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.
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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.

GreenTech means ecologically improving every new product.
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.
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.
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.
**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 ($\Delta T$) of the cooling airflow (from entry to exit of the device to be cooled). The maximum admissible $\Delta T$ depends greatly on the temperature sensitivity of the individual parts of the device.
For example, $\Delta T = 5K$ means that the average cooling airflow leaving the device to be cooled may be only $5^\circ C$ 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. $\Delta T = 20K$), 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 $\Delta T$ 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 $\Delta p_f$, 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**
- $P_V = \text{amount of heat to be dissipated in [W]}$
- $C_{PL} = \text{specific heat capacity of air in [J/kgK]}$
- $\rho_L = 1010 \text{ [J/kgK]}$
- $\rho_L = \text{air density in [kg/m}^3\text{]}$
- $\Delta T = T_1-T_2$ temperature difference in [K] between inlet and outlet
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
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 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.

Recommended capacitors
We recommend using the following capacitors from Rubycon:

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 L10 (40 °C) and L10 (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 L10 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 L10IPC (40 °C)
The new third service life column states the life expectancy L10IPC. 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 L10 (40 °C), L10 (T_max) and L10IPC (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.
**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** [m³/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 $\rho = 1.2$ kg/m³, 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 $\Delta p = \Delta p_1 (\rho_2 / \rho_1)$. 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 $\rho = 1.2$ kg/m³ 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

**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**

<table>
<thead>
<tr>
<th>Air flow</th>
<th>Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 cfm = 1.7 m³/h</td>
<td>1 Pa = $1 \times 10^{-5}$ bar</td>
</tr>
<tr>
<td>1 l/s = 3.6 m³/h</td>
<td>1 inch H₂O = 249 Pa</td>
</tr>
<tr>
<td>1 l/min = 0.06 m³/h</td>
<td>1 mm H₂O = 9.81 Pa</td>
</tr>
</tbody>
</table>

We do not support aerospace applications with our products. German and international patents (registered designs and utility models).

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PAPST, SINTEC, VARIOFAN and Vario-Pro are registered trademarks of ebm-papst St. Georgen GmbH & Co. KG.
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
### 3-digit DC axial fan e.g. 412 FM

<table>
<thead>
<tr>
<th>Housing dimensions (W x H x D)</th>
<th>Value</th>
<th>Edge dim. (W x H)</th>
<th>Installation depth (D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Ø 220 x 200 mm</td>
<td>51 mm</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Ø 92 x 92 mm</td>
<td>25 / 32 / 38 mm</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>119 x 119 mm</td>
<td>25 / 32 / 38 mm</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>127 x 127 mm</td>
<td>38 mm</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>135 x 135 mm</td>
<td>38 mm</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Ø 140 x 140 mm</td>
<td>51 mm</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Ø 172 mm</td>
<td>51 mm</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Ø 172 x 150 / 160 mm</td>
<td>51 mm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>150 x 38 / 55 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>80 x 80 mm</td>
<td>25 / 32 / 38 mm</td>
<td></td>
</tr>
</tbody>
</table>

### Operating voltage

<table>
<thead>
<tr>
<th>Value</th>
<th>Nominal voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>12 V</td>
</tr>
<tr>
<td>4</td>
<td>24 V</td>
</tr>
<tr>
<td>5</td>
<td>5 V</td>
</tr>
<tr>
<td>8</td>
<td>48 V</td>
</tr>
</tbody>
</table>

### 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)
- 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
- 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

### Motor and housing version

<table>
<thead>
<tr>
<th>Value</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4xx fan, 10 / 20 / 25 / 28 mm (D)</td>
</tr>
<tr>
<td>2</td>
<td>6xx fan, 15 / 25 / 32 mm (D)</td>
</tr>
<tr>
<td>3</td>
<td>25 / 28 mm (D)</td>
</tr>
<tr>
<td>4</td>
<td>63x fan, 25 mm (D)</td>
</tr>
<tr>
<td>4</td>
<td>2xx fan, 8 mm (D)</td>
</tr>
</tbody>
</table>

### Connection type and direction of rotation

<table>
<thead>
<tr>
<th>Value</th>
<th>Connection type</th>
<th>Direction of rotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Wires, length = 310 mm</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Wires, length = 310 mm</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Plug, 2.8 x 0.8 mm</td>
<td>Counter-clockwise (CCW)</td>
</tr>
<tr>
<td>5</td>
<td>Plug, 2.8 x 0.8 mm</td>
<td>Clockwise (CW)</td>
</tr>
<tr>
<td>6</td>
<td>Plug, 2.8 x 0.5 mm</td>
<td>Counter-clockwise (CCW)</td>
</tr>
<tr>
<td>7</td>
<td>Plug, 2.8 x 0.5 mm</td>
<td>Clockwise (CW)</td>
</tr>
</tbody>
</table>

### Motor and housing version

<table>
<thead>
<tr>
<th>Value</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>38 mm (D)</td>
</tr>
<tr>
<td>2</td>
<td>38 mm (D)</td>
</tr>
<tr>
<td>3</td>
<td>32 mm (D)</td>
</tr>
<tr>
<td>4</td>
<td>25 / 36 / 51 mm (D)</td>
</tr>
</tbody>
</table>

### Operating voltage

<table>
<thead>
<tr>
<th>Value</th>
<th>Nominal voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>12 V</td>
</tr>
<tr>
<td>4</td>
<td>24 V</td>
</tr>
<tr>
<td>5</td>
<td>36 V</td>
</tr>
<tr>
<td>8</td>
<td>48 V</td>
</tr>
</tbody>
</table>

All measurements are given in mm.

---

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

<table>
<thead>
<tr>
<th>Housing dimensions (W x H x D)</th>
<th>Value</th>
<th>Edge dimensions (W x H)</th>
<th>Installation depth (D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Ø 220 x 200 mm</td>
<td>51 mm</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Ø 92 x 92 mm</td>
<td>25 / 32 / 38 mm</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>119 x 119 mm</td>
<td>25 / 32 / 38 mm</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>127 x 127 mm</td>
<td>38 mm</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>135 x 135 mm</td>
<td>38 mm</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Ø 140 x 140 mm</td>
<td>51 mm</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Ø 172 mm</td>
<td>51 mm</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Ø 172 x 150 / 160 mm</td>
<td>51 mm</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>150 x 38 / 55 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>80 x 80 mm</td>
<td>25 / 32 / 38 mm</td>
<td></td>
</tr>
</tbody>
</table>

### Connection type and direction of rotation

<table>
<thead>
<tr>
<th>Value</th>
<th>Connection type</th>
<th>Direction of rotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Wires, length = 310 mm</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Wires, length = 310 mm</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Plug, 2.8 x 0.8 mm</td>
<td>Counter-clockwise (CCW)</td>
</tr>
<tr>
<td>5</td>
<td>Plug, 2.8 x 0.8 mm</td>
<td>Clockwise (CW)</td>
</tr>
<tr>
<td>6</td>
<td>Plug, 2.8 x 0.5 mm</td>
<td>Counter-clockwise (CCW)</td>
</tr>
<tr>
<td>7</td>
<td>Plug, 2.8 x 0.5 mm</td>
<td>Clockwise (CW)</td>
</tr>
</tbody>
</table>

### Motor and housing version

<table>
<thead>
<tr>
<th>Value</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>38 mm (D)</td>
</tr>
<tr>
<td>2</td>
<td>38 mm (D)</td>
</tr>
<tr>
<td>3</td>
<td>32 mm (D)</td>
</tr>
<tr>
<td>4</td>
<td>25 / 36 / 51 mm (D)</td>
</tr>
</tbody>
</table>

### Operating voltage

<table>
<thead>
<tr>
<th>Value</th>
<th>Nominal voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>12 V</td>
</tr>
<tr>
<td>4</td>
<td>24 V</td>
</tr>
<tr>
<td>5</td>
<td>36 V</td>
</tr>
<tr>
<td>8</td>
<td>48 V</td>
</tr>
</tbody>
</table>

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

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
- HS-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
- 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: VARIFAN
- W: Additional wires (standard length 310 mm)
- X: Mounting bore hole 3.7 mm
- xxx: Variant number

Fan impeller blade height

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

Housing dimensions (W x H)
- Value: Edge dim. (W x H)
- Impeller length: 148 mm
- Total length: 201 mm
- 148: 48 x 50 mm
- 198: 48 x 50 mm
- 303: 48 x 50 mm
- 353: 48 x 50 mm

Impeller diameter in mm

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

All measurements are given in mm.
### 4-digit GreenTech EC tubeaxial fans axial fan e.g. ACi 4420 HH

#### Housing dimensions (W x H x D)

<table>
<thead>
<tr>
<th>Value</th>
<th>Edge dim. (W x H)</th>
<th>Installation depth (D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ø 88.5 mm</td>
<td>130 mm</td>
</tr>
<tr>
<td>3</td>
<td>92 x 92 mm</td>
<td>38 mm</td>
</tr>
<tr>
<td>4</td>
<td>119 x 119 mm</td>
<td>25 / 32 / 38 mm</td>
</tr>
<tr>
<td>6</td>
<td>Ø 172</td>
<td>51 mm</td>
</tr>
<tr>
<td>8</td>
<td>80 x 80 mm</td>
<td>32 mm</td>
</tr>
</tbody>
</table>

#### Operating voltage

<table>
<thead>
<tr>
<th>Value</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Version</th>
<th>Wide voltage range input (85-265 V AC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>115 V</td>
<td>50 / 60 Hz</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>115 V</td>
<td>50 Hz</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>230 V</td>
<td>50 Hz</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Options (various versions possible)

- A: Analog speed control input (input voltage: 0...5 / 0...10V DC)
- D: Reinforced flange corners with through-holes (series 44xx F)
- E: Constant speed control regardless of operating voltage
- F: Economy fan with round flange
- G: Flat construction / frequency-modulated signal
- H: Sleeve bearing
- HH: High speed
- H8: Further increased speed
- I: Economy fan with round flange (NTC behavior, i.e. thermostat)
- 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 (analogue or PWM signal)
- P: PWM speed control input (pulse-width modulated signal)
- R: Moisture protection coating
- S: Circuit board and winding (IP 20), optional stainless steel ball bearing
- T: External temperature sensor (NTC behavior, i.e. thermostat)
- 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)

<table>
<thead>
<tr>
<th>Value</th>
<th>Edge dim. (W x H)</th>
<th>Installation depth (D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>92 x 92 mm</td>
<td>25 / 38 mm</td>
</tr>
<tr>
<td>4</td>
<td>119 x 119 mm</td>
<td>25 / 32 / 38 mm</td>
</tr>
<tr>
<td>5</td>
<td>127 x 127 mm</td>
<td>38 mm</td>
</tr>
<tr>
<td>6</td>
<td>135 x 135 mm</td>
<td>38 mm</td>
</tr>
<tr>
<td>7</td>
<td>140 x 140 mm</td>
<td>51 mm</td>
</tr>
<tr>
<td>8</td>
<td>Ø 172</td>
<td>51 / 52 mm</td>
</tr>
<tr>
<td>9</td>
<td>Ø 175</td>
<td>55 mm</td>
</tr>
<tr>
<td>7</td>
<td>Ø 150 x 172 mm</td>
<td>38 mm</td>
</tr>
<tr>
<td>8</td>
<td>80 x 80 mm</td>
<td>38 mm</td>
</tr>
<tr>
<td>9</td>
<td>119 x 119 mm</td>
<td>25 mm</td>
</tr>
</tbody>
</table>

#### Operating voltage

<table>
<thead>
<tr>
<th>Value</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>115 V</td>
<td>60 Hz</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>115 V</td>
<td>60 Hz</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>115 V</td>
<td>60 Hz</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>115 V</td>
<td>50 Hz</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>230 V</td>
<td>50 Hz</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>115 V / 230 V</td>
<td>50 Hz / 60 Hz</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>230 V</td>
<td>60 Hz</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>230 V</td>
<td>60 Hz</td>
<td></td>
</tr>
</tbody>
</table>

#### Options (various versions possible)

- A: Analog speed control input (input voltage: 0...5 / 0...10V DC)
- E: Reinforced flange corners with through-holes (series 44xx F)
- D: Constant speed control regardless of operating voltage
- F: Economy fan with round flange
- G: Flat construction / frequency-modulated signal
- H: Sleeve bearing
- I: High speed
- HH: Further increased speed
- H8: Additional further increased speeds
- M: Standard or basic speed (only DC fans)
- N: Multi-option speed control input (analogue or PWM signal)
- O: PWM speed control input (pulse-width modulated signal)
- R: Moisture protection coating
- S: Circuit board and winding (IP 20), optional stainless steel ball bearing
- T: External temperature sensor (NTC behavior, i.e. thermostat)
- TD: Turbo drive (extremely powerful 3-phase motor)
- U: Environmentally friendly fan (min. IP 54)
- V: Environmentally friendly fan (min. IP 54)
- W: Additional wires (standard length 310 mm)
- X: Mounting bore hole 3.7 mm
- -xxx: Variant number

#### Motor and housing version

<table>
<thead>
<tr>
<th>Value</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Medium speed</td>
</tr>
<tr>
<td>5</td>
<td>High speed</td>
</tr>
<tr>
<td>6</td>
<td>Medium / High speed</td>
</tr>
<tr>
<td>7</td>
<td>High speed</td>
</tr>
<tr>
<td>8</td>
<td>Medium / High speed</td>
</tr>
<tr>
<td>9</td>
<td>Medium / High speed</td>
</tr>
</tbody>
</table>

#### Bearing type and insulation class

<table>
<thead>
<tr>
<th>Value</th>
<th>Bearing type</th>
<th>Insulation class</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Ball bearing</td>
<td>E</td>
</tr>
<tr>
<td>1</td>
<td>Ball bearing</td>
<td>E</td>
</tr>
<tr>
<td>2</td>
<td>Ball bearing</td>
<td>E</td>
</tr>
<tr>
<td>3</td>
<td>Ball bearing</td>
<td>E</td>
</tr>
<tr>
<td>4</td>
<td>Ball bearing</td>
<td>E</td>
</tr>
<tr>
<td>5</td>
<td>Ball bearing</td>
<td>E</td>
</tr>
<tr>
<td>6</td>
<td>Ball bearing</td>
<td>E</td>
</tr>
<tr>
<td>7</td>
<td>Ball bearing</td>
<td>E</td>
</tr>
<tr>
<td>8</td>
<td>Ball bearing</td>
<td>E</td>
</tr>
<tr>
<td>9</td>
<td>Ball bearing</td>
<td>E</td>
</tr>
</tbody>
</table>

All measurements are given in mm.
## Type code

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

<table>
<thead>
<tr>
<th>Type</th>
<th>Housing and fan impeller versions</th>
<th>Fan impeller blade height</th>
</tr>
</thead>
<tbody>
<tr>
<td>RE</td>
<td>None</td>
<td>Non-curved, no direction of rotation set</td>
</tr>
<tr>
<td>REF</td>
<td>None</td>
<td>Forward/backward-curved impeller blades, flat</td>
</tr>
<tr>
<td>RET</td>
<td>None</td>
<td>Forward-curved impeller blades</td>
</tr>
<tr>
<td>RG</td>
<td>Square</td>
<td>Forward/backward-curved impeller blades</td>
</tr>
<tr>
<td>RL</td>
<td>Round</td>
<td>Forward-curved impeller blades</td>
</tr>
<tr>
<td>RLF</td>
<td>Round</td>
<td>Forward/backward-curved impeller blades, flat</td>
</tr>
</tbody>
</table>

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

**Operating voltage**

<table>
<thead>
<tr>
<th>Value</th>
<th>Nominal voltage</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>/00</td>
<td>115 V</td>
<td>60 Hz</td>
</tr>
<tr>
<td>/06</td>
<td>115 V</td>
<td>60 Hz</td>
</tr>
<tr>
<td>/50</td>
<td>230 V</td>
<td>50 Hz</td>
</tr>
<tr>
<td>/56</td>
<td>230 V</td>
<td>50 Hz</td>
</tr>
</tbody>
</table>

### 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:

<table>
<thead>
<tr>
<th>Type</th>
<th>Housing and fan impeller versions</th>
<th>Impeller diameter in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Axial fan</td>
<td>120 mm</td>
</tr>
<tr>
<td>S</td>
<td>Axial fan with finger guard</td>
<td>120 mm</td>
</tr>
<tr>
<td>W</td>
<td>Axial fan with fan housing</td>
<td>120 mm</td>
</tr>
<tr>
<td>V</td>
<td>Axial combination</td>
<td>120 mm</td>
</tr>
<tr>
<td>R</td>
<td>Centrifugal fan, single inlet</td>
<td>120 mm</td>
</tr>
<tr>
<td>G</td>
<td>Centrifugal blower, single inlet</td>
<td>120 mm</td>
</tr>
<tr>
<td>B</td>
<td>Centrifugal fan, dual inlet</td>
<td>120 mm</td>
</tr>
<tr>
<td>G</td>
<td>Centrifugal blower, dual inlet (with scroll housing)</td>
<td>120 mm</td>
</tr>
<tr>
<td>K</td>
<td>Centrifugal combination</td>
<td>120 mm</td>
</tr>
</tbody>
</table>

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

**Key for mechanical design**

**Key for mechanical variants**

**Key for electrical design**

- Number of poles (AC): 1 = 2-pole
- Number of cores (DC/EC): 1 = 1-phase/core, 2 = 3-phase/core

All measurements are given in mm.
**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 m³/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**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Series</th>
<th>Air Flow</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 x 8</td>
<td>250</td>
<td>23...4.6</td>
<td>31</td>
</tr>
<tr>
<td>40 x 10</td>
<td>400 F</td>
<td>6...9</td>
<td>32</td>
</tr>
<tr>
<td>40 x 20</td>
<td>400</td>
<td>10...13.5</td>
<td>33</td>
</tr>
<tr>
<td>40 x 28</td>
<td>420 J</td>
<td>24...38</td>
<td>34</td>
</tr>
<tr>
<td>50 x 15</td>
<td>500 F</td>
<td>11...20</td>
<td>35</td>
</tr>
<tr>
<td>60 x 15</td>
<td>600 F</td>
<td>19...33</td>
<td>36</td>
</tr>
<tr>
<td>60 x 25</td>
<td>620</td>
<td>21...67</td>
<td>37</td>
</tr>
<tr>
<td>60 x 25</td>
<td>630</td>
<td>40...58</td>
<td>38</td>
</tr>
<tr>
<td>60 x 25</td>
<td>600 N</td>
<td>21...56</td>
<td>39</td>
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<tr>
<td>60 x 25</td>
<td>600 N VARIFAN</td>
<td>16...41</td>
<td>40</td>
</tr>
<tr>
<td>60 x 32</td>
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<td>700 F</td>
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<td>8400 N</td>
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<td>8200 J</td>
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<td>47</td>
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Subject to change

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**Legend**

- ACmaxx / EC fans
- DC centrifugal fans
- DC fans - specials
- DC axial fans
- AC axial fans
- Accessories
- Representatives

**Notes**

- Dimension: mm
- Series: ACmaxx / EC fans
- Air Flow: m³/h
## Axial fans for DC operation

### Overview of air performance

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Series</th>
<th>Air flow</th>
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<tr>
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<td>*1G 300</td>
<td>2320...2345</td>
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<tr>
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<td>4100 N</td>
<td>187...340</td>
<td>64</td>
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<tr>
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<td>6300 TD</td>
<td>270...320</td>
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<td>5300 TD</td>
<td>410...670</td>
<td>68</td>
</tr>
<tr>
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<td>7100 N</td>
<td>308...360</td>
<td>69</td>
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<td>7200 N</td>
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<td>70</td>
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<td>*1G 300</td>
<td>2320...2345</td>
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**Subject to change**
Information

Axial fans for DC operation
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31

c

40 x 10

400 F

yes

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32

c

40 x 20

400

yes

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33

c

40 x 28

420 J

yes

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34

c

50 x 15

500 F

yes

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35

c

60 x 15

600 F

yes

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36

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60 x 25

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39

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600 N VARIOFAN

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600 J

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41

c

70 x 15

700 F

yes

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42

c

80 x 25

8450

yes

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43

c

80 x 25

8400 N

yes

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44

c

80 x 25

8400 N VARIOFAN

yes

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45

c

80 x 32

8300

yes

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46

c

80 x 38

8200 J

yes

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47

c

92 x 25

3400 N

yes

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48

c

92 x 25

3400 N VARIOFAN

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92 x 38

3300 N

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92 x 38

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56

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57

c

119 x 25

4400 FN

c

119 x 32

4300

yes

c

119 x 32

4300 VARIOFAN

yes

/

/

DC centrifugal fans

yes

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

DC fans - specials

250

ACmaxx / EC fans

Series

c 25 x 8

AC axial fans

mm

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.

Subject to change

Accessories

AC centrifugal fans

Sleeve bearings
Ball bearings

29

2016-01

– not yet available
• Available

Representatives

Axial fans

DC axial fans

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IP 68

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Overview of technically feasible designs


Axial fans for DC operation
Overview of technically feasible designs

<table>
<thead>
<tr>
<th>Dimension</th>
<th>VIF, UL, CSA</th>
<th>Start, stop, run-back, braking</th>
<th>Start signal</th>
<th>Stop signal</th>
<th>Alarm relay inspeed level</th>
<th>FPM temperature sensor</th>
<th>Analog speed sensor</th>
<th>Analog current sensor</th>
<th>Motor overspeed sensor</th>
<th>P. F.</th>
<th>Extension or return of voltage</th>
<th>Page</th>
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<tbody>
<tr>
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</tr>
</tbody>
</table>
| Subject to alterations

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

- **Material:** Housing: GRP<sup>1)</sup> (PBT)
  - Impeller: GRP<sup>1)</sup> (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:**
  - Speed signal
  - Moisture protection

---

**Series 250**

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow m³/h</th>
<th>Air flow cfm</th>
<th>Nominal voltage VDC</th>
<th>Voltage range</th>
<th>Sound pressure level dB(A)</th>
<th>Bel(A)</th>
<th>Power consumption Watts</th>
<th>RPM-1</th>
<th>Nominal speed</th>
<th>Temperature range °C</th>
<th>Service life L&lt;sub&gt;10&lt;/sub&gt; (20 °C) Hours</th>
<th>Hours</th>
<th>Sound power level dB(A)</th>
<th>Sound pressure level dB(A)</th>
<th>Temperature range °C</th>
<th>Service life L&lt;sub&gt;10&lt;/sub&gt; (60 °C) Hours</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>255 M</td>
<td>2.3</td>
<td>1.2</td>
<td>5</td>
<td>4.5...5.5</td>
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<td>-10...+70</td>
<td>45 000 / 17 500</td>
<td>47 500</td>
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<td>255 N</td>
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<td>1.9</td>
<td>5</td>
<td>4.5...5.5</td>
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<td>40 000 / 15 000</td>
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<td>4.4</td>
<td>0.6</td>
<td>12 000</td>
<td>-10...+55</td>
<td>35 000 / 15 000*</td>
<td>37 500</td>
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<td></td>
</tr>
<tr>
<td>252 N</td>
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<td>12</td>
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<td>15</td>
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<td>9 000</td>
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<td>40 000 / 15 000</td>
<td>42 500</td>
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</tbody>
</table>

* at 55 °C

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Subject to change

---

Air performance measured as per: ISO 5801. Installation category A, without accidental contact. Noise: Total sound power level L<sub>WA</sub> ISO 10360-2 measured on a hemisphere with a radius of 2 m. Sound pressure level L<sub>PA</sub> 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

---

1) Fiberglass-reinforced plastic

---

Accessories

DC centrifugal fans

DC fans - specials

AC axial fans

AC centrifugal fans

Representatives

DC axial fans

ACmaxx / EC fans
Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level $L_{WA}$ ISO 10300 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

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

Material:
- Housing: GRP<sup>1)</sup> (PBT)
- Impeller: GRP<sup>1)</sup> (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

---

<table>
<thead>
<tr>
<th>Type</th>
<th>m&lt;sup&gt;3&lt;/sup&gt;/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm&lt;sup&gt;-1&lt;/sup&gt;</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>405 F</td>
<td>8</td>
<td>4.7</td>
<td>5</td>
<td>4.5...5.5</td>
<td>22.1</td>
<td>4.4</td>
<td>0.7</td>
<td>5 400</td>
<td>-20...+70</td>
<td>45 000 / 17 500</td>
<td>47 500</td>
</tr>
<tr>
<td>405 FH</td>
<td>9</td>
<td>5.3</td>
<td>5</td>
<td>4.5...5.5</td>
<td>26.0</td>
<td>4.6</td>
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<td>45 000 / 17 500</td>
<td>47 500</td>
</tr>
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<td>12</td>
<td>10...14</td>
<td>17.0</td>
<td>3.8</td>
<td>0.5</td>
<td>4 300</td>
<td>-20...+70</td>
<td>45 000 / 17 500</td>
<td>47 500</td>
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<td>412 F</td>
<td>8</td>
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<td>12</td>
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<td>22.1</td>
<td>4.4</td>
<td>0.7</td>
<td>5 400</td>
<td>-20...+70</td>
<td>45 000 / 17 500</td>
<td>47 500</td>
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<td>5.3</td>
<td>12</td>
<td>10...14</td>
<td>26.0</td>
<td>4.6</td>
<td>0.8</td>
<td>6 000</td>
<td>-20...+70</td>
<td>45 000 / 17 500</td>
<td>47 500</td>
</tr>
<tr>
<td>414 F</td>
<td>8</td>
<td>4.7</td>
<td>24</td>
<td>20...28</td>
<td>22.1</td>
<td>4.4</td>
<td>0.8</td>
<td>5 400</td>
<td>-20...+70</td>
<td>45 000 / 17 500</td>
<td>47 500</td>
</tr>
<tr>
<td>414 FH</td>
<td>9</td>
<td>5.3</td>
<td>24</td>
<td>21.6...26.4</td>
<td>26.0</td>
<td>4.4</td>
<td>0.9</td>
<td>6 000</td>
<td>-20...+70</td>
<td>45 000 / 17 500</td>
<td>47 500</td>
</tr>
<tr>
<td>Model with temperature range up to +85 °C.</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>412 FM-074</td>
<td>6</td>
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<td>12</td>
<td>10...14</td>
<td>17.0</td>
<td>3.8</td>
<td>0.4</td>
<td>4 300</td>
<td>-20...+85</td>
<td>45 000 / 17 500</td>
<td>47 500</td>
</tr>
<tr>
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<td>8</td>
<td>4.7</td>
<td>12</td>
<td>10...14</td>
<td>22.1</td>
<td>4.4</td>
<td>0.6</td>
<td>5 400</td>
<td>-20...+85</td>
<td>45 000 / 17 500</td>
<td>47 500</td>
</tr>
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<td>412 FH-132</td>
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<td>5.3</td>
<td>12</td>
<td>10...14</td>
<td>26.0</td>
<td>4.6</td>
<td>0.8</td>
<td>6 000</td>
<td>-20...+85</td>
<td>45 000 / 17 500</td>
<td>47 500</td>
</tr>
</tbody>
</table>

Subject to change

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Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level $L_{WA}$ ISO 10300 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

DC axial fans

- Material:
  - Housing: GRP<sup>1)</sup> (PBT)
  - Impeller: GRP<sup>1)</sup> (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

---

Series 400 F

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>m&lt;sup&gt;3&lt;/sup&gt;/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm&lt;sup&gt;-1&lt;/sup&gt;</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>405 F</td>
<td>8</td>
<td>4.7</td>
<td>5</td>
<td>4.5...5.5</td>
<td>22.1</td>
<td>4.4</td>
<td>0.7</td>
<td>5 400</td>
<td>-20...+70</td>
<td>45 000 / 17 500</td>
<td>47 500</td>
</tr>
<tr>
<td>405 FH</td>
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<td>5.3</td>
<td>5</td>
<td>4.5...5.5</td>
<td>26.0</td>
<td>4.6</td>
<td>0.9</td>
<td>6 000</td>
<td>-20...+70</td>
<td>45 000 / 17 500</td>
<td>47 500</td>
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<td>412 FM</td>
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<td>12</td>
<td>10...14</td>
<td>17.0</td>
<td>3.8</td>
<td>0.5</td>
<td>4 300</td>
<td>-20...+70</td>
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<td>47 500</td>
</tr>
<tr>
<td>412 F</td>
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<td>4.7</td>
<td>12</td>
<td>10...14</td>
<td>22.1</td>
<td>4.4</td>
<td>0.7</td>
<td>5 400</td>
<td>-20...+70</td>
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<td>47 500</td>
</tr>
<tr>
<td>412 FH</td>
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<td>5.3</td>
<td>12</td>
<td>10...14</td>
<td>26.0</td>
<td>4.6</td>
<td>0.8</td>
<td>6 000</td>
<td>-20...+70</td>
<td>45 000 / 17 500</td>
<td>47 500</td>
</tr>
<tr>
<td>414 F</td>
<td>8</td>
<td>4.7</td>
<td>24</td>
<td>20...28</td>
<td>22.1</td>
<td>4.4</td>
<td>0.8</td>
<td>5 400</td>
<td>-20...+70</td>
<td>45 000 / 17 500</td>
<td>47 500</td>
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<td>414 FH</td>
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<td>5.3</td>
<td>24</td>
<td>21.6...26.4</td>
<td>26.0</td>
<td>4.4</td>
<td>0.9</td>
<td>6 000</td>
<td>-20...+70</td>
<td>45 000 / 17 500</td>
<td>47 500</td>
</tr>
<tr>
<td>Model with temperature range up to +85 °C.</td>
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<td>412 FM-074</td>
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<td>3.5</td>
<td>12</td>
<td>10...14</td>
<td>17.0</td>
<td>3.8</td>
<td>0.4</td>
<td>4 300</td>
<td>-20...+85</td>
<td>45 000 / 17 500</td>
<td>47 500</td>
</tr>
<tr>
<td>412 F-130</td>
<td>8</td>
<td>4.7</td>
<td>12</td>
<td>10...14</td>
<td>22.1</td>
<td>4.4</td>
<td>0.6</td>
<td>5 400</td>
<td>-20...+85</td>
<td>45 000 / 17 500</td>
<td>47 500</td>
</tr>
<tr>
<td>412 FH-132</td>
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<td>5.3</td>
<td>12</td>
<td>10...14</td>
<td>26.0</td>
<td>4.6</td>
<td>0.8</td>
<td>6 000</td>
<td>-20...+85</td>
<td>45 000 / 17 500</td>
<td>47 500</td>
</tr>
</tbody>
</table>

Subject to change

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Finger guards from p. 242

Notes:
- Total sound power level $L_{WA}$ ISO 10300 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

Subject to change
DC axial fans

Max. 13.5 m³/h

- **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

1) Fiberglass-reinforced plastic

### Series 400

#### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow m³/h</th>
<th>Air flow cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>Sound pressure level dB(A)</th>
<th>Sound power level Be(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>405</td>
<td>10.0</td>
<td>5.9</td>
<td>5</td>
<td>4.5...5.5</td>
<td>18</td>
<td>3.8</td>
<td>0.9</td>
<td>6 000</td>
<td>-20...+70</td>
<td>50 000 / 20 000</td>
<td>52 500</td>
</tr>
<tr>
<td>412</td>
<td>10.0</td>
<td>5.9</td>
<td>12</td>
<td>10...14</td>
<td>18</td>
<td>3.8</td>
<td>0.8</td>
<td>6 000</td>
<td>-20...+70</td>
<td>50 000 / 20 000</td>
<td>52 500</td>
</tr>
<tr>
<td>412 H</td>
<td>13.5</td>
<td>7.9</td>
<td>12</td>
<td>10...14</td>
<td>29</td>
<td>4.7</td>
<td>1.6</td>
<td>8 100</td>
<td>-20...+60</td>
<td>45 000 / 17 500</td>
<td>47 500</td>
</tr>
<tr>
<td>414</td>
<td>10.0</td>
<td>5.9</td>
<td>24</td>
<td>20...28</td>
<td>18</td>
<td>3.8</td>
<td>1.0</td>
<td>6 000</td>
<td>-20...+70</td>
<td>50 000 / 20 000</td>
<td>52 500</td>
</tr>
<tr>
<td>414 H</td>
<td>13.5</td>
<td>7.9</td>
<td>24</td>
<td>20...26.5</td>
<td>29</td>
<td>4.7</td>
<td>1.7</td>
<td>8 100</td>
<td>-20...+60</td>
<td>45 000 / 17 500</td>
<td>47 500</td>
</tr>
<tr>
<td>412-099</td>
<td>10.0</td>
<td>5.9</td>
<td>12</td>
<td>10...14</td>
<td>18</td>
<td>3.8</td>
<td>0.8</td>
<td>6 000</td>
<td>-20...+85</td>
<td>50 000 / 20 000</td>
<td>52 500</td>
</tr>
</tbody>
</table>

Model with temperature range up to +85 °C.

Subject to change

---

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level LWA 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

---

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

---

[DC axial fans]

[DC centrifugal fans]

[DC fans – specials]

[AC axial fans]

[AC centrifugal fans]

[Accessories]

[Representatives]

---

Finger guards from p. 242
Max. 38 m³/h

DC axial fans

- **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

---

**Series 420 J**

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>422 JM</td>
<td>24</td>
<td>14.2</td>
<td>12</td>
<td>8...13.8</td>
<td>42</td>
<td>5.5</td>
<td>2.4</td>
<td>11 400</td>
<td>-20...+70</td>
<td>75 000 / 37 500</td>
<td>127 500</td>
</tr>
<tr>
<td>422 JN</td>
<td>31</td>
<td>18.3</td>
<td>12</td>
<td>8...13.8</td>
<td>48</td>
<td>6.0</td>
<td>4.1</td>
<td>14 250</td>
<td>-20...+70</td>
<td>67 500 / 35 000</td>
<td>115 000</td>
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<tr>
<td>422 JH</td>
<td>38</td>
<td>22.4</td>
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<td>8...13.8</td>
<td>54</td>
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<td>6.9</td>
<td>17 250</td>
<td>-20...+70</td>
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<td>14.2</td>
<td>24</td>
<td>16...28</td>
<td>42</td>
<td>5.5</td>
<td>2.7</td>
<td>11 400</td>
<td>-20...+70</td>
<td>75 000 / 37 500</td>
<td>127 500</td>
</tr>
<tr>
<td>424 JN</td>
<td>31</td>
<td>18.3</td>
<td>24</td>
<td>16...28</td>
<td>48</td>
<td>6.0</td>
<td>4.3</td>
<td>14 250</td>
<td>-20...+70</td>
<td>67 500 / 35 000</td>
<td>115 000</td>
</tr>
<tr>
<td>424 JH</td>
<td>38</td>
<td>22.4</td>
<td>24</td>
<td>16...26.4</td>
<td>54</td>
<td>6.6</td>
<td>6.9</td>
<td>17 250</td>
<td>-20...+65</td>
<td>60 000 / 32 500</td>
<td>102 500</td>
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</table>

Subject to change

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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](http://www.ebmpapst.com/general conditions)

---

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](http://www.ebmpapst.com/general conditions)
DC axial fans

- Material: Housing: GRP (PBT) Impeller: GRP (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

1) Fiberglass-reinforced plastic

Max. 20 m³/h

Series 500 F

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow m³/h</th>
<th>Air flow cfm</th>
<th>Nominal voltage VDC</th>
<th>Sound pressure level dB(A)</th>
<th>Power consumption Watts</th>
<th>Nominal speed rpm⁻¹</th>
<th>Temperature range °C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>512 F</td>
<td>20</td>
<td>11.8</td>
<td>10.8...13.2</td>
<td>4.5</td>
<td>0.8</td>
<td>5 000</td>
<td>-20...+70</td>
<td>50 000 / 20 000</td>
<td>52 500</td>
</tr>
<tr>
<td>514 F</td>
<td>20</td>
<td>11.8</td>
<td>21.6...26.4</td>
<td>4.5</td>
<td>0.9</td>
<td>5 000</td>
<td>-20...+70</td>
<td>50 000 / 20 000</td>
<td>52 500</td>
</tr>
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<td>512 FL-547</td>
<td>11</td>
<td>6.5</td>
<td>10.2...13.8</td>
<td>3.7</td>
<td>0.4</td>
<td>3 000</td>
<td>-20...+85</td>
<td>50 000 / 20 000</td>
<td>52 500</td>
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<td>10.8...13.2</td>
<td>4.5</td>
<td>0.9</td>
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<td>-20...+85</td>
<td>50 000 / 20 000</td>
<td>52 500</td>
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</table>

Model with temperature range up to +85 °C.

Subject to change

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

Possible special versions:
- Speed signal
- Go / NoGo alarm
- PWM control input
- Moisture protection

![Fan Image](image-url)
Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level $L_{WA}$ ISO 10300 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

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow</th>
<th>Air flow</th>
<th>Nominal voltage</th>
<th>Voltage range</th>
<th>Sound pressure level</th>
<th>Sound power level</th>
<th>Bearing type</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L10 (20 °C)</th>
<th>Outage life L10 (60 °C)</th>
<th>Service life L10 (80 °C)</th>
<th>Service life L10 (85 °C)</th>
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<tbody>
<tr>
<td>605 F</td>
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<td>4.5...5.2</td>
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<td>4.4</td>
<td></td>
<td>1.1</td>
<td>4 000</td>
<td>-20...+50</td>
<td>50 000 / 20 000</td>
<td>52 500</td>
<td>52 500</td>
<td>52 500</td>
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<td>19</td>
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<td>12</td>
<td>11.5...13.2</td>
<td>16</td>
<td>3.6</td>
<td></td>
<td>0.4</td>
<td>2 650</td>
<td>-20...+70</td>
<td>50 000 / 20 000</td>
<td>52 500</td>
<td>52 500</td>
<td>52 500</td>
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<tr>
<td>612 F</td>
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<td>17.1</td>
<td>12</td>
<td>10.8...13.2</td>
<td>27</td>
<td>4.4</td>
<td></td>
<td>1.0</td>
<td>3 900</td>
<td>-20...+70</td>
<td>50 000 / 20 000</td>
<td>52 500</td>
<td>52 500</td>
<td>52 500</td>
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<tr>
<td>612 FH</td>
<td>33</td>
<td>19.4</td>
<td>12</td>
<td>10.0...13.2</td>
<td>31</td>
<td>4.8</td>
<td></td>
<td>1.5</td>
<td>4 500</td>
<td>-20...+60</td>
<td>45 000 / 17 500</td>
<td>47 500</td>
<td>47 500</td>
<td>47 500</td>
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<tr>
<td>614 F</td>
<td>29</td>
<td>17.1</td>
<td>24</td>
<td>21.6...26.4</td>
<td>27</td>
<td>4.4</td>
<td></td>
<td>1.1</td>
<td>3 900</td>
<td>-20...+70</td>
<td>50 000 / 20 000</td>
<td>52 500</td>
<td>52 500</td>
<td>52 500</td>
</tr>
<tr>
<td>614 F/39 H-691</td>
<td>33</td>
<td>19.4</td>
<td>24</td>
<td>16...28</td>
<td>31</td>
<td>4.8</td>
<td></td>
<td>1.4</td>
<td>4 500</td>
<td>-20...+60</td>
<td>45 000 / 17 500</td>
<td>47 500</td>
<td>47 500</td>
<td>47 500</td>
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</table>

Model with temperature range up to +80 / 85 °C.

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<th>Air flow</th>
<th>Nominal voltage</th>
<th>Voltage range</th>
<th>Sound pressure level</th>
<th>Sound power level</th>
<th>Bearing type</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L10 (20 °C)</th>
<th>Outage life L10 (60 °C)</th>
<th>Service life L10 (80 °C)</th>
<th>Service life L10 (85 °C)</th>
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<td>11.2</td>
<td>12</td>
<td>11.5...14</td>
<td>16</td>
<td>3.6</td>
<td></td>
<td>0.5</td>
<td>2 650</td>
<td>-20...+85</td>
<td>50 000 / 20 000</td>
<td>52 500</td>
<td>52 500</td>
<td>52 500</td>
</tr>
<tr>
<td>612 F-637</td>
<td>29</td>
<td>17.1</td>
<td>12</td>
<td>10.8...12.6</td>
<td>27</td>
<td>4.4</td>
<td></td>
<td>1.0</td>
<td>3 900</td>
<td>-20...+80</td>
<td>50 000 / 20 000</td>
<td>52 500</td>
<td>52 500</td>
<td>52 500</td>
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Subject to change
Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level LWA ISO 10300 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

**Series 620**

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>VDC</th>
<th>VDC</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>622 L</td>
<td>21</td>
<td>12</td>
<td>8...15</td>
<td>20</td>
<td>3.7</td>
<td>0.5</td>
<td>3 200</td>
<td>-20...+85</td>
<td>80 000 / 20 000</td>
<td>135 000 ①</td>
</tr>
<tr>
<td>622 M</td>
<td>30</td>
<td>17.7</td>
<td>8...15</td>
<td>29</td>
<td>4.3</td>
<td>1.0</td>
<td>4 550</td>
<td>-20...+75</td>
<td>77 500 / 30 000</td>
<td>130 000 ②</td>
</tr>
<tr>
<td>622 N</td>
<td>40</td>
<td>23.5</td>
<td>8...15</td>
<td>35</td>
<td>4.7</td>
<td>1.9</td>
<td>6 100</td>
<td>-20...+70</td>
<td>72 500 / 35 000</td>
<td>122 500 ③</td>
</tr>
<tr>
<td>622 H</td>
<td>46</td>
<td>27.1</td>
<td>8...15</td>
<td>39</td>
<td>5.1</td>
<td>2.3</td>
<td>6 850</td>
<td>-20...+70</td>
<td>70 000 / 35 000</td>
<td>117 500 ④</td>
</tr>
<tr>
<td>622 HH</td>
<td>56</td>
<td>33.0</td>
<td>8...15</td>
<td>43</td>
<td>5.6</td>
<td>3.5</td>
<td>8 200</td>
<td>-20...+70</td>
<td>65 000 / 32 500</td>
<td>110 000 ⑤</td>
</tr>
<tr>
<td>622/2 H3P</td>
<td>67</td>
<td>39.4</td>
<td>8...13.2</td>
<td>48</td>
<td>5.9</td>
<td>5.5</td>
<td>9 700</td>
<td>-20...+60</td>
<td>52 500 / 32 500</td>
<td>87 500 ⑥</td>
</tr>
<tr>
<td>624 L</td>
<td>21</td>
<td>12.4</td>
<td>24</td>
<td>18...28</td>
<td>20</td>
<td>3.7</td>
<td>1.0</td>
<td>3 200</td>
<td>-20...+70</td>
<td>80 000 / 40 000</td>
</tr>
<tr>
<td>624 M</td>
<td>30</td>
<td>17.7</td>
<td>24</td>
<td>12...28</td>
<td>29</td>
<td>4.3</td>
<td>1.5</td>
<td>4 550</td>
<td>-20...+70</td>
<td>77 500 / 37 500</td>
</tr>
<tr>
<td>624 N</td>
<td>40</td>
<td>23.5</td>
<td>24</td>
<td>12...28</td>
<td>35</td>
<td>4.7</td>
<td>2.2</td>
<td>6 100</td>
<td>-20...+70</td>
<td>72 500 / 35 000</td>
</tr>
<tr>
<td>624 H</td>
<td>46</td>
<td>27.1</td>
<td>24</td>
<td>18...28</td>
<td>39</td>
<td>5.1</td>
<td>2.4</td>
<td>6 850</td>
<td>-20...+70</td>
<td>70 000 / 35 000</td>
</tr>
<tr>
<td>624 HH</td>
<td>56</td>
<td>33.0</td>
<td>24</td>
<td>18...28</td>
<td>43</td>
<td>5.6</td>
<td>3.6</td>
<td>8 200</td>
<td>-20...+70</td>
<td>65 000 / 32 500</td>
</tr>
<tr>
<td>624/2 H3P</td>
<td>67</td>
<td>39.4</td>
<td>24</td>
<td>18...28</td>
<td>48</td>
<td>5.9</td>
<td>5.6</td>
<td>9 700</td>
<td>-20...+60</td>
<td>52 500 / 32 500</td>
</tr>
<tr>
<td>628 HH</td>
<td>56</td>
<td>33.0</td>
<td>48</td>
<td>36...60</td>
<td>43</td>
<td>5.6</td>
<td>4.2</td>
<td>8 200</td>
<td>-20...+70</td>
<td>65 000 / 32 500</td>
</tr>
</tbody>
</table>

Subject to change

---

**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

---

**Material:** Housing: GRP 1) (PBT)
Impeller: GRP 1) (PA)

---

1) Fiberglass-reinforced plastic.
DC axial fans

- Material: Housing: GRP<sup>1)</sup> (PBT)
- 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

### Series 630

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>632 NU</td>
<td>40</td>
<td>23.5</td>
<td>12</td>
<td>6...15</td>
<td>33</td>
<td>5.2</td>
<td>1.8</td>
<td>5900</td>
<td>-20...+70</td>
<td>85 000 / 42 500</td>
<td>142 500</td>
</tr>
<tr>
<td>632/2 HPU</td>
<td>44</td>
<td>25.9</td>
<td>12</td>
<td>10.8...13.2</td>
<td>35</td>
<td>5.4</td>
<td>1.5</td>
<td>6 300</td>
<td>-20...+70</td>
<td>85 000 / 42 500</td>
<td>142 500</td>
</tr>
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<td>634 NU</td>
<td>40</td>
<td>23.5</td>
<td>24</td>
<td>12...30</td>
<td>34</td>
<td>5.1</td>
<td>1.6</td>
<td>5 900</td>
<td>-20...+70</td>
<td>85 000 / 42 500</td>
<td>142 500</td>
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<tr>
<td>634 HHU</td>
<td>58</td>
<td>34.1</td>
<td>24</td>
<td>18...28</td>
<td>44</td>
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<td>3.2</td>
<td>8 500</td>
<td>-20...+70</td>
<td>75 000 / 37 500</td>
<td>127 500</td>
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<td>634/2 HHPU</td>
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<td>18...28</td>
<td>44</td>
<td>6.1</td>
<td>3.2</td>
<td>8 500</td>
<td>-20...+70</td>
<td>75 000 / 37 500</td>
<td>127 500</td>
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<td>638/2 HPU</td>
<td>44</td>
<td>25.9</td>
<td>48</td>
<td>40...60</td>
<td>35</td>
<td>5.4</td>
<td>1.8</td>
<td>6 300</td>
<td>-20...+70</td>
<td>85 000 / 42 500</td>
<td>142 500</td>
</tr>
</tbody>
</table>

Subject to change

---

<sup>1</sup> Fiberglass-reinforced plastic.
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. 66 g
- Weight:

1) Fiberglass-reinforced plastic

Series 600 N

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>Voltage range</th>
<th>Sound pressure level</th>
<th>Sound power level</th>
<th>Watts</th>
<th>rpm</th>
<th>°C</th>
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<td>12.4</td>
<td>8...15</td>
<td>16</td>
<td>3.6</td>
<td>0.4</td>
<td>2500</td>
<td>-20...+85</td>
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<td>37</td>
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<td>8...15</td>
<td>41</td>
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<td>1.0</td>
<td>2500</td>
<td>-20...+70</td>
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<tr>
<td>614 NL</td>
<td>21</td>
<td>12.4</td>
<td>18...28</td>
<td>16</td>
<td>3.6</td>
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</table>

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

Nominal voltage: 66 g

Maximum air flow: 56 m³/h

Air performance measured according to ISO 5801. Installation category A, without contact protection.
Noise: Total sound power level \(L_{pA}\) 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
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

<table>
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<tr>
<th>Type</th>
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<th>VDC</th>
<th>VDC</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm(^{-1})</th>
<th>°C</th>
<th>Hours</th>
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<td>5 100</td>
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<td>117 500</td>
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</table>

Subject to change

- 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.

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

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

Air performance measured according to ISO 5801. Installation category A, without contact protection.
Noise: Total sound power level LWA\(^2\) measured on half-sphere 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](http://www.ebmpapst.com/general-conditions).

V types

I types

Finger guards

from p. 242
Max. 82 m³/h

**DC axial fans**

- **Material:** Housing: GRP² (PBT)
  Impeller: GRP² (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

### Series 600 J

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<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
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| 612 JH  | 70   | 41.1| 12  | 7...
| 614 JH  | 70   | 41.1| 24  | 14...
| 618 JH  | 70   | 41.1| 48  | 36...

Fan types with streamer and integrated guard grille.

- 614 J/2 HHP
- 618 J/2 HHP

Subject to change

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1) Fiberglass-reinforced plastic.

---

![Rear view of types 614 J/2HHP and 618 J/2HHP](image-url)

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level LwA, ISO 10362 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](http://www.ebmpapst.com/general conditions)
Air performance measured according to: ISO 5801. Installation category A, without contact protection. Noise: Total sound power level $L_{WA}$ ISO 10300 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

### DC axial fans

- 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

#### Series 700 F

**Nominal data**

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<th>Type</th>
<th>Air flow m(^3)/h</th>
<th>cfm</th>
<th>Voltage range</th>
<th>Sound pressure level dB(A)</th>
<th>Sound power level Bel(A)</th>
<th>Power consumption Watts</th>
<th>rpm(^{-1})</th>
<th>Temperature range °C</th>
<th>Service life L(_{10}) (40 °C)</th>
<th>Service life L(<em>{10}) (T(</em>{\text{max}}))</th>
<th>Life expectancy L(_{10}) (40 °C)</th>
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<td>8...13.8</td>
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<td>-20...+70</td>
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<td>5 300</td>
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<td>1.5</td>
<td>5 300</td>
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<td>60 000 / 30 000</td>
<td>120 500</td>
<td>3</td>
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Subject to change

\(1\) Fiber glass-reinforced plastic

*Version with 3-pin Molex plug housing 22-01-2035 Molex Contacts 08-50-0113

---

**Nominal data**

- **Type**
- **Air flow m\(^3\)/h**
- **Air flow cfm**
- **Voltage range**
- **Sound pressure level dB(A)**
- **Sound power level Bel(A)**
- **Power consumption Watts**
- **rpm\(^{-1}\)**
- **Temperature range °C**
- **Service life L\(_{10}\) (40 °C)**
- **Service life L\(_{10}\) (T\(_{\text{max}}\))**
- **Life expectancy L\(_{10}\) (40 °C)**

---

**Graphs**

Air performance measured according to ISO 5801. Installation category A, without contact protection. Noise: Total sound power level $L_{WA}$ ISO 10300 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

---

**Material and Construction**

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

---

**Direction and Rotation**

- **Direction of air flow**: Exhaust over struts
- **Direction of rotation**: Counterclockwise, looking towards rotor

---

**Connection**

- **Connection**: Via single wires AWG 24 to AWG 28, TR 64

---

**Weight**

- **Weight**: 53 g

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**Special Versions**

- **Speed signal**
- **Go / NoGo alarm**
- **Moisture protection**
Air performance measured according to: ISO 5801. Installation category A, without contact protection. Noise: Total sound power level $L_{WA}$ ISO 10300 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.
Series 8400 N

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<th>Air flow cfm</th>
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<th>Voltage range</th>
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<th>Sound power level VDC</th>
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<th>Power consumption Watts</th>
<th>Nominal speed rpm⁻¹</th>
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<td>3 100</td>
<td>-20...+70</td>
<td>70 000 / 35 000</td>
<td>117 500</td>
</tr>
</tbody>
</table>

**Notes:**
- 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!

**Additional Information:**
- Air performance measured according to ISO 5801.
- Installation category A, without contact protection.
- Noise: Total sound power level LWA ISO 103002, ebm-papst standard.
- Life expectancy L10 IPC (40 °C) see page 17.
- Weight: 95 g
- Highlights: Impeller: GRP(1) (PA)
- TR 64 temperatures up to 85 °C.

**Finger guards from p. 242**

---

1) Fiberglass-reinforced plastic.
Air performance measured according to: ISO 5801. Installation category A, without contact protection.

Noise: Total sound power level LWA ISO 103002 measured on half-sphere 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

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

Material:
Housing: GRP1) (PBT)
Impeller: GRP1) (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

---

Series 8400 N VARIOFAN

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow m³/h</th>
<th>Air flow cfm</th>
<th>Nominal voltage</th>
<th>Voltage range</th>
<th>Sound pressure level</th>
<th>Sound power level</th>
<th>Power consumption</th>
<th>Temperature range</th>
<th>Service life L10(Tmax)</th>
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<tr>
<td>8412 NGLV</td>
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<td>2 600</td>
<td>135 000</td>
</tr>
</tbody>
</table>

1) Fiberglass-reinforced plastic

---

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.
Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level LWA ISO 10300 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

### Series 8300

<table>
<thead>
<tr>
<th>Type</th>
<th>Nominal air flow</th>
<th>Voltage range</th>
<th>Sound pressure level</th>
<th>Sound power level</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L10 (40 °C)</th>
<th>Service life L10 (Tmax)</th>
<th>Life expectancy L10 (IP54)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>m³/h</td>
<td>cfm</td>
<td>VDC</td>
<td>Bel(A)</td>
<td>Watts</td>
<td>rpm⁻¹</td>
<td>°C</td>
<td>Hours</td>
<td>Hours</td>
<td>Hours</td>
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<td>80 000 / 32 500</td>
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<td>12</td>
<td>6...15</td>
<td>34</td>
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<td>2.2</td>
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<td>70 000 / 27 500</td>
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<td>24</td>
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<td>1.0</td>
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</table>

Subject to change

### DC axial fans

- **80 x 32 mm**

- **Material:** Housing: GRP (PBT)
  Impeller: GRP (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

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow</th>
<th>Voltage range</th>
<th>Sound pressure level</th>
<th>Sound power level</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L10 (40 °C)</th>
<th>Service life L10 (Tmax)</th>
<th>Life expectancy L10 (IP54)</th>
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<td>12...31.5</td>
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Subject to change

### Rotor protrusion max. 0.4 mm.
Series 8200 J

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<thead>
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<th>Voltage range</th>
<th>Sound pressure level</th>
<th>Sound power level</th>
<th>Shell,sleeve bearings</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L10 (Tmax)</th>
<th>Life expectancy L10(IP54)</th>
<th>Hours</th>
<th>Hours</th>
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<tbody>
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<td>85 000</td>
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</tbody>
</table>

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 LWA ISO 10300 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
### Series 3400 N

**Nominal data**

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<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
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<th>VDC</th>
<th>dB(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
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</table>

*Other 48 VDC models on request.*

---

**DC axial fans**

- **Material:** Housing: GRP¹ (PBT)  
  Impeller: GRP³ (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:**

- Speed signal
- Go / NoGo alarm
- Alarms 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.
² 102 m³/h from p. 242

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**Finger guards**

For detailed information see the parameters must be checked after installation!

In the event of deviation from the standard configuration, installation conditions.

The values given are applicable only under the specified from fan axis.

Sound pressure level LpA measured at 1 m distance

Noise: Total sound power level LWA ISO 103002

Installation category A, without contact protection.

Air performance measured according to ISO 5801.

Service life L10 (40 °C)

ebm-papst standard

Life expectancyL10IPC (40 °C) see page 17
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.

- Material: Housing: GRP\(^1\) (PBT)
- Direction of air flow: Impeller: GRP\(^1\) (PA)
- 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

\(^1\) Fiberglass-reinforced plastic

### Series 3400 N VARIOFAN

#### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>$m^3/h$</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>$dB(A)$</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm(^{-1})</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
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<td>1.5</td>
<td>1 400</td>
<td>-20...+65</td>
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<td>$50^\circ C$</td>
<td>72</td>
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<td>12</td>
<td>8...14</td>
<td>28</td>
<td>4.3</td>
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<td>2 300</td>
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<td>-20...+65</td>
<td>75 000 / 42 500</td>
<td>127 500</td>
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</table>

Subject to change

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

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Subject to change

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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

Series 3300 N

Nominal data

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<th>Type</th>
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<th>Nominal voltage</th>
<th>Voltage range</th>
<th>Sound pressure level</th>
<th>Sound power level</th>
<th>Sintered sleeve bearings</th>
<th>Ball bearings</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L(_{10}) (40 °C)</th>
<th>Service life L(<em>{10}) (T(</em>{max}))</th>
<th>ebm-papst standard</th>
<th>ebm-papst standard</th>
<th>Life expectancy (L:°)</th>
<th>Curve</th>
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<td>35 4.7</td>
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<td>2 650</td>
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Subject to change

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1) Fiberglass-reinforced plastic.

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L\(_{WA}\) ISO 103002
Installation category A, without contact protection.
Air flow measured according to: ISO 5801.

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<th>rpm(^{-1})</th>
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<th>Hours</th>
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Subject to change.

http://www.ebmpapst.com/general conditions

Finger guards from p. 242
DC axial fans

- **Material:** Housing: GRP (PBT) Impeller: GRP (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)

### Series 3200 J

**Nominal data**

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<thead>
<tr>
<th>Type</th>
<th>Air flow m³/h</th>
<th>Air flow cfm</th>
<th>Nominal voltage</th>
<th>Voltage range</th>
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<th>Sound power level Bel(A)</th>
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<th>rpm⁻¹</th>
<th>°C</th>
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<td>139.5</td>
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<td>6...13.8</td>
<td>69</td>
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<td>11 000</td>
<td>-20...+70</td>
<td>65 000 / 32 500</td>
<td>110 000</td>
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<td>164.8</td>
<td>12</td>
<td>6...13.8</td>
<td>73</td>
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<td>13 000</td>
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<td>115 700</td>
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<td>24</td>
<td>12...30</td>
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<td>12...27.6</td>
<td>69</td>
<td>7.8</td>
<td>30.0*</td>
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<td>-20...+70</td>
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<td>110 000</td>
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<td>164.8</td>
<td>24</td>
<td>12...27.6</td>
<td>73</td>
<td>8.2</td>
<td>50.0*</td>
<td>13 000</td>
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<td>36...56</td>
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<td>115 700</td>
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<td>3218 JH</td>
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<td>48</td>
<td>36...53</td>
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<td>9.5</td>
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<td>-20...+70</td>
<td>70 000 / 35 000</td>
<td>115 700</td>
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<td>11 000</td>
<td>-20...+70</td>
<td>65 000 / 32 500</td>
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<td>3218 JHS</td>
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<td>20...58.0</td>
<td>73</td>
<td>8.2</td>
<td>50.0*</td>
<td>13 000</td>
<td>-20...+70</td>
<td>60 000 / 30 000</td>
<td>110 000</td>
</tr>
</tbody>
</table>

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.

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**Max. 280 m³/h**

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**Air performance measured according to ISO 5801.**

- Installation category A, without contact protection.
- Standard power level measured according to ISO 5801 and ISO 13306.2 measured on a hemisphere with a radius of 2 m.
- Sound pressure level 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](http://www.ebmpapst.com/general-conditions)
Max. 270 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 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

### Series 3250 J

#### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
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<tbody>
<tr>
<td>3252 J/2 H3P</td>
<td>270</td>
<td>158</td>
<td>12</td>
<td>7...13.2</td>
<td>64</td>
<td>7.6</td>
<td>35.0</td>
<td>7 450</td>
<td>-20...+70</td>
<td>85 000 / 42 500</td>
<td>142 500</td>
</tr>
<tr>
<td>3254 J/2 H3P</td>
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<td>158</td>
<td>24</td>
<td>14...26.4</td>
<td>64</td>
<td>7.6</td>
<td>35.0</td>
<td>7 450</td>
<td>-20...+70</td>
<td>85 000 / 42 500</td>
<td>142 500</td>
</tr>
<tr>
<td>3258 J/2 HP(^{**})</td>
<td>145</td>
<td>85</td>
<td>48</td>
<td>36...56.0</td>
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<td>5.8</td>
<td>7.0</td>
<td>4 100</td>
<td>-20...+70</td>
<td>100 000 / 50 000</td>
<td>170 000</td>
</tr>
<tr>
<td>3258 J/2 HHP</td>
<td>235</td>
<td>138</td>
<td>48</td>
<td>36...56.0</td>
<td>59</td>
<td>7.0</td>
<td>24.3</td>
<td>6 650</td>
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</tr>
<tr>
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<td>270</td>
<td>158</td>
<td>48</td>
<td>36...56.0</td>
<td>64</td>
<td>7.6</td>
<td>33.6</td>
<td>7 450</td>
<td>-20...+70</td>
<td>85 000 / 42 500</td>
<td>142 500</td>
</tr>
</tbody>
</table>

\(^{1}\) Fiberglass-reinforced plastic.

- 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 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.ejbmpapst.com/general conditions

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Finger guards from p. 242
Max. 170 m³/h

DC axial fans

119 x 25 mm

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

### Series 4400 F

**Nominal data**

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
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<tr>
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<td>94</td>
<td>55</td>
<td>12</td>
<td>7...14</td>
<td>26</td>
<td>3.9</td>
<td>1.3</td>
<td>1 600</td>
<td>-20...+75</td>
<td>80 000 / 32 500</td>
<td>135 000</td>
</tr>
<tr>
<td>4412 FGML</td>
<td>114</td>
<td>67</td>
<td>12</td>
<td>7...12.6</td>
<td>32</td>
<td>4.3</td>
<td>2.0</td>
<td>1 950</td>
<td>-20...+75</td>
<td>75 000 / 30 000</td>
<td>127 500</td>
</tr>
<tr>
<td>4412 FML</td>
<td>114</td>
<td>67</td>
<td>12</td>
<td>7...12.6</td>
<td>32</td>
<td>4.3</td>
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<td>1 950</td>
<td>-20...+75</td>
<td>75 000 / 30 000</td>
<td>127 500</td>
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<td>4412 FGM</td>
<td>140</td>
<td>82</td>
<td>12</td>
<td>7...12.6</td>
<td>38</td>
<td>4.8</td>
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<td>2 400</td>
<td>-20...+75</td>
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<td>117 500</td>
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<td>117 500</td>
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<td>8...12.6</td>
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<td>2 900</td>
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<td>102 500</td>
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<td>100</td>
<td>12</td>
<td>8...12.6</td>
<td>43</td>
<td>5.3</td>
<td>5.3</td>
<td>2 900</td>
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<td>18...28</td>
<td>26</td>
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<td>1.2</td>
<td>1 600</td>
<td>-20...+75</td>
<td>80 000 / 32 500</td>
<td>135 000</td>
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<td>4414 FM</td>
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<td>82</td>
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<td>12...28</td>
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<td>26...53</td>
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<td>43</td>
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<td>2 900</td>
<td>-20...+60</td>
<td>60 000 / 37 500</td>
<td>102 500</td>
</tr>
</tbody>
</table>

Subject to change

Available as an option: 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 10300 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

---

1) Fiberglass-reinforced plastic

---
DC axial fans
Ø 127 mm

Max. 170 m³/h

- Material: Housing: GRP<sup>1)</sup> (PBT) Impeller: GRP<sup>1)</sup> (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

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

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
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<td>135 000</td>
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<td>32</td>
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<td>117 500</td>
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<td>8...12.6</td>
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<td>2900</td>
<td>-20...+60</td>
<td>60 000 / 37 500</td>
<td>102 500</td>
</tr>
</tbody>
</table>

Subject to change
* On request

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

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level LWA 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

1) Fiberglass-reinforced plastic
Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level LWA ISO 10300 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

- Material: Housing: GRP (PBT) 1) Impeller: GRP (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

Max. 225 m³/h

Series 4400 FN

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>dBA</th>
<th>Bel(A)</th>
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<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
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<tr>
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<td>132</td>
<td>12</td>
<td>9...13.2</td>
<td>55</td>
<td>6.7</td>
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<td>-20...+70</td>
<td>60 000 / 30 000</td>
<td>102 500</td>
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<td>4414 FNN</td>
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<td>14...28</td>
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<td>4 850</td>
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<td>60 000 / 30 000</td>
<td>102 500</td>
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<td>4414 FNH</td>
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<td>18...26.4</td>
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<td>6.7</td>
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<td>60 000 / 30 000</td>
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<td>4418 FNH</td>
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<td>12</td>
<td>5 400</td>
<td>-20...+70</td>
<td>60 000 / 30 000</td>
<td>102 500</td>
</tr>
</tbody>
</table>

Subject to change

Air performance measured according to ISO 5801. Installation category A, without contact protection. Noise: Total sound power level LWA ISO 10300 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

1) Fiberglass-reinforced plastic.
Air performance measured according to ISO 5801. Installation category A, without contact protection. Noise: Total sound power level $L_{WA}$ 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.

**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

### DC axial fans

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow m³/h</th>
<th>Air flow cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>Nominal voltage</th>
<th>Voltage range</th>
<th>Sound pressure level</th>
<th>Sound power level</th>
<th>Shaft sleeve bearings</th>
<th>Ball bearings</th>
<th>Power consumption</th>
<th>Normal speed</th>
<th>Temperature range</th>
<th>Service life L10 (40 °C)</th>
<th>ebm-papst standard</th>
<th>ebm-papst standard</th>
<th>Life expectancy L10 (40 °C)</th>
<th>Curves</th>
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<tbody>
<tr>
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<td>56</td>
<td>12</td>
<td>6..15</td>
<td>30</td>
<td>4.3</td>
<td>1.2</td>
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<td>-20...+75</td>
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Subject to change
Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level LWA ISO 10300 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

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

Max. 170 m³/h

DC axial fans

119 x 32 mm

Material: Housing: GRP1) (PBT) Impeller: GRP1) (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

Series 4300 VARIOFAN

Nominal data

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<th>Type</th>
<th>Air flow 25°C</th>
<th>Air flow 50°C</th>
<th>Nominal voltage</th>
<th>Voltage range</th>
<th>Sound pressure level</th>
<th>Sound power level</th>
<th>Slip sleeve bearings</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L10 (40 °C)</th>
<th>Service life L10 (Tmax )</th>
<th>Service life L10 (max)</th>
<th>Life expectancy L10IPC (40 °C)</th>
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1) Fiberglass-reinforced plastic;

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

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 10300 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.
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### Possible special versions:
- 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

### Nominal data

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<th>Air flow/CFM</th>
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<th>Sound pressure level</th>
<th>Sound power level</th>
<th>Sanit-sleeve bearings</th>
<th>Power consumption</th>
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<th>Temperature range</th>
<th>Service life $L_{10}(40\degree C)$</th>
<th>Service life $L_{10}(T_{max})$</th>
<th>Life expectancy $L_{IPC}$ $(40\degree C)$</th>
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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 $L_{WA\text{ ISO 10300}}$ measured on a hemisphere with a radius of 2 m.
Sound pressure level $L_{PA}$ measured at 1 m distance from fan axis.
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For detailed information see http://www.ebmpapst.com/general conditions

### DC axial fans

**Nominal data**

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<th>VDC</th>
<th>dB(A)</th>
<th>Bel(A)</th>
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Subject to change
Air performance measured according to ISO 5801. Installation category A, without contact protection. Noise: Total sound power level $L_{WA}$ 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.

Subject to change.

### Series 4100 N

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<th>VDC</th>
<th>VDC</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm $^{-1}$</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
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<tr>
<td>4184 NX</td>
<td>180</td>
<td>106</td>
<td>24</td>
<td>12..31.5</td>
<td>49</td>
<td>5.7</td>
<td>4.9</td>
<td>3 200</td>
<td>-30..+70</td>
<td>85 000 / 42 500</td>
<td>142 500</td>
</tr>
<tr>
<td>4184 N0H</td>
<td>237</td>
<td>140</td>
<td>24</td>
<td>12..28</td>
<td>57</td>
<td>6.5</td>
<td>11.0</td>
<td>4 400</td>
<td>-30..+70</td>
<td>70 000 / 35 000</td>
<td>117 500</td>
</tr>
<tr>
<td>4188 NGX</td>
<td>160</td>
<td>94</td>
<td>48</td>
<td>36..60</td>
<td>44</td>
<td>5.3</td>
<td>3.6</td>
<td>2 800</td>
<td>-20..+75</td>
<td>85 000 / 37 500</td>
<td>142 500</td>
</tr>
<tr>
<td>4188 NXM</td>
<td>160</td>
<td>94</td>
<td>48</td>
<td>36..60</td>
<td>44</td>
<td>5.3</td>
<td>3.5</td>
<td>2 800</td>
<td>-30..+75</td>
<td>85 000 / 37 500</td>
<td>142 500</td>
</tr>
</tbody>
</table>

1) Fiberglass-reinforced plastic.
Max. 440 m³/h

### DC axial fans

<table>
<thead>
<tr>
<th>Material:</th>
<th>Housing: Die-cast aluminum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direction of air flow:</td>
<td>Intake over struts</td>
</tr>
<tr>
<td>Direction of rotation:</td>
<td>Clockwise, looking towards rotor</td>
</tr>
<tr>
<td>Connection:</td>
<td>Via single wires</td>
</tr>
<tr>
<td></td>
<td>AWG 22 UL 1007, TR 64</td>
</tr>
<tr>
<td>Highlights:</td>
<td>Housing with grounding lug for screw M4 x 8 (Torx)</td>
</tr>
<tr>
<td>Weight:</td>
<td>390 g</td>
</tr>
</tbody>
</table>

### Series 4100 N

#### High Performance

#### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>Voltage range</th>
<th>Sound pressure level dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>4112 NHH</td>
<td>260</td>
<td>153</td>
<td>12</td>
<td>9...15</td>
<td>60</td>
<td>6.8</td>
<td>13.3</td>
<td>5 000</td>
<td>-20...+65</td>
<td>70 000</td>
</tr>
<tr>
<td>4112 NH3</td>
<td>310</td>
<td>182</td>
<td>12</td>
<td>9...15</td>
<td>65</td>
<td>7.2</td>
<td>16.5</td>
<td>6 000</td>
<td>-20...+65</td>
<td>65 000</td>
</tr>
<tr>
<td>4112 NH4</td>
<td>355</td>
<td>209</td>
<td>12</td>
<td>9...14</td>
<td>67</td>
<td>7.4</td>
<td>19.6</td>
<td>6 800</td>
<td>-20...+65</td>
<td>62 500</td>
</tr>
<tr>
<td>4114 NHH</td>
<td>260</td>
<td>153</td>
<td>24</td>
<td>16...30</td>
<td>60</td>
<td>6.8</td>
<td>21.8</td>
<td>5 000</td>
<td>-20...+65</td>
<td>70 000</td>
</tr>
<tr>
<td>4114 NH3</td>
<td>310</td>
<td>182</td>
<td>24</td>
<td>16...30</td>
<td>65</td>
<td>7.2</td>
<td>24.9</td>
<td>6 000</td>
<td>-20...+65</td>
<td>65 000</td>
</tr>
<tr>
<td>4114 NH4</td>
<td>355</td>
<td>209</td>
<td>24</td>
<td>16...30</td>
<td>67</td>
<td>7.4</td>
<td>28.0</td>
<td>6 800</td>
<td>-20...+65</td>
<td>62 500</td>
</tr>
<tr>
<td>4114 NHH</td>
<td>390</td>
<td>230</td>
<td>24</td>
<td>16...30</td>
<td>70</td>
<td>7.6</td>
<td>31.2</td>
<td>7 500</td>
<td>-20...+65</td>
<td>62 500</td>
</tr>
<tr>
<td>4114 NH6</td>
<td>440</td>
<td>259</td>
<td>24</td>
<td>16...30</td>
<td>73</td>
<td>8.1</td>
<td>34.4</td>
<td>8 400</td>
<td>-20...+65</td>
<td>60 000</td>
</tr>
<tr>
<td>4118 NHH</td>
<td>260</td>
<td>153</td>
<td>48</td>
<td>36...60</td>
<td>60</td>
<td>6.8</td>
<td>12.0</td>
<td>5 000</td>
<td>-20...+65</td>
<td>70 000</td>
</tr>
<tr>
<td>4118 NH3</td>
<td>310</td>
<td>182</td>
<td>48</td>
<td>36...60</td>
<td>65</td>
<td>7.2</td>
<td>15.5</td>
<td>6 000</td>
<td>-20...+65</td>
<td>65 000</td>
</tr>
<tr>
<td>4118 NH4</td>
<td>355</td>
<td>209</td>
<td>48</td>
<td>36...60</td>
<td>67</td>
<td>7.4</td>
<td>18.6</td>
<td>6 800</td>
<td>-20...+65</td>
<td>62 500</td>
</tr>
<tr>
<td>4118 NHH</td>
<td>390</td>
<td>230</td>
<td>48</td>
<td>36...60</td>
<td>70</td>
<td>7.6</td>
<td>21.7</td>
<td>7 500</td>
<td>-20...+65</td>
<td>62 500</td>
</tr>
<tr>
<td>4118 NH6</td>
<td>440</td>
<td>259</td>
<td>48</td>
<td>36...60</td>
<td>73</td>
<td>8.1</td>
<td>24.9</td>
<td>8 400</td>
<td>-20...+65</td>
<td>60 000</td>
</tr>
</tbody>
</table>

Subject to change

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

### Possible special versions:

- 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

For detailed information see chapter DC fans - specials

### Accessories

- Degree of protection: IP 54 / IP 68
- Salt spray protection
- Moisture protection
- Analog control input
- PWM control input
- Internal temperature sensor
- External temperature sensor
- Alarm with speed limit
- Go / NoGo alarm
- Speed signal
- Direction of rotation: clockwise, looking towards rotor
- Connection: Via single wires
- Nominal data
- Material: Housing: Die-cast aluminum
- Nominal voltage: 390-8 400
- Sound pressure level dB(A): 13.3 - 65.0
- Bel(A): 5.0 - 8.4
- Watts: 5 000 - 8 400
- rpm⁻¹: 5 000 - 8 400
- °C: -20...+65
- Hours: 70 000 - 117 500
- Hours: 60 000 - 102 500

### Nominal speed

- Ball bearings
- Power consumption
- Voltage range
- Temperature range
- Power consumption – in operation

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

### Curve

Air performance measured according to ISO 5801. Installation category A, without contact protection. Noise: Total sound power level measured on a hemisphere with a radius of 2 m.

For detailed information see http://www.ebmpapst.com/general conditions
Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level \( L_{WA} \) ISO 10300 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!

### Series 4100 N
High Performance

#### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>4114 N/2 H7P</td>
<td>500</td>
<td>294</td>
<td>24</td>
<td>16...30</td>
<td>76</td>
<td>8.5</td>
<td>90</td>
<td>9 500</td>
<td>-20...+75</td>
<td>57 500 / 25 000</td>
<td>97 500</td>
</tr>
<tr>
<td>4114 N/2 H8P</td>
<td>570</td>
<td>336</td>
<td>24</td>
<td>16...30</td>
<td>78</td>
<td>8.9</td>
<td>90</td>
<td>12 000</td>
<td>-20...+75</td>
<td>55 000 / 22 500</td>
<td>92 500</td>
</tr>
<tr>
<td>4118 N/2 H7P</td>
<td>500</td>
<td>284</td>
<td>48</td>
<td>36...60*</td>
<td>78</td>
<td>8.9</td>
<td>90</td>
<td>9 500</td>
<td>-20...+75</td>
<td>57 500 / 25 000</td>
<td>97 500</td>
</tr>
<tr>
<td>4118 N/2 H8P</td>
<td>570</td>
<td>336</td>
<td>48</td>
<td>36...60*</td>
<td>78</td>
<td>8.9</td>
<td>90</td>
<td>12 000</td>
<td>-20...+75</td>
<td>55 000 / 25 000</td>
<td>92 500</td>
</tr>
</tbody>
</table>

Subject to change

* 36...72 VDC on request.

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

#### Material:
Housing: Die-cast aluminum
Impeller: GRP1) (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

**Power consumption - in operation**

<table>
<thead>
<tr>
<th>Fan type</th>
<th>optimum operating range (W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4114 NH7P</td>
<td>100</td>
</tr>
<tr>
<td>4114 NH8P</td>
<td>160</td>
</tr>
<tr>
<td>4118 NH7P</td>
<td>100</td>
</tr>
<tr>
<td>4118 NH8P</td>
<td>160</td>
</tr>
</tbody>
</table>

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.

Finger guards from p. 242
Max. 280 m³/h

DC diagonal fan

- 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)

\(^{1}\) Fiber-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 / IP 68

Series DV 4100

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>Noise level</th>
<th>Sound pressure level</th>
<th>Sound power level</th>
<th>Power consumption*</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L10 (40 °C)</th>
<th>Service life L10 (Tmax)</th>
<th>Life expectancy L10 IPC (40 °C)</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>DV 4112 N</td>
<td>280</td>
<td>165</td>
<td>12</td>
<td>9...15</td>
<td>61</td>
<td>6.9</td>
<td>21.0</td>
<td>6 000</td>
<td>-20...+65</td>
<td>70 000 / 40 000</td>
<td>117 500</td>
<td></td>
<td>!</td>
<td></td>
</tr>
<tr>
<td>DV 4114 N</td>
<td>280</td>
<td>165</td>
<td>24</td>
<td>16...30</td>
<td>61</td>
<td>6.9</td>
<td>20.5</td>
<td>6 000</td>
<td>-20...+65</td>
<td>70 000 / 40 000</td>
<td>117 500</td>
<td></td>
<td>!</td>
<td></td>
</tr>
<tr>
<td>DV 4118 N</td>
<td>280</td>
<td>165</td>
<td>48</td>
<td>36...60</td>
<td>61</td>
<td>6.9</td>
<td>20.0</td>
<td>6 000</td>
<td>-20...+65</td>
<td>70 000 / 40 000</td>
<td>117 500</td>
<td></td>
<td>!</td>
<td></td>
</tr>
</tbody>
</table>

Subject to change

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

Finger guards
from p. 242
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

**NHH models: fan housing with molded-in spacers.**
Max. 320 m³/h

DC diagonal fan

- Material:
  Housing: GRP (PBT)
  Available in Die-cast aluminum
  Metal flange
  Impeller: GRP (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

Series DV 5200

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DV 5212 N</td>
<td>270</td>
<td>159</td>
<td>12</td>
<td>9...15</td>
<td>56</td>
<td>6.4</td>
<td>21.0</td>
<td>5 000</td>
<td>-20...+65</td>
<td>70 000 / 40 000</td>
<td>117 500</td>
</tr>
<tr>
<td>DV 5214 N</td>
<td>270</td>
<td>159</td>
<td>24</td>
<td>16...30</td>
<td>56</td>
<td>6.4</td>
<td>20.4</td>
<td>5 000</td>
<td>-20...+65</td>
<td>70 000 / 40 000</td>
<td>117 500</td>
</tr>
<tr>
<td>DV 5218 N</td>
<td>270</td>
<td>159</td>
<td>48</td>
<td>36...60</td>
<td>56</td>
<td>6.4</td>
<td>18.5</td>
<td>5 000</td>
<td>-20...+65</td>
<td>70 000 / 40 000</td>
<td>117 500</td>
</tr>
</tbody>
</table>

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 |

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 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

1) Fiberglass-reinforced plastic

Subject to change

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- DC axial fans
- DC centrifugal fans
- DC fans - specials
- AC axial fans
- AC centrifugal fans
- Accessories
- Representatives

Finger guards from p. 242
Air performance measured according to: ISO 5801. Installation category A, without contact protection.
Noise: Total sound power level $L_{WA}$ ISO 10300 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

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

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow</th>
<th>Voltage</th>
<th>Sound pressure level</th>
<th>Sound power level</th>
<th>Power consumption*</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L10 (40 °C)</th>
<th>Service life L10 (Tmax)</th>
<th>Life expectancy L10(IPC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5112 N</td>
<td>260</td>
<td>12</td>
<td>48</td>
<td>6.1</td>
<td>9.5</td>
<td>2 900</td>
<td>-25...+72</td>
<td>80 000 / 37 500</td>
<td>135 000</td>
<td></td>
</tr>
<tr>
<td>5114 N</td>
<td>260</td>
<td>24</td>
<td>48</td>
<td>6.1</td>
<td>9.5</td>
<td>2 900</td>
<td>-25...+72</td>
<td>80 000 / 37 500</td>
<td>135 000</td>
<td></td>
</tr>
<tr>
<td>5118 N</td>
<td>260</td>
<td>48</td>
<td>48</td>
<td>6.1</td>
<td>9.5</td>
<td>2 900</td>
<td>-25...+72</td>
<td>80 000 / 37 500</td>
<td>135 000</td>
<td></td>
</tr>
</tbody>
</table>

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 10300 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
Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level $L_{WA}$ ISO 10300 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.

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 5300

<table>
<thead>
<tr>
<th>Type</th>
<th>$m^3/h$</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>$dB(A)$</th>
<th>$Bel(A)$</th>
<th>Watts</th>
<th>rpm$^{-1}$</th>
<th>°C</th>
<th>Service life $L_{10}$ (40 °C)</th>
<th>Service life $L_{10}$ (Tmax)</th>
<th>Power consumption*</th>
</tr>
</thead>
<tbody>
<tr>
<td>5314/2 HP</td>
<td>340</td>
<td>200</td>
<td>24</td>
<td>16−28</td>
<td>64</td>
<td>7.2</td>
<td>28.4</td>
<td>5 000</td>
<td>-20...+65</td>
<td>77 500 / 40 000</td>
<td>130 000</td>
<td></td>
</tr>
<tr>
<td>5318/2 HP</td>
<td>340</td>
<td>200</td>
<td>48</td>
<td>36−72</td>
<td>64</td>
<td>7.2</td>
<td>27</td>
<td>5 000</td>
<td>-20...+65</td>
<td>77 500 / 40 000</td>
<td>130 000</td>
<td></td>
</tr>
</tbody>
</table>

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 $L_{WA}$ 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

Possible special versions:
- 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

Subject to change

<table>
<thead>
<tr>
<th>Type</th>
<th>air flow m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>5312/2 TDHP</td>
<td>410</td>
<td>241</td>
<td>12</td>
<td>8...16</td>
<td>70</td>
<td>7.7</td>
<td>43</td>
<td>6 000</td>
<td>-20...+70</td>
<td>70 000 / 35 000</td>
<td>117 500</td>
</tr>
<tr>
<td>5314/2 TDHP</td>
<td>410</td>
<td>241</td>
<td>24</td>
<td>16...36</td>
<td>70</td>
<td>7.7</td>
<td>42</td>
<td>6 000</td>
<td>-20...+70</td>
<td>70 000 / 35 000</td>
<td>117 500</td>
</tr>
<tr>
<td>5314/2 TDHHP</td>
<td>490</td>
<td>288</td>
<td>24</td>
<td>16...36</td>
<td>75</td>
<td>8.1</td>
<td>67</td>
<td>7 000</td>
<td>-20...+70</td>
<td>62 500 / 30 000</td>
<td>105 000</td>
</tr>
<tr>
<td>5318/2 TDHP</td>
<td>410</td>
<td>241</td>
<td>48</td>
<td>36...72</td>
<td>70</td>
<td>7.7</td>
<td>42</td>
<td>6 000</td>
<td>-20...+70</td>
<td>70 000 / 35 000</td>
<td>117 500</td>
</tr>
<tr>
<td>5318/2 TDHHP</td>
<td>490</td>
<td>288</td>
<td>48</td>
<td>36...72</td>
<td>75</td>
<td>8.1</td>
<td>66</td>
<td>7 000</td>
<td>-20...+70</td>
<td>62 500 / 30 000</td>
<td>105 000</td>
</tr>
<tr>
<td>5318/2 TDH4P</td>
<td>670</td>
<td>394</td>
<td>48</td>
<td>36...72</td>
<td>79</td>
<td>8.8</td>
<td>149</td>
<td>9 200</td>
<td>-20...+65</td>
<td>57 500 / 32 500</td>
<td>97 500</td>
</tr>
</tbody>
</table>

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.

Material: Die-cast aluminum

Impeller: GRP1) (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

Finger guards from p. 242

Air performance measured according to ISO 5801. Installation category A, without contact protection.

Noise: Total sound power level $L_{WA}$ 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
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

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

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

Series 7100 N

<table>
<thead>
<tr>
<th>Type</th>
<th>Nominal data</th>
<th>Nominal voltage</th>
<th>Sound pressure level</th>
<th>Power consumption*</th>
<th>Temperature range</th>
<th>Service life L10 (40 °C)</th>
<th>Service life L10 (Tmax)</th>
<th>Life expectancy L10IPC (40 °C)</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>7112 N</td>
<td>308</td>
<td>181</td>
<td>6...15</td>
<td>53</td>
<td>6.2</td>
<td>12.0</td>
<td>2 850</td>
<td>-25...+72</td>
<td>Hours</td>
</tr>
<tr>
<td>7114 N</td>
<td>308</td>
<td>181</td>
<td>12...30</td>
<td>53</td>
<td>6.2</td>
<td>12.0</td>
<td>2 850</td>
<td>-25...+72</td>
<td>Hours</td>
</tr>
<tr>
<td>7114 NH</td>
<td>360</td>
<td>212</td>
<td>12...26.5</td>
<td>58</td>
<td>6.7</td>
<td>19.0</td>
<td>3 350</td>
<td>-25...+72</td>
<td>Hours</td>
</tr>
<tr>
<td>7118 N</td>
<td>308</td>
<td>181</td>
<td>24...60</td>
<td>53</td>
<td>6.2</td>
<td>12.0</td>
<td>2 850</td>
<td>-25...+72</td>
<td>Hours</td>
</tr>
</tbody>
</table>

Subject to change

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

Wire fastened with cable tie.
Strand fastened using cable tie; cable tie protrudes 1 mm.
DC axial fans
Ø 150 x 55 mm

- Material: Housing: Die-cast aluminum
  Impeller: GRP
- 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

Series 7200 N

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow m³/h</th>
<th>Air flow cfm</th>
<th>Nominal voltage VDC</th>
<th>Voltage range °C</th>
<th>Sound pressure level dB(A)</th>
<th>Sound power level Bel(A)</th>
<th>Power consumption* Watts</th>
<th>Normal speed rpm⁻¹</th>
<th>Temperature range °C</th>
<th>Service life L10 (40 °C) Hours</th>
<th>Service life L10 (Tmax) Hours</th>
<th>Life expectancy L10 (IPC) Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>7212 N</td>
<td>360</td>
<td>212</td>
<td>12</td>
<td>6...15</td>
<td>53</td>
<td>6.2</td>
<td>12.0</td>
<td>3 050</td>
<td>-25...+72</td>
<td>80 000 / 37 500</td>
<td>135 000</td>
<td>1</td>
</tr>
<tr>
<td>7214 N</td>
<td>360</td>
<td>212</td>
<td>24</td>
<td>12...30</td>
<td>53</td>
<td>6.2</td>
<td>12.0</td>
<td>3 050</td>
<td>-25...+72</td>
<td>80 000 / 37 500</td>
<td>135 000</td>
<td>1</td>
</tr>
<tr>
<td>7218 N</td>
<td>360</td>
<td>212</td>
<td>48</td>
<td>24...60</td>
<td>53</td>
<td>6.2</td>
<td>12.0</td>
<td>3 050</td>
<td>-25...+72</td>
<td>80 000 / 37 500</td>
<td>135 000</td>
<td>1</td>
</tr>
</tbody>
</table>

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 LWA 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 defer 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
Air performance measured according to ISO 5801. Installation category A, without contact protection.
Noise: Total sound power level LWA 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

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>Sound pressure level</th>
<th>Sound power level</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>6412 M</td>
<td>350</td>
<td>206</td>
<td>12</td>
<td>8...15</td>
<td>52</td>
<td>6.0</td>
<td>12</td>
<td>2 850</td>
<td>-20...+72</td>
<td>80 000 / 37 500</td>
</tr>
<tr>
<td>6424 M</td>
<td>350</td>
<td>206</td>
<td>24</td>
<td>12...32</td>
<td>52</td>
<td>6.0</td>
<td>12</td>
<td>2 850</td>
<td>-20...+72</td>
<td>80 000 / 37 500</td>
</tr>
<tr>
<td>6424</td>
<td>410</td>
<td>241</td>
<td>24</td>
<td>12...28</td>
<td>57</td>
<td>6.4</td>
<td>17</td>
<td>3 400</td>
<td>-20...+72</td>
<td>75 000 / 35 000</td>
</tr>
<tr>
<td>6424 H</td>
<td>480</td>
<td>283</td>
<td>24</td>
<td>12...28</td>
<td>63</td>
<td>7.1</td>
<td>26</td>
<td>4 000</td>
<td>-20...+55**</td>
<td>70 000 / 50 000</td>
</tr>
<tr>
<td>6448</td>
<td>410</td>
<td>241</td>
<td>48</td>
<td>28...60</td>
<td>57</td>
<td>6.4</td>
<td>17</td>
<td>3 400</td>
<td>-20...+72</td>
<td>75 000 / 35 000</td>
</tr>
<tr>
<td>6448 H*</td>
<td>480</td>
<td>283</td>
<td>48</td>
<td>28...60</td>
<td>63</td>
<td>7.1</td>
<td>26</td>
<td>4 000</td>
<td>-20...+55**</td>
<td>70 000 / 50 000</td>
</tr>
</tbody>
</table>

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

1) Fiberglass-reinforced plastic.

Series 6400

DC axial fans

172 x 150 x 51 mm

- Material: Housing: Die-cast aluminum
  Impeller: GRP1) (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

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* ACmaxx / EC fans

** DC centrifugal fans

*** Accessories

**** Representatives

Finger guards
from p. 242

Cables
P. 255
Air performance measured according to ISO 5801. Installation category A, without contact protection. Noise: Total sound power level $L_\text{WA}$ ISO 10300-2 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](http://www.ebmpapst.com/general conditions)

---

**Series 6400 TD**

<table>
<thead>
<tr>
<th>Type</th>
<th>Base model</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min</td>
<td>6424 TD...</td>
<td>90</td>
<td>53</td>
<td>24</td>
<td>16...28</td>
<td>18</td>
<td>—</td>
<td>2</td>
<td>800</td>
<td>-20...+60</td>
<td>70 000 / 45 000</td>
<td>117 500</td>
</tr>
<tr>
<td>Max</td>
<td>6424 TD...</td>
<td>600</td>
<td>353</td>
<td>48</td>
<td>40...55*</td>
<td>65</td>
<td>7.4</td>
<td>50</td>
<td>5 100</td>
<td>-20...+60</td>
<td>70 000 / 45 000</td>
<td>117 500</td>
</tr>
<tr>
<td>Min</td>
<td>6448 TDHH...</td>
<td>90</td>
<td>53</td>
<td>48</td>
<td>36...72</td>
<td>18</td>
<td>—</td>
<td>2</td>
<td>800</td>
<td>-20...+60</td>
<td>70 000 / 45 000</td>
<td>117 500</td>
</tr>
<tr>
<td>Max</td>
<td>6448 TDHH...</td>
<td>900</td>
<td>530</td>
<td>48</td>
<td>36...72</td>
<td>78</td>
<td>8.6</td>
<td>163</td>
<td>7500</td>
<td>-20...+60</td>
<td>70 000 / 45 000</td>
<td>117 500</td>
</tr>
</tbody>
</table>

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.

---

**Possible special versions:**

- 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

---

Finger guards from p. 242
Max. 530 m³/h

DC diagonal fan
172 x 160 x 51 mm

- Material: Housing: Die-cast aluminum
  Impeller: GRP (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

1) Fiberglass-reinforced plastic.

### Series DV 6400

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>Type</th>
<th>Air flow</th>
<th>Air flow</th>
<th>Nominal voltage</th>
<th>Voltage range</th>
<th>Sound pressure level</th>
<th>Sound power level</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L10 (40 °C)</th>
<th>Service life L10 (Tmax)</th>
<th>Life expectancy L10 (40 °C)</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DV 6424</td>
<td>530</td>
<td>312</td>
<td>24</td>
<td>16...28</td>
<td>65</td>
<td>7.3</td>
<td>40</td>
<td>4 300</td>
<td>-20...+75</td>
<td>90 000 / 35 000</td>
<td>152 500</td>
<td>152 500</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>DV 6448</td>
<td>530</td>
<td>312</td>
<td>48</td>
<td>28...60</td>
<td>65</td>
<td>7.3</td>
<td>40</td>
<td>4 300</td>
<td>-20...+75</td>
<td>90 000 / 35 000</td>
<td>152 500</td>
<td>152 500</td>
<td>1</td>
</tr>
</tbody>
</table>

Subject to change

### Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level LWA 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
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. 930 m³/h

### DC axial fans

**Series 6300 TD**

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>6314/2 TDHHP-015</td>
<td>710</td>
<td>418</td>
<td>24</td>
<td>16...36</td>
<td>69</td>
<td>7.9</td>
<td>67</td>
<td>7 000</td>
<td>-20...+75</td>
<td>62 500 / 25 000</td>
<td>105 000</td>
</tr>
<tr>
<td>6318/2 TDH4P-007</td>
<td>930</td>
<td>546</td>
<td>48</td>
<td>36...72</td>
<td>75</td>
<td>8.4</td>
<td>150</td>
<td>9 200</td>
<td>-20...+75</td>
<td>52 500 / 20 000</td>
<td>87 500</td>
</tr>
</tbody>
</table>

**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.

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**Specifications**

- **Material:** Housing: Die-cast aluminum
  - Impeller: GRP<sup>1</sup> (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

---

**Air performance measured according to:** ISO 5801.

**Installation category A, without contact protection.**

**Note:** Total sound power level $L_\text{WA}$ ISO 10300<sup>2</sup> 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

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

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

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow m³/h</th>
<th>Air flow cfm</th>
<th>Nominal voltage VDC</th>
<th>Voltage range</th>
<th>Sound pressure level dB(A)</th>
<th>Sound power level Bel(A)</th>
<th>Watts</th>
<th>rpm (^{-1})</th>
<th>Nominal speed</th>
<th>Temperature range °C</th>
<th>Service life L₁₀ (40 °C)</th>
<th>Service life L₁₀ (70 °C)</th>
<th>Life expectancy L₁₀ IPC (40 °C)</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>6314 N/2 HHP</td>
<td>540</td>
<td>318</td>
<td>24</td>
<td>16…32</td>
<td>6.9</td>
<td>-</td>
<td>30</td>
<td>4000</td>
<td>-20…+70</td>
<td>80 000 / 40 000</td>
<td>135 000</td>
<td></td>
<td>![Image]</td>
<td>1</td>
</tr>
<tr>
<td>6318 N/2 H3P</td>
<td>685</td>
<td>403</td>
<td>48</td>
<td>36…60</td>
<td>7.5</td>
<td>-</td>
<td>53</td>
<td>5000</td>
<td>-20…+70</td>
<td>77 500 / 40 000</td>
<td>130 000</td>
<td></td>
<td>![Image]</td>
<td>2</td>
</tr>
</tbody>
</table>

Subject to change

Speed control range from 1000 rpm\(^{-1}\) up to maximum nominal speed. Standsill at 0% PWM, maximum speed if control cable is interrupted.

### Notes

- Air performance measured according to ISO 5801.
- Installation category A, without contact protection.
- Noise: Total sound power level LWA meas. ISO 10360-2 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](http://www.ebmpapst.com/general conditions)

---

1) Fiber glass-reinforced plastic
Max. 1030 m³/h

**S-Panther**

### DC axial fans

**Dimensions:** Ø 172 x 51 mm

- **Material:** Housing: Die-cast aluminum
  Impeller: GRP1) (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

### Series 6300 NTD

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6314 N/2 TDHHP</td>
<td>970</td>
<td>571</td>
<td>24</td>
<td>16…36</td>
<td>-</td>
<td>8.3</td>
<td>135</td>
<td>7200</td>
<td>-20…+70</td>
<td>62,500</td>
<td>32,500</td>
</tr>
<tr>
<td></td>
<td>6318 N/2 TDH3P</td>
<td>1030</td>
<td>606</td>
<td>48</td>
<td>36…72</td>
<td>83</td>
<td>8.4</td>
<td>152</td>
<td>7500</td>
<td>-20…+70</td>
<td>60,000</td>
<td>30,000</td>
</tr>
</tbody>
</table>

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.*

### 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

---

[1) Fiberglass-reinforced plastic]

---

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level $L_{WA}$ ISO 10360-2 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
### DC axial fans

- **Max. 545 m³/h**
- **S-Force**

#### Series 6300

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>Air flow</th>
<th>Air flow</th>
<th>Nominal voltage</th>
<th>Voltage range</th>
<th>Sound pressure level</th>
<th>Sound power level</th>
<th>Sinter-sleeve bearings</th>
<th>Power consumption</th>
<th>Normal speed</th>
<th>Temperature range</th>
<th>Service life L10 (40 °C)</th>
<th>Service life L10 (Fmax)</th>
<th>Service life L10 (%)</th>
<th>Life expectancy L10</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>m³/h</td>
<td>cfm</td>
<td>VDC</td>
<td>VDC</td>
<td>dB(A)</td>
<td>Bel(A)</td>
<td></td>
<td>Watts</td>
<td>rpm⁻¹</td>
<td>°C</td>
<td>Hours</td>
<td>Hours</td>
<td>Hours</td>
<td>Hours</td>
<td></td>
</tr>
<tr>
<td>6314/2 MP</td>
<td>395</td>
<td>232</td>
<td>24</td>
<td>16...30</td>
<td>51</td>
<td>6.0</td>
<td></td>
<td>14</td>
<td>3 700</td>
<td>-20...+75</td>
<td>82 500 / 32 500</td>
<td>140 000</td>
<td>1</td>
<td>Subject to change</td>
<td></td>
</tr>
<tr>
<td>6314/2 NP</td>
<td>470</td>
<td>276</td>
<td>24</td>
<td>16...30</td>
<td>56</td>
<td>6.5</td>
<td></td>
<td>23</td>
<td>4 400</td>
<td>-20...+70</td>
<td>80 000 / 40 000</td>
<td>135 000</td>
<td>2</td>
<td>Subject to change</td>
<td></td>
</tr>
<tr>
<td>6314/2 HP</td>
<td>545</td>
<td>320</td>
<td>24</td>
<td>16...30</td>
<td>58</td>
<td>6.9</td>
<td></td>
<td>31</td>
<td>5 000</td>
<td>-20...+65</td>
<td>77 500 / 42 500</td>
<td>130 000</td>
<td>3</td>
<td>Subject to change</td>
<td></td>
</tr>
<tr>
<td>6318/2 HP</td>
<td>545</td>
<td>320</td>
<td>48</td>
<td>36...72</td>
<td>58</td>
<td>6.9</td>
<td></td>
<td>32</td>
<td>5 000</td>
<td>-20...+65</td>
<td>77 500 / 42 500</td>
<td>130 000</td>
<td>3</td>
<td>Subject to change</td>
<td></td>
</tr>
</tbody>
</table>

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.

---

### Material:
- **Housing:** Die-cast aluminum
- **Impeller:** GRP (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**

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### Notes:
- **Finger guards** from p. 242
- **Air performance measured according to ISO 5801.**
- **Installation category A, without contact protection.**
- **Noise: Total sound power level LwA ISO 10300 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
Max. 930 m³/h

**DC axial fans**

Ø 172 x 51 mm

- **Material:** Housing: Die-cast aluminum
  Impeller: GRP¹ (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 (Tork)
- **Weight:** 910 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
- Multi-option control input
- Moisture protection
- Salt spray protection
- Degree of protection: IP 54

**Series 6300 TD**

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air flow</td>
<td>Air flow</td>
<td>Voltage range</td>
<td>Sound pressure level</td>
<td>Sound power level</td>
<td>Safety sleeve bearings</td>
<td>Fan range</td>
<td>Power consumption*</td>
<td>Nominal speed</td>
<td>Temperature range</td>
<td>Service life L₁₀ (40 °C)</td>
<td>Service life L₁₀ (Tmax)</td>
<td>Life expectancy L₁₀ IPC (40 °C)</td>
</tr>
<tr>
<td>6312/2 TDHP</td>
<td>600</td>
<td>353</td>
<td>12</td>
<td>8...16</td>
<td>60</td>
<td>7.3</td>
<td>40</td>
<td>5 500</td>
<td>-20...+70</td>
<td>75 000 / 37 500</td>
<td>127 500</td>
<td></td>
</tr>
<tr>
<td>6314/2 TDHP-298</td>
<td>600</td>
<td>353</td>
<td>24</td>
<td>16...30</td>
<td>60</td>
<td>7.3</td>
<td>42</td>
<td>5 500</td>
<td>-20...+65</td>
<td>75 000 / 42 500</td>
<td>127 500</td>
<td></td>
</tr>
<tr>
<td>6314/2 TDHP</td>
<td>600</td>
<td>353</td>
<td>24</td>
<td>16...36</td>
<td>60</td>
<td>7.3</td>
<td>40</td>
<td>5 500</td>
<td>-20...+75</td>
<td>75 000 / 30 000</td>
<td>127 500</td>
<td></td>
</tr>
<tr>
<td>6314/2 TDHHP</td>
<td>710</td>
<td>418</td>
<td>24</td>
<td>16...36</td>
<td>69</td>
<td>7.9</td>
<td>67</td>
<td>7 000</td>
<td>-20...+75</td>
<td>62 500 / 25 000</td>
<td>105 000</td>
<td></td>
</tr>
<tr>
<td>6314/2 TDH4P</td>
<td>930</td>
<td>545</td>
<td>24</td>
<td>16...36</td>
<td>75</td>
<td>8.4</td>
<td>150</td>
<td>9 200</td>
<td>-20...+75</td>
<td>52 500 / 20 000</td>
<td>87 500</td>
<td></td>
</tr>
<tr>
<td>6318/2 TDHP-299</td>
<td>600</td>
<td>353</td>
<td>48</td>
<td>36...60</td>
<td>60</td>
<td>7.3</td>
<td>42</td>
<td>5 500</td>
<td>-20...+65</td>
<td>75 000 / 42 500</td>
<td>127 500</td>
<td></td>
</tr>
<tr>
<td>6318/2 TDH4P</td>
<td>600</td>
<td>353</td>
<td>48</td>
<td>36...72</td>
<td>60</td>
<td>7.3</td>
<td>40</td>
<td>5 500</td>
<td>-20...+75</td>
<td>75 000 / 30 000</td>
<td>127 500</td>
<td></td>
</tr>
<tr>
<td>6318/2 TDHHP</td>
<td>710</td>
<td>418</td>
<td>48</td>
<td>36...72</td>
<td>69</td>
<td>7.9</td>
<td>67</td>
<td>7 000</td>
<td>-20...+75</td>
<td>62 500 / 25 000</td>
<td>105 000</td>
<td></td>
</tr>
<tr>
<td>6318/2 TDH4P</td>
<td>930</td>
<td>545</td>
<td>48</td>
<td>36...72</td>
<td>75</td>
<td>8.4</td>
<td>150</td>
<td>9 200</td>
<td>-20...+75</td>
<td>52 500 / 20 000</td>
<td>87 500</td>
<td></td>
</tr>
</tbody>
</table>

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.

---

¹ Fiberglass-reinforced plastic

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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

---

**Fan type**

- **6318/2 TDHP**: 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
Series DV 6300 TD

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DV 6318/2 TDH4P</td>
<td>630</td>
<td>371</td>
<td>48</td>
<td>36…72</td>
<td>68</td>
<td>7.6</td>
<td>75</td>
<td>4000</td>
<td>-20…+65</td>
<td>70 000 / 40 000</td>
<td>117 500</td>
</tr>
<tr>
<td>DV 6318/2 TDHHP*</td>
<td>770</td>
<td>453</td>
<td>48</td>
<td>36…72</td>
<td>73</td>
<td>8.0</td>
<td>135</td>
<td>4900</td>
<td>-20…+65</td>
<td>60 000 / 32 500</td>
<td>102 500</td>
</tr>
<tr>
<td>DV 6318/2 TDHP*</td>
<td>1050</td>
<td>617</td>
<td>48</td>
<td>36…72</td>
<td>77</td>
<td>8.7</td>
<td>300</td>
<td>6500</td>
<td>-20…+65</td>
<td>50 000 / 27 500</td>
<td>85 000</td>
</tr>
<tr>
<td>DV 6318/2 TDHSP**</td>
<td>1100</td>
<td>647</td>
<td>48</td>
<td>36…72</td>
<td>79</td>
<td>8.9</td>
<td>360</td>
<td>6800</td>
<td>-20…+65</td>
<td>40 000 / 22 500</td>
<td>67 500</td>
</tr>
</tbody>
</table>

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.

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Note: Total sound power level LWA, ISO 10302 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
Max. 1220 m³/h

DC axial fans
220 x 200 x 51 mm

- Material: Housing: Die-cast aluminum
  Impeller: GRP/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)
  1000 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
  - Multi-option control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54

Series 2200 FTD

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow/ cfm</th>
<th>Voltage range</th>
<th>Sound pressure level DB(A)</th>
<th>Sound power level Bel(A)</th>
<th>Power consumption Watts</th>
<th>Nominal speed rpm-1</th>
<th>Temperature range °C</th>
<th>Life expectancy L10 IPC (40 °C) Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>2214 F/2 TDHO</td>
<td>790</td>
<td>24</td>
<td>62</td>
<td>7.1</td>
<td>35</td>
<td>4250</td>
<td>-20...+75</td>
<td>90 000 / 42 500 152 500 ①</td>
</tr>
<tr>
<td>2214 F/2 TDHHO</td>
<td>940</td>
<td>24</td>
<td>66</td>
<td>7.4</td>
<td>48</td>
<td>5000</td>
<td>-20...+70</td>
<td>85 000 / 42 500 142 500 ②</td>
</tr>
<tr>
<td>2218 F/2 TDHO</td>
<td>790</td>
<td>48</td>
<td>62</td>
<td>7.1</td>
<td>35</td>
<td>4250</td>
<td>-20...+75</td>
<td>90 000 / 42 500 152 500 ①</td>
</tr>
<tr>
<td>2218 F/2 TDHHO</td>
<td>940</td>
<td>48</td>
<td>66</td>
<td>7.4</td>
<td>48</td>
<td>5000</td>
<td>-20...+70</td>
<td>85 000 / 42 500 142 500 ②</td>
</tr>
<tr>
<td>2218 F/2 TDH4P</td>
<td>1220</td>
<td>48</td>
<td>72</td>
<td>8.2</td>
<td>103</td>
<td>6500</td>
<td>-20...+65</td>
<td>70 000 / 40 000 117 500 ③</td>
</tr>
</tbody>
</table>

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 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
- **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"
- **Degree of protection:** Depending on installation and position
  - "IP 44, IP 20"

- **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

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Curve</th>
<th>VDC</th>
<th>VDC</th>
<th>m³/h</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>°C</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>K1G 200-AD65-04</td>
<td>M1G 074-BF</td>
<td>①</td>
<td>24</td>
<td>16...28</td>
<td>1020</td>
<td>3 400</td>
<td>95</td>
<td>4.7</td>
<td>76</td>
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<tr>
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<td>16...28</td>
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<td>81</td>
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Subject to change

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
- **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

**Connection diagrams**
P. 262

**Technical features:**
- DC axial fans
- DC centrifugal fans
- AC axial fans
- AC centrifugal fans

**Accessories**

**Information**
- DC axial fans
- DC centrifugal fans
- AC axial fans
- AC centrifugal fans
- Accessories
- Representatives
Nominal data

- **Type:**
  - K3G 200-BD46-04
  - M3G 074-CF
  - K3G 200-BD44-02
  - M3G 074-CF
  - K3G 200-BD64-04
  - M3G 074-CF
  - K3G 200-BDA8-02
  - M3G 074-CF

- **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

### Technical Features and Connection Diagram

- **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

### Curves:

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.

<table>
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<th>Motor</th>
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<th>VDC</th>
<th>m³/h</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>°C</th>
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Subject to change
- **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

---

**Mounting dimensions**
- PVC AWG 16 cable
- 4x crimped ferrules

---

**Information**
- DC axial fans
- DC fans - specials
- ACmaxx / EC fans
- AC axial fans
- DC centrifugal fans
- AC centrifugal fans
- Accessories
- Representatives
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

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>Motor Type</th>
<th>Nominal voltage</th>
<th>Nominal voltage range</th>
<th>Air flow</th>
<th>Nominal speed</th>
<th>Power consumption</th>
<th>Input current</th>
<th>Max. back-pressure</th>
<th>Admissible amb. temp.</th>
<th>Technical features and connection diagram</th>
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<td>p. 258 / E</td>
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<td>p. 258 / E</td>
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</table>

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
- 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

For self-tapping M6 screws

"V"

(1) Control input
(2) Speed monitoring

Finger guards from p. 245
Connection diagrams P. 258
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

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<th>A</th>
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<th>°C</th>
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Curves:

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, 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](http://www.ebmpapst.com/general conditions)
- **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
  - GOST, UL

<table>
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<tr>
<th>Arrow direction</th>
<th>Without attachments</th>
<th>Weight without attachment</th>
<th>With full round nozzle</th>
<th>Weight with full round nozzle</th>
<th>Weight with finger guard for short nozzle</th>
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<td>A1G 300-AC19 -54</td>
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<td>W1G 300-DC19 -54</td>
<td>3.8</td>
<td>S1G 300-AC19 -54</td>
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<td>&quot;V&quot;</td>
<td>A1G 300-AC33 -54</td>
<td>1.8</td>
<td>W1G 300-DC33 -54</td>
<td>3.8</td>
<td>S1G 300-AC33 -54</td>
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</table>

Max. clearance for screw 6 mm

PVC AWG 20 cable, 4x crimped splices
DC centrifugal fans

### Product line
Our centrifugal product line includes fans for every application. Whether as free-running impellers with a diameter between 97 mm and 225 mm, or as assemblies in a ready-to-install, compact housing with inlet ring with an edge length between 51 mm and 270 mm. Of course, all models feature highly efficient, brushless motor technology.

### 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 centrifugal RadiCal
The new S-Force centrifugal fans provide peak performance among fans of this type. With air flow capacity of over 1500 m³/h and a pressure increase of up to 1000 pascals, the highest heat flows are manageable. The models are extremely efficient due to the multi-pole, electronically commutated drive motors, and can be adapted individually to every application thanks to intelligent motor features. Some models use our new, highly efficient RadiCal impellers.
# Centrifugal fans for DC operation

## Overview of air performance

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Series</th>
<th>Air flow</th>
<th>Page</th>
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<tbody>
<tr>
<td>Ø 105 x 99</td>
<td>RV 49</td>
<td>18...24</td>
<td>95</td>
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<tr>
<td>Ø 51 x 15</td>
<td>RLF 35</td>
<td>9.6</td>
<td>96</td>
</tr>
<tr>
<td>Ø 76 x 27</td>
<td>RL 48</td>
<td>22...28</td>
<td>97</td>
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<tr>
<td>Ø 97 x 93.5 x 33</td>
<td>RL 65</td>
<td>56...61</td>
<td>98</td>
</tr>
<tr>
<td>Ø 121 x 37</td>
<td>RL 90 N</td>
<td>40...55</td>
<td>99</td>
</tr>
<tr>
<td>Ø 127 x 25</td>
<td>RLF 100</td>
<td>64...80</td>
<td>100</td>
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<tr>
<td>Ø 135 x 38</td>
<td>RG 90 N</td>
<td>55</td>
<td>101</td>
</tr>
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<td>Ø 180 x 40</td>
<td>RG 125 N</td>
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<td>102</td>
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<tr>
<td>Ø 180 x 40</td>
<td>RG T40 NTD</td>
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<td>103</td>
</tr>
<tr>
<td>Ø 220 x 56</td>
<td>RG 160 N</td>
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</tr>
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<td>RG 160 NTD</td>
<td>59...444</td>
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</tr>
<tr>
<td>Ø 270 x 99</td>
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<td>RG 225 TD</td>
<td>1040...1450</td>
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<td>Ø 97 x 41</td>
<td>RET 97 TD</td>
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<td>REF 100</td>
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Subject to change
### Centrifugal fans for DC operation

**Overview of technically feasible designs**

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<td>RET 97 TD</td>
<td>• • • • • • • • •</td>
<td>109</td>
</tr>
<tr>
<td>100 x 25</td>
<td>REF 100</td>
<td>• • • • • • • • •</td>
<td>110</td>
</tr>
<tr>
<td>101 x 52</td>
<td>RER 101 N</td>
<td>• • • • • • • • •</td>
<td>111</td>
</tr>
<tr>
<td>120 x 54</td>
<td>RER 120 TD</td>
<td>• • • • • • • • •</td>
<td>112</td>
</tr>
<tr>
<td>138 x 35</td>
<td>RER 125 N</td>
<td>• • • • • • • • •</td>
<td>113</td>
</tr>
<tr>
<td>133 x 91</td>
<td>RER 133 TD</td>
<td>• • • • • • • • •</td>
<td>114</td>
</tr>
<tr>
<td>165 x 51</td>
<td>RER 160 N</td>
<td>• • • • • • • • •</td>
<td>115</td>
</tr>
<tr>
<td>165 x 51</td>
<td>RER 160 NTD</td>
<td>• • • • • • • • •</td>
<td>116</td>
</tr>
<tr>
<td>175 x 55</td>
<td>RER 175 TD</td>
<td>• • • • • • • • •</td>
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</tr>
<tr>
<td>175 x 69</td>
<td>RER 175 TD</td>
<td>• • • • • • • • •</td>
<td>118</td>
</tr>
<tr>
<td>190 x 69</td>
<td>RER 190 TD</td>
<td>• • • • • • • • •</td>
<td>119</td>
</tr>
<tr>
<td>220 x 71</td>
<td>RER 220 TD</td>
<td>• • • • • • • • •</td>
<td>120</td>
</tr>
<tr>
<td>225 x 99</td>
<td>RER 225 TD</td>
<td>• • • • • • • • •</td>
<td>121</td>
</tr>
<tr>
<td>201 x 413 x 50 x 48</td>
<td>QG 030</td>
<td>• • • • • • • • •</td>
<td>122</td>
</tr>
</tbody>
</table>

Optional special versions (see page 12)

On the catalog pages and in the overview on page 12, we provide information about the special designs that are technically feasible 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.
### DC centrifugal fans

**105 x 59 x 79 mm**

- **Material:** Scroll housing: GRP
  Impeller: GRP
- **Direction of air flow:** Axial: Intake
  Centrifugal: Exhaust
- **Connection:** via single wires AWG 26, TR 64
- **Highlights:** Forward-curved impeller
- **Weight:** 100 g

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

#### Series RV 40

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RV 40-18/12 L</td>
<td>18</td>
<td>10.6</td>
<td>12</td>
<td>9...16</td>
<td>4.0</td>
<td>2.0</td>
<td>3 900</td>
<td>-20...+70</td>
<td>70 000 / 35 000</td>
<td>117 500</td>
</tr>
<tr>
<td>RV 40-18/12 H</td>
<td>24</td>
<td>14.1</td>
<td>12</td>
<td>9...16</td>
<td>5.0</td>
<td>4.5</td>
<td>4 800</td>
<td>-20...+70</td>
<td>50 000 / 25 000</td>
<td>85 000</td>
</tr>
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</table>

Subject to change

---

Air performance measured according to ISO 5801. Installation category A, without contact protection.

Noise: Total sound power level \( L_{WA} \) ISO 10300 measured on a hemisphere with a radius of 2 m; Sound pressure level \( L_{PA} \) measured at 1 m distance from fan axis.

The acoustic values are only valid for the described measurement setup and may vary depending on the installation situation.

The data sheets are only valid for the described measurement setup and may vary depending on the installation situation.

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](http://www.ebmpapst.com/general conditions)
Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level \(L_{W}A\) ISO 10300 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

### DC centrifugal fans

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow m³/h</th>
<th>Nominal voltage VDC</th>
<th>Sound power level (L_{W}A) dB(A)</th>
<th>Power consumption Watts</th>
<th>Nominal speed rpm⁻¹</th>
<th>Temperature range °C</th>
<th>Service life L10 (T_{Max})</th>
<th>Life expectancy L10 IPC (40 °C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RLF 35-8/12 N</td>
<td>9.6</td>
<td>12</td>
<td>8...13.2</td>
<td>3.5</td>
<td>6700</td>
<td>-20...+70</td>
<td>60 000 / 30 000</td>
<td>102 500</td>
</tr>
<tr>
<td>RLF 35-8/14 N</td>
<td>9.6</td>
<td>24</td>
<td>14...28</td>
<td>4.3</td>
<td>6700</td>
<td>-20...+70</td>
<td>60 000 / 30 000</td>
<td>102 500</td>
</tr>
</tbody>
</table>

Subject to change

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### Series RLF 35

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>Air flow m³/h</th>
<th>Nominal voltage VDC</th>
<th>Sound power level (L_{W}A) dB(A)</th>
<th>Power consumption Watts</th>
<th>Nominal speed rpm⁻¹</th>
<th>Temperature range °C</th>
<th>Service life L10 (T_{Max})</th>
<th>Life expectancy L10 IPC (40 °C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RLF 35-8/12 N</td>
<td>9.6</td>
<td>12</td>
<td>8...13.2</td>
<td>3.5</td>
<td>6700</td>
<td>-20...+70</td>
<td>60 000 / 30 000</td>
<td>102 500</td>
</tr>
<tr>
<td>RLF 35-8/14 N</td>
<td>9.6</td>
<td>24</td>
<td>14...28</td>
<td>4.3</td>
<td>6700</td>
<td>-20...+70</td>
<td>60 000 / 30 000</td>
<td>102 500</td>
</tr>
</tbody>
</table>

### Possible special versions:
(See chapter DC fans - specials)
- Speed signal - PWM control input
- Moisture protection

---

1) Fiberglass-reinforced plastic.
**Series RL 48**

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow m³/h</th>
<th>cfm</th>
<th>Nominal voltage VDC</th>
<th>Voltage range VDC</th>
<th>Power consumption Bel(A) watts</th>
<th>Nominal speed rpm⁻¹</th>
<th>Temperature range °C</th>
<th>Service life L₁₀ (40 °C) Hours</th>
<th>Service life L₁₀ (Tmax) Hours</th>
<th>Life expectancy L₁₀ IPC (40 °C) Hours</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>RL 48-19/12 ML</td>
<td>22</td>
<td>12.9</td>
<td>8...15</td>
<td>5.3</td>
<td>5.0</td>
<td>3 500</td>
<td>-20...+70</td>
<td>70 000 / 35 000</td>
<td>177 500</td>
<td>117 500</td>
<td></td>
</tr>
<tr>
<td>RL 48-19/12</td>
<td>28</td>
<td>16.5</td>
<td>8...13.5</td>
<td>5.7</td>
<td>4.6</td>
<td>4 400</td>
<td>-20...+70</td>
<td>60 000 / 30 000</td>
<td>102 500</td>
<td>102 500</td>
<td></td>
</tr>
<tr>
<td>RL 48-19/14 ML</td>
<td>22</td>
<td>12.9</td>
<td>18...28</td>
<td>5.3</td>
<td>5.0</td>
<td>3 500</td>
<td>-20...+70</td>
<td>70 000 / 35 000</td>
<td>177 500</td>
<td>117 500</td>
<td></td>
</tr>
<tr>
<td>RL 48-19/14</td>
<td>28</td>
<td>16.5</td>
<td>18...26.4</td>
<td>5.7</td>
<td>4.4</td>
<td>4 400</td>
<td>-20...+70</td>
<td>60 000 / 30 000</td>
<td>102 500</td>
<td>102 500</td>
<td></td>
</tr>
</tbody>
</table>

Subject to change

**DC centrifugal fans**

- **Material:** Scroll housing: GRP
- **Impeller:** GRP
- **Direction of air flow:** Axial: Intake, Centrifugal: Exhaust
- **Connection:** via single wires AWG 26, TR 64
- **Highlights:** Forward curved impeller
- **Weight:** 75 g

1) Fiberglass-reinforced plastic.

Air performance measured according to ISO 5801, Installation category A, without contact protection.
Noise: Total sound power level LWA 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
### DC centrifugal fans

97 x 93.5 x 33 mm

- **Material:** Scroll housing: GRP
- **Impeller:** GRP
- **Direction of air flow:** Axial: Intake, Centrifugal: Exhaust
- **Connection:** via single wires AWG 26, TR 64
- **Highlights:** Forward curved impeller
- **Weight:** 170 g
- **Possible special versions:**
  - 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 RL 65

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>Nominal voltage</th>
<th>Sound power level</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Life expectancy L10 (40 °C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RL 65-21/12</td>
<td>56</td>
<td>32,9</td>
<td>12</td>
<td>6.8...13.8</td>
<td>15.0</td>
<td>4 500</td>
<td>-20...+70</td>
<td>60 000 / 30 000 / 102 500</td>
</tr>
<tr>
<td>RL 65-21/12 H</td>
<td>61</td>
<td>35,8</td>
<td>12</td>
<td>6.8...13.2</td>
<td>19.2</td>
<td>4 900</td>
<td>-20...+55</td>
<td>55 000 / 40 000 / 92 500</td>
</tr>
<tr>
<td>RL 65-21/14</td>
<td>56</td>
<td>32,9</td>
<td>24</td>
<td>12...26.4</td>
<td>14.0</td>
<td>4 500</td>
<td>-20...+70</td>
<td>60 000 / 30 000 / 102 500</td>
</tr>
<tr>
<td>RL 65-21/14 H</td>
<td>61</td>
<td>35,8</td>
<td>24</td>
<td>12...26.4</td>
<td>18.0</td>
<td>4 900</td>
<td>-20...+60</td>
<td>55 000 / 35 000 / 92 500</td>
</tr>
</tbody>
</table>

**Subject to change**

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**Nominal data**

<table>
<thead>
<tr>
<th>Air flow</th>
<th>Air flow</th>
<th>Nominal voltage</th>
<th>Voltage range</th>
<th>Sound power level</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Life expectancy L10 (40 °C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RL 65-21/12</td>
<td>56</td>
<td>32,9</td>
<td>12</td>
<td>6.8...13.8</td>
<td>15.0</td>
<td>4 500</td>
<td>-20...+70</td>
<td>60 000 / 30 000 / 102 500</td>
</tr>
<tr>
<td>RL 65-21/12 H</td>
<td>61</td>
<td>35,8</td>
<td>12</td>
<td>6.8...13.2</td>
<td>19.2</td>
<td>4 900</td>
<td>-20...+55</td>
<td>55 000 / 40 000 / 92 500</td>
</tr>
<tr>
<td>RL 65-21/14</td>
<td>56</td>
<td>32,9</td>
<td>24</td>
<td>12...26.4</td>
<td>14.0</td>
<td>4 500</td>
<td>-20...+70</td>
<td>60 000 / 30 000 / 102 500</td>
</tr>
<tr>
<td>RL 65-21/14 H</td>
<td>61</td>
<td>35,8</td>
<td>24</td>
<td>12...26.4</td>
<td>18.0</td>
<td>4 900</td>
<td>-20...+60</td>
<td>55 000 / 35 000 / 92 500</td>
</tr>
</tbody>
</table>

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Air performance measured according to ISO 5801. Installation category A, without contact protection. Noise: Total sound power level LWA ISO 10300 measured on a hemisphere with a radius of 2 m. Sound pressure level LpA measured at 1 m distance from the 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](http://www.ebmpapst.com/general conditions)
Max. 55 m³/h

DC centrifugal fans

- **Material:** Scroll housing: GRP<sup>1</sup>
  Impeller: GRP<sup>1</sup>
  Base plate: Sheet steel
- **Direction of air flow:** Axial: Intake,
  Centrifugal: Exhaust
- **Connection:** via single wires AWG 22, TR 64
- **Highlights:** Forward-curved impeller
- **Weight:** 420 g

### Series RL 90 N

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow (m³/h)</th>
<th>Air flow (cfm)</th>
<th>Nominal voltage (VDC)</th>
<th>Voltage range (°C)</th>
<th>Sound power level (Watts)</th>
<th>RPM</th>
<th>Temperature range (°C)</th>
<th>Service life L10 (40 °C) (hours)</th>
<th>Service life L10 (Tmax ) (hours)</th>
<th>Life expectancy (L10IPC) (40 °C)</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>RL 90-18/12 N</td>
<td>40</td>
<td>23.5</td>
<td>12</td>
<td>7...15</td>
<td>5.8</td>
<td></td>
<td>6.3</td>
<td>2 500</td>
<td>-30...+75</td>
<td>62 500 / 27 500</td>
<td>105 000</td>
</tr>
<tr>
<td>RL 90-18/14 NG</td>
<td>40</td>
<td>23.5</td>
<td>24</td>
<td>12...28</td>
<td>5.8</td>
<td></td>
<td>5.6</td>
<td>2 500</td>
<td>-20...+75</td>
<td>62 500 / 27 500</td>
<td>105 000</td>
</tr>
<tr>
<td>RL 90-18/14 N</td>
<td>40</td>
<td>23.5</td>
<td>24</td>
<td>12...28</td>
<td>5.8</td>
<td></td>
<td>5.6</td>
<td>2 500</td>
<td>-30...+75</td>
<td>62 500 / 27 500</td>
<td>105 000</td>
</tr>
<tr>
<td>RL 90-18/18 NH</td>
<td>55</td>
<td>32.4</td>
<td>48</td>
<td>36...53</td>
<td>6.9</td>
<td></td>
<td>14.7</td>
<td>3 500</td>
<td>-30...+65</td>
<td>32 500 / 17 500</td>
<td>55 000</td>
</tr>
</tbody>
</table>

Subject to change

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<sup>1</sup> Fiberglass-reinforced plastic

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Air performance measured according to:
ISO 5801.
Installation category A, without contact protection.

Notes:
- Total sound power level LWA measured with a hemisphere with a radius of 2 m;
- Sound pressure level LₚA measured at 1 m distance from fan axis.

The acoustic values are only valid for the described measurement setup and may vary depending on the installation situation.

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

---

Material:
- Scroll housing: GRP<sup>1</sup>
- Impeller: GRP<sup>1</sup>
- Base plate: Sheet steel

Direction of air flow:
- Axial: Intake
- Centrifugal: Exhaust

Connection:
- via single wires AWG 22, TR 64

Highlights:
- Forward-curved impeller

Weight:
- 420 g

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2015-01

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Represents
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.
DC centrifugal fans

Series RG 90 N

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG 90-18/12 N</td>
<td>55</td>
<td>32.4</td>
<td>12</td>
<td>7...15</td>
<td>5.5</td>
<td>6.7</td>
<td>2 200</td>
<td>-30...+75</td>
<td>62 500 / 27 500</td>
<td>105 000</td>
</tr>
<tr>
<td>RG 90-18/14 NG</td>
<td>55</td>
<td>32.4</td>
<td>24</td>
<td>12...28</td>
<td>5.5</td>
<td>6.2</td>
<td>2 200</td>
<td>-10...+75</td>
<td>62 500 / 27 500</td>
<td>105 000</td>
</tr>
<tr>
<td>RG 90-18/14 N</td>
<td>55</td>
<td>32.4</td>
<td>24</td>
<td>12...28</td>
<td>5.5</td>
<td>6.2</td>
<td>2 200</td>
<td>-30...+75</td>
<td>62 500 / 27 500</td>
<td>105 000</td>
</tr>
<tr>
<td>RG 90-18/18 N</td>
<td>55</td>
<td>32.4</td>
<td>48</td>
<td>36...56</td>
<td>5.5</td>
<td>6.1</td>
<td>2 200</td>
<td>-30...+75</td>
<td>62 500 / 27 500</td>
<td>105 000</td>
</tr>
</tbody>
</table>

Subject to change

- Material: Scroll housing: GRP\(^1\)
  Impeller: GRP\(^1\)
  Base plate: Sheet steel
- Direction of air flow: Axial: Intake,
  Centrifugal: Exhaust
- Connection: Via single wires AWG 22, TR 64
  48 V model: Flat plug
  6.3 x 0.8 mm for ground conductor
- Highlights: Forward-curved impeller
- Weight: 440 g

1) Fiberglass-reinforced plastic

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
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

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>$m^3/h$</th>
<th>cfm</th>
<th>Voltage range</th>
<th>Sound Power Level $L_{WA}$</th>
<th>Power Consumption</th>
<th>Nominal Speed</th>
<th>Temperature Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG 125-19/12 NM</td>
<td>60.0</td>
<td>35.3</td>
<td>12</td>
<td>7...15</td>
<td>2.0</td>
<td>1 750</td>
<td>-30...+75</td>
</tr>
<tr>
<td>RG 125-19/12 N</td>
<td>87.5</td>
<td>51.5</td>
<td>12</td>
<td>7...15</td>
<td>5.2</td>
<td>2 550</td>
<td>-30...+75</td>
</tr>
<tr>
<td>RG 125-19/14 NM</td>
<td>60.0</td>
<td>35.3</td>
<td>24</td>
<td>12...28</td>
<td>2.0</td>
<td>1 750</td>
<td>-30...+75</td>
</tr>
<tr>
<td>RG 125-19/14 N</td>
<td>87.5</td>
<td>51.5</td>
<td>24</td>
<td>12...28</td>
<td>4.9</td>
<td>2 550</td>
<td>-30...+75</td>
</tr>
<tr>
<td>RG 125-19/18 N</td>
<td>87.5</td>
<td>51.5</td>
<td>48</td>
<td>36...56</td>
<td>4.8</td>
<td>2 550</td>
<td>-30...+75</td>
</tr>
<tr>
<td>RG 125-19/18 NH</td>
<td>137</td>
<td>80.6</td>
<td>48</td>
<td>36...56</td>
<td>19.0</td>
<td>4 000</td>
<td>-20...+70</td>
</tr>
</tbody>
</table>

Subject to change

Max. $137 \, m^3/h$

### Possible special versions:

- 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

### Material:

- Scroll housing: GRP
- Impeller: GRP
- Base plate: Sheet steel

### Direction of air flow:

- Axial: Intake
- Centrifugal: Exhaust

### Connection:

- Via single wires AWG 22, TR 64 48 V model:
- Flat plug 6.3 x 0.8 mm for ground conductor

### Highlights:

- Backward-curved impeller

### Weight:

- 730 g

1) Fiberglass-reinforced plastic.
Max. 118 m³/h

DC centrifugal fans

- **Material:** Scroll housing: GRP
  Impeller: GRP
  Base plate: Sheet steel
- **Direction of air flow:** Axial: Intake,
  Centrifugal: Exhaust
- **Connection:** via single wires AWG 22, TR 64
- **Highlights:** Backward-curved impeller
  3-phase fan drive with special
  commutation electronics for
  extremely low-noise operation
- **Weight:** 750 g

Series RG 140 NTD

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEW RG 140-22/14 N/2 TDPU</td>
<td>118</td>
<td>69.4</td>
<td>24</td>
<td>20.4...27.6</td>
<td>6.0</td>
<td>9.3</td>
<td>2 500</td>
<td>-20...+70</td>
<td>62 500 / 32 500</td>
<td>105 000</td>
</tr>
</tbody>
</table>

Subject to change

Higher performance levels on request.

![DC centrifugal fans diagram](image)

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

1) Fiberglass-reinforced plastic.
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

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow</th>
<th>Air flow</th>
<th>Nominal voltage</th>
<th>Voltage range</th>
<th>Sound power level</th>
<th>Sintered sleeve bearings</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life $L_{10} (40 , ^\circ\text{C})$</th>
<th>Service life $L_{10} (T_{max})$</th>
<th>Life expectancy $L_{10}$ IPC (40 °C) Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG 160-28/12 NM</td>
<td>139</td>
<td>81</td>
<td>12</td>
<td>7...14</td>
<td>5.6</td>
<td>7.5</td>
<td>1 900</td>
<td>-20...+70</td>
<td>80 000 / 40 000</td>
<td>135 000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RG 160-28/12 N</td>
<td>209</td>
<td>123</td>
<td>12</td>
<td>7.5...14</td>
<td>6.6</td>
<td>21.0</td>
<td>2 850</td>
<td>-20...+70</td>
<td>70 000 / 35 000</td>
<td>117 500</td>
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<td></td>
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<tr>
<td>RG 160-28/14 NM</td>
<td>139</td>
<td>81</td>
<td>24</td>
<td>12...28</td>
<td>5.6</td>
<td>7.0</td>
<td>1 900</td>
<td>-20...+70</td>
<td>80 000 / 40 000</td>
<td>135 000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RG 160-28/14 N</td>
<td>209</td>
<td>123</td>
<td>24</td>
<td>12...28</td>
<td>6.6</td>
<td>20.0</td>
<td>2 850</td>
<td>-20...+70</td>
<td>70 000 / 35 000</td>
<td>117 500</td>
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<td></td>
</tr>
<tr>
<td>RG 160-28/18 N</td>
<td>209</td>
<td>123</td>
<td>48</td>
<td>28...60</td>
<td>6.6</td>
<td>20.0</td>
<td>2 850</td>
<td>-20...+70</td>
<td>70 000 / 35 000</td>
<td>117 500</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Possible special versions:
- 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:

**DC centrifugal fans**

- **Material:** Scroll housing: GRP
  Impeller: GRP
  Base plate: Sheet steel
- **Direction of air flow:** Axial: Intake, Centrifugal: Exhaust
- **Connection:** Via single wires AWG 22, TR 64 48 V model: Flat plug 6.3 x 0.8 mm for ground conductor
- **Highlights:** Backward-curved impeller
- **Weight:** 1.4 kg

---

Max. 209 m$^3$/h
Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level LWA ISO 10300 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

- **Material:** Scroll housing: GRP\(^1\)
  Impeller: GRP\(^1\)
  Base plate: Sheet steel

- **Direction of air flow:** Axial: Intake,
  Centrifugal: Exhaust

- **Connection:** Via single wires AWG 22, TR 64 48 V model: Flat plug
  6.3 x 0.8 mm for ground conductor

- **Highlights:** Smoothly operating 3-phase fan drive
  Backward-curved impeller

- **Weight:** 1.4 kg

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
- Humidity protection
- Degree of protection: IP 54

**Series RG 160 NTD**

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Temperature range</th>
<th>Service life L10 (40 °C) ebm-papst standard</th>
<th>Life expectancy L10IPC (40 °C) see page 17</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG 160-28/14 NTD...</td>
<td>59</td>
<td>34.7</td>
<td>16...28</td>
<td>7.5</td>
<td>2.0</td>
<td>64</td>
<td>4 200</td>
<td>-20...+60</td>
<td>55 000 / 35 000</td>
<td>92 500</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>308</td>
<td>181</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>55 000 / 35 000</td>
<td>92 500</td>
</tr>
<tr>
<td>RG 160-28/14 NTD</td>
<td>308</td>
<td>181</td>
<td>24</td>
<td>16...28</td>
<td>7.5</td>
<td>64</td>
<td>4 200</td>
<td>-20...+60</td>
<td>55 000 / 35 000</td>
<td>92 500</td>
<td>2</td>
</tr>
<tr>
<td>RG 160-28/14 NTDH</td>
<td>370</td>
<td>218</td>
<td>24</td>
<td>16...28</td>
<td>7.8</td>
<td>101</td>
<td>5 000</td>
<td>-20...+60</td>
<td>50 000 / 32 500</td>
<td>85 000</td>
<td>3</td>
</tr>
<tr>
<td>RG 160-28/18 NTD...</td>
<td>59</td>
<td>34.7</td>
<td>48</td>
<td>38...57</td>
<td>7.5</td>
<td>2.0</td>
<td>800</td>
<td>-20...+70</td>
<td>55 000 / 27 500</td>
<td>92 500</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>308</td>
<td>181</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>55 000 / 27 500</td>
<td>92 500</td>
</tr>
<tr>
<td>RG 160-28/18 N/2 TDHHP*</td>
<td>444</td>
<td>261</td>
<td>48</td>
<td>36...60</td>
<td>8.5</td>
<td>159</td>
<td>6 000</td>
<td>-20...+65</td>
<td>40 000 / 22 500</td>
<td>67 500</td>
<td>3</td>
</tr>
</tbody>
</table>

Subject to change

Models RG 160-28/14 NTD... and RG 160-28/18 NTD... 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.
*The specific service life is valid when an external capacitor is wired between the positive and negative wires.
Please note the wiring suggestion.
Air performance measured according to ISO 5801. Installation category A, without contact protection.

- Material: Scroll housing: GRP
- Impeller: GRP
- Direction of air flow: Axial: Intake, Centrifugal: Exhaust
- Direction of rotation: Clockwise, looking towards rotor 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 Backward-curved RadiCal impeller
- Weight: 1210 g

### DC centrifugal fans

#### Series RG 190 TD

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG 190-39/14/2 TDMLO</td>
<td>630</td>
<td>371</td>
<td>24</td>
<td>16...30</td>
<td>7.6</td>
<td>54</td>
<td>3 000</td>
<td>-20...+60</td>
<td>55 000 / 35 000</td>
<td>92 500</td>
</tr>
<tr>
<td>RG 190-39/14/2 TDMO</td>
<td>820</td>
<td>482</td>
<td>24</td>
<td>16...36</td>
<td>7.9</td>
<td>113</td>
<td>3 900</td>
<td>-20...+65</td>
<td>52 500 / 30 000</td>
<td>87 500</td>
</tr>
<tr>
<td>RG 190-39/18/2 TDMLO*</td>
<td>630</td>
<td>371</td>
<td>48</td>
<td>36...57</td>
<td>7.6</td>
<td>52</td>
<td>3 000</td>
<td>-20...+65</td>
<td>55 000 / 30 000</td>
<td>92 500</td>
</tr>
<tr>
<td>RG 190-39/18/2 TDMO</td>
<td>820</td>
<td>482</td>
<td>48</td>
<td>36...72</td>
<td>7.9</td>
<td>113</td>
<td>3 900</td>
<td>-20...+65</td>
<td>52 500 / 30 000</td>
<td>87 500</td>
</tr>
<tr>
<td>RG 190-190/18/2 TDO</td>
<td>930</td>
<td>547</td>
<td>48</td>
<td>36...72</td>
<td>8.3</td>
<td>140</td>
<td>4 400</td>
<td>-20...+65</td>
<td>40 000 / 22 500</td>
<td>67 500</td>
</tr>
</tbody>
</table>

Subject to change

* On request

Speed control range from 800 rpm⁻¹ at 7% PWM up to nominal speed at > 90% PWM. Standstill at 0% PWM, Standstill if control cable is interrupted.

Finger guards P. 249

1) Fiberglass-reinforced plastic

---

Max. 930 m³/h

---

Finger guards P. 249

106
Max. 1100 m³/h

**DC centrifugal fans – RadiCal**

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG 220-43/14/2 TDMO</td>
<td>1100</td>
<td>647</td>
<td>24</td>
<td>16..36</td>
<td>7.5</td>
<td>101</td>
<td>3 000</td>
<td>-20...+55</td>
<td>55 000 / 40 000</td>
<td>92 500</td>
</tr>
<tr>
<td>RG 220-43/18/2 TDMO*</td>
<td>1100</td>
<td>647</td>
<td>48</td>
<td>36..72</td>
<td>7.5</td>
<td>101</td>
<td>3 000</td>
<td>-20...+55</td>
<td>55 000 / 40 000</td>
<td>92 500</td>
</tr>
</tbody>
</table>

Subject to change

* On request

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
- Humidity protection
- Salt spray protection
- Degree of protection: IP 54

### Material:
Scroll housing: GRP
Impeller: GRP

### Direction of air flow:
Axial: Intake,
Centrifugal: Exhaust

### Direction of rotation:
Clockwise, looking towards rotor
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
Backward-curved impeller

### Weight:
1560 g

1) Fiberglass-reinforced plastic

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 [P. 249]
DC centrifugal fans – RadiCal

270 x 119 mm

- Material: Scroll housing: GRP\(^1\)
  Impeller: GRP\(^1\)
- Direction of air flow: Axial: Intake, Centrifugal: Exhaust
- Direction of rotation: Clockwise, looking towards rotor 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 Backward-curved RadiCal impeller
- Weight: 1750 g

\(^1\) Fiberglass-reinforced plastic

---

Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level LWA ISO 10300-2 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

---

Series RG 225 TD

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG 225-55/14/2 TDMLO</td>
<td>1090</td>
<td>641</td>
<td>24</td>
<td>16..36</td>
<td>7.4</td>
<td>■</td>
<td>80</td>
<td>2 500</td>
<td>-20...+65</td>
<td>52 500 / 30 000</td>
</tr>
<tr>
<td>RG 225-55/18/2 TDMLO*</td>
<td>1090</td>
<td>641</td>
<td>48</td>
<td>36..72</td>
<td>7.4</td>
<td>■</td>
<td>80</td>
<td>2 500</td>
<td>-20...+65</td>
<td>52 500 / 30 000</td>
</tr>
<tr>
<td>RG 225-55/18/2 TDMO</td>
<td>1210</td>
<td>712</td>
<td>48</td>
<td>36..72</td>
<td>7.9</td>
<td></td>
<td>116</td>
<td>2 800</td>
<td>-20...+55</td>
<td>55 000 / 40 000</td>
</tr>
<tr>
<td>RG 225-55/18/2 TDO</td>
<td>1450</td>
<td>853</td>
<td>48</td>
<td>36..60</td>
<td>8.1</td>
<td></td>
<td>192</td>
<td>3 300</td>
<td>-20...+40</td>
<td>30 000 / 30 000</td>
</tr>
</tbody>
</table>

Subject to change
* On request

The specific service life is valid when an external capacitor is wired between the positive and negative wires.
Please note the wiring suggestion.

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
## DC centrifugal fans

### Ø 97 x 41 mm

- **Material:** Impeller: Galvanized sheet steel
- **Direction of air flow:** Axial: Intake, Centrifugal: Exhaust
- **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 Forward-curved impeller Fan requires a scroll housing
- **Weight:** 430 g

### Series RET 97 TD

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow m³/h</th>
<th>cfm</th>
<th>Voltage range VDC</th>
<th>Sound power level Bel(A)</th>
<th>Power consumption Watts</th>
<th>Nominal speed rpm⁻¹</th>
<th>Temperature range °C</th>
<th>Service life L₁₀ (40 °C) Hours</th>
<th>Service life L₁₀ (Tmax) Hours</th>
<th>Life expectancy L₁₀IPC (40 °C) Hours</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>RET 97-25/14/2 TDP</td>
<td>220</td>
<td>129</td>
<td>16...32</td>
<td>8.1</td>
<td>■</td>
<td>77</td>
<td>6 000</td>
<td>-20...+60</td>
<td>80 000 / 50 000</td>
<td>135 000</td>
<td>1</td>
</tr>
<tr>
<td>RET 97-25/18/2 TDP</td>
<td>220</td>
<td>129</td>
<td>36...60</td>
<td>8.1</td>
<td>■</td>
<td>76</td>
<td>6 000</td>
<td>-20...+60</td>
<td>80 000 / 50 000</td>
<td>135 000</td>
<td>1</td>
</tr>
</tbody>
</table>

Subject to change

Speed control range from 800 rpm⁻¹ at 7% PWM up to nominal speed at > 90% PWM. 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 positive and negative wires. Please note the wiring suggestion.

---

Air performance measured according to ISO 5801. Installation category A, with ebm-papst scroll housing 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.

---

![Diagram of DC centrifugal fan](image-url)
DC centrifugal fans
Ø 104 x 25 mm

Maximum airflow: 104 m³/h

- Material: Impeller: GRP
- Direction of air flow: Axial: Intake, Centrifugal: Exhaust
- Direction of rotation: Clockwise, looking towards rotor
- Connection: via single wires AWG 22, TR 64
- Highlights: Backward-curved impeller
- Weight: 160 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

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>REF 100-11/12</td>
<td>86</td>
<td>50.6</td>
<td>12</td>
<td>8...15</td>
<td>6.3</td>
<td>7.5</td>
<td>5 400</td>
<td>-20...+75</td>
<td>80 000</td>
<td>30 000</td>
</tr>
<tr>
<td>REF 100-11/14</td>
<td>86</td>
<td>50.6</td>
<td>24</td>
<td>16...30</td>
<td>6.3</td>
<td>7.5</td>
<td>5 400</td>
<td>-20...+75</td>
<td>80 000</td>
<td>30 000</td>
</tr>
<tr>
<td>REF 100-11/18</td>
<td>86</td>
<td>50.6</td>
<td>48</td>
<td>36...60</td>
<td>6.3</td>
<td>8.2</td>
<td>5 400</td>
<td>-20...+75</td>
<td>80 000</td>
<td>30 000</td>
</tr>
<tr>
<td>REF 100-11/18 H</td>
<td>104</td>
<td>61.2</td>
<td>48</td>
<td>36...56</td>
<td>6.9</td>
<td>14.8</td>
<td>6 700</td>
<td>-20...+70</td>
<td>67 500</td>
<td>32 500</td>
</tr>
</tbody>
</table>

Subject to change

Air performance measured according to ISO 5801.
Installation category A, with ebm-papst inlet ring without contact protection.
Noise: Total sound power level LWA ISO 103002 measured on a hemisphere with a distance 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
DC centrifugal fans
Ø 101 x 52 mm

Max. 190 m³/h

- Material: Impeller: GRP
- Direction of air flow: Axial: Intake, Centrifugal: Exhaust
- Direction of rotation: Clockwise, looking towards rotor
- Connection: via single wires AWG 22, TR 64
- Highlights: Backward-curved impeller
- Weight: 305 g

Possible special versions:
- Speed signal
- Go / NoGo alarm
- Alarm with speed limit
- External temperature sensor
- Internal temperature sensor
- PWM control input
- Analog control input
- Moisture protection

Series RER 101 N

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow m³/h</th>
<th>Air flow cfm</th>
<th>Nominal voltage VDC</th>
<th>Sound power level LWA ISO 10300 measured on a hemisphere with a distance of 2 m; Sound pressure level LpA measured at 1 m distance from fan axis.</th>
<th>Power consumption Watts</th>
<th>Nominal speed rpm-1</th>
<th>Temperature range °C</th>
<th>Service life L10 (40 °C) in hours</th>
<th>Service life L10 (Tmax) in hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RER 101-36/12 NH</td>
<td>162</td>
<td>95</td>
<td>12</td>
<td>9...13.6 6.9</td>
<td>13.0</td>
<td>5 000</td>
<td>-20...+70</td>
<td>65 000 / 32 500</td>
<td>110 000</td>
</tr>
<tr>
<td>RER 101-36/12 NHH</td>
<td>190</td>
<td>112</td>
<td>12</td>
<td>9...13.6 7.2</td>
<td>20.5</td>
<td>6 000</td>
<td>-20...+70</td>
<td>60 000 / 30 000</td>
<td>102 500</td>
</tr>
<tr>
<td>RER 101-36/14 NH</td>
<td>190</td>
<td>112</td>
<td>24</td>
<td>18...27.2 7.2</td>
<td>22.5</td>
<td>6 050</td>
<td>-20...+70</td>
<td>60 000 / 30 000</td>
<td>102 500</td>
</tr>
<tr>
<td>RER 101-36/18 NHH</td>
<td>190</td>
<td>112</td>
<td>48</td>
<td>36...60 7.2</td>
<td>19.4</td>
<td>5 850</td>
<td>-20...+70</td>
<td>60 000 / 30 000</td>
<td>102 500</td>
</tr>
</tbody>
</table>

Subject to change

The air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions.

The stated air flow and sound level were recorded under the following measurement parameters:
- Centrifugal fan mounted on a foundation plate 148 x 148 mm.
- Cover plate 148 x 148 mm, with an air inlet opening Ø 66 mm, arranged concentrically to the impeller.

Air performance measured according to ISO 5801.
- Installation category A, with ebm-papst inlet ring without contact protection.
- Noise: Total sound power level LWA ISO 10300 measured on a hemisphere with a distance 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
Max. 390 m³/h

DC centrifugal fans
Ø 120 x 54 mm

- **Material:** Impeller: GRP
- **Direction of air flow:** Axial: Intake, Centrifugal: Exhaust
- **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
  Backward-curved impeller
- **Weight:** 430 g

### Series RER 120 TD

**Nominal data**

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RER 120-26/14/2 TDMP*</td>
<td>320</td>
<td>188</td>
<td>24</td>
<td>16...32</td>
<td>tbd</td>
<td>51</td>
<td>5 200</td>
<td>-20...+60</td>
<td>60 000 / 37 500</td>
<td>102 500</td>
</tr>
<tr>
<td>RER 120-26/14/2 TDP</td>
<td>377</td>
<td>222</td>
<td>24</td>
<td>16...32</td>
<td>8.2</td>
<td>78</td>
<td>6 100</td>
<td>-20...+60</td>
<td>55 000 / 35 000</td>
<td>92 500</td>
</tr>
<tr>
<td>RER 120-26/18/2 TDMP*</td>
<td>320</td>
<td>188</td>
<td>48</td>
<td>36...60</td>
<td>tbd</td>
<td>51</td>
<td>5 200</td>
<td>-20...+60</td>
<td>57 500 / 35 000</td>
<td>97 500</td>
</tr>
<tr>
<td>RER 120-26/18/2 TDP</td>
<td>390</td>
<td>230</td>
<td>48</td>
<td>36...60</td>
<td>8.3</td>
<td>92</td>
<td>6 300</td>
<td>-20...+60</td>
<td>50 000 / 30 000</td>
<td>85 000</td>
</tr>
</tbody>
</table>

Subject to change
* On request

The specific service life is valid when an external capacitor is wired between the positive and negative wires. Please note the wiring suggestion.

The air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions. The stated air flow and sound level were recorded under the following measurement parameters:

- Centrifugal fan mounted on a foundation plate 140 x 140 mm.
- Cover plate 140 x 140 mm, with an air inlet opening Ø 94.4 mm, arranged concentrically to the impeller.

Air performance measured according to ISO 5801. Installation category A, with ebm-papst inlet ring without contact protection.

Noise: Total sound power level LWA, ISO 103002 measured on a hemisphere with a distance 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
DC centrifugal fans
Ø 120 mm

- **Material:**
  - Impeller: PA 6.6 plastic, fiberglass-reinforced
  - Rotor: Galvanized

- **Number of blades:** 9
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** IP 20
- **Insulation class:** “B”
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VDC</th>
<th>VDC</th>
<th>m³/h</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1G 120</td>
<td>M1G 045-BE</td>
<td>24</td>
<td>16-28</td>
<td>250</td>
<td>4060</td>
<td>26</td>
<td>1.20</td>
<td>62</td>
<td>-25..+50</td>
</tr>
<tr>
<td>R1G 120</td>
<td>M1G 045-BE</td>
<td>48</td>
<td>36-57</td>
<td>250</td>
<td>4060</td>
<td>26</td>
<td>0.60</td>
<td>62</td>
<td>-25..+50</td>
</tr>
</tbody>
</table>

Subject to change

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Air performance measured according to EN 5001, installation category A, with ebm-papst inlet ring 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](http://www.ebmpapst.com/general conditions).
– Technical features: See connection diagram p. 259
– Cable exit: Axial
– Conformity with standard(s): EN 60950-1
– Approvals: EAC

<table>
<thead>
<tr>
<th>Centrifugal fans</th>
<th>kg</th>
<th>Inlet ring (long)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1G 120-AD13 -02</td>
<td>0.5</td>
<td>96120-2-4013</td>
</tr>
<tr>
<td>R1G 120-AD11 -02</td>
<td>0.5</td>
<td>96120-2-4013</td>
</tr>
</tbody>
</table>
Air performance measured according to ISO 5801.
Installation category A, with ebm-papst inlet ring without contact protection.
Noise: Total sound power level $L_W$ ISO 103002 measured on a hemisphere with a distance of 2 m; Sound pressure level $L_p$ 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

The air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions.
The stated air flow and sound level were recorded under the following measurement parameters:
Centrifugal fan mounted on a foundation plate 220 x 220 mm.
Cover plate 220 x 220 mm, with an air inlet opening Ø 86 mm, arranged concentrically to the impeller.
DC centrifugal fans

Max. 565 m³/h

S-Force

- Material: Impeller: GRP¹
- Direction of air flow: Axial: Intake, Centrifugal: Exhaust
- 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 Backward-curved impeller
- Weight: 890 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

The air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions.

The stated air flow and sound level were recorded under the following measurement parameters:
- Centrifugal fan mounted on a foundation plate 140 x 140 mm.
- Cover plate 140 x 140 mm, with an air inlet opening Ø 87 mm, arranged concentrically to the impeller.

Air performance measured according to ISO 5801.
Installation category A, with ebm-papst inlet ring without contact protection.
Noise: Total sound power level LWA.
ISO 103002 measured on a hemisphere with a distance 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
Air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions. The stated air flow and sound level were recorded under the following measurement parameters:

- Centrifugal fan mounted on a foundation plate 260 x 260 mm.
- Cover plate 260 x 260 mm, with an air inlet opening Ø 100 mm, arranged concentrically to the impeller.

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
**Series RER 160 NTD**

**Nominal data**

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>Voltage range</th>
<th>Sound power level</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L10 (Tmax)</th>
<th>Life expectancy L10IPC (40 °C) Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>RER 160-28/14 NTD…</td>
<td>360</td>
<td>211</td>
<td>24</td>
<td>7.4</td>
<td>51</td>
<td>4 200</td>
<td>-20...+60</td>
<td>55 000 / 27 500</td>
<td>92 500</td>
</tr>
<tr>
<td>RER 160-28/18 NTD…</td>
<td>360</td>
<td>211</td>
<td>48</td>
<td>7.4</td>
<td>48</td>
<td>4 200</td>
<td>-20...+70</td>
<td>55 000 / 27 500</td>
<td>92 500</td>
</tr>
</tbody>
</table>

Subject to change

Model RER 160-28/18 NTD… is available in customer-specific, custom-developed variant only.

The figures indicated are technically feasible benchmark values. The fans can be specially adapted to your application with signal outputs and control inputs.

* The specific service life is valid when an external capacitor is wired between the positive and negative wires.

Please note the wiring suggestion.

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The air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions.

The stated air flow and sound level were recorded under the following measurement parameters:

- Centrifugal fan mounted on a foundation plate 260 x 260 mm.
- Cover plate 260 x 260 mm, with an air inlet opening Ø 100 mm, arranged concentrically to the impeller.

---

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
DC centrifugal fans
Ø 175 x 55 mm

- Material: Impeller: Galvanized sheet steel
- Direction of air flow: Axial: Intake, Centrifugal: Exhaust
- 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 Backward-curved impeller
- Weight: 930 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
- Multi-option control input
- Humidity protection
- Degree of protection: IP 54

Series RER 175 TD

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>REF 175-30/18/2 TDP</td>
<td>800</td>
<td>470</td>
<td>48</td>
<td>36...72</td>
<td>8.3</td>
<td>144</td>
<td>4 400</td>
<td>-20...+60</td>
<td>65 000 / 37 500</td>
<td>110 000</td>
</tr>
</tbody>
</table>

Subject to change

| Speed control range from 800 rpm⁻¹ at 7% PWM up to nominal speed at > 90% PWM. Standstill at 0% PWM, maximum speed if control cable is interrupted. |

The air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions.
The stated air flow and sound level were recorded under the following measurement parameters:
Centrifugal fan mounted on a foundation plate 180 x 180 mm.
Cover plate 180 x 180 mm, with an air inlet opening Ø 125.5 mm, arranged concentrically to the impeller.

Air performance measured according to ISO 5801.
Installation category A, with ebm-papst inlet ring without contact protection.
Noise: Total sound power level LA,ISO 103302 measured on a hemisphere with a distance 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

Max. 800 m³/h
S-Force

Inlet rings from p. 252

Subject to change
### DC centrifugal fans

** Ø 175 x 69 mm **

- **Material:** Impeller: GRP¹
- **Direction of air flow:** Axial: Intake, Centrifugal: Exhaust
- **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
  - Backward-curved impeller
- **Weight:** 775 g

¹) Fiberglass-reinforced plastic

#### Possible special versions:

- 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

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RER 175-42/14/2 TDMLP</td>
<td>600</td>
<td>353</td>
<td>24</td>
<td>16...30</td>
<td>7.3</td>
<td>48</td>
<td>3 400</td>
<td>-20...+65</td>
<td>72 500 / 40 000</td>
<td>122 500</td>
</tr>
<tr>
<td>RER 175-42/14/2 TDMP</td>
<td>865</td>
<td>509</td>
<td>24</td>
<td>16...36</td>
<td>8.2</td>
<td>110</td>
<td>4 800</td>
<td>-20...+65</td>
<td>70 000 / 40 000</td>
<td>117 500</td>
</tr>
<tr>
<td>RER 175-42/18/2 TDMLP</td>
<td>600</td>
<td>353</td>
<td>48</td>
<td>36...57</td>
<td>7.3</td>
<td>46</td>
<td>3 400</td>
<td>-20...+65</td>
<td>72 500 / 40 000</td>
<td>122 500</td>
</tr>
<tr>
<td>RER 175-42/18/2 TDMP*</td>
<td>865</td>
<td>509</td>
<td>48</td>
<td>36...72</td>
<td>8.2</td>
<td>110</td>
<td>4 800</td>
<td>-20...+65</td>
<td>70 000 / 40 000</td>
<td>117 500</td>
</tr>
<tr>
<td>RER 175-42/18/2 TDP</td>
<td>980</td>
<td>577</td>
<td>48</td>
<td>36...72</td>
<td>8.5</td>
<td>166</td>
<td>5 400</td>
<td>-20...+65</td>
<td>60 000 / 32 500</td>
<td>102 500</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Subject to change</th>
</tr>
</thead>
<tbody>
<tr>
<td>* On request</td>
</tr>
</tbody>
</table>

**Series RER 175 TD**

The air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions. The stated air flow and sound level were recorded under the following measurement parameters:
- Centrifugal fan mounted on a foundation plate 180 x 180 mm.
- Cover plate 180 x 180 mm, with an air inlet opening Ø 125.5 mm, arranged concentrically to the impeller.

The air performance measured according to ISO 5801.
- Installation category A, with ebm-papst inlet ring without contact protection.
- Noise: Total sound power level $L_{WA}$ measured on a hemisphere with a distance 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](http://www.ebmpapst.com/general conditions)

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### Accessories

- **DC axial fans**
- **AC axial fans**
- **Inlet rings**
- **Accessories**
- **Representatives**

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### DC centrifugal fans

- **DC centrifugal fans**
- **DC axial fans**
- **AC axial fans**
- **AC centrifugal fans**
- **Protocols / Brochures**
- **Contact Data**
- **Sales dep. worldwide**
DC centrifugal fans – RadiCal
Ø 190 x 69 mm

- Material: Impeller: GRP
- Direction of air flow: Axial: Intake, Centrifugal: Exhaust
- 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 Backward-curved RadiCal impeller
- Weight: 870 g

1) Fiberglass-reinforced plastic

Series RER 190 TD

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow m³/h</th>
<th>Air flow cfm</th>
<th>Nominal voltage VDC</th>
<th>Sound power level Bel(A)</th>
<th>Power consumption Watts</th>
<th>Nominal speed rpm⁻¹</th>
<th>Temperature range °C</th>
<th>Service life L10 (40 °C)</th>
<th>Life expectancy L10 ipc (40 °C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RER 190-39/14/2 TDMLO</td>
<td>650</td>
<td>382</td>
<td>24</td>
<td>16...30</td>
<td>7.6</td>
<td>■</td>
<td>58</td>
<td>3 000</td>
<td>-20...+60</td>
</tr>
<tr>
<td>RER 190-39/14/2 TDMO</td>
<td>860</td>
<td>506</td>
<td>24</td>
<td>16...36</td>
<td>7.9</td>
<td>■</td>
<td>110</td>
<td>3 900</td>
<td>-20...+65</td>
</tr>
<tr>
<td>RER 190-39/18/2 TDMLO</td>
<td>650</td>
<td>382</td>
<td>48</td>
<td>36...57</td>
<td>7.6</td>
<td>■</td>
<td>56</td>
<td>3 000</td>
<td>-20...+60</td>
</tr>
<tr>
<td>RER 190-39/18/2 TDMO</td>
<td>860</td>
<td>506</td>
<td>48</td>
<td>36...72</td>
<td>7.9</td>
<td>■</td>
<td>105</td>
<td>3 900</td>
<td>-20...+65</td>
</tr>
<tr>
<td>RER 190-39/18/2 TDO</td>
<td>970</td>
<td>571</td>
<td>48</td>
<td>36...72</td>
<td>8.3</td>
<td>■</td>
<td>148</td>
<td>4 400</td>
<td>-20...+65</td>
</tr>
</tbody>
</table>

Subject to change
* On request

Air performance measured according to ISO 5801.
Installation category A, with inlet ring without contact protection.
Note: Total sound power level LWA ISO 10300 measured on a hemisphere with a distance 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
### DC centrifugal fans – RadiCal

**Ø 190 mm**

- **Material:**
  - Impeller: PA plastic
  - Rotor: Painted black
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** IP 44, depending on installation and position
- **Insulation class:** “B”
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>Curve</th>
<th>Minimal voltage</th>
<th>Minimal voltage range</th>
<th>Air flow</th>
<th>Nominal speed</th>
<th>Power consumption</th>
<th>Input current</th>
<th>Sound pressure level</th>
<th>Admissible amb. temp.</th>
<th>Technical features and connection diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Motor</td>
<td>VDC</td>
<td>VDC</td>
<td>m³/h</td>
<td>rpm⁻¹</td>
<td>W</td>
<td>A</td>
<td>dB(A)</td>
<td>°C</td>
<td>p. 262 / J5)</td>
</tr>
<tr>
<td>R3G 190</td>
<td>M3G 074-CF</td>
<td>24</td>
<td>16-28</td>
<td>880</td>
<td>4570</td>
<td>180</td>
<td>7.50</td>
<td>76</td>
<td>-25..+60</td>
<td>p. 262 / J5)</td>
</tr>
<tr>
<td>R3G 190</td>
<td>M3G 074-CF</td>
<td>48</td>
<td>36-57</td>
<td>930</td>
<td>4800</td>
<td>192</td>
<td>4.00</td>
<td>76</td>
<td>-25..+60</td>
<td>p. 262 / J5)</td>
</tr>
</tbody>
</table>

Subject to change

Air performance measured according to ISO 5801, Installation category A, with ebm-papst inlet ring without contact protection. Suction-side noise levels LWA according to ISO 13347, LWA 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
- **Technical features:** See connection diagram p. 262
- **Cable exit:** Variable
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** EAC

### Centrifugal fans

<table>
<thead>
<tr>
<th>Centrifugal fans</th>
<th>Weight (kg)</th>
<th>Inlet ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 190-RN38 -01</td>
<td>1.9</td>
<td>09576-2-4013</td>
</tr>
<tr>
<td>R3G 190-RN99 -02</td>
<td>1.9</td>
<td>09576-2-4013</td>
</tr>
</tbody>
</table>

Accessory part: Inlet ring 09576-2-4013 not included in the standard scope of delivery

Clearance for screw max. 12 - 14 mm

PVC AWG 16 cable, 4 x crimped ferrules
DC centrifugal fans – RadiCal

Ø 220 mm

- **Material:**
  - Impeller: PA plastic
  - Rotor: Painted black

- **Number of blades:** 7

- **Direction of rotation:** Clockwise, looking towards rotor

- **Degree of protection:** IP 44, depending on installation and position

- **Insulation class:** "B"

- **Installation position:** Any

- **Condensation drainage holes:** None

- **Mode of operation:** Continuous operation (S1)

- **Bearings:** Maintenance-free ball bearings

---

**Nominal data**

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VDC</th>
<th>VDC</th>
<th>m³/h</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 220</td>
<td>M3G 074-CF</td>
<td>24</td>
<td>16-28</td>
<td>1200</td>
<td>3460</td>
<td>157</td>
<td>6.50</td>
<td>73</td>
<td>-25...+60</td>
</tr>
<tr>
<td>R3G 220</td>
<td>M3G 074-CF</td>
<td>48</td>
<td>36-57</td>
<td>1215</td>
<td>3510</td>
<td>160</td>
<td>3.40</td>
<td>73</td>
<td>-25...+60</td>
</tr>
</tbody>
</table>

Subject to change

---

Air performance measured according to ISO 5801, Installation category A, with ebm-papst inlet ring without contact protection. Suction-side noise levels LWA according to ISO 13347, 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.

---

**Curves:**

- **Curves:**

---

<table>
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<tr>
<th>n (rpm⁻¹)</th>
<th>P_e[n] (W)</th>
<th>I (A)</th>
<th>LWA [dB(A)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>3460</td>
<td>157</td>
<td>6.50</td>
<td>81</td>
</tr>
<tr>
<td>3420</td>
<td>171</td>
<td>7.11</td>
<td>77</td>
</tr>
<tr>
<td>3360</td>
<td>182</td>
<td>7.59</td>
<td>74</td>
</tr>
<tr>
<td>3455</td>
<td>168</td>
<td>6.97</td>
<td>79</td>
</tr>
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<td>3510</td>
<td>160</td>
<td>3.40</td>
<td>81</td>
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<tr>
<td>3450</td>
<td>168</td>
<td>3.50</td>
<td>77</td>
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<td>3385</td>
<td>178</td>
<td>3.71</td>
<td>74</td>
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<tr>
<td>3460</td>
<td>167</td>
<td>3.47</td>
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</table>

---

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- **Technical features:** See connection diagram p. 262
- **Cable exit:** Variable
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** EAC

### Centrifugal fans

<table>
<thead>
<tr>
<th></th>
<th>Weight</th>
<th>Inlet ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 220-RN12-01</td>
<td>1.9 kg</td>
<td>09609-2-4013</td>
</tr>
<tr>
<td>R3G 220-RNB6-02</td>
<td>1.9 kg</td>
<td>09609-2-4013</td>
</tr>
</tbody>
</table>

Accessory part: Inlet ring 09609-2-4013 not included in the standard scope of delivery.

PVC AWG 16 cable, 4 x crimped ferrules.

Clearance for screw max. 12 - 14 mm.

M5 (4x)

∅90 ±0,15 mm

∅55 (8x)
Max. 1250 m³/h

DC centrifugal fans – RadiCal
Ø 221 x 71 mm

- Material: Impeller: GRP¹
- Direction of air flow: Axial: Intake, Centrifugal: Exhaust
- 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
- Weight: 940 g

¹ Fiberglass-reinforced plastic

Series RER 220 TD

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RER 220-43/14/2 TDMO²</td>
<td>1063</td>
<td>625</td>
<td>24</td>
<td>16...36</td>
<td>tbd</td>
<td>110</td>
<td>3 000</td>
<td>-20...+55</td>
<td>65 000 / 45 000</td>
<td>110 000 ¹</td>
</tr>
<tr>
<td>RER 220-43/18/2 TDMO</td>
<td>1063</td>
<td>625</td>
<td>48</td>
<td>36...72</td>
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<td>110</td>
<td>3 000</td>
<td>-20...+55</td>
<td>65 000 / 45 000</td>
<td>110 000 ¹</td>
</tr>
<tr>
<td>RER 220-43/18/2 TDO</td>
<td>1250</td>
<td>735</td>
<td>48</td>
<td>36...72</td>
<td>tbd</td>
<td>160</td>
<td>3 500</td>
<td>-20...+55</td>
<td>60 000 / 42 500</td>
<td>102 500 ²</td>
</tr>
</tbody>
</table>

Subject to change
* On request

Speed control range from 800 rpm⁻¹ at 7% PWM up to nominal speed at > 90% PWM. Standstill at 0% PWM, Standstill if control cable is interrupted.

The air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions.
The stated air flow and sound level were recorded under the following measurement parameters:
Centrifugal fan mounted on a foundation plate 230 x 230 mm.
Cover plate 230 x 230 mm, with an air inlet opening Ø 155 mm, arranged concentrically to the impeller.

Air performance measured according to ISO 5801.
Installation category A, with ebm-papst inlet ring without contact protection.
Noise: Total sound power level LWA ISO 103002 measured on a hemisphere with a distance 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

Inlet rings from p. 253
The air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions.

The stated air flow and sound level were recorded under the following measurement parameters:
- Centrifugal fan mounted on a foundation plate 230 x 230 mm.
- Cover plate 230 x 230 mm, with an air inlet opening Ø 146 mm, arranged concentrically to the impeller.

Air performance measured according to ISO 5801.
Installation category A, with ebm-papst inlet ring without contact protection.
Noise: Total sound power level LWA/ISO 10360-2 measured on a hemisphere with a distance 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.
DC centrifugal fans – RadiCal
Ø 225 mm

- Material:
  - Impeller: PA plastic
  - Rotor: Painted black
- Number of blades: 7
- Direction of rotation: Clockwise, looking towards rotor
- Degree of protection: IP 44, depending on installation and position
- Insulation class: “B”
- Installation position: Any
- Condensation drainage holes: None
- Mode of operation: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Curve</th>
<th>VDC</th>
<th>VDC</th>
<th>m³/h</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 225</td>
<td>M3G 074-CF</td>
<td>①</td>
<td>24</td>
<td>16-28</td>
<td>1300</td>
<td>3270</td>
<td>205</td>
<td>8.50</td>
<td>75</td>
<td>-25...+60</td>
</tr>
<tr>
<td>R3G 225</td>
<td>M3G 074-CF</td>
<td>②</td>
<td>48</td>
<td>36-57</td>
<td>1340</td>
<td>3400</td>
<td>230</td>
<td>4.80</td>
<td>73</td>
<td>-25...+60</td>
</tr>
</tbody>
</table>

Subject to change

Air performance measured according to ISO 5801, Installation category A, with ebm-papst inlet ring 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.
- Technical features: See connection diagram p. 262
- Cable exit: Variable
- Conformity with standard(s): EN 60950-1
- Approvals: EAC

<table>
<thead>
<tr>
<th>Centrifugal fans</th>
<th>Weight</th>
<th>Inlet ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 225-RN28-01</td>
<td>2.1 kg</td>
<td>96358-2-4013</td>
</tr>
<tr>
<td>R3G 225-RN18-02</td>
<td>2.1 kg</td>
<td>96358-2-4013</td>
</tr>
</tbody>
</table>

Accessory part: Inlet ring 96358-2-4013 not included in the standard scope of delivery

Clearance for screw max. 12 - 14 mm

Accessories
Centrifugal fans
R3G 225-RN28 -01
R3G 225-RN18 -02

Inlet rings from p. 254
Connection diagrams P. 262
DC centrifugal fans – RadiCal

Ø 250 mm

- **Material:**
  - Impeller: PA plastic
  - Rotor: Painted black

- **Number of blades:** 7

- **Direction of rotation:** Clockwise, looking towards rotor

- **Degree of protection:** IP 44, depending on installation and position

- **Insulation class:** “B”

- **Installation position:** Any

- **Condensation drainage holes:** None

- **Mode of operation:** Continuous operation (S1)

- **Bearings:** Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VDC</th>
<th>VDC</th>
<th>m³/h</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 250</td>
<td>M3G 074-CF</td>
<td>24</td>
<td>16-28</td>
<td>1505</td>
<td>2850</td>
<td>175</td>
<td>7.20</td>
<td>73</td>
<td>-25…+60</td>
</tr>
<tr>
<td>R3G 250</td>
<td>M3G 074-CF</td>
<td>48</td>
<td>36-57</td>
<td>1640</td>
<td>3100</td>
<td>230</td>
<td>4.80</td>
<td>73</td>
<td>-25…+60</td>
</tr>
</tbody>
</table>

*Subject to change*

### Curves:

Air performance measured according to ISO 5801, Installation category A, with ebm-papst inlet ring without contact protection. Suction-side noise levels $L_{WA}$ 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
- **Technical features:** See connection diagram p. 262
- **Cable exit:** Variable
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** EAC

### Centrifugal fans

<table>
<thead>
<tr>
<th>Model</th>
<th>Weight</th>
<th>Inlet ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 250-RN46 -01</td>
<td>2.1</td>
<td>96359-2-4013</td>
</tr>
<tr>
<td>R3G 250-RN85 -02</td>
<td>2.1</td>
<td>96359-2-4013</td>
</tr>
</tbody>
</table>

Accessory part: Inlet ring 96359-2-4013 not included in the standard scope of delivery.
DC centrifugal fans – RadiCal
Ø 280 mm

- Material: Impeller: PP plastic
  Rotor: Painted black
- Number of blades: 6
- Direction of rotation: Clockwise, looking towards rotor
- Degree of protection: IP 44, depending on installation and position
- Insulation class: “B”
- Installation position: Any
- Condensation drainage holes: None
- Mode of operation: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VDC</th>
<th>VDC</th>
<th>m³/h</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 280</td>
<td>M3G 074-CF</td>
<td>24</td>
<td>16-28</td>
<td>2190</td>
<td>1900</td>
<td>142</td>
<td>5.90</td>
<td>67</td>
<td>-25...+60</td>
</tr>
<tr>
<td>R3G 280</td>
<td>M3G 074-CF</td>
<td>48</td>
<td>36-57</td>
<td>2160</td>
<td>1910</td>
<td>140</td>
<td>2.90</td>
<td>67</td>
<td>-25...+60</td>
</tr>
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</table>

Subject to change

Curves:

Air performance measured according to ISO 5801, Installation category A, with ebm-papst inlet ring 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
− Technical features: See connection diagram p. 262
− Cable exit: Variable
− Conformity with standard(s): EN 60950-1
− Approvals: EAC

<table>
<thead>
<tr>
<th>Centrifugal fans</th>
<th>Inlet ring</th>
<th>Weight</th>
<th>Inlet ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 280-RN30  -01</td>
<td>2.4</td>
<td>28000-2-4013</td>
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<tr>
<td>R3G 280-RNB1  -02</td>
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<td>28000-2-4013</td>
<td></td>
</tr>
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</table>

Accessory part: Inlet ring 28000-2-4013 not included in the standard scope of delivery

Clearance for screw max. 12 - 14 mm

PVC AWG 16 cable, 4 x crimped ferrules
DC centrifugal fans – RadiCal

Ø 310 mm

- Material:
  - Impeller: PP plastic
  - Rotor: Painted black

- Number of blades: 6

- Direction of rotation: Clockwise, looking towards rotor

- Degree of protection: IP 44, depending on installation and position

- Insulation class: “B”

- Installation position: Any

- Condensation drainage holes: None

- Mode of operation: Continuous operation (S1)

- Bearings: Maintenance-free ball bearings

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VDC</th>
<th>VDC</th>
<th>m³/h</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 310</td>
<td>M3G 074-CF</td>
<td>24</td>
<td>16-28</td>
<td>2310</td>
<td>1580</td>
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<td>-25...+60</td>
</tr>
<tr>
<td>R3G 310</td>
<td>M3G 074-CF</td>
<td>48</td>
<td>36-57</td>
<td>2380</td>
<td>1620</td>
<td>123</td>
<td>2.60</td>
<td>64</td>
<td>-25...+60</td>
</tr>
</tbody>
</table>

Air performance measured according to ISO 5801, Installation category A, with ebm-papst inlet ring 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.
- Technical features: See connection diagram p. 262
- Cable exit: Variable
- Conformity with standard(s): EN 60950-1
- Approvals: EAC

<table>
<thead>
<tr>
<th>Centrifugal fans</th>
<th>Weight (kg)</th>
<th>Inlet ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 310-RN99 -01</td>
<td>2.8</td>
<td>31000-2-4013</td>
</tr>
<tr>
<td>R3G 310-RN98 -02</td>
<td>2.8</td>
<td>31000-2-4013</td>
</tr>
</tbody>
</table>

Accessory part: Inlet ring 31000-2-4013 not included in the standard scope of delivery

Clearance for screw max. 12 - 14 mm

PVC AWG 16 cable, 4 x crimped ferrules

Connection diagrams P. 262
DC tangential fans
201...413 x 50 x 48 mm

- Material:
  - Housing: Aluminum
  - Housing side parts: Plastic
  - Impeller: Aluminum

- Direction of air flow: See photo

- Connection:
  - via single wires AWG 24, TR 64

- Highlights:
  - Motor with ball bearing system
  - Impeller retaining plate with sleeve bearing

- Weight:
  - 235 / 290 / 380 / 415 g

The values for service life were recorded with the fan installed horizontally.

<table>
<thead>
<tr>
<th>Type</th>
<th>Dimension:</th>
<th>L</th>
<th>Ls</th>
<th>Mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>QG 030-148/12</td>
<td>203.4 <strong>1.5</strong></td>
<td>148</td>
<td>235 g</td>
<td></td>
</tr>
<tr>
<td>QG 030-198/12</td>
<td>280.4 <strong>1.5</strong></td>
<td>198</td>
<td>290 g</td>
<td></td>
</tr>
<tr>
<td>QG 030-303/12</td>
<td>365.4 <strong>1.5</strong></td>
<td>303</td>
<td>380 g</td>
<td></td>
</tr>
<tr>
<td>QG 030-353/12</td>
<td>415.4 <strong>1.5</strong></td>
<td>353</td>
<td>415 g</td>
<td></td>
</tr>
</tbody>
</table>

Subject to change.

Tangential fans are suitable only for operation with high air flow and low back-pressure.

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 to 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
DC centrifugal fans and blowers
Ø 85 mm

- Material:
  Housing: Die-cast aluminum
  Impeller: Hot-dip galvanized sheet steel
  Rotor: Galvanized

- Direction of rotation:
  Clockwise, looking towards rotor

- Degree of protection:
  IP 22

- Insulation class:
  "B"

- Installation position:
  Any

- Condensation drainage holes:
  None

- Mode of operation:
  Continuous operation (S1)

- Bearings:
  Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VDC</th>
<th>VDC</th>
<th>m³/h</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>*1G 085</td>
<td>M1G 045-BE</td>
<td>24</td>
<td>16-28</td>
<td>95</td>
<td>2850</td>
<td>14</td>
<td>0.64</td>
<td>57</td>
<td>0</td>
<td>-25...+60</td>
</tr>
<tr>
<td>*1G 085</td>
<td>M1G 045-BE</td>
<td>48</td>
<td>36-57</td>
<td>95</td>
<td>2850</td>
<td>14</td>
<td>0.32</td>
<td>57</td>
<td>0</td>
<td>-25...+60</td>
</tr>
</tbody>
</table>

Subject to change

Curves:

- Nominal voltage
  (24 V / 48 V)
- Over-voltage
  (28 V / 57 V)

Air performance measured according to ISO 5801, Installation category A, with ebm-papst scroll housing without contact protection. Suction-side noise levels: LₚA according to ISO 13347, Lₚ₄ according to 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.
- Technical features: See connection diagram p. 259
- Cable exit: Axial
- Conformity with standard(s): EN 60950-1
- Approvals: EAC

<table>
<thead>
<tr>
<th>Centrifugal fans</th>
<th>kg</th>
<th>Centrifugal blowers with flange</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1G 085-AB05 -01</td>
<td>0.5</td>
<td>G1G 085-AB05 -01</td>
<td>0.8</td>
</tr>
<tr>
<td>R1G 085-AB07 -01</td>
<td>0.5</td>
<td>G1G 085-AB07 -01</td>
<td>0.8</td>
</tr>
</tbody>
</table>

- Finger guards from p. 247
- Inlet rings from p. 253
- Connection diagrams P. 259
DC centrifugal fans and blowers
Ø 97 mm

- Material:
  Housing: Hot-dip galvanized sheet steel
  Impeller: Hot-dip galvanized sheet steel
  Rotor: Galvanized

- Direction of rotation:
  Clockwise, looking towards rotor

- Degree of protection:
  IP 22

- Insulation class:
  "B"

- Installation position:
  Any

- Condensation drainage holes:
  None

- Mode of operation:
  Continuous operation (S1)

- Bearings:
  Maintenance-free ball bearings

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VDC</th>
<th>VDC</th>
<th>m³/h</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>*1G 097</td>
<td>M1G045-BE</td>
<td>24</td>
<td>16-28</td>
<td>95</td>
<td>2650</td>
<td>16</td>
<td>0.75</td>
<td>59</td>
<td>0</td>
<td>-25...+60</td>
</tr>
<tr>
<td>*1G 097</td>
<td>M1G045-BE</td>
<td>48</td>
<td>36-57</td>
<td>95</td>
<td>2650</td>
<td>16</td>
<td>0.38</td>
<td>59</td>
<td>0</td>
<td>-25...+60</td>
</tr>
</tbody>
</table>

Subject to change

Air performance measured according to ISO 5801, Installation category A, with ebm-papst scroll housing 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

Curves:

- $U_n =$ nominal voltage
  (24 V / 48 V)
- $U_v =$ over-voltage
  (28 V / 57 V)
- Technical features: See connection diagram p. 259
- Cable exit: Axial
- Conformity with standard(s): EN 60950-1
- Approvals: EAC

<table>
<thead>
<tr>
<th>Centrifugal fans</th>
<th>Weight kg</th>
<th>Centrifugal blowers with flange</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1G 097-AA05-01</td>
<td>0.5</td>
<td>G1G 097-AA05-01</td>
<td>0.8</td>
</tr>
<tr>
<td>R1G 097-AA07-01</td>
<td>0.5</td>
<td>G1G 097-AA07-01</td>
<td>0.8</td>
</tr>
</tbody>
</table>

Clearance for screw max. 4 mm

Wire end splices

Connection diagrams P. 259
DC centrifugal fans and blowers
Ø 108 mm

- **Material:**
  - Housing: Die-cast aluminum
  - Impeller: Hot-dip galvanized sheet steel
  - Rotor: Painted black

- **Direction of rotation:** Clockwise, looking towards rotor

- **Degree of protection:** IP 22

- **Insulation class:** "B"

- **Installation position:** Any

- **Condensation drainage holes:** None

- **Mode of operation:** Continuous operation (S1)

- **Bearings:** Maintenance-free ball bearings

---

**Nominal data**

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VDC</th>
<th>VDC</th>
<th>m³/h</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>*1G 108</td>
<td>M1G 055-BD</td>
<td>24</td>
<td>16-28</td>
<td>200</td>
<td>3000</td>
<td>42</td>
<td>2.00</td>
<td>65</td>
<td>0</td>
<td>-25...+60</td>
</tr>
<tr>
<td>*1G 108</td>
<td>M1G 055-BD</td>
<td>48</td>
<td>36-57</td>
<td>200</td>
<td>3000</td>
<td>42</td>
<td>1.00</td>
<td>65</td>
<td>0</td>
<td>-25...+60</td>
</tr>
</tbody>
</table>

Subject to change

---

### Curves:

**Un = nominal voltage**
- (24 V / 48 V)

**Un = over-voltage**
- (28 V / 57 V)

---

Air performance measured according to ISO 5801, Installation category A, with ebm-papst scroll housing 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
### Technical features:
- See connection diagram p. 259
- **Cable exit:** Axial
- **Protection class:** I
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** ☑ (24 VDC) UL, CSA, ☑ (48 VDC) CCC

<table>
<thead>
<tr>
<th>Centrifugal fans</th>
<th>Weight centrifugal fans kg</th>
<th>Centrifugal blowers with flange kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1G 108-AB17 -02</td>
<td>0.7</td>
<td>G1G 108-AB17 -02</td>
</tr>
<tr>
<td>R1G 108-AB41 -02</td>
<td>0.7</td>
<td>G1G 108-AB41 -02</td>
</tr>
</tbody>
</table>

**Clearance for screw max. 6 mm**

Wire end splices

---

**Finger guards** from p. 247

**Inlet rings** from p. 253

**Air filter** P. 254

**Connection diagrams** P. 259
**DC centrifugal fans and blowers**

**Ø 120 mm**

- **Material:**
  - Housing: Die-cast aluminum
  - Impeller: Hot-dip galvanized sheet steel
  - Rotor: Galvanized

- **Direction of rotation:** Clockwise, looking towards rotor

- **Degree of protection:** IP 22

- **Insulation class:** “B”

- **Installation position:** Any

- **Condensation drainage holes:** None

- **Mode of operation:** Continuous operation (S1)

- **Bearings:** Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VDC</th>
<th>VDC</th>
<th>m³/h</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>*1G 120</td>
<td>M1G 055-BD</td>
<td>24</td>
<td>16-28</td>
<td>255</td>
<td>2200</td>
<td>40</td>
<td>1.90</td>
<td>62</td>
<td>0</td>
<td>-25...+60</td>
</tr>
<tr>
<td>*1G 120</td>
<td>M1G 055-BD</td>
<td>48</td>
<td>36-57</td>
<td>255</td>
<td>2200</td>
<td>40</td>
<td>0.95</td>
<td>62</td>
<td>0</td>
<td>-25...+60</td>
</tr>
</tbody>
</table>

Subject to change

---

**Curves:**

- $U_n =$ nominal voltage (24 V / 48 V)
- $U_o =$ over-voltage (28 V / 57 V)

---

**Technical features and connection diagram**

Air performance measured according to ISO 5801, Installation category A, with ebm-papst scroll housing without contact protection. Suction-side noise level: $L_{WA}$ according to ISO 3347. $L_{WA}$ 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
- **Technical features:** See connection diagram p. 259
- **Cable exit:** Axial
- **Protection class:** I
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** (24 VDC) UL, CSA, (48 VDC) CCC

<table>
<thead>
<tr>
<th>Centrifugal fans</th>
<th>Weight kg</th>
<th>Centrifugal blowers with flange</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1G 120-AB67 -02</td>
<td>0.8</td>
<td>G1G 120-AB67 -02</td>
<td>1.6</td>
</tr>
<tr>
<td>R1G 120-AB71 -02</td>
<td>0.8</td>
<td>G1G 120-AB71 -02</td>
<td>1.6</td>
</tr>
</tbody>
</table>
DC centrifugal fans and blowers
Ø 133 mm

- Material:
  - Housing: Hot-dip galvanized sheet steel
  - Impeller: Hot-dip galvanized sheet steel
  - Rotor: Galvanized

- Direction of rotation: Clockwise, looking towards rotor

- Degree of protection: IP 22

- Insulation class: “B”

- Installation position: Any

- Condensation drainage holes: None

- Mode of operation: Continuous operation (S1)

- Bearings: Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VDC</th>
<th>VDC</th>
<th>m³/h</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>*1G 133</td>
<td>M1G 055-BD</td>
<td>24</td>
<td>16-28</td>
<td>225</td>
<td>2000</td>
<td>2.20</td>
<td>64</td>
<td>0</td>
<td>-25...+60</td>
<td></td>
</tr>
<tr>
<td>*1G 133</td>
<td>M1G 055-BD</td>
<td>48</td>
<td>36-57</td>
<td>225</td>
<td>2000</td>
<td>1.10</td>
<td>64</td>
<td>0</td>
<td>-25...+60</td>
<td></td>
</tr>
</tbody>
</table>

Subject to change

Air performance measured according to: ISO 5801, Installation category A, with ebm-papst scroll housing 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](http://www.ebmpapst.com/general conditions)
- **Technical features:** See connection diagram p. 259
- **Cable exit:** Lateral
- **Protection class:** I
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** ☑️ (24 VDC) UL, CSA, ☑️ (48 VDC) CCC

---

<table>
<thead>
<tr>
<th>Centrifugal fans</th>
<th>kg</th>
<th>Centrifugal blowers with flange</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1G 133-AE19 -02</td>
<td>0.7</td>
<td>G1G 133-DE19 -02</td>
<td>1.3</td>
</tr>
<tr>
<td>R1G 133-AE03 -02</td>
<td>0.7</td>
<td>G1G 133-DE03 -02</td>
<td>1.3</td>
</tr>
</tbody>
</table>

---

Wire end splices

---

Connection diagrams P. 259
DC centrifugal fans and blowers
Ø 140 mm

- Material:
  - Housing: Die-cast aluminum
  - Impeller: Hot-dip galvanized sheet steel
  - Rotor: Painted black
- Direction of rotation: Clockwise, looking towards rotor
- Degree of protection: IP 22
- Insulation class: “B”
- Installation position: Any
- Condensation drainage holes: None
- Mode of operation: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VDC</th>
<th>VDC</th>
<th>m³/h</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>*1G 140</td>
<td>M1G 055-BD</td>
<td>24</td>
<td>16-28</td>
<td>400</td>
<td>1750</td>
<td>54</td>
<td>2.50</td>
<td>63</td>
<td>0</td>
<td>-25...+60</td>
</tr>
<tr>
<td>*1G 140</td>
<td>M1G 055-BD</td>
<td>48</td>
<td>36-57</td>
<td>410</td>
<td>1750</td>
<td>54</td>
<td>1.30</td>
<td>63</td>
<td>0</td>
<td>-25...+60</td>
</tr>
</tbody>
</table>

Subject to change

---

**Curves:**

\[ U_n = \text{nominal voltage} \quad (24 \text{ V} / 48 \text{ V}) \]

\[ U_o = \text{over-voltage} \quad (28 \text{ V} / 57 \text{ V}) \]

**Air performance measured according to:** ISO 5801, Installation category A, with ebm-papst scroll housing without contact protection. Suction-side noise levels: \( L_{WA} \) 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](http://www.ebmpapst.com/general-conditions)
- **Technical features:** See connection diagram p. 259
- **Cable exit:** Axial
- **Protection class:** I
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** (48 VDC) CCC

### Centrifugal fans

<table>
<thead>
<tr>
<th>Centrifugal fans</th>
<th>Weight</th>
<th>Centrifugal blowers</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1G 140-AV17 -02</td>
<td>1.0</td>
<td>G1G 140-AV17 -02</td>
<td>2.3</td>
</tr>
<tr>
<td>G1G 140-AV21 -02</td>
<td>1.0</td>
<td>G1G 140-AV21 -02</td>
<td>2.3</td>
</tr>
</tbody>
</table>

**Clearance for screw max. 6 mm**

**Wire end splices**

**Finger guards** from p. 247

**Inlet rings** from p. 253

**Air filter** P. 254

**Connection diagrams** P. 259
DC centrifugal fans and blowers
Ø 146 mm

- **Material:**
  - Housing: Die-cast aluminum
  - Impeller: Hot-dip galvanized sheet steel
  - Rotor: Painted black

- **Direction of rotation:** Clockwise, 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

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VDC</th>
<th>VDC</th>
<th>m³/h</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>*1G 146</td>
<td>M1G 074-BF</td>
<td>24</td>
<td>16-28</td>
<td>470</td>
<td>2200</td>
<td>100</td>
<td>5.00</td>
<td>68</td>
<td>0</td>
<td>-25...+60</td>
</tr>
<tr>
<td>*1G 146</td>
<td>M1G 074-BF</td>
<td>48</td>
<td>36-57</td>
<td>465</td>
<td>2150</td>
<td>100</td>
<td>2.60</td>
<td>67</td>
<td>0</td>
<td>-25...+60</td>
</tr>
</tbody>
</table>

*Subject to change*

---

Air performance measured according to ISO 5801, Installation category A, with ebm-papst scroll housing without contact protection. Suction-side noise levels: $L_W$ according to ISO 13347, $L_W$ 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](http://www.ebmpapst.com/general conditions).
- **Technical features:** See connection diagram p. 259
- **Cable exit:** Axial
- **Protection class:** I
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** UL, CSA, CCC (only centrifugal blowers)

<table>
<thead>
<tr>
<th>Centrifugal fans</th>
<th>Weight</th>
<th>Centrifugal blowers with flange</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1G 146- AA07 -52</td>
<td>1.4</td>
<td>G1G 146-BA07 -52</td>
<td>2.8</td>
</tr>
<tr>
<td>R1G 146- AA11 -52</td>
<td>1.4</td>
<td>G1G 146-BA11 -52</td>
<td>2.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Clearance for screw max. 6 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wire end splices</td>
</tr>
</tbody>
</table>

| 72 ±1 |
| 65 ±1 |
| 6 |
| 35 |
| 450 ±10 |
| max. 62.5 |

| 36 ±1 |
| 18.5 ±1.5 |
| 22.7 |

| 130 |
| 115 |
| 6.3 |

| 108 |
| 103 |

| 158 |
| 227.8 |

| Finger guards from p. 247 |
| Inlet rings from p. 253 |
| Air filter P. 254 |
| Connection diagrams P. 259 |
DC centrifugal fans and blowers

Ø 160 mm

- **Material:**
  - Housing: Die-cast aluminum
  - Impeller: Hot-dip galvanized sheet steel
  - Rotor: Painted black

- **Direction of rotation:**
  - Clockwise, 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

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VDC</th>
<th>VDC</th>
<th>m³/h</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>*1G  160</td>
<td>M1G 074-BF</td>
<td>24</td>
<td>16-28</td>
<td>505</td>
<td>1750</td>
<td>105</td>
<td>5.80</td>
<td>67</td>
<td>0</td>
<td>-25...+60</td>
</tr>
<tr>
<td>*1G  160</td>
<td>M1G 074-BF</td>
<td>48</td>
<td>36-57</td>
<td>505</td>
<td>1750</td>
<td>105</td>
<td>2.90</td>
<td>67</td>
<td>0</td>
<td>-25...+60</td>
</tr>
</tbody>
</table>

Subject to change

Air performance measured according to ISO 5801, Installation category A, with ebm-papst scroll housing without contact protection. Suction-side noise levels: LWA according to ISO 13347, 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
- **Technical features:** See connection diagram p. 259
- **Cable exit:** Axial
- **Protection class:** I
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** UL, CSA

<table>
<thead>
<tr>
<th>Centrifugal fans</th>
<th>kg</th>
<th>Centrifugal blowers with flange</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1G 160-AH29 -S2</td>
<td>1.4</td>
<td>G1G 160-BH29 -S2</td>
<td>2.8</td>
</tr>
<tr>
<td>R1G 160-AH39 -S2</td>
<td>1.4</td>
<td>G1G 160-BH39 -S2</td>
<td>2.8</td>
</tr>
</tbody>
</table>

- Clearance for screw max. 6 mm
- Finger guards from p. 247
- Inlet rings from p. 253
- Air filter P. 254
- Connection diagrams P. 259

Wire end splices

---

**Clearance for screw max. 6 mm**

- Finger guards from p. 247
- Inlet rings from p. 253
- Air filter P. 254
- Connection diagrams P. 259
DC centrifugal blowers
Ø 133 mm

- Material:
  - Housing: Galvanized sheet steel
  - Impeller: Galvanized sheet steel
  - Rotor: Painted black

- Direction of rotation: Clockwise, looking towards rotor

- Degree of protection: IP 42

- Insulation class: "B"

- Installation position: Any

- Condensation drainage holes: None

- Mode of operation: Continuous operation (S1)

- Design:
  - SAL motor mounted with vibration damping on both sides
  - Maintenance-free ball bearings

---

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VDC</th>
<th>VDC</th>
<th>m³/h</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1G 133</td>
<td>M1G 074-BF</td>
<td>24</td>
<td>16-28</td>
<td>700</td>
<td>1780</td>
<td>105</td>
<td>5.60</td>
<td>62</td>
<td>50</td>
<td>-25...+60</td>
</tr>
<tr>
<td>D1G 133</td>
<td>M1G 074-BF</td>
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<td>36-57</td>
<td>700</td>
<td>1780</td>
<td>105</td>
<td>2.80</td>
<td>62</td>
<td>50</td>
<td>-25...+60</td>
</tr>
</tbody>
</table>

Subject to change

---

### Technical features and connection diagram

Air performance measured according to ISO 5801, Installation category A, with ebm-papst scroll housing 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](http://www.ebmpapst.com/general_conditions)
### Technical features:
- See connection diagram p. 259
- **Cable exit:** Variable
- **Protection class:** I
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** UL, CSA; (48 VDC) also CCC

### Centrifugal blowers without flange

<table>
<thead>
<tr>
<th>Model</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIG 133-AB29-S2</td>
<td>3.3</td>
</tr>
<tr>
<td>DIG 133-AB39-S2</td>
<td>3.3</td>
</tr>
</tbody>
</table>

Wire end splices
DC centrifugal blowers
Ø 133 mm

- Material:
  - Housing: Galvanized sheet steel
  - Impeller: Galvanized sheet steel
  - Rotor: Painted black

- Direction of rotation: Clockwise, looking towards rotor

- Degree of protection: IP 42

- Insulation class: “B”

- Installation position: Any

- Condensation drainage holes: None

- Mode of operation: Continuous operation (S1)

- Design: SAL motor mounted with vibration damping on both sides

- Bearings: Maintenance-free ball bearings

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VDC</th>
<th>VDC</th>
<th>m³/h</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1G 133</td>
<td>M1G 074-BF</td>
<td>24</td>
<td>16-28</td>
<td>1020</td>
<td>1580</td>
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<td>6.00</td>
<td>64</td>
<td>0</td>
<td>-25...+60</td>
</tr>
<tr>
<td>D1G 133</td>
<td>M1G 074-BF</td>
<td>48</td>
<td>36-57</td>
<td>1020</td>
<td>1580</td>
<td>118</td>
<td>3.00</td>
<td>64</td>
<td>0</td>
<td>-25...+60</td>
</tr>
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Subject to change

Air performance measured according to ISO 5801, Installation category A, with ebm-papst scroll housing 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
- **Technical features:** See connection diagram p. 259
- **EMC (24 VDC):** Interference emission acc. to EN 55022, class B
  Immunity to interference acc. to EN 61000-6-2
- **Cable exit:** Variable
- **Protection class:** I
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** UL, CSA

### Centrifugal blowers without flange

<table>
<thead>
<tr>
<th></th>
<th>kg</th>
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</thead>
<tbody>
<tr>
<td>D1G 133-DC13 -52</td>
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<tr>
<td>D1G 133-DC17 -52</td>
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</tr>
</tbody>
</table>

*Wire end splices from p. 246*
DC centrifugal blowers
Ø 146 mm

- Material:
  - Housing: Galvanized sheet steel
  - Impeller: Galvanized sheet steel
  - Rotor: Painted black
- Direction of rotation: Clockwise, looking towards rotor
- Degree of protection: IP 42
- Insulation class: "B"
- Installation position: Any
- Condensation drainage holes: None
- Mode of operation: Continuous operation (S1)
- Design: SAL motor mounted with vibration damping on both sides
- Bearings: Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VDC</th>
<th>VDC</th>
<th>m³/h</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
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<tbody>
<tr>
<td>D1G 146</td>
<td>M1G074-CF</td>
<td>24</td>
<td>16-28</td>
<td>1000</td>
<td>1350</td>
<td>105</td>
<td>5.10</td>
<td>61</td>
<td>0</td>
<td>-25...+60</td>
</tr>
<tr>
<td>D1G 146</td>
<td>M1G074-CF</td>
<td>48</td>
<td>36-57</td>
<td>1000</td>
<td>1350</td>
<td>105</td>
<td>2.60</td>
<td>61</td>
<td>0</td>
<td>-25...+60</td>
</tr>
</tbody>
</table>

Subject to change

---

Air performance measured according to ISO 5801, Installation category A, with ebm-papst scroll housing 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
- Technical features: See connection diagram p. 259
- EMC (24 VDC): Interference emission acc. to EN 55022, class B
  Immunity to interference acc. to EN 61000-6-2
- Cable exit: Variable
- Protection class: I
- Conformity with standard(s): EN 60950-1
- Approvals: UL, CSA

<table>
<thead>
<tr>
<th>Centrifugal blowers without flange</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1G 146-AA19 -52</td>
<td>3.5</td>
</tr>
<tr>
<td>D1G 146-AA33 -52</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Wire end splices from p. 246
Connection diagrams P. 259
DC centrifugal blowers
Ø 160 mm

- Material:
  - Housing: Galvanized sheet steel
  - Impeller: Galvanized sheet steel
  - Rotor: Painted black

- 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)

- Design:
  SAL motor mounted with vibration damping on both sides

- Bearings:
  Maintenance-free ball bearings

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VDC</th>
<th>VDC</th>
<th>m³/h</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1G 160</td>
<td>M1G 074-CF</td>
<td>24</td>
<td>16-28</td>
<td>980</td>
<td>1250</td>
<td>112</td>
<td>5.60</td>
<td>60</td>
<td>-25...+60</td>
<td></td>
</tr>
<tr>
<td>D1G 160</td>
<td>M1G 074-CF</td>
<td>48</td>
<td>36-57</td>
<td>980</td>
<td>1250</td>
<td>112</td>
<td>2.90</td>
<td>60</td>
<td>-25...+60</td>
<td></td>
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Subject to change

Air performance measured according to: ISO 5801, Installation category A, with ebm-papst scroll housing 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
- Technical features: See connection diagram p. 259
- Cable exit: Variable
- Protection class: I
- Conformity with standard(s): EN 60950-1
- Approvals: UL, CSA
DC fans - specials

Speed signal 168
Alarm signal 172
Vario-Pro / Speed setting / Control input 177
Protected fans, degree of protection: IP 54 / IP 68 181
Cooling capacity and efficiency
Greater power density, increasing miniaturization and extreme electronic component density are placing increased demands on the cooling capacity and efficiency of fans. Therefore, intelligent and space-saving integration of the fan in the device configuration is very important:

- Tailor-made cooling adapted to the situation as and when required.
- Programmable cooling by defining speed profiles.
- Transparency of function thanks to complete, interactive monitoring in all operating conditions.

Standard fans in electronics cooling have proven themselves a million times over.

With a constant speed and an appropriate sound level, they continuously provide the air flow required for extreme cases. But these extreme situations occur seldom – if at all – during operation. What is needed is an intelligent fan that adapts automatically to the level of cooling required at the time.

ebm-papst provides intelligent cooling concepts that are optimally adapted to practical requirements. For example:

1. Speed adjustment via temperature sensor
   ebm-papst answers with a complete range of DC fans with temperature-controlled speed adjustment via a temperature sensor, available in a variety of standard dimensions.

   Installation is very simple. Either an external temperature sensor in the form of an exposed wire that can be placed anywhere, or an internal sensor located directly in the fan hub in the air flow provides continuous and undissipated thermal information to the control electronics for speed adjustment. A range of temperature sensors can be found on page 178.

2. DC fans with separate control input
   Open or closed-loop speed control is also possible with DC fans that have a separate control input. So a control voltage or a pulse-width modulated signal can be used to vary the speed. These options are used primarily in devices that have the appropriate standard interfaces and require varied fans depending on the load.
3. Speed signal
DC fans with speed signal.
The integrated “electronic tachometer” continuously provides an actual speed signal for external evaluation. A very simple signal evaluation on the customer side informs the user of the current fan speed at all times. The speed signal is provided by a separate wire.

4. Alarm signal
For applications that require monitored fan operation with an alarm signal, ebm-papst offers a number of alarm signals variants. Depending on the type of fan in question, the signal will either be static, already evaluated, or a continuous, interface-compatible, high or low signal. The alarm signal is provided by a separate wire.

5. Turbo drives
Fans with three-phase EC drives and microprocessor-controlled motor electronics. The torque of these three-phase motors, which is virtually independent of the rotor position, allows the fan to run very smoothly. The speed of these fans can be controlled over a very wide speed range by means of PWM, analog voltage, or temperature. Optionally, the fans can be supplied with reversible direction of rotation and active brake operation.

6. Vario-Pro fans
This high-end fan concept by ebm-papst with programmed intelligence and customer-specific integrated functions makes your electronics cooling even more versatile and competitive. Vario-Pro provides greater economy for all demanding cooling tasks – especially those that require greater safety, more flexibility, and intelligent features like an alarm function, speed control, etc.

The key to the success of Vario-Pro is: Tailor-made software instead of permanently installed hardware, because software modules programmed for motor control and application intelligence do the work that used to be performed by analog components in the past. This central control unit of the Vario-Pro comprises a microcontroller and an EEPROM, where all its features are stored.

7. Protection against environmental conditions
Some applications place particular demands on the fans’ resistance to environmental conditions, such as dust, moisture, water, and salt. ebm-papst offers solutions for adapting fans to these conditions.
Speed signal /2

- Speed-proportional, square-wave signal for external monitoring of the fan motor speed
- 2, 3, or 6 pulses per revolution
- Open-collector signal output
- Extremely wide operating voltage range
- Easy adaptation to user interface
- Connection via separate cable
- The sensor signal also serves as a major comparison variable for setting and maintaining the setpoint speed for interactive or controlled cooling with one or more interconnected fans.

**Signal data**

<table>
<thead>
<tr>
<th>Type</th>
<th>VDC</th>
<th>mA</th>
<th>VDC</th>
<th>mA</th>
<th>VDC</th>
<th>mA</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>250</td>
<td>≤ 0.4</td>
<td>2</td>
<td>≤ 30</td>
<td>0</td>
<td>30</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>400 F</td>
<td>≤ 0.4</td>
<td>1</td>
<td>≤ 30</td>
<td>0</td>
<td>30</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>400</td>
<td>≤ 0.4</td>
<td>1</td>
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<td>0</td>
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<td>2</td>
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<tr>
<td>420 J</td>
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<td>2</td>
<td>≤ 15</td>
<td>0</td>
<td>15</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>500 F</td>
<td>≤ 0.4</td>
<td>1</td>
<td>≤ 30</td>
<td>0</td>
<td>30</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>600 F</td>
<td>≤ 0.4</td>
<td>1</td>
<td>≤ 30</td>
<td>0</td>
<td>30</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>620</td>
<td>≤ 0.4</td>
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<td>≤ 30</td>
<td>0</td>
<td>30</td>
<td>4</td>
<td>2</td>
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<tr>
<td>630 U</td>
<td>≤ 0.4</td>
<td>2</td>
<td>≤ 30</td>
<td>0</td>
<td>30</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>600 N</td>
<td>≤ 0.4</td>
<td>2</td>
<td>≤ 28</td>
<td>0</td>
<td>28</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>600 J</td>
<td>≤ 0.4</td>
<td>2</td>
<td>≤ 30</td>
<td>0</td>
<td>30</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>700 F</td>
<td>≤ 0.4</td>
<td>2</td>
<td>≤ 30</td>
<td>0</td>
<td>30</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>8450</td>
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<td>≤ 28</td>
<td>0</td>
<td>28</td>
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<td>2</td>
</tr>
<tr>
<td>8400 N</td>
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<td>2</td>
<td>≤ 28</td>
<td>0</td>
<td>28</td>
<td>4</td>
<td>2</td>
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<td>2</td>
<td>≤ 30</td>
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<td>30</td>
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</tr>
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<td>4</td>
<td>2</td>
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<tr>
<td>6200 J</td>
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<td>≤ 30</td>
<td>0</td>
<td>30</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>5400 N</td>
<td>≤ 0.4</td>
<td>2</td>
<td>≤ 28</td>
<td>0</td>
<td>28</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>5400 N</td>
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<td>≤ 30</td>
<td>0</td>
<td>30</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
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<td>≤ 30</td>
<td>0</td>
<td>30</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>3212 J / 3214 J</td>
<td>≤ 0.4</td>
<td>2</td>
<td>≤ 30</td>
<td>0</td>
<td>30</td>
<td>4</td>
<td>2</td>
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<td>3218 J</td>
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<td>2</td>
<td>≤ 60</td>
<td>0</td>
<td>60</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>3250 J</td>
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<td>2</td>
<td>≤ 60</td>
<td>0</td>
<td>60</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>4412 F / 4414 F</td>
<td>≤ 0.4</td>
<td>2</td>
<td>≤ 30</td>
<td>0</td>
<td>30</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>4418 F</td>
<td>≤ 0.4</td>
<td>2</td>
<td>≤ 60</td>
<td>0</td>
<td>60</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
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<td>≤ 0.4</td>
<td>2</td>
<td>≤ 30</td>
<td>0</td>
<td>30</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>4312 / 4314</td>
<td>≤ 0.4</td>
<td>2</td>
<td>≤ 30</td>
<td>0</td>
<td>30</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>4318</td>
<td>≤ 0.4</td>
<td>2</td>
<td>≤ 60</td>
<td>0</td>
<td>60</td>
<td>4</td>
<td>2</td>
</tr>
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<td>4312 / 4314 VARIOFAN</td>
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<td>2</td>
<td>≤ 30</td>
<td>0</td>
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<td>4</td>
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</tr>
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<td>0</td>
<td>60</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>4400</td>
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<td>2</td>
<td>≤ 30</td>
<td>0</td>
<td>30</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>4100 N</td>
<td>≤ 0.4</td>
<td>2</td>
<td>≤ 30</td>
<td>0</td>
<td>30</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>4100 NH...NH6</td>
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<td>2</td>
<td>≤ 60</td>
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<td>60</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>4100 NH...NH8</td>
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<td>≤ 60</td>
<td>0</td>
<td>60</td>
<td>20</td>
<td>3</td>
</tr>
<tr>
<td>DV 4100</td>
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<td>≤ 30</td>
<td>0</td>
<td>30</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>5200 N</td>
<td>≤ 0.4</td>
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<td>0</td>
<td>30</td>
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<td>2</td>
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Subject to change

**Electrical hookup**

*All voltages measured to ground. External load resistor $R_L / U_{SS}$ required.*
Available on request:
- Electrically isolated speed signal circuit
- Varying voltage potentials for power and logic circuit

<table>
<thead>
<tr>
<th>Type</th>
<th>Speed signal VDC</th>
<th>Condition Isink</th>
<th>Speed signal VDC</th>
<th>Condition Isource</th>
<th>Admissible sink current</th>
<th>Pulses per revolution</th>
<th>Fan description Base type</th>
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</table>

**Note:**
Fans that come with these fan specials could have variations with respect to the temperature range, voltage range, and power consumption compared to standard fans without specials.
Speed signal /12

- Speed-proportional, square-wave signal for external monitoring of the fan motor speed
- 2, 3, or 6 pulses per revolution
- TTL-compatible
- Integrated pull-up resistor
- Connection via separate cable
- The sensor signal also serves as a major comparison variable for setting and maintaining the setpoint speed for interactive or controlled cooling with one or more interconnected fans.

### Electrical hookup

![Electrical hookup diagram]

All voltages measured to ground.

### Signal output voltage

**Standard signal for all models (exceptions see below)**

<table>
<thead>
<tr>
<th>Type</th>
<th>VDC</th>
<th>mA</th>
<th>VDC</th>
<th>mA</th>
<th>mA</th>
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</tr>
</thead>
<tbody>
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<td>≤ 0.4</td>
<td>1</td>
<td>2.5–5.5</td>
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<td>2.5–5.5</td>
<td>1</td>
<td>1</td>
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<td>2.5–5.5</td>
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<td>4412 F/12 GM</td>
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<td>2.5–5.5</td>
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<tr>
<td>4418 F/12</td>
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<td>2.5–5.5</td>
<td>1</td>
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<td>53</td>
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<td>2.5–5.5</td>
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<td>56</td>
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<td>4314 /12</td>
<td>≤ 0.4</td>
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<td>2.5–5.5</td>
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<tr>
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<td>2.5–5.5</td>
<td>1</td>
<td>1</td>
<td>60</td>
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</tbody>
</table>

**Note:**

With these fan options, deviations in regard to temperature range, voltage range and power consumption are possible compared with standard fan data.
Available on request:
- Electrically isolated speed signal circuit
- Varying voltage potentials for power and logic circuit

<table>
<thead>
<tr>
<th>Type</th>
<th>Speed signal US low</th>
<th>Condition</th>
<th>Speed signal US high</th>
<th>Condition</th>
<th>Admissible sink current $I_{sink}$ max.</th>
<th>Fan description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>7214 N/12</td>
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<td>mA</td>
<td>2.5–5.5</td>
<td>1 mA</td>
<td>≤ 20 mA</td>
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<td>70</td>
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<tr>
<td>6424/12 H</td>
<td>≤ 0.4</td>
<td>mA</td>
<td>2.5–5.5</td>
<td>1 mA</td>
<td>≤ 20 mA</td>
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<td>DV 6424/12</td>
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<td>mA</td>
<td>4.5–5.25</td>
<td>2 mA</td>
<td>≤ 12 mA</td>
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<tr>
<td>DV 6448/12</td>
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<td>mA</td>
<td>4.5–5.25</td>
<td>2 mA</td>
<td>≤ 12 mA</td>
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<td>73</td>
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<tr>
<td>RG 125-19/12 N/12</td>
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<td>mA</td>
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<td>≤ 1 mA</td>
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<td>≤ 20 mA</td>
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</table>

Note: Fans that come with these fan specials could have variations with respect to the temperature range, voltage range, and power consumption compared to standard fans without specials.
Alarm signal /17

- Alarm signal for speed monitoring
- Signal output via open collector
- The fan emits a continuous high signal during trouble-free operation within the permissible voltage range.
- Low signal when speed limit is not reached
- After elimination of the fault, the fan returns to its setpoint speed; the alarm signal reverts to high.

### Alarm signal data

<table>
<thead>
<tr>
<th>Type</th>
<th>VDC</th>
<th>mA</th>
<th>VDC</th>
<th>mA</th>
<th>VDC</th>
<th>mA</th>
<th>s</th>
<th>min⁻¹</th>
<th>Page</th>
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</thead>
<tbody>
<tr>
<td>8318 /17</td>
<td>≤ 0.4</td>
<td>n &lt; n_G</td>
<td>2</td>
<td>≤ 60</td>
<td>n &gt; n_G</td>
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<td>≤ 15</td>
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Subject to change

**Note:**
Fans that come with these fan specials could have variations with respect to the temperature range, voltage range, and power consumption compared to standard fans without specials.
Available on request:
- Integrated signal storage for subsequent recognition of short-term faults (latch).
- Alarm circuit open collector or TTL.
- Electrically isolated for maximum device safety
  Defects in the power circuit do not affect the alarm circuit.

<table>
<thead>
<tr>
<th>Alarm signaldata</th>
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<th>VDC</th>
<th>mA</th>
<th>VDC</th>
<th>mA</th>
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<th>min⁻¹</th>
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Subject to change

Note:
Fans that come with these fan specials could have variations with respect to the temperature range,
voltage range, and power consumption compared to standard fans without specials.
Alarm signal /19

- Alarm signal for speed monitoring
- Signal output via open collector
- The fan emits a continuous low signal during trouble-free operation within the permissible voltage range.
- High signal when speed limit is not reached
- After elimination of the fault, the fan returns to its setpoint speed; the alarm signal reverts to low.

### Alarm signal data

<table>
<thead>
<tr>
<th>Type</th>
<th>VDC</th>
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<th>VDC</th>
<th>mA</th>
<th>VDC</th>
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<th>s</th>
<th>min⁻¹</th>
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<td>2</td>
<td>n &lt; nG</td>
<td>0</td>
<td>28</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>RLF 100-11/14/19</td>
<td></td>
<td>0.4</td>
<td>n &gt; nG</td>
<td>2</td>
<td>n &lt; nG</td>
<td>0</td>
<td>28</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>RER 101-36/18N/19 HH</td>
<td></td>
<td>0.4</td>
<td>n &gt; nG</td>
<td>2</td>
<td>n &lt; nG</td>
<td>0</td>
<td>28</td>
<td>10</td>
<td>15</td>
</tr>
</tbody>
</table>

Subject to change

**Note:**
Fans that come with these fan specials could have variations with respect to the temperature range, voltage range, and power consumption compared to standard fans without specials.

**Available on request:**
- Integrated signal storage for subsequent recognition of short-term faults (latch).
- Alarm circuit open collector or TTL.
- Electrically isolated for maximum device safety; Defects in the power circuit do not affect the alarm circuit.

### Electrical hookup

- Alarm signal suppression during startup.
- n < speed limit nG by braking or locking.

All voltages measured to ground

External load resistor \(R_a\) from \(U_A\) to \(U_{BA}\) required.
**Alarm signal /37**

**Go / NoGo alarm**

- Alarm signal for speed monitoring
- Signal output via open collector
- The fan emits a continuous high signal during trouble-free operation within the permissible voltage range.
- Low signal when speed limit is not reached
- After elimination of the fault, the fan returns to its setpoint speed; the alarm signal reverts to high.

### Alarm signal data

<table>
<thead>
<tr>
<th>Type</th>
<th>VDC</th>
<th>mA</th>
<th>VDC</th>
<th>mA</th>
<th>VDC</th>
<th>mA</th>
<th>s</th>
<th>min⁻¹</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>8412 N/37 GMLV</td>
<td>≤ 0.4</td>
<td>n ≤ n₉</td>
<td>2</td>
<td>≤ 28</td>
<td>n &gt; n₉</td>
<td>0</td>
<td>28</td>
<td>10</td>
<td>&lt;1</td>
</tr>
<tr>
<td>3412 N/37 GV</td>
<td>≤ 0.4</td>
<td>n ≤ n₉</td>
<td>2</td>
<td>≤ 28</td>
<td>n &gt; n₉</td>
<td>0</td>
<td>28</td>
<td>10</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

Subject to change

* After switching on U₉

**Note:**

Fans that come with these fan specials could have variations with respect to the temperature range, voltage range, and power consumption compared to standard fans without specials.

**Available on request:**

- Alarm circuit TTL compatible.

### Electrical hookup

All voltages measured to ground

External load resistor Rₐ from Uₐ to U₉BA required.
Alarm signal /39
Go / NoGo alarm

- Alarm signal for speed monitoring
- Signal output via open collector
- The fan emits a continuous low signal during trouble-free operation within the permissible voltage range.
- High signal when speed limit is not reached
- After elimination of the fault, the fan returns to its setpoint speed; the alarm signal reverts to low.

### Alarm signal data

<table>
<thead>
<tr>
<th>Type</th>
<th>VDC</th>
<th>mA</th>
<th>VDC</th>
<th>mA</th>
<th>VDC</th>
<th>mA</th>
<th>s</th>
<th>min⁻¹</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>412/39</td>
<td>&lt;0.5</td>
<td>n &gt; n₉</td>
<td>2</td>
<td>&gt; 28</td>
<td>n = n₉</td>
<td>0</td>
<td>28</td>
<td>10</td>
<td>&lt;1</td>
</tr>
<tr>
<td>612 F/39 H</td>
<td>≤0.5</td>
<td>n &gt; n₉</td>
<td>2</td>
<td>≥ 28</td>
<td>n = n₉</td>
<td>0</td>
<td>28</td>
<td>10</td>
<td>&lt;1</td>
</tr>
<tr>
<td>614 N/39 M</td>
<td>≤0.5</td>
<td>n &gt; n₉</td>
<td>2</td>
<td>≥ 28</td>
<td>n = n₉</td>
<td>0</td>
<td>28</td>
<td>10</td>
<td>&lt;1</td>
</tr>
<tr>
<td>618 N/39 N</td>
<td>≤0.5</td>
<td>n &gt; n₉</td>
<td>2</td>
<td>≥ 28</td>
<td>n = n₉</td>
<td>0</td>
<td>28</td>
<td>10</td>
<td>&lt;1</td>
</tr>
<tr>
<td>3412 N/39 H</td>
<td>≤0.5</td>
<td>n &gt; n₉</td>
<td>2</td>
<td>≥ 28</td>
<td>n = n₉</td>
<td>0</td>
<td>28</td>
<td>10</td>
<td>&lt;1</td>
</tr>
<tr>
<td>3414 N/39 HH</td>
<td>≤0.5</td>
<td>n &gt; n₉</td>
<td>2</td>
<td>≥ 28</td>
<td>n = n₉</td>
<td>0</td>
<td>28</td>
<td>10</td>
<td>&lt;1</td>
</tr>
<tr>
<td>4412 F/39 GL</td>
<td>≤0.5</td>
<td>n &gt; n₉</td>
<td>2</td>
<td>≥ 28</td>
<td>n = n₉</td>
<td>0</td>
<td>28</td>
<td>10</td>
<td>&lt;1</td>
</tr>
<tr>
<td>4412 F/39 M</td>
<td>≤0.5</td>
<td>n &gt; n₉</td>
<td>2</td>
<td>≥ 28</td>
<td>n = n₉</td>
<td>0</td>
<td>28</td>
<td>10</td>
<td>&lt;1</td>
</tr>
<tr>
<td>4414 F/39</td>
<td>≤0.5</td>
<td>n &gt; n₉</td>
<td>2</td>
<td>≥ 28</td>
<td>n = n₉</td>
<td>0</td>
<td>28</td>
<td>10</td>
<td>&lt;1</td>
</tr>
<tr>
<td>4414 FN/39 H</td>
<td>≤0.4</td>
<td>n &gt; n₉</td>
<td>2</td>
<td>≥ 30</td>
<td>n = n₉</td>
<td>0</td>
<td>30</td>
<td>4</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

Subject to change

* After switching on U₉

### Note:
Fans that come with these fan specials could have variations with respect to the temperature range, voltage range, and power consumption compared to standard fans without specials.

### Electrical hookup

![Electrical hookup diagram](image)

All voltages measured to ground
External load resistor Rₐ from Uₐ to UBA required.

* Speed limit n₉ = 0 rpm
“Software instead of hardware” aptly describes the unique fan concept. Fans come equipped with tailor-made intelligence for cooling electronics.

The main advantages are flexible configuration based on software, faster availability, sampling from the factory, and the ability to supply customer-specific solutions in any quantity.

Vario-Pro® features

External speed setting
- Speed setting via temperature, PWM or analog control voltage
  
  See page 178 (Speed setting)
- Description of speed curve with up to 14 selectable interpolation points.
  
  Linear interpolation between the points.
- 0 rpm speed possible
- Sensor break detection: If the sensor signal is lost, the fan will operate at any programmable speed.

Alarm and tachometer functions
- Optional alarm and/or tachometer function
- Selectable alarm speed limit (with hysteresis) and alarm delay time
- Storing of the alarm signal
- Delay only when starting or permanently active
- “High” or “low” output signal for alarm
- Optional alarm if temperature sensor fails
- Optional alarm in case of overtemperature

Motor management
- High control accuracy due to digital motor management
- Increased operating efficiency due to optimum coordination of motor hardware and software

### Fan Series and Page Numbers

<table>
<thead>
<tr>
<th>Fan series</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>620</td>
<td>37</td>
</tr>
<tr>
<td>8400 N</td>
<td>44</td>
</tr>
<tr>
<td>8300</td>
<td>46</td>
</tr>
<tr>
<td>8200 J</td>
<td>47</td>
</tr>
<tr>
<td>3400 N</td>
<td>48</td>
</tr>
<tr>
<td>3300 N</td>
<td>50</td>
</tr>
<tr>
<td>3200 J</td>
<td>51</td>
</tr>
<tr>
<td>3250 J</td>
<td>52</td>
</tr>
<tr>
<td>4400 FN</td>
<td>55</td>
</tr>
<tr>
<td>4300</td>
<td>56</td>
</tr>
<tr>
<td>4100 N</td>
<td>60</td>
</tr>
<tr>
<td>4100 NH...NH6</td>
<td>61</td>
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</table>

<table>
<thead>
<tr>
<th>Fan series</th>
<th>Page</th>
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<tbody>
<tr>
<td>4100 NH 7-8</td>
<td>62</td>
</tr>
<tr>
<td>DV 4100</td>
<td>63</td>
</tr>
<tr>
<td>5200 N</td>
<td>64</td>
</tr>
<tr>
<td>DV 5200</td>
<td>65</td>
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<td>5100 N</td>
<td>66</td>
</tr>
<tr>
<td>5300</td>
<td>67</td>
</tr>
<tr>
<td>7100 N</td>
<td>69</td>
</tr>
<tr>
<td>7200 N</td>
<td>70</td>
</tr>
<tr>
<td>6400</td>
<td>71</td>
</tr>
<tr>
<td>DV 6400</td>
<td>73</td>
</tr>
<tr>
<td>6300 N</td>
<td>76</td>
</tr>
<tr>
<td>6300 NTD</td>
<td>77</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fan series</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>6300</td>
<td>78</td>
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<tr>
<td>DV 6300 TD</td>
<td>80</td>
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<td>RL 90 N</td>
<td>99</td>
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<td>RLF 100</td>
<td>100</td>
</tr>
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<td>RG 90 N</td>
<td>101</td>
</tr>
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<td>RG 125 N</td>
<td>102</td>
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<td>RG 140</td>
<td>103</td>
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<td>RG 160 N</td>
<td>104</td>
</tr>
<tr>
<td>REF 100</td>
<td>110</td>
</tr>
<tr>
<td>RER 101 N</td>
<td>111</td>
</tr>
<tr>
<td>RER 125 N</td>
<td>116</td>
</tr>
<tr>
<td>RER 160 N</td>
<td>118</td>
</tr>
</tbody>
</table>
Speed setting via temperature sensor

The control variable is a temperature sensor that is either integrated in the fan or connected to an additional control cable.

External temperature sensor type T

- Ext. NTC resistor type LZ370 (p. 257) is required (not included in the standard scope of delivery)

$n_{\text{min}} = \frac{1}{2} n_{\text{max}}$
$T_{\text{min}} = 30 \, ^\circ\text{C}; T_{\text{max}} = 50 \, ^\circ\text{C}$

Internal temperature sensor type I

- NTC integrated in the fan hub

$n_{\text{min}} = 800 \, ' / \text{min}$
$T_{\text{min}} = 5 \, ^\circ\text{C}; T_{\text{max}} \leq 85 \, ^\circ\text{C}$, based on model

Standard speed/temperature curve for type T and type I

Optionally available with selectable temperature/speed curve
Speed setting via control voltage or PWM signal

- The control variable is a PWM signal or analog control voltage.

**Speed setting via analog control voltage type A**
- Standard control range 0 ... 10 V

**Speed setting via PWM type P**
- Standard PWM signal in two versions
  a) PWM frequency, mainly 1 ... 10 kHz (0-100%), Open-collector input
  b) Four-wire interface according to Intel specifications for 12 VDC fans, PWM frequency 25 kHz, incl. speed signal /2

- Optional with potentiometer

**Typical input resistance > 10 kΩ**

**Internal reference = +5 V**
R1 typical 4.7...10 kΩ
R2 typical 100 kΩ

**Standard P / A curve**

**Optionally available with selectable P / A speed curve**
Speed setting via Control input

- Customer can operate input either with PWM signal, analog voltage, external temperature control module, or resistor.
- The control signal speed characteristics of the fan differ from the standard curve of the A and P inputs (see p. 179).
- To reach the maximum speed, the control cable must be connected to the UB.
- The control input is usually combined with an open collector tachometer (type /2, see page 168).

---

### Speed setting via multi-option control input type O

#### Application instructions for various control options

<table>
<thead>
<tr>
<th>Temperature control module</th>
</tr>
</thead>
<tbody>
<tr>
<td>50002-1-0174</td>
</tr>
<tr>
<td>50003-1-0174</td>
</tr>
</tbody>
</table>

- **PWM 1 - 10 kHz**
- **Adjustable speed**
- **Full speed**
  - **PWM** 100% PWM app.
  - **10 V** -> n = max
  - **< 1 V** -> n = 0
  - **Startup** at > 14%

- **Adjustable speed with potentiometer**

- **GND**

#### Customer circuit

<table>
<thead>
<tr>
<th>Wire</th>
<th>Connection</th>
<th>Color</th>
<th>Assignment/function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+</td>
<td>Red</td>
<td>Supply voltage ripple ±3.5%</td>
</tr>
<tr>
<td></td>
<td>GND</td>
<td>Blue</td>
<td>GND</td>
</tr>
</tbody>
</table>

#### Connection

<table>
<thead>
<tr>
<th>Wire</th>
<th>Connection</th>
<th>Color</th>
<th>Assignment/function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tach</td>
<td>White</td>
<td>Tach output:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3 Impulse/revolution</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0-10 V / PWM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Purple</td>
<td>Control input (impedance 100 kV)</td>
</tr>
</tbody>
</table>
Protected fans
against environmental conditions

- Capable of satisfying special requirements for a broad range of applications
- Resistance of fans to environmental conditions such as dust, splashing water, humidity, spray water, and salt spray.
- Competent solutions to adapt fans to environmental conditions.

Moisture protection
A coat of paint over the motor and circuit board protect the fans against spray water and condensation.

Degree of protection IP 54 / IP 68*
In the degree of protection IP 54, the motor and circuit boards are coated and therefore protected against spray water and moisture.
The degree of protection IP 68 is important for ebm-papst products, as it ensures a high degree of protection for the encapsulated motor and electronics against foreign bodies and water, while protecting the user against potential hazards upon contact. Degrees of protection higher than IP 68 are possible on request.

Solutions that are available and are used may differ depending on the fan size.
We would be glad to develop solutions tailored to the demands of your application.

<table>
<thead>
<tr>
<th>Degree of protection – IP code*</th>
<th>Protection against foreign bodies and accidental contact (first digit)</th>
<th>Water protection (second digit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>No protection</td>
<td>X</td>
</tr>
<tr>
<td>1</td>
<td>Protection against foreign objects &gt; 50 mm (back of the hand)</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Protection against foreign objects &gt; 12 mm (finger)</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Protection against foreign objects &gt; 2.5 mm (tool)</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>Protection against foreign objects &gt; 1 mm (wire)</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Protection against dust in harmful quantities</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>Dust-proof</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>Protection against temporary submersion (15 cm - 1 m)</td>
<td>8</td>
</tr>
<tr>
<td>8</td>
<td>Protection against continuous submersion</td>
<td></td>
</tr>
</tbody>
</table>

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

Salt spray protection
Salt spray represents one of the most difficult requirements for product durability. ebm-papst has the technology to protect fans and blowers from salt spray reliably and for the long term.

Stainless steel bearings
Special bearings made of stainless steel provide additional protection.

Stainless steel bearings
Special bearings made of stainless steel provide additional protection.

Stainless steel bearings
Special bearings made of stainless steel provide additional protection.

Stainless steel bearings
Special bearings made of stainless steel provide additional protection.

Stainless steel bearings
Special bearings made of stainless steel provide additional protection.

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Special bearings made of stainless steel provide additional protection.

Stainless steel bearings
Special bearings made of stainless steel provide additional protection.

Stainless steel bearings
Special bearings made of stainless steel provide additional protection.
ACmaxx / EC fans

Technical information about ACmaxx
Overview
ACmaxx axial fans
GreenTech EC tubeaxial fans
Energy-saving axial fans
EC axial fans
ACmaxx in-line duct fans
Progress made by ebm-papst
The best example: The ACmaxx fans from ebm-papst that offer
substantial benefits thanks to an ingenious yet simple improvement over
conventional AC fans.
The aim in developing the new ACmaxx series was to raise the technical
standard of the conventional AC fan significantly and in the process
facilitate a transition to new technology by maintaining the same fan
sizes. In short, to make sure that the fans can be replaced 1:1 without any
changes to the peripherals or voltage situation.

What the ACmaxx and GreenTech EC compact fans have in common:

Energy efficiency
A drive concept based on state-of-the-art GreenTech EC technology with
outstanding motor efficiency. Compared to AC fans of the same size,
ACmaxx energy consumption is up to 77% lower – for greater cooling
capacity! The energy savings alone means that the products pay for
themselves after only a few months. The savings over the entire service
life, especially in systems with multiple fans, is considerable.

Independent of the power frequency and line voltage
The ACmaxx and GreenTech EC tubeaxial fans are prepared for direct
connection to a wide range of AC voltages and frequencies. The speed,
and thus important properties of the fan such as air flow and noise, are
independent of the power frequency and do not change, even within the
defined voltage range. Voltage fluctuations in the power system are
automatically compensated for.

Long service life
The efficiency of ACmaxx and GreenTech EC tubeaxial fan motors is up to
75% greater than that of conventional AC fan variants. This not only saves
energy, it also means less self-heating of the motor. Especially the
bearing system responds positively to the low self-heating. The reason
why the fans have a service life that is up to 85% longer! This also
extends the service and maintenance intervals significantly. Investments
in replacement fans and every more expensive downtime are manageably
small.
Safety

- Safety certifications: UL, CSA and VDE 0805 / EN60950. VDE 0700 / EN60335 on request.
- Our fans have the CE mark of conformity.
- EMC protection:
  > EN61000-4-4 Level 1 (1 kV or 2 kV) B
  > EN61000-4-2 Level 8 kV/15 kV or 4 kV/8 kV
  > EN61000-4-3
  > EN61000-4-6
  > EN61000-4-8
  > EN55022 Class B

The environment

AC fans are extremely common and are used in a wide variety of applications. In control cabinet cooling, beer coolers, cooling cabinets, wood-burning stoves, medical devices — all have different requirements for resistance to environmental conditions. ACmaxx and GreenTech EC tubeaxial fans offer the same features for moisture protection, splash water, and tougher environmental conditions.

Particular design features of the GreenTech EC tubeaxial fan (ACi 4400): GreenTech EC compact fan is more compact!

As large as existing AC fans — and not a bit larger. This is the greatest feature of the new ACi 4400 GreenTech EC tubeaxial fans. Even in the hub area, the fan does not differ from typical 119 x 119 x 38 mm AC fans. Out with the AC, in with the ACi 4400 GreenTech EC tubeaxial fans — it’s that simple.

The GreenTech EC tubeaxial fan is more efficient!

ACmaxx saves energy, and the GreenTech EC tubeaxial fan generation saves even more. While an AC fan at 50 Hz can barely reach an overall efficiency of 5-6%, the ACmaxx makes it to about 20-25%. With the new ACi 4400 GreenTech EC tubeaxial fans, a remarkable level of up to 30% is reached. This is the result of the optimization of the entire package made up of the drive, electronics, AC/DC conversion, and aerodynamics. Thus the new GreenTech EC tubeaxial fan series boasts energy savings of almost 75% compared to the corresponding AC fan, thus providing significantly greater savings than the 40% level of the old AC 4300 generation.

The GreenTech EC tubeaxial fan is quieter!

The ACi 4400 GreenTech EC tubeaxial fan is quieter! Quieter than AC fans and quieter than the existing ACmaxx generation. The reason for this is the optimized aerodynamics and the drive, which is optimized for minimum structure-borne noise. Thus the fan is only half as loud at a comparable air performance, and is up to 6 dB(A) quieter at some operating points.

Speed independent of voltage and frequency

For the ACi 4400 GreenTech EC tubeaxial fans, the speed, and thus the flow quantity and operating noise, are independent of the power supply and power frequency. Versions are available for 115 VAC with a voltage range from 85 to 132 VAC and 230 VAC with a voltage range of 195 to 265 VAC. Operation with DC voltage is also possible. Voltage fluctuations and frequency differences in the power system are compensated for automatically.
Particular design features of the ACmaxx:

Prepared for all common AC voltages
These models have a very wide voltage range from 85 to 265 VAC – the global voltage range, so to speak. This allows the fan to be used around the world, opening up large savings potentials. In addition to reduced logistics effort and stock keeping, worldwide availability is key. ACmaxx is compatible with every power supply and no switching is needed. From 85 to 265 volts and power frequencies of 50 and 60 Hz. Voltage fluctuations in the power system are automatically compensated for.

Higher performance
Unlike conventional AC technology, the state-of-the-art drive concept of this fan series is not linked to a fixed power frequency. This allows the motor speed to be increased over a wide range. Thus ACmaxx provides significantly greater air flow and significantly increased pressure.

Greater flexibility
The flexibility of ACmaxx is unique. With its intelligent features, ACmaxx can be adapted individually to the specific application: standby mode, overload mode at peak times, or night reduction all the way to temperature-controlled quiet operation are all possible. From speed monitoring to long-term function checks using an alarm or speed signal outputs, ACmaxx offers optional interfaces that allow you to monitor an operation easily and quickly.

You can find further information about these fan options in the “Fans specials” chapter, starting on page 161. Or you can simply contact our application engineers to discuss your ideal ACmaxx or GreenTech EC tubeaxial fan.
### Overview of air performance

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Series</th>
<th>Air flow</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm</td>
<td>m³/h</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80 x 32</td>
<td>AC 8300</td>
<td>80</td>
<td>188</td>
</tr>
<tr>
<td>92 x 38</td>
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<td>189</td>
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</tr>
<tr>
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<td>220...370</td>
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### Overview of technically feasible designs

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>ACmaxx / ACi axial fans</th>
<th>Sleeve bearings</th>
<th>Ball bearings</th>
<th>ISO</th>
<th>Series</th>
<th>OPTIONAL</th>
<th>Speed</th>
<th>Pollutant</th>
<th>WV</th>
<th>VDE</th>
<th>ATEX</th>
<th>VDI</th>
<th>Nema</th>
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</tbody>
</table>

Subject to change

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 tied to minimum volumes. Please consult your customer support representative about the feasibility of your special variant.
Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level \( L_{WA\text{ ISO 10300}2} \) 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

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow</th>
<th>Air flow</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Voltage range</th>
<th>Sound pressure level</th>
<th>Sound power level</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L10 (40 °C)</th>
<th>Service life L10 (85 °C)</th>
<th>Life expectancy L10 IPC (40 °C)</th>
<th>Curve</th>
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</thead>
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<tr>
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<td>47</td>
<td>115 / 230</td>
<td>50 / 60</td>
<td>85 ... 265</td>
<td>48</td>
<td>6.2</td>
<td>8.3</td>
<td>5 000</td>
<td>-20 ... +75</td>
<td>55 000 / 20 000</td>
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</table>

Subject to change

Speed variants available on request.
ACmaxx axial fans

Subject to change

Series AC 3200 J

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VAC</th>
<th>Hz</th>
<th>VAC</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
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<tbody>
<tr>
<td>AC 3200 JH</td>
<td>144</td>
<td>85</td>
<td>115 / 230</td>
<td>50 / 60</td>
<td>85 ... 265</td>
<td>55</td>
<td>6.4</td>
<td>12</td>
<td>6 800</td>
<td>-20...+70</td>
<td>70 000 / 35 000</td>
<td>117 500</td>
</tr>
</tbody>
</table>

Subject to change

Speed variants available on request.

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level $L_{WA}$ 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

Motor performance measured to EN 61000-6-2.
External fan test.
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
Air performance measured according to: ISO 5801. Installation category A, without contact protection.

Noise: Total sound power level $L_{WA}$ ISO 10300 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

---

### Series AC 4400 FN

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow m³/h</th>
<th>cfm</th>
<th>Nominal voltage VAC</th>
<th>Frequency Hz</th>
<th>Nominal sound pressure level dB(A)</th>
<th>Sound power level Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>Temperature range °C</th>
<th>Service life $L_{10}(40°C)$ Hours</th>
<th>Service life $L_{10}(T_{max})$ Hours</th>
<th>Life expectancy $L_{10}$ IPC Hours</th>
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</thead>
<tbody>
<tr>
<td>AC 4400 FN</td>
<td>205</td>
<td>121</td>
<td>115 / 230</td>
<td>50 / 60</td>
<td>85 ... 265</td>
<td>53</td>
<td>6.2</td>
<td>12</td>
<td>-20 ... +70</td>
<td>60 000 / 30 000</td>
<td>102 500</td>
<td>*</td>
</tr>
</tbody>
</table>

Subject to change

---

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

---

Series AC 4400 FN

Nominal data

### Highlights:
- Universally usable for all power voltages between 85 and 265 VAC
- Weight: 370 g

### Possible special versions:
- Speed signal
- Go / NoGo alarm
- Alarm with speed limit
- External temperature sensor
- Internal temperature sensor
- PWM control input
- Analog control input
- Moisture protection

---

ACmaxx axial fans

119 x 25 mm

- Material: Housing: GRP² (PBTP)
  Impeller: GRP² (PA)
- Direction of air flow: Exhaust over struts
- Direction of rotation: Counterclockwise, looking towards rotor
- Connection: Via single wires AWG 22, TR 64
- Highlights: Universally usable for all power voltages between 85 and 265 VAC
  - Weight: 370 g

1) Fiberglass-reinforced plastic
## NOMINAL DATA

### Type | m³/h | cfm | VAC | Hz | Frequency | dB(A) | Bel(A) | Watts | rpm
--- | --- | --- | --- | --- | --- | --- | --- | --- | ---
AC 4300 H | 204 | 120 | 115 / 230 | 50 / 60 | 85 ... 265 | 51 | 6.4 | 12 | 3400 | -20...+70 | 45 000 / 22 500 | 75 500

### INSTALLATION
- **Material:** Housing: GRP\(^1\) (PBTP), 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:** Universally usable for all power voltages between 85 and 265 VAC
- **Weight:** 325 g

### SPECIAL VERSIONS
- 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
**AC 4300**

### NOMINAL DATA

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Voltage range</th>
<th>Sound power level</th>
<th>Sound pressure level</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L10 (40 °C)</th>
<th>Service life L10 (60 °C)</th>
<th>Service life L10 ecm part standard</th>
<th>Service life L10 ecm part standard</th>
<th>Life expectancy LIPC (40 °C)</th>
<th>Curve</th>
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<td>cfm</td>
<td>VAC</td>
<td>Hz</td>
<td>Watts</td>
<td>rpm</td>
<td>°C</td>
<td>Hours</td>
<td>Hours</td>
<td></td>
<td></td>
<td></td>
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</table>

### SPEED VARIANTS
Required.

---

1) Fiberglass-reinforced plastic

---

Air performance measured according to ISO 5801, installation category A, without contact protection.

Noise: Total sound power level \(L_{PA}\) ISO 103002 measured on a hemisphere with a radius of 2 m.

Sound pressure level \(L_{PAm}\) 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](http://www.ebmpapst.com/general conditions)
Max. 175 m³/h

GreenTech EC tubeaxial fans

- Material: Housing: GRP\(^1\) (PBT)
  Impeller: GRP\(^1\) (PA)
- Direction of air flow: Exhaust over struts
- Direction of rotation: Clockwise, looking towards rotor
- Connection: with flat plug 2.8 x 0.5, optionally also with exposed external wires
- Highlights: Fully integrated converter and fan electronics
- Weight: 250 g

Possible special versions:
(See chapter DC fans - specials)
- Moisture protection
- Salt spray protection
- Degree of protection: IP 54

Series ACI 4400

Nominal data

<table>
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<tr>
<th>Type</th>
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<th>Air flow</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Voltage range</th>
<th>Sound pressure level</th>
<th>Sound power level</th>
<th>Series sleeve bearings</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L(_{10}) (40 °C)</th>
<th>Service life L(<em>{10}) (T(</em>{\text{max}}))</th>
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<td>230</td>
<td>50 / 60</td>
<td>195...265</td>
<td>25</td>
<td>4.1</td>
<td>■</td>
<td>1.7</td>
<td>1 850</td>
<td>-40...+75</td>
<td>65 000 / 25 000</td>
<td>110 000</td>
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<td>50 / 60</td>
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<td>4.9</td>
<td>■</td>
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<td>-40...+75</td>
<td>65 000 / 25 000</td>
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<td>-40...+75</td>
<td>65 000 / 25 000</td>
<td>110 000</td>
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</table>

1) Fiberglass-reinforced plastic

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L\(_{WA}\) 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
P. 244

Cables
P. 255
### Series AC 6200 N

#### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow m³/h</th>
<th>Air flow cfm</th>
<th>Nominal voltage VAC / Hz</th>
<th>Air flow VAC</th>
<th>Frequency Hz</th>
<th>Voltage range</th>
<th>Sound pressure level dB(A)</th>
<th>Sound power level Bel(A)</th>
<th>Power consumption Watts</th>
<th>Nominal speed rpm⁻¹</th>
<th>Temperature range °C</th>
<th>Service life L10 (40 °C) Hours</th>
<th>Service life L10 (Tmax) hours</th>
<th>Life expectancy L10 IPC see page Curves</th>
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<tbody>
<tr>
<td>AC 6200 NM</td>
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<td>206</td>
<td>115 / 230 50 / 60</td>
<td>85 ... 265</td>
<td>50</td>
<td>50</td>
<td>5.7</td>
<td></td>
<td>14</td>
<td>2 850</td>
<td>-20 ... +70</td>
<td>80 000 / 40 000</td>
<td>135 000</td>
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</tr>
</tbody>
</table>

Subject to change

---

**Material:** Housing: Die-cast aluminum
Impeller: GRP¹ (PA)

**Direction of air flow:** Exhaust over struts

**Direction of rotation:** Counterclockwise, looking towards rotor

**Connection:** Via single wires AWG 22, TR 64

**Highlights:** Universally usable for all power voltages between 85 and 265 VAC, 50-60 Hz
Housing with grounding lug for screw M4 x 8 (Torx)
900 g

**Weight:** 1) Fiberglass-reinforced plastic

---

### Possible special versions:

- 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

---

Max. 350 m³/h

---

Air performance measured according to ISO 5801:
Installation category A, without contact protection.
Noise: Total sound power level LWA 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
P: 244

---

1) Fiberglass-reinforced plastic
Max. 370 m³/h

Energy-saving axial fans
Ø 130 mm

- Material:
  Housing: PP plastic, fiberglass-reinforced;
  Blades: PA plastic, fiberglass-reinforced
- Number of blades: 7
- Direction of air flow: “V”, exhaust over struts
- Direction of rotation: Counterclockwise, looking towards rotor
- Degree of protection: IP 54
- Insulation class: “B”
- Installation position: Any
- Condensation drainage holes: None
- Mode of operation: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>Pa</th>
<th>°C</th>
<th>kg</th>
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<td>W1G130-AA49 -01</td>
<td>M1G 055-AI</td>
<td>1~</td>
<td>115</td>
<td>50/60</td>
<td>3200</td>
<td>24</td>
<td>0.38</td>
<td>90</td>
<td>-30…+60</td>
</tr>
<tr>
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<td>M1G 055-AI</td>
<td>1~</td>
<td>230</td>
<td>50/60</td>
<td>3200</td>
<td>24</td>
<td>0.19</td>
<td>90</td>
<td>-30…+70</td>
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</tbody>
</table>

Subject to change

(1) Nominal data in operating point with maximum load and 115 or 230 VAC

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, 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
- Motor protection: Via electronics and thermal overload protector
- Electrical hookup: Plug-in connection on motor side
- Protection class: II
- Conformity with standard(s): CE; EN 60335-1
- Approvals: VDE, GOST (are available); UL, CSA (are applied for)
- Speed: Using the programming unit 2 speeds between n_{min} and n_{max} can be programmed

Connection lead (total length 450 mm) is fitted ex works and can be detached.
Max. 1065 m³/h

EC axial fans
Ø 200 mm

- Material:
  - Housing: Die-cast aluminum
  - Blades: PP plastic
  - Rotor: Thick-film passivated

- Number of blades: 7

- Direction of air flow: "V"

- Direction of rotation: Counterclockwise, looking towards rotor

- Degree of protection: Depending on installation and position
  - "B"

- Insulation class: B

- Installation position: Any

- Condensate discharges: None, open rotor

- Mode of operation: Continuous operation (S1)

- Bearings: Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>Pa</th>
<th>°C</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>W3G200-HD01-01</td>
<td>M3G055-BD</td>
<td>1–200-240 50/60 2 900</td>
<td>54</td>
<td>0,55</td>
<td>96</td>
<td>-25..+60</td>
<td>1,6</td>
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<td>M3G055-BD</td>
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Subject to change  
± Nominal data in operating point with maximum load and 230 VAC  
^ Not suitable for permanent outdoor use. Special version available on request.

Curves:

- 2 Speed stages
- Speed-controlled

Air performance measured according to ISO 5801. Installation category A, without contact protection. Suction-side noise levels: LWA according to ISO 13347. LWA 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
– Touch current: <= 3.5 mA acc. to IEC 60990 (test circuit, illustration 4)
– Electrical hookup: Via terminal strip
– Protection class: I (with customer connection to grounding conductor)
– Conformity with standard(s): EN 60335-1, CE
– Approvals: VDE, cURus
EC axial fans
Ø 250 mm

- Material: Housing: Die-cast aluminum
  Blades: PP plastic
  Rotor: Thick-film passivated
- Number of blades: 7
- Direction of air flow: “V”
- Direction of rotation: Counterclockwise, looking towards rotor
- Degree of protection: Depending on installation and position(2)
- Insulation class: “B”
- Installation position: Any
- Condensate discharges: None, open rotor
- Mode of operation: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings

---

### Nominal data

<table>
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<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>Pa</th>
<th>°C</th>
<th>kg</th>
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Subject to change  
(1) Nominal data in operating point with maximum load and 230 VAC  
(2) Not suitable for permanent outdoor use. Special version available on request.

---

### Curves:

- ② 2 Speed stages
- ③ ④ ⑤ Speed-controlled

Air performance measured according to ISO 5801. Installation category A, without contact protection. Suction-side noise levels $L_{WA}$ according to ISO 13347, $L_{WA}$ 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.
- **Technical features:** See connection diagram p. 260/261
- **Touch current:** <= 3.5 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Electrical hookup:** Via terminal strip
- **Protection class:** I (with customer connection to grounding conductor)
- **Conformity with standard(s):** EN 60335-1, CE
- **Approvals:** VDE, cURus

Finger guards from p. 245
Connection diagrams p. 260/261
### ACmaxx in-line duct fan

**Ø 98.5 x 130 mm**

- **Material:** Housing: GRP³ (PBT)
  Impeller: GRP³ (PA)
- **Direction of air flow:** Intake over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via 3-pin Europa terminal strip
- **Max. speed:** 3 000 rpm
- **Max. pressure:** 200 mbar
- **Weight:** 400 g

#### Possible special versions:
- Speed signal
- PWM control input
- Analog control input 0...10 VDC
- Moisture protection
- Degree of protection: IP 44 (IP45 possible depending on installation position)

#### Series AC 100

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>Type high air flow</th>
<th>Type high pressure</th>
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<tr>
<td>Type high air flow</td>
<td>m³/h</td>
<td>cfm</td>
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<tr>
<td>AC 100 NR</td>
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<td>47</td>
</tr>
<tr>
<td>Max.</td>
<td>AC 100 HR*</td>
<td>135</td>
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</tbody>
</table>

| Type high pressure | m³/h | cfm | VAC | Hz | VAC | Voltage range | dB(A) | Bel(A) | Watts | rpm⁻¹ | Temperature range | Hours | Hours |
| Nominal boost | AC 100 MR* | 40 | 23 | 115/230 | 50-60 | 85...265 | 31 | 4.2 | tbd | 2 050* | -10...+55 | 70 000 | 50 000 |
| AC 100 NR-017 | 53 | 31 | 115/230 | 50-60 | 85...265 | 33 | 4.4 | 2.8 | 2 680 | -10...+55 | 70 000 | 50 000 |

**Impeller Type Boost off, Jumper low Boost off, Jumper high Boost on

| Type high air flow | AC 100 MR | 1 250 | 2 050 | 3 150 |
| High air flow | AC 100 NR | 2 200* | 2 750 | 3 500 |
| High pressure | AC 100 MR* | 1 250* | 2 050* | 3 150* |
| AC 100 NR-017 | 2 180 | 2 680 | 3 300 |

---

* Possible special versions: 
  - Speed signal
  - PWM control input
  - Analog control input 0...10 VDC
  - Moisture protection
  - Degree of protection: IP 44 (IP45 possible depending on installation position)

---

**Subject to change**

* on request

---

**Max. 135 m³/h**
Highest energy efficiency: 0.03 - 0.045 W/m³/h free air (specific fan power).
Boost speed: 2 speed settings possible via boost function.
Vibration isolation: Reduced transmission of vibrations from motor to housing.
Intelligence: Can be expanded to include set value requirement and signal outputs as an option.

Examples of connections

Example 1:
Nom speed endurance
Boost via light switch

Example 2:
Nom speed via light switch
Separate boost switch

Example 3:
Simple connection
Nom speed without switching

Example 4:
Simple connection
Boost without switching

Scope of delivery
AC axial fans

AC axial fan overview
AC axial fans

205
206
Product line
The renowned ebm-papst AC fans are used when DC voltage is not available. The AC range of fans is based on experience gained from decades of development know-how, millions of units in series production, and the innovation competence of a world-wide technology pioneer.

In this catalog, we offer you the broad spectrum of our AC fans. In addition to complete systems, you will also find fans without external housing. They offer economic benefits whenever the air duct design can be integrated in the respective device.

Variety of sizes
AC fans are available in a variety of sizes with either air exhaust or air intake over struts. Silent running models with sleeve bearings. Electrical connection with plug connection or external exposed connection wires are available.

Shaded-pole or capacitor motors
Fan drives by shaded-pole or capacitor motors, most of which incorporate the world-famous ebm-papst external rotor principle. The fan blades are directly attached to the external rotor of the external rotor motor. This construction combining high performance with profitability.

Flat built AC fans
ebm-papst also has AC fans with a particularly flat construction and an internal rotor motor. Their advantage: quick start to full speed. A plastic impeller and the smaller and lighter internal rotor motor result in lower rotational inertia.

Bearings
AC fans with sleeve bearings are powered by Class E insulated motors. Fans with ball bearings are equipped with Class B, E, or F insulated motors.

Degree of protection
All ebm-papst fans conform to the requirements of IP 20. IP 54 / IP 65 and special degrees of protection are available on request.

AC voltage
The line of AC fans for Euro voltage according to IEC 60038 (230 V ± 10 %) is also available in 115 V.

Frequencies
AC fans can be operated at frequencies of 50 or 60 Hz. In this case, their technical data changes accordingly.

Capacitor
Fans driven by capacitor external motors provide particularly high operating efficiency. Generally, the required motor run capacitor is already integrated in the fan housing.

Overloading
Almost all AC fans are protected against overloading (e. g. due to locked rotor) – either impedance protected (marked “Impedance protected” or “Z. P.”) or equipped with a thermal switch (marked “Thermally protected” or “Th. P.”). The model designation of these fans ends with “S”.

Technical information

Technical information
### Axial fans for AC operation

#### Overview of air performance

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Series</th>
<th>m³/h</th>
<th>Speed signal</th>
<th>Motor protection</th>
<th>Sleeve bearings</th>
<th>Ball bearings</th>
<th>Page</th>
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### Overview of technically feasible designs

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<th>Dimensions</th>
<th>Series</th>
<th>Speed</th>
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<th>Sleeve bearings</th>
<th>Ball bearings</th>
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</table>

Subject to change

- available
- not yet available
- Sleeve bearings
- Ball bearings

Subject to change
Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level LWA ISO 10300 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

Subject to change

- Material: Housing: Die-cast aluminum
  Impeller: painted sheet steel
- Direction of air flow: Exhaust over struts
- Direction of rotation: Clockwise, looking towards rotor
- Connection: Via 2 single wires
- Weight: 490 g
- Note: Please note our new ACmaxx series. With identical mounting dimensions and voltages, this series achieves greater energy efficiency. See page 188.

Series 8000 N

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow</th>
<th>Air flow</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Sound pressure level dB(A)</th>
<th>Sound power level Bel(A)</th>
<th>Ball bearings</th>
<th>Power consumption Watts</th>
<th>Nominal speed rpm⁻¹</th>
<th>Temperature range °C</th>
<th>Nominal life L10 at 40 °C</th>
<th>at T max</th>
<th>Curve</th>
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<td>12.0</td>
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<td>31</td>
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<td>12.0</td>
<td>2 800</td>
<td>-40...+90</td>
<td>52 500 / 15 000</td>
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<td>60</td>
<td>21</td>
<td>3.7</td>
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<td>8.0</td>
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<td>-10...+80</td>
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Subject to change

Fan type

<table>
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<th>Type</th>
<th>Length “L”</th>
<th>Connection wires</th>
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<td>310 mm long</td>
<td>AWG 18, TR 64</td>
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<td>8850 N</td>
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<td>AWG 22</td>
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<td>8556 N</td>
<td>440 mm long</td>
<td>AWG 18, TR 64</td>
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</table>

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level LWA ISO 10300 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.
For detailed information see http://www.ebmpapst.com/general conditions
### AC axial fans

| Ø 76 x 37 mm |

- **Material:** Impeller: Die-cast aluminum
  Mounting bracket: Metal
- **Direction of air flow:** Exhaust over mounting bracket
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via 2 single wires
- **Weight:** 370 g

### Possible special versions:
(See page 12)
- Moisture protection
- Salt spray protection
- Degree of protection: IP 54 / IP 65

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VAC</th>
<th>Hz</th>
<th>dB(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
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Subject to change

The air flow and sound level of fans without external housing depend on the installation conditions. The stated air flow and noise have been measured with an orifice 76.5 mm Ø at a distance of approx. 17 mm from the mounting bracket.

The air flow capacity of fan series 8000 N is achievable because of the exceptionally favorable installation conditions. The noise in the optimal operating range can be measured for these fans only in a specific application.

### Fan type

<table>
<thead>
<tr>
<th>Fan type</th>
<th>Type</th>
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The air flow and sound level of fans without external housing depend on the installation conditions. The stated air flow and noise have been measured with an orifice 76.5 mm Ø at a distance of approx. 17 mm from the mounting bracket.

The air flow capacity of fan series 8000 N is achievable because of the exceptionally favorable installation conditions. The noise in the optimal operating range can be measured for these fans only in a specific application.
Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level \(L_{WA}\) 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

### Series 3900

<table>
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<th>Frequency</th>
<th>Sound pressure level (dB(A))</th>
<th>Sound power level (Bel(A))</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L10</th>
<th>at (70^\circ)C</th>
<th>at (T_{max})</th>
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<td>60 000 / 22 500</td>
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</tr>
</tbody>
</table>

Subject to change

### Material:
- Housing: Die-cast aluminum
- Impeller: Mineral-reinforced PA plastic

### Possible special versions:
(See page 12)
- Moisture protection

### Direction of air flow:
Exhaust over struts

### Direction of rotation:
Counterclockwise, looking towards rotor

### Connection:
Via 2 flat plugs 2.8 x 0.5 mm grounding lug for M4

### Weight:
280 g

### Note:
Please note our new ACmaxx series. With identical mounting dimensions and voltages, this series achieves greater energy efficiency. See page 189.
Max. 89 m³/h

**AC axial fans**

- **Material:** Housing: Die-cast aluminum
  Impeller: painted sheet steel
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise.
- **Connection:** Via 2 single wires
  grounding lug for M4 x 8
- **Weight:** 420 g
- **Note:** Please note our new ACmaxx series.
  With identical mounting dimensions and voltages,
  this series achieves greater energy efficiency.
  See page 189.

### Series 3000

<table>
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<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VAC</th>
<th>Hz</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm³</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
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<td>9.0</td>
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</table>

Subject to change

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### Fan type

**With sleeve bearings**

- Length "L": 310 mm long
- Connection wires: AWG 18, TR 64

**With ball bearings**

- Length "L": 310 mm long
- Connection wires: AWG 18

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Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level LWA 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

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Finger guards
FROM P. 242
Air performance measured according to: ISO 5801. Installation category A, without contact protection.

- **Material:** Housing: Die-cast aluminum. Impeller: Mineral-reinforced PA plastic.
- **Direction of air flow:** Exhaust over struts.
- **Direction of rotation:** Counterclockwise, looking towards rotor.
- **Connection:** Via 2 flat plugs 2.8 x 0.5 mm grounding lug for M4.
- **Weight:** 320 g.
- **Note:** Please note our new ACmaxx series. With identical mounting dimensions and voltages, this series achieves greater energy efficiency. See page 192.

### Subject to change

Table: Series 9900

<table>
<thead>
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<th>Air flow m³/h</th>
<th>cfm</th>
<th>VAC</th>
<th>Frequency Hz</th>
<th>Sound pressure level dB(A)</th>
<th>Sound power level Bel(A)</th>
<th>Power consumption Watts</th>
<th>Nominal speed rpm⁻¹</th>
<th>Temperature range °C</th>
<th>Service life L₁₀ at 40°C</th>
<th>aT₁ max Hours</th>
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</table>

Subject to change

Air performance measured according to ISO 5801. Installation category A, without contact protection.

Noise: Total sound power level $L_{PwA}$ 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

### Series 9900

- **Material:** Housing: Die-cast aluminum. Impeller: Mineral-reinforced PA plastic.
- **Direction of air flow:** Exhaust over struts.
- **Direction of rotation:** Counterclockwise, looking towards rotor.
- **Connection:** Via 2 flat plugs 2.8 x 0.5 mm grounding lug for M4.
- **Weight:** 320 g.
- **Note:** Please note our new ACmaxx series. With identical mounting dimensions and voltages, this series achieves greater energy efficiency. See page 192.

### Table: Series 9900

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow m³/h</th>
<th>cfm</th>
<th>VAC</th>
<th>Frequency Hz</th>
<th>Sound pressure level dB(A)</th>
<th>Sound power level Bel(A)</th>
<th>Power consumption Watts</th>
<th>Nominal speed rpm⁻¹</th>
<th>Temperature range °C</th>
<th>Service life L₁₀ at 40°C</th>
<th>aT₁ max Hours</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>9956 L</td>
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<td>29</td>
<td>4.4</td>
<td>9.5</td>
<td>1850</td>
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<td>9956 M</td>
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<td>230</td>
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<td>47 500 / 22 500</td>
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<td>117</td>
<td>68.9</td>
<td>230</td>
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<td>37</td>
<td>5.0</td>
<td>14.0</td>
<td>2450</td>
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<td>2100</td>
<td>-40...+80</td>
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<td>62 500 / 25 000</td>
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<td>9900</td>
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<td>2850</td>
<td>-40...+70</td>
<td>52 500 / 25 000</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Subject to change

Air performance measured according to ISO 5801. Installation category A, without contact protection.

Noise: Total sound power level $L_{PwA}$ 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
AC axial fans

Max. 180 m³/h

- Material: Housing: Die-cast aluminum
  Impeller: painted sheet steel
- Direction of air flow: Intake over struts
  Exhaust over struts
- Direction of rotation: Clockwise, looking towards rotor
- Connection: Via 2 flat plugs 2.8 x 0.5 mm
  grounding lug for M4
- Weight: 550 g
- Available as an option: Versions with reinforced mounting flanges and exposed external single wires.

- Possible special versions: (See page 12)
  - Speed signal
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54 / IP 65

Series 4000 N

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VAC</th>
<th>Hz</th>
<th>dB(A)</th>
<th>Watts</th>
<th>rpm</th>
<th>°C</th>
<th>Curves</th>
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</thead>
<tbody>
<tr>
<td>4880 N</td>
<td>80</td>
<td>47.0</td>
<td>230</td>
<td>50</td>
<td>25</td>
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<td>11.0</td>
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<td>58.8</td>
<td>230</td>
<td>50</td>
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<td>15.0</td>
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</tr>
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<td>5.7</td>
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</tr>
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<td>115</td>
<td>60</td>
<td>51</td>
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<td>3 100</td>
<td>-40...+90</td>
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</tbody>
</table>

Subject to change

Finger guards from p. 242
Cables P. 255

Available as an option: Versions with reinforced mounting flanges and exposed external single wires.

Possible special versions: (See page 12)
- Speed signal
- Moisture protection
- Salt spray protection
- Degree of protection: IP 54 / IP 65

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
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

**Possible special versions:**
(See page 12)
- Speed signal
- Moisture protection
- Salt spray protection
- Degree of protection: IP 54 / IP 65

### Series 4000 Z

<table>
<thead>
<tr>
<th>Type</th>
<th>Nominal flow</th>
<th>cfm</th>
<th>230 VAC</th>
<th>50 Hz</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm-1</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
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<td>100</td>
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<td>230</td>
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<td>13.0</td>
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<td>4856 Z</td>
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<td>58.8</td>
<td>230</td>
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<td>26</td>
<td>4.0</td>
<td>13.0</td>
<td>1700</td>
<td>-40...+75</td>
<td>50 000</td>
<td>20 000</td>
</tr>
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<td>4580 Z</td>
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<td>230</td>
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<td>30</td>
<td>4.3</td>
<td>13.0</td>
<td>1700</td>
<td>-10...+65</td>
<td>50 000</td>
<td>27 500</td>
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<tr>
<td>4586 Z</td>
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<td>67.6</td>
<td>230</td>
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<td>30</td>
<td>4.3</td>
<td>13.0</td>
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<td>50 000</td>
<td>20 000</td>
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<td>4656 Z</td>
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<td>40</td>
<td>5.3</td>
<td>19.0</td>
<td>2650</td>
<td>-40...+75</td>
<td>37 500</td>
<td>17 500</td>
</tr>
<tr>
<td>4800 Z</td>
<td>105</td>
<td>61.7</td>
<td>115</td>
<td>60</td>
<td>28</td>
<td>4.1</td>
<td>12.0</td>
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<td>4806 Z</td>
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<td>28</td>
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<td>1800</td>
<td>-40...+75</td>
<td>50 000</td>
<td>17 500</td>
</tr>
<tr>
<td>4530 Z</td>
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<td>115</td>
<td>60</td>
<td>32</td>
<td>4.4</td>
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<td>115</td>
<td>60</td>
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<td>4.4</td>
<td>12.0</td>
<td>2000</td>
<td>-40...+75</td>
<td>52 500</td>
<td>17 500</td>
</tr>
<tr>
<td>4600 Z</td>
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<td>106</td>
<td>115</td>
<td>60</td>
<td>45</td>
<td>5.6</td>
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<td>3100</td>
<td>-10...+60</td>
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<td>25 000</td>
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<tr>
<td>4606 Z</td>
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<td>106</td>
<td>115</td>
<td>60</td>
<td>45</td>
<td>5.6</td>
<td>18.0</td>
<td>3100</td>
<td>-40...+85</td>
<td>40 000</td>
<td>15 000</td>
</tr>
</tbody>
</table>

Subject to change

---

**Material:** Housing: Die-cast aluminum
Impeller: painted sheet steel

**Direction of air flow:** Exhaust over struts

**Direction of rotation:** Clockwise, looking towards rotor

**Connection:** Via 2 flat plugs 2.8 x 0.5 mm grounding lug for M4 x 8

**Weight:** 540 g

**Note:** Please note our new ACmaxx series.

With identical mounting dimensions and voltages, this series achieves greater energy efficiency.

See page 192.

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**Finger guards:** from p. 242

**Cables:** P. 255
Max. 140 m³/h

AC axial fans
Ø 108 x 37 mm

- Material: Impeller: Die-cast aluminum  
  Mounting bracket: Metal
- Direction of air flow: Exhaust over mounting bracket
- Direction of rotation: Clockwise, looking towards rotor
- Connection: Via 2 single wires
- Weight: 430 g

Possible special versions:
(See page 12)
- Moisture protection
- Salt spray protection
- Degree of protection: IP 54 / IP 65

Series 4600 TZ

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VAC</th>
<th>Hz</th>
<th>dB(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Temperature range</th>
<th>Service life L10 at 40 °C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>4650 TZ</td>
<td>125</td>
<td>73.6</td>
<td>230</td>
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<td>19.0</td>
<td>2 600</td>
<td>-10...+50</td>
<td>37 500 / 30 000</td>
<td>37 500</td>
<td>20 000</td>
<td></td>
</tr>
<tr>
<td>4656 TZ</td>
<td>125</td>
<td>73.6</td>
<td>230</td>
<td>50</td>
<td>42</td>
<td>19.0</td>
<td>2 600</td>
<td>-40...+65</td>
<td>37 500 / 20 000</td>
<td>40 000</td>
<td>32 500</td>
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</tr>
<tr>
<td>4600 TZ</td>
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<td>82.4</td>
<td>115</td>
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<td>45</td>
<td>18.0</td>
<td>2 950</td>
<td>-10...+50</td>
<td>40 000 / 32 500</td>
<td>40 000</td>
<td>17 500</td>
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</tr>
<tr>
<td>4606 TZ</td>
<td>140</td>
<td>82.4</td>
<td>115</td>
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<td>45</td>
<td>18.0</td>
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<td>-40...+75</td>
<td>40 000 / 17 500</td>
<td>40 000</td>
<td>17 500</td>
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</tr>
</tbody>
</table>

Subject to change

The air flow and sound level of fans without external housing depends on the installation conditions.
The stated air flow and noise have been measured with an orifice 109 mm Ø at a distance of approx. 17 mm from the mounting bracket.
The air flow capacity of fan series 4000 Z is achievable because of the exceptionally favorable installation conditions.
The noise in the optimal operating range can be measured for these fans only in a specific application.

<table>
<thead>
<tr>
<th>Fan type</th>
<th>Connection wires</th>
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</thead>
<tbody>
<tr>
<td>4650 TZ</td>
<td>AWG 22, TR 32</td>
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<tr>
<td>4656 TZ</td>
<td>AWG 18</td>
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</table>

The air flow and sound level of fans without external housing depends on the installation conditions.
The stated air flow and noise have been measured with an orifice 109 mm Ø at a distance of approx. 17 mm from the mounting bracket.
The air flow capacity of fan series 4000 Z is achievable because of the exceptionally favorable installation conditions.
The noise in the optimal operating range can be measured for these fans only in a specific application.

Subject to change

The air flow and sound level of fans without external housing depends on the installation conditions.
The stated air flow and noise have been measured with an orifice 109 mm Ø at a distance of approx. 17 mm from the mounting bracket.
The air flow capacity of fan series 4000 Z is achievable because of the exceptionally favorable installation conditions.
The noise in the optimal operating range can be measured for these fans only in a specific application.

Subject to change

The air flow and sound level of fans without external housing depends on the installation conditions.
The stated air flow and noise have been measured with an orifice 109 mm Ø at a distance of approx. 17 mm from the mounting bracket.
The air flow capacity of fan series 4000 Z is achievable because of the exceptionally favorable installation conditions.
The noise in the optimal operating range can be measured for these fans only in a specific application.

Subject to change

The air flow and sound level of fans without external housing depends on the installation conditions.
The stated air flow and noise have been measured with an orifice 109 mm Ø at a distance of approx. 17 mm from the mounting bracket.
The air flow capacity of fan series 4000 Z is achievable because of the exceptionally favorable installation conditions.
The noise in the optimal operating range can be measured for these fans only in a specific application.

Subject to change

The air flow and sound level of fans without external housing depends on the installation conditions.
The stated air flow and noise have been measured with an orifice 109 mm Ø at a distance of approx. 17 mm from the mounting bracket.
The air flow capacity of fan series 4000 Z is achievable because of the exceptionally favorable installation conditions.
The noise in the optimal operating range can be measured for these fans only in a specific application.

Subject to change

The air flow and sound level of fans without external housing depends on the installation conditions.
The stated air flow and noise have been measured with an orifice 109 mm Ø at a distance of approx. 17 mm from the mounting bracket.
The air flow capacity of fan series 4000 Z is achievable because of the exceptionally favorable installation conditions.
The noise in the optimal operating range can be measured for these fans only in a specific application.

Subject to change

The air flow and sound level of fans without external housing depends on the installation conditions.
The stated air flow and noise have been measured with an orifice 109 mm Ø at a distance of approx. 17 mm from the mounting bracket.
The air flow capacity of fan series 4000 Z is achievable because of the exceptionally favorable installation conditions.
The noise in the optimal operating range can be measured for these fans only in a specific application.

Subject to change

The air flow and sound level of fans without external housing depends on the installation conditions.
The stated air flow and noise have been measured with an orifice 109 mm Ø at a distance of approx. 17 mm from the mounting bracket.
The air flow capacity of fan series 4000 Z is achievable because of the exceptionally favorable installation conditions.
The noise in the optimal operating range can be measured for these fans only in a specific application.
Maximum air flow: 206 m³/h

AC axial fans

- 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 2 flat plugs 2.8 x 0.8 mm grounding lug for M4 x 6
- Weight: 570 g

Possible special versions:
- Moisture protection

(See page 12)

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VAC</th>
<th>Hz</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
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<td>35 000 / 20 000</td>
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<td>5950</td>
<td>180</td>
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<td>5.4</td>
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<td>5.5</td>
<td>18.0</td>
<td>2 750</td>
<td>-30...+60</td>
<td>40 000 / 25 000</td>
<td></td>
</tr>
<tr>
<td>5938</td>
<td>162</td>
<td>95.2</td>
<td>115</td>
<td>60</td>
<td>40</td>
<td>4.9</td>
<td>12.0</td>
<td>2 500</td>
<td>-30...+55</td>
<td>35 000 / 20 000</td>
<td></td>
</tr>
<tr>
<td>5900</td>
<td>206</td>
<td>121</td>
<td>115</td>
<td>60</td>
<td>46</td>
<td>5.7</td>
<td>17.0</td>
<td>3 050</td>
<td>-20...+55</td>
<td>42 500 / 30 000</td>
<td></td>
</tr>
<tr>
<td>5908</td>
<td>206</td>
<td>121</td>
<td>115</td>
<td>60</td>
<td>47</td>
<td>5.8</td>
<td>17.0</td>
<td>3 100</td>
<td>-30...+75</td>
<td>42 500 / 20 000</td>
<td></td>
</tr>
</tbody>
</table>

Subject to change

1) Fiberglass-reinforced plastic.

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level $L_{WA}$ 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
### AC axial fans

- **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 2 flat plugs 2.8 x 0.5 mm
  grounding lug for M4 x 8

- **Weight:** 800 g

---

### Series 5600

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow</th>
<th>Frequency</th>
<th>Sound pressure level</th>
<th>Sound power level</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life at max</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>5656 S</td>
<td>235 m³/h</td>
<td>50 Hz</td>
<td>46 dB(A)</td>
<td>5.9 Bel(A)</td>
<td>30 Watts</td>
<td>2,700 rpm</td>
<td>-35...+70 °C</td>
<td>45,000 / 20,000</td>
<td></td>
</tr>
<tr>
<td>5606 S</td>
<td>270 m³/h</td>
<td>60 Hz</td>
<td>50 dB(A)</td>
<td>6.2 Bel(A)</td>
<td>26 Watts</td>
<td>3,100 rpm</td>
<td>-35...+80 °C</td>
<td>47,500 / 20,000</td>
<td></td>
</tr>
</tbody>
</table>

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
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. 380 \( \text{m}^3/\text{h} \)

### AC axial fans

150 x 172 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 2 flat plugs 2.8 x 0.5 mm grounding lug for M4 x 8
- **Weight:** 900 g
- **Note:** Please note our new ACmaxx series.
  With identical mounting dimensions and voltages, this series achieves greater energy efficiency.
  See pages 194, 196, and 198.

### Series 7000

<table>
<thead>
<tr>
<th>Type</th>
<th>m(^3)/h</th>
<th>cfm</th>
<th>VAC</th>
<th>Hz</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm (^{-1})</th>
<th>( ^\circ \text{C} )</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L10</th>
<th>at ( T \max )</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>7056 ES</td>
<td>320</td>
<td>188</td>
<td>230</td>
<td>50</td>
<td>51</td>
<td>6.4</td>
<td>27.0</td>
<td>2 800</td>
<td>-25...+55</td>
<td>60 000 / 32 000</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>7006 ES</td>
<td>380</td>
<td>224</td>
<td>115</td>
<td>60</td>
<td>56</td>
<td>6.8</td>
<td>28.0</td>
<td>3 350</td>
<td>-25...+65</td>
<td>55 000 / 18 000</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Subject to change

---

### Nominal data

- **Air flow**
- **Nominal voltage**
- **Sound pressure level**
- **Sound power level**
- **Sinter-sleeve bearings**
- **Ball bearings**
- **Power consumption**
- **Nominal speed**
- **Temperature range**
- **Service life L10**
- **at \( T \max \)**
- **Curve**

---

**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
**AC axial fans**

Ø 150 x 55 mm

- **Material:** Housing: Die-cast aluminum
- **Direction of air flow:** Impeller: painted sheet steel
- **Direction of rotation:** Exhaust over struts, counterclockwise, looking towards rotor
- **Connection:** Via 2 single wires wire ends with wire end splices grounding lug for M4 x 8
- **Weight:** 1.1 kg

Please note our new ACmaxx series.

With identical mounting dimensions and voltages, this series achieves greater energy efficiency. See page 194.

---

### Series 7800

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VAC</th>
<th>Hz</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>Temperature range at 40 °C</th>
<th>Service life L₁₀ at Tₘ₉₀</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>7855 ES</td>
<td>325</td>
<td>191</td>
<td>230</td>
<td>50</td>
<td>49</td>
<td>6.0</td>
<td>45.0</td>
<td>2 800</td>
<td>-25...+50</td>
<td>60 000 / 47 500</td>
<td>1</td>
</tr>
<tr>
<td>7856 ES</td>
<td>325</td>
<td>191</td>
<td>230</td>
<td>50</td>
<td>49</td>
<td>6.0</td>
<td>45.0</td>
<td>2 800</td>
<td>-25...+70</td>
<td>60 000 / 30 000</td>
<td>1</td>
</tr>
<tr>
<td>7805 ES</td>
<td>380</td>
<td>224</td>
<td>115</td>
<td>60</td>
<td>53</td>
<td>6.4</td>
<td>38.0</td>
<td>3 250</td>
<td>-25...+70</td>
<td>60 000 / 47 500</td>
<td>2</td>
</tr>
<tr>
<td>7806 ES</td>
<td>380</td>
<td>224</td>
<td>115</td>
<td>60</td>
<td>53</td>
<td>6.4</td>
<td>38.0</td>
<td>3 250</td>
<td>-25...+90</td>
<td>60 000 / 15 000</td>
<td>2</td>
</tr>
</tbody>
</table>

Subject to change

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

---

**Max. 380 m³/h**
Air performance measured according to ISO 5801. Installation category A, without contact protection.

Noise: Total sound power level $L_{WA}$ ISO 10300 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

---

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VAC</th>
<th>Hz</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>7450 ES</td>
<td>380</td>
<td>224</td>
<td>230</td>
<td>50</td>
<td>60</td>
<td>6.8</td>
<td>47.0</td>
<td>2 700</td>
<td>-25...+50</td>
<td>63 000 / 50 000</td>
<td></td>
</tr>
<tr>
<td>7400 ES</td>
<td>425</td>
<td>250</td>
<td>115</td>
<td>60</td>
<td>62</td>
<td>6.9</td>
<td>46.0</td>
<td>3 050</td>
<td>-25...+70</td>
<td>50 000 / 24 000</td>
<td></td>
</tr>
</tbody>
</table>

Subject to change

---

Air performance measured according to ISO 5801.

Installation category A, without contact protection.

Noise: Total sound power level $L_{WA}$ ISO 10300 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

---

**Series 7400**

- Material: Housing: Die-cast aluminum
  Impeller: painted sheet steel
- Direction of air flow: Intake over struts
- Direction of rotation: Counterclockwise, looking towards rotor
- Connection: Via 2 single wires
  wire ends with wire end splices
  grounding lug for M4 x 8
- Weight: 1.1 kg
- Note: Please note our new ACmaxx series.
  With identical mounting dimensions and voltages, this series achieves greater energy efficiency.
  See page 194.

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Subject to change
Max. 500 m³/h

**AC axial fans**

Ø 172 x 51 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 2 flat plugs 2.8 x 0.5 mm ground lug for M4 x 6
- **Weight:** 1.0 kg
- **Note:** Please note our new ACmaxx series. With identical mounting dimensions and voltages, this series achieves greater energy efficiency. See pages 196 and 198.

### Series 6000

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow</th>
<th>Air flow</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Sound pressure level</th>
<th>Sound power level</th>
<th>Sintec sleeve bearings</th>
<th>Ball bearings</th>
<th>Power consumption Watts</th>
<th>rpm⁻¹</th>
<th>Temperature range °C</th>
<th>Service life L10 at 40°C</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>6058 ES</td>
<td>375</td>
<td>221</td>
<td>230</td>
<td>50</td>
<td>55</td>
<td>5.9</td>
<td>■</td>
<td>■</td>
<td>24.0</td>
<td>2 800</td>
<td>-25...+70</td>
<td>62 000 / 31 000</td>
<td>1</td>
</tr>
<tr>
<td>6078 ES</td>
<td>420</td>
<td>247</td>
<td>230</td>
<td>50</td>
<td>54</td>
<td>6.3</td>
<td>■</td>
<td>■</td>
<td>26.0</td>
<td>2 800</td>
<td>-25...+60</td>
<td>62 000 / 39 000</td>
<td>2</td>
</tr>
<tr>
<td>6008 ES</td>
<td>440</td>
<td>259</td>
<td>115</td>
<td>60</td>
<td>60</td>
<td>6.4</td>
<td>■</td>
<td>■</td>
<td>26.0</td>
<td>3 300</td>
<td>-25...+70</td>
<td>57 000 / 28 000</td>
<td>3</td>
</tr>
<tr>
<td>6028 ES</td>
<td>500</td>
<td>284</td>
<td>115</td>
<td>60</td>
<td>58</td>
<td>6.7</td>
<td>■</td>
<td>■</td>
<td>29.0</td>
<td>3 300</td>
<td>-25...+75</td>
<td>57 000 / 22 000</td>
<td>4</td>
</tr>
</tbody>
</table>

Subject to change

Air performance measured according to ISO 5801. Installation category A, without contact protection.
Noise: Total sound power level LWA 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
Max. 1000 m³/h

AC axial fans

- **Material:**
  - Housing: Die-cast-aluminum
  - Impeller: Sheet steel, painted black
  - Rotor: Painted black

- **Number of blades:** 7

- **Direction of air flow:** "V"
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Degree of protection:** IP 44, depending on installation and position
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

**Nominal data**

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>F/VDB</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>W2E 200-HK86-01</td>
<td>M2E 068-BF</td>
<td>1~115</td>
<td>50</td>
<td>880</td>
<td>2550</td>
<td>64</td>
<td>0.58</td>
<td>5.0/220</td>
<td>—-</td>
<td>80</td>
<td>-25...+60</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1~115</td>
<td>60</td>
<td>1000</td>
<td>2800</td>
<td>80</td>
<td>0.70</td>
<td>5.0/220</td>
<td>—-</td>
<td>95</td>
<td>-25...+65</td>
<td>2.0</td>
</tr>
<tr>
<td>W2E 200-HK38-01</td>
<td>M2E 068-BF</td>
<td>1~230</td>
<td>50</td>
<td>880</td>
<td>2550</td>
<td>64</td>
<td>0.29</td>
<td>1.5/450</td>
<td>—-</td>
<td>80</td>
<td>-25...+60</td>
<td>2.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1~230</td>
<td>60</td>
<td>1000</td>
<td>2800</td>
<td>80</td>
<td>0.35</td>
<td>1.5/450</td>
<td>—-</td>
<td>95</td>
<td>-25...+65</td>
<td>2.1</td>
</tr>
</tbody>
</table>

**Curves:**

Air performance measured according to ISO 5801, Installation category A. For detailed information on the measurement setup, contact ebm-papst. 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
– **Motor protection:** Thermal overload protector (TOP) connected internally
– **Touch current:** < 0.75 mA acc. to IEC 60990 (test circuit, illustration 4)
– **Cable exit:** Variable
– **Electrical hookup:** Via terminal strips, capacitor connected
– **Protection class:** I (with customer connection to grounding conductor)
– **Conformity with standard(s):** EN 60335-1, CE
– **Approvals:**
  - EAC, UL 507, VDE, CSA C22.2 no. 113, CCC
  - EAC, UL 2111, VDE, CSA C22.2 no. 113, CCC
Max. 1880 m³/h

AC axial fans

- **Material:**
  - Housing: Die-cast-aluminum
  - Impeller: PP plastic
  - Rotor: Painted black

- **Number of blades:** 7
- **Direction of air flow:** “V”
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Degree of protection:** IP 44, depending on installation and position
- **Insulation class:** “F”
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>F/VDB</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>W2E 250-HP08-01</td>
<td>M2E 068-CF</td>
<td>1~115</td>
<td>50</td>
<td>1740</td>
<td>2375</td>
<td>125</td>
<td>1.10</td>
<td>12/320</td>
<td>70</td>
<td>100</td>
<td>-25...+50</td>
<td>2.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1~115</td>
<td>60</td>
<td>1880</td>
<td>2350</td>
<td>165</td>
<td>1.45</td>
<td>12/320</td>
<td>72</td>
<td>110</td>
<td>-25...+45</td>
<td>2.7</td>
</tr>
<tr>
<td>W2E 250-HP06-01</td>
<td>M2E 068-CF</td>
<td>1~230</td>
<td>50</td>
<td>1695</td>
<td>2320</td>
<td>125</td>
<td>0.55</td>
<td>3.0/400</td>
<td>70</td>
<td>100</td>
<td>-25...+60</td>
<td>2.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1~230</td>
<td>60</td>
<td>1840</td>
<td>2300</td>
<td>160</td>
<td>0.71</td>
<td>3.0/400</td>
<td>71</td>
<td>110</td>
<td>-25...+50</td>
<td>2.7</td>
</tr>
</tbody>
</table>

Subject to change

(1) Nominal data in operating point with maximum load and 115/230 VAC

Air performance measured according to ISO 5801, installation category A. For detailed information on the measurement setup, contact ebm-papst. 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](http://www.ebmpapst.com/general conditions)
- **Motor protection:** Thermal overload protector (TOP) connected internally
- **Touch current:** < 0.75 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Cable exit:** Variable
- **Electrical hookup:** Via terminal strips, capacitor connected
- **Protection class:** I (with customer connection to grounding conductor)
- **Conformity with standard(s):** EN 60335-1, CE
- **Approvals:**
  1. UL 2111, CSA C22.2 no. 77
  2. EAC, UL 2111, CSA C22.2 no. 77
Max. 830 m³/h

AC diagonal module
Ø 200 mm

- Material:
  Housing: PA plastic
  Support bracket: PA plastic
  Impeller: PA plastic
  Rotor: Painted black

- Number of blades: 7
- Direction of air flow: "V", single inlet
- Direction of rotation: Clockwise, looking towards rotor
- Degree of protection: IP 44, depending on installation and position
- Insulation class: "F"
- Installation position: Any
- Condensation drainage holes: None
- Mode of operation: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>µF/VDB</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>K2E 200-AA12 -01</td>
<td>M2E 068-CF</td>
<td>1</td>
<td>115</td>
<td>50</td>
<td>2650</td>
<td>64</td>
<td>0.56</td>
<td>6.0/250</td>
<td>70</td>
<td>200</td>
<td>-25..+65</td>
<td>2.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>115</td>
<td>60</td>
<td>830</td>
<td>88</td>
<td>0.77</td>
<td>6.0/250</td>
<td>72</td>
<td>240</td>
<td>-25..+65</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Subject to change

Curves:

Air performance measured according to ISO 5801. Installation category A; without contact protection. Suction-side noise levels LWA according to ISO 13347. LWA 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
- Motor protection: Thermal overload protector (TOP) connected internally
- Touch current: < 0.75 mA acc. to IEC 60990 (test circuit, illustration 4)
- Cable exit: Lateral
- Electrical hookup: Via connector
- Protection class: I (with customer connection to grounding conductor)
- Conformity with standard(s): EN 60335-1, CE
- Approvals: UL 2111, CSA C22.2 no. 77

Coded plug system
Universal Mate-N-Lok
Connector shell: AMP 350 780-1
3x plug pins: AMP 926 885-1
Mating connector (not included in scope of delivery):
Connector shell: AMP 350 779-4
3x sockets: AMP 926 884-1

X view

1 = not used
2 = N + capacitor
3 = L
4 = PE

Connection diagrams
P. 263
AC diagonal module
Ø 200 mm

- Material:
  - Housing: PA plastic
  - Support bracket: PA plastic
  - Impeller: PA plastic
  - Rotor: Painted black

- Number of blades: 7
- Direction of air flow: "V", single inlet
- Direction of rotation: Clockwise, looking towards rotor
- Degree of protection: IP 44, depending on installation and position
- Insulation class: "F"
- Installation position: Any
- Condensation drainage holes: None
- Mode of operation: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>Hz</th>
<th>m³/h</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>µF/VDB</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>K2E 200-AA52 -02</td>
<td>M2E 068-CF</td>
<td>① 1~ 230</td>
<td>50</td>
<td></td>
<td>765</td>
<td>2650</td>
<td>65</td>
<td>0.30</td>
<td>2.0/400</td>
<td>70</td>
<td>200</td>
<td>-25..+80</td>
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<tr>
<td></td>
<td></td>
<td>⑤ 1~ 230</td>
<td>60</td>
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<td>2.0/400</td>
<td>73</td>
<td>245</td>
<td>-25..+80</td>
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</table>

Subject to change

Curves:
- 50 Hz
- 60 Hz

Air performance measured according to ISO 5801. Installation category A, without contact protection. Suction-side noise levels \( L_{WA} \) according to ISO 13347, \( L_{WA} \) 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
- **Motor protection:** Thermal overload protector (TOP) connected internally
- **Touch current:** < 0.75 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Cable exit:** Lateral
- **Electrical hookup:** Via connector
- **Protection class:** I (with customer connection to grounding conductor)
- **Conformity with standard(s):** EN 60335-1, CE
- **Approvals:** UL 2111, CSA C22.2 no. 77

Coded plug system
- Universal Mate-N-Lok
- Connector shell: AMP 350 780-1
- 3x plug pins: AMP 926 885-1
- Mating connector (not included in scope of delivery):
  - Connector shell: AMP 350 779-4
  - 3x sockets: AMP 926 884-1

Connection diagrams
P. 263

1 = not used
2 = N + capacitor
3 = L
4 = PE

Mounting dimensions:

- 225 mm
- 219 mm
- 45°

1 = not used
2 = N + capacitor
3 = L
4 = PE

Connection diagrams
P. 263
### AC diagonal module

Ø 200 mm

- **Material:**
  - Housing: PA plastic
  - Support bracket: PA plastic
  - Impeller: PA plastic
  - Rotor: Painted black

- **Number of blades:** 7
- **Direction of air flow:** "V", single inlet
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** IP 44, depending on installation and position
- **Insulation class:** "F"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>rpm⁻¹</th>
<th>W</th>
<th>A</th>
<th>µF/VDB</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
<th>kg</th>
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<tbody>
<tr>
<td>K2D 200-AA02-02</td>
<td>M2D068-CF</td>
<td>3–400 Y</td>
<td>50</td>
<td>780</td>
<td>2700</td>
<td>65</td>
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<td>——</td>
<td>71</td>
<td>210</td>
<td>-25..+75</td>
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<tr>
<td></td>
<td></td>
<td>3–400 Y</td>
<td>60</td>
<td>880</td>
<td>3050</td>
<td>90</td>
<td>0.16</td>
<td>——</td>
<td>73</td>
<td>260</td>
<td>-25..+75</td>
<td>2.0</td>
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</tbody>
</table>

Subject to change

---

**Curves:**

- 50 Hz
- 60 Hz

Air performance measured according to ISO 5801. Installation category A, without contact protection. Suction-side noise levels LWA according to ISO 13347. LWA 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. 880 m³/h
- **Motor protection:** thermal overload protector wired internally
- **Touch current:** < 0.75 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Cable exit:** Lateral
- **Electrical hookup:** Via connector
- **Protection class:** I (with customer connection to grounding conductor)
- **Conformity with standard(s):** EN 60335-1, CE

Coded plug system
Universal Mate-N-Lok
Connector shell: AMP 350 780-1
4 x plug pins: AMP 926 885-1
Mating connector (not included in scope of delivery):
Connector shell: AMP 350 779-4
4x sockets: AMP 926 884-1

X view:
1 = L3
2 = L1
3 = L2
4 = PE
AC centrifugal fans

AC centrifugal fan overview
AC centrifugal fans
AC centrifugal fans

**Product line**
The renowned ebm-papst AC fans are used when DC voltage is not available. The AC range of fans is based on experience gained from decades of development know-how, millions of units in series production, and the innovation competence of a world-wide technology pioneer.

In this catalog, we offer you the broad spectrum of our AC fans. In addition to complete systems, you will also find fans without external housing. They offer economic benefits whenever the air duct design can be integrated in the respective device.

**Variety of sizes**
AC fans are available in a variety of sizes with either air exhaust or air intake over struts. Silent running models with sleeve bearings. Electrical connection with plug connection or external exposed connection wires are available.

**Shaded-pole or capacitor motors**
Fan drives by shaded-pole or capacitor motors, most of which incorporate the world-famous ebm-papst external rotor principle. The fan blades are directly attached to the external rotor of the external rotor motor. This construction combining high performance with profitability.

**Flat built AC fans**
ebm-papst also has AC fans with a particularly flat construction and an internal rotor motor. Their advantage: quick start to full speed. A plastic impeller and the smaller and lighter internal rotor motor result in lower rotational inertia.

**Bearings**
AC fans with sleeve bearings are powered by Class E insulated motors. Fans with ball bearings are equipped with Class B, E, or F insulated motors.

**Degree of protection**
All ebm-papst fans conform to the requirements of IP 20. Fans conforming to IP 54 / IP 68 and special degrees of protection are also available on request.

**AC voltage**
The line of AC fans for Euro voltage according to IEC 60038 (230 V ± 10 %) is also available in 115 V.

**Frequencies**
AC fans can be operated at frequencies of 50 or 60 Hz. In this case, their technical data changes accordingly.

**Capacitor**
Fans driven by capacitor external motors provide particularly high operating efficiency. Generally, the required motor run capacitor is already integrated in the fan housing.

**Overloading**
Almost all AC fans are protected against overloading (e. g. due to locked rotor) – either impedance protected (marked “Impedance protected” or “Z. P.”) or equipped with a thermal switch (marked “Thermally protected” or “Th. P.”). The model designation of these fans ends with “S”.

**Bearing protection**
AC fans with sleeve bearings are powered by Class E insulated motors. Fans with ball bearings are equipped with Class B, E, or F insulated motors.
Centrifugal fans for AC operation

Overview of air performance

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Series</th>
<th>Air flow ( m^3/h )</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm</td>
<td></td>
<td>10 20 30 40 50 60 70 80 90 100 200 300 400 500 600 700 800 900 1000 2000 3000</td>
</tr>
<tr>
<td>121 x 37</td>
<td>RL 90</td>
<td>40...42</td>
</tr>
<tr>
<td>135 x 38</td>
<td>RG 90</td>
<td>47...54</td>
</tr>
<tr>
<td>180 x 40</td>
<td>RG 125</td>
<td>86...94</td>
</tr>
<tr>
<td>220 x 56</td>
<td>RG 160</td>
<td>202...223</td>
</tr>
<tr>
<td>Ø 138 x 40</td>
<td>RER 125</td>
<td>104...115</td>
</tr>
<tr>
<td>Ø 176 x 54</td>
<td>RER 160</td>
<td>234...274</td>
</tr>
</tbody>
</table>

Subject to change

Overview of technically feasible designs

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Series</th>
<th>OPTIONAL</th>
<th>P.</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>121 x 37</td>
<td>RL 90</td>
<td>yes</td>
<td>–</td>
</tr>
<tr>
<td>135 x 38</td>
<td>RG 90</td>
<td>yes</td>
<td>–</td>
</tr>
<tr>
<td>180 x 40</td>
<td>RG 125</td>
<td>yes</td>
<td>–</td>
</tr>
<tr>
<td>220 x 56</td>
<td>RG 160</td>
<td>yes</td>
<td>–</td>
</tr>
<tr>
<td>Ø 138 x 40</td>
<td>RER 125</td>
<td>yes</td>
<td>–</td>
</tr>
<tr>
<td>Ø 176 x 54</td>
<td>RER 160</td>
<td>yes</td>
<td>–</td>
</tr>
</tbody>
</table>

Subject to change

- available — not yet available
- Sleeve bearings
- Ball bearings

DC axial fans
DC fans – specials
ACmaxx / EC fans
AC axial fans
AC centrifugal fans
Accessories
Representatives
Air performance measured according to: ISO 5801. Installation category A, without contact protection.

- **Material:** Scroll housing: GRP\(^1\) (PBT)
  - Impeller: GRP\(^1\) (PA)
  - Housing base: Sheet steel

- **Direction of air flow:** Centrifugal: discharge through window in housing
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via 2 single wires; housing base with flat plugs 6.3 x 0.8 mm for ground conductor
- **Highlights:** Forward-curved impeller
- **Weight:** 680 g

### Series RL 90

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow</th>
<th>Air flow</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Sound power level</th>
<th>Slipper sleeve bearing</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L10 at 40 °C</th>
<th>at T_max</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>RL 90-18/50</td>
<td>40</td>
<td>23.5</td>
<td>230</td>
<td>50</td>
<td>5.6</td>
<td>20.0</td>
<td>2 450</td>
<td>-10...+50</td>
<td>37 500 / 30 000</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>RL 90-18/56</td>
<td>40</td>
<td>23.5</td>
<td>230</td>
<td>50</td>
<td>5.6</td>
<td>20.0</td>
<td>2 450</td>
<td>-30...+70</td>
<td>37 500 / 20 000</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RL 90-18/00</td>
<td>42</td>
<td>24.7</td>
<td>115</td>
<td>60</td>
<td>6.0</td>
<td>19.5</td>
<td>2 550</td>
<td>-10...+60</td>
<td>37 500 / 25 000</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RL 90-18/06</td>
<td>42</td>
<td>24.7</td>
<td>115</td>
<td>60</td>
<td>6.0</td>
<td>19.5</td>
<td>2 550</td>
<td>-30...+85</td>
<td>37 500 / 15 000</td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Subject to change

---

1) Fiberglass-reinforced plastic

### Nominal data

- **Type:** RL 90-18/50
- **Flow rate:** 40 m\(^3\)/h
- **CFM:** 23.5
- **Voltage:** 230 V
- **Frequency:** 50 Hz
- **Sound power level:** 5.6 dB(A)
- **Slipper sleeve bearing:** Yes
- **Power consumption:** 20.0 W
- **Nominal speed:** 2 450 rpm
- **Temperature range:** -10...+50 °C
- **Service life L10 at 40 °C:** 37 500 / 30 000

### Connection wires

- **Fan type:** RL 90-18/50, RL 90-18/00
- **Connection wires:** AWG 18, TR 32

### AC centrifugal fans

- **Max. Flow rate:** 42 m\(^3\)/h
- **Material:** Scroll housing: GRP\(^1\) (PBT)
  - Impeller: GRP\(^1\) (PA)
  - Housing base: Sheet steel

- **Possible special versions:**
  - Moisture protection
  - Salt spray protection
  - IP 54

### Specifications

- **Material:**
  - Scroll housing: GRP\(^1\) (PBT)
  - Impeller: GRP\(^1\) (PA)
  - Housing base: Sheet steel

- **Direction of air flow:** Centrifugal: discharge through window in housing

- **Direction of rotation:** Clockwise, looking towards rotor

- **Connection:**
  - Via 2 single wires; housing base with flat plugs 6.3 x 0.8 mm for ground conductor

- **Highlights:** Forward-curved impeller

- **Weight:** 680 g

---

1) Fiberglass-reinforced plastic
- **Material:** Scroll housing: GRP1) (PBT)
  Impeller: GRP1) (PA)
  Housing base: Sheet steel

- **Direction of air flow:** Centrifugal: discharge through window in housing

- **Direction of rotation:** Clockwise, looking towards rotor

- **Connection:** To 2 single wires AWG 22.

- **Weight:** 560 g

- **Possible special versions:**
  (See page 12)
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 54

---

**Series RG 90**

**Nominal data**

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VAC</th>
<th>Hz</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours at 40°C</th>
<th>Hours at T max</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG 90-18/50</td>
<td>54</td>
<td>32</td>
<td>230</td>
<td>50</td>
<td>5.8</td>
<td>22.0</td>
<td>2 200</td>
<td>-30...+60</td>
<td>35 000 / 22 500</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>RG 90-18/56</td>
<td>54</td>
<td>32</td>
<td>230</td>
<td>50</td>
<td>5.8</td>
<td>22.0</td>
<td>2 200</td>
<td>-30...+60</td>
<td>35 000 / 22 500</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>RG 90-18/00</td>
<td>47</td>
<td>28</td>
<td>115</td>
<td>60</td>
<td>6.2</td>
<td>22.0</td>
<td>1 900</td>
<td>-30...+65</td>
<td>35 000 / 20 000</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>RG 90-18/06</td>
<td>47</td>
<td>28</td>
<td>115</td>
<td>60</td>
<td>6.2</td>
<td>22.0</td>
<td>1 900</td>
<td>-30...+65</td>
<td>35 000 / 20 000</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Subject to change

---

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level $L_{WA}$ 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

1) Fiberglass-reinforced plastic
AC centrifugal fans

- Material: 
  Scroll housing: GRP\(^1\) (PBT) 
  Impeller: GRP\(^1\) (PA) 
  Housing base: Sheet steel

- Direction of air flow: 
  Centrifugal; discharge through window in housing

- Direction of rotation: 
  Clockwise, looking towards rotor

- Connection: 
  To 2 single wires AWG 22.

- Highlights: 
  Backward-curved impeller

- Weight: 
  850 g

\(^1\) Fiberglass-reinforced plastic

Series RG 125

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VAC</th>
<th>Hz</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>RG 125-19/56</td>
<td>86</td>
<td>51</td>
<td>230</td>
<td>50</td>
<td>5.8</td>
<td>20.0</td>
<td>2 550</td>
<td>-30...+70</td>
<td>37 500 / 20 000</td>
<td></td>
</tr>
<tr>
<td>RG 125-19/06</td>
<td>94</td>
<td>55</td>
<td>115</td>
<td>60</td>
<td>6.0</td>
<td>19.0</td>
<td>2 750</td>
<td>-30...+80</td>
<td>40 000 / 15 000</td>
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</table>

Subject to change

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level \(L_{WA}\) 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
AC centrifugal fans

- Material: Scroll housing: GRP1) (PBT)
  Impeller: GRP1) (PA)
  Housing base: Sheet steel

- Direction of air flow: Centrifugal; discharge through window in housing

- Direction of rotation: Counterclockwise, looking towards rotor

- Connection: To 2 single wires AWG 18.

- Highlights: Backward-curved impeller

- Weight: 1.7 kg

1) Fiberglass-reinforced plastic.

Series RG 160

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>m³/h</th>
<th>cfm</th>
<th>VAC</th>
<th>Hz</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm³</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>RG 160-28/56S</td>
<td>202</td>
<td>119</td>
<td>230</td>
<td>50</td>
<td>6.6</td>
<td>47.0</td>
<td>2 750</td>
<td>-30...+70</td>
<td>30 000 / 15 000</td>
<td></td>
</tr>
<tr>
<td>RG 160-28/06S</td>
<td>223</td>
<td>131</td>
<td>115</td>
<td>60</td>
<td>6.9</td>
<td>50.0</td>
<td>3 050</td>
<td>-30...+80</td>
<td>27 500 / 12 500</td>
<td></td>
</tr>
</tbody>
</table>

Subject to change

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level $L_{WA}$ 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 case 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
AC centrifugal fans

\[ \varnothing 138 \times 40 \text{ mm} \]

- Material: Scroll housing: GRP1) (PBT)
  Impeller: GRP1) (PA)
  with sheet steel reinforced
- Direction of air flow: centrifugal
- Direction of rotation: Clockwise, looking towards rotor
- Connection: To 2 single wires AWG 22.
- Highlights: Backward-curved impeller
- Weight: 500 g

Subject to change

The air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions. The stated air flow and noise levels have been measured under the following conditions:

Centrifugal fan mounted on a base plate 220 x 220 mm.
Cover plate 220 x 220 mm with an air inlet of \( \varnothing \) 86 mm, concentric to the impeller.

### Series RER 125

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow</th>
<th>Frequency</th>
<th>Sound power level</th>
<th>Sinter sleeve bearing</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L10 at 40°C</th>
<th>aT1max</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>RER 125-19/56</td>
<td>104</td>
<td>50</td>
<td>6.2</td>
<td>19.0</td>
<td>2 600</td>
<td>-30...+60</td>
<td>37 500 / 22 500</td>
<td>(1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RER 125-19/06</td>
<td>115</td>
<td>60</td>
<td>6.5</td>
<td>18.0</td>
<td>2 850</td>
<td>-30...+70</td>
<td>40 000 / 20 000</td>
<td>(2)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1) Fiberglass-reinforced plastic

Nominal data

### Air performance measured according to ISO 5801.

Installation category A, with ebm-papst inlet ring without contact protection.

Noise: Total sound power level \( L_{WA} \) ISO 10360-2 measured on a hemisphere with a distance 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
- Inlet rings from p. 252
Max. 274 m³/h

AC centrifugal fans
Ø 176 x 54 mm

- Material: Scroll housing: GRP\(^1\) (PBT)
  Impeller: GRP\(^1\) (PA)
  with sheet steel reinforced
- Direction of airflow: centrifugal
- Direction of rotation: Counterclockwise,
  looking towards rotor
- Connection: To 2 single wires AWG 18.
- Highlights: Backward-curved impeller
- Weight: 1.0 kg

Possible special versions:
(See page 12)
- Moisture protection

Series RER 160

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VAC</th>
<th>Hz</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RER 160-28/56S</td>
<td>234</td>
<td>138</td>
<td>230</td>
<td>50</td>
<td>6.6</td>
<td>45.0</td>
<td>2 800</td>
<td>-30...+60</td>
<td>30 000 / 20 000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RER 160-28/06S</td>
<td>274</td>
<td>161</td>
<td>115</td>
<td>60</td>
<td>6.8</td>
<td>46.0</td>
<td>3 250</td>
<td>-30...+70</td>
<td>30 000 / 15 000</td>
<td></td>
</tr>
</tbody>
</table>

Subject to change

The air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions. The stated air flow and noise levels have been measured under the following conditions:
Centrifugal fan mounted on a base plate
260 x 260 mm.
Cover plate 260 x 260 mm with an air inlet of Ø 100 mm, concentric to the impeller.

Air performance measured according to ISO 5801.
Installation category A, with ebm-papst inlet ring without contact protection.
Noise: Total sound power level L\(_{WA}\) ISO 10360-2
measured on a hemisphere with a distance 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

1) Fiberglass-reinforced plastic
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 used 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.

<table>
<thead>
<tr>
<th>Fan series</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>400</td>
<td>LZ29-1</td>
</tr>
<tr>
<td>420 J</td>
<td>LZ29-1</td>
</tr>
<tr>
<td>500</td>
<td>LZ31</td>
</tr>
<tr>
<td>600</td>
<td>LZ28-1</td>
</tr>
<tr>
<td>3000</td>
<td>LZ23-1</td>
</tr>
<tr>
<td>8000</td>
<td>LZ32-4 / LZ22-2</td>
</tr>
<tr>
<td>9000</td>
<td>LZ30-4 / LZ 30 / LZ 30-3</td>
</tr>
<tr>
<td>4000</td>
<td>LZ30-4 / LZ 30 / LZ 30-3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fan series</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5100</td>
<td>LZ25</td>
</tr>
<tr>
<td>5600</td>
<td>LZ25</td>
</tr>
<tr>
<td>5200</td>
<td>LZ35</td>
</tr>
<tr>
<td>5300</td>
<td>LZ53</td>
</tr>
<tr>
<td>5900</td>
<td>LZ35</td>
</tr>
<tr>
<td>7000</td>
<td>LZ36</td>
</tr>
<tr>
<td>6300</td>
<td>LZ37</td>
</tr>
<tr>
<td>6400</td>
<td>LZ38</td>
</tr>
</tbody>
</table>

**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
Also called LZ 30 for North America only.
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.

<table>
<thead>
<tr>
<th>Fan series</th>
<th>Part no.</th>
<th>Side</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC 8300 H</td>
<td>LZ32-4</td>
<td>Intake</td>
</tr>
<tr>
<td>AC 8300 H</td>
<td>LZ32-7</td>
<td>Outlet</td>
</tr>
<tr>
<td>AC 3200 J</td>
<td>LZ23-1</td>
<td>Intake</td>
</tr>
<tr>
<td>AC 3200 J</td>
<td>LZ23-6</td>
<td>Outlet</td>
</tr>
<tr>
<td>AC 4400 FN</td>
<td>LZ30-4</td>
<td>Intake</td>
</tr>
<tr>
<td>AC 4400 FN</td>
<td>LZ30-9</td>
<td>Outlet</td>
</tr>
<tr>
<td>AC 4300</td>
<td>LZ30-4</td>
<td>Intake</td>
</tr>
<tr>
<td>AC 4300</td>
<td>LZ30-9</td>
<td>Outlet</td>
</tr>
</tbody>
</table>

*Outlet-side guards on request*

Finger guard according to DIN EN ISO 13857 (previously EN 294).

- **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.
Finger guards

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

---

<table>
<thead>
<tr>
<th>Fan series</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>W3G 200</td>
<td>78128-2-4039</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fan series</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>W1G 250</td>
<td>09418-2-4039</td>
</tr>
<tr>
<td>W3G 250</td>
<td>09418-2-4039</td>
</tr>
</tbody>
</table>

---

**Fan size 200**

**Fan size 250**

---

2016-01  
09418-2-4039  
78128-2-4039  
W3G 200  
W1G 250  
W3G 250  
Fan series  
Part no.  
Fan size 200  
Fan size 250  
78128-2-4039  
09418-2-4039  
---
Finger guards

- Material: Steel wire

Finger guards for centrifugal blowers with dual inlet

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

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)

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Fan size</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
</tr>
</thead>
<tbody>
<tr>
<td>35000-2-4039</td>
<td>160</td>
<td>182.0</td>
<td>12.0</td>
<td>144.0</td>
<td>2.4</td>
<td>4.5</td>
</tr>
</tbody>
</table>

Subject to change
### Finger guards

**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**

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Fan size</th>
<th>a</th>
<th>b</th>
<th>c</th>
</tr>
</thead>
<tbody>
<tr>
<td>09489-2-4039</td>
<td>085 (3)</td>
<td>90.0</td>
<td>74.0</td>
<td>84.0</td>
</tr>
<tr>
<td>09490-2-4039</td>
<td>108</td>
<td>126.0</td>
<td>110.0</td>
<td>118.0</td>
</tr>
<tr>
<td>09494-2-4039</td>
<td>120</td>
<td>140.0</td>
<td>124.0</td>
<td>132.0</td>
</tr>
<tr>
<td>09492-2-4039</td>
<td>140 / 146</td>
<td>168.0</td>
<td>152.0</td>
<td>158.0</td>
</tr>
<tr>
<td>09503-2-4039</td>
<td>160 (4)</td>
<td>183.0</td>
<td>170.0</td>
<td>175.0</td>
</tr>
</tbody>
</table>

*Subject to change (3) 3 drilled holes staggered by 120°*

---

**Finger guards for centrifugal blowers with single inlet**

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Fan size</th>
<th>a</th>
<th>b</th>
<th>c</th>
</tr>
</thead>
<tbody>
<tr>
<td>09603-2-4039</td>
<td>076 / 085</td>
<td>101.0</td>
<td>6.0</td>
<td>79.0</td>
</tr>
<tr>
<td>98214-2-4039</td>
<td>108</td>
<td>120.0</td>
<td>3.5</td>
<td>88.0</td>
</tr>
<tr>
<td>25028-2-4039</td>
<td>140 / 146</td>
<td>162.0</td>
<td>8.5</td>
<td>139.0</td>
</tr>
<tr>
<td>17729-2-4039</td>
<td>160</td>
<td>175.0</td>
<td>3.5</td>
<td>139.0</td>
</tr>
</tbody>
</table>

*Coating:*
- Plastic coated, silver-metallic gloss
- Galvanized, chromatized in blue

---

**Material:** Steel wire

### DC fans – specials

- DC axial fans
- DC centrifugal fans

### AC fans

- AC axial fans
- AC centrifugal fans

### Accessories

### Representatives
- **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 NHS - NH8

### Part no.  Mounting  B  C  D  E

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Mounting</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>LZ28-3</td>
<td>A3</td>
<td>60</td>
<td>50</td>
<td>3.0</td>
<td>24</td>
</tr>
<tr>
<td>LZ32-2</td>
<td>A1</td>
<td>80</td>
<td>71.5</td>
<td>7.0</td>
<td>34</td>
</tr>
<tr>
<td>LZ32-3</td>
<td>A3</td>
<td>80</td>
<td>71.5</td>
<td>7.0</td>
<td>34</td>
</tr>
<tr>
<td>LZ33-2</td>
<td>A1</td>
<td>92.5</td>
<td>82.5</td>
<td>6.5</td>
<td>46</td>
</tr>
<tr>
<td>LZ33-3</td>
<td>A3</td>
<td>92.5</td>
<td>82.5</td>
<td>6.5</td>
<td>46</td>
</tr>
</tbody>
</table>

**Subject to change**

### Screw connection

![Screw connection diagram](diagram1.png)

### Barbed inserts

![Barbed inserts diagram](diagram2.png)

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
Finger guards
For compact centrifugal modules

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

<table>
<thead>
<tr>
<th>Fan series</th>
<th>Part no.</th>
<th>a</th>
<th>b</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG 190</td>
<td>LZ46-1</td>
<td>133</td>
<td>9.0</td>
</tr>
<tr>
<td>RG 220</td>
<td>LZ47-1</td>
<td>166</td>
<td>8.7</td>
</tr>
<tr>
<td>RG 225</td>
<td>LZ48-1</td>
<td>158</td>
<td>8.7</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>DC fan series</th>
<th>AC fan series</th>
</tr>
</thead>
<tbody>
<tr>
<td>4400 F</td>
<td>AC 4300</td>
</tr>
<tr>
<td>4400 FN</td>
<td>9900</td>
</tr>
<tr>
<td>4300</td>
<td>4000 N</td>
</tr>
<tr>
<td>4400</td>
<td>4000 Z</td>
</tr>
<tr>
<td>4100 N</td>
<td>Subject to change</td>
</tr>
</tbody>
</table>

Subject to change.

LZ40N Filter guard
LZ40-1 Mounting lug
LZ60 Coarse filter
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.

### 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.

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Fan size</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>Part no. Replacement filter*</th>
</tr>
</thead>
<tbody>
<tr>
<td>FF60</td>
<td>60 x 60 mm</td>
<td>65</td>
<td>65</td>
<td>13.5</td>
<td>50.0</td>
<td>RF 60</td>
</tr>
<tr>
<td>FF80</td>
<td>80 x 80 mm</td>
<td>85</td>
<td>85</td>
<td>14.0</td>
<td>71.5</td>
<td>RF 80</td>
</tr>
<tr>
<td>FF92</td>
<td>92 x 92 mm</td>
<td>125</td>
<td>105</td>
<td>17.5</td>
<td>82.5</td>
<td>RF 92</td>
</tr>
<tr>
<td>FF119</td>
<td>119 x 119 mm</td>
<td>162</td>
<td>136</td>
<td>18.5</td>
<td>104.5</td>
<td>RF 119</td>
</tr>
<tr>
<td>FF172</td>
<td>Ø 172 mm</td>
<td>226</td>
<td>190</td>
<td>19.5</td>
<td>162.0</td>
<td>RF 172</td>
</tr>
</tbody>
</table>

* Replacement filter available only in packages of 5.

---

**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.

### 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.

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Fan size</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>Part no. Replacement filter*</th>
</tr>
</thead>
<tbody>
<tr>
<td>FF60</td>
<td>60 x 60 mm</td>
<td>65</td>
<td>65</td>
<td>13.5</td>
<td>50.0</td>
<td>RF 60</td>
</tr>
<tr>
<td>FF80</td>
<td>80 x 80 mm</td>
<td>85</td>
<td>85</td>
<td>14.0</td>
<td>71.5</td>
<td>RF 80</td>
</tr>
<tr>
<td>FF92</td>
<td>92 x 92 mm</td>
<td>125</td>
<td>105</td>
<td>17.5</td>
<td>82.5</td>
<td>RF 92</td>
</tr>
<tr>
<td>FF119</td>
<td>119 x 119 mm</td>
<td>162</td>
<td>136</td>
<td>18.5</td>
<td>104.5</td>
<td>RF 119</td>
</tr>
<tr>
<td>FF172</td>
<td>Ø 172 mm</td>
<td>226</td>
<td>190</td>
<td>19.5</td>
<td>162.0</td>
<td>RF 172</td>
</tr>
</tbody>
</table>

* Replacement filter available only in packages of 5.

---

**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.

### 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.

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Fan size</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>Part no. Replacement filter*</th>
</tr>
</thead>
<tbody>
<tr>
<td>FF60</td>
<td>60 x 60 mm</td>
<td>65</td>
<td>65</td>
<td>13.5</td>
<td>50.0</td>
<td>RF 60</td>
</tr>
<tr>
<td>FF80</td>
<td>80 x 80 mm</td>
<td>85</td>
<td>85</td>
<td>14.0</td>
<td>71.5</td>
<td>RF 80</td>
</tr>
<tr>
<td>FF92</td>
<td>92 x 92 mm</td>
<td>125</td>
<td>105</td>
<td>17.5</td>
<td>82.5</td>
<td>RF 92</td>
</tr>
<tr>
<td>FF119</td>
<td>119 x 119 mm</td>
<td>162</td>
<td>136</td>
<td>18.5</td>
<td>104.5</td>
<td>RF 119</td>
</tr>
<tr>
<td>FF172</td>
<td>Ø 172 mm</td>
<td>226</td>
<td>190</td>
<td>19.5</td>
<td>162.0</td>
<td>RF 172</td>
</tr>
</tbody>
</table>

* Replacement filter available only in packages of 5.
Inlet rings
For centrifugal fans

**Material:** Galvanized sheet steel

<table>
<thead>
<tr>
<th>Fan</th>
<th>Part no.</th>
<th>k</th>
<th>m</th>
<th>o</th>
<th>q</th>
<th>r₁</th>
<th>s</th>
<th>t</th>
<th>u</th>
<th>Vers.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RET 97</td>
<td>LZ 1000-097</td>
<td>116,0</td>
<td>80,0</td>
<td>10,0</td>
<td>0,80</td>
<td>10,0</td>
<td>108,0</td>
<td>3x4,5</td>
<td>–</td>
<td>1</td>
</tr>
<tr>
<td>RER 120</td>
<td>LZ 1000-120</td>
<td>146,0</td>
<td>94,4</td>
<td>18,0</td>
<td>0,80</td>
<td>16,0</td>
<td>134,0</td>
<td>4x4,5</td>
<td>126,0</td>
<td>1</td>
</tr>
<tr>
<td>RER 133</td>
<td>LZ 1000-133</td>
<td>129,0</td>
<td>87,0</td>
<td>13,0</td>
<td>1,00</td>
<td>8,0</td>
<td>118,0</td>
<td>4x4,5</td>
<td>103,0</td>
<td>1</td>
</tr>
<tr>
<td>RER 160</td>
<td>LZ 1000-160</td>
<td>142,0</td>
<td>100,0</td>
<td>9,0</td>
<td>1,00</td>
<td>8,0</td>
<td>132,0</td>
<td>4x4,5</td>
<td>–</td>
<td>1</td>
</tr>
<tr>
<td>RER 175 / 190</td>
<td>LZ 1000-175</td>
<td>170,0</td>
<td>125,5</td>
<td>14,0</td>
<td>1,25</td>
<td>10,0</td>
<td>158,0</td>
<td>4x4,5</td>
<td>146,0</td>
<td>1</td>
</tr>
<tr>
<td>RER 220</td>
<td>LZ 1000-220</td>
<td>252,0</td>
<td>155,0</td>
<td>21,0</td>
<td>0,80</td>
<td>22,0</td>
<td>–</td>
<td>–</td>
<td>199,0</td>
<td>2</td>
</tr>
<tr>
<td>RER 225</td>
<td>LZ 1000-225</td>
<td>223,0</td>
<td>146,0</td>
<td>28,0</td>
<td>1,50</td>
<td>25,0</td>
<td>210,0</td>
<td>4x4,5</td>
<td>196,0</td>
<td>1</td>
</tr>
</tbody>
</table>

(P) = plastic, (S) = galvanized sheet steel
**Inlet rings**

**For centrifugal fans**

**Material:** Galvanized sheet steel

---

### Inlet rings for backward curved centrifugal fans

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Fan size (P)</th>
<th>Vers.</th>
<th>k</th>
<th>m</th>
<th>n</th>
<th>o</th>
<th>q</th>
<th>r1</th>
<th>r2</th>
<th>r3</th>
<th>s</th>
<th>t</th>
<th>u</th>
</tr>
</thead>
<tbody>
<tr>
<td>96120-2-4013</td>
<td>120</td>
<td>1</td>
<td>146.0</td>
<td>94.4</td>
<td>—</td>
<td>18.0</td>
<td>0.80</td>
<td>16.0</td>
<td>—</td>
<td>—</td>
<td>134.0</td>
<td>4x4.5</td>
<td>126.0</td>
</tr>
</tbody>
</table>

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

### Inlet rings for forward curved centrifugal fans

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

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

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Fan size</th>
<th>Vers.</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>09576-2-4013</td>
<td>190</td>
<td>1</td>
<td>See corresponding product page</td>
</tr>
<tr>
<td>09609-2-4013</td>
<td>220</td>
<td>1</td>
<td>See corresponding product page</td>
</tr>
<tr>
<td>96358-2-4013</td>
<td>225</td>
<td>1</td>
<td>See corresponding product page</td>
</tr>
<tr>
<td>96359-2-4013</td>
<td>250</td>
<td>1</td>
<td>See corresponding product page</td>
</tr>
<tr>
<td>28000-2-4013</td>
<td>280</td>
<td>1</td>
<td>See corresponding product page</td>
</tr>
<tr>
<td>31000-2-4013</td>
<td>310</td>
<td>1</td>
<td>See corresponding product page</td>
</tr>
</tbody>
</table>

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)

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

Subject to change
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.

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

* UL-approved

**Cable**

**Straight plug (G)**

![Diagram of Straight plug (G)](image)

**Cable**

**Angled plug (W)**

![Diagram of Angled plug (W)](image)

**Wire end ferrules**

![Diagram of Wire end ferrules A](image)

**Tin-plated**

![Diagram of Tin-plated](image)

**Wire end ferrules**

![Diagram of Wire end ferrules B and C](image)
Cable (ESM) / Handheld Programmer

Jacketed cable, internal cables (UL style 2464/1061)
3 x AWG20 (approx. 0.5 mm²)

Wire end splices

<table>
<thead>
<tr>
<th>Cables for energy-saving motors 115/230 VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part no.</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>13060-4-1040</td>
</tr>
<tr>
<td>13061-4-1040</td>
</tr>
</tbody>
</table>

Subject to change

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

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

For Energy Saving Motor (ESM) based products

<table>
<thead>
<tr>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBC 000-AF08-01</td>
</tr>
</tbody>
</table>

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.
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.

<table>
<thead>
<tr>
<th>Fan series</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>8300</td>
<td>LZ212 / LZ260</td>
</tr>
<tr>
<td>8400 N</td>
<td>LZ261</td>
</tr>
<tr>
<td>3400 N</td>
<td>LZ261</td>
</tr>
<tr>
<td>9000</td>
<td>LZ210</td>
</tr>
<tr>
<td>4000</td>
<td>LZ210</td>
</tr>
<tr>
<td>4300</td>
<td>LZ212 / LZ260</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fan series</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5100</td>
<td>LZ210</td>
</tr>
<tr>
<td>5600</td>
<td>LZ210</td>
</tr>
<tr>
<td>5200</td>
<td>LZ210</td>
</tr>
<tr>
<td>5900</td>
<td>LZ210</td>
</tr>
<tr>
<td>7000</td>
<td>LZ210</td>
</tr>
<tr>
<td>9000</td>
<td>LZ2370</td>
</tr>
</tbody>
</table>

**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.

**LZ212**
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.
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

Application instructions for various control options

Customer circuit

Connection

Fan

Wire 1

Red Blue White Yellow

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

Wire | Connection | Color | Assignment/function
--- | --- | --- | ---
1 | Tach | White | Tach output
1 | 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

<table>
<thead>
<tr>
<th>Wire</th>
<th>Connection</th>
<th>Color</th>
<th>Assignment/function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+</td>
<td>Red</td>
<td>Supply voltage ripple ±3.5%</td>
</tr>
<tr>
<td></td>
<td>GND</td>
<td>Blue</td>
<td>GND</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wire</th>
<th>Connection</th>
<th>Color</th>
<th>Assignment/function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tach</td>
<td>White</td>
<td>Tach output: 2 pulses/revolution (M1G045/M1G055)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3 pulses/revolution (M1G074/M1G084)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0-10 V / PWM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yellow</td>
<td>Control input (impedance 100 kΩ)</td>
</tr>
</tbody>
</table>

Customer circuit

Connection

Fan

Temperature control module
- Adjustable speed
  - PWM 1 - 10 kHz
  - 100% PWM -> n=max
  - app. 10% PWM -> n=min
  - < 10% PWM -> n=0
  - Startup at > 14%
- Adjustable speed with potentiometer
- Full speed
- Adjustable speed
  - 1 V - 10 V
  - 10 V -> n=max
  - app. 1 V -> n=min
  - < 1 V -> n=0
  - Startup at > 1.4 V

Application instructions for various control options

- Supply voltage ripple ±3.5%
- Reverse polarity and locked-rotor protection
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

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

Customer circuit

Connection

Fan
**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

### Customer circuit

#### Max. speed

- +10V
- 0-10V / PWM

#### Adjustable speed

- 1-10V
- GND

#### Adjustable speed with potentiometer

- 10V
- 0-10V / PWM
- 100% PWM -> n = max
- 10% PWM -> n = min
- <10% PWM -> n = 0

### Connection

#### Fan

- +10V
- 0-10V / PWM
- +10V
- 0-10V / PWM
- GND
- Tach

#### Connection

- L
- N
- PE
- AC1
- AC2
- P

#### Connection diagrams EC H4)

### Table: Connection / Color / Function / assignment

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

### Connection diagrams EC J5)

**Application instructions for various control options**

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

---

**Diagram Content**

- **Customer circuit**
- **Connection**
- **Fan**

---

**Technical features**

- **Control input 0-10 VDC / PWM**
- **Tach output**
- **Reverse polarity and locked-rotor protection**
- **Motor current limitation**
- **Line undervoltage detection**
- **Soft startup**
Connection diagrams AC
A1) / A3) / C2)

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

```
L   PE   N   C
U1  = blue
U2  = black
Z   = brown
= green/yellow
```

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

```
L   N   PE
C   = blue
= black
= green/yellow
```

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

```
PE
U1 = black
U2 = green
V1 = blue
V2 = white
W1 = brown
W2 = yellow
= green/yellow
```
**J7) Energy-saving motor (ESM)** (1– 115/230 VAC power line)

<table>
<thead>
<tr>
<th>Speed selection</th>
<th>Open</th>
<th>Closed (L1 or N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>n1</td>
<td></td>
<td>n2</td>
</tr>
</tbody>
</table>

- **Line voltage**
  - L1: Black
  - N: Blue
  - S: Brown

- **Speed selection**
  - L1 or N

---

Connection diagrams AC
J7)
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