) for improving energy efficiency, with the first stage applicable from 2013 and the second as of 2015. Thanks to ground-breaking GreenTech EC technology, all of our fans and motors in these performance classes already exceed the ErP Directive today.

Tailor-made to meet your special requirements

Practical applications: fans that are customized and smart

ebm-papst has always developed customer-specific smart fans that meet the exact requirements of the application. We provide a wide range of standard fan types, in many sizes and designs; with smart motor features, monitoring and control functions, as well as special designs for use under extreme conditions. They are all based on the standard type fans that you will find in this catalog. Special fan types for your application can be produced in economical batch sizes. Our expert engineers will assist you in selecting the right configuration.



Innovation at its best:
Vario-Pro® with "intelligence inside". Its programmed intelligence thanks to customer-specifically configured software modules makes the cooling of electronics even more economical and flexible. For example, temperature-dependent speed profiles are possible with a number of freely selectable interpolation points. External speed settings and a variety of combinable alarm and tachometer functions can also be programmed. The digital motor management achieves high control accuracy.

Higher degree of protection for every type of application
ebm-papst provides, on request, many fan series in versions that meet to the requirements of degree of protection IP 54 and IP 68: Their stator and all electrical components are fully encapsulated. Stainless steel ball bearings can be used for operation in particularly aggressive media and use under extreme environmental conditions, thus providing additional reliability.

Almost anything is possible
Regardless of your cooling and ventilation tasks, we will develop the right solution. And the most economical one. Based on the fans listed in this catalog, more than 4000 different versions are available.

Temperature-controlled fans
Fans with temperature-controlled speed have particularly quiet cooling characteristics. Thanks to integrated IC technology, they adapt their speed to the current cooling requirements. The result is a drastic reduction of noise in most operating conditions. A temperature sensor provides the fan with thermal information: either externally via an exposed wire or integrated into the hub of the fan.

Speed setting via interfaces
With a wide range of DC fans with separate control input, ebm-papst provides an alternative to the NTC-controlled types of fans. They are especially suitable for systems and units that already have standard interfaces for varying speed via internal switching and control circuits. The main applications are units that require load-dependent, individual speed profiles or systems with minimum standby cooling requirements and varied speed increase at varying power peaks.

Electronic tachometer
Do you want to be informed about the current fan speed at all times? ebm-papst has fans with an integrated "electronic tachometer". It registers the actual value of the fan speed. Via an integrated sensor, the fan generates speed-dependent signals that can be used directly. Depending on the number of poles of the motor, 2, 3, or 6 pulses per revolution are generated.

Alarm signal for greater safety
If your application requires monitored fan operation, in addition to speed monitoring, ebm-papst also provides a multitude of varying alarm signals. Depending on the type of fan in question, the signal will either be static, already evaluated, or interface-compatible. The alarm signal output provides reliable long-term monitoring and a status signal if critical operating conditions arise.

S-Force
The new standard!
When you need to provide extremely fast, powerful and efficient cooling for electronic components of all kinds, the generation of S-Force high-performance fans finishes first: in air performance, pressure increase, and technology. Extremely efficient drives and optimized aerodynamics form the core technology of the S-Force fans, which we offer in both an axial and brand-new centrifugal model.

S-Panther
S-Panther power delivered quietly. Wherever there is need for power and reduced noise, fans from the S-Panther range are the right solution. A strong pressure saddle curve at optimum air flow provides the power of a real big cat, an S-Panther.

Optional special versions

(see chapter DC fans - specials)

In the catalog, a text box in the upper right corner provides information on the special designs that are technically possible in the fan series.
Please note that these special versions are not possible for all voltages and speeds, and not in all combinations. The special versions are designed for specific customers and projects and are usually not available off the shelf.

max. 44 m³/h

DC axial fans

☐ 60 x 25 mm

- **Material:** Housing: GRP[1] (PBT) Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, seen on rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Highlights:** Developed for applications with demanding environmental requirements
- **Mass:** 70 g

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go- / NoGo-alarm
  - Alarm with limit speed
  - External temperature sensor
  - PWM control input
  - Analog control input
  - Humidity protection
  - Salt fog protection
  - Degree of protection: IP 54 / IP 68

Possible special designs are depicted on the catalog page.

Speed signal /2, /12
The fan uses a separate wire to output information about its speed, and thus about the speed of the rotor. For technical details, please refer to page 168 and the following.

Go- / NoGo alarm /37, /39
The fan uses a separate wire to output a static signal when it is stationary, thus providing information about whether or not the rotor is turning. For technical details, please refer to page 175 and the following.

Alarm with speed limit /17, /19
When one of the speeds defined in the fan electronics is undershot, the fan outputs a static signal providing information that the set speed limit was undershot. For technical details, please refer to page 172 and the following.

External temperature sensor
An NTC resistor (negative temperature coefficient) is attached to the fan via a separate wire and the fan changes its speed depending on the temperature on the NTC. For technical details, please refer to page 178.

Internal temperature sensor
In this case, the NTC is integrated into the fan and the fan changes its speed depending on the temperature at the NTC. For technical details, please refer to page 178.

PWM control input
The speed of the fan can be changed via a pulse-width-modulated signal. This signal is applied to a specially provided wire. For technical details, please refer to page 179.

Analog control input
The speed of the fan can be changed via a control voltage. This control voltage is applied to a specially provided wire. For technical details, please refer to page 179.

Multi-option control input
The fan has a control input that the user can trigger either using a PWM signal, an analog signal, or a resistor. For technical details, please refer to page 180.

Moisture protection
Protection for the fan electronics against moisture and condensation. For technical details, please refer to page 181.

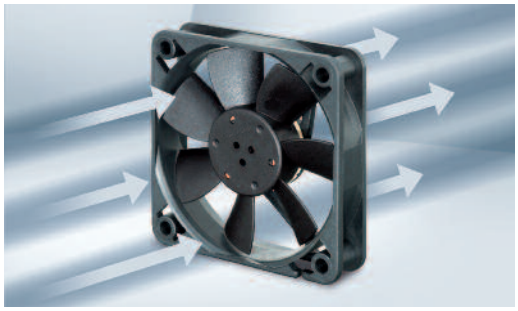
Degree of protection IP 54* / IP 68*
Protection of motor and circuit board against splashed water and moisture. For technical details, please refer to page 181.

Salt spray protection
Protection of fan against the damaging effects of salt spray. For technical details, please refer to page 181.

Direction of rotation
On many variants, the direction of rotation can be changed via a control input.

* IP = International degree of protection marking
For AC fans max. IP 65 available.

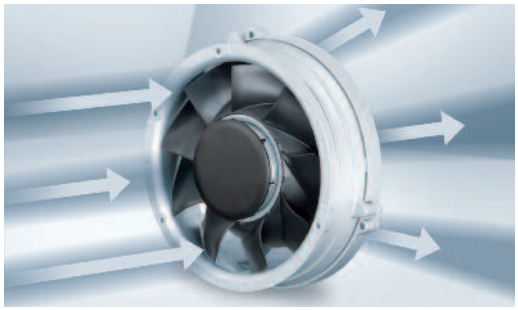
Types of fans and their function



Axial fans:

High air flow with medium to relatively high pressure increase

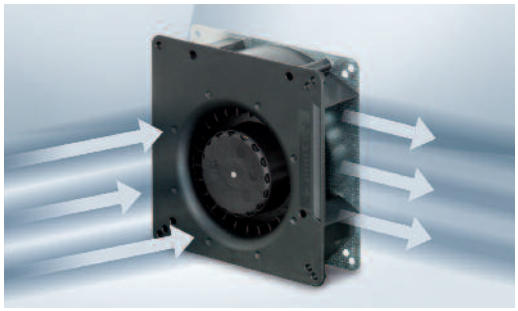
The air flow in axial fans with an impeller that is similar to a propeller is conducted largely parallel to the axis of rotation, in other words in the axial direction. Axial fans with free air delivery at zero static pressure have the lowest power input that rises with increasing back pressure. Axial fans for cooling of electronic equipment are mostly equipped with external housing. The electric motor is integrated in the fan hub. This compact design allows space-saving accommodation of all devices. The flange is equipped with mounting holes.



Diagonal fans:

High air flow at relatively high pressure increase

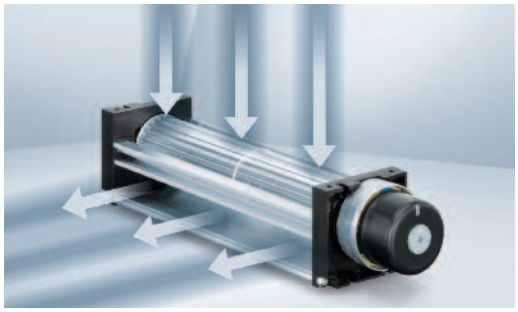
At first glance diagonal fans only differ slightly from axial fans. Intake is axial, whereas exhaust is diagonal. Due to the conical shape of the wheel and housing, the air is pressurized more in the diagonal fan. In direct comparison with axial fans of the same size and comparable performance, these fans are distinguished by the lower operating noise at high pressures.



Centrifugal fans:

High pressure increase at limited flow rate

Generally, many cooling tasks can be performed excellently by axial and/or diagonal fans. But if the cooling airflow has to be deflected at an angle of 90°, for example, or if even greater pressure increase is necessary, centrifugal fans are more effective. For your application, ebm-papst offers not only complete centrifugal fans, but also motor/impeller combinations without external housing.



Tangential fans:

High air flow with low pressure increase

Tangential fans are used especially to produce a wide airflow distribution through devices. The air flows through the roller-shaped impellers twice in the radial direction: in the intake area from the outside to the inside and in the outflow area from the inside to the outside. Whirls form in the roller due to the vanes, which guarantee a steady flow of air through the impeller.

Selecting the correct fan

1. Dissipated energy

A large amount of the energy consumed by electrical and electronic devices is converted to heat. So when selecting the correct fan, it is important to determine the dissipated energy that must be removed. The electrical power consumption of the unit to be cooled often represents a suitable value for this purpose.

2. Admissible temperature increase

The air flow that the selected fan is required to generate, is determined by the dissipated energy and the admissible heating (ΔT) of the cooling airflow (from entry to exit of the device to be cooled). The maximum admissible ΔT depends greatly on the temperature sensitivity of the individual parts of the device.

For example, ΔT = 5K means that the average cooling airflow leaving the device to be cooled may be only 5°C warmer than the ambient temperature. This requires a lot of air. A lower air flow rate is sufficient if a higher temperature difference (e.g. ΔT = 20K), can be tolerated.

3. Required cooling airflow

- In the diagram below, a horizontal line is drawn from the dissipated energy to intersect with the selected ΔT line.
- Read down from this point to obtain the required value for the cooling airflow. The diagram is based on the following formula:

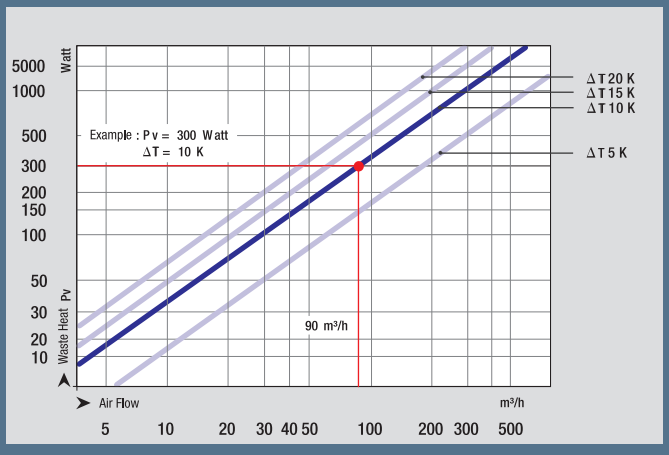
$$q_V = \frac{P_V}{C_{PL} \cdot \rho_L \cdot \Delta T}$$

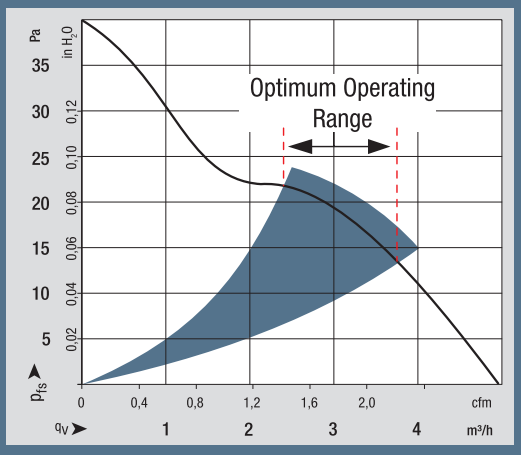
4. Optimum operating range

But the fan you are looking for must also be able to deliver a suitable static pressure increase Δpf, in order to force the cooling air through the device. So a fan must be selected that provides the required air flow performance within its optimum operating range (see also the air performance curves under technical data).

5. Fan selection

If more than one fan meets your requirements, the sound level, space requirements, economy, and ambient conditions will assist in making the final choice.





Definitions

P_V = amount of heat to be dissipated in [W]
C_{PL} = specific heat capacity of air in [J/kg/K]
C_{PL} = 1010 [J/kg/K]

ρ_L = air density in [kg/m³]
ρ_L = 1,2 kg/m³
$\Delta T = T_1 - T_2$ temperature difference in [K] between inlet and outlet

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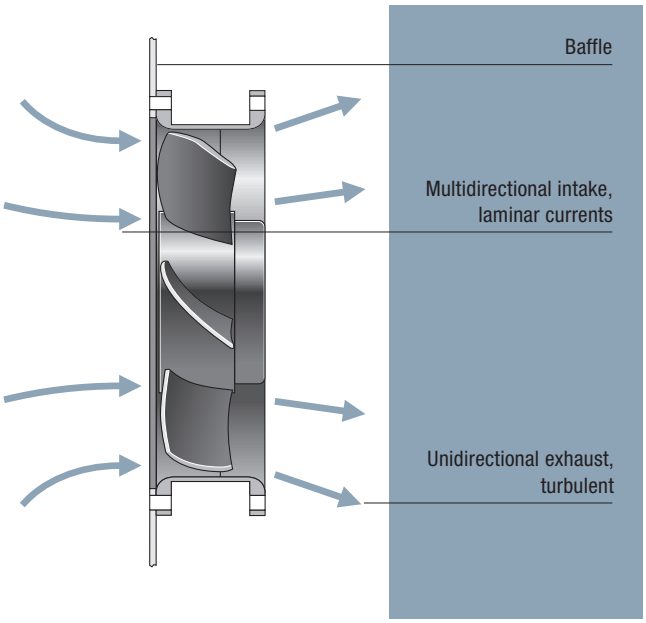
Fan installation

Intake or exhaust side installation

Under ideal conditions, the operating point is represented as the intersection between the fan and loss curves, regardless of whether the fan is positioned at the air intake or exhaust side of the device. In addition to ensuring the required flow rate, several other aspects must be considered for determining an appropriate fan concept. The intake air currents of a fan are mainly laminar, comprising nearly the entire suction area. By contrast, the exhaust air of a fan is generally turbulent and flows in a preferred direction, such as axial for an axial fan.
The turbulence of the exhaust intensifies the heat transfer from components within the air currents, so that installing the fan on the air intake side of the device is recommended for cooling and heating.
Installing the fan at the device intake is also advantageous because the fan will not be subjected to the dissipated heat of the device.
Therefore, it operates at low ambient temperatures and has a greater life expectancy.



Information on installation

When a fan is operated for the first time in an application, the user may have noticed that the air flow in the device was lower than expected. What is the reason for this?

- The values stated in this catalog were determined under optimum, constant, and comparable measurement conditions.
- Ideal installation conditions under which free air intake and exhaust are present are seldom feasible in practice. Quite frequently, the fans have to be installed in close proximity to other components or cabinet panels. As a consequence, the intake and exhaust currents may be restricted, causing the air flow to diminish and the sound level to increase. Fans are particularly sensitive to obstructions that are positioned directly in front of the output cross section, and they often cause an increase in tonal noise.

Our advice: The distance between the fan and adjacent components should be at least equal to the installation depth of the fan.

Accident prevention

The turning rotor and the high speeds that are sometimes involved mean that our fan products carry an inherent risk of injury. They may only be operated after correct installation and with suitable protective equipment (e.g. with a finger guard). More information can be found in the Internet at: **www.ebmpapst.com/safety**

Connection instructions for S-Force fans

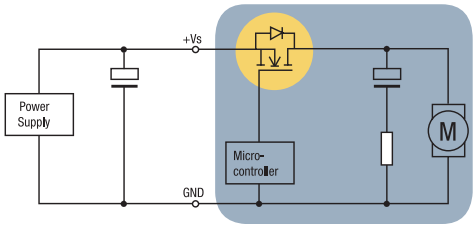
Special features of S-Force fans

The S-Force series is the most powerful product series. S-Force stands for the highest innovation in motor technology, fluid mechanics and electronics. The one-of-a-kind power density of the products requires special attention to the application at the customer's facility.

Service life

Due to the high currents in the fans, the load on the electrolyte capacitors is greater, which reduces the service life of the capacitor. As a larger or additional capacitor cannot be housed in the fan, the capacitor must be housed in the supply line.

If the power supply of the application has a corresponding capacitor, in some cases it may be possible to omit the external capacitor.



Recommended measure: additional external capacitor (must be installed as close to the fan as possible < 30 cm).

Fan	Capacitor required
S-Force axial	
8200 / 3200 JH3-JH4	no
4100 NH3 / NH4 / NH5 / NH6	no
4100 NH7 / NH8	yes
5300 / 5300 TD	no
6300 / 6300 TD / DV 6300	no
2200 FTD	no
S-Force centrifugal	
RET 97 TD	yes
RER 120 TD	yes
RER 133 TD	no
RER 160 NTDHH / RG 160 NTDHH	yes
REF 175 TD	no
RER 175 TD	no
RER 190 TD / RG 190 TD	no
RER 220 TD / RG 220 TD	no
RER 225 TDM / RG 225 TDM	no
RER 225 TD / RG 225 TD	no

Recommended capacitors

We recommend using the following capacitors from Rubycon:

24 VDC:

50 ZL 680 µF; 12.5 mm x 30 mm or

50 ZLH 680 µF 12.5 mm x 30 mm

48 VDC:

100 YXG 470 µF; 16 mm x 35.5 mm or

100 ZLH 470 µF 16 mm x 31.5 mm

Other capacitors with equal or greater capacitance and equal or lower serial resistance can also be used.

ebm-papst St. Georgen has the following capacitors in stock:

24 VDC: 1000 µF / 50 V, 16 mm x 25 mm

Art. no.: 992 0354 000 (LZ 354)

48 VDC: 680 µF / 100 V, 18 mm x 40 mm

Art. no.: 992 0355 000 (LZ 355)

Service life

Service life data from ebm-papst St. Georgen

Our fans catalog gives three different values for the service life of each product. The first column usually states the service life L_{10} at 40 °C. the second column usually states the service life L_{10} at T_{max}. Exceptions are marked in the column headings. The third column states the new value, life expectancy L_{10IPC} (40 °C).

Sound power level	Sinter- sleeve bearings Ball bearings	Input power	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst Standard	Service life L_{10} (T_{max}) ebm-papst Standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Bel(A)	□ / ■	Watts	rpm	°C	Hours	Hours		
5,2	■	1,8	5 900	-20...+70	85 000 / 42 500	142 500		①
5,4	■	1,5	6 300	-20...+70	85 000 / 42 500	142 500		②

Example of the service life figures on the catalog page.

Service life L_{10} (40 °C) and L_{10} (T_{max})

The values given in the first two columns have been derived from intensive, in-house service life endurance tests in which our products are operated in various positions at 40 °C and 70 °C until they fail. A fan is deemed to have failed when it deviates from its defined air flow and speed values, or when the operating noise becomes noticeable. Such tests can take several years before a representative number of failures has been registered, and even today, some fans are still in the process of endurance testing, even though the test began early in the 1980s. These fans are proof of the legendary "made by ebm-papst" reliability.

Test results are presented in a diagram and the service life of the product L_{10} at the temperature tested is determined based on the Weibull distribution.

These tests have given us years of experience in the way various design parameters and temperatures can affect the service life of a product. Data for service life at various temperatures for new products can be stated with a very high degree of precision based on tests, product specifications, and commonalities in the design of the product.

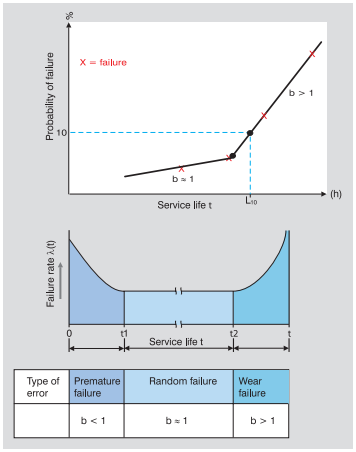
Life expectancy L_{10IPC} (40 °C)

The new third service life column states the life expectancy L_{10IPC}. This information is based on the international standard IPC 9591. Again here, the foundations for the service life values are our service life endurance tests at high ambient temperatures. The service life at temperatures below the test temperatures is calculated using fixed factors. This method produces much higher service life values, especially at room temperature (see diagram on right).

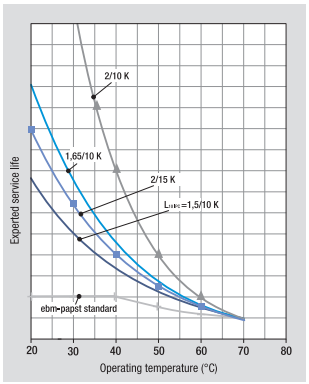
Summary:

The life span calculations have been carried out to the best of our knowledge and are based on experience gained by ebm-papst. The specified L_{10} (40 °C), L_{10} (T_{max}) and L_{10IPC} (40 °C) values all allow statements to be made about the theoretical calculated service life under certain assumptions. The values determined here are extrapolations from our own service life tests and from statistical variables. In the respective customer applications, there may be different influencing factors that cannot be included in the calculations due to their complexity. The service life information is explicitly not a guarantee of service life, but strictly a theoretical quality figure.

Fans in an endurance test cabinet at ebm-papst St. Georgen.
1500 fans are operated in temperature cabinets until they fail.



Bathtub curve and Weibull distribution.



Example of the influence of factors from various manufacturers on the life expectancy.

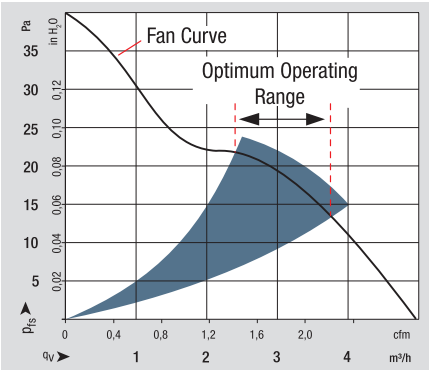
Definitions

Nominal voltage [volts]
The voltage at which the nominal values (the table values listed in this catalog) were determined. The fan operation for DC fans is not limited to the nominal voltage. Fan speed and fan performance can vary according to the admissible voltage range that is specified on the nameplate of each fan. Please note that this is not a pulsed or modulated DC voltage.

Frequency [Hz]
ebm-papst AC fans are made for operating frequencies of 50 Hz or 60 Hz. Their technical data changes accordingly.

Air flow [m^3/h, cfm]
The air performance of the fan in free air operation, i.e. the fan blows into the free space without static pressure increase.

Fan curves
The fan curves are determined in accordance with DIN ISO 5801 specifications on a dual-chamber test stand with intake side measurement. This measurement technique closely approximates the operating conditions experienced in typical applications for fans and yields realistic performance curves. The curves apply to an air density of ρ =1.2 kg/m^3 corresponding to an air pressure of 1013 mbar at 20 °C. Variations in air density affect pressure



generation, but not the flow rate. The pressure generated at other air densities can be estimated with the formula $\Delta\rho 2 = \Delta\rho 1\ (\rho 2 / \rho 1)$.
The nominal speed values, air flow and power consumption listed in the table were measured in free air operation with horizontal shaft at an ambient temperature of 20 +5 °C, air density ρ =1.2 kg/m^3 after a warmup period of 5 min.

Optimum operating range
The optimum operating range is always indicated in the colored area in the air performance diagrams. In this range the fans operate best with respect to efficiency and sound level. Within this optimum operating range the sound level only fluctuates slightly.

Noise [dB(A), Bel(A)]

1. Sound pressure level – dB(A)
Noise ratings of the fan in free air operation, i.e. at maximum flow rate.

2. Sound power level 1 Bel(A) = 10 dB(A)
Extent of the overall sound radiation of the fan. The sound power level is determined in the optimum operating range.

PAPST Sintec® sleeve bearings
A particularly economical bearing system with excellent advantages:
– Very precise, large sintered bearings
– Low running noise
– High service life expectancy
– Resistant to shock and vibration

Ball bearings
Precision ball bearings for particularly high ambient temperatures and high service life expectancy.

Power consumption [watts]
Input performance of the fan motor when operating free blowing at nominal voltage. Depending on the operating condition in the application, the power consumption may be higher.

Temperature range [°C]
The admissible ambient temperature range within which the fan can be expected to run continuously.

Service life [h]

Service life L_{10} at 40 °C and T_{max}
Standard figures for service life at ebm-papst. These two temperatures are based on intensive, in-house endurance tests and on experience from more than 60 years developing fans.

Life expectancy L_{10IPC} (40 °C)
Information calculated in line with the standard IPC 9591. Data based on the internal life expectancy at 70 °C, more optimistically extrapolated to 40 °C.

We expressly state that none of the information or data in this catalog is to be construed as a guarantee or warranty of properties.

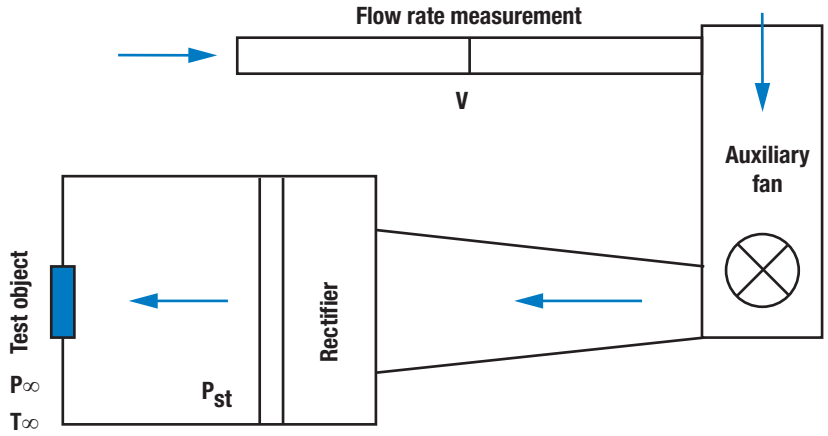
Unit conversion

Air flow	Pressure
1 cfm = 1.7 m^3/h	1 Pa = 1x10^{-5} bar
1 l/s = 3.6 m^3/h	1 inch H_2O = 249 Pa
1 l/min = 0.06 m^3/h	1 mm H_2O = 9.81 Pa

Standard test equipment to determine the fan characteristics

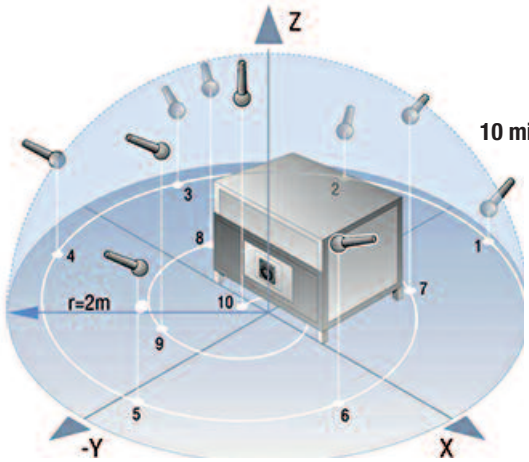
Pressure/air flow

Blow-down test facility acc. to ISO 5801

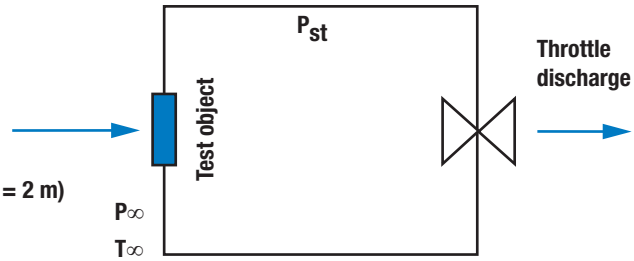


Sound power level pressure/air flow:

Outlet side regulated test rig in semi-anechoic chamber according to ISO 10302

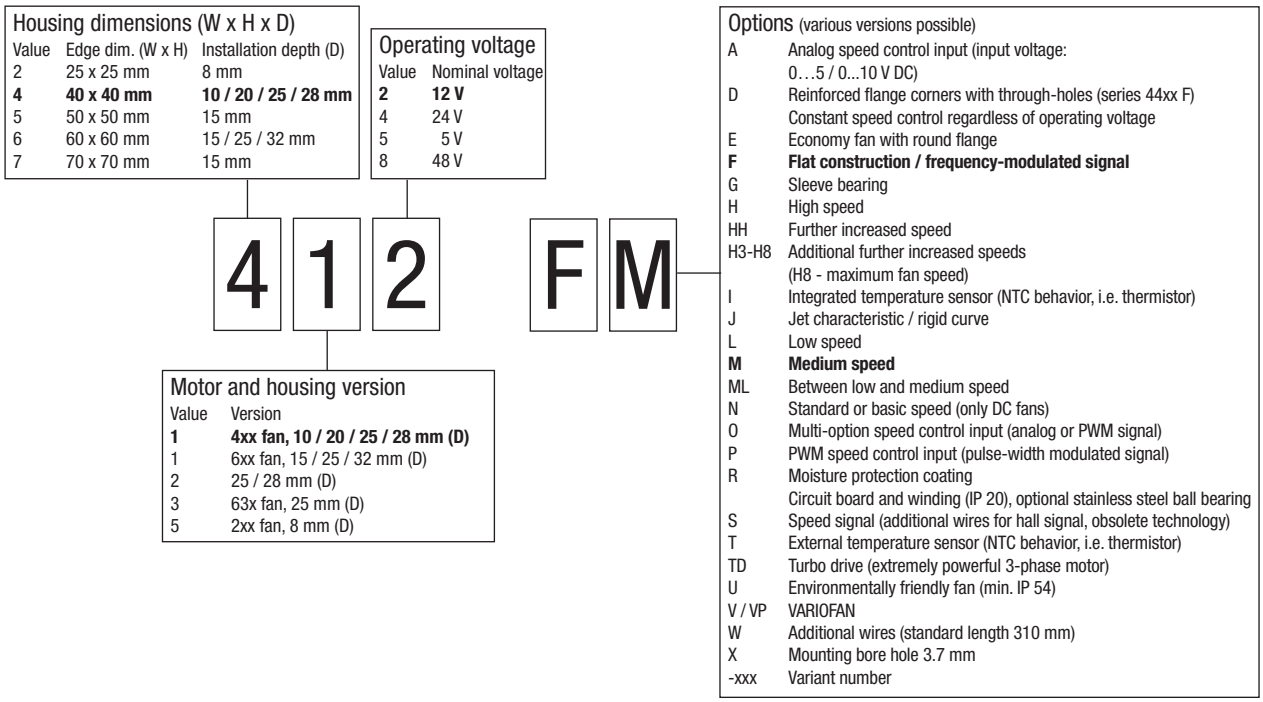


10 microphones (r = 2 m)



Type code

3-digit DC axial fan e.g. 412 FM



Housing dimensions (W x H x D)

Value	Edge dim. (W x H)	Installation depth (D)
2	25 x 25 mm	8 mm
4	**40 x 40 mm**	**10 / 20 / 25 / 28 mm**
5	50 x 50 mm	15 mm
6	60 x 60 mm	15 / 25 / 32 mm
7	70 x 70 mm	15 mm

Operating voltage

Value	Nominal voltage
2	**12 V**
4	24 V
5	5 V
8	48 V

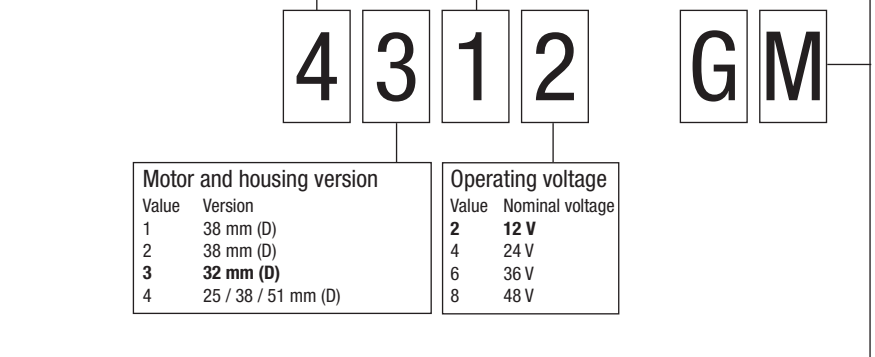
Motor and housing version

Value	Version
1	**4xx fan, 10 / 20 / 25 / 28 mm (D)**
1	6xx fan, 15 / 25 / 32 mm (D)
2	25 / 28 mm (D)
3	63x fan, 25 mm (D)
5	2xx fan, 8 mm (D)

Options (various versions possible)

A	Analog speed control input (input voltage: 0…5 / 0...10 V DC)
D	Reinforced flange corners with through-holes (series 44xx F) Constant speed control regardless of operating voltage
E	Economy fan with round flange
F	**Flat construction / frequency-modulated signal**
G	Sleeve bearing
H	High speed
HH	Further increased speed
H3-H8	Additional further increased speeds (H8 - maximum fan speed)
I	Integrated temperature sensor (NTC behavior, i.e. thermistor)
J	Jet characteristic / rigid curve
L	Low speed
M	**Medium speed**
ML	Between low and medium speed
N	Standard or basic speed (only DC fans)
O	Multi-option speed control input (analog or PWM signal)
P	PWM speed control input (pulse-width modulated signal)
R	Moisture protection coating Circuit board and winding (IP 20), optional stainless steel ball bearing
S	Speed signal (additional wires for hall signal, obsolete technology)
T	External temperature sensor (NTC behavior, i.e. thermistor)
TD	Turbo drive (extremely powerful 3-phase motor)
U	Environmentally friendly fan (min. IP 54)
V / VP	VARIOFAN
W	Additional wires (standard length 310 mm)
X	Mounting bore hole 3.7 mm
-xxx	Variant number

4-digit DC axial fan, e.g. 4312 GM



Housing dimensions (W x H x D)

Value	Edge dimensions (W x H)	Installation depth (D)
2	Ø 220 x 200 mm	51 mm
3	92 x 92 mm	25 / 32 / 38 mm
4	**119 x 119 mm**	**25 / 32 / 38 mm**
5	127 x 127 mm	38 mm
5	135 x 135 mm	38 mm
5	140 x 140 mm	51 mm
6	Ø 172 mm	51 mm
6	Ø 172 x 150 / 160 mm	51 mm
7	Ø 150 mm	38 / 55 mm
8	80 x 80 mm	25 / 32 / 38 mm

Connection type and direction of rotation

Value	Connection type	Direction of rotation
1	**Wires, length = 310 mm**	
5	Wires, length = 310 mm	
6	Plug, 2.8 x 0.8 mm	Counterclockwise (CCW)
7	Plug, 2.8 x 0.8 mm	Clockwise (CW)
8	Plug, 2.8 x 0.5 mm	Counterclockwise (CCW)
9	Plug, 2.8 x 0.5 mm	Clockwise (CW)

Motor and housing version

Value	Version
1	38 mm (D)
2	38 mm (D)
3	**32 mm (D)**
4	25 / 38 / 51 mm (D)

Operating voltage

Value	Nominal voltage
2	**12 V**
4	24 V
6	36 V
8	48 V

Options (various versions possible)

A	Analog speed control input (input voltage: 0…5 / 0...10 V DC)
D	Reinforced flange corners with through-holes (series 44xx F) Constant speed control regardless of operating voltage
DV	Diagonal Venturi fan
E	Economy fan with round flange
F	Flat construction / frequency-modulated signal
G	**Sleeve bearing**
H	High speed
HH	Further increased speed
H3-H8	Additional further increased speeds (H8 - maximum fan speed)
I	Integrated temperature sensor (NTC behavior, i.e. thermistor)
J	Jet characteristic / rigid curve
L	Low speed
M	**Medium speed**
ML	Between low and medium speed
N	Standard or basic speed (only DC fans)
O	Multi-option speed control input (analog or PWM signal)
P	PWM speed control input (pulse-width modulated signal)
R	Moisture protection coating Circuit board and winding (IP 20), optional stainless steel ball bearing
S	Speed signal (additional wires for hall signal, obsolete technology)
T	External temperature sensor (NTC behavior, i.e. thermistor)
TD	Turbo drive (extremely powerful 3-phase motor)
U	Environmentally friendly fan (min. IP 54)
V / VP	VARIOFAN
W	Additional wires (standard length 310 mm)
X	Mounting bore hole 3.7 mm
-xxx	Variant number

All measurements are given in mm.

Type code

DC centrifugal fan e.g. RER 160-28/12 N

Type	Housing and fan impeller versions	
	Housing	Impeller blade design
RE	None	Non-curved, no direction of rotation set
REF	None	Forward/backward-curved impeller blades, flat
RER	**None**	**Backward-curved impeller blades**
RET	None	Forward-curved impeller blades
RG	Square	Forward/backward-curved impeller blades
RL	Round	Forward-curved impeller blades
RLF	Round	Forward/backward-curved impeller blades, flat
RV	Round	Forward-curved impeller blades

Options (various versions possible)	
A	Analog speed control input (input voltage: 0…5 / 0...10 V DC)
D	Reinforced flange corners with through-holes (series 44xx F) Constant speed control regardless of operating voltage
E	Economy fan with round flange
F	Flat construction / frequency-modulated signal
G	Sleeve bearing
H	High speed
HH	Further increased speed
H3-H8	Additional further increased speeds (H8 - maximum fan speed)
I	Integrated temperature sensor (NTC behavior, i.e. thermistor)
J	Jet characteristic / rigid curve
L	Low speed
M	Medium speed
ML	Between low and medium speed
N	**Standard or basic speed (only DC fans)**
O	Multi-option speed control input (analog or PWM signal)
P	PWM speed control input (pulse-width modulated signal)
R	Moisture protection coating Circuit board and winding (IP 20), optional stainless steel ball bearing
S	Speed signal (additional wires for hall signal, obsolete technology)
T	External temperature sensor (NTC behavior, i.e. thermistor)
TD	Turbo drive (extremely powerful 3-phase motor)
U	Environmentally friendly fan (min. IP 54)
V / VP	VARIOFAN
W	Additional wires (standard length 310 mm)
X	Mounting bore hole 3.7 mm
-xxx	Variant number

Fan impeller blade height

R E R 1 6 0 - 2 8 / 1 2 N

Impeller diameter in mm

Operating voltage	
Value	Nominal voltage
/12	**12 V**
/14	24 V
/18	48 V

Crossflow blower e.g. QG 030-148/12

Type	Housing and fan impeller versions	
	Housing	Impeller blade design
QG	**Round**	**Compressor drum**

Housing dimensions (W x H)			
Value	Edge dim. (W x H)	Impeller length	Total length
148	**48 x 50 mm**	**148 mm**	**201 mm**
198	48 x 50 mm	198 mm	258 mm
303	48 x 50 mm	303 mm	363 mm
353	48 x 50 mm	353 mm	413 mm

Q G 0 3 0 - 1 4 8 / 1 2

Impeller diameter in mm

Operating voltage	
Value	Nominal voltage
/12	**12 V**
/14	24 V

All measurements are given in mm.

Type code

4-digit GreenTech EC tubeaxial fans axial fan e.g. ACi 4420 HH

Housing dimensions (W x H x D)

Value	Edge dim. (W x H)	Installation depth (D)
1	Ø 98.5 mm	130 mm
3	92 x 92 mm	38 mm
4	**119 x 119 mm**	**25 / 32 / 38 mm**
6	Ø 172	51 mm
8	80 x 80 mm	32 mm

Operating voltage

Value	Nominal voltage	Frequency	Version
0	115 / 230 V	50 / 60 Hz	Wide voltage range input (85-265 V AC)
1	115 V	50 Hz	
2	**230 V**	**50 Hz**	

Basic design

Value	Version
AC	DC basic fan with integrated AC/DC power supply
ACi	**EC technology (electronics completely integrated)**

Motor and housing version

Value	Version
0	130 mm (D)
1	51 mm (D)
2	38 / 51 mm (D)
3	32 mm (D)
4	**25 / 38 mm (D)**

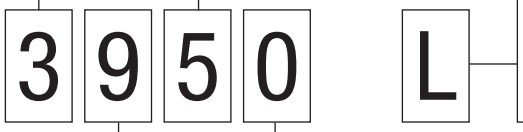
Bearing type and insulation class

Value	Bearing type	Insulation class
0	**Ball bearing**	**E**

Options (various versions possible)

A	Analog speed control input (input voltage: 0…5 / 0...10 V DC)
D	Reinforced flange corners with through-holes (series 44xx F) Constant speed control regardless of operating voltage
E	Economy fan with round flange
F	Flat construction / frequency-modulated signal
G	Sleeve bearing
H	High speed
HH	**Further increased speed**
H3-H8	Additional further increased speeds (H8 - maximum fan speed)
I	Integrated temperature sensor (NTC behavior, i.e. thermistor)
J	Jet characteristic / rigid curve
L	Low speed
M	Medium speed
ML	Between low and medium speed
N	Standard or basic speed (only DC fans)
O	Multi-option speed control input (analog or PWM signal)
P	PWM speed control input (pulse-width modulated signal)
R	Moisture protection coating Circuit board and winding (IP 20), optional stainless steel ball bearing
S	Speed signal (additional wires for hall signal, obsolete technology)
T	External temperature sensor (NTC behavior, i.e. thermistor)
TD	Turbo drive (extremely powerful 3-phase motor)
U	Environmentally friendly fan (min. IP 54)
V / VP	VARIOFAN
W	Additional wires (standard length 310 mm)
X	Mounting bore hole 3.7 mm
-xxx	Variant number

AC axial fan e.g. 3950 L



Housing dimensions (W x H x D)

Value	Edge dim. (W x H)	Installat. depth (D)
3	**92 x 92 mm**	**25 / 38 mm**
4	119 x 119 mm	25 / 32 / 38 mm
5	127 x 127 mm	38 mm
5	135 x 135 mm	38 mm
5	140 x 140 mm	51 mm
6	Ø 172 mm	51 / 52 mm
7	Ø 150 mm	55 mm
7	Ø 150 x 172 mm	38 mm
8	80 x 80 mm	38 mm
9	119 x 119 mm	25 mm

Operating voltage

Value	Nominal voltage	Frequency
0	115 V	60 Hz
2	115 V	60 Hz
3	115 V	60 Hz
4	115 V	50 Hz
5	**230 V**	**50 Hz**
6	115 V / 230 V	50 Hz / 60 Hz
7	230 V	50 Hz
8	230 V	60 Hz
9	230 V	60 Hz

Motor and housing version

Value	Version
4	Shaded-pole motor, 55 mm (D) medium speed
5	Shaded-pole motor, 38 mm (D) medium / high speed
6	Shaded-pole motor, 38 mm (D) high speed
7	Shaded-pole motor, 38 mm (D) with mounting bracket
8	Shaded-pole motor, slow / medium speed
9	**Shaded-pole motor, 25 / 38 mm (D)**

Bearing type and insulation class

Value	Bearing type	Insulation class
0	**Sleeve bearing**	**E**
5	Ball bearing	E
6	Ball bearing	F
8	Ball bearing	E

Options (various versions possible)

A	Intake via bars
E	Made by ebm-papst Mulfingen (6xxx, 7xxx range) or round flange
H	Speed signal 1 Impulses per 360 degrees (additional magnet sensor and hall sensor)
L	**Low speed**
M	Medium speed
N	Air intake via struts (ø mounting bore hole)
R	Moisture protection coating Circuit board and winding (IP 20), optional stainless steel ball bearing
S	Integrated temperature switch
T	Mounting bracket
U	Environmentally friendly fan (min. IP 54)
V	Air exhaust over struts
W	Additional wires (standard length 310 mm)
X	Mounting bore hole 3.7 mm
-xxx	Variant number
Z	Air exhaust over struts, reinforced flange corners with through-holes

All measurements are given in mm.

Type code

AC centrifugal fan e.g. RER 160-28/56 S

Type	Housing and fan impeller versions	
	Housing	Impeller blade design
RE	None	Non-curved, no direction of rotation set
REF	None	Forward/backward-curved impeller blades, flat
RER	**None**	**Backward-curved impeller blades**
RET	None	Forward-curved impeller blades
RG	Square	Forward/backward-curved impeller blades
RL	Round	Forward-curved impeller blades
RLF	Round	Forward/backward-curved impeller blades, flat
RV	Round	Forward-curved impeller blades

Options (various versions possible)	
A	Intake via bars
E	Made by ebm-papst Mulfingen (6xxx, 7xxx range) or round flange
H	Speed signal 1 Impulses per 360 degrees (additional magnet sensor and hall sensor)
L	Low speed
M	Medium speed
N	Air intake via struts (ø mounting bore hole)
R	Moisture protection coating Circuit board and winding (IP 20), optional stainless steel ball bearing
S	**Integrated temperature switch**
T	Mounting bracket
U	Environmentally friendly fan (min. IP 54)
V	Air exhaust over struts
W	Additional wires (standard length 310 mm)
X	Mounting bore hole 3.7 mm
-xxx	Variant number
Z	Air exhaust via bars, reinforced flange joints with through-holes

Fan impeller blade height

R E R 1 6 0 - 2 8 / 5 6 S

Impeller diameter in mm

Operating voltage		
Value	Nominal voltage	Frequency
/00	115 V	60 Hz
/06	115 V	60 Hz
/50	230 V	50 Hz
/56	**230 V**	**50 Hz**

DC centrifugal fan e.g. R3G 190-RN 38-01

Note: This type code specifies fans from ebm-papst Mulfingen and can be used to clearly identify and order them:

Type	Housing and fan impeller versions
A	Axial fan
S	Axial fan with finger guard
W	Axial fan with fan housing
V	Axial combination
R	**Centrifugal fan, single inlet**
G	Centrifugal blower, single inlet (with scroll housing)
B	Centrifugal fan, dual inlet
G	Centrifugal blower, dual inlet (with scroll housing)
K	Centrifugal combination

Impeller diameter in mm

Key for mechanical design

Key for mechanical variants

R 3 G 1 9 0 - R N 3 8 - 0 1

Number of poles (AC)	
2	2-pole

Number of cores (DC/EC)	
1	1-phase/core
3	**3-phase/core**

Motor type	
D	Three-phase motor
E	Single-phase motor with motor run capacitor
G	**DC/EC motor**

Key for electrical design

All measurements are given in mm.

DC axial fans

DC axial fans

Technical information



Product line
ebm-papst offers you the widest full product line of DC axial and diagonal fans from 25 mm to 280 mm in size. Every single type of fan can be optimally integrated in the respective device concept. The highly economical brushless motor technology of these fans provides a unique variety of intelligent innovations at prices that would have been unthinkable a few years ago.

Electronic protection against reverse polarity
ebm-papst DC fans have electronically commutated drives with electronic protection against reverse polarity. The electronics are integrated in the fan's impeller hub to save space.

Product life expectancy
A distinctive feature of DC fan technology is the amazing product life expectancy. The outstanding efficiency of the brushless drive results in lower heat stress for the bearings, which significantly increases the service life of the fan.

Degree of protection
DC fans with sleeve and ball bearings are powered by class E insulated motors. All ebm-papst fans conform to the requirements of degree of protection IP 20. Fans conforming to IP 54 / IP 68 and special degrees of protection are also available.

Voltage range
Many of our DC fans can be operated on voltages that are up to 50% lower and 25% higher than their nominal voltage (see voltage range in the technical tables). This allows the air performance to be adapted to the cooling requirements and the noise to be reduced, even if the fan does not have a control input.

Closed-loop speed control and monitoring
Closed-loop speed control and function monitoring are becoming increasingly important in many applications. ebm-papst offers many fans in the standard design with a control input and open-collector speed signal.

S-Force
The new S-Force fans with their extremely high blower capacity of up to 1100 m^3/h and pressure increase of up to 1400 pascals are capable of dealing with the extreme heat load. If needed, these fans can produce up to 100% more output under full load, and they work with a much broader delivery bandwidth than current models. This makes them ideal for equipment and systems with a high density of components. Thanks to intelligent motor features, they can be adapted individually for any application. S-Force fans are available in standard dimensions. The air flow rate is amazing!

S-Panther
S-Panther power delivered quietly. Wherever there is need for power and reduced noise, fans from the S-Panther range are the right solution. A strong pressure saddle curve at optimum air flow provides the power of a real big cat, an S-Panther.

Axial fans for DC operation

Overview of air performance

	Dimension	Series	Air flow	Page
	mm		m³/h	
	□ 25 x 8	250	2.3...4.6	31
	□ 40 x 10	400 F	6...9	32
	□ 40 x 20	400	10...13.5	33
	□ 40 x 28	420 J	24...38	34
	□ 50 x 15	500 F	11...20	35
	□ 60 x 15	600 F	19...33	36
	□ 60 x 25	620	21...67	37
	□ 60 x 25	630	40...58	38
	□ 60 x 25	600 N	21...56	39
	□ 60 x 25	600 N VARIOFAN	16...41	40
	□ 60 x 32	600 J	70...82	41
	□ 70 x 15	700 F	28...44	42
	□ 80 x 25	8450	32...117	43
	□ 80 x 25	8400 N	33...79	44
	□ 80 x 25	8400 N VARIOFAN	20...58	45
	□ 80 x 32	8300	32...80	46
	□ 80 x 38	8200 J	132...222	47
	□ 92 x 25	3400 N	61...102	48
	□ 92 x 25	3400 N VARIOFAN	44...84	49
	□ 92 x 32	3300 N	56...133	50
S-Force	□ 92 x 38	3200 J	130...280	51
S-Panther	□ 92 x 38	3250 J	145...270	52
	□ 119 x 25	4400 F	94...170	53
	Ø 127	4400 F	91	54
	□ 119 x 25	4400 FN	200...225	55
	□ 119 x 32	4300	95...204	56
	□ 119 x 32	4300 VARIOFAN	65...170	57

NEW

Subject to change

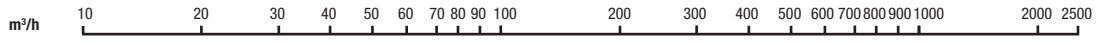
m³/h 10 20 30 40 50 60 70 80 90 100 200 300 400 500 600 700 800 900 1000 2000 2500

Axial fans for DC operation

Overview of air performance

	Dimension	Series	Air flow	Page
	mm		m³/h	
	□ 119 x 38	4400	100...285	58/59
	□ 119 x 38	4100 N	160...237	60
S-force	□ 119 x 38	4100 NHH..NH6	260...440	61
S-force	□ 119 x 38	4100 NH7..NH8	500...570	62
	□ 119 x 38	DV 4100	280	63
	□ 127 x 38	5200 N	187...340	64
	□ 127 x 38	DV 5200	270...320	65
	□ 135 x 38	5100 N	260	66
S-force	□ 140 x 51	5300	340	67
S-force	□ 140 x 51	5300 TD	410...670	68
	Ø 150 x 38	7100 N	308...360	69
	Ø 150 x 55	7200 N	360	70
	172 x 150 x 51	6400	350...480	71
	172 x 150 x 51	6400 TD	90...900	72
	172 x 160 x 51	DV 6400	530	73
	172 x 160 x 51	DV 6400 TD	100...680	74
S-force	172 x 160 x 51	6300 TD	710...930	75
S-Panther	Ø 172 x 51	6300 N	540...685	76
S-Panther	Ø 172 x 51	6300 NTD	970...1030	77
S-force	Ø 172 x 51	6300	395...545	78
S-force	Ø 172 x 51	6300 TD	600...930	79
S-force	Ø 172 x 51	DV 6300 TD	630...1100	80
S-force	220x200x51	2200 FTD	790...1220	81
	□ 225 x 80	K1G 200	1020...1245	82
	□ 225 x 89	K3G 200	725...1650	84
	Ø 250	W1G 250	2070	86
	Ø 300	*1G 300	2320...2345	88

Subject to change



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Axial fans for DC operation

Overview of technically feasible designs

Dimension		VDE, UL, CSA	SWITEC sleeve bearings / ball bearings	Speed signal	Go / NoGo alarm	Alarm with speed limit	External temperature sensor	Internal temperature sensor	PWM control input	Analog control input	Multi-options control input	Moisture protection	IP >= 54	IP 68	Salt spray protection	Reversible direction of rotation	Page
Axial fans																	
	mm	**Series**					**OPTIONAL**										**P.**
	☐ 25 x 8	250	yes	▫	•	–	–	–	–	–	–	–	•	–	–	–	–	31
	☐ 40 x 10	400 F	yes	▫	•	•	–	–	–	–	–	–	•	–	–	–	–	32
	☐ 40 x 20	400	yes	▫	•	•	–	–	–	•	–	–	•	–	–	–	–	33
	☐ 40 x 28	420 J	yes	■	•	•	–	•	–	•	–	–	•	–	–	•	–	34
	☐ 50 x 15	500 F	yes	▫	•	•	–	–	–	•	–	–	•	–	–	–	–	35
	☐ 60 x 15	600 F	yes	▫	•	•	–	–	–	•	–	–	•	–	–	–	–	36
	☐ 60 x 25	620	yes	■	•	•	•	•	•	•	•	–	•	–	–	–	–	37
	☐ 60 x 25	630	yes	■	•	•	•	•	–	•	•	–	•	•	•	•	–	38
	☐ 60 x 25	600 N	yes	▫/■	•	•	–	–	–	–	–	–	•	•	•	–	–	39
	☐ 60 x 25	600 N VARIOFAN	yes	▫/■	•	•	–	•	•	–	–	–	•	–	–	–	–	40
	☐ 60 x 32	600 J	yes	■	•	•	–	•	–	•	•	–	•	–	–	–	–	41
	☐ 70 x 15	700 F	yes	▫	•	•	–	–	–	–	–	–	•	–	–	–	–	42
	☐ 80 x 25	8450	yes	▫/■	•	•	•	•	•	•	•	–	•	–	–	–	–	43
	☐ 80 x 25	8400 N	yes	▫/■	•	•	•	•	•	•	•	–	•	•	•	–	–	44
	☐ 80 x 25	8400 N VARIOFAN	yes	▫	•	•	–	•	•	–	–	–	•	–	–	–	–	45
	☐ 80 x 32	8300	yes	■	•	•	•	•	•	•	•	–	•	•	•	•	–	46
	☐ 80 x 38	8200 J	yes	■	•	•	•	•	•	•	•	–	•	•	–	–	–	47
	☐ 92 x 25	3400 N	yes	▫/■	•	•	•	•	•	•	•	–	•	•	•	–	–	48
	☐ 92 x 25	3400 N VARIOFAN	yes	▫	•	•	–	•	•	–	–	–	•	–	–	–	–	49
	☐ 92 x 38	3300 N	yes	■	•	•	–	•	•	•	•	–	•	•	•	•	–	50
S-Force	☐ 92 x 38	3200 J	yes	■	•	•	•	•	•	•	•	–	•	•	•	–	–	51
S-Panther	☐ 92 x 38	3250 J	yes	■	•	•	–	•	•	•	•	–	•	•	•	•	–	52
	☐ 119 x 25	4400 F	yes	▫/■	•	•	•	•	•	•	•	–	•	–	–	–	–	53
NEW	Ø 172	4400 F	yes	▫	•	•	•	•	•	•	•	–	•	–	–	–	•	54
	☐ 119 x 25	4400 FN	yes	■	•	•	•	•	•	•	•	–	•	–	–	–	–	55
	☐ 119 x 32	4300	yes	▫/■	•	•	•	•	•	•	•	–	•	•	•	•	–	56
	☐ 119 x 32	4300 VARIOFAN	yes	■	•	•	•	•	•	•	•	–	•	–	–	–	–	57

Subject to change

– not yet available
• Available
▫ Sleeve bearings
■ Ball bearings

Please note that these special versions are not possible for all voltages and speeds, and not in all combinations. The special versions are designed for specific customers and projects. As a rule, they are not available off the shelf and are based on minimum quantities.

Please consult your customer support representative about the feasibility of your special variant.

Axial fans for DC operation

Overview of technically feasible designs

	Dimension	Series	VDE, UL, CSA	SIMTEC sleeve bearings / ball bearings	Speed signal	Go / NoGo alarm	Alarm with speed limit	External temperature sensor	Internal temperature sensor	PWM control input	Analog control input	Multi-options control input	Moisture protection	IP >= 54	IP 68	Salt spray protection	Reversible direction of rotation	Page
Axial fans																		
	mm						**OPTIONAL**											**P.**
	☐ 119 x 38	4400	ja	■	•	•	•	•	•	•	•	–	•	•	–	–	–	58/59
	☐ 119 x 38	4100 N	ja	▫/■	•	•	•	•	•	•	•	–	•	•	•	•	–	60
S-Force	☐ 119 x 38	4100 NH..NH6	ja	■	•	•	•	•	•	•	•	–	•	•	•	•	–	61
S-Force	☐ 119 x 38	4100 NH7..NH8	ja	■	•	•	•	•	•	•	•	–	•	–	–	•	–	62
	☐ 119 x 38	DV 4100	ja	■	•	•	•	•	•	•	•	–	•	•	•	•	–	63
	☐ 127 x 38	5200 N	ja	■	•	•	•	•	•	•	•	–	•	•	•	•	–	64
	☐ 127 x 38	DV 5200	ja	■	•	•	•	•	•	•	•	–	•	•	–	•	–	65
	☐ 135 x 38	5100 N	ja	■	•	•	•	•	•	•	•	–	•	•	–	•	–	66
S-Force	☐ 140 x 51	5300	ja	■	•	•	•	•	•	•	•	–	•	•	–	•	–	67
S-Force	☐ 140 x 51	5300 TD	ja	■	•	•	•	•	•	•	•	•	•	•	–	•	–	68
	Ø 150 x 38	7100 N	ja	■	•	•	•	•	•	•	•	–	•	•	•	•	–	69
	Ø 150 x 55	7200 N	ja	■	•	•	•	•	•	•	•	–	•	•	•	•	–	70
	172 x 150 x 51	6400	ja	■	•	•	•	•	•	•	•	–	•	•	–	•	–	71
	172 x 150 x 51	6400 TD	ja	■	•	•	•	•	•	•	•	–	•	•	–	•	•	72
	172 x 150 x 51	DV 6400	ja	■	•	•	•	•	•	•	•	–	•	•	–	•	–	73
	172 x 150 x 51	DV 6400 TD	ja	■	•	•	•	•	•	•	•	–	•	•	–	•	•	74
S-Force	172 x 160 x 51	6300 TD	ja	■	•	•	•	•	•	•	•	•	•	•	–	•	–	75
S-Panther	Ø 172 x 51	6300 N	ja	■	•	•	•	•	•	•	•	•	•	•	•	•	–	76
S-Panther	Ø 172 x 51	6300 NTD	ja	■	•	•	•	•	•	•	•	•	•	•	–	•	–	77
S-Force	Ø 172 x 51	6300	ja	■	•	•	•	•	•	•	•	–	•	•	–	•	–	78
S-Force	Ø 172 x 51	6300 TD	ja	■	•	•	•	•	•	•	•	•	•	•	–	•	–	79
S-Force	Ø 172 x 51	DV 6300 TD	ja	■	•	•	•	•	•	•	•	•	•	•	–	•	–	80
S-Force	Ø 200 x 51	2200 FTD	ja	■	•	•	•	•	•	•	•	•	•	•	–	•	–	81
	☐ 225 x 80	K1G 200	ja	■	•	•	•	•	–	•	•	•	•	–	–	•	–	82
	☐ 225 x 89	K3G 200	ja	■	•	•	•	•	–	•	•	•	•	–	–	•	–	84

Subject to alterations

– not yet available ▫ Sleeve bearings
• Available ■ Ball bearings

Please note that these special versions are not possible for all voltages and speeds, and not in all combinations. The special versions are designed for specific customers and projects. As a rule, they are not available off the shelf and are based on minimum quantities.

Please consult your customer support representative about the feasibility of your special variant.

Max. 4.6 m³/h

DC axial fans

☐ 25 x 8 mm

- **Material:** Housing: GRP[1] (PBT)
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 28, TR 64
- **Weight:** 5 g

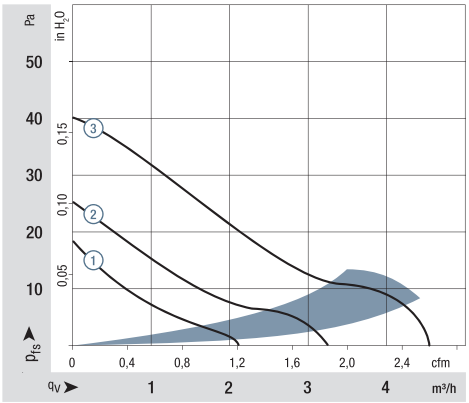
- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Moisture protection

1) Fiberglass-reinforced plastic

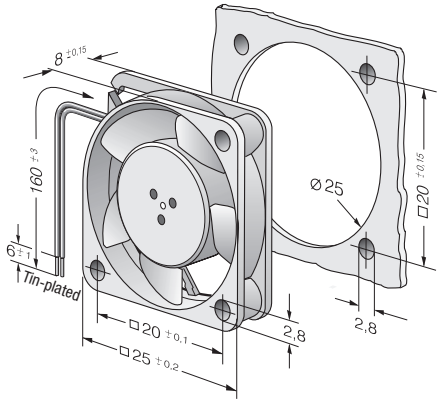
Series 250 **Nominal data**	Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L_{10} (20 °C) ebm-papst standard Service life L_{10} (60 °C) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	**□ / ■**	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
255 M	2.3	1.2	**5**	4.5...5.5	5	< 3	■	0.2	6 500	-10...+70	45 000 / 17 500	47 500	①
255 N	3.5	1.9	**5**	4.5...5.5	16	< 3	■	0.4	9 600	-10...+70	40 000 / 15 000	42 500	②
255 H	4.6	2.6	**5**	4.5...5.5	23	4.4	■	0.6	12 000	-10...+55	35 000 / 15 000*	37 500	③
252 N	3.4	1.9	**12**	10...14	15	< 3	■	0.5	9 000	-10...+70	40 000 / 15 000	42 500	②
252 H	4.6	2.6	**12**	10...14	23	4.4	■	0.7	12 000	-10...+55	35 000 / 15 000*	37 500	③

Subject to change

* at 55 °C



Air performance measured as per: ISO 5801.
Installation category A, without accidental contact.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 9 m³/h

DC axial fans

☐ 40 x 10 mm

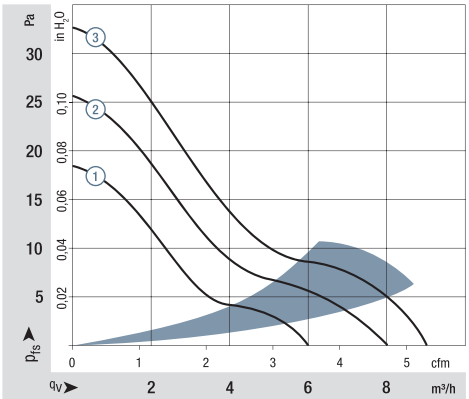
- **Material:** Housing: GRP[1] (PBT)
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 28, TR 64
- **Highlights:** Some models are suitable for use at high ambient temperatures
- **Weight:** 17 g

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Moisture protection

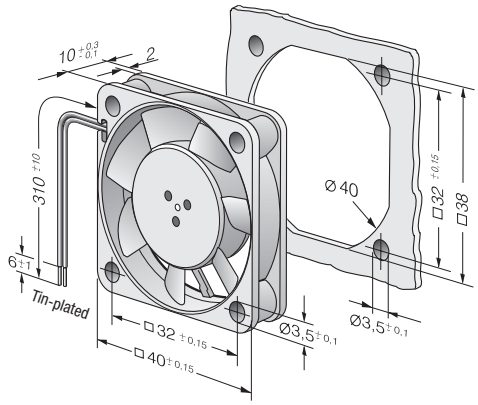
1) Fiberglass-reinforced plastic

Series 400 F **Nominal data**	Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L_{10} (20 °C) ebm-papst standard Service life L_{10} (60 °C) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	**□ / ■**	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
405 F	8	4.7	**5**	4.5...5.5	22.1	4.4	□	0.7	5 400	-20...+70	45 000 / 17 500	47 500	②
405 FH	9	5.3	**5**	4.5...5.5	26.0	4.6	□	0.9	6 000	-20...+70	45 000 / 17 500	47 500	③
412 FM	6	3.5	**12**	10...14	17.0	3.8	□	0.5	4 300	-20...+70	45 000 / 17 500	47 500	①
412 F	8	4.7	**12**	10...14	22.1	4.4	□	0.7	5 400	-20...+70	45 000 / 17 500	47 500	②
412 FH	9	5.3	**12**	10...14	26.0	4.6	□	0.8	6 000	-20...+70	45 000 / 17 500	47 500	③
414 F	8	4.7	**24**	20...28	22.1	4.4	□	0.8	5 400	-20...+70	45 000 / 17 500	47 500	②
414 FH	9	5.3	**24**	21.6...26.4	26.0	4.4	□	0.9	6 000	-20...+70	45 000 / 17 500	47 500	③
Model with temperature range up to +85 °C.													
412 FM-074	6	3.5	**12**	10...14	17.0	3.8	□	0.4	4 300	-20...+85	45 000 / 17 500	47 500	①
412 F-130	8	4.7	**12**	10...14	22.1	4.4	□	0.6	5 400	-20...+85	45 000 / 17 500	47 500	②
412 FH-132	9	5.3	**12**	10...14	26.0	4.6	□	0.8	6 000	-20...+85	45 000 / 17 500	47 500	③

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



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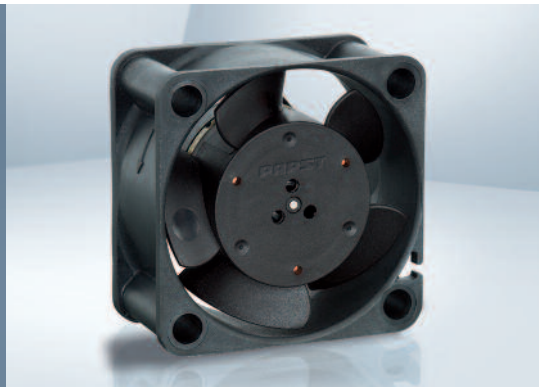
Max. 13.5 m³/h

DC axial fans

☐ 40 x 20 mm



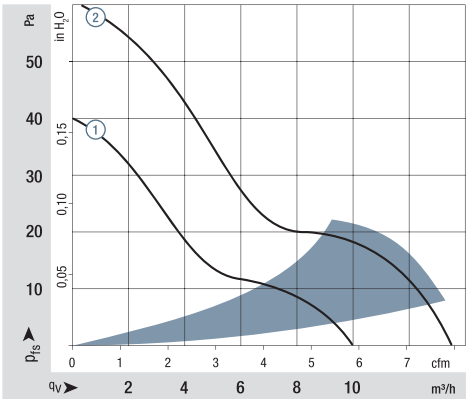
- **Material:** Housing: GRP[1] (PBT)
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 28, TR 64
- **Highlights:** Some models are suitable for use at high ambient temperatures
- **Weight:** 27 g

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - PWM control input
  - Moisture protection

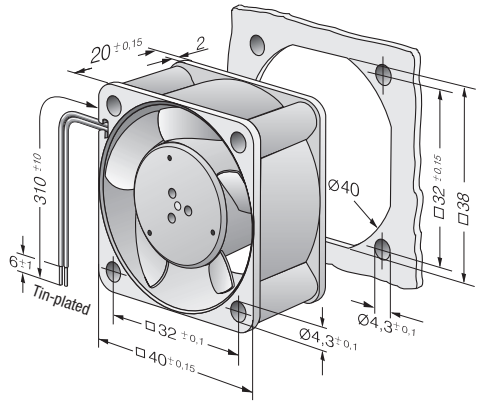
1) Fiberglass-reinforced plastic

Series 400 **Nominal data**	Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L_{10} (20 °C) ebm-papst standard Service life L_{10} (60 °C) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	**□ / ■**	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
405	10.0	5.9	**5**	4.5...5.5	18	3.8	■	0.9	6 000	-20...+70	50 000 / 20 000	52 500	①
412	10.0	5.9	**12**	10...14	18	3.8	■	0.8	6 000	-20...+70	50 000 / 20 000	52 500	①
412 H	13.5	7.9	**12**	10...14	29	4.7	■	1.6	8 100	-20...+60	45 000 / 17 500	47 500	②
414	10.0	5.9	**24**	20...28	18	3.8	■	1.0	6 000	-20...+70	50 000 / 20 000	52 500	①
414 H	13.5	7.9	**24**	20...26.5	29	4.7	■	1.7	8 100	-20...+60	45 000 / 17 500	47 500	②
Model with temperature range up to +85 °C.													
412-099	10.0	5.9	**12**	10...14	18	3.8	■	0.8	6 000	-20...+85	50 000 / 20 000	52 500	①

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 38 m³/h

DC axial fans

☐ 40 x 28 mm

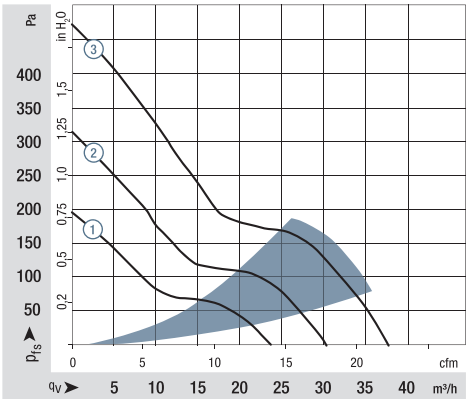
- **Material:** Housing: GRP[1] (PBT)
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 28, UL 1061
- **Weight:** 45 g

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - External temperature sensor
  - PWM control input
  - Moisture protection
  - Salt spray protection

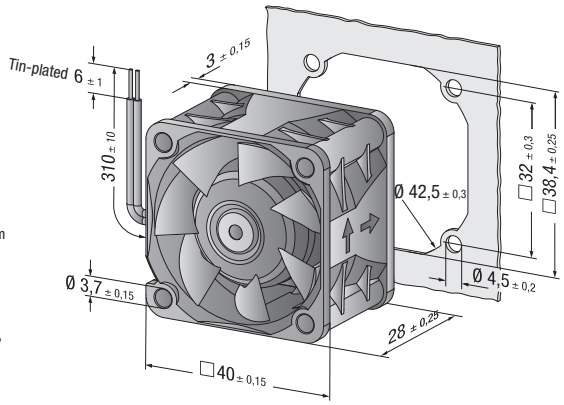
1) Fiberglass-reinforced plastic

Series 420 J **Nominal data**	Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	□ / ■	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
422 JM	24	14.2	**12**	8...13.8	42	5.5	■	2.4	11 400	-20...+70	75 000 / 37 500	127 500	①
422 JN	31	18.3	**12**	8...13.8	48	6.0	■	4.1	14 250	-20...+70	67 500 / 35 000	115 000	②
422 JH	38	22.4	**12**	8...13.8	54	6.6	■	6.9	17 250	-20...+70	60 000 / 30 000	102 500	③
424 JM	24	14.2	**24**	16...28	42	5.5	■	2.7	11 400	-20...+70	75 000 / 37 500	127 500	①
424 JN	31	18.3	**24**	16...28	48	6.0	■	4.3	14 250	-20...+70	67 500 / 35 000	115 000	②
424 JH	38	22.4	**24**	16...26.4	54	6.6	■	6.9	17 250	-20...+65	60 000 / 32 500	102 500	③

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



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Max. 20 m³/h

DC axial fans

☐ 50 x 15 mm

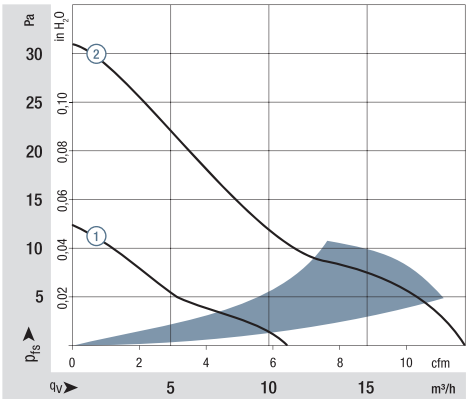
- **Material:** Housing: GRP[1] (PBT)
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 28, TR 64
- **Highlights:** Some models are suitable for use at high ambient temperatures
- **Weight:** 27 g

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - PWM control input
  - Moisture protection

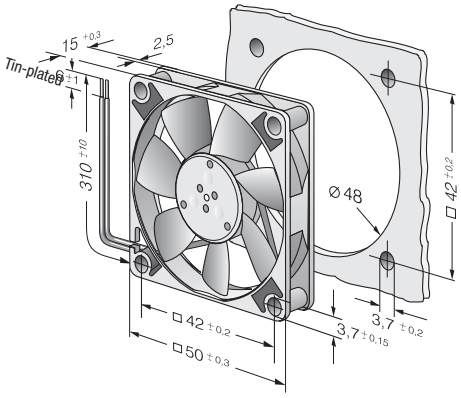
1) Fiberglass-reinforced plastic

Series 500 F **Nominal data**	Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L_{10} (20 °C) ebm-papst standard Service life L_{10} (60 °C) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	**□ / ■**	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
512 F	20	11.8	**12**	10.8...13.2	30	4.5	■	0.8	5 000	-20...+70	50 000 / 20 000	52 500	②
514 F	20	11.8	**24**	21.6...26.4	30	4.5	■	0.9	5 000	-20...+70	50 000 / 20 000	52 500	②
Model with temperature range up to +85 °C.													
512 FL-547	11	6.5	**12**	10.2...13.8	18	3.7	■	0.4	3 000	-20...+85	50 000 / 20 000	52 500	①
512 F-532	20	11.8	**12**	10.8...13.2	30	4.5	■	0.9	5 000	-20...+85	50 000 / 20 000	52 500	②

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 33 m³/h

DC axial fans

☐ 60 x 15 mm

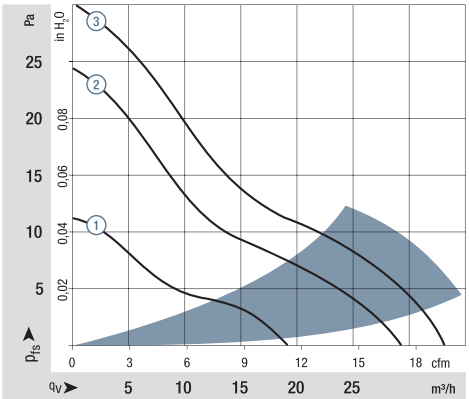
- **Material:** Housing: GRP[1] (PBT)
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 28, TR 64
- **Highlights:** Some models are suitable for use at high ambient temperatures
- **Weight:** 30 g

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - PWM control input
  - Moisture protection

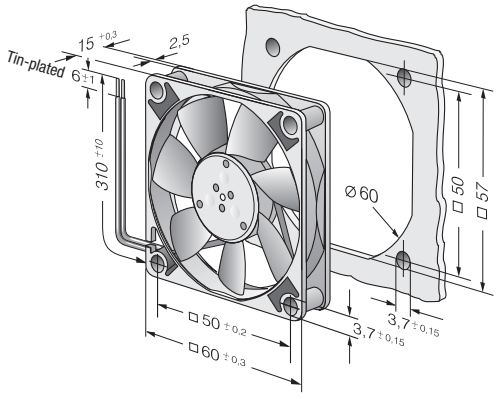
1) Fiberglass-reinforced plastic

Series 600 F **Nominal data**	Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L_{10} (20 °C) ebm-papst standard Service life L_{10} (60 °C) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	□ / ■	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
605 F	29	17.1	**5**	4.5...5.2	27	4.4	■	1.1	4 000	-20...+50	50 000 / 20 000	52 500	②
612 FL	19	11.2	**12**	11.5...13.2	16	3.6	■	0.4	2 650	-20...+70	50 000 / 20 000	52 500	①
612 F	29	17.1	**12**	10.8...13.2	27	4.4	■	1.0	3 900	-20...+70	50 000 / 20 000	52 500	②
612 FH	33	19.4	**12**	10.0...13.2	31	4.8	■	1.5	4 500	-20...+60	45 000 / 17 500	47 500	③
614 F	29	17.1	**24**	21.6...26.4	27	4.4	■	1.1	3 900	-20...+70	50 000 / 20 000	52 500	②
614 F/39 H-691	33	19.4	**24**	16...28	31	4.8	■	1.4	4 500	-20...+60	45 000 / 17 500	47 500	③
Model with temperature range up to +80 / 85 °C.													
612 FL-680	19	11.2	**12**	11.5...14	16	3.6	■	0.5	2 650	-20...+85	50 000 / 20 000	52 500	①
612 F-637	29	17.1	**12**	10.8...12.6	27	4.4	■	1.0	3 900	-20...+80	50 000 / 20 000	52 500	②

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 67 m³/h

DC axial fans

☐ 60 x 25 mm

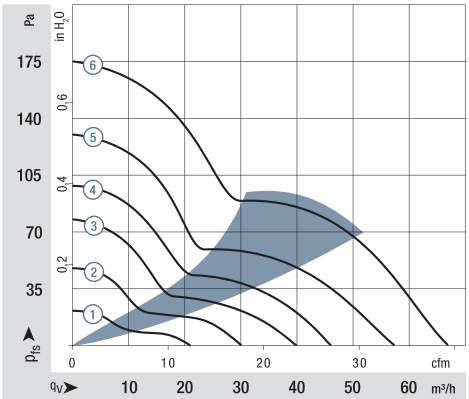
- **Material:** Housing: GRP[1] (PBT)
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Highlights:** Very low-noise motor
- **Weight:** 85 g

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection

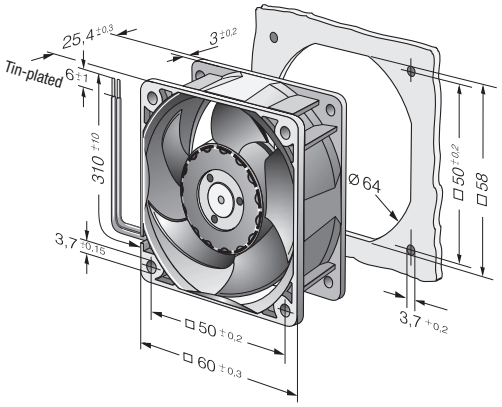
1) Fiberglass-reinforced plastic

Series 620 **Nominal data**	Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type	**m³/hcfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	**□/■**	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**		
622 L	21	12.4	**12**	8...15	20	3.7	■	0.5	3 200	-20...+85	80 000 / 20 000	135 000	①
622 M	30	17.7	**12**	8...15	29	4.3	■	1.0	4 550	-20...+75	77 500 / 30 000	130 000	②
622 N	40	23.5	**12**	8...15	35	4.7	■	1.9	6 100	-20...+70	72 500 / 35 000	122 500	③
622 H	46	27.1	**12**	8...15	39	5.1	■	2.3	6 850	-20...+70	70 000 / 35 000	117 500	④
622 HH	56	33.0	**12**	8...15	43	5.6	■	3.5	8 200	-20...+70	65 000 / 32 500	110 000	⑤
622/2 H3P	67	39.4	**12**	8...13.2	48	5.9	■	5.5	9 700	-20...+60	52 500 / 32 500	87 500	⑥
624 L	21	12.4	**24**	18...28	20	3.7	■	1.0	3 200	-20...+70	80 000 / 40 000	135 000	①
624 M	30	17.7	**24**	12...28	29	4.3	■	1.5	4 550	-20...+70	77 500 / 37 500	130 000	②
624 N	40	23.5	**24**	12...28	35	4.7	■	2.2	6 100	-20...+70	72 500 / 35 000	122 500	③
624 H	46	27.1	**24**	18...28	39	5.1	■	2.4	6 850	-20...+70	70 000 / 35 000	117 500	④
624 HH	56	33.0	**24**	18...28	43	5.6	■	3.6	8 200	-20...+70	65 000 / 32 500	110 000	⑤
624/2 H3P	67	39.4	**24**	18...28	48	5.9	■	5.6	9 700	-20...+60	52 500 / 32 500	87 500	⑥
628 HH	56	33.0	**48**	36...60	43	5.6	■	4.2	8 200	-20...+70	65 000 / 32 500	110 000	⑤

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 58 m³/h

DC axial fans

☐ 60 x 25 mm

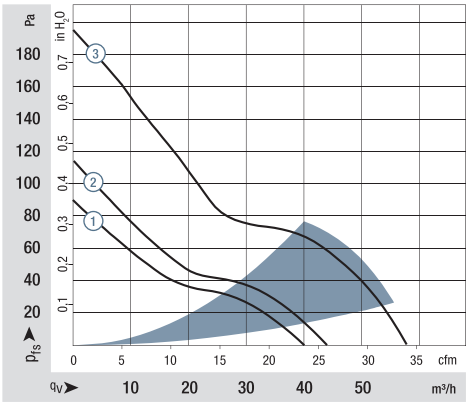
- **Material:** Housing: GRP[1] (PBT)
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Highlights:** Developed for applications with demanding environmental requirements
- **Weight:** 70 g

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54 / IP 68

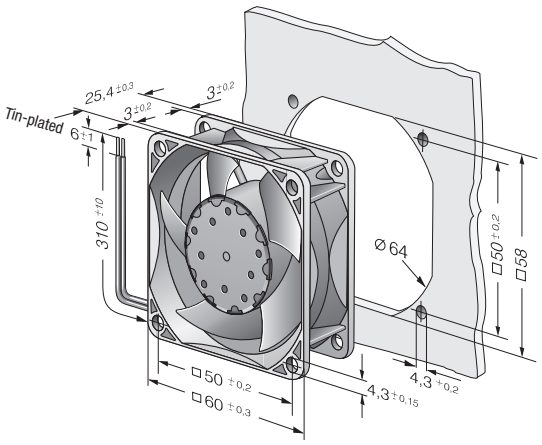
1) Fiberglass-reinforced plastic

Series 630 **Nominal data**	Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	**□/■**	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
632 NU	40	23.5	**12**	6...15	33	5.2	■	1.8	5 900	-20...+70	85 000 / 42 500	142 500	①
632/2 HPU	44	25.9	**12**	10.8...13.2	35	5.4	■	1.5	6 300	-20...+70	85 000 / 42 500	142 500	②
634 NU	40	23.5	**24**	12...30	34	5.1	■	1.6	5 900	-20...+70	85 000 / 42 500	142 500	①
634 HHU	58	34.1	**24**	18...28	44	6.1	■	3.2	8 500	-20...+70	75 000 / 37 500	127 500	③
634/2 HHPU	58	34.1	**24**	18...28	44	6.1	■	3.2	8 500	-20...+70	75 000 / 37 500	127 500	③
638/2 HPU	44	25.9	**48**	40...60	35	5.4	■	1.8	6 300	-20...+70	85 000 / 42 500	142 500	②

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



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Max. 56 m³/h

DC axial fans

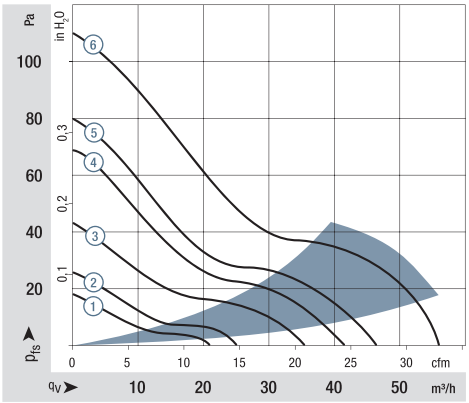
☐ 60 x 25 mm

- **Material:** Housing: GRP[1)] (PBT)
  Impeller: GRP[1)] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Highlights:** Some models are suitable for use at high ambient temperatures up to 85 °C.
- **Weight:** 66 g

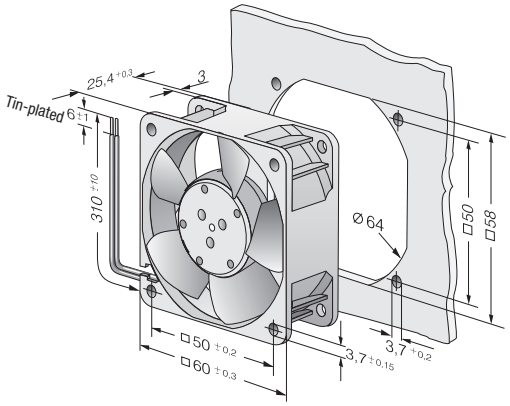
- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Moisture protection
  - Degree of protection: IP 54 / IP 68

1) Fiberglass-reinforced plastic

Series 600 N **Nominal data**	Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	**□ / ■**	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
612 NGLE	21	12.4	**12**	8...15	16	3.6	□	0.6	2 500	-20...+85	80 000 / 27 500	135 000	①
612 NLE	21	12.4	**12**	8...15	16	3.6	■	0.4	2 500	-20...+85	80 000 / 27 500	135 000	①
612 NGMLE	25	14.7	**12**	8...15	19	3.9	□	0.7	3 000	-20...+80	80 000 / 32 500	135 000	②
612 NMLE	25	14.7	**12**	8...15	19	3.9	■	0.4	3 000	-20...+85	80 000 / 27 500	135 000	②
612 NGME	35	20.6	**12**	8...15	28	4.6	□	1.2	4 100	-20...+75	80 000 / 35 000	135 000	③
612 NME	35	20.6	**12**	8...15	28	4.6	■	0.8	4 100	-20...+75	80 000 / 35 000	135 000	③
612 NN	42	24.7	**12**	8...15	35	5.0	■	1.5	5 100	-20...+70	70 000 / 35 000	117 500	④
612 NH	43	25.3	**12**	8...15	37	5.3	■	1.8	5 600	-20...+70	70 000 / 35 000	117 500	⑤
612 NHH-118	56	33.0	**12**	8...15	41	5.7	■	2.9	6 800	-20...+70	60 000 / 30 000	102 500	⑥
614 NGL	21	12.4	**24**	18...28	16	3.6	□	1.0	2 500	-20...+70	80 000 / 40 000	135 000	①
614 NL	21	12.4	**24**	18...28	16	3.6	■	0.8	2 500	-20...+70	80 000 / 40 000	135 000	①
614 NGML	25	14.7	**24**	18...28	19	3.9	□	1.2	3 000	-20...+70	80 000 / 40 000	135 000	②
614 NML	25	14.7	**24**	18...28	19	3.9	■	1.0	3 000	-20...+70	80 000 / 40 000	135 000	②
614 NGM	35	20.6	**24**	18...28	28	4.6	□	1.7	4 100	-20...+70	80 000 / 40 000	135 000	③
614 NM	35	20.6	**24**	18...28	28	4.6	■	1.3	4 100	-20...+70	80 000 / 40 000	135 000	③
614 NN	42	24.7	**24**	18...28	35	5.0	■	1.8	5 100	-20...+70	70 000 / 35 000	117 500	④
614 NH	43	25.3	**24**	18...26	37	5.3	■	2.1	5 600	-20...+70	70 000 / 35 000	117 500	⑤
614 NHH	56	33.0	**24**	18...26	41	5.7	■	2.9	6 850	-20...+70	60 000 / 30 000	102 500	⑥
614 NHH-119	56	33.0	**24**	18...28	41	5.7	■	2.9	6 850	-20...+70	60 000 / 30 000	102 500	⑥
618 NM	35	20.6	**48**	36...56	28	4.6	■	1.9	4 100	-20...+70	80 000 / 40 000	135 000	③
618 NN	42	24.7	**48**	36...56	35	5.0	■	2.1	5 100	-20...+65	70 000 / 40 000	117 500	④



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 41 m³/h

DC axial fans

☐ 60 x 25 mm

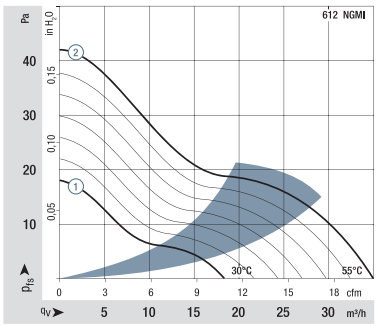
- **Material:** Housing: GRP[1] (PBT)
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Highlights:** Automatic speed adjustment with temperature sensor
- **Weight:** 66 g

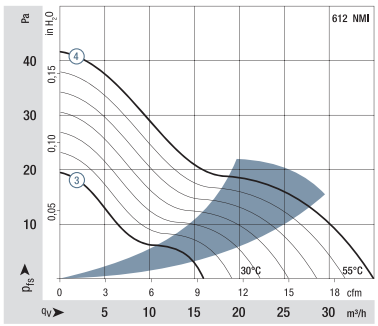
- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - External temperature sensor
  - Internal temperature sensor
  - Moisture protection

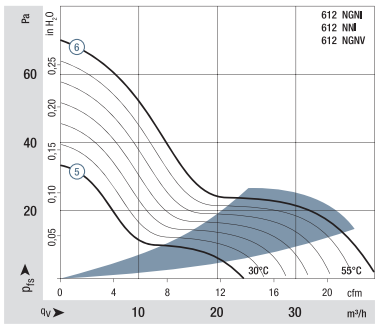
1) Fiberglass-reinforced plastic

Series 600 N VARIOFAN **Nominal data**		Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings / Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard / Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type		**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	□ / ■	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
30 °C 55 °C	612 NGMI	18 35	10.6 20.6	**12**	8...12.6	14 28	3.5 4.6	□	1.3 1.7	2 150 4 100	-20...+65	80 000 / 45 000	135 000	① ②
30 °C 55 °C	612 NMI	16 35	9.4 20.6	**12**	8...12.6	16 28	3.6 4.6	■	1.0 1.4	2 400 4 100	-20...+65	80 000 / 45 000	135 000	③ ④
30 °C 55 °C	612 NGNI	23 41	13.5 24.1	**12**	8...12.6	18 35	3.8 5.0	□	1.7 2.4	2 900 5 100	-20...+65	70 000 / 40 000	117 500	⑤ ⑥
30 °C 55 °C	612 NNI	23 41	13.5 24.1	**12**	8...12.6	18 35	3.8 5.0	■	1.2 1.5	2 900 5 100	-20...+65	70 000 / 40 000	117 500	⑤ ⑥
30 °C 55 °C	612 NGNV	23 41	13.5 24.1	**12**	8...12.6	18 35	3.8 5.0	□	1.7 2.4	2 900 5 100	-20...+65	70 000 / 40 000	117 500	⑤ ⑥

Subject to change

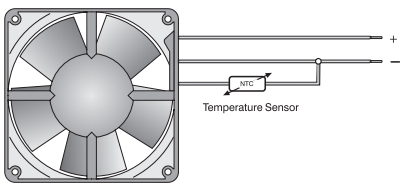






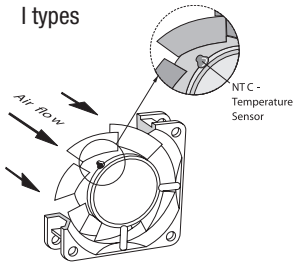
Air performance measured according to: ISO 5801. Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on half-sphere of 2 m; Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see http://www.ebmpapst.com/general conditions

V types

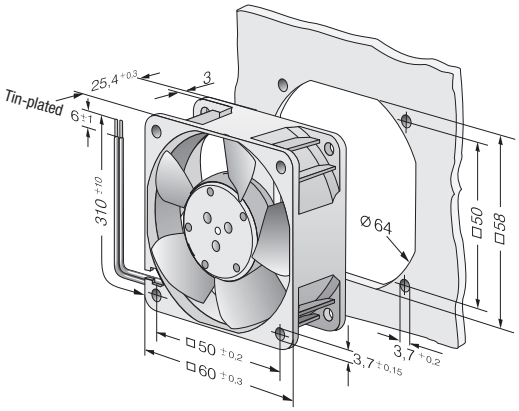


The temperature sensor for controlling the motor speed is not included in the scope of delivery.
For the temperature sensor LZ 370, see accessories.

I types



The temperature sensor (NTC resistor) for controlling the motor speed is positioned in the fan hub directly in the air flow.



ebmpapst

Max. 82 m³/h

DC axial fans

☐ 60 x 32 mm

- **Material:** Housing: GRP[1] (PBT)
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 24, TR 64
- **Weight:** 100 g

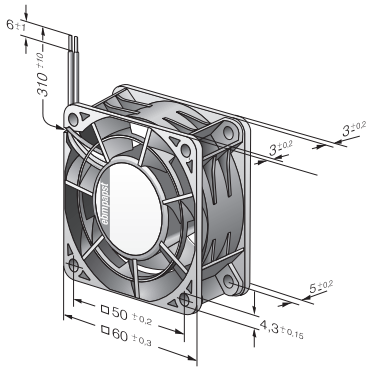
- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection

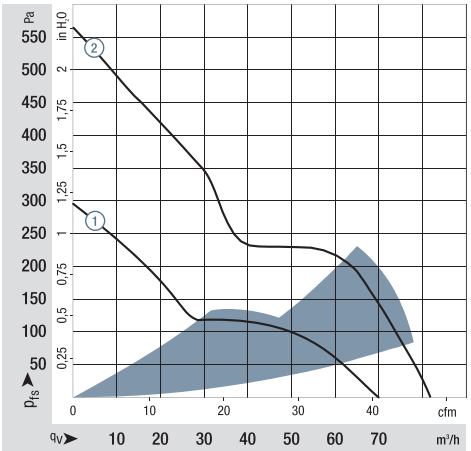
1) Fiberglass-reinforced plastic

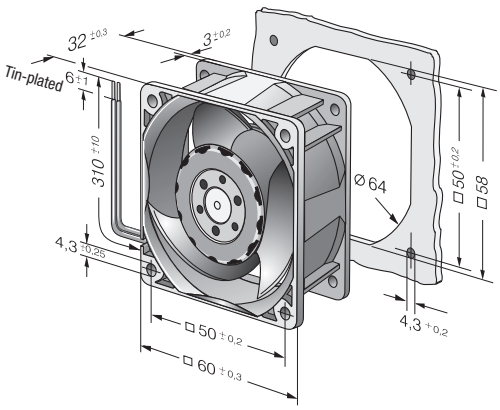
Series 600 J **Nominal data**	Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	**□ / ■**	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
612 JH	70	41.1	**12**	7...13.6	53	6.4	■	7.7	11 700	-20...+70	57 500 / 27 500	97 500	①
614 JH	70	41.1	**24**	14...26.4	53	6.4	■	7.7	11 700	-20...+70	57 500 / 27 500	97 500	①
618 JH	70	41.1	**48**	36...56	53	6.4	■	7.7	11 700	-20...+70	57 500 / 27 500	97 500	①
Fan types with streamer and integrated guard grille.													
614 J/2 HHP	82	48.3	**24**	18...30	62	7.6	■	14.6	15 000	-20...+75	65 000 / 25 000	110 000	②
618 J/2 HHP	82	48.3	**48**	38...58	62	7.6	■	14.6	15 000	-20...+75	65 000 / 25 000	110 000	②

Subject to change

Rear view of types 614 J/2HHP and 618 J/2HHP







Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions

Max. 44 m³/h

DC axial fans

☐ 70 x 15 mm

- **Material:** Housing: GRP[1] (PBT)
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 24 to AWG 28, TR 64
- **Weight:** 53 g

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Moisture protection

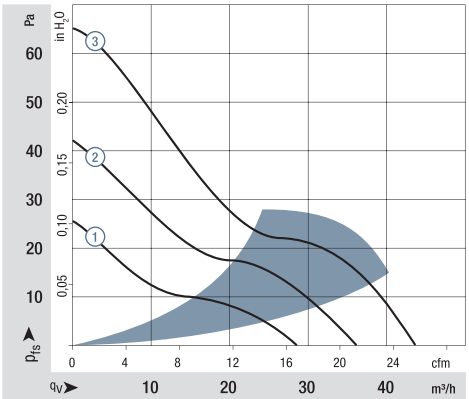
1) Fiberglass-reinforced plastic

Series 700 F **Nominal data**	Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	□ / ■	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
712 F/2L-005*	28	16.5	**12**	8...13.8	25	4.7	■	0.6	3 300	-20...+70	60 000 / 30 000	102 500	①
712 F/2M-006*	36	21.2	**12**	8...13.8	32	5.0	■	1.1	4 300	-20...+70	60 000 / 30 000	102 500	②
712 F	44	25.9	**12**	8...13.8	38	5.3	■	1.7	5 300	-20...+70	60 000 / 30 000	102 500	③
714 F	44	25.9	**24**	18...28	38	5.3	■	1.5	5 300	-20...+70	60 000 / 30 000	102 500	③

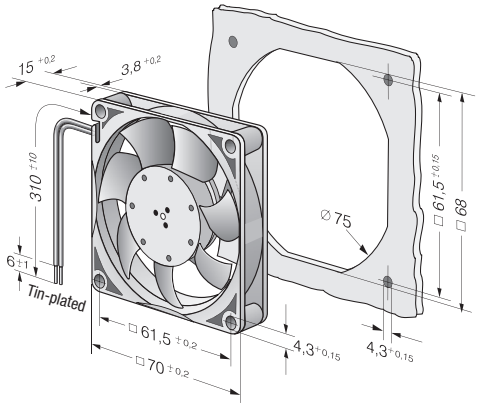
Subject to change

*Version with 3-pin

Molex plug housing	22-01-2035
Molex Contacts	08-50-0113



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 117 m³/h

DC axial fans

☐ 80 x 25 mm

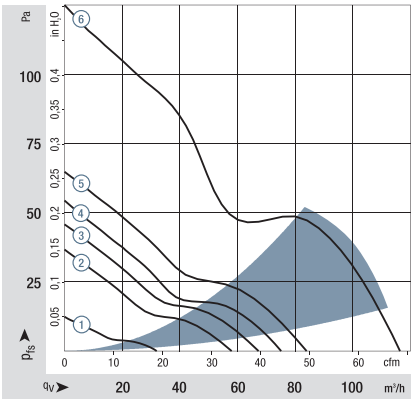
- **Material:** Housing: GRP[1] (PBT)
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 24, TR 64
- **Highlights:** Very low-noise motor
- **Weight:** 105 g

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection

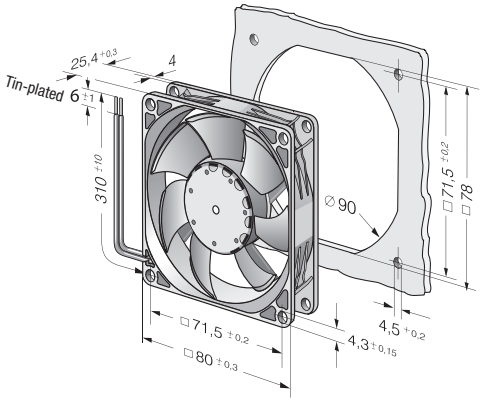
1) Fiberglass-reinforced plastic

Series 8450 **Nominal data**	Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	**□ / ■**	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
8452 GL	32	18.8	**12**	8...15	14	3.3	□	0.4	1 700	-20...75	80 000 / 35 000	135 000	①
8452 GM	58	34.1	**12**	8...15	32	4.7	□	1.3	3 100	-20...75	80 000 / 35 000	135 000	②
8452 GN	68	40.0	**12**	8...15	36	5.0	□	1.8	3 600	-20...70	70 000 / 35 000	117 500	③
Models with 25 kHz PWM control and speed signal to 4-wire specification (see page 179).													
8452/2 GHP	75	44.1	**12**	10.8...13.2	38	5.3	□	2.5	4 000	-20...70	70 000 / 35 000	117 500	④
8452/2 GHHP	83	48.8	**12**	10.8...13.2	42	5.5	□	3.5	4 400	-20...60	65 000 / 40 000	110 000	⑤
Models with 1-30 kHz PWM control and speed signal.													
8452/2 H4P	117	68.8	**12**	8...15	50	6.4	■	6.8	6 200	-20...70	60 000 / 30 000	102 500	⑥
8454/2 H4P	117	68.8	**24**	20.0...26.4	50	6.4	■	6.8	6 200	-20...70	60 000 / 30 000	102 500	⑥

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 79 m³/h

DC axial fans

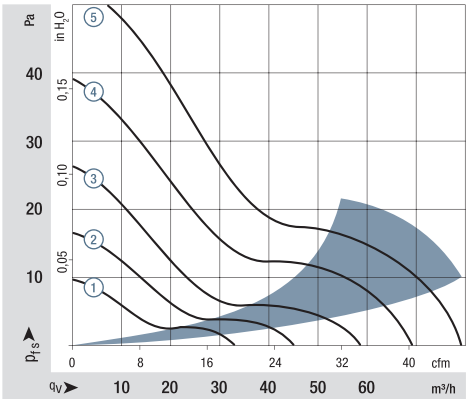
☐ 80 x 25 mm

- **Material:** Housing: GRP[1] (PBT)
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 24, TR 64
- **Highlights:** Some models are suitable for use at high ambient temperatures up to 85 °C.
- **Weight:** 95 g

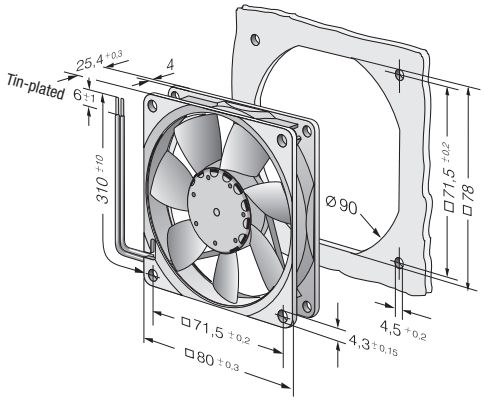
- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection
  - Degree of protection: IP 54 / IP 68

1) Fiberglass-reinforced plastic

Series 8400 N **Nominal data**	Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings / Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard / Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	□ / ■	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
8412 NGLE	33	19.4	**12**	8...15	12	3.5	□	0.5	1 500	-20...+85	80 000 / 27 500	135 000	①
8412 NLE	33	19.4	**12**	8...15	17	3.7	■	0.3	1 500	-20...+85	80 000 / 27 500	135 000	①
8412 NGMLE	45	26.5	**12**	8...15	19	3.9	□	0.9	2 050	-20...+80	80 000 / 32 500	135 000	②
8412 NMLE	45	26.5	**12**	8...15	21	4.0	■	0.6	2 050	-20...+85	80 000 / 27 500	135 000	②
8412 NGME	58	34.1	**12**	8...15	26	4.3	□	1.4	2 600	-20...+75	80 000 / 35 000	135 000	③
8412 NME	58	34.1	**12**	8...15	27	4.4	■	1.0	2 600	-20...+75	80 000 / 35 000	135 000	③
8412 NG	69	40.6	**12**	8...15	32	4.7	□	2.0	3 100	-20...+70	70 000 / 35 000	117 500	④
8412 N	69	40.6	**12**	8...15	32	4.7	■	1.7	3 100	-20...+70	70 000 / 35 000	117 500	④
8412 NH	79	46.5	**12**	8...13.2	37	5.0	■	2.1	3 600	-20...+70	70 000 / 35 000	117 500	⑤
8412 NH-217	79	46.5	**12**	8...15	37	5.0	■	2.5	3 600	-20...+70	70 000 / 35 000	117 500	⑤
8414 NGL	33	19.4	**24**	18...28	12	3.5	□	0.9	1 500	-20...+70	80 000 / 40 000	135 000	①
8414 NL	33	19.4	**24**	18...28	17	3.7	■	0.8	1 500	-20...+70	80 000 / 40 000	135 000	①
8414 NGML	45	26.5	**24**	18...28	19	3.9	□	1.2	2 050	-20...+70	80 000 / 40 000	135 000	②
8414 NML	45	26.5	**24**	18...28	21	4.0	■	1.1	2 050	-20...+70	80 000 / 40 000	135 000	②
8414 NGM	58	34.1	**24**	18...28	26	4.3	□	1.4	2 600	-20...+70	80 000 / 40 000	135 000	③
8414 NM	58	34.1	**24**	18...28	27	4.4	■	1.4	2 600	-20...+70	80 000 / 40 000	135 000	③
8414 NG	69	40.6	**24**	18...28	32	4.7	□	2.2	3 100	-20...+70	70 000 / 35 000	117 500	④
8414 N	69	40.6	**24**	18...28	32	4.7	■	1.8	3 100	-20...+70	70 000 / 35 000	117 500	④
8414 NH	79	46.5	**24**	18...26	37	5.0	■	2.4	3 600	-20...+70	70 000 / 35 000	117 500	⑤
8414 NH-221	79	46.5	**24**	18...28	37	5.0	■	2.2	3 600	-20...+70	70 000 / 35 000	117 500	⑤
8418 N	69	40.6	**48**	36...56	32	4.7	■	2.0	3 100	-20...+70	70 000 / 35 000	117 500	④



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Finger guards from p. 242

ebmpapst

Max. 58 m³/h

DC axial fans

☐ 80 x 25 mm

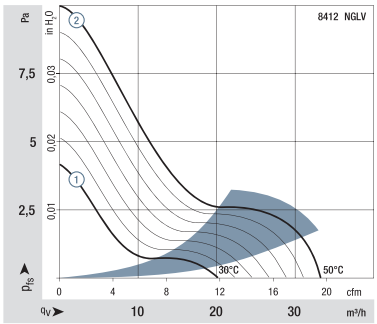
- **Material:** Housing: GRP[1] (PBT)
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 24, TR 64
- **Highlights:** Automatic speed adjustment with temperature sensor
- **Weight:** 95 g

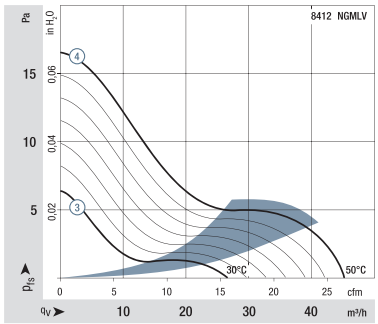
- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - External temperature sensor
  - Internal temperature sensor
  - Moisture protection

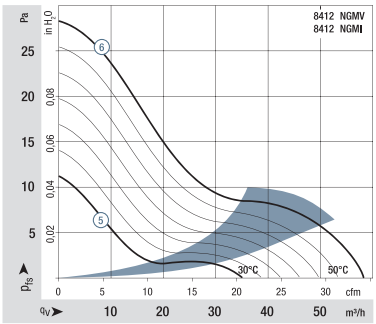
1) Fiberglass-reinforced plastic

Series 8400 N VARIOFAN **Nominal data**		Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard	Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
	Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	□ / ■	**Watts**	**rpm⁻¹**	**°C**	**Hours**		**Hours**	
30 °C 50 °C	8412 NGLV	20 33	11.8 19.4	**12**	10...14	< 10 12	< 3 3.5	□	0.9 1.1	900 1 500	-20...+65	80 000 / 45 000		135 000	① ②
30 °C 50 °C	8412 NGMLV	27 45	15.9 26.6	**12**	8...14	< 10 19	3.0 3.9	□	1.1 1.5	1 200 2 050	-20...+65	80 000 / 45 000		135 000	③ ④
30 °C 50 °C	8412 NGMI	35 58	20.6 34.1	**12**	8...14	< 13 26	3.5 4.3	□	1.4 2.0	1 600 2 600	-20...+65	80 000 / 45 000		135 000	⑤ ⑥

Subject to change

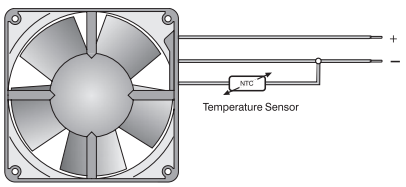






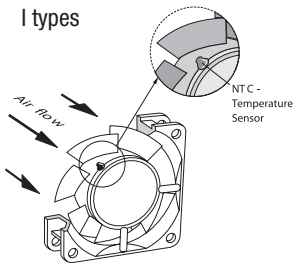
Air performance measured according to: ISO 5801. Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on half-sphere of 2 m; Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see http://www.ebmpapst.com/general conditions

V types

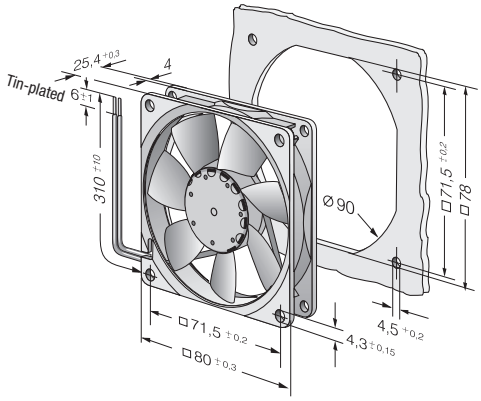


The temperature sensor for controlling the motor speed is not included in the scope of delivery.
For the temperature sensor LZ 370, see accessories.

I types



The temperature sensor (NTC resistor) for controlling the motor speed is positioned in the fan hub directly in the air flow.



Max. 80 m³/h

DC axial fans

☐ 80 x 32 mm

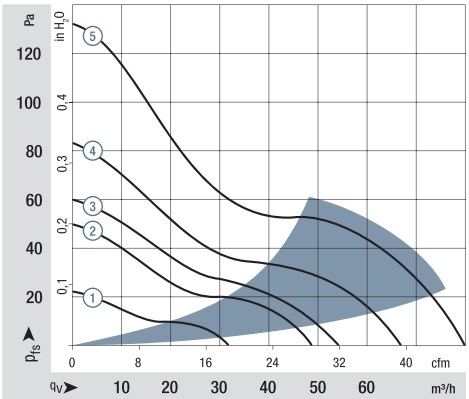
- **Material:** Housing: GRP[1] (PBT)
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Weight:** 170 g

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54 / IP 68

1) Fiberglass-reinforced plastic

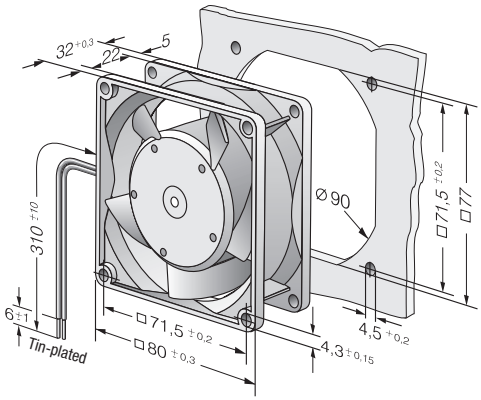
Series 8300 **Nominal data**	Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	**□ / ■**	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
8312 L	32	18.8	**12**	6...15	24	4.0	■	1.2	2 000	-20...+75	80 000 / 32 500	135 000	①
8312 M	48	28.3	**12**	6...15	34	5.0	■	2.2	3 000	-20...+75	70 000 / 27 500	117 500	②
8312	54	31.8	**12**	6...15	36	5.2	■	2.6	3 300	-20...+75	70 000 / 27 500	117 500	③
8312 HL	67	39.4	**12**	6...15	43	5.8	■	4.0	4 200	-20...+75	62 500 / 25 000	105 000	④
8312 H	80	47.1	**12**	6...12.6	48	6.2	■	6.4	5 000	-20...+60	55 000 / 35 000	92 500	⑤
8314 L	32	18.8	**24**	12...31.5	24	4.0	■	1.0	2 000	-20...+75	80 000 / 32 500	135 000	①
8314 M	48	28.3	**24**	12...31.5	34	5.0	■	2.3	3 000	-20...+75	70 000 / 27 500	117 500	②
8314	54	31.8	**24**	12...31.5	36	5.2	■	2.7	3 300	-20...+75	70 000 / 27 500	117 500	③
8314 HL	67	39.4	**24**	12...31.5	43	5.8	■	4.3	4 200	-20...+75	62 500 / 25 000	105 000	④
8314 H	80	47.1	**24**	12...28	48	6.2	■	6.0	5 000	-20...+75	55 000 / 20 000	92 500	⑤
8318	54	31.8	**48**	36...60	36	5.2	■	3.0	3 300	-20...+75	70 000 / 27 500	117 500	③
8318 HL	67	39.4	**48**	36...60	43	5.8	■	4.2	4 200	-20...+75	62 500 / 25 000	105 000	④
8318 H	80	47.1	**48**	36...60	48	6.2	■	6.2	5 000	-20...+65	55 000 / 30 000	92 500	⑤

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions

Rotor protrusion max. 0.4 mm.



ebmpapst

Max. 222 m³/h

DC axial fans

☐ 80 x 38 mm

- **Material:** Housing: GRP[1)] (PBT)
  Impeller: GRP[1)] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 24 (H3 and H4: AWG 22), TR 64
- **Weight:** 160 g (H3 and H4: 200 g)

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection
  - Degree of protection:IP 54

1) Fiberglass-reinforced plastic

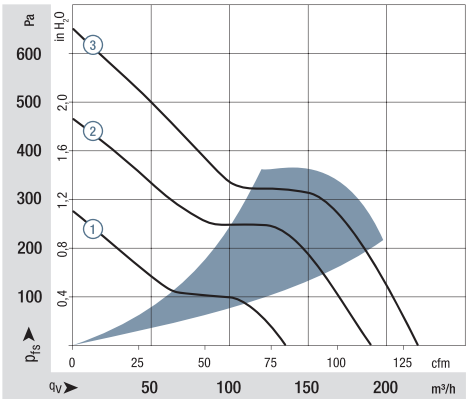
Series 8200 J

Nominal data

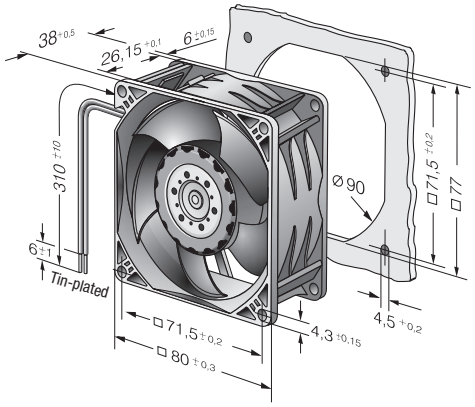
Type	Air flow m³/h	Air flow cfm	Nominal voltage VDC	Voltage range VDC	Sound pressure level dB(A)	Sound power level Bel(A)	Sintec sleeve bearings ☐ / Ball bearings ■	Power consumption Watts	Nominal speed rpm⁻¹	Temperature range °C	Service life L_{10} (40 °C) ebm-papst standard / Service life L_{10} (T_{max}) ebm-papst standard Hours	Life expectancy L_{10IPC} (40 °C) see page 17 Hours	Curve
8212 JN	132	78	**12**	7...13.8	55	6.6	■	10	8 400	-20...+70	62 500 / 32 500	105 000	①
8212 JH3 S-Force	190	112	**12**	6...13.8	66	7.3	■	26*	12 000	-20...+70	55 000 / 27 500	92 500	②
8212 JH4 S-Force	222	131	**12**	6...13.8	71	7.8	■	39*	14 000	-20...+70	50 000 / 25 000	85 000	③
8214 JN	132	78	**24**	18...26.4	55	6.6	■	11	8 400	-20...+70	62 500 / 32 500	105 000	①
8214 JH3 S-Force	190	112	**24**	12...27.6	66	7.3	■	26*	12 000	-20...+70	55 000 / 27 500	92 500	②
8214 JH4 S-Force	222	131	**24**	12...27.6	71	7.8	■	38*	14 000	-20...+70	50 000 / 25 000	85 000	③
8218 JN	132	78	**48**	36...53	55	6.6	■	11	8 400	-20...+70	62 500 / 32 500	105 000	①
8218 JH3 S-Force	190	112	**48**	36...53	66	7.3	■	25*	12 000	-20...+70	55 000 / 27 500	92 500	②
8218 JH4 S-Force	222	131	**48**	20...58	71	7.8	■	36*	14 000	-20...+70	50 000 / 25 000	85 000	③

Subject to change

8200 JH3 and JH4 also available as standard with PWM control input and speed signal.
Speed control range from 2000 rpm⁻¹ up to maximum nominal speed. Standstill at 0% PWM, maximum speed if control cable is interrupted.
* Power consumption at free air flow. These values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 102 m³/h

DC axial fans

☐ 92 x 25 mm

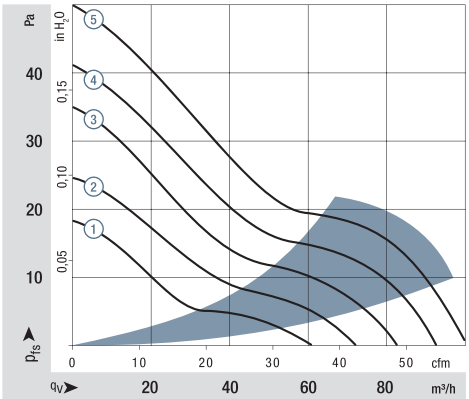
- **Material:** Housing: GRP[1)] (PBT)
  Impeller: GRP[1)] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 24, TR 64
- **Weight:** 100 g

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection
  - Degree of protection: IP 54 / IP 68

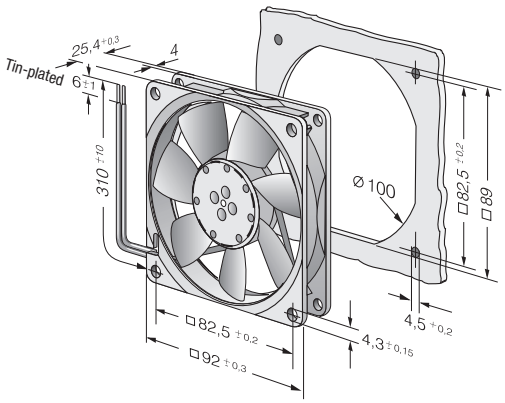
1) Fiberglass-reinforced plastic

Series 3400 N **Nominal data**	Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings / Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard / Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	□ / ■	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
3412 NGLE	61	35.9	**12**	8...15	23	4.0	□	1.1	1 950	-20...+80	80 000 / 22 500	135 000	①
3412 NLE	61	35.9	**12**	8...15	23	4.0	■	0.8	1 950	-20...+85	80 000 / 17 500	135 000	①
3412 NGME	72	42.4	**12**	8...15	28	4.3	□	1.6	2 300	-20...+75	75 000 / 27 500	127 500	②
3412 NME	72	42.4	**12**	8...15	28	4.3	■	1.1	2 300	-20...+75	75 000 / 27 500	127 500	②
3412 NG	84	49.4	**12**	8...15	32	4.7	□	1.9	2 700	-20...+70	70 000 / 35 000	117 500	③
3412 N	84	49.4	**12**	8...15	32	4.7	■	1.7	2 700	-20...+70	70 000 / 35 000	117 500	③
3412 NGH	94	55.3	**12**	8...15	36	5.0	□	2.3	3 000	-20...+70	70 000 / 35 000	117 500	④
3412 NH	94	55.3	**12**	8...15	36	5.0	■	2.1	3 000	-20...+70	70 000 / 35 000	117 500	④
3412 NGHH	102	60.0	**12**	8...13.2	39	5.1	□	3.2	3 250	-20...+60	70 000 / 45 000	117 500	⑤
3412 NHH	102	60.0	**12**	8...13.2	39	5.1	■	2.9	3 250	-20...+60	70 000 / 45 000	117 500	⑤
3412 NHH-379	102	60.0	**12**	8...15	39	5.1	■	2.7	3 250	-20...+70	70 000 / 35 000	117 500	⑤
3414 NGL	61	35.9	**24**	18...28	23	4.0	□	1.4	1 950	-20...+70	80 000 / 40 000	135 000	①
3414 NL	61	35.9	**24**	18...28	23	4.0	■	1.1	1 950	-20...+70	80 000 / 40 000	135 000	①
3414 NGM	72	42.4	**24**	18...28	28	4.3	□	1.7	2 300	-20...+70	75 000 / 37 500	127 500	②
3414 NM	72	42.4	**24**	18...28	28	4.3	■	1.4	2 300	-20...+70	75 000 / 37 500	127 500	②
3414 NG	84	49.4	**24**	18...28	32	4.7	□	2.5	2 700	-20...+70	70 000 / 35 000	117 500	③
3414 N	84	49.4	**24**	18...28	32	4.7	■	2.1	2 700	-20...+70	70 000 / 35 000	117 500	③
3414 NGH	94	55.3	**24**	18...26	36	5.0	□	3.0	3 000	-20...+70	70 000 / 35 000	117 500	④
3414 NH	94	55.3	**24**	18...26	36	5.0	■	2.3	3 000	-20...+70	70 000 / 35 000	117 500	④
3414 NGHH	102	60.0	**24**	18...26	39	5.1	□	3.2	3 250	-20...+70	70 000 / 35 000	117 500	⑤
3414 NGHH-389	102	60.0	**24**	18...28	39	5.1	□	3.2	3 250	-20...+70	70 000 / 35 000	117 500	⑤
3414 NHH	102	60.0	**24**	18...26	39	5.1	■	3.1	3 250	-20...+70	70 000 / 35 000	117 500	⑤
3414 NHH-386	102	60.0	**24**	18...28	39	5.1	■	3.2	3 250	-20...+70	70 000 / 35 000	117 500	⑤
3418 N	84	49.4	**48**	36...56	32	4.7	■	2.4	2 700	-20...+70	70 000 / 35 000	117 500	③

Other 48 VDC models on request.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



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Max. 84 m³/h

DC axial fans

☐ 92 x 25 mm

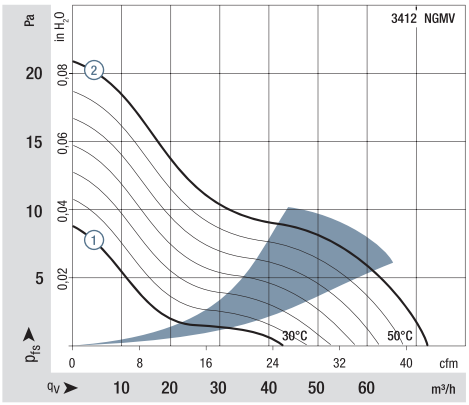
- **Material:** Housing: GRP[1] (PBT)
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 24, TR 64
- **Highlights:** Automatic speed adjustment with temperature sensor
- **Weight:** 100 g

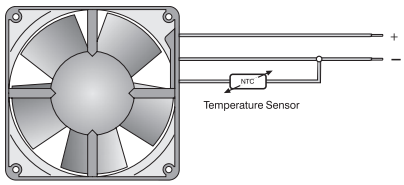
- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - External temperature sensor
  - Internal temperature sensor
  - Moisture protection

1) Fiberglass-reinforced plastic

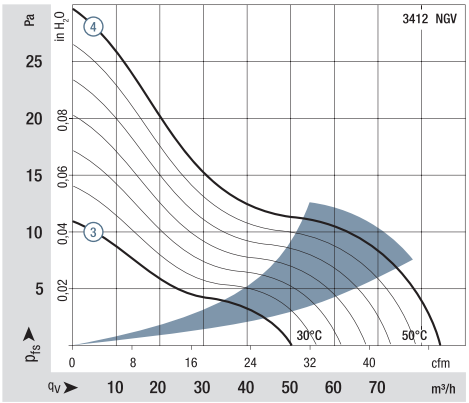
Series 3400 N VARIOFAN **Nominal data**		Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings ☐ / Ball bearings ■	Power consumption	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type		**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	☐ / ■	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
30 °C	3412 NGMV	44	25.9	**12**	8...14	14	3.5	■	1.5	1 400	-20...+65	75 000 / 42 500	127 500	①
50 °C		72	42.4			28	4.3		2.0	2 300				②
30 °C	3412 NGV	50	29.4	**12**	8...12.6	16	3.7	■	1.6	1 600	-20...+65	75 000 / 42 500	127 500	③
50 °C		84	49.4			32	4.7		2.5	2 700				④

Subject to change

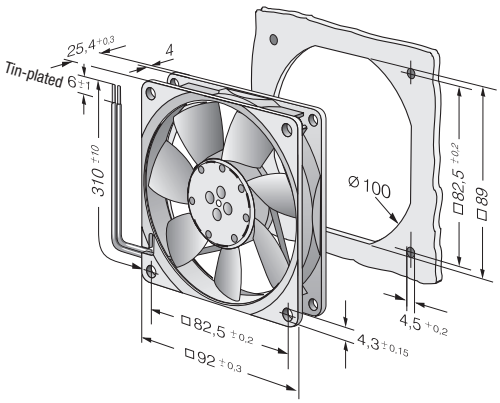




The temperature sensor for controlling the motor speed is not included in the scope of delivery.
For the temperature sensor LZ 370, see accessories.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see http://www.ebmpapst.com/general conditions



Max. 133 m³/h

DC axial fans

☐ 92 x 32 mm

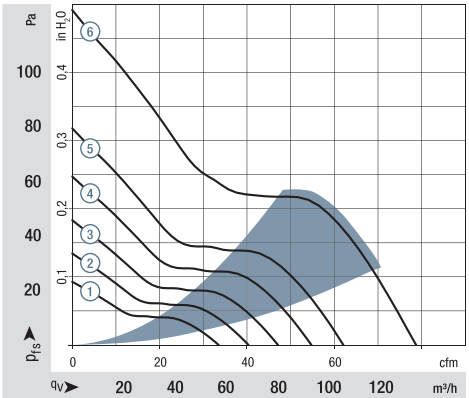
- **Material:** Housing: GRP[1] (PBT)
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 24 UL 1061, TR 64
- **Weight:** 190 g

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54 / IP 68

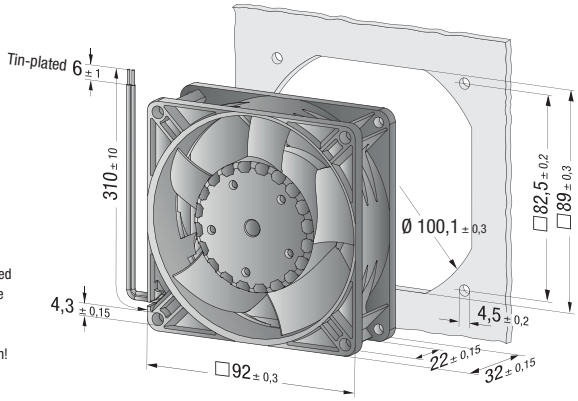
1) Fiberglass-reinforced plastic

Series 3300 N **Nominal data**	Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings / Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard / Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	□/■	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
3312 NL	56	33	**12**	6...15	24	4.1	■	0.8	1 850	-20...+75	80 000 / 35 000	135 000	①
3312 NM	68	40	**12**	6...15	29	4.5	■	1.3	2 250	-20...+75	70 000 / 30 000	117 500	②
3312 NN	80	47	**12**	6...15	35	4.7	■	1.8	2 650	-20...+75	70 000 / 30 000	117 500	③
3312 NH	93	54	**12**	6...15	38	5.1	■	2.8	3 050	-20...+75	65 000 / 27 500	110 000	④
3312 NHH	107	63	**12**	6...15	42	5.4	■	3.4	3 450	-20...+75	57 500 / 25 000	97 500	⑤
3312 NH3	133	78	**12**	6...14	50	6.0	■	6.7	4 350	-20...+70	50 000 / 25 000	85 000	⑥
3314 NN	80	47	**24**	18...28	35	4.7	■	1.8	2 650	-20...+75	70 000 / 30 000	117 500	③
3314 NH	93	54	**24**	18...28	38	5.1	■	2.6	3 050	-20...+75	65 000 / 27 500	110 000	④
3314 NHH	107	63	**24**	18...28	42	5.4	■	3.5	3 450	-20...+75	57 500 / 25 000	97 500	⑤
3314 NH3	133	78	**24**	18...28	50	6.0	■	6.7	4 350	-20...+75	50 000 / 22 500	85 000	⑥
3318 NN	80	47	**48**	36...60	35	4.7	■	1.8	2 650	-20...+75	70 000 / 30 000	117 500	③
3318 NH	93	54	**48**	36...60	38	5.1	■	3.5	3 050	-20...+75	65 000 / 27 500	110 000	④
3318 NH3	133	78	**48**	36...58	50	6.0	■	6.5	4 350	-20...+75	50 000 / 22 500	85 000	⑥

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 280 m³/h

DC axial fans

☐ 92 x 38 mm

- **Material:** Housing: GRP[1)] (PBT)
  Impeller: GRP[1)] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 24 (H3 and H4: AWG 22), TR 64
- **Weight:** 240 g (H3 and H4: 280 g)

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection
  - Degree of protection: IP 54 / IP 68

1) Fiberglass-reinforced plastic

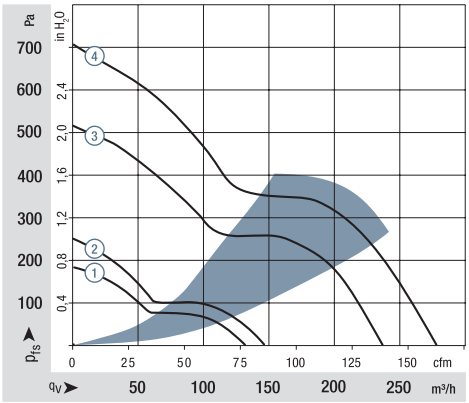
Series 3200 J

Nominal data

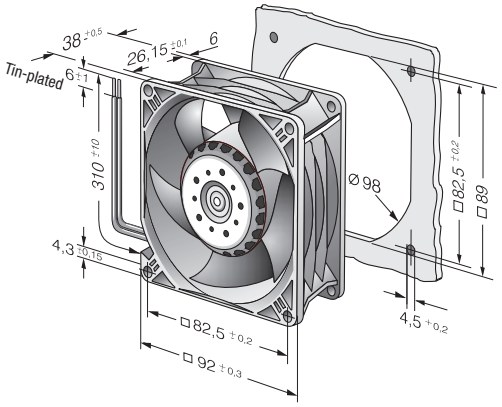
Type	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings / Ball bearings	Power consumption*	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard / Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
	m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	☐/■	Watts	rpm⁻¹	°C	Hours	Hours	
3212 JN	130	76.5	**12**	7...13.8	51	6.1	■	7.5	6 000	-20 ...+70	70 000 / 35 000	117 500	①
3212 JH	146	86.0	**12**	7...15	55	6.4	■	9.0	6 800	-20 ...+70	70 000 / 35 000	117 500	②
3212 JH3 *S-Force*	237	139.5	**12**	6...13.8	69	7.8	■	31.0*	11 000	-20 ...+70	65 000 / 32 500	110 000	③
3212 JH4 *S-Force*	280	164.8	**12**	6...13.8	73	8.2	■	50.0*	13 000	-20 ...+70	60 000 / 30 000	110 000	④
3214 JN	130	76.5	**24**	11...28	51	6.1	■	6.5	6 000	-20 ...+70	70 000 / 35 000	117 500	①
3214 JH	146	86.0	**24**	12...30	55	6.4	■	9.0	6 800	-20 ...+70	70 000 / 35 000	117 500	②
3214 JH3 *S-Force*	237	139.5	**24**	12...27.6	69	7.8	■	30.0*	11 000	-20 ...+70	65 000 / 32 500	110 000	③
3214 JH4 *S-Force*	280	164.8	**24**	12...27.6	73	8.2	■	50.0*	13 000	-20 ...+70	60 000 / 30 000	110 000	④
3218 JN	130	76.5	**48**	36...56	51	6.1	■	7.0	6 000	-20 ...+70	70 000 / 35 000	117 500	①
3218 JH	146	86.0	**48**	36...53	55	6.4	■	9.5	6 800	-20 ...+70	70 000 / 35 000	117 500	②
3218 JH3 *S-Force*	237	139.5	**48**	20...58.0	69	7.8	■	29.0*	11 000	-20 ...+70	65 000 / 32 500	110 000	③
3218 JH4 *S-Force*	280	164.8	**48**	20...58.0	73	8.2	■	50.0*	13 000	-20 ...+70	60 000 / 30 000	110 000	④

Subject to change

3200 JH3 and JH4 also available as standard with PWM control input and speed signal.
Speed control range from 2000 rpm⁻¹ up to maximum nominal speed. Standstill at 0% PWM, maximum speed if control cable is interrupted.
* Power consumption at free air flow. These values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 270 m³/h

S-Panther

DC axial fans

☐ 92 x 38 mm

- **Material:** Housing: GRP[1] (PBT)
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Weight:** 240 g

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54 / IP 68

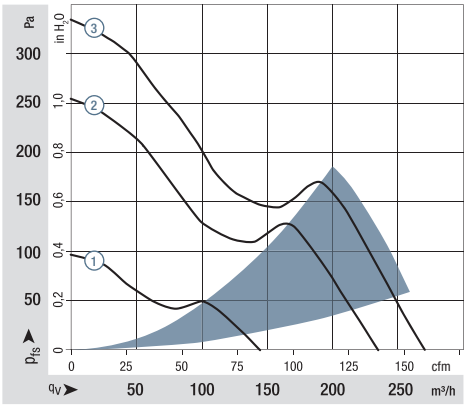
1) Fiberglass-reinforced plastic

Series 3250 J **Nominal data**	Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption*	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	**□/■**	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
3252 J/2 H3P	270	158	**12**	7...13.2	64	7.6	■	35.0	7 450	-20...+70	85 000 / 42 500	142 500	③
3254 J/2 H3P	270	158	**24**	14...26.4	64	7.6	■	35.0	7 450	-20...+70	85 000 / 42 500	142 500	③
3258 J/2 HP**	145	85	**48**	36...56.0	46	5.8	■	7.0	4 100	-20...+70	100 000 / 50 000	170 000	①
3258 J/2 HHP	235	138	**48**	36...56.0	59	7.0	■	24.3	6 650	-20...+70	90 000 / 45 000	152 500	②
3258 J/2 H3P	270	158	**48**	36...56.0	64	7.6	■	33.6	7 450	-20...+70	85 000 / 42 500	142 500	③

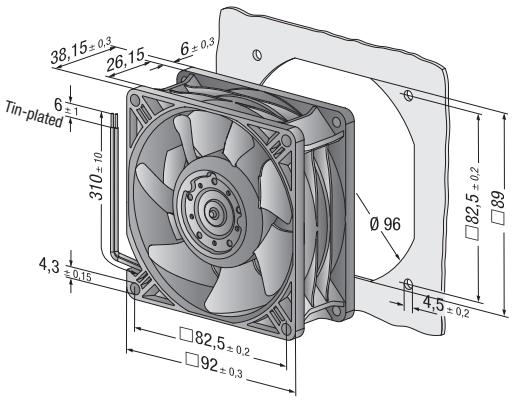
Subject to change

** On request

* Power consumption at free air flow. These values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parametersmust be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 170 m³/h

DC axial fans

☐ 119 x 25 mm

- **Material:** Housing: GRP[1] (PBT)
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 24, TR 64
- **Highlights:** Ball bearings and sleeve bearings available
- **Weight:** 175 g

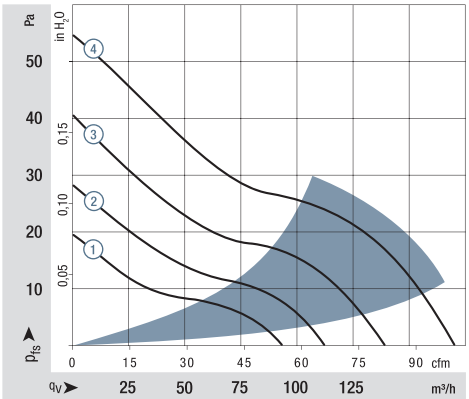
- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection

1) Fiberglass-reinforced plastic

Series 4400 F

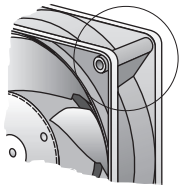
Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings / Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard / Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	□ / ■	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
4412 FGL	94	55	**12**	7...14	26	3.9	□	1.3	1 600	-20...+75	80 000 / 32 500	135 000	①
4412 FGML	114	67	**12**	7...12.6	32	4.3	□	2.0	1 950	-20...+75	75 000 / 30 000	127 500	②
4412 FML	114	67	**12**	7...12.6	32	4.3	■	2.0	1 950	-20...+75	75 000 / 30 000	127 500	②
4412 FGM	140	82	**12**	7...12.6	38	4.8	□	3.2	2 400	-20...+75	70 000 / 27 500	117 500	③
4412 FM	140	82	**12**	7...12.6	38	4.8	■	3.2	2 400	-20...+75	70 000 / 27 500	117 500	③
4412 FG	170	100	**12**	8...12.6	43	5.3	□	5.3	2 900	-20...+60	60 000 / 37 500	102 500	④
4412 F	170	100	**12**	8...12.6	43	5.3	■	5.3	2 900	-20...+60	60 000 / 37 500	102 500	④
4414 FL	94	55	**24**	18...28	26	3.9	■	1.2	1 600	-20...+75	80 000 / 32 500	135 000	①
4414 FM	140	82	**24**	12...28	38	4.8	■	3.1	2 400	-20...+75	70 000 / 27 500	117 500	③
4414 FG	170	100	**24**	12...28	43	5.3	□	5.0	2 900	-20...+60	60 000 / 37 500	102 500	④
4414 F	170	100	**24**	12...28	43	5.3	■	5.0	2 900	-20...+60	60 000 / 37 500	102 500	④
4418 FG	170	100	**48**	28...53	43	5.3	□	5.4	2 900	-20...+60	60 000 / 37 500	102 500	④
4418 F	170	100	**48**	28...53	43	5.3	■	5.4	2 900	-20...+60	60 000 / 37 500	102 500	④

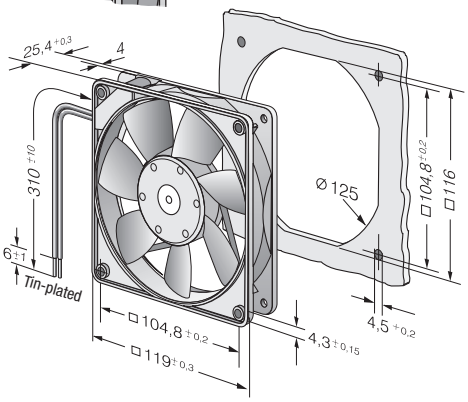
Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions

Available as an option:
Fan housing with molded-in spacers





Finger guards from p. 242

Max. 170 m³/h

DC axial fans

Ø 127 mm

- **Material:** Housing: GRP[1] (PBT)
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 24, TR 64
- **Highlights:** Ball bearings and sleeve bearings available
  Optional:
  - Reversible direction of rotation
  - Symmetrical impeller
- **Weight:** 170 g

1) Fiberglass-reinforced plastic

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection
  - Reversible direction of rotation
  - Symmetrical impeller

Series 4400 F **Nominal data**		Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
	Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	□ / ■	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
NEW	4412 FGL-573	91	54	**12**	7...15	26	3.9	■	1.2	1 600	-20...+75	80 000 / 32 500	135 000	①
NEW	4412 FGML*	114	67	**12**	7...12.6	32	4.3	■	2.0	1 950	-20...+75	75 000 / 30 000	127 500	③
NEW	4412 FGM*	140	82	**12**	7...12.6	38	4.8	■	3.2	2 400	-20...+75	75 000 / 27 500	117 500	③
NEW	4412 FG*	170	100	**12**	8...12.6	43	5.3	■	5.3	2 900	-20...+60	60 000 / 37 500	102 500	④

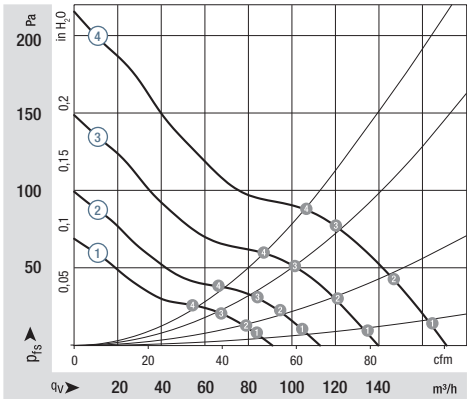
Subject to change

* On request

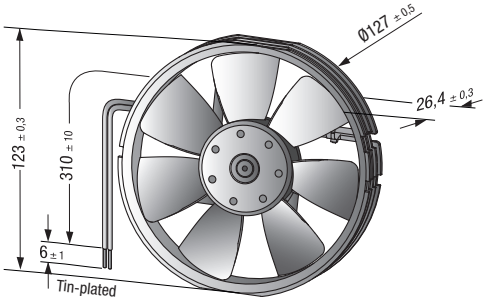
Other voltage versions (24 VDC, 48 VDC), speed variations and ball bearing designs are available as additional variants.

		n rpm⁻¹	P_{ed} W	Lw_A dB(A)
①	❶	1515	1	44
①	❷	1516	1	38
①	❸	1547	1	40
①	❹	1567	1	39
②	❶	1856	2	50
②	❷	1848	2	44
②	❸	1882	2	44
②	❹	1929	2	46

		n rpm⁻¹	P_{ed} W	Lw_A dB(A)
③	❶	2225	4	51
③	❷	2235	4	50
③	❸	2304	4	51
③	❹	2369	4	52
④	❶	2670	6	59
④	❷	2685	6	59
④	❸	2783	6	56
④	❹	2869	6	57



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_pA measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parametersmust be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Finger guards from p. 242

ebmpapst

Max. 225 m³/h

DC axial fans

☐ 119 x 25 mm

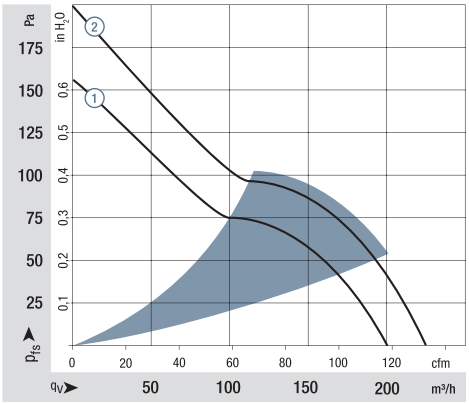
- **Material:** Housing: GRP[1] (PBT)
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Weight:** 240 g

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection

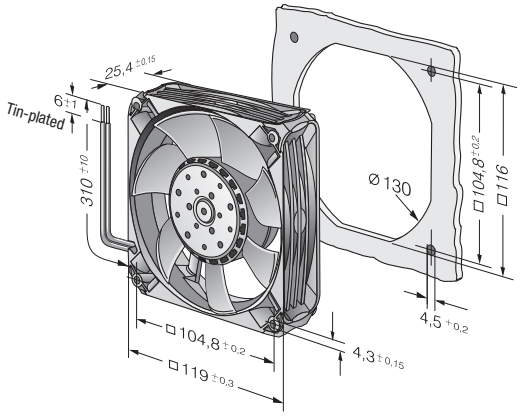
1) Fiberglass-reinforced plastic

Series 4400 FN **Nominal data**	Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	**□ / ■**	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
4412 FNH	225	132	**12**	9...13.2	55	6.7	■	12	5 400	-20...+70	60 000 / 30 000	102 500	②
4414 FNN	200	118	**24**	14...28	52	6.5	■	8.3	4 850	-20...+70	60 000 / 30 000	102 500	①
4414 FNH	225	132	**24**	18...26.4	55	6.7	■	12	5 400	-20...+70	60 000 / 30 000	102 500	②
4418 FNH	225	132	**48**	36...53	55	6.7	■	12	5 400	-20...+70	60 000 / 30 000	102 500	②

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 204 m³/h

DC axial fans

☐ 119 x 32 mm

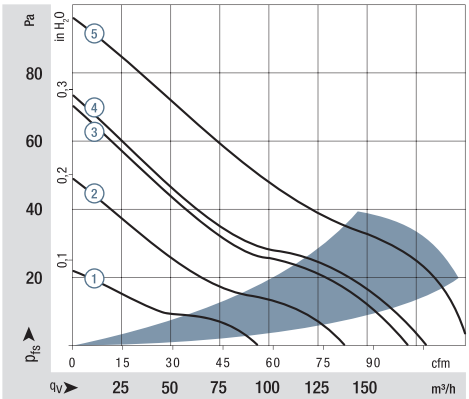
- **Material:** Housing: GRP[1] (PBT)
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Highlights:** Ball bearings and sleeve bearings available
- **Weight:** 220 g

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54 / IP 68

1) Fiberglass-reinforced plastic

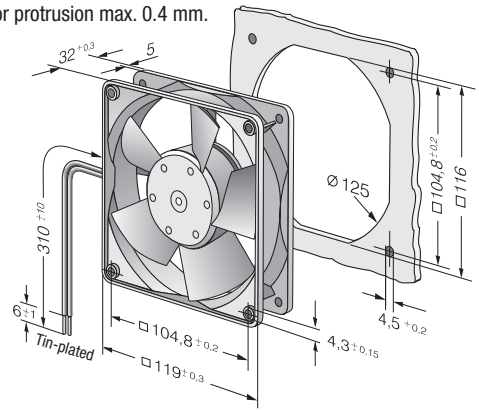
Series 4300 **Nominal data**	Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings / Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard / Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	□ / ■	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
4312 GL	95	56	**12**	6...15	30	4.3	□	1.2	1 550	-20...+75	80 000 / 35 000	135 000	①
4312 L	95	56	**12**	6...15	30	4.3	■	1.2	1 550	-20...+75	80 000 / 35 000	135 000	①
4312 GM	140	82	**12**	6...15	39	5.3	□	3.1	2 300	-20...+75	70 000 / 30 000	117 500	②
4312 M	140	82	**12**	6...15	39	5.3	■	3.1	2 300	-20...+75	70 000 / 30 000	117 500	②
4312 G	170	100	**12**	6...15	45	5.8	□	5.0	2 800	-20...+70	62 500 / 30 000	105 000	③
4312	170	100	**12**	6...15	45	5.8	■	5.0	2 800	-20...+70	62 500 / 30 000	105 000	③
4312-179	204	120	**12**	6...13.2	51	6.4	■	9.4	3 400	-20...+65	47 500 / 27 500	80 000	⑤
4314 L	95	56	**24**	12...28	30	4.3	■	1.2	1 550	-20...+75	80 000 / 35 000	135 000	①
4314 M	140	82	**24**	12...28	39	5.3	■	2.8	2 300	-20...+75	70 000 / 30 000	117 500	②
4314 G	170	100	**24**	12...28	45	5.8	□	4.7	2 800	-20...+75	62 500 / 27 500	105 000	③
4314	170	100	**24**	12...28	45	5.8	■	5.0	2 800	-20...+75	62 500 / 27 500	105 000	③
4314-147	180	106	**24**	12...28	47	6.1	■	4.7	3 000	-20...+75	57 500 / 25 000	80 000	④
4314-180	204	120	**24**	12...26	51	6.4	■	8.5	3 400	-20...+70	45 000 / 22 500	75 000	⑤
4318 M	140	82	**48**	36...56	39	5.3	■	3.6	2 300	-20...+75	70 000 / 30 000	117 500	②
4318	170	100	**48**	36...53	45	5.8	■	5.1	2 800	-20...+75	62 500 / 27 500	105 000	③

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions

Rotor protrusion max. 0.4 mm.



Max. 170 m³/h

DC axial fans

☐ 119 x 32 mm

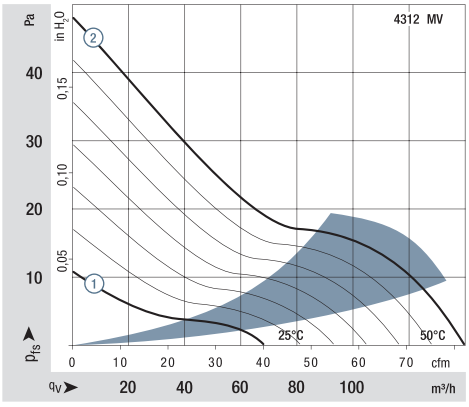
- **Material:** Housing: GRP[1] (PBT)
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Highlights:** Speed automatically adjusted to cooling requirement
- **Weight:** 220 g

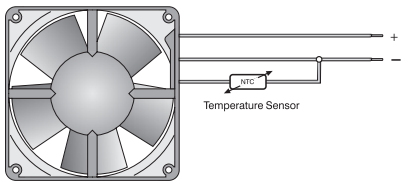
- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection

1) Fiberglass-reinforced plastic

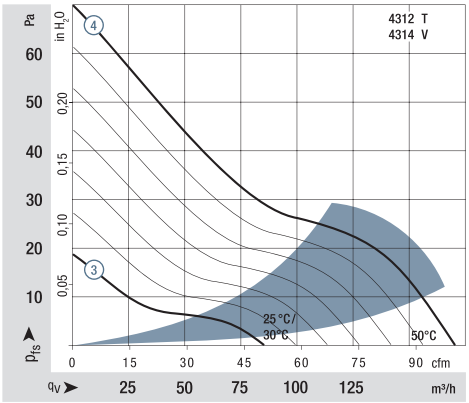
Series 4300 VARIOFAN **Nominal data**		Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings ☐ / Ball bearings ■	Power consumption	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type		**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	☐ / ■	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
25°C 50°C	4312 MT	65 138	38 81	**12**	8...15	25 39	3.9 5.3	■	1.1 3.3	1 100 2 300	-20...+65	70 000 / 40 000	117 500	① ②
25°C 50°C	4312 T	85 170	50 100	**12**	8...13.2	29 45	4.2 5.8	■	1.7 5.0	1 400 2 800	-20...+65	65 000 / 35 000	110 000	③ ④
30°C 50°C	4314 T	85 170	50 100	**24**	18...32	29 45	4.2 5.8	■	1.6 4.8	1 400 2 800	-20...+65	65 000 / 35 000	110 000	③ ④

Subject to change



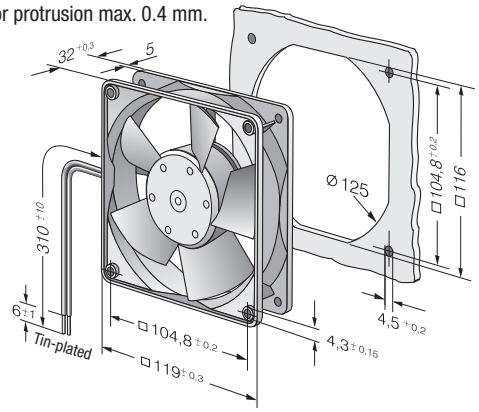


The temperature sensor for controlling the motor speed is not included in the scope of delivery.
For the temperature sensor LZ 370, see accessories.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see http://www.ebmpapst.com/general conditions

Rotor protrusion max. 0.4 mm.



Max. 205 m³/h

DC axial fans

☐ 119 x 38 mm

- **Material:** Housing: GRP[1] (PBT)
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 24, TR 64
- **Weight:** 270 g

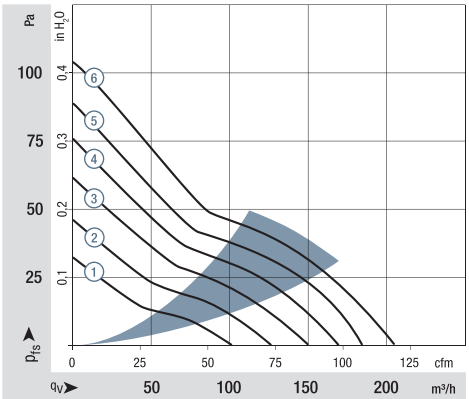
- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection
  - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

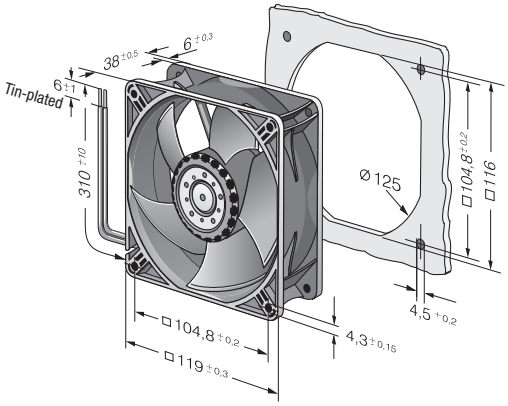
Series 4400 **Nominal data**	Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	**□ / ■**	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
4412 L	150	88	**12**	7...14	37	5.0	■	2.2	2 700	-20...+80	67 500 / 22 500	115 000	③
4412 ML	168	99	**12**	7...15	40	5.1	■	3.0	3 000	-20...+80	67 500 / 22 500	115 000	④
4412 M	184	108	**12**	7...14	42	5.3	■	3.8	3 300	-20...+75	65 000 / 25 000	110 000	⑤
4412 N	205	121	**12**	7...14	46	5.6	■	5.3	3 650	-20...+70	62 500 / 30 000	105 000	⑥
4414 L3	100	59	**24**	12...28	26	4.0	■	1.0	1 800	-20...+80	75 500 / 22 500	127 500	①
4414 LL	124	73	**24**	12...28	33	4.5	■	1.6	2 250	-20...+80	70 000 / 22 500	117 500	②
4414 L	150	88	**24**	18...28	37	5.0	■	2.4	2 700	-20...+80	67 500 / 22 500	115 000	③
4414 ML	168	99	**24**	12...28	40	5.1	■	3.2	3 000	-20...+80	67 500 / 22 500	115 000	④
4414 M	184	108	**24**	18...28	42	5.3	■	4.1	3 300	-20...+75	65 000 / 25 000	110 000	⑤
4414 N	205	121	**24**	18...28	46	5.6	■	5.4	3 650	-20...+70	62 500 / 30 000	105 000	⑥
4418 L	150	88	**48**	36...60	37	5.0	■	2.5	2 700	-20...+75	67 500 / 27 500	115 000	③
4418 ML	168	99	**48**	36...60	40	5.1	■	3.2	3 000	-20...+75	67 500 / 27 500	115 000	④
4418 M	184	108	**48**	36...60	42	5.3	■	4.2	3 300	-20...+70	65 000 / 32 500	110 000	⑤
4418 N	205	121	**48**	36...60	46	5.6	■	5.4	3 650	-20...+70	62 500 / 30 000	105 000	⑥

Subject to change

Further variants can be found on page 59.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 285 m³/h

DC axial fans

☐ 119 x 38 mm

- **Material:** Housing: GRP[1] (PBT)
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 24, TR 64
- **Weight:** 270 g

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection
  - Degree of protection: IP 54

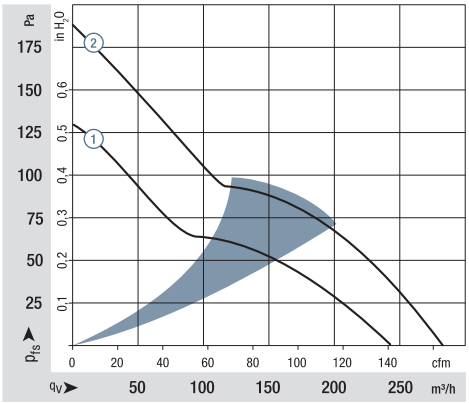
1) Fiberglass-reinforced plastic

Series 4400

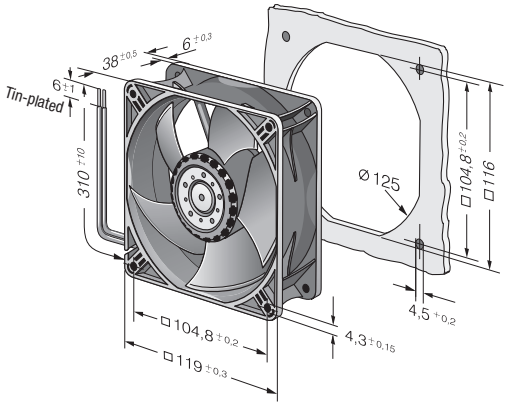
Nominal data

Type	Air flow m³/h	Air flow cfm	**Nominal voltage** VDC	Voltage range VDC	Sound pressure level dB(A)	Sound power level Bel(A)	Sintec sleeve bearings ☐ / Ball bearings ■	Power consumption Watts	Nominal speed rpm⁻¹	Temperature range °C	Service life L_{10} (40 °C) ebm-papst standard / Service life L_{10} (T_{max}) ebm-papst standard Hours	Life expectancy L_{10IPC} (40 °C) see page 17 Hours	Curve
4412 H	240	141	**12**	7...14	50	6.0	■	8.6	4 300	-20...+70	57 500 / 27 500	97 500	①
4412/2 HHP	285	168	**12**	7...14.5	55	6.4	■	13.0	5 000	-20...+70	50 000 / 25 000	85 000	②
4414 H	240	141	**24**	18...28	50	6.0	■	8.6	4 300	-20...+70	57 500 / 27 500	97 500	①
4414 HH	285	165	**24**	16...28	55	6.4	■	14.0	5 000	-20...+70	50 000 / 25 000	85 000	②
4414/2 HHP	285	168	**24**	18...28	55	6.4	■	12.0	5 000	-20...+70	50 000 / 25 000	85 000	②
4418 H	240	141	**48**	36...60	50	6.0	■	8.6	4 300	-20...+70	57 500 / 27 500	97 500	①
4418/2 HHP	285	168	**48**	36...60	55	6.4	■	13.0	5 000	-20...+70	50 000 / 25 000	85 000	②

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 237 m³/h

DC axial fans

□ 119 x 38 mm

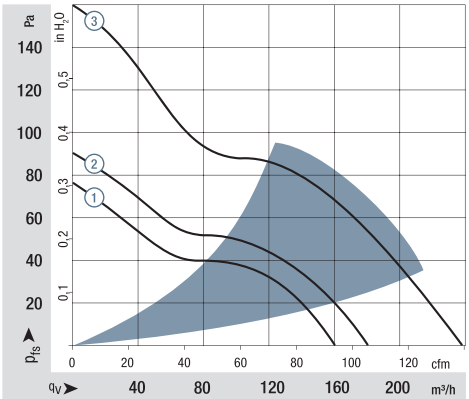
- **Material:** Housing: Die-cast aluminum
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Intake over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** On flat connectors, 2.8 x 0.5 mm
  Also available with wires as an option
- **Highlights:** Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 390 g

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54 / IP 68

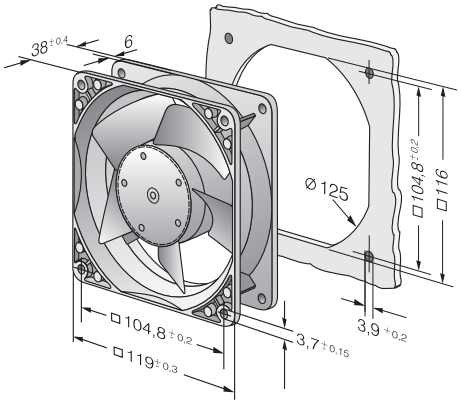
1) Fiberglass-reinforced plastic

Series 4100 N **Nominal data**	Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings / Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard / Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	□ / ■	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
4182 NGX	160	94	**12**	6...15	44	5.3	□	3.7	2 800	-20...+75	85 000 / 37 500	142 500	①
4182 NX	180	106	**12**	6...15	49	5.7	■	4.9	3 200	-30...+75	85 000 / 37 500	142 500	②
4182 NXH	237	140	**12**	7...14	57	6.5	■	11.0	4 400	-30...+55	70 000 / 50 000	117 500	③
4184 NGX	160	94	**24**	12...31.5	44	5.3	□	3.3	2 800	-20...+75	85 000 / 37 500	142 500	①
4184 NXM	160	94	**24**	12...31.5	44	5.3	■	3.2	2 800	-30...+75	85 000 / 37 500	142 500	①
4184 NX	180	106	**24**	12...31.5	49	5.7	■	4.9	3 200	-30...+70	85 000 / 42 500	142 500	②
4184 NXH	237	140	**24**	12...28	57	6.5	■	11.0	4 400	-30...+70	70 000 / 35 000	117 500	③
4188 NGX	160	94	**48**	36...60	44	5.3	□	3.6	2 800	-20...+75	85 000 / 37 500	142 500	①
4188 NXM	160	94	**48**	36...60	44	5.3	■	3.5	2 800	-30...+75	85 000 / 37 500	142 500	①

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 440 m³/h

DC axial fans

☐ 119 x 38 mm

- **Material:** Housing: Die-cast aluminum
  Impeller: GRP[1)] (PA)
- **Direction of air flow:** Intake over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 22 UL 1007, TR 64
- **Highlights:** Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 390 g

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection:IP 54 / IP 68

1) Fiberglass-reinforced plastic

Series 4100 N
High Performance

Nominal data

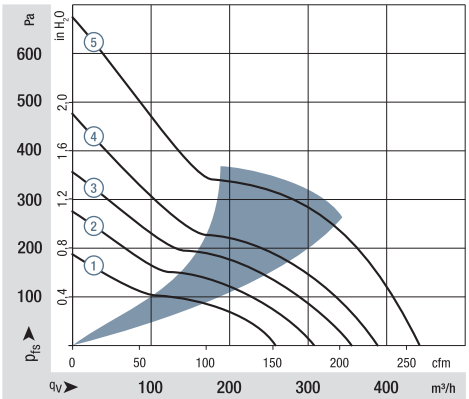
Type	Air flow m³/h	Air flow cfm	Nominal voltage VDC	Voltage range VDC	Sound pressure level dB(A)	Sound power level Bel(A)	Sintec sleeve bearings □ / Ball bearings ■	Power consumption* Watts	Nominal speed rpm⁻¹	Temperature range °C	Service life L_{10} (40 °C) ebm-papst standard / Service life L_{10} (T_{max}) ebm-papst standard Hours	Life expectancy L_{10IPC} (40 °C) see page 17 Hours	Curve
4112 NHH	260	153	**12**	9...15	60	6.8	■	13.3	5 000	-20...+65	70 000 / 55 000	117 500	①
4112 NH3	310	182	**12**	9...15	65	7.2	■	21.6	6 000	-20...+65	65 000 / 37 500	110 000	②
4112 NH4	355	209	**12**	9...14	67	7.4	■	32.0	6 800	-20...+65	62 500 / 35 000	105 000	③
4114 NHH	260	153	**24**	16...30	60	6.8	■	12.4	5 000	-20...+65	70 000 / 52 500	117 500	①
4114 NH3	310	182	**24**	16...30	65	7.2	■	19.5	6 000	-20...+65	65 000 / 37 500	110 000	②
4114 NH4	355	209	**24**	16...30	67	7.4	■	30.0	6 800	-20...+65	62 500 / 35 000	105 000	③
4114 NH5 *S-Force*	390	230	**24**	16...30	70	7.6	■	45.0*	7 500	-20...+65	62 500 / 35 000	105 000	④
4114 NH6 *S-Force*	440	259	**24**	16...30	73	8.1	■	65.0*	8 400	-20...+65	60 000 / 32 500	102 500	⑤
4118 NHH	260	153	**48**	36...60	60	6.8	■	12.0	5 000	-20...+65	70 000 / 52 500	117 500	①
4118 NH3	310	182	**48**	36...60	65	7.2	■	20.0	6 000	-20...+65	65 000 / 37 500	110 000	②
4118 NH4	355	209	**48**	36...60	67	7.4	■	28.0	6 800	-20...+65	62 500 / 35 000	105 000	③
4118 NH5 *S-Force*	390	230	**48**	36...60	70	7.6	■	45.0*	7 500	-20...+65	62 500 / 35 000	105 000	④
4118 NH6 *S-Force*	440	259	**48**	36...60	73	8.1	■	62.0*	8 400	-20...+65	60 000 / 32 500	102 500	⑤

Subject to change

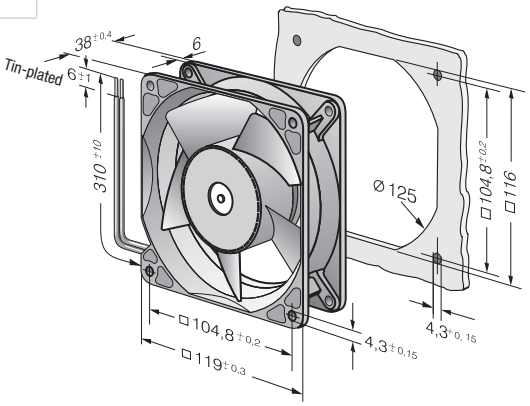
* Power consumption at free air flow. These values can be significantly higher in the operating point.

*** Power consumption – in operation**

Fan type	optimum operating range (W)
4114 NH5	55
4114 NH6	95
4118 NH5	55
4118 NH6	95



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 570 m³/h

S-Force

DC axial fans

□ 119 x 38 mm

- **Material:** Housing: Die-cast aluminum
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Intake over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 18, 20 or AWG 22, TR 64, speed signal and control input AWG 22
- **Highlights:** Highly efficient and smoothly operating 3-phase fan drive
  Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 425 g

1) Fiberglass-reinforced plastic

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input (standard)
  - Analog control input
  - Moisture protection
  - Salt spray protection

Series 4100 N
High Performance

Nominal data

Type	Air flow m³/h	Air flow cfm	Nominal voltage VDC	Voltage range VDC	Sound pressure level dB(A)	Sound power level Bel(A)	Sintec sleeve bearings □ / Ball bearings ■	Power consumption** Watts	Nominal speed rpm⁻¹	Temperature range °C	Service life L_{10} (40 °C) ebm-papst standard Hours	Service life L_{10} (T_{max}) ebm-papst standard Hours	Life expectancy L_{10IPC} (40 °C) see page 17 Hours	Curve
4114 N/2 H7P	500	294	**24**	16...30	76	8.5	■	90	9 500	-20...+75	57 500 / 25 000		97 500	①
4114 N/2 H8P	570	336	**24**	16...30	78	8.9	■	120	11 000	-20...+75	55 000 / 22 500		92 500	②
4118 N/2 H7P	500	294	**48**	36...60*	76	8.5	■	90	9 500	-20...+75	57 500 / 25 000		97 500	①
4118 N/2 H8P	570	336	**48**	36...60*	78	8.9	■	120	11 000	-20...+75	55 000 / 22 500		92 500	②

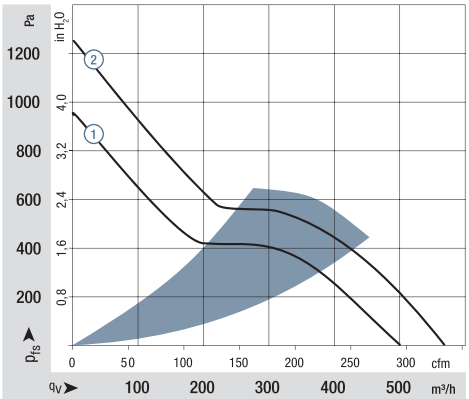
Subject to change

* 36...72 VDC on request.

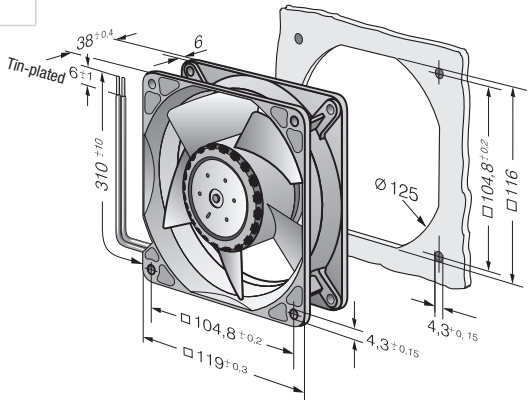
Speed control range from 500 rpm⁻¹ up to maximum nominal speed.
Standstill at 0% PWM, maximum speed if control cable is interrupted.
To attain the specified service life, an external capacitor must be wired between the plus and minus strands. Please note the wiring suggestion on page 16.
** Power consumption at free air flow, these values can be significantly higher in the operating point.

**** Power consumption - in operation**

Fan type	optimum operating range (W)
4114 NH7P	100
4114 NH8P	160
4118 NH7P	100
4118 NH8P	160



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 280 m³/h

DC diagonal fan

☐ 119 x 38 mm

- **Material:** Housing: GRP[1] (PBT)
  Available in die-cast aluminum
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Highlights:** Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 375 g (with metal housing: 455 g)

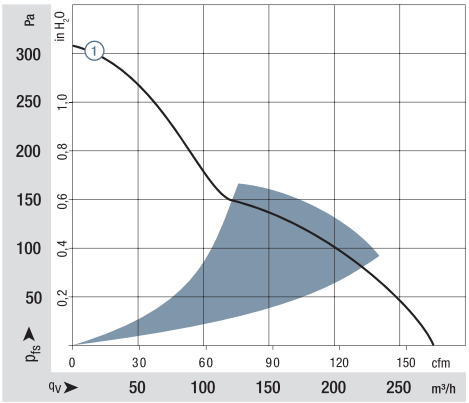
- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54 / IP 68

1) Fiberglass-reinforced plastic

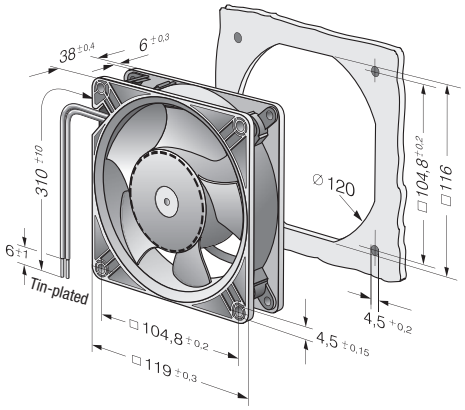
Series DV 4100 **Nominal data**	Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption*	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	**□ / ■**	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
DV 4112 N	280	165	**12**	9...15	61	6.9	■	21.0	6 000	-20...+65	70 000 / 40 000	117 500	①
DV 4114 N	280	165	**24**	16...30	61	6.9	■	20.5	6 000	-20...+65	70 000 / 40 000	117 500	①
DV 4118 N	280	165	**48**	36...60	61	6.9	■	20.0	6 000	-20...+65	70 000 / 40 000	117 500	①

Subject to change

* Power consumption at free air flow. These values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 340 m³/h

DC axial fans

☐ 127 x 38 mm

- **Material:** Housing: GRP[1] (PBT)
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Weight:** 310 g

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54 / IP 68

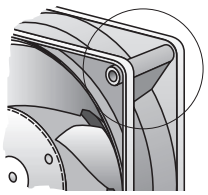
1) Fiberglass-reinforced plastic

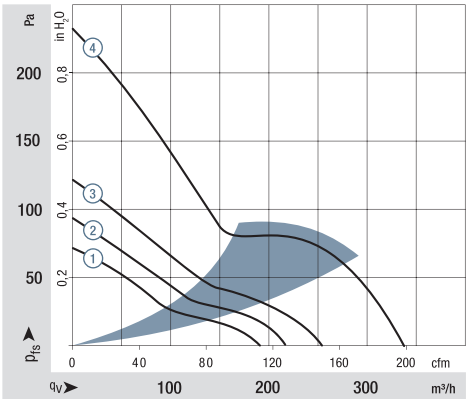
Series 5200 N **Nominal data**	Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption**	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard	Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	**□/■**	**Watts**	**rpm⁻¹**	**°C**	**Hours**		**Hours**	
5212 NM	187	110	**12**	7...14.5	43	5.3	■	4.1	2 750	-20...+75	62 500 / 27 500		105 000	①
5212 NN	216	127	**12**	7...14	46	5.6	■	6.2	3 150	-20...+70	57 500 / 25 000		97 500	②
5212 NH	252	148	**12**	7...14	51	6.0	■	9.8	3 650	-20...+70	45 000 / 22 500		75 000	③
5212 NHH*	340	200	**12**	9...15	58	6.6	■	19.0	4 900	-20...+65	45 000 / 25 000		75 000	④
5214 NM	187	110	**24**	12...28	43	5.3	■	4.6	2 750	-20...+75	62 500 / 27 500		105 000	①
5214 NN	216	127	**24**	12...28	46	5.6	■	6.0	3 150	-20...+75	57 500 / 25 000		97 500	②
5214 NH	252	148	**24**	12...28	51	6.0	■	9.8	3 650	-20...+70	45 000 / 22 500		75 000	③
5214 NHH*	340	200	**24**	16...30	58	6.6	■	17.5	4 900	-20...+65	45 000 / 25 000		75 000	④
5218 NM	187	110	**48**	36...56	43	5.3	■	4.5	2 750	-20...+75	62 500 / 27 500		105 000	①
5218 NN	216	127	**48**	36...56	46	5.6	■	6.2	3 150	-20...+70	57 500 / 32 500		97 500	②
5218 NH	252	148	**48**	36...56	51	6.0	■	9.6	3 650	-20...+55	45 000 / 32 500		75 000	③
5218 NHH*	340	200	**48**	36...60	58	6.6	■	18.0	4 900	-20...+65	45 000 / 25 000		75 000	④

Subject to change

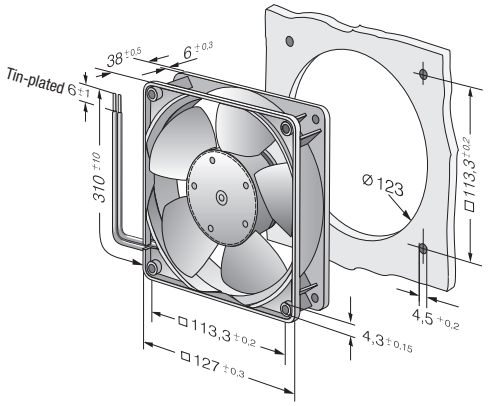
** Power consumption at free air flow, these values can be significantly higher in the operating point.

***NHH models:** fan housing with molded-in spacers.





Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axi.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parametersmust be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Finger guards from p. 242

ebmpapst

Max. 320 m³/h

DC diagonal fan

☐ 127 x 38 mm

- **Material:** Housing: GRP[1] (PBT)
  Available in Die-cast aluminum
  Metal flange
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Highlights:** Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 415 g (with metal housing: 490 g)

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

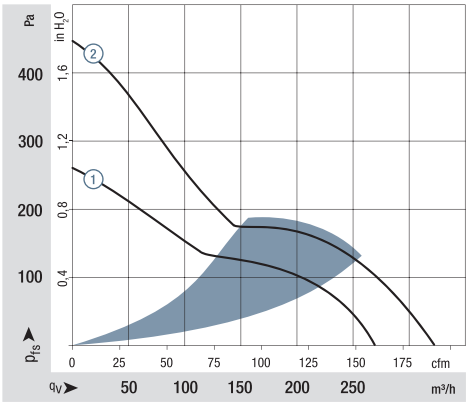
Series DV 5200

Nominal data

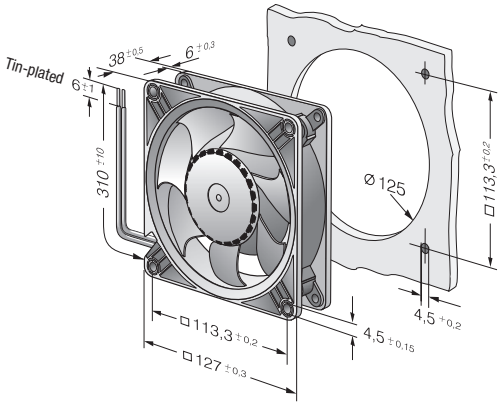
Type	Air flow m³/h	Air flow cfm	**Nominal voltage** VDC	Voltage range VDC	Sound pressure level dB(A)	Sound power level Bel(A)	Sintec sleeve bearings □ / Ball bearings ■	Power consumption* Watts	Nominal speed rpm⁻¹	Temperature range °C	Service life L_{10} (40 °C) ebm-papst standard / Service life L_{10} (T_{max}) ebm-papst standard Hours	Life expectancy L_{10IPC} (40 °C) see page 17 Hours	Curve
DV 5212 N	270	159	**12**	9...15	56	6.4	■	21.0	5 000	-20...+65	70 000 / 40 000	117 500	①
DV 5214 N	270	159	**24**	16...30	56	6.4	■	20.4	5 000	-20...+65	70 000 / 40 000	117 500	①
DV 5218 N	270	159	**48**	36...60	56	6.4	■	18.5	5 000	-20...+65	70 000 / 40 000	117500	①
Standard model comes with speed signal and PWM control input. Other versions by request.													
DV 5214/2 HP	320	188	**24**	16...30	62	7.2	■	38.5	6 000	-20...+65	62 500 / 35 000	105 000	②

Subject to change

Speed control range from 1000 rpm⁻¹ up to maximum nominal speed.
Standstill at 0% PWM, maximum speed if control cable is interrupted.
* Power consumption at free air flow. These values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see http://www.ebmpapst.com/general conditions



Max. 260 m³/h

DC axial fans

☐ 135 x 38 mm

- **Material:** Housing: Die-cast aluminum
  Impeller: painted sheet steel
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Highlights:** Housing with grounding lug for screw M4 x 8 (Torx)
  48 V design incl. screws.
- **Weight:** 650 g

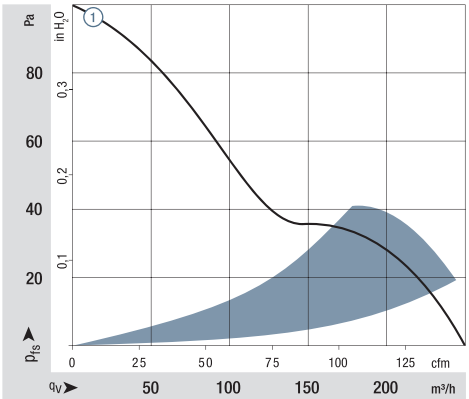
- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54

Series 5100 N

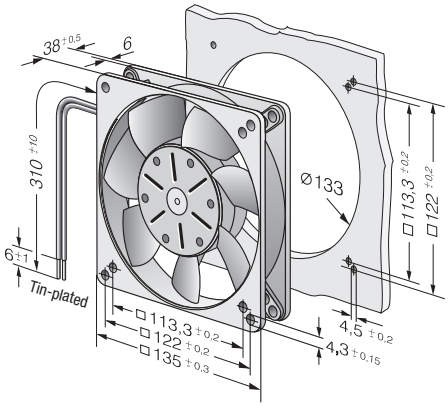
Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings / Ball bearings	Power consumption*	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard / Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	**□ / ■**	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
5112 N	260	153	**12**	6...15	48	6.1	■	9.5	2 900	-25...+72	80 000 / 37 500	135 000	①
5114 N	260	153	**24**	12...30	48	6.1	■	9.5	2 900	-25...+72	80 000 / 37 500	135 000	①
5118 N	260	153	**48**	24...60	48	6.1	■	9.5	2 900	-25...+72	80 000 / 37 500	135 000	①

Subject to change

* Power consumption at free air flow. These values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Finger guards from p. 242

ebmpapst

Max. 340 m³/h

S-Force

DC axial fans

□ 140 x 51 mm

- **Material:** Housing: Die-cast aluminum
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Intake over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Highlights:** Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 900 g

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

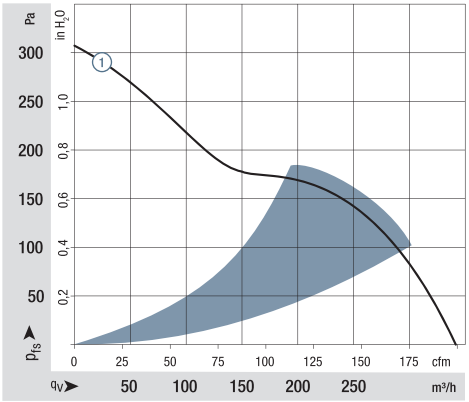
Series 5300

Nominal data

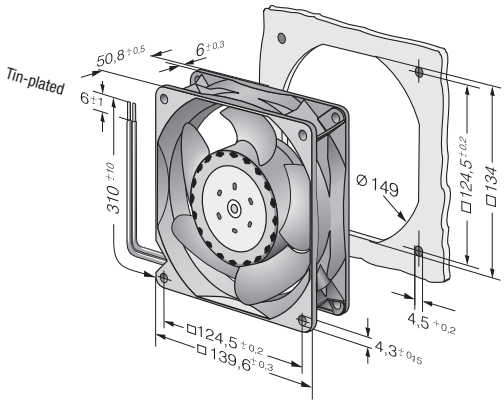
Type	Air flow m³/h	Air flow cfm	**Nominal voltage** VDC	Voltage range VDC	Sound pressure level dB(A)	Sound power level Bel(A)	Sintec sleeve bearings □ / Ball bearings ■	Power consumption* Watts	Nominal speed rpm⁻¹	Temperature range °C	Service life L_{10} (40 °C) ebm-papst standard / Service life L_{10} (T_{max}) ebm-papst standard Hours	Life expectancy L_{10IPC} (40 °C) see page 17 Hours	Curve
5314/2 HP	340	200	**24**	16...28	64	7.2	■	28.4	5 000	-20...+65	77 500 / 40 000	130 000	①
5318/2 HP	340	200	**48**	36...72	64	7.2	■	27	5 000	-20...+65	77 500 / 40 000	130 000	①

Subject to change

Speed control range from 700 rpm⁻¹ up to maximum nominal speed.
Standstill at 0% PWM, maximum speed if control cable is interrupted.
* Power consumption at free air flow. These values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 670 m³/h

S-Force

DC axial fans

□ 140 x 51 mm

- **Material:** Housing: Die-cast aluminum
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Intake over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 20 and AWG 22, TR 64
- **Highlights:** 3-phase fan drive with very smooth operation
  Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 900 g

1) Fiberglass-reinforced plastic

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Multi-option control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54

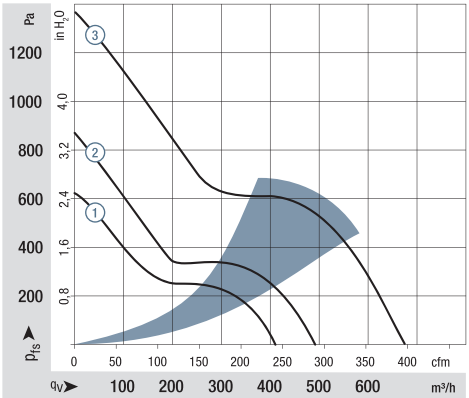
Series 5300 TD

Nominal data

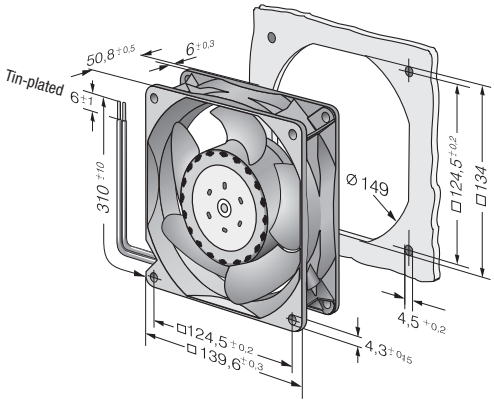
Type	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings ■ / Ball bearings ■	Power consumption*	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard	Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
	m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	□ / ■	Watts	rpm⁻¹	°C	Hours		Hours	
5312/2 TDHP	410	241	**12**	8...16	70	7.7	■	43	6 000	-20...+70	70 000 / 35 000		117 500	①
5314/2 TDHP	410	241	**24**	16...36	70	7.7	■	42	6 000	-20...+70	70 000 / 35 000		117 500	①
5314/2 TDHHP	490	288	**24**	16...36	75	8.1	■	67	7 000	-20...+70	62 500 / 30 000		105 000	②
5318/2 TDHP	410	241	**48**	36...72	70	7.7	■	42	6 000	-20...+70	70 000 / 35 000		117 500	①
5318/2 TDHHP	490	288	**48**	36...72	75	8.1	■	66	7 000	-20...+70	62 500 / 30 000		105 000	②
5318/2 TDH4P	670	394	**48**	36...72	79	8.8	■	149	9 200	-20...+65	57 500 / 32 500		97 500	③

Subject to change

Speed control range from 1000 rpm⁻¹ up to maximum nominal speed.
Standstill at 0% PWM, maximum speed if control cable is interrupted.
* Power consumption at free air flow. These values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Finger guards from p. 242

ebmpapst

Max. 360 m³/h

DC axial fans

Ø 150 x 38 mm

- **Material:** Housing: Die-cast aluminum
  Impeller: painted sheet steel
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Highlights:** Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 620 g

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection:IP 54 / IP 68

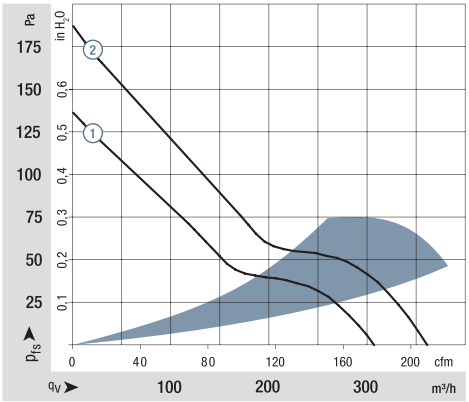
Series 7100 N

Nominal data

Type	Air flow m³/h	Air flow cfm	**Nominal voltage** VDC	Voltage range VDC	Sound pressure level dB(A)	Sound power level Bel(A)	Sintec sleeve bearings □ / Ball bearings ■	Power consumption* Watts	Nominal speed rpm⁻¹	Temperature range °C	Service life L_{10} (40 °C) ebm-papst standard Hours	Service life L_{10} (T_{max}) ebm-papst standard Hours	Life expectancy L_{10IPC} (40 °C) see page 17 Hours	Curve
7112 N	308	181	**12**	6...15	53	6.2	■	12.0	2 850	-25...+72	80 000	37 500	135 000	①
7114 N	308	181	**24**	12...30	53	6.2	■	12.0	2 850	-25...+72	80 000	37 500	135 000	①
7114 NH	360	212	**24**	12...26.5	58	6.7	■	19.0	3 350	-25...+72	75 000	35 000	127 500	②
7118 N	308	181	**48**	24...60	53	6.2	■	12.0	2 850	-25...+72	80 000	37 500	135 000	①

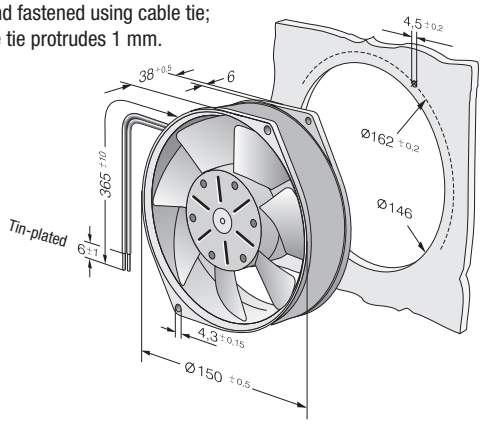
Subject to change

* Power consumption at free air flow. These values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see http://www.ebmpapst.com/general conditions

Wire fastened with cable tie.
Strand fastened using cable tie; cable tie protrudes 1 mm.



Finger guards from p. 242

Max. 360 m³/h

DC axial fans

Ø 150 x 55 mm

- **Material:** Housing: Die-cast aluminum
  Impeller: GRP[1)] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Highlights:** Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 725 g

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54 / IP 68

1) Fiberglass-reinforced plastic

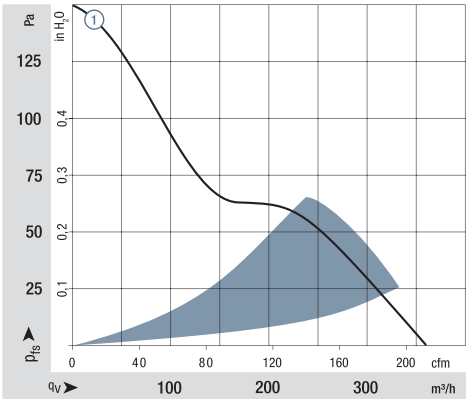
Series 7200 N

Nominal data

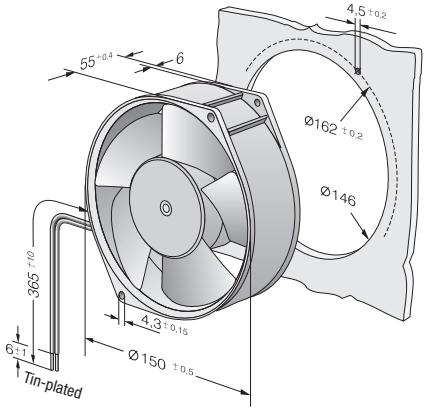
Type	Air flow m³/h	Air flow cfm	Nominal voltage VDC	Voltage range VDC	Sound pressure level dB(A)	Sound power level Bel(A)	Sintec sleeve bearings □ / Ball bearings ■	Power consumption* Watts	Nominal speed rpm⁻¹	Temperature range °C	Service life L_{10} (40 °C) ebm-papst standard Hours	Service life L_{10} (T_{max}) ebm-papst standard Hours	Life expectancy L_{10IPC} (40 °C) see page 17 Hours	Curve
7212 N	360	212	**12**	6...15	53	6.2	■	12.0	3 050	-25...+72	80 000	37 500	135 000	①
7214 N	360	212	**24**	12...30	53	6.2	■	12.0	3 050	-25...+72	80 000	37 500	135 000	①
7218 N	360	212	**48**	24...60	53	6.2	■	12.0	3 050	-25...+72	80 000	37 500	135 000	①

Subject to change

* Power consumption at free air flow. These values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Finger guards from p. 242

ebmpapst

Max. 480 m³/h

DC axial fans

172 x 150 x 51 mm

- **Material:** Housing: Die-cast aluminum
  Impeller: GRP[1)] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** on flat plugs 3 x 0.5 mm
- **Highlights:** Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 760 g

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

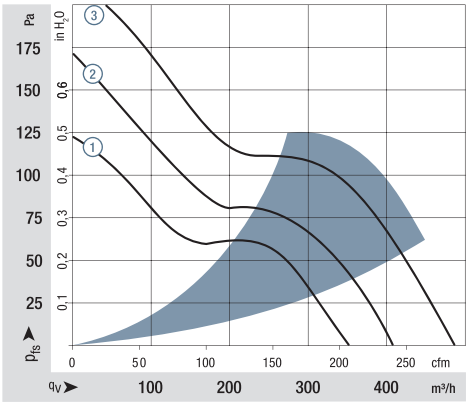
Series 6400

Nominal data

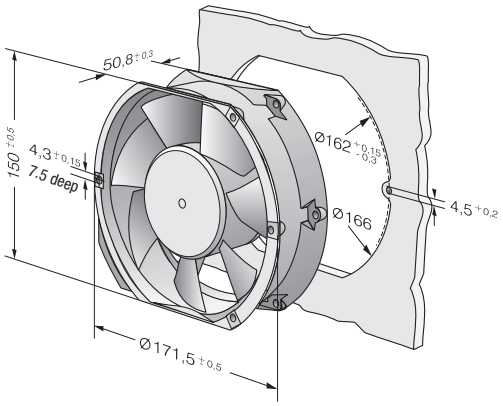
Type	Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings / Ball bearings	Power consumption***	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard / Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
	m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	□ / ■	Watts	rpm⁻¹	°C	Hours	Hours	
6412 M	350	206	**12**	8...15	52	6.0	■	12	2 850	-20...+72	80 000 / 37 500	135 000	①
6424 M	350	206	**24**	12...32	52	6.0	■	12	2 850	-20...+72	80 000 / 37 500	135 000	①
6424	410	241	**24**	12...28	57	6.4	■	17	3 400	-20...+72	75 000 / 35 000	127 500	②
6424 H	480	283	**24**	12...28	63	7.1	■	26	4 000	-20...+55**	70 000 / 50 000	117 500	③
6448	410	241	**48**	28...60	57	6.4	■	17	3 400	-20...+72	75 000 / 35 000	127 500	②
6448 H*	480	283	**48**	28...60	63	7.1	■	26	4 000	-20...+55**	70 000 / 50 000	117 500	③

Subject to change

* Strand 310 mm.
** 72 °C versions on request
*** Power consumption at free air flow, these values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 900 m³/h

DC axial fans

172 x 150 x 51 mm

- **Material:** Housing: Die-cast aluminum
  Impeller: GRP[1)] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 18, 20 or AWG 22, TR 64, speed signal and control input AWG 22
- **Highlights:** Highly efficient and smoothly operating 3-phase fan drive
  Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 760 g

1) Fiberglass-reinforced plastic

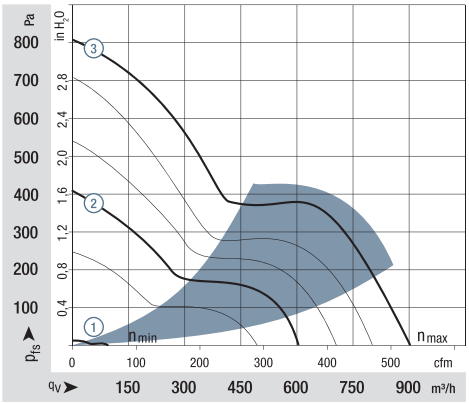
- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54
  - Reversible direction of rotation

Series 6400 TD **Nominal data**		Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption**	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
	Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	□ / ■	**Watts**	**rpm⁻¹**	**°C**	**Hours**	**Hours**	
Min	6424 TD...	90	53	**24**	16...28	18	—	■	2	800	-20...+60	70 000 / 45 000	117 500	①
Max		600	353			65	7.4		50	5 100				②
Min	6448 TD...	90	53	**48**	40...55*	18	—	■	2	800	-20...+60	70 000 / 45 000	117 500	①
Max		600	353			65	7.4		50	5 100				②
Min	6448 TDHH...	90	53	**48**	36...72	18	—	■	2	800	-20...+60	70 000 / 45 000	117 500	①
Max		900	530			78	8.6		163	7500				③

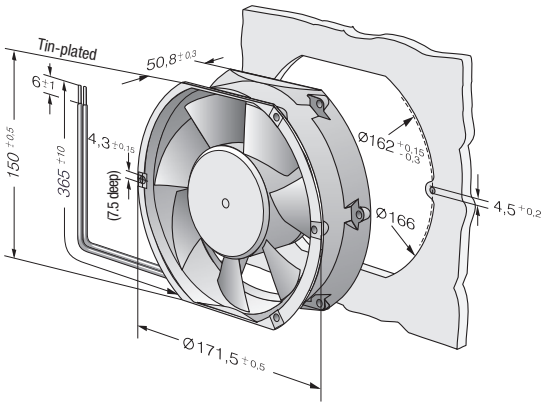
Subject to change

* Variants with an extended voltage range available on request.

Models 6424 TD..., 6448 TD... and 6448 TDHH... are available in customer-specific, custom-developed variants only.
The figures indicated are technically feasible benchmark values. The fans can be specially adapted to your application with signal outputs and control inputs.
For details of the technical possibilities, refer to the chapters on the sensor signal, alarm signal and control inputs beginning on page 165.
** Power consumption at free air flow, these values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 530 m³/h

DC diagonal fan

172 x 160 x 51 mm

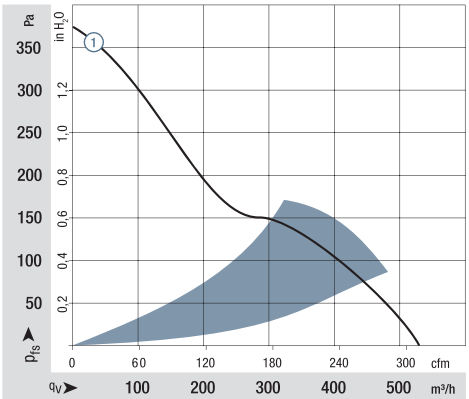
- **Material:** Housing: Die-cast aluminum
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Highlights:** Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 820 g

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54

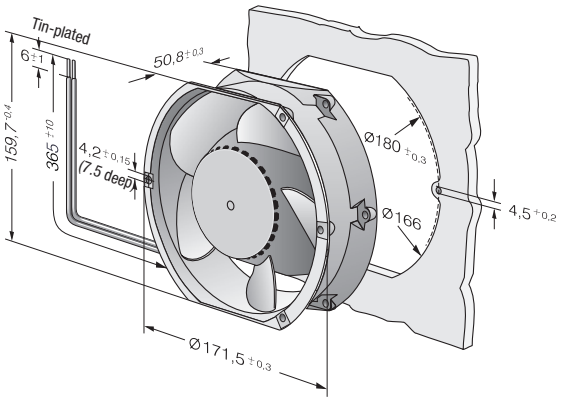
1) Fiberglass-reinforced plastic

Series DV 6400 **Nominal data**	Air flow	Air flow	**Nominal voltage**	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L_{10} (40 °C) ebm-papst standard	Service life L_{10} (T_{max}) ebm-papst standard	Life expectancy L_{10IPC} (40 °C) see page 17	Curve
Type	**m³/h**	**cfm**	**VDC**	**VDC**	**dB(A)**	**Bel(A)**	□ / ■	**Watts**	**rpm⁻¹**	**°C**	**Hours**		**Hours**	
DV 6424	530	312	**24**	16...28	65	7.3	■	40	4 300	-20...+75	90 000 / 35 000		152 500	①
DV 6448	530	312	**48**	28...60	65	7.3	■	40	4 300	-20...+75	90 000 / 35 000		152 500	①

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 680 m³/h

DC diagonal fan

172 x 160 x 51 mm

- **Material:** Housing: Die-cast aluminum
  Impeller: GRP[1)] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Highlights:** 3-phase fan drive with very smooth operation and high efficiency. Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 820 g

1) Fiberglass-reinforced plastic

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54
  - Reversible direction of rotation

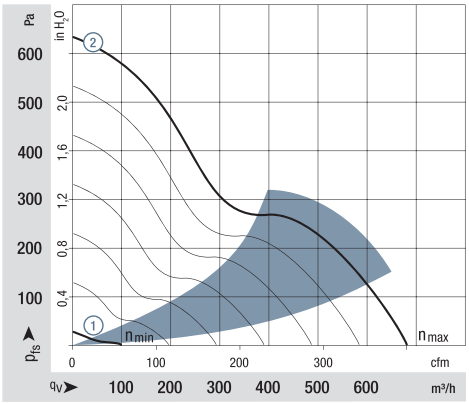
Series DV 6400 TD
TURBOFAN

Nominal data

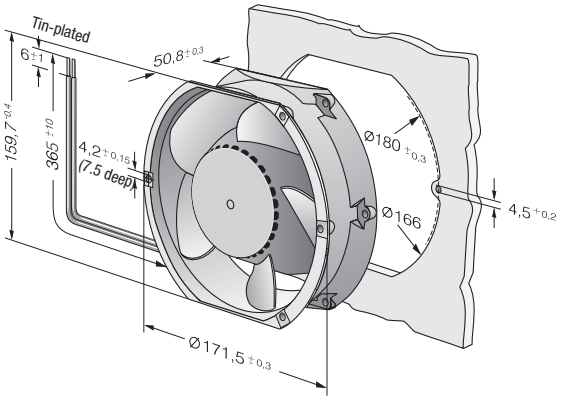
	Type	Air flow m³/h	Air flow cfm	Nominal voltage VDC	Voltage range VDC	Sound pressure level dB(A)	Sound power level Bel(A)	Sintec sleeve bearings □ / Ball bearings ■	Power consumption* Watts	Nominal speed rpm⁻¹	Temperature range °C	Service life L_{10} (40 °C) ebm-papst standard Hours	Service life L_{10} (T_{max}) ebm-papst standard Hours	Life expectancy L_{10IPC} (40 °C) see page 17 Hours	Curve
	DV 6424 TD	680	400	**24**	16...28	71	7.9	■	91	5 500	-20...+60	65 000	40 000	110 000	②
Min	DV 6424 TD...	100	59	**24**	16...28	29	—	■	2	800	-20...+60	65 000	40 000	110 000	①
Max		680	400			71	7.9		91	5 500					②
Min	DV 6448 TD...	100	59	**48**	40...55	29	—	■	2	800	-20...+60	65 000	40 000	110 000	①
Max		680	400			71	7.9		86	5 500					②

Subject to change

Models DV 6424 TD... and DV 6448 TD... are available in customer-specific, custom-developed variants only.
The figures indicated are technically feasible benchmark values. The fans can be specially adapted to your application with signal outputs and control inputs.
For details of the technical possibilities, refer to the chapters on the sensor signal, alarm signal and control inputs beginning on page 165.
* Power consumption at free air flow. These values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Finger guards from p. 242

ebmpapst

Max. 930 m³/h

S-Force

DC axial fans

172 x 160 x 51 mm

- **Material:** Housing: Die-cast aluminum
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 18, 20 or AWG 22, TR 64, speed signal and control input AWG 22
- **Highlights:** Highly efficient and smoothly operating 3-phase fan drive
  Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 910 g

1) Fiberglass-reinforced plastic

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input (standard)
  - Analog control input
  - Multi-option control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54

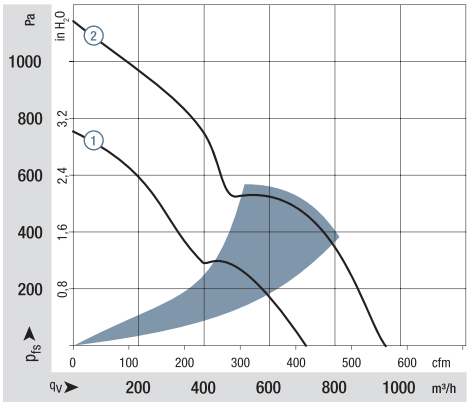
Series 6300 TD

Nominal data

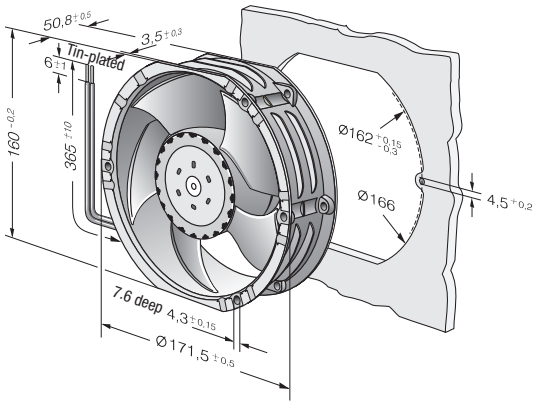
Type	Air flow m³/h	Air flow cfm	**Nominal voltage** VDC	Voltage range VDC	Sound pressure level dB(A)	Sound power level Bel(A)	Sintec sleeve bearings □ / Ball bearings ■	Power consumption* Watts	Nominal speed rpm⁻¹	Temperature range °C	Service life L_{10} (40 °C) ebm-papst standard / Service life L_{10} (T_{max}) ebm-papst standard Hours	Life expectancy L_{10IPC} (40 °C) see page 17 Hours	Curve
6314/2 TDHHP-015	710	418	**24**	16...36	69	7.9	■	67	7 000	-20...+75	62 500 / 25 000	105 000	①
6318/2 TDH4P-007	930	546	**48**	36...72	75	8.4	■	150	9 200	-20...+75	52 500 / 20 000	87 500	②

Subject to change

Speed control range from 1000 rpm⁻¹ up to maximum nominal speed.
Standstill at 0% PWM, maximum speed if control cable is interrupted.
* Power consumption at free air flow. These values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 685 m³/h

S-Panther

DC axial fans

Ø 172 x 51 mm

- **Material:** Housing: Die-cast aluminum
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** (+) and GND AWG 20, UL 1007, TR 64; speed signal and alarm signal: AWG 22, UL 1007, TR 64
- **Highlights:** Highly efficient and smoothly operating 3-phase fan drive
  Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 850 g

1) Fiberglass-reinforced plastic

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input (standard)
  - Analog control input
  - Multi-option control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54 / IP 68

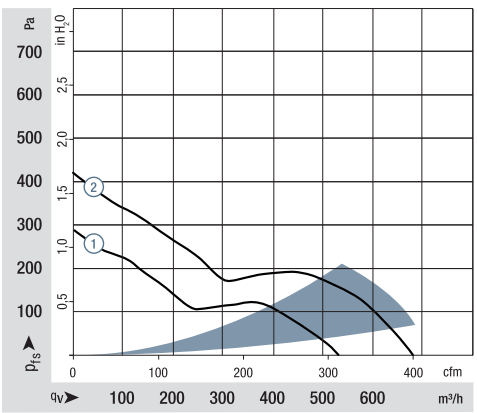
Series 6300 N

Nominal data

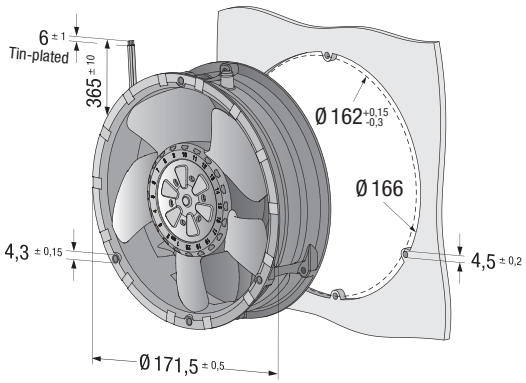
Type	Air flow m³/h	Air flow cfm	**Nominal voltage** VDC	Voltage range VDC	Sound pressure level dB(A)	Sound power level Bel(A)	Sintec sleeve bearings □ / Ball bearings ■	Power consumption Watts	Nominal speed rpm⁻¹	Temperature range °C	Service life L_{10} (40 °C) ebm-papst standard Hours	Service life L_{10} (T_{max}) ebm-papst standard Hours	Life expectancy L_{10IPC} (40 °C) see page 17 Hours	Curve
6314 N/2 HHP	540	318	**24**	16…32	-	6.9	■	30	4000	-20…+70	80 000 / 40 000		135 000	①
6318 N/2 H3P	685	403	**48**	36…60	-	7.5	■	53	5000	-20…+70	77 500 / 40 000		130 000	②

Subject to change

Speed control range from 1000 rpm⁻¹ up to maximum nominal speed. Standstill at 0% PWM, maximum speed if control cable is interrupted.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see http://www.ebmpapst.com/general conditions



Finger guards from p. 242

ebmpapst

Max. 1030 m³/h

S-Panther

DC axial fans

Ø 172 x 51 mm

- **Material:** Housing: Die-cast aluminum
  Impeller: GRP[1)] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** AWG 18, 20 UL 1007, TR 64, speed and alarm signals: AWG 22, UL 1007, TR 64
- **Highlights:** Highly efficient and smoothly operating 3-phase fan drive
  Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 850 g

1) Fiberglass-reinforced plastic

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input (standard)
  - Analog control input
  - Multi-option control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54

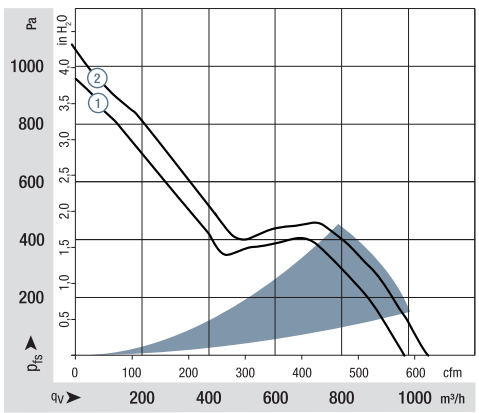
Series 6300 NTD

Nominal data

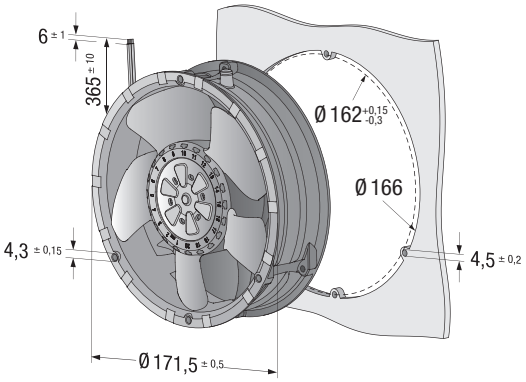
Type	Air flow m³/h	Air flow cfm	Nominal voltage VDC	Voltage range VDC	Sound pressure level dB(A)	Sound power level Bel(A)	Sintec sleeve bearings □ / Ball bearings ■	Power consumption* Watts	Nominal speed rpm⁻¹	Temperature range °C	Service life L_{10} (40 °C) ebm-papst standard / Service life L_{10} (T_{max}) ebm-papst standard Hours	Life expectancy L_{10IPC} (40 °C) see page 17 Hours	Curve
6314 N/2 TDHHP	970	571	**24**	16…36	-	8.3	■	135	7200	-20…+70	62,500 / 32,500	105,000	①
6318 N/2 TDH3P	1030	606	**48**	36…72	83	8.4	■	152	7500	-20…+70	60,000 / 30,000	102,500	②

Subject to change

Speed control range from 1000 rpm⁻¹ up to maximum nominal speed. Standstill at 0% PWM, maximum speed if control cable is interrupted.
* Power consumption at free air flow. These values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 545 m³/h

S-Force

DC axial fans

Ø 172 x 51 mm

- **Material:** Housing: Die-cast aluminum
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Highlights:** Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 825 g

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input (standard)
  - Analog control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

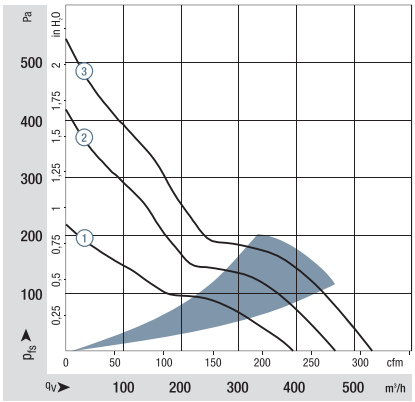
Series 6300

Nominal data

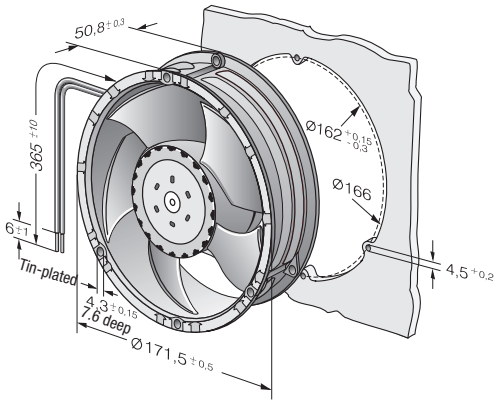
Type	Air flow m³/h	Air flow cfm	Nominal voltage VDC	Voltage range VDC	Sound pressure level dB(A)	Sound power level Bel(A)	Sintec sleeve bearings □ / Ball bearings ■	Power consumption* Watts	Nominal speed rpm⁻¹	Temperature range °C	Service life L_{10} (40 °C) ebm-papst standard Hours	Service life L_{10} (T_{max}) ebm-papst standard Hours	Life expectancy L_{10IPC} (40 °C) see page 17 Hours	Curve
6314/2 MP	395	232	**24**	16...30	51	6.0	■	14	3 700	-20...+75	82 500 / 32 500		140 000	①
6314/2 NP	470	276	**24**	16...30	56	6.5	■	23	4 400	-20...+70	80 000 / 40 000		135 000	②
6314/2 HP	545	320	**24**	16...30	58	6.9	■	31	5 000	-20...+65	77 500 / 42 500		130 000	③
6318/2 HP	545	320	**48**	36...72	58	6.9	■	32	5 000	-20...+65	77 500 / 42 500		130 000	③

Subject to change

Speed control range from 700 rpm⁻¹ up to maximum nominal speed. Standstill at 0% PWM, maximum speed if control cable is interrupted.
* Power consumption at free air flow. These values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level LwA ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level LpA measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Finger guards from p. 242

ebmpapst

Max. 930 m³/h

S-Force

DC axial fans

Ø 172 x 51 mm

- **Material:** Housing: Die-cast aluminum
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 18, 20 or AWG 22, TR 64, speed signal and control input AWG 22
- **Highlights:** Highly efficient and smoothly operating 3-phase fan drive
  Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 910 g

1) Fiberglass-reinforced plastic

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input (standard)
  - Analog control input
  - Multi-option control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54

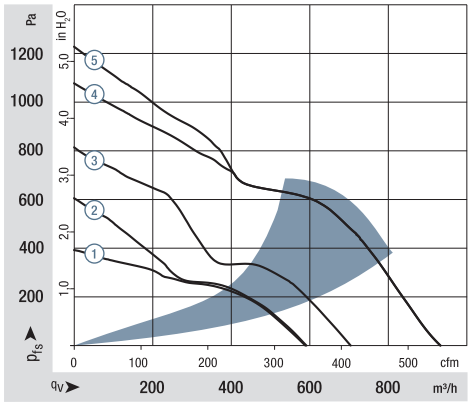
Series 6300 TD

Nominal data

Type	Air flow m³/h	Air flow cfm	Nominal voltage VDC	Voltage range VDC	Sound pressure level dB(A)	Sound power level Bel(A)	Sintec sleeve bearings □ / Ball bearings ■	Power consumption* Watts	Nominal speed rpm⁻¹	Temperature range °C	Service life L_{10} (40 °C) ebm-papst standard / Service life L_{10} (T_{max}) ebm-papst standard Hours	Life expectancy L_{10IPC} (40 °C) see page 17 Hours	Curve
6312/2 TDHP	600	353	**12**	8...16	60	7.3	■	40	5 500	-20...+70	75 000 / 37 500	127 500	②
6314/2 TDHP-298	600	353	**24**	16...30	60	7.3	■	42	5 500	-20...+65	75 000 / 42 500	127 500	①
6314/2 TDHP	600	353	**24**	16...36	60	7.3	■	40	5 500	-20...+75	75 000 / 30 000	127 500	②
6314/2 TDHHP	710	418	**24**	16...36	69	7.9	■	67	7 000	-20...+75	62 500 / 25 000	105 000	③
6314/2 TDH4P	930	545	**24**	16...36	75	8.4	■	150	9 200	-20...+75	52 500 / 20 000	87 500	⑤
6318/2 TDHP-299	600	353	**48**	36...60	60	7.3	■	42	5 500	-20...+65	75 000 / 42 500	127 500	①
6318/2 TDHP	600	353	**48**	36...72	60	7.3	■	40	5 500	-20...+75	75 000 / 30 000	127 500	②
6318/2 TDHHP	710	418	**48**	36...72	69	7.9	■	67	7 000	-20...+75	62 500 / 25 000	105 000	③
6318/2 TDH4P	930	545	**48**	36...72	75	8.4	■	150	9 200	-20...+75	52 500 / 20 000	87 500	④

Subject to change

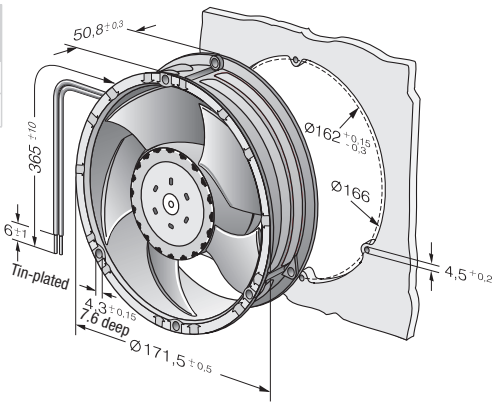
Speed control range from 1000 rpm⁻¹ up to maximum nominal speed.
Standstill at 0% PWM, maximum speed if control cable is interrupted.
* Power consumption at free air flow. These values can be significantly higher in the operating point.



*** Power consumption – in operation**

Fan type	optimum operating range (W)
6318/2 TDHHP	115
6318/2 TDH4P	270

Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level LwA ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level LpA measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Finger guards from p. 242

Max. 1100 m³/h

S-Force

DC diagonal fan

Ø 172 x 51 mm

- **Material:** Housing: Die-cast aluminum
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** (+) and GND: AWG 18, UL 1007, TR 64; speed and alarm signal: AWG 22, UL 1007, TR 64
- **Highlights:** Highly efficient and smoothly operating 3-phase fan drive
  Housing with grounding lugfor screw M4 x 8 (Torx)
- **Weight:** 1050 g

1) Fiberglass-reinforced plastic

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input (standard)
  - Analog control input
  - Multi-option control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54

Series DV 6300 TD

Nominal data

Type	Air flow m³/h	Air flow cfm	**Nominal voltage VDC**	Voltage range VDC	Sound pressure level dB(A)	Sound power level Bel(A)	Sintec sleeve bearings □ / Ball bearings ■	Power consumption Watts	Nominal speed rpm⁻¹	Temperature range °C	Service life L_{10} (40 °C) ebm-papst standard Hours	Service life L_{10} (T_{max}) ebm-papst standard Hours	Life expectancy L_{10IPC} (40 °C) see page 17 Hours	Curve
DV 6318/2 TDHP*	630	371	**48**	36…72	68	7.6	■	75	4000	-20…+65	70 000	40 000	117 500	①
DV 6318/2 TDHHP*	770	453	**48**	36…72	73	8.0	■	135	4900	-20…+65	60 000	32 500	102 500	②
DV 6318/2 TDH4P	1050	617	**48**	36…72	77	8.7	■	300	6500	-20…+65	50 000	27 500	85 000	③
DV 6318/2 TDH5P**	1100	647	**48**	36…72	79	8.9	■	360	6800	-20…+65	40 000	22 500	67 500	④

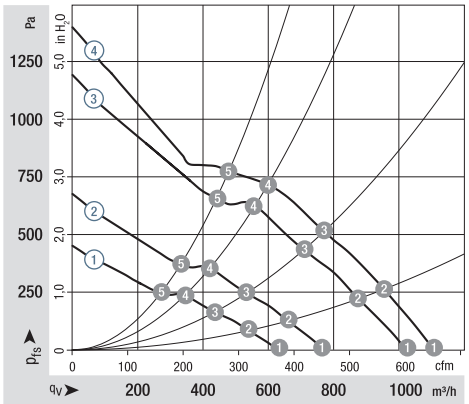
Subject to change

* On request
** Rotor protrusion
a = 3 mm

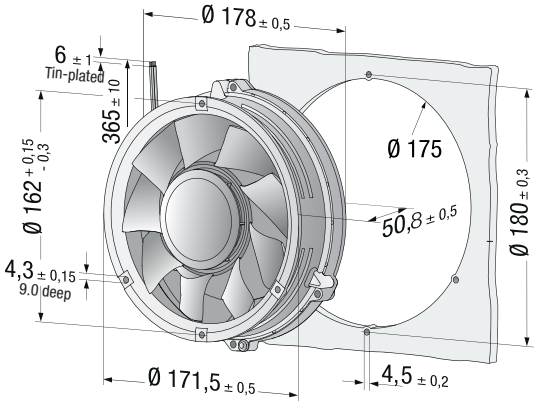
Speed control range from 1000 rpm⁻¹ up to maximum nominal speed. Standstill at 0% PWM, maximum speed if control cable is interrupted.
The fan has an acceleration of up to 30% that produces a smoother curve.

		n rpm⁻¹	P_{ed} W	Lw_A dB(A)	L_{10} (40 °C)	L_{10} (65 °C)	L_{10IPC} (40 °C)
①	❶	4000	65,5	79	70 000	40 000	117 500
①	❷	3835	64,5	78	72 500	40 000	122 500
①	❸	3815	64,5	76	75 000	42 500	127 500
①	❹	3930	65	76	77 500	42 500	130 000
①	❺	4240	66	79	77 500	42 500	130 000
②	❶	4900	120	83	60 000	32 500	102 500
②	❷	4690	119	82	67 500	37 500	115 000
②	❸	4670	119	80	72 500	40 000	122 500
②	❹	4870	120	81	75 000	42 500	127 500
②	❺	5190	121	85	75 000	42 500	127 500

		n rpm⁻¹	P_{ed} W	Lw_A dB(A)	L_{10} (40 °C)	L_{10} (65 °C)	L_{10IPC} (40 °C)
③	❶	6500	280	90	50 000	27 500	85 000
③	❷	6230	275	89	62 500	35 000	105 000
③	❸	6200	280	88	70 000	40 000	117 500
③	❹	6450	281	88	72 500	40 000	122 500
③	❺	6900	283	92,5	72 500	40 000	122 500
④	❶	6950	345	92	40 000	22 500	67 500
④	❷	6720	345	91	57 500	32 500	97 500
④	❸	6630	345	89,5	62 500	35 000	105 000
④	❹	6850	345	89	67 500	37 500	115 000
④	❺	7300	345	94	72 500	40 000	122 500



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_pA measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 1220 m³/h

S-Force

DC axial fans

220 x 200 x 51 mm

- **Material:** Housing: Die-cast aluminum
  Impeller: GRP[1] (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 18, 20 or AWG 22, TR 64, speed signal and control input AWG 22
- **Highlights:** Highly efficient and smoothly operating 3-phase fan drive
  Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 1000 g

1) Fiberglass-reinforced plastic

- **Possible special versions:**
  (See chapter DC fans - specials)
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Multi-option control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54

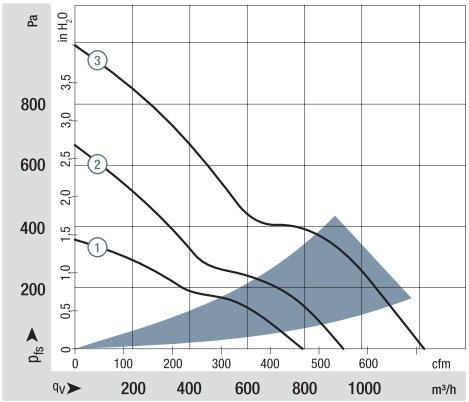
Series 2200 FTD

Nominal data

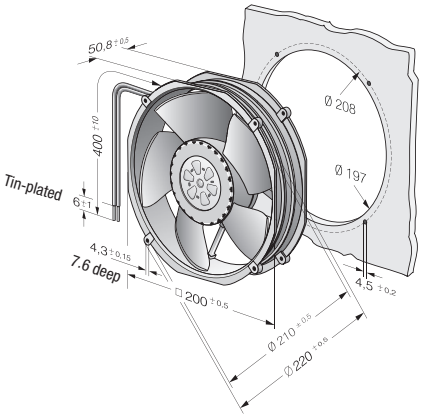
Type	Air flow m³/h	Air flow cfm	**Nominal voltage** VDC	Voltage range VDC	Sound pressure level dB(A)	Sound power level Bel(A)	Sintec sleeve bearings □ / Ball bearings ■	Power consumption* Watts	Nominal speed rpm⁻¹	Temperature range °C	Service life L_{10} (40 °C) ebm-papst standard Hours	Service life L_{10} (T_{max}) ebm-papst standard Hours	Life expectancy L_{10IPC} (40 °C) see page 17 Hours	Curve
2214 F/2 TDHO	790	465	**24**	16...30	62	7.1	■	35	4250	-20...+75	90 000	42 500	152 500	①
2214 F/2 TDHHO	940	553	**24**	16...36	66	7.4	■	48	5000	-20...+70	85 000	42 500	142 500	②
2218 F/2 TDHO	790	465	**48**	36...57	62	7.1	■	35	4250	-20...+75	90 000	42 500	152 500	①
2218 F/2 TDHHO	940	553	**48**	36...72	66	7.4	■	48	5000	-20...+70	85 000	42 500	142 500	②
2218 F/2 TDH4P	1220	718	**48**	36...72	72	8.2	■	103	6500	-20...+65	70 000	40 000	117 500	③

Subject to change

Speed control range from 1000 rpm⁻¹ up to maximum nominal speed.
Standstill at 0% PWM, Type O: standstill if control wire is interrupted; Type P: maximum speed if control wire is interrupted.
* Power consumption at free air flow. These values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general conditions



Max. 1245 m³/h

DC diagonal module

☐ 225 x 80 mm

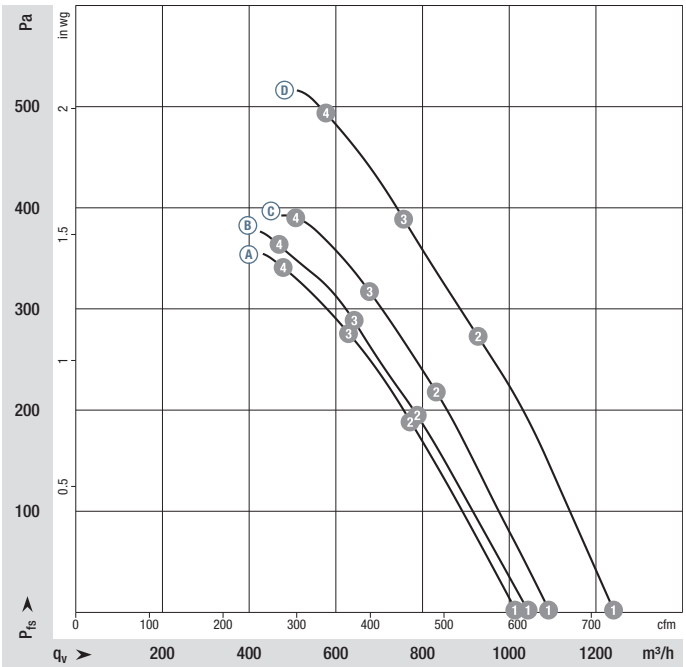
- **Material:** Housing and support bracket: Fiberglass-reinforced plastic (PA6)
  Impeller: Fiberglass-reinforced plastic (PA6)
  Rotor: Painted black
- **Number of blades:** 7
- **Direction of air flow:** "V"
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** Ⓐ Ⓒ IP 44, Ⓑ Ⓓ IP 20, depending on installation and position
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** Ⓐ Ⓒ none, Ⓑ Ⓓ seen on rotor
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data

Type	Motor	Curve	Nominal voltage	Nominal voltage range	Air flow	Nominal speed	Power consumption	Input current	Sound power level	Admissible amb. temp.	Weight	Technical features and connection diagram
			VDC	VDC	m³/h	rpm⁻¹	W	A	dB(A)	°C	kg	
K1G 200-AD65-04	M1G 074-BF	Ⓐ	24	16...28	1020	3 400	95	4.7	76	-25...+60	1.8	p. 262 / J5)
K1G 200-AD31-02	M1G 074-BF	Ⓑ	24	16...28	1045	3 500	110	5.4	77	-25...+70	1.7	p. 262 / J5)
K1G 200-AD49-04	M1G 074-BF	Ⓒ	48	36...57	1095	3 650	120	3.4	77	-25...+60	1.8	p. 262 / J5)
K1G 200-AD37-02	M1G 074-BF	Ⓓ	48	36...57	1245	4 140	183	5.6	81	-25...+70	1.7	p. 262 / J5)

Subject to change

Curves:



		n rpm⁻¹	P_{ed} W	I A	L_WA dB(A)
Ⓐ	1	3400	95	4.70	76
Ⓐ	2	3410	116	5.61	74
Ⓐ	3	3410	119	5.75	74
Ⓐ	4	3410	117	5.62	76
Ⓑ	1	3500	110	5.40	77
Ⓑ	2	3510	127	6.24	75
Ⓑ	3	3510	129	6.31	75
Ⓑ	4	3510	125	6.15	76
Ⓒ	1	3650	120	3.40	77
Ⓒ	2	3645	141	3.90	75
Ⓒ	3	3640	145	3.99	76
Ⓒ	4	3645	141	3.88	80
Ⓓ	1	4140	183	5.60	81
Ⓓ	2	4080	212	6.46	79
Ⓓ	3	4060	213	6.52	79
Ⓓ	4	4105	211	6.43	80

Air performance measured according to: ISO 5801. Installation category A, without contact protection. Suction-side noise levels: LWA according to ISO 13347, LpA measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see http://www.ebmpapst.com/general conditions

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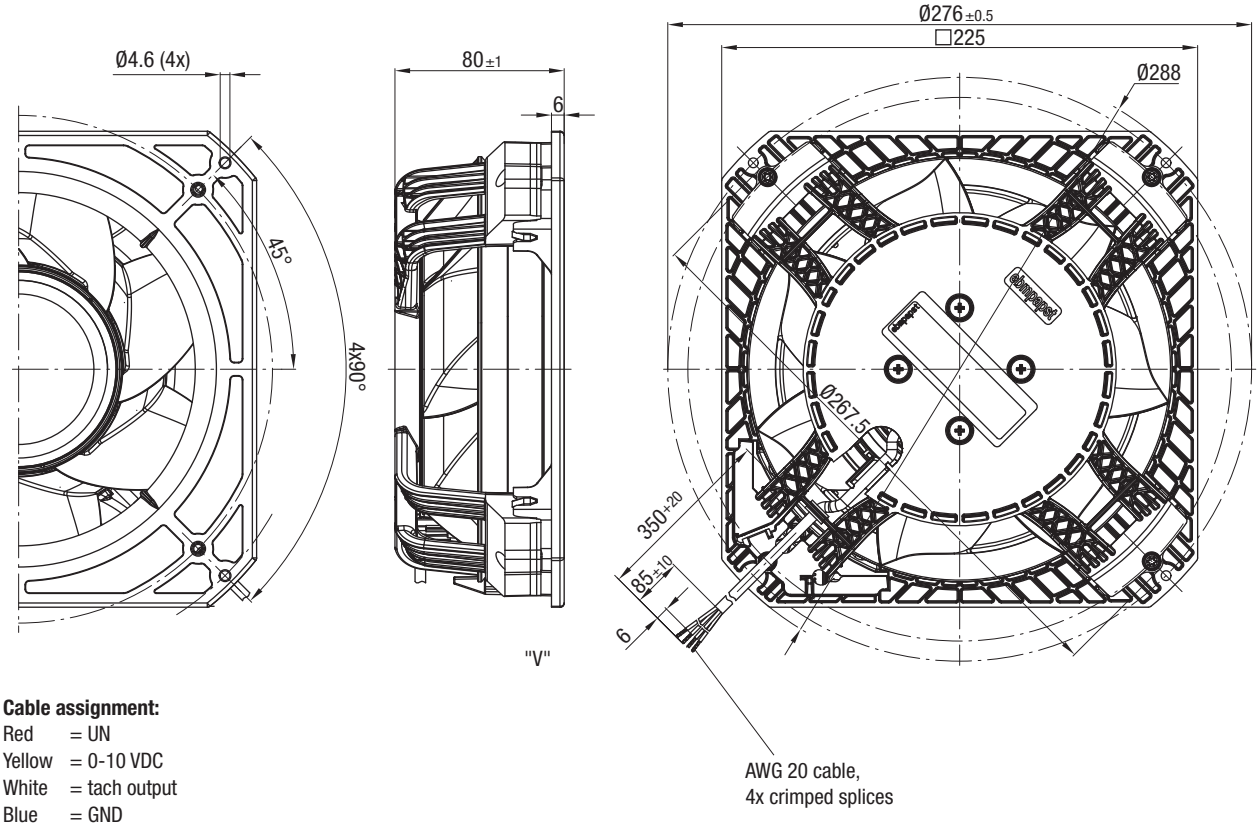
- **Technical features:** See connection diagram p. 262
- **EMC:** Immunity to interference according to EN 61000-6-2 (industrial environment)
  Interference emission according to EN 55022 (Class B)
- **Cable exit:** Lateral
- **Protection class:** I (with customer connection to grounding conductor)
- **Conformity with standard(s):** EN 60335-1
- **Approvals** Ⓐ Ⓒ UL 1004-1, CSA C22.2 no. 77
  Ⓑ Ⓓ EAC, UL 1004-1, CSA C22.2 no. 77



Cable assignment:
Red = UN
Yellow = 0-10 VDC
White = tach output
Blue = GND

Max. 1650 m³/h

DC diagonal module

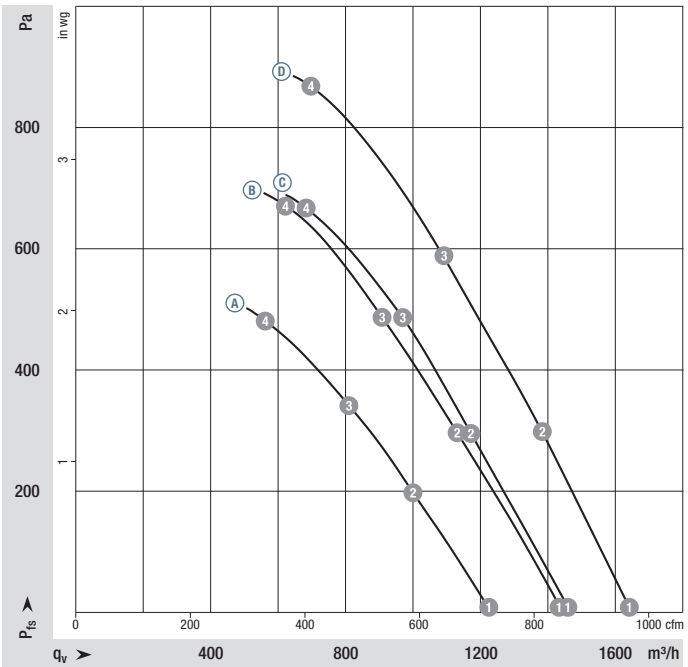
☐ 225 x 89 mm

- **Material:** Housing and support bracket: Plastic (PA)
  Impeller: Plastic (PA)
  Rotor: Painted black
- **Number of blades:** 7
- **Direction of air flow:** "V"
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** Ⓐ Ⓒ IP 44, Ⓑ Ⓓ IP 20, depending on installation and position
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** Ⓐ Ⓒ none, Ⓑ Ⓓ seen on rotor
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage	Nominal voltage range	Air flow	Nominal speed	Power consumption	Input current	Sound power level	Admissible amb. temp.	Weight	Technical features and connection diagram
Type	**Motor**		**VDC**	**VDC**	**m³/h**	**rpm⁻¹**	**W**	**A**	**dB(A)**	**°C**	**kg**	
K3G 200-BD46-04	M3G 074-CF	Ⓐ	24	16...28	1240	4120	170	7.0	80	-25...+60	2.3	p. 262 / J5)
K3G 200-BD44-02	M3G 074-CF	Ⓑ	24	16...28	1445	4830	275	11.5	84	-25...+60	2.3	p. 262 / J5)
K3G 200-BD64-04	M3G 074-CF	Ⓒ	48	36...57	1475	4875	275	5.8	85	-25...+60	2.3	p. 262 / J5)
K3G 200-BDA8-02	M3G 074-CF	Ⓓ	48	36...57	1650	5470	400	8.4	88	-25...+60	2.3	p. 262 / J5)

Subject to change

Curves:



		n rpm⁻¹	P_{ed} W	I A	L_WA dB(A)
Ⓐ	1	4120	170	7.00*	80
Ⓐ	2	4025	180	7.52*	77
Ⓐ	3	4005	187	7.80*	76
Ⓐ	4	4045	187	7.78*	78
Ⓑ	1	4830	275	11.50*	84
Ⓑ	2	4720	294	12.24*	81
Ⓑ	3	4685	299	12.48*	80
Ⓑ	4	4715	295	12.30*	83
Ⓒ	1	4875	275	5.80*	85
Ⓒ	2	4795	300	6.27*	81
Ⓒ	3	4755	307	6.41*	80
Ⓒ	4	4780	304	6.35*	82
Ⓓ	1	5470	400	8.40*	88
Ⓓ	2	5365	426	8.89*	85
Ⓓ	3	5310	438	9.17*	83
Ⓓ	4	5355	431	9.01*	87

* Current measured at nominal voltage.

Air performance measured according to: ISO 5801. Installation category A, without contact protection. Suction-side noise levels: LWA according to ISO 13347, LpA measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see http://www.ebmpapst.com/general conditions

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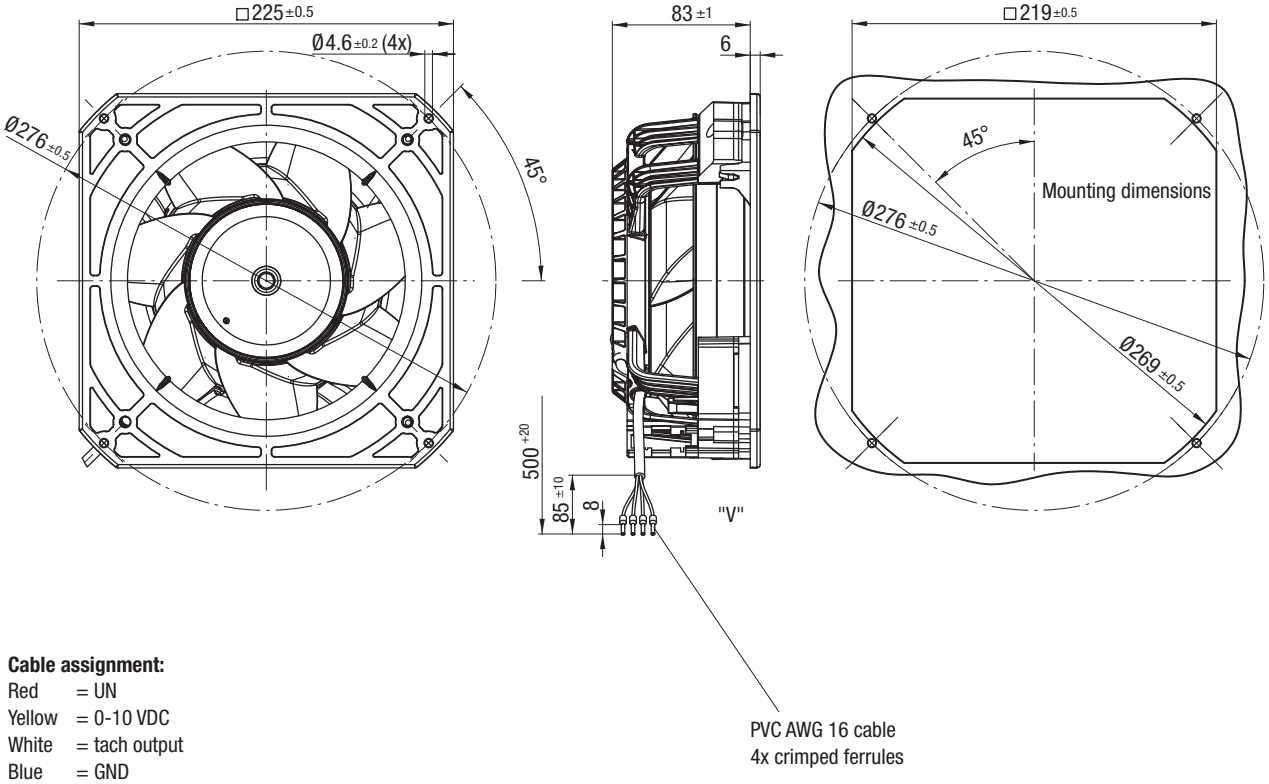
- **Technical features:** See connection diagram p. 262
- **EMC (48 V):** Immunity to interference according to EN 61000-6-2 (industrial environment)
  Interference emission according to EN 55022 (Class B, household environment)
- **Cable exit:** Lateral
- **Conformity with standard(s):** EN 60335-1
- **Approvals:** (24 V) EAC
  (48 V) EAC, CCC



Cable assignment:
Red = UN
Yellow = 0-10 VDC
White = tach output
Blue = GND

Max. 2070 m³/h

DC axial fans

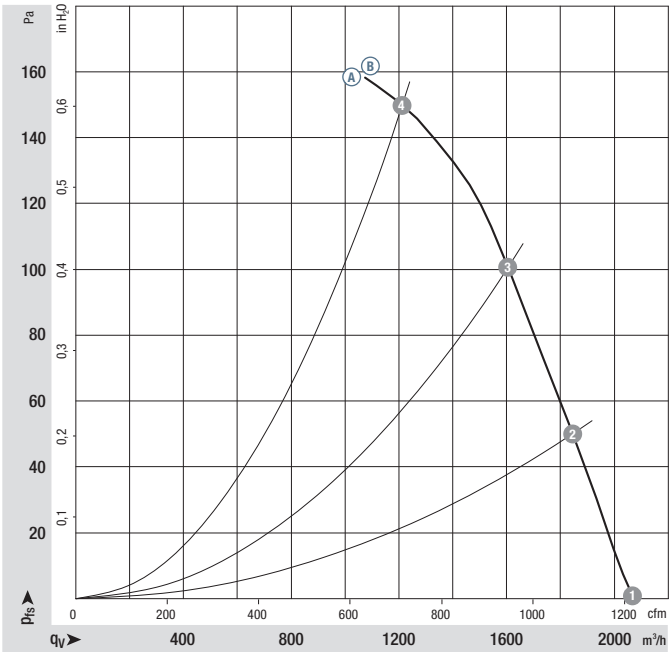
Ø 250 mm

- **Material:** Fan housing: Die-cast aluminum
Blades: Plastic (PP)
Rotor: Thick-film passivated
- **Number of blades:** 7
- **Direction of air flow:** "V"
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Insulation class:** "B"
- **Installation position: Any**
- **Condensation drainage holes:** On rotor side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage	Nominal voltage range	Air flow	Nominal speed	Power consumption	Input current	Max. back-pressure	Admissible amb. temp.	Technical features and connection diagram
Type	**Motor**		**VDC**	**VDC**	**m³/h**	**rpm⁻¹**	**W**	**A**	**Pa**	**°C**	
W1G250-HJ87 -02	M1G074-BF	Ⓐ	24	16-28	2070	3090	120	7.00	150	-25...+60	p. 258 / E)
W1G250-HJ63 -02	M1G074-BF	Ⓑ	48	36-57	2070	3090	120	3.40	150	-25...+60	p. 258 / E)

Subject to change

Curves:

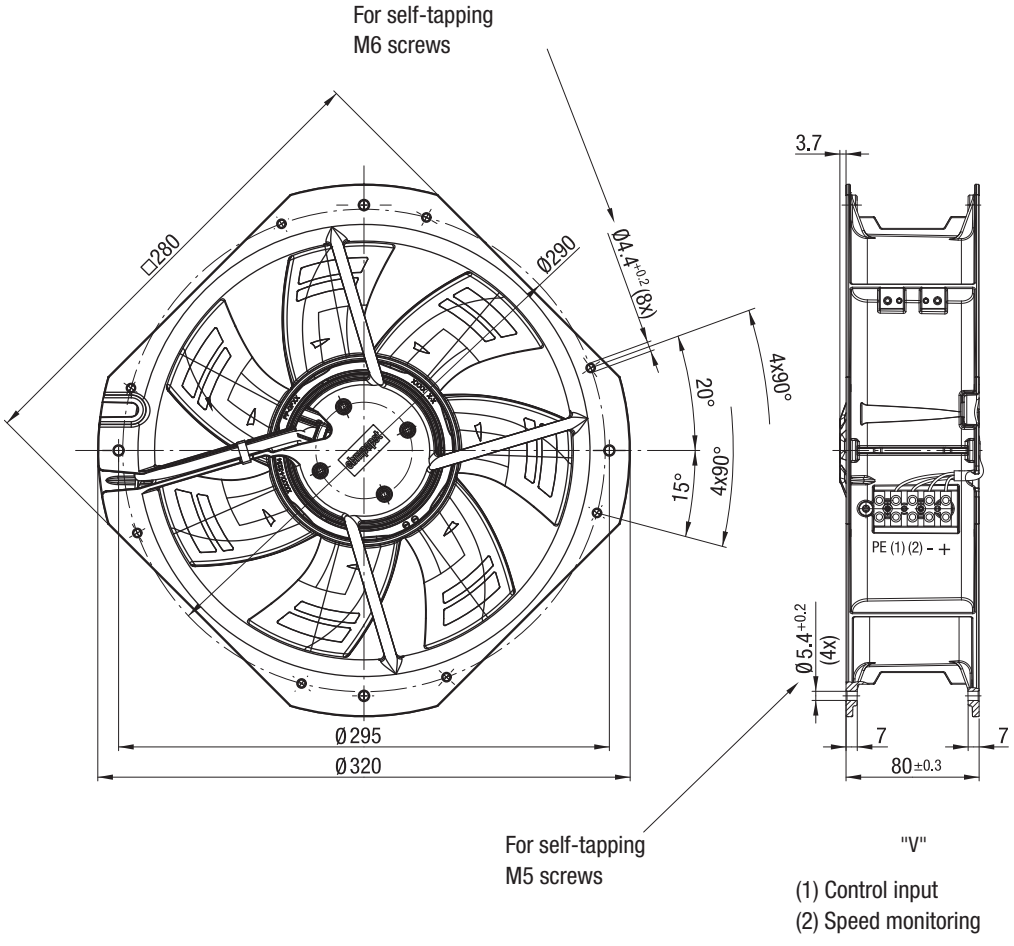


		n rpm⁻¹	P_{ed} W	I A	L_WA dB(A)
Ⓐ	1	3090	120	6.80	74
Ⓐ	2	2950	124	7.10	73
Ⓐ	3	2820	127	7.43	73
Ⓐ	4	2730	130	7.80	78
Ⓑ	1	3090	120	3.40	74
Ⓑ	2	2950	124	3.55	73
Ⓑ	3	2820	127	3.74	73
Ⓑ	4	2730	130	3.90	78

Air performance measured according to: ISO 5801. Installation category A, without contact protection. Suction-side noise levels: LWA according to ISO 13347, L_pA measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see http://www.ebmpapst.com/general conditions

ebmpapst

- **Technical features:** See connection diagram p. 258
- **EMC:** Interference emission acc. to EN 55022 (Class B)
  Immunity to interference acc. to EN 61000-6-2 (industrial environment)
- **Electrical hookup:** Via terminal strip
- **Protection class:** I
- **Conformity with standard(s):** EN 60950-1



Max. 2345 m³/h

DC axial fans – HyBlade®

Ø 300 mm

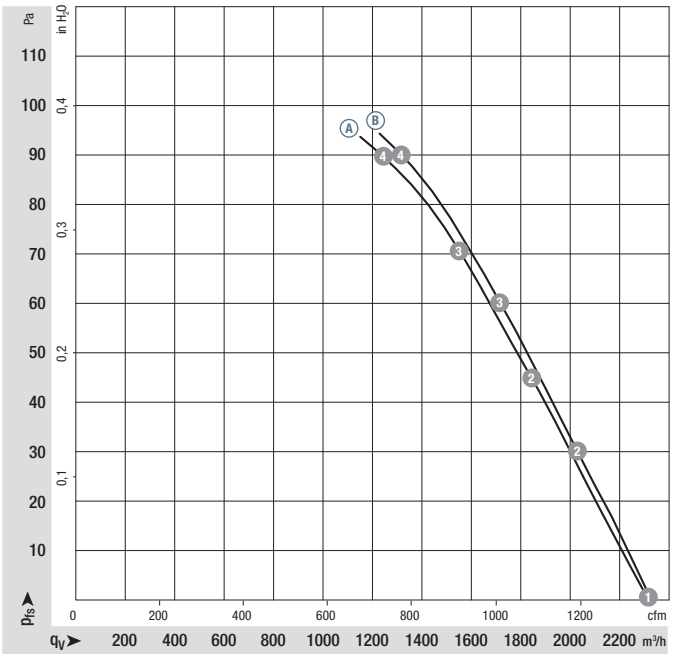
- **Material:** Finger guard: Steel, phosphated and coated in black plastic
  Fan housing: Sheet steel, pre-galvanized and coated in black plastic
  Blades: Plastic (PP)
  Rotor: Painted black
- **Number of blades:** 5
- **Direction of air flow:** "V"
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Degree of protection:** IP 42
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data

Type	Motor	Curve	Nominal voltage VDC	Nominal voltage range VDC	Air flow m³/h	Nominal speed rpm⁻¹	Power consumption W	Input current A	Max. back-pressure Pa	Admissible amb. temp. °C	Technical features and connection diagram
*1G 300	M1G074-CF	Ⓐ	24	16-28	2320	1830	80	3.80	100	-25..+60	p. 262 / J5)
*1G 300	M1G074-CF	Ⓑ	48	36-57	2345	1830	80	1.90	100	-25..+60	p. 262 / J5)

Subject to change

Curves:



		n rpm⁻¹	P_{ed} W	I A	L_WA dB(A)
Ⓐ	1	1810	80	3.80	67
Ⓐ	2	1730	86	4.03	67
Ⓐ	3	1690	87	4.10	66
Ⓐ	4	1635	89	4.21	70
Ⓑ	1	1870	87	2.00	68
Ⓑ	2	1805	90	2.10	67
Ⓑ	3	1765	91	2.13	67
Ⓑ	4	1695	92	2.19	69

Air performance measured according to: ISO 5801, installation category A, in ebm-papst full nozzle without contact protection. Suction-side noise levels: LWA according to ISO 13347, L_pA measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see http://www.ebmpapst.com/general conditions

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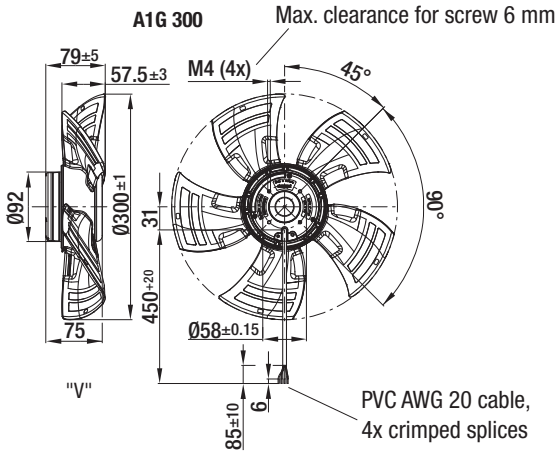
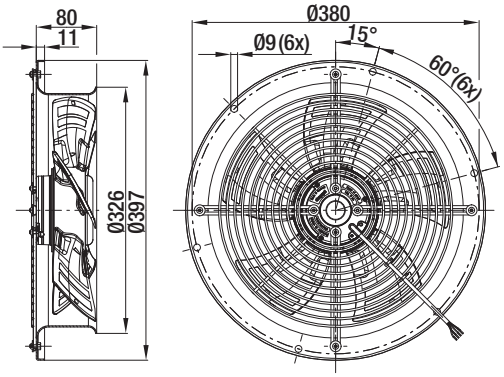
- **Technical features:** See connection diagram p. 262
- **EMC:** Interference emission acc. to EN 55022 (Class B)
  Immunity to interference acc. to EN 61000-6-2 (industrial environment)
- **Cable exit:** Lateral
- **Conformity with standard(s):** EN 60950-1, UL 1004-1, CSA C22.2 no. 100
- **Approvals:** GOST, UL

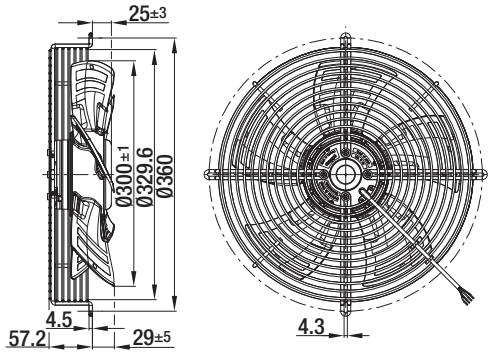
Airflow direction	 "V" without attachments	Weight without attachments kg	 "V" With full round nozzle	Weight with full round nozzle kg	 "V" With finger guard for short nozzle	Weight with finger guard for short nozzle kg
"V"	A1G 300-AC19 -54	1.8	W1G 300-DC19 -54	3.8	S1G 300-AC19 -54	2.8
"V"	A1G 300-AC33 -54	1.8	W1G 300-DC33 -54	3.8	S1G 300-AC33 -54	3.1

A1G 300





W1G 300



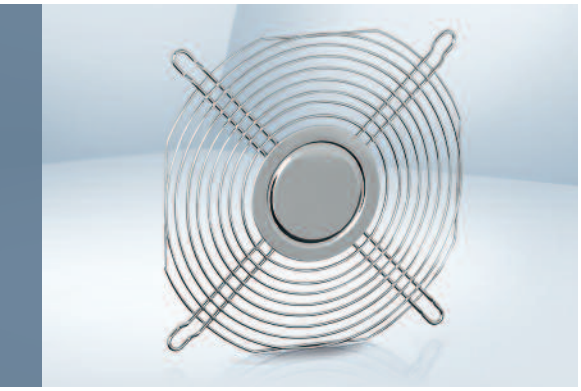
S1G 300

Accessories

ebm-papst offers a comprehensive selection of accessories for optimum fan operation, from temperature sensors for speed-controlled fans, to finger guards for all variants, to cables, filters, and screens, to spacers and installation parts. Even in the case of very special parts, you can be sure: We will assist you every way possible. The sales experts at ebm-papst will be happy to assist you with your question concerning fan installation and use.

From selection to accessories:
Insist on the efficient and reliable service provided by ebm-papst.

Finger guards



- **Material:** Galvanized or nickel-plated steel wire
- **Note:** Finger guard according to DIN EN ISO 13857 (previously EN 294).
  Additional finger guards that do not satisfy DIN EN ISO 13857 available on request.
  Our finger guards are designed specifically to be uses with ebm-papst fans.
  They combine the highest degree of safety with minimum effect on the operating noise. Please note that the safety-related clearances cannot be guaranteed when finger guards made by other manufacturers are used.

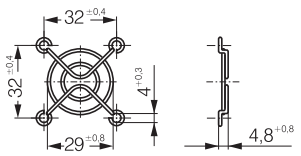
Fan series	Part no.
400	**LZ29-1**
420 J	**LZ29-1**
500	**LZ31**
600	**LZ28-1**
3000	**LZ23-1**
8000	**LZ32-4 / LZ22-2**
9000	**LZ30-4 / LZ 30 / LZ 30-3**
4000	**LZ30-4 / LZ 30 / LZ 30-3**

Fan series	Part no.
5100	**LZ25**
5600	**LZ25**
5200	**LZ35**
5300	**LZ53**
5900	**LZ35**
7000	**LZ36**
6300	**LZ37**
6400	**LZ38**

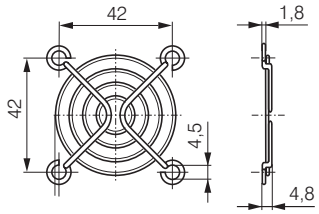
Fan series	Part no.	Side
2200 F	**LZ22**	
DV 4100	**LZ30-4**	Intake/outlet
DV 5200	**LZ35**	Intake/outlet
DV 6300 TD	**LZ37**	Intake side
DV 6300 TD	**LZ52**	Outlet side
DV 6400	**LZ38**	Intake side
DV 6400	**LZ39**	Outlet side

Subject to change

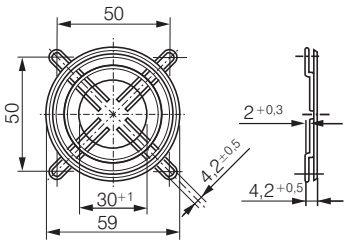
LZ29-1 Fan size 40 x 40



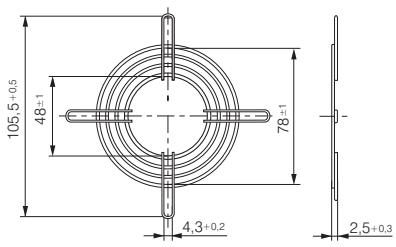
LZ31 Fan size 50 x 50



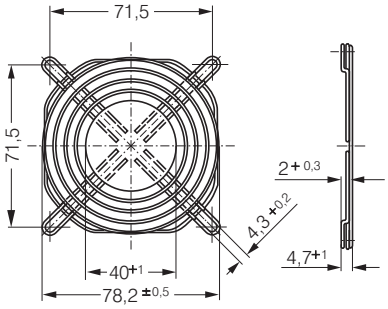
LZ28-1 Fan size 60 x 60



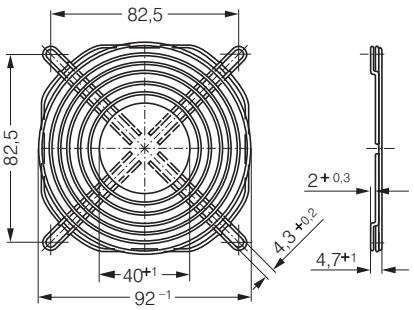
LZ22-2 Fan size 80 x 80



LZ32-4 Fan size 80 x 80



LZ23-1 Fan size 92 x 92



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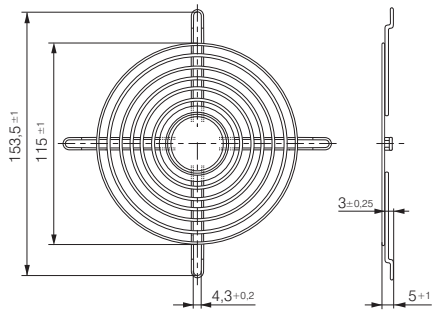
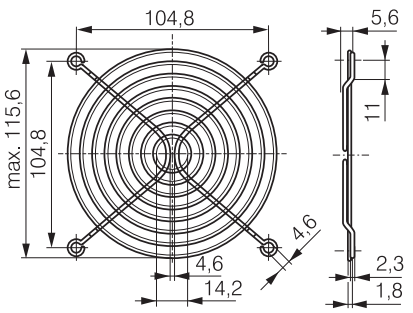
LZ30 — Fan size 119 x 119

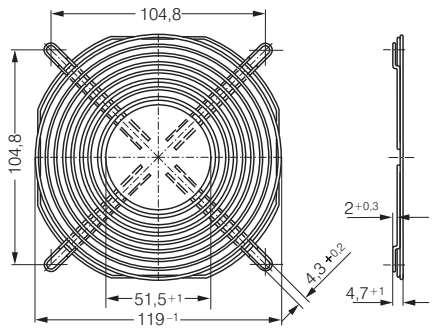


LZ30-3 — Fan size 119 x 119

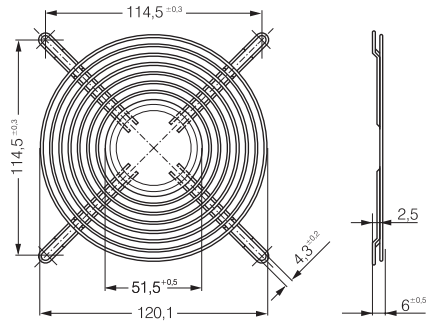


Also called LZ 30
for North America only.

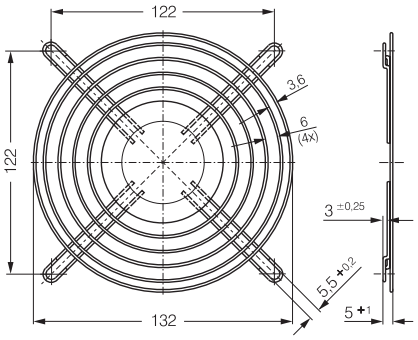
LZ30-4 — Fan size 119 x 119



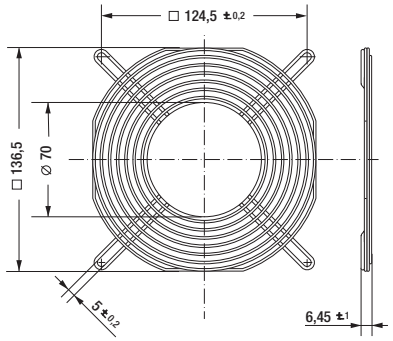
LZ35 — Fan size 127 x 127



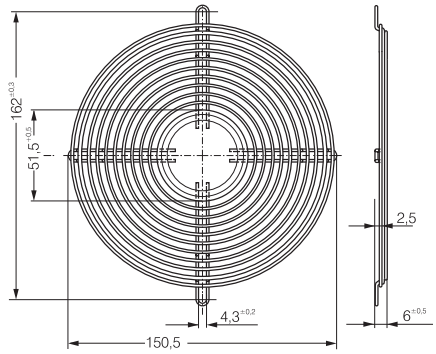
LZ25 — Fan size 135 x 135



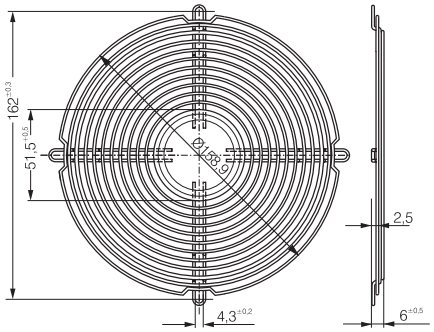
LZ53 — Fan size 140 x 140



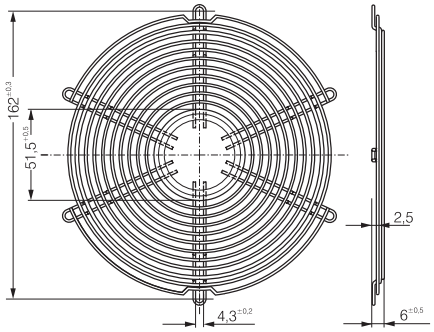
LZ36 — Fan size 150 x 172



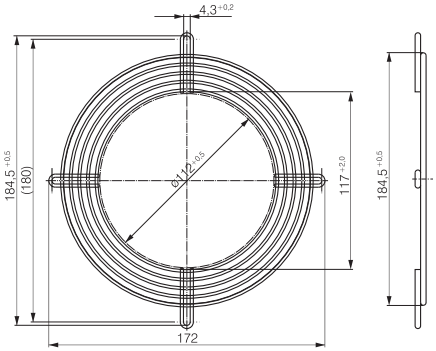
LZ37 — Fan size 172 x 51



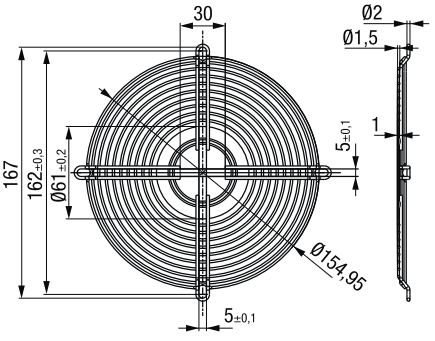
LZ38 — Fan size 172 x 51



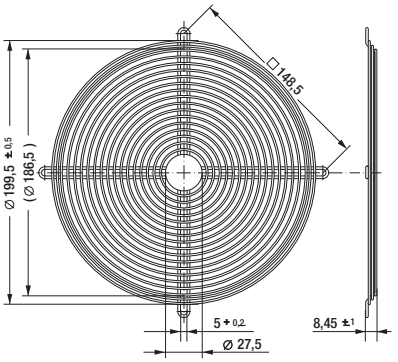
LZ39 — Fan size 172 x 51



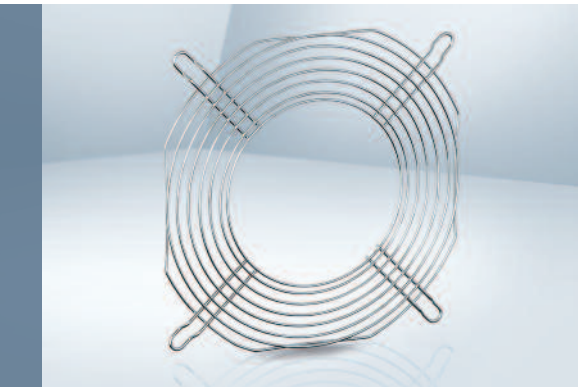
LZ52 — Fan size 172 x 51



LZ22 — Fan size 200 x 51



Finger guards



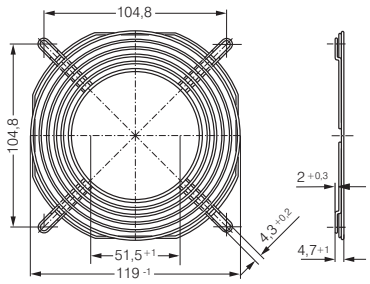
- **Material:** Galvanized or nickel-plated steel wire
- **Note:** Finger guard according to DIN EN ISO 13857 (previously EN 294).
  The finger guard detailed on this page are intended specifically for the ACmaxx / GreenTech EC tubeaxial fan ranges and are mounted on the outlet side.

Fan series	Part no.	Side
AC 8300 H	**LZ32-4**	Intake
AC 8300 H	**LZ32-7**	Outlet
AC 3200 J	**LZ23-1**	Intake
AC 3200 J	**LZ23-6**	Outlet
AC 4400 FN	**LZ30-4**	Intake
AC 4400 FN	**LZ30-9**	Outlet
AC 4300	**LZ30-4**	Intake
AC 4300	**LZ30-9**	Outlet

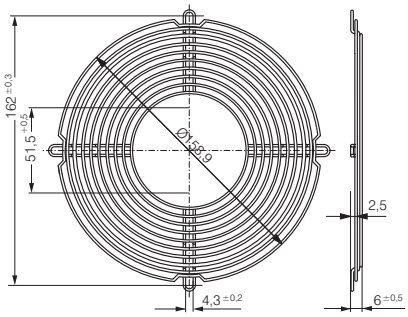
Fan series	Part no.	Side
ACi 4400	**LZ30**	Intake
ACi 4400	**LZ30**	Outlet
AC 6200 N	**LZ37**	Intake
AC 6200 N	**LZ37-2**	Outlet

* Outlet-side guards on request

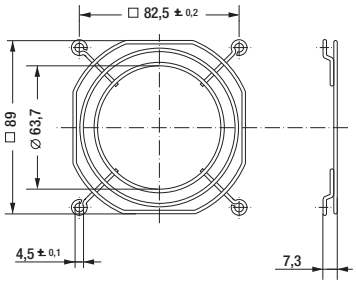
LZ30-9 Fan size 119 X 119



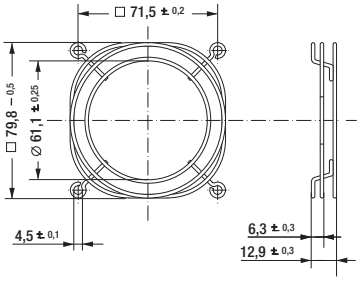
LZ37-2 Fan size Ø 172 X 51



LZ23-6 Fan size 92 x 92



LZ32-7 Fan size 80 x 80



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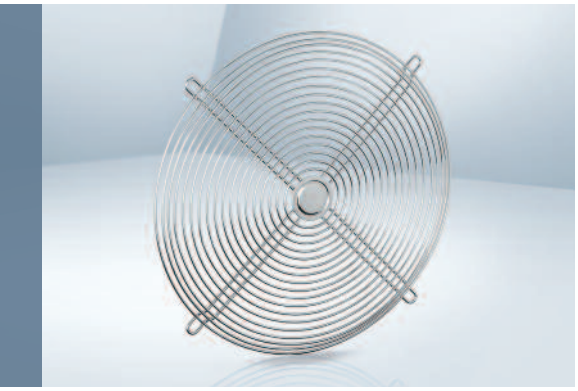
Finger guards

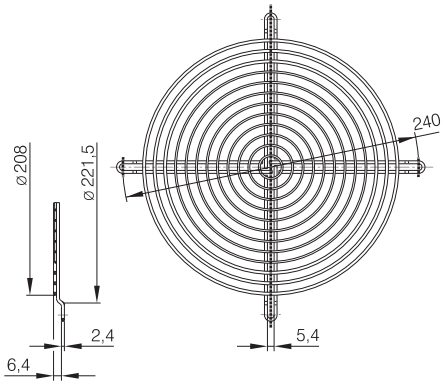


– **Material:** Steel wire, plastic-coated, with silver-metallic gloss

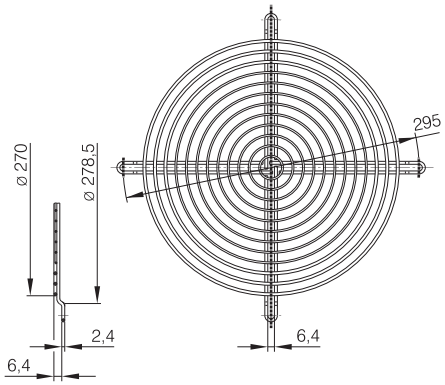
Fan series	Part no.
W3G 200	**78128-2-4039**

Fan series	Part no.
W1G 250	**09418-2-4039**
W3G 250	**09418-2-4039**

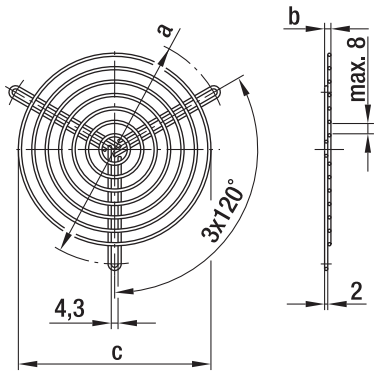
78128-2-4039 **Fan size 200**



09418-2-4039 **Fan size 250**



Finger guards

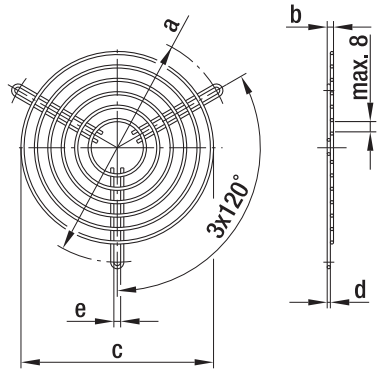


– **Material:** Steel wire

Finger guards for centrifugal blowers with dual inlet

Part no.	Fan size	a	b	c	Coating
83319-2-4039	097 (1)	96.0	3.5	71.0	Phosphated, plastic-coated in RAL no. 9005
09485-2-4039	097 (2)	114.0	3.5	88.0	Phosphated, plastic-coated in RAL no. 9005
09500-2-4039	133 / 146	145.0	4.0	122.0	Phosphated, plastic-coated in RAL no. 9005

Subject to change (1) for D2E097-CH (2) for D2E097-B*



– **Material:** Phosphated steel wire, plastic-coated, silver-metallic gloss

Finger guards for centrifugal blowers with dual inlet (versions with EW motor)

Part no.	Fan size	a	b	c	d	e
35000-2-4039	160	182.0	12.0	144.0	2.4	4.5

Subject to change

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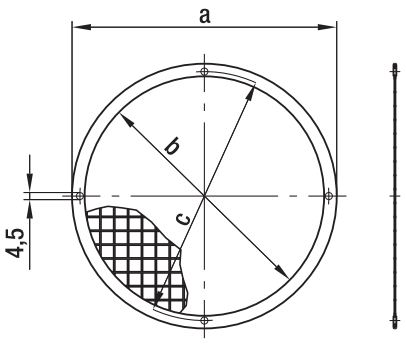
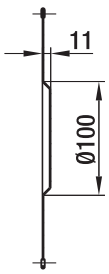
Finger guards





[4] Fan size 160

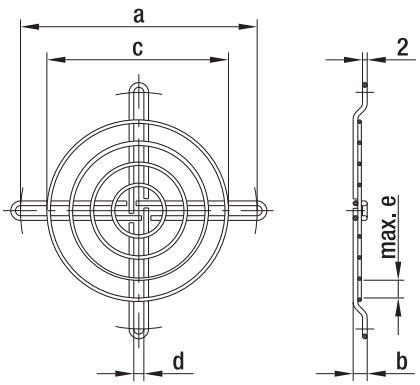
– **Material:** Welded screens made of hot-dip galvanized steel, border made of tin (0.4 mm thick)

Finger guards for centrifugal blowers with single inlet

Part no.	Fan size	a	b	c
09489-2-4039	085 [3]	90.0	74.0	84.0
09490-2-4039	108	126.0	110.0	118.0
09494-2-4039	120	140.0	124.0	132.0
09492-2-4039	140 / 146	168.0	152.0	158.0
09503-2-4039	160 [4]	183.0	170.0	175.0

Subject to change

(3) 3 drilled holes staggered by 120°



– **Material:** Steel wire

Finger guards for centrifugal blowers with single inlet

Part no.	Fan size	a	b	c	d	e	Coating
09603-2-4039	076 / 085	101.0	6.0	79.0	4.3	8.0	Plastic coated, silver-metallic gloss
98214-2-4039	108	120.0	3.5	88.0	4.3	8.0	Plastic coated, silver-metallic gloss
25028-2-4039	140 / 146	162.0	8.5	139.0	4.3	8.0	Galvanized, chromatized in blue
17729-2-4039	160	175.0	3.5	139.0	4.6	7.0	Galvanized, chromatized in blue

Subject to change

Finger guards

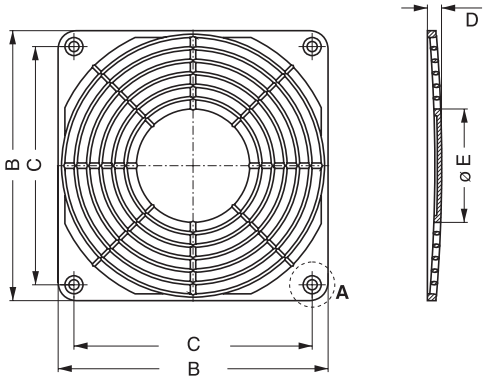
- **Material:** Fiberglass-reinforced plastic
- **Note:** Finger guard according to DIN EN ISO 13857 (previously EN 294).
  Plastic guards may not be used for the following models:
  8200 JH3 / JH4
  3200 JH3 / JH4
  4100 NH5 - NH8

Part no.	Mounting	B	C	D	E
LZ28-3	A3	$60^{-0.5}$	$50.0^{\pm0.2}$	3.0	24
LZ32-2	A1	$80^{-0.5}$	$71.5^{\pm0.2}$	7.0	34
LZ32-3	A3	$80^{-0.5}$	$71.5^{\pm0.2}$	7.0	34
LZ23-2	A1	$92.5^{-0.5}$	$82.5^{\pm0.2}$	6.5	46
LZ23-3	A3	$92.5^{-0.5}$	$82.5^{\pm0.2}$	6.5	46

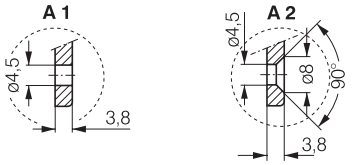
Part no.	Mounting	B	C	D	E
LZ30-5	A2	$119^{-0.5}$	$105^{\pm0.2}$	6.5	50
LZ30-6	A4	$119^{-0.5}$	$105^{\pm0.2}$	6.5	50
LZ33-1	A2	$127^{-0.5}$	$113.5^{\pm0.2}$	6.5	50
LZ33-2	A4	$127^{-0.5}$	$113.5^{\pm0.2}$	6.5	50

Subject to change

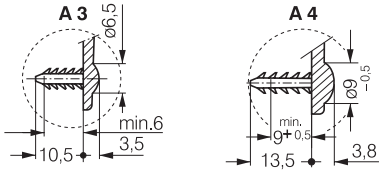
LZ28-3	Fan size 60 x 60
LZ32-2 / LZ32-3	Fan size 80 x 80
LZ23-2 / LZ23-3	Fan size 92 x 92
LZ30-5 / LZ30-6	Fan size 119 x 119
LZ33-1 / LZ33-2	Fan size 127 x 127



Screw connection

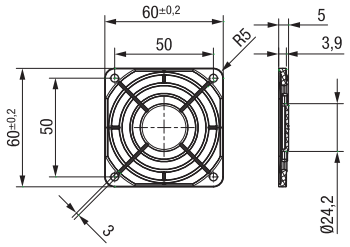


Barbed inserts

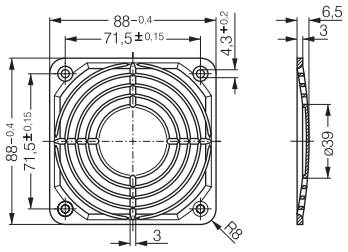


Only suitable for bore hole diameter
¯4.3 - ¯4.7.

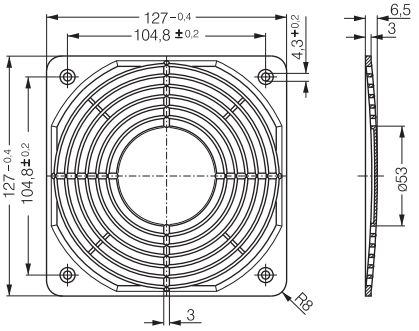
LZ28-3 Fan size 60 x 60



LZ32P Fan size 80 x 80



LZ30P Fan size 119 x 119



ebmpapst

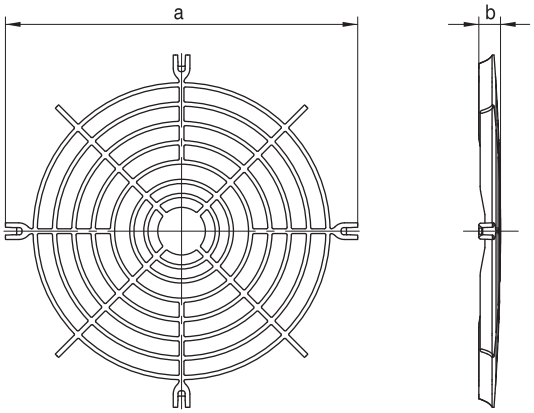
Finger guards

For compact centrifugal modules

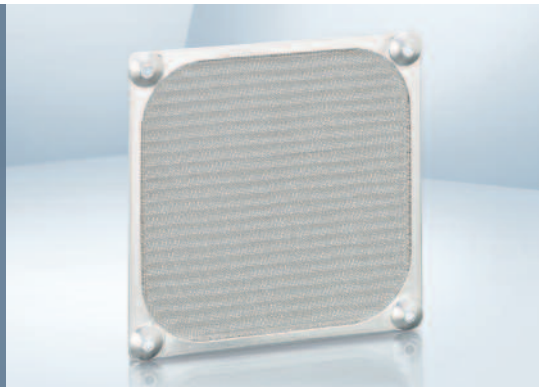
- **Material:** PA plastic, fiberglass-reinforced
- **Highlights:** Flame protection class in line with UL 94V-0

Fan series	Part no.	a	b
RG 190	**LZ46-1**	133	9.0
RG 220	**LZ47-1**	166	8.7
RG 225	**LZ48-1**	158	8.7

Subject to change

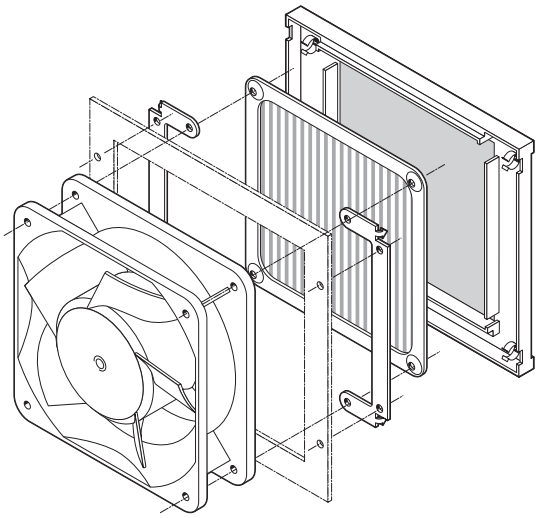


Filter fan guards

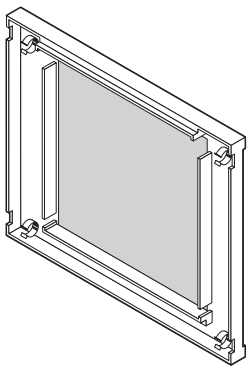


– **Material:** Filter guard LZ40 N: black, fiberglass-reinforced plastic with inserted wire mesh LZ60.
Coarse filter LZ60: stainless steel wire mesh
Mounting lug LZ40-1 for mounting

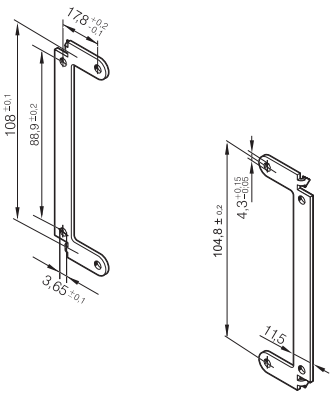
DC fan series	AC fan series
4400 F	AC 4300
4400 FN	9900
4300	4000 N
4400	4000 Z
4100 N	Subject to change



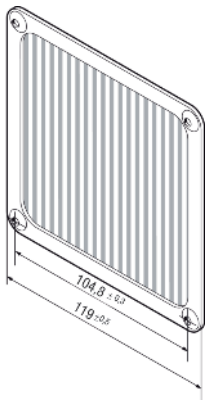
LZ40N Filter guard



LZ40-1 Mounting lug



LZ60 Coarse filter



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Filter fan guards

- **Material:** Guard cover: Injection-molded polycarbonate (PC) with mat surface.
  Mounting plate: wire mesh with black powder coating
  Filter pad: white, synthetically bonded fibers
- **Note:**
  Filter fan guards suitable for fitting on axial fan series in sizes:
  60 mm, 80 mm, 92 mm, 119 mm, ø 172 mm. All filter units fit directly on the existing mounting holes of the fans.
  Filter fan guards consisting of 3 parts: external guard cover, internal mounting plate, and replaceable filter pad.
  The filter pad can be replaced quickly and easily via a quick release on the guard cover.
  The filter pads can be replaced even while the fan is running, as protection is provided by the welded wire mesh.

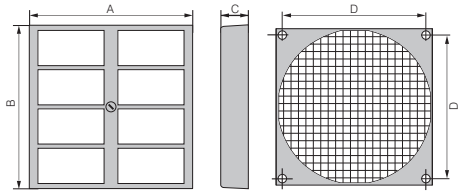
Part no.	Fan size	A	B	C	D	Part no. Replacement filter*
FF60	60 x 60 mm	65	65	13.5	50.0	**RF 60**
FF80	80 x 80 mm	85	85	14.0	71.5	**RF 80**
FF92	92 x 92 mm	125	105	17.5	82.5	**RF 92**
FF119	119 x 119 mm	162	136	18.5	104.5	**RF 119**
FF172	ø 172 mm	226	190	19.5	162.0	**RF 172**

Subject to change

* Replacement filter available only in packages of 5.

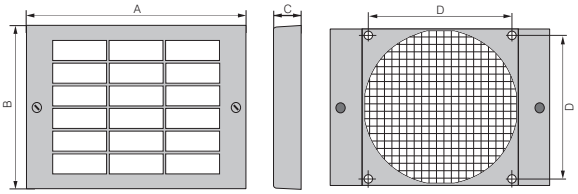
FF60 / FF80

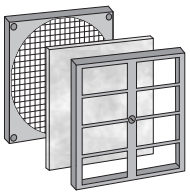
Fan size: 60 x 60 mm
80 x 80 mm



FF92 / FF 119

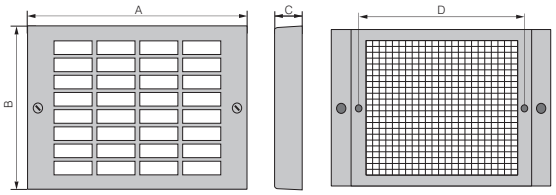
Fan size: 92 x 92 mm
119 x 119 mm





FF 172

Fan size: Ø 172 mm

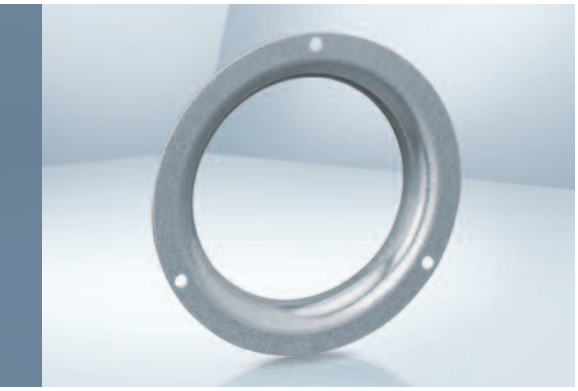


Filter performance

The filter fan guard filters 75% of dust particles with a size of 5-10 microns and can withstand temperatures of up to 100 °C. Filter class G3 according to DIN EN 779. Flame-retardant according to DIN 53438, class F1. When a clean filter is installed, a reduction of air flow of 20-30% is possible.

Inlet rings

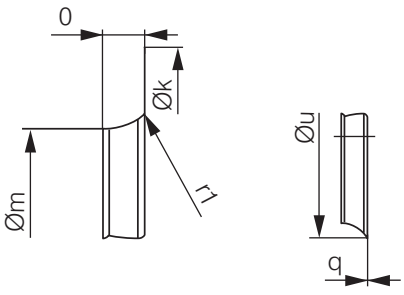
For centrifugal fans



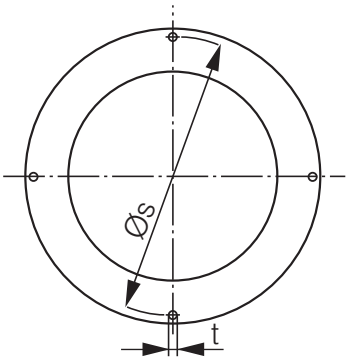
– **Material:** Galvanized sheet steel

Fan		Part no.	k	m	o	q	r_1	s	t	u	Vers.
RET 97	(S)	**LZ 1000-097**	116,0	80,0	10,0	0,80	10,0	108,0	3x4,5	–	1
RER 120	(K)	**LZ 1000-120**	146,0	94,4	18,0	0,80	16,0	134,0	4x4,5	126,0	1
RER 133	(K)	**LZ 1000-133**	129,0	87,0	13,0	1,00	8,0	118,0	4x4,5	103,0	1
RER 160	(S)	**LZ 1000-160**	142,0	100,0	9,0	1,00	8,0	132,0	4x4,5	–	1
RER 175 / 190	(K)	**LZ 1000-175**	170,0	125,5	14,0	1,25	10,0	158,0	4x4,5	146,0	1
RER 220	(K)	**LZ 1000-220**	252,0	155,0	21,0	0,80	22,0	–	–	199,0	2
RER 225	(K)	**LZ 1000-225**	223,0	146,0	28,0	1,50	25,0	210,0	4x4,5	196,0	1

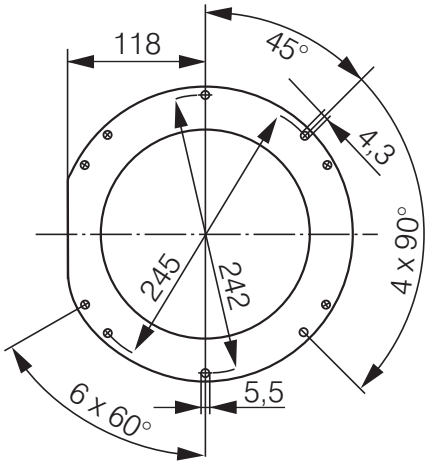
(P) = plastic, (S) = galvanized sheet steel



Vers. 1



Vers. 2



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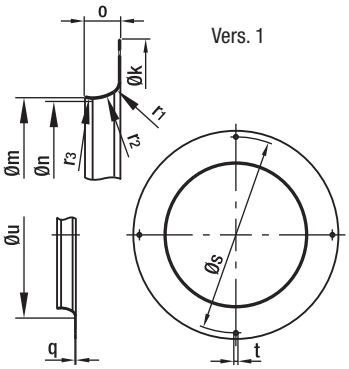
Inlet rings

For centrifugal fans



– **Material:** Galvanized sheet steel

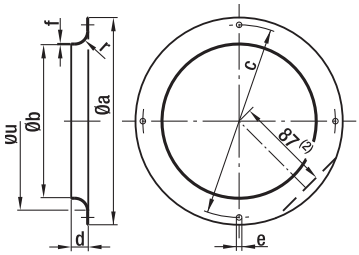
Inlet rings for backward curved centrifugal fans

Part no.	Fan size(1)	Vers.	k	m	n	o	q	r_1	r_2	r_3	s	t	u
96120-2-4013	120 (P)	1	146.0	94.4	—	18.0	0.80	16.0	—	—	134.0	4x4.5	126.0

Subject to change

(1) Fan size with key for impeller material: (P) = plastic, (S) = sheet steel, (A) = aluminum

Vers. 1



– **Material:** Galvanized sheet steel

Inlet rings for forward curved centrifugal fans

Part no.	Fan size	Vers.	a	b	c	d	e	f	r	u
09560-2-4013	085 (1)	1	92.0	63.4	84.0	6.0	3x4.2	0.80	6.8	—
09563-2-4013	097 (1)	1	116.0	80.0	108.0	10.0	3x4.5	0.80	10.0	—
09566-2-4013	108	1	129.0	87.0	118.0	13.0	4x4.5	1.00	8.0	—
09569-2-4013	120	1	142.0	100.0	132.0	9.0	4x4.5	1.00	8.0	—
09572-2-4013	133	1	150.0	112.0	142.0	12.0	4x4.5	1.00	10.0	—
09576-2-4013	140 / 146	1	170.0	125.5	158.0	14.0	4x4.5	1.25	10.0	—
09588-2-4013	160	1 (2)	185.0	130.0	175.0	17.0	4x4.5	0.75	12.0	—

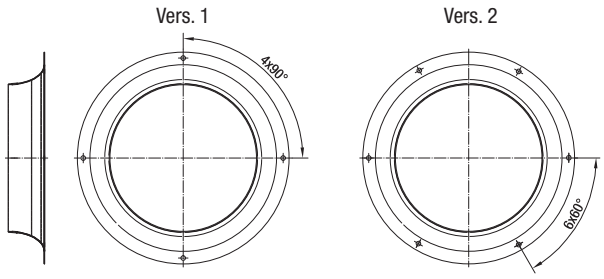
Subject to change

(1) 3 drilled holes staggered by 120°

(2) only for 09588-2-4013

Inlet rings / air filter

For centrifugal fans

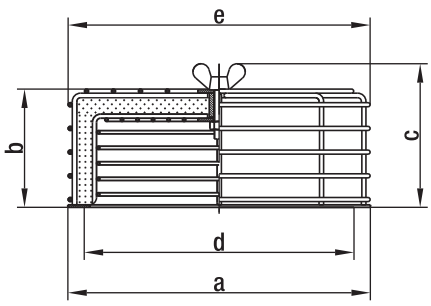


Material: Galvanized sheet steel

Inlet rings without measuring device for backward curved centrifugal fans

Part no.	Fan size	Vers.	Dimensions
09576-2-4013	190	1	See corresponding product page
09609-2-4013	220	2	See corresponding product page
96358-2-4013	225	1	See corresponding product page
96359-2-4013	250	1	See corresponding product page
28000-2-4013	280	1	See corresponding product page
31000-2-4013	310	1	See corresponding product page

Subject to change



- **Material:** Steel wire or sheet steel, plastic coated in RAL no. 9005, black
- **Filter:** Viledon filter type R: PSB / 29 OS (according to DIN 24185)
  Separation capacity: < 86%
  Efficiency: < 20%
  Dust binding capacity: 650 g/m²

Air filters for centrifugal blowers (with die-cast aluminum housing)

Part no.	Fan size	a	b	c	d	e	Replacement filter
95777-1-5171	108 / 120	142.0	66.0	83.0	118-132	145.0	95779-1-5171
95778-1-5171	140 / 146 / 160	185.0	74.0	91.0	158-175	185.0	95780-1-5171

Subject to change

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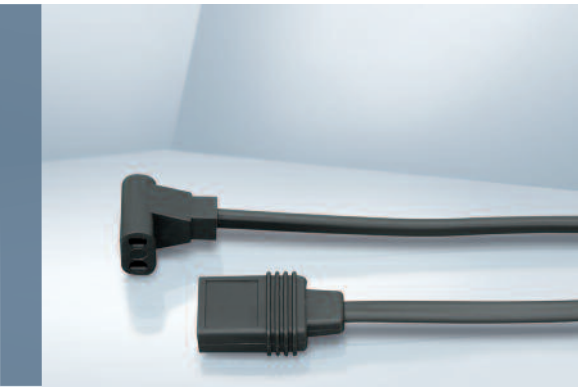
Cables

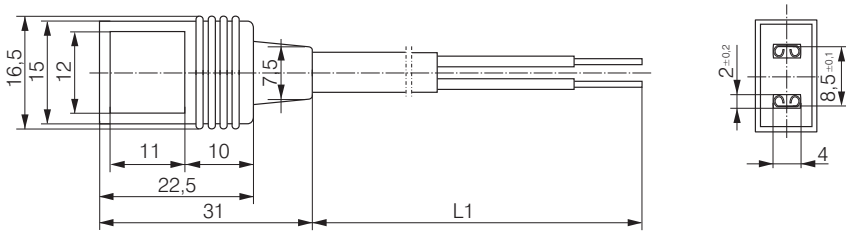


- Cable with molded plug connection in varying lengths.
- Wire end with wire end ferrules, crimped ferrules, or tin-plated.
- Straight or angled plug.
- For all fan types with flat plug 2.8 / 3.0 x 0.5.

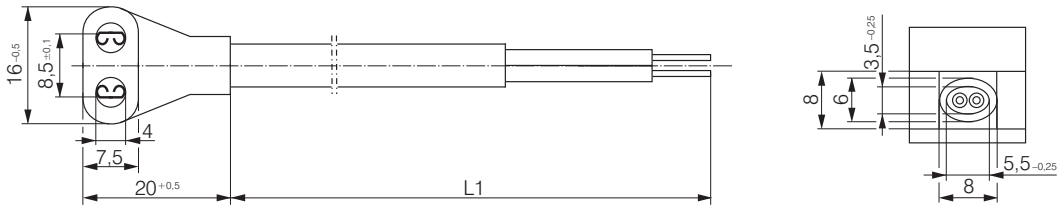
Part no.	L1 (mm)	Wires	Plug	Wire end	Flat push-on receptacle	Application
LZ120	610	0.5 mm²	G	C	2.8 x 0.5	AC
LZ120-4	2 000	0.5 mm²	G	A	2.8 x 0.5	AC
LZ120-5	380	0.5 mm²	W	B	2.8 x 0.5	DC
LZ120-6	610	0.5 mm²	W	B	2.8 x 0.5	DC
LZ120-11	2 000	0.5 mm²	G	A	2.8 x 0.5	DC
LZ120-16	800	0.5 mm²	G	B	2.8 x 0.5	AC
LZ120-18	4 000	0.5 mm²	G	A	2.8 x 0.5	AC
LZ126	1 000	0.5 mm²	G	C	2.8 x 0.5	AC
LZ127	1 600	0.5 mm²	G	B	2.8 x 0.5	AC
LZ130-1	610	0.82 mm²	G	C	2.8 x 0.5	AC *
LZ140	610	0.73 mm²	G	B	2.8 x 0.8	AC

* UL-approved

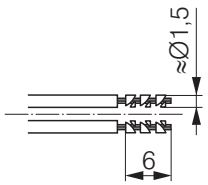
Cable **Straight plug (G)**



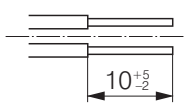
Cable **Angled plug (W)**



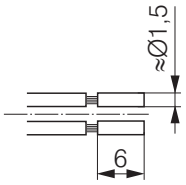
Wire end ferrules **Wire end A**



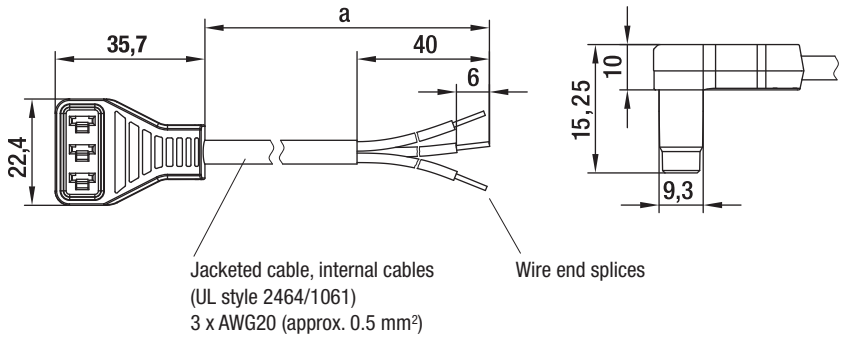
Tin-plated **Wire end B**



Wire end ferrules **Wire end C**



Cable (ESM) / Handheld Programmer



– **Design:** Cable conforms to UL standards sealed plug. Customized cables on request.

Cables for energy-saving motors 115/230 VAC

Part no.	a
13060-4-1040	450
13061-4-1040	1500

Subject to change

– **Easy speed programming**
– **Battery operated**
– **User-friendly navigation menu**
– **Protective cover with folding stand**

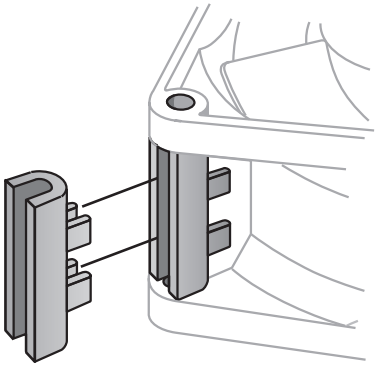
For Energy Saving Motor (ESM) based products

Part no.
CBC 000-AF08-01

Subject to change

Makes quick work of programming the two ESM adjustable operating speeds. Eliminates the need for a PC, software adapter and second cable. Especially for use in production or by sales representatives. Automatic shut-off function for extended battery life.
Mini USB plug for downloading software updates. Batteries, programming cable, and operating instructions included in scope of delivery.

Accessories

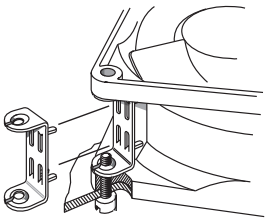


In addition to the accessories and installation parts listed here, ebm-papst also supplies a number of additional, sometimes very special parts for fans. Our company sales team is happy to offer you their expert assistance with all your questions regarding the installation and use of our fans.

Fan series	Part no.
8300	**LZ212 / LZ260**
8400 N	**LZ261**
3400 N	**LZ261**
9000	**LZ210**
4000	**LZ210**
4300	**LZ212 / LZ260**

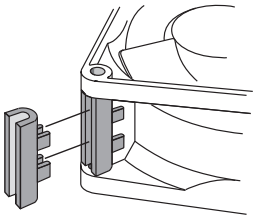
Fan series	Part no.
5100	**LZ210**
5600	**LZ210**
5200	**LZ210**
5900	**LZ210**
7000	**LZ210**
VARIOFAN	**LZ370**

LZ212



Screw clip of rustproof spring steel.
For mounting fans with threaded pin 3.5 DIN EN ISO 1478 (7970).

LZ260/LZ261

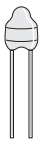


Spacer of fiberglass-reinforced plastic.
For mounting with screws through both fan mounting flanges.

LZ210

Screw clip of hardened steel.
For mounting fans with threaded pin 6-32 UNC or 3.5 DIN 7970.

LZ370

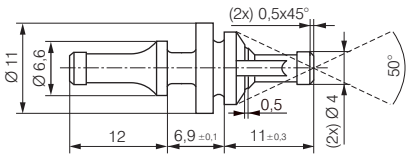


Required performance data:

R_{25}	= 100 KΩ ±5% @25°C
B-value	= 4190 ±2%
P_{max}	= 0,25 W

Temperature sensor for speed-controlled fan operation. Temperature range 30...50 °C.

LZ550

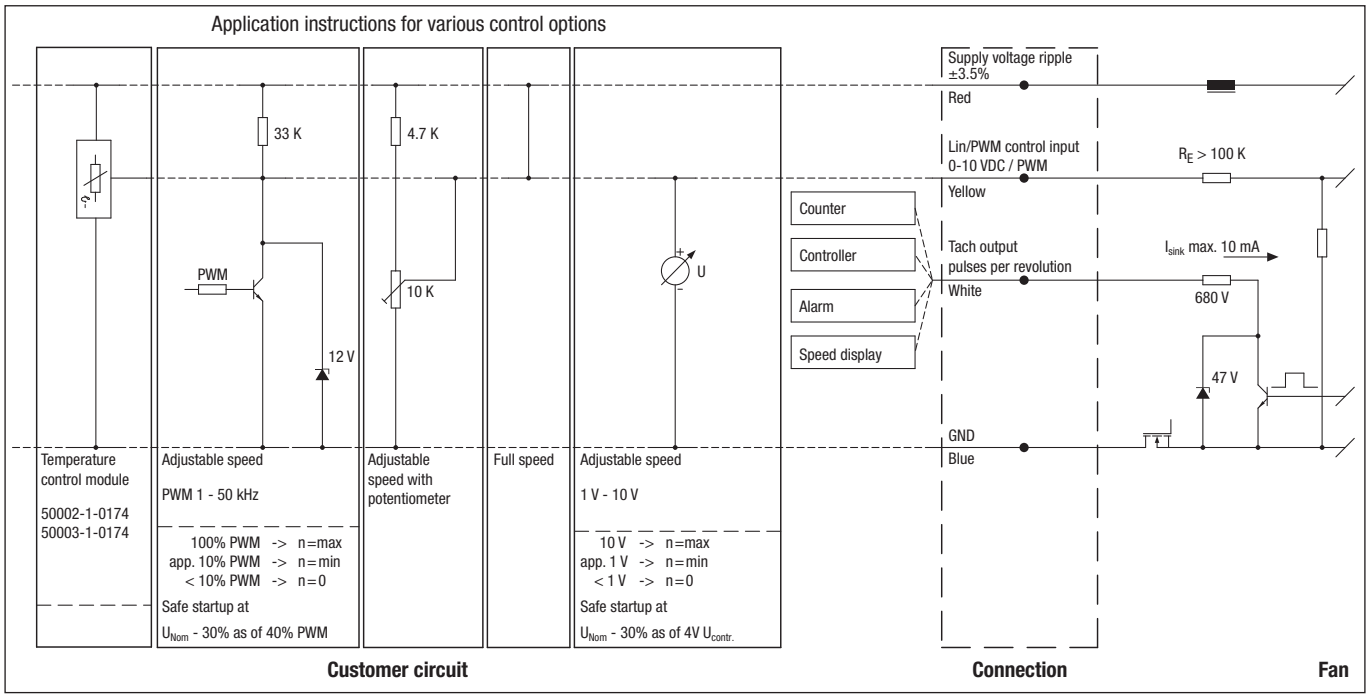


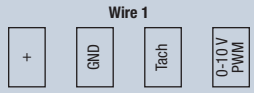
Rubber anti-vibration mounts
for fans with a hole ø of 4.3 ±0.2 mm and flange thickness of 3 to 5.5 mm.
For a carrier plate with a hole ø of 6.5 ±0.15 mm and plate thickness of 1 to 2 mm.

Connection diagrams EC E)

Technical features (nominal voltage 24 / 48 VDC)**:**

- Control input 0-10 VDC / PWM
- Tach output
- Reverse polarity and locked-rotor protection
- Motor current limitation
- Voltage-dependent derating
- Thermal overload protection electronics
- Soft startup





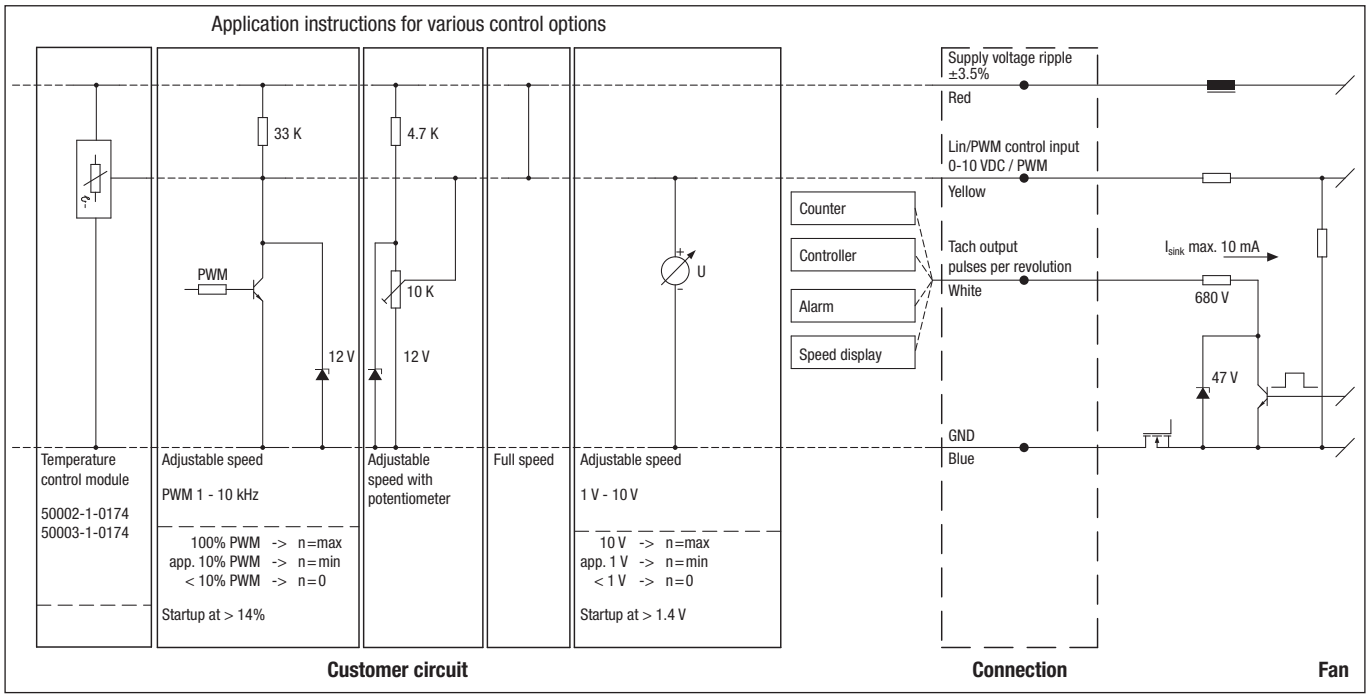
Wire	Connection	Color	Assignment/function
1	+	Red	Supply voltage ripple ±3.5%
	GND	Blue	GND

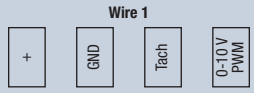
Wire	Connection	Color	Assignment/function
1	Tach	White	Tach output:
	0-10 V / PWM	Yellow	Control input

Connection diagrams EC G)

Technical features (nominal voltage 24 / 48 VDC)**:**

- Control input 0-10 VDC / PWM
- Tach output
- Reverse polarity and locked-rotor protection





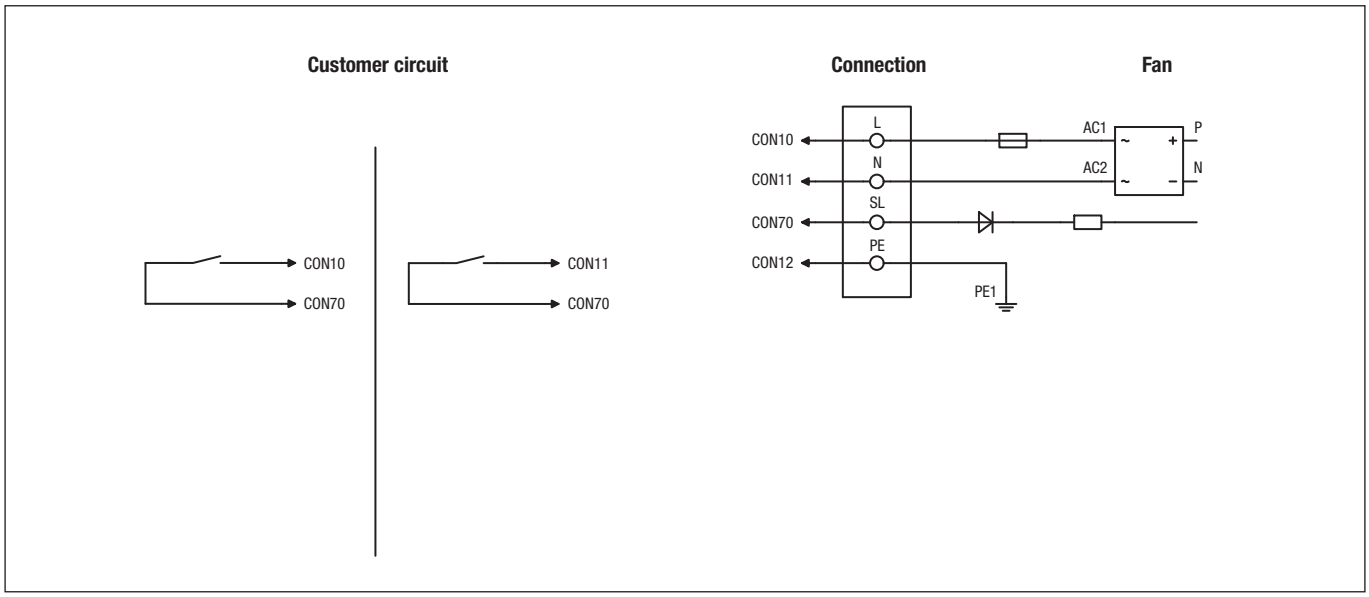
Wire	Connection	Color	Assignment/function
1	+	Red	Supply voltage ripple ±3.5%
	GND	Blue	GND

Wire	Connection	Color	Assignment/function
1	Tach	White	Tach output:
			2 pulses/revolution (M1G045/M1G055)
			3 pulses/revolution (M1G074/M1G084)
	0-10 V / PWM	Yellow	Control input (impedance 100 kV)

Connection diagrams EC H3)

Technical features (M3G 055 with 2 speed stages)**:**

- Speed setting input (230V)
- Thermal overload protection electronics / motor
- Motor current limitation
- Locked-rotor protection
- Soft startup

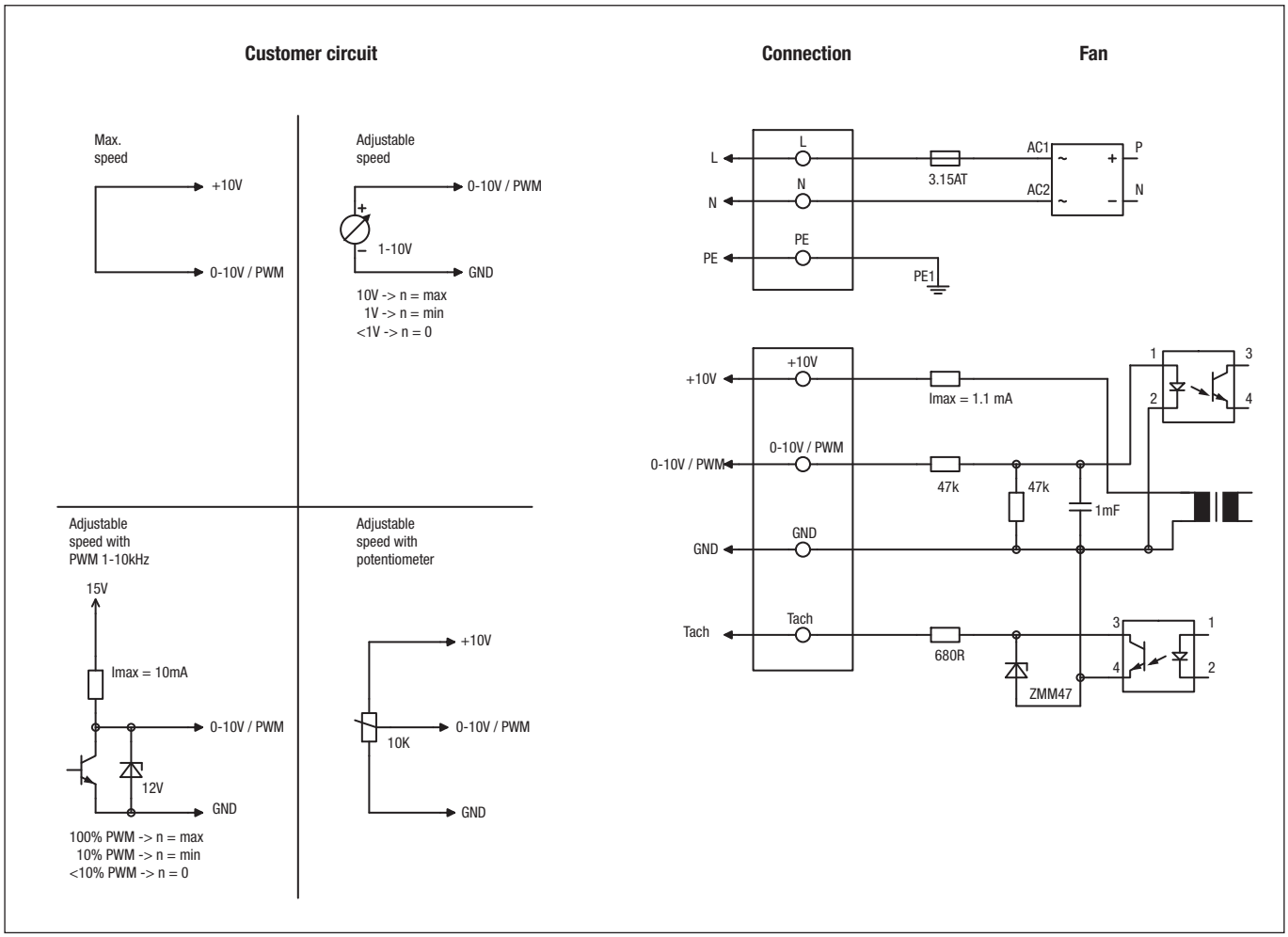


Wire	Connection	Color	Function / assignment
CON10	L	Black	Power supply 230 VAC, 50 - 60 Hz, see type plate for voltage range
CON11	N	Blue	Neutral conductor
CON12	PE	Green/yellow	Ground conductor
CON70	SL	brown	Speed selection: switch open = speed 1; switch closed = speed 2

Connection diagrams EC H4)

Technical features (M3G 055 speed-controlled)**:**

- Output 10 VDC Max. 1.1 mA
- Tach output
- Thermal overload protection electronics / motor
- Motor current limitation
- Soft startup
- Locked-rotor protection
- Control input 0-10 VDC / PWM
- Control interface with SELV potential safely disconnected from the mains



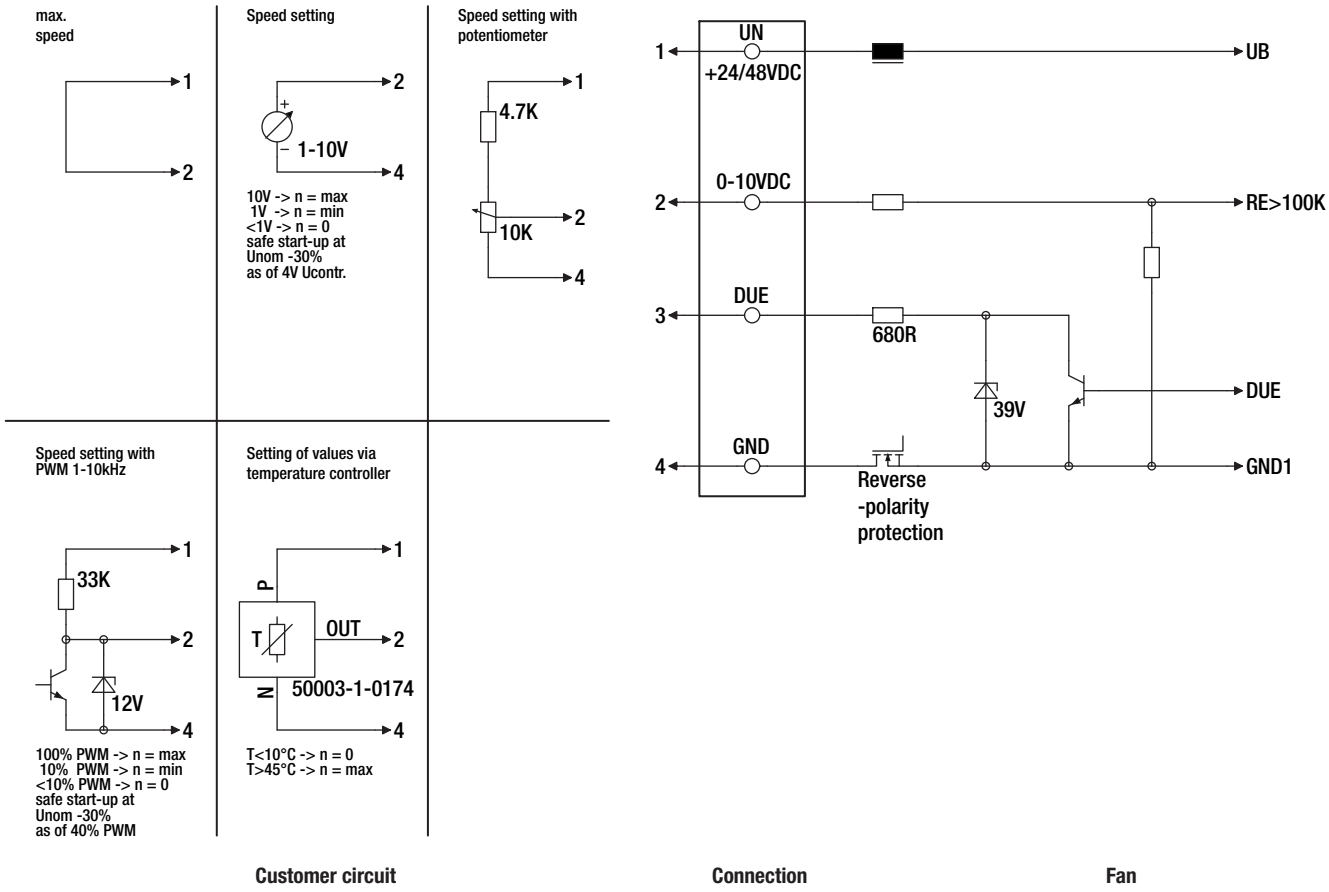
Connection	Color	Function / assignment
L	Black	Power supply 115/230 VAC, 50 - 60 Hz, see type plate for voltage range
N	Blue	Neutral conductor
PE	Green/yellow	Ground conductor
+10V/max.1.1mA	Red	Voltage output +10 V / 1.1 mA, electrically isolated, not short-circuit-proof
Tach	White	Tach output: Open collector, 1 pulse per revolution, electrically isolated
0-10V / PWM	Yellow	Control input 0-10 V or PWM, electrically isolated
GND	Blue	GND - Connection for control interface

Connection diagrams EC J5)

Technical features (nominal voltage 24 / 48 VDC)**:**

- Control input 0-10 VDC / PWM
- Tach output
- Reverse polarity and locked-rotor protection
- Motor current limitation
- Line undervoltage detection
- Soft startup

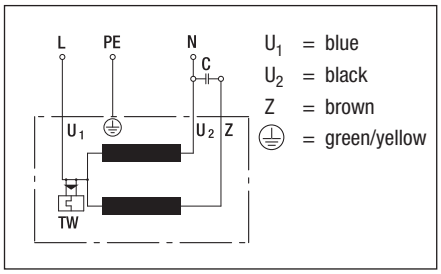
Application instructions for various control options



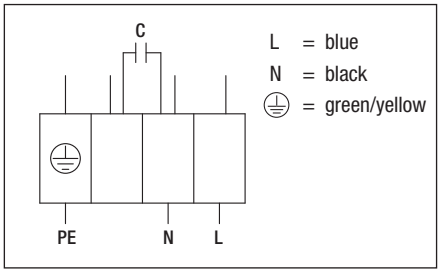
Wire	Connection	Color	Assignment/function
1	UN +24/48 VDC	Red	Power supply 24/48 VDC, supply voltage ripple ± 3.5 %
2	0-10 VDC	Yellow	Control input Re >100 K
3	Tach	White	Tach output, 3 pulses per revolution, Isink max. = 10 mA
4	GND	Blue	Reference ground

Connection diagrams AC A1) / A3) / C2)

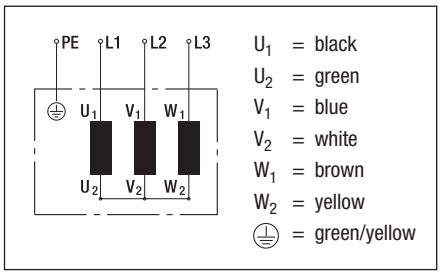
A1) Single-phase capacitor motor (1~ 115/230 VAC power line)
with thermal overload protector wired internally



A3) Single-phase capacitor motor (1~ 115/230 VAC power line)
with thermal overload protector wired internally

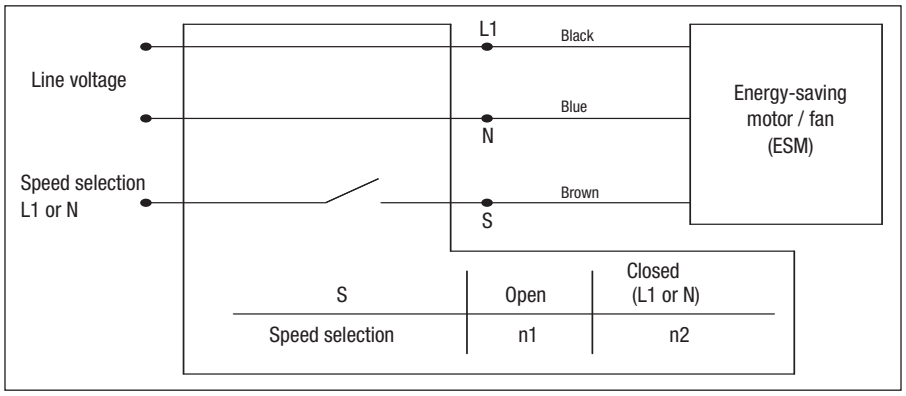


C2) Star connection (3~ 400 VAC power line)
without thermal overload protector



Connection diagrams AC
J7)

J7) Energy-saving motor (ESM) (1~ 115/230 VAC power line)



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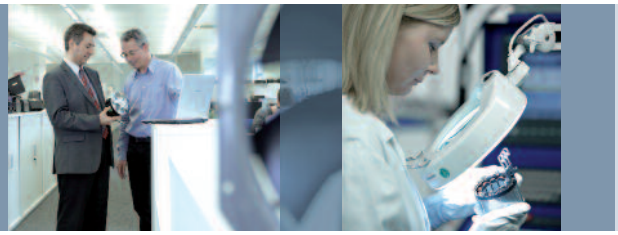

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