Compact fans for AC, DC and EC

Version 2019-04
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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As technological leader for ventilation and drive engineering, ebm-papst is in demand as an engineering partner in many industries. With over 20,000 different products, we provide the right solution for just about any challenge. Our fans and drives are reliable, quiet and energy-efficient.

Six reasons that make us the ideal partner:

Our systems expertise.
You want the best solution for every project. The interrelationships between ventilation and drive engineering must thus be considered as a whole. And that’s what we do – with motor technology that sets standards, sophisticated electronics and aerodynamic designs – all from a single source and perfectly matched. These system solutions release unique synergies worldwide. And in particular – they relieve you of a lot of work, so that you can concentrate on your core competency.

The ebm-papst spirit of invention.
In addition to our wide range of products, we are always able to develop customized solutions for you. A diversified team of 600 engineers and technicians works at our three locations in Germany: Mulfingen, Landshut and St. Georgen. Contact us to discuss your next project.

Our lead in technology.
As pioneer and trail-blazer for developing highly efficient EC technology, we are way ahead of other motor manufacturers. Almost all our products are also available with GreenTech EC technology. The list of benefits is long: higher efficiency, maintenance-free, longer service life, sound reduction, intelligent control characteristics and unrivalled energy efficiency with savings of up to 80% compared to conventional AC technology. Let our technology be your competitive advantage as you lead in your industry.

Closeness to our customers.
ebm-papst has 25 production locations worldwide (including facilities in Germany, China and the USA), together with 49 sales offices, each of which has a dense network of sales representatives. You will always have a local contact, someone who speaks your language and knows your market.

Our standard of quality.
Of course you can rely on the highest standards of quality with our products. Our quality management is uncompromising, at every step in every process. This is underscored by our certification according to international standards including DIN EN ISO 9001 and DIN EN ISO 14001.

Our sustainable approach.
Assuming responsibility for the environment, for our employees and for society is an integral part of our corporate philosophy. We develop products with an eye to maximum environmental compatibility, in particular resource-preserving production methods. We promote environmental awareness among our young staff and are actively involved in sports, culture and education. That’s what makes us a leading company – and an ideal partner for you.
The story of our success to market and technology pioneer.

1963 Founding of Elektrobau Mulfingen GmbH & Co. KG by Gerhard Sturm and Heinz Ziehl.
1965 First tubeaxial fan developed in EC/DC technology.
1966 ebm-papst’s success takes off with the new 68 motor.
1972 The first ebm-papst foreign subsidiary is established in Sweden.
1988 Gerhard Sturm is awarded the Federal Cross of Merit.
1990 The sixty-millionth external-rotor fan is produced.
1992 Acquisition of PAPST Motoren GmbH in St. Georgen.
1997 Buyout of the Landshut (mvl) plant.
1998 Development of first fans with integrated electronics.
2003 Change of name to ebm-papst.
2008 The HyBlade® range of fans sets new efficiency standards.
2010 GreenTech – our sign for energy efficiency and resource preservation.
2011 RadiCal defines a new standard for EC centrifugal fans.
2013 ebm-papst takes over the gearbox specialist Zeitlauf and wins the German Sustainability Award.
2014 Team partnership with Mercedes AMG PETRONAS Formula 1 team.
2015 RadiPac pushes the limits of efficiency.
2016 S-Panther – the consistent development of the S-Forces series.
**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.

Brand name PAPST
The PAPST mark is a registered brandmark for ebm-papst products and is a synonym for compact fans of the highest quality, functionality and reliability for decades.

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
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 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 178 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 182 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 180 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 184.

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 184.

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 185.

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 185.

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 variable resistor. For technical details, please refer to page 186.

Moisture protection
Protection for the fan electronics against moisture and condensation. For technical details, please refer to page 188.

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 188.

Salt spray protection
Protection of fan against the damaging effects of salt spray. For technical details, please refer to page 188.

Direction of rotation
On many variants, the direction of rotation can be changed via a control input.
Types of fans and their function

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

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

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

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

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

2. **Admissible temperature increase**
   The air flow that the selected fan is required to generate, is determined by the dissipated energy and the admissible heating (ΔT) of the cooling airflow (from entry to exit of the device to be cooled). The maximum admissible ΔT depends greatly on the temperature sensitivity of the individual parts of the device.
   For example, ΔT = 5K means that the average cooling airflow leaving the device to be cooled may be only 5°C warmer than the ambient temperature. This requires a lot of air. A lower air flow rate is sufficient if a higher temperature difference (e.g. ΔT = 20K), can be tolerated.

3. **Required cooling airflow**
   - In the diagram below, a horizontal line is drawn from the dissipated energy to intersect with the selected ΔT line.
   - Read down from this point to obtain the required value for the cooling airflow. The diagram is based on the following formula:
     \[
     q_V = \frac{P_V}{C_{PL} \cdot \rho_L \cdot \Delta T}
     \]

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

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

Definitions

- \( P_V \) = amount of heat to be dissipated in [W]
- \( C_{PL} \) = specific heat capacity of air in [J/kg/K]
- \( C_{PL} = 1010 \ [J/kg/K] \)
- \( \rho_L \) = air density in [kg/m³]
- \( \rho_L = 1,2 \ [kg/m^3] \)
- \( \Delta T = T_1 - T_2 \) 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.
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

- **48 VDC:**
  - 680 µF / 100 V, 18 mm x 40 mm

**Fan**

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

**Special features of S-Force fans**
The S-Force series is the most powerful product series. S-Force stands for the highest innovation in motor technology, fluid mechanics and electronics. The one-of-a-kind power density of the products requires special attention to the application at the customer’s facility.
Service life data from ebm-papst St. Georgen

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

**Service life $L_{10}$ (40 °C) and $L_{10}$ ($T_{\text{max}}$)**

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

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

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

**Life expectancy $L_{10\text{IPC}}$ (40 °C)**

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

**Summary:**

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

![Fans in an endurance test cabinet at ebm-papst St. Georgen. 1500 fans are operated in temperature cabinets until they fail.](image)

![Example of the service life figures on the catalog page.](image)

![Example of the influence of factors from various manufacturers on the life expectancy.](image)

![Bathtub curve and Weibull distribution.](image)
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 \( \rho = 1.2 \text{ kg/m}^3 \) corresponding to an air pressure of 1013 mbar at 20 °C. Variations in air density affect pressure generation, but not the flow rate. The pressure generated at other air densities can be estimated with the formula 
\[
\Delta p_2 = \Delta p_1 \left( \frac{\rho_2}{\rho_1} \right)
\]
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 °C - 25 °C, air density \( \rho = 1.2 \text{ kg/m}^3 \) after a warmup period of 5 min.

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

Noise [dB(A), Bel(A)]
1. Sound pressure level – dB(A) Noise ratings of the fan in free air operation, i.e. at maximum flow rate.
2. Sound power level 1 Bel(A) = 10 dB(A) Extent of the overall sound radiation of the fan. The sound power level is determined in the optimum operating range.

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

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

Power consumption [watts]
Input performance of the fan motor when operating free blowing at nominal voltage. Depending on the operating condition in the application, the power consumption may be significantly 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 \( T_{\text{max}} \) 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 70 years developing fans.

Life expectancy \( L_{10\text{IPC}} (40 \text{ °C}) \)
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 = 1x10⁻⁴ 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>

Subject to technical changes.
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

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

<table>
<thead>
<tr>
<th>Value</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edge dim. (W x H)</td>
<td>40 x 40 mm</td>
<td>50 x 50 mm</td>
<td>60 x 60 mm</td>
<td>70 x 70 mm</td>
<td>50 x 50 mm</td>
<td>60 x 60 mm</td>
<td>70 x 70 mm</td>
</tr>
<tr>
<td>Installation depth (D)</td>
<td>8 mm</td>
<td>15 mm</td>
<td>15 / 25 / 32 mm</td>
<td>15 mm</td>
<td>15 mm</td>
<td>15 / 25 / 32 mm</td>
<td>15 mm</td>
</tr>
</tbody>
</table>

#### Operating voltage

<table>
<thead>
<tr>
<th>Value</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage</td>
<td>12 V</td>
<td>24 V</td>
<td>5 V</td>
<td>48 V</td>
<td>12 V</td>
<td>24 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**: Constant speed control regardless of operating voltage
- **F**: Economy fan with round flange
- **G**: Flat construction / frequency-modulated speed control input
- **H**: Sleeve bearing
- **H1-H8**: High speed
- **H3-HB**: Further increased speed
- **I**: Integrated temperature sensor (NTC behavior, i.e. thermistor)
- **J**: Jet characteristic / rigid curve
- **K**: Low speed
- **L**: Medium speed
- **ML**: Between low and medium speed
- **N**: Standard or basic speed
- **O**: Multi-option speed control input
- **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

---

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

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

<table>
<thead>
<tr>
<th>Value</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edge dimensions (W x H)</td>
<td>220 x 220 mm</td>
<td>92 x 92 mm</td>
<td>140 x 140 mm</td>
<td>172 x 172 mm</td>
</tr>
<tr>
<td>Installation depth (D)</td>
<td>51 mm</td>
<td>51 mm</td>
<td>51 mm</td>
<td>51 mm</td>
</tr>
</tbody>
</table>

#### Connection type and direction of rotation

<table>
<thead>
<tr>
<th>Value</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wires, length = 310 mm</td>
<td>2.8 x 0.8 mm</td>
<td>2.8 x 0.5 mm</td>
<td>2.8 x 0.5 mm</td>
<td>2.8 x 0.5 mm</td>
</tr>
<tr>
<td>Wires, length = 310 mm</td>
<td>Clockwise (CW)</td>
<td>Clockwise (CW)</td>
<td>Clockwise (CW)</td>
<td>Clockwise (CW)</td>
</tr>
<tr>
<td>Plug, 2.8 x 0.8 mm</td>
<td>Counterclockwise (CCW)</td>
<td>Counterclockwise (CCW)</td>
<td>Counterclockwise (CCW)</td>
<td>Counterclockwise (CCW)</td>
</tr>
</tbody>
</table>

#### Motor and housing version

<table>
<thead>
<tr>
<th>Value</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Version</td>
<td>4xx fan, 10 / 20 / 25 / 28 mm (D)</td>
<td>6xx fan, 15 / 25 / 32 mm (D)</td>
<td>25 / 28 mm (D)</td>
<td>63x fan, 25 mm (D)</td>
</tr>
<tr>
<td>25 / 28 mm (D)</td>
<td>51 mm</td>
<td>51 mm</td>
<td>51 mm</td>
<td>51 mm</td>
</tr>
<tr>
<td>25 / 32 / 38 mm</td>
<td>51 mm</td>
<td>51 mm</td>
<td>51 mm</td>
<td>51 mm</td>
</tr>
</tbody>
</table>

#### Operating voltage

<table>
<thead>
<tr>
<th>Value</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage</td>
<td>12 V</td>
<td>24 V</td>
<td>36 V</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**: Constant speed control regardless of operating voltage
- **F**: Economy fan with round flange
- **G**: Flat construction / frequency-modulated speed control input
- **H**: Sleeve bearing
- **H1-H8**: High speed
- **H3-HB**: Further increased speed
- **I**: Integrated temperature sensor (NTC behavior, i.e. thermistor)
- **J**: Jet characteristic / rigid curve
- **K**: Low speed
- **L**: Medium speed
- **ML**: Between low and medium speed
- **N**: Standard or basic speed
- **O**: Multi-option speed control input
- **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

---

All measurements are given in mm.
### DC centrifugal fan e.g. RER 160-28/12 N

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

#### Fan impeller blade height
- RER: Backward-curved impeller blades
- RET: Forward-curved impeller blades
- RG: Square Forward/backward-curved impeller blades
- RLF: Round Forward/backward-curved impeller blades, flat
- RV: Round Forward-curved impeller blades

#### Impeller diameter in mm
- RER: 160
- RET: 160
- RG: 148
- RLF: 148
- RV: 148

#### Operating voltage
- Value: Nominal voltage
- /12: 12 V
- /14: 24 V
- /18: 48 V

#### Options (various versions possible)
- A: Analog speed control input (input voltage: 0...5 / 0...10 V DC)
- G: Sleeve bearing
- H: High speed
- HH: Further increased speed
- HS-HB: Additional further increased speeds
- I: Integrated temperature sensor (NTC behavior, i.e. thermistor)
- L: Low speed
- M: Medium speed
- NL: Between low and medium speed
- N: Standard or basic speed
- D: Multi-option speed control input
- P: PWM speed control input (pulse-width modulated signal)
- R: Moisture protection coating
- T: External temperature sensor (NTC behavior, i.e. thermistor)
- TD: Turbo drive (extremely powerful 3-phase motor)
- U: Environmentally friendly fan (min. IP 54)

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

<table>
<thead>
<tr>
<th>Type</th>
<th>Housing and fan impeller versions</th>
</tr>
</thead>
<tbody>
<tr>
<td>QG</td>
<td>Round Compressor drum</td>
</tr>
</tbody>
</table>

#### 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
- QG: 30
- QG: 30
- QG: 30

#### Operating voltage
- Value: Nominal voltage
- /12: 12 V
- /14: 24 V

All measurements are given in mm.
## 4-digit GreenTech EC tubaxial 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 98.5 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 (V AC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>115 / 230 V</td>
<td>50 / 60 Hz</td>
<td>1</td>
<td>115 V 50 Hz</td>
</tr>
<tr>
<td>1</td>
<td>115 V</td>
<td>50 Hz</td>
<td>2</td>
<td>230 V 50 Hz</td>
</tr>
</tbody>
</table>

### Options (various versions possible)

- A: Analog speed control input (input voltage: 0...5 / 0...10 V DC)
- B: Flat construction / frequency-modulated signal
- C: Sleeve bearing
- D: High speed
- E: Integrated temperature sensor (NTC behavior, i.e. thermistor)
- F: Jet characteristic / rigid curve
- G: Low speed
- H: Medium speed
- I: Between low and medium speed
- J: Standard or basic speed
- K: PWM speed control input (pulse-width modulated signal)
- L: Moisture protection coating
- M: External temperature sensor (NTC behavior, i.e. thermistor)
- N: Environmentally friendly fan (min. IP 54)
- O: 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>5</td>
<td>135 x 135 mm</td>
<td>38 mm</td>
</tr>
<tr>
<td>5</td>
<td>140 x 140 mm</td>
<td>51 mm</td>
</tr>
<tr>
<td>6</td>
<td>Ø 172 mm</td>
<td>51 / 52 mm</td>
</tr>
<tr>
<td>7</td>
<td>Ø 150 mm</td>
<td>55 mm</td>
</tr>
<tr>
<td>7</td>
<td>Ø 150 x 172 mm</td>
<td>38 mm</td>
</tr>
<tr>
<td>7</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>3</td>
<td>115 V</td>
<td>60 Hz</td>
<td>2 / 3</td>
</tr>
<tr>
<td>4</td>
<td>115 V</td>
<td>50 Hz</td>
<td>4 / 5</td>
</tr>
<tr>
<td>5</td>
<td>230 V</td>
<td>50 Hz / 60 Hz</td>
<td>6 / 8</td>
</tr>
<tr>
<td>9</td>
<td>230 V</td>
<td>50 Hz / 60 Hz</td>
<td>9</td>
</tr>
</tbody>
</table>

### Options (various versions possible)

- A: Intake via bars
- B: Made by ebm-papst Mulfingen (6xxx, 7xxx range) or round flange
- C: Speed signal
- D: 1 Impulses per 360 degrees (additional hall sensor)
- E: Low speed
- F: Medium speed
- G: Air intake via struts (a mounting bore hole)
- H: Moisture protection coating
- I: Integrated temperature switch
- J: Mounting bracket
- K: Environmentally friendly fan (min. IP 54)
- L: Additional wires (standard length 310 mm)
- M: Mounting bore hole 3.7 mm
- N: Air exhaust over struts, reinforced flange corners with through-holes
- O: Variant number

All measurements are given in mm.
### AC Centrifugal Fan e.g. RER 160-28/56 S

**Type Code**

<table>
<thead>
<tr>
<th>Type</th>
<th>Housing and Fan Impeller Versions</th>
</tr>
</thead>
<tbody>
<tr>
<td>RE</td>
<td>Non-Curved, No Direction of Rotation Set</td>
</tr>
<tr>
<td>RER</td>
<td>Backward-Curved Impeller Blades</td>
</tr>
<tr>
<td>RET</td>
<td>Forward-Curved Impeller Blades</td>
</tr>
<tr>
<td>RL</td>
<td>Forward-Curved Impeller Blades</td>
</tr>
<tr>
<td>RLF</td>
<td>Forward/Backward-Curved Impeller Blades, Flat</td>
</tr>
<tr>
<td>RV</td>
<td>Forward-Curved Impeller Blades</td>
</tr>
</tbody>
</table>

**Options**

(Various versions possible)
- **H**: Speed Signal
  - 1 Impulses per 360 Degrees (Additional Magnet Sensor and Hall Sensor)
- **L**: Low Speed
- **M**: Medium Speed
- **N**: Air Intake Via Struts (A Mounting Bore Hole)
- **R**: Moisture Protection Coating
- **S**: Integrated Temperature Switch
- **U**: Environmentally Friendly Fan (Min. IP 54)
- **W**: Additional Wires (Standard Length 310 mm)
- **xxx**: Variant Number

**Impeller Diameter in mm**

RER 160-28/56 S

**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.

**Type Code**

<table>
<thead>
<tr>
<th>Type</th>
<th>Housing and Fan Impeller Versions</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Axial Fan</td>
</tr>
<tr>
<td>S</td>
<td>Axial Fan with Finger Guard</td>
</tr>
<tr>
<td>W</td>
<td>Axial Fan with Fan Housing</td>
</tr>
<tr>
<td>V</td>
<td>Axial Combination</td>
</tr>
<tr>
<td>R</td>
<td>Centrifugal Fan, Single Inlet</td>
</tr>
<tr>
<td>G</td>
<td>Centrifugal Blower, Single Inlet</td>
</tr>
<tr>
<td>B</td>
<td>Centrifugal Fan, Dual Inlet</td>
</tr>
<tr>
<td>G</td>
<td>Centrifugal Blower, Dual Inlet</td>
</tr>
<tr>
<td>K</td>
<td>Centrifugal Combination</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**

R3G 190-RN 38-01

**Number of Poles (AC)**

- 2: 2-Pole

**Number of Cores (DC/EC)**

- 1: 1-Phase/Core
- 3: 3-Phase/Core

All measurements are given in mm.
DC axial fans

DC axial fan overview
DC axial fan / DC diagonal fan
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 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>
</tr>
</thead>
<tbody>
<tr>
<td>mm</td>
<td>m³/h</td>
<td></td>
</tr>
</tbody>
</table>

| 25 x 8    | 250    | 2.3...4.6 |
| 40 x 10   | 400 F  | 6...9     |
| 40 x 20   | 400    | 10...13.5 |
| 40 x 28   | 420 J  | 24...38   |
| 50 x 15   | 500 F  | 11...20   |
| 60 x 15   | 600 F  | 19...33   |
| 60 x 25   | 620    | 21...67   |
| 60 x 25   | 630    | 40...58   |
| 80 x 25   | 600 N  | 21...56   |
| 80 x 32   | 600 J  | 70...82   |
| 70 x 15   | 700 F  | 28...44   |
| 80 x 25   | 8450   | 32...117  |
| 80 x 25   | 8400 N | 33...79   |
| S-Panther | 80 x 32| 8300 N    |
|           | 80 x 38| 8200 J    |
|           | 80 x 38| 8200 J    |
|           | 92 x 25| 3400 N    |
| S-Panther | 92 x 32| 3300 N    |
| J-Fan    | 92 x 38| 3200 J    |
| S-Panther | 92 x 38| 3250 J    |
| S-Panther | 119 x 25| 4400 F  |
| Ø 127    | 4400 F | 91        |
| S-Panther | 119 x 32| 4300 N  |

**Subject to change**

| m³/h | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 2000 | 2500 |
|------|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 10   |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 20   |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 30   |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 40   |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 50   |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 60   |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 70   |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 80   |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 90   |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 100  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 200  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 300  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 400  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 500  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 600  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 700  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 800  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 900  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 1000 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 2000 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 2500 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
Axial fans for DC operation

Overview of air performance

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<th>Dimension</th>
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<th>Air Flow m³/h</th>
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Subject to change
Axial fans for DC operation
Overview of technically feasible designs

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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.

- not yet available
  * Available
  □ Sleeve bearings
  □ Ball bearings
Axial fans for DC operation
Overview of technically feasible designs

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.

---

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<td>4100 TD</td>
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<td>2200 FTD</td>
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Subject to change

- not yet available
• Available
■ Ball bearings

Sleeve bearings
Max. 4.6 m³/h

DC axial fans

- 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 28, TR 64
- Weight: 5 g

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

Material:

1) Fiberglass-reinforced plastic

Series 250
VWC0025AUBAS

Nominal data

<table>
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<tr>
<th>Type</th>
<th>Air flow</th>
<th>Air flow</th>
<th>Nominal voltage</th>
<th>Nominal current</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 (20 °C)</th>
<th>Life expectancy L₁₀IPC (40 °C)</th>
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<td>5</td>
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<td>12 000</td>
<td>-10...+55</td>
<td>35 000 / 15 000*</td>
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<td>12 000</td>
<td>-10...+55</td>
<td>35 000 / 15 000*</td>
<td>37 500</td>
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</table>

Air performance measured as per: ISO 5801. Installation category A, without accidental contact. Noise: Total sound power level LWA measured on a hemisphere with a radius of 2 m. Sound pressure level LA 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

* at 55 °C

1 Finger guards from p. 254

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

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

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

---

#### DC axial fans

<table>
<thead>
<tr>
<th>Type</th>
<th>Nominal voltage VDC</th>
<th>Voltage range</th>
<th>Nominal voltage VDC</th>
<th>Voltage range</th>
<th>Sound pressure level L(_{pA})</th>
<th>Sound power level L(_{WA})</th>
<th>Power consumption Watts</th>
<th>Nominal speed rpm</th>
<th>Temperature range °C</th>
<th>Hours</th>
<th>Hours</th>
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<td>10...14</td>
<td>5.4</td>
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<td>-20...+70</td>
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<td>47 500</td>
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<td>0.9</td>
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<td>-20...+70</td>
<td>45 000 / 17 500</td>
<td>47 500</td>
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<td>10...14</td>
<td>4.4</td>
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<td>47 500</td>
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<td>9.0</td>
<td>0.9</td>
<td>6 000</td>
<td>-20...+70</td>
<td>45 000 / 17 500</td>
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Model with temperature range up to +85 °C.

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<th>Voltage range</th>
<th>Nominal voltage VDC</th>
<th>Voltage range</th>
<th>Sound pressure level L(_{pA})</th>
<th>Sound power level L(_{WA})</th>
<th>Power consumption Watts</th>
<th>Nominal speed rpm</th>
<th>Temperature range °C</th>
<th>Hours</th>
<th>Hours</th>
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<td>17.0</td>
<td>10...14</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>
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<td>4.7</td>
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<td>45 000 / 17 500</td>
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Subject to change

---

1) Fiberglass-reinforced plastic

---

### Nominal data

#### Series 400 F VWC040FUDAS

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<th>Air flow cfm</th>
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<th>Voltage range</th>
<th>Sound pressure level L(_{pA})</th>
<th>Sound power level L(_{WA})</th>
<th>Power consumption Watts</th>
<th>Nominal speed rpm</th>
<th>Temperature range °C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>405 F</td>
<td>8</td>
<td>4.7</td>
<td>4.5...5.5</td>
<td>22.1</td>
<td>10...14</td>
<td>5.4</td>
<td>9.5</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>4.5...5.5</td>
<td>26.0</td>
<td>4.6</td>
<td>9.0</td>
<td>0.9</td>
<td>5 400</td>
<td>-20...+70</td>
<td>45 000 / 17 500</td>
<td>47 500</td>
</tr>
<tr>
<td>412 FM</td>
<td>6</td>
<td>3.5</td>
<td>12</td>
<td>17.0</td>
<td>10...14</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>
</tr>
<tr>
<td>412 F</td>
<td>8</td>
<td>4.7</td>
<td>12</td>
<td>22.1</td>
<td>10...14</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>412 FH</td>
<td>9</td>
<td>5.3</td>
<td>12</td>
<td>26.0</td>
<td>4.6</td>
<td>9.0</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>22.1</td>
<td>10...14</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>26.0</td>
<td>4.4</td>
<td>9.0</td>
<td>0.9</td>
<td>6 000</td>
<td>-20...+70</td>
<td>45 000 / 17 500</td>
<td>47 500</td>
</tr>
</tbody>
</table>

---

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](http://www.ebmpapst.com/general conditions)
Max. 13.5 m³/h

### DC axial fans

- **Dimensions:** 40 x 20 mm

- **Material:** Housing: GRP\(^1\) (PBT)
  Impeller: GRP\(^1\) (PA)

- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 28, TR 64
- **Highlights:** Some models are suitable for use at high ambient temperatures
- **Weight:** 27 g

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

---

**Series 400**

**VWC0040YUDBS**

#### 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 VDC</th>
<th>Sound pressure level dB(A)</th>
<th>Bel(A)</th>
<th>Sound power level</th>
<th>Bel</th>
<th>Bel</th>
<th>Watts</th>
<th>rpm</th>
<th>°C</th>
<th>Service life L(_{10}(20\ °C))</th>
<th>Service life L(_{10}(60\ °C))</th>
<th>Life expectancy L(_{10}) [IPC]</th>
<th>Curve</th>
</tr>
</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></td>
<td></td>
<td>6 000</td>
<td>-20...+70</td>
<td>50 000 / 20 000</td>
<td>52 500 ()</td>
<td></td>
<td></td>
<td></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></td>
<td></td>
<td>6 000</td>
<td>-20...+70</td>
<td>50 000 / 20 000</td>
<td>52 500 ()</td>
<td></td>
<td></td>
<td></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></td>
<td></td>
<td>8 100</td>
<td>-20...+60</td>
<td>45 000 / 17 500</td>
<td>47 500 ()</td>
<td></td>
<td></td>
<td></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></td>
<td></td>
<td>6 000</td>
<td>-20...+70</td>
<td>50 000 / 20 000</td>
<td>52 500 ()</td>
<td></td>
<td></td>
<td></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></td>
<td></td>
<td>8 100</td>
<td>-20...+60</td>
<td>45 000 / 17 500</td>
<td>47 500 ()</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Model with temperature range up to +85 °C.

| 412-099| 10.0 | 5.9 | 12 | 10...14 | 18 | 3.8 | 0.8 | 6 000 | -20...+85 | 50 000 / 20 000 | 52 500 \(\) |

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 \(L_{W,ISO}\) 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 28, UL 1061
- Weight: 45 g

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

1) Fiberglass-reinforced plastic

Series 420 J
VWC0040JUDBS

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>
</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>
</tr>
<tr>
<td>422 JH</td>
<td>38</td>
<td>22,4</td>
<td>12</td>
<td>8..13,8</td>
<td>54</td>
<td>6,6</td>
<td>6,9</td>
<td>17 250</td>
<td>-20..+70</td>
<td>60 000 / 30 000</td>
<td>102 500</td>
</tr>
<tr>
<td>424 JM</td>
<td>24</td>
<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>
</tr>
</tbody>
</table>

Model with degree of protection IP 68, -40 °C, speed signal and EMC - Class B.

<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>
</tr>
</thead>
<tbody>
<tr>
<td>422 J/2 HPU</td>
<td>37</td>
<td>21,8</td>
<td>12</td>
<td>8..13,8</td>
<td>56</td>
<td>6,6</td>
<td>7,5</td>
<td>17 250</td>
<td>-40..+70</td>
<td>60 000 / 30 000</td>
<td>102 500</td>
</tr>
<tr>
<td>424 J/2 HPU</td>
<td>37</td>
<td>21,8</td>
<td>24</td>
<td>18..28</td>
<td>56</td>
<td>6,6</td>
<td>7,0</td>
<td>17 250</td>
<td>-40..+70</td>
<td>60 000 / 30 000</td>
<td>102 500</td>
</tr>
<tr>
<td>428 J/2 HPU</td>
<td>37</td>
<td>21,8</td>
<td>46</td>
<td>36..60</td>
<td>56</td>
<td>6,6</td>
<td>7,0</td>
<td>17 250</td>
<td>-40..+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 L\(_{W}\) ISO 10302 measured on a hemisphere with a radius 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
Air performance measured according to ISO 5801. Installation category A, without contact protection.

- 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.

### DC axial fans

<table>
<thead>
<tr>
<th>Type</th>
<th>m(^3)/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>Sound pressure level</th>
<th>Sound power level</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</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>30</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>
<td></td>
</tr>
<tr>
<td>514 F</td>
<td>20</td>
<td>11.8</td>
<td>21.6...26.4</td>
<td>30</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>
<td></td>
</tr>
</tbody>
</table>

Model with temperature range up to +85 °C.

<table>
<thead>
<tr>
<th>Type</th>
<th>m(^3)/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>Sound pressure level</th>
<th>Sound power level</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>512 FL-547</td>
<td>11</td>
<td>6.5</td>
<td>10.2...13.8</td>
<td>18</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>
<td></td>
</tr>
<tr>
<td>512 F-532</td>
<td>20</td>
<td>11.8</td>
<td>10.8...13.2</td>
<td>30</td>
<td>4.5</td>
<td>0.9</td>
<td>5 000</td>
<td>-20...+85</td>
<td>50 000 / 20 000</td>
<td>52 500</td>
<td></td>
</tr>
</tbody>
</table>

Subject to change.

---

### Series 500 F

VWC0050FUDBS

<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>Power consumption</th>
<th>Power consumption</th>
<th>Temperature range</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>m(^3)/h</td>
<td>cfm</td>
<td>VDC</td>
<td>VDC</td>
<td>dB(A)Bel(A)</td>
<td>Watts</td>
<td>rpm(^{-1})</td>
<td>°C</td>
<td>Hours</td>
<td>Hours</td>
<td>Hours</td>
</tr>
<tr>
<td>512 F</td>
<td>20</td>
<td>11.8</td>
<td>10.8...13.2</td>
<td>30</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>
<td></td>
</tr>
<tr>
<td>514 F</td>
<td>20</td>
<td>11.8</td>
<td>21.6...26.4</td>
<td>30</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>
<td></td>
</tr>
</tbody>
</table>

Model with temperature range up to +85 °C.

<table>
<thead>
<tr>
<th>Type</th>
<th>m(^3)/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>Sound pressure level</th>
<th>Sound power level</th>
<th>Power consumption</th>
<th>Power consumption</th>
<th>Temperature range</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>512 FL-547</td>
<td>11</td>
<td>6.5</td>
<td>10.2...13.8</td>
<td>18</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>
<td></td>
</tr>
<tr>
<td>512 F-532</td>
<td>20</td>
<td>11.8</td>
<td>10.8...13.2</td>
<td>30</td>
<td>4.5</td>
<td>0.9</td>
<td>5 000</td>
<td>-20...+85</td>
<td>50 000 / 20 000</td>
<td>52 500</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\(_{WA}\) ISO 10302 measured on a hemisphere with a radius 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

---

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

Noise: Total sound power level \( L_{\text{W}} \text{A ISO 10302} \) measured on a hemisphere with a radius of 2 m.

Sound pressure level \( L_{\text{p}} \text{A} \) 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\(^1\) (PBT)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 28, TR 64
- **Highlights:** Some models are suitable for use at high ambient temperatures
- **Weight:** 30 g

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

---

Max. 33 \( m^3/h \)

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**Series 600 F VWCO060FUDBS**

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow</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>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L10 (20 °C)</th>
<th>Service life L10 (60 °C)</th>
<th>Life expectancy L10 IPC</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>605 F</td>
<td>29</td>
<td>17.1</td>
<td>5</td>
<td>4.5...5.2</td>
<td>27</td>
<td>4.4</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>2</td>
</tr>
<tr>
<td>612 FL</td>
<td>19</td>
<td>11.2</td>
<td>12</td>
<td>11.5...13.2</td>
<td>16</td>
<td>3.6</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>1</td>
</tr>
<tr>
<td>612 F</td>
<td>29</td>
<td>17.1</td>
<td>12</td>
<td>10.8...13.2</td>
<td>27</td>
<td>4.4</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>
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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>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>3</td>
</tr>
<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>
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</table>

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

- 612 FL-680 | 19 | 11.2 | 12 | 11.5...14 | 16 | 3.6 | 0.5 | 2 650 | -20...+85 | 50 000 / 20 000 | 52 500 | 1     |
- 612 F-637  | 29 | 17.1 | 12 | 10.8...12.6 | 27 | 4.4 | 1.0 | 3 900 | -20...+80 | 50 000 / 20 000 | 52 500 | 2     |

Subject to change

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1) Fiberglass-reinforced plastic

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**Nominal data**

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

- 612 FL-680 | 19 | 11.2 | 12 | 11.5...14 | 16 | 3.6 | 0.5 | 2 650 | -20...+85 | 50 000 / 20 000 | 52 500 |
- 612 F-637  | 29 | 17.1 | 12 | 10.8...12.6 | 27 | 4.4 | 1.0 | 3 900 | -20...+80 | 50 000 / 20 000 | 52 500 | 2     |

Subject to change

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

Noise: Total sound power level \( L_{\text{W}} \text{A ISO 10302} \) measured on a hemisphere with a radius of 2 m.

Sound pressure level \( L_{\text{p}} \text{A} \) 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 10302 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

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<th>Ball bearing</th>
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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 $L_{W_{A \text{ ISO} 10302}}$ measured on a hemisphere with a radius of 2 m.

Sound pressure level $L_{p_{A}}$ 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
- PWM control input
- Analog control input
- Moisture protection
- Salt spray protection
- Degree of protection: IP 54 / IP 68

Series 630
VWC0060AUEBS

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<th>Type</th>
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<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life $L_{10}(40 \degree C)$ (h)</th>
<th>Service life $L_{10}(T_{\max })$ (h)</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 $L_{W_{A \text{ ISO} 10302}}$ measured on a hemisphere with a radius of 2 m.

Sound pressure level $L_{p_{A}}$ measured at 1 m distance from fan axis.

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Subject to change

Finger guards from p. 254
Max. 56 m³/h

DC axial fans

- 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: Some models are suitable for use at high ambient temperatures up to 85 °C.
- Weight: 66 g

¹ Fiber glass reinforced plastic

Series 600 N VWC060YOUEBS

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 pressure level</th>
<th>Sound power level</th>
<th>Sealed sleeve bearings</th>
<th>Ball bearings</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L10 / L50°C</th>
<th>Service life L70Y / L75 / L85°C</th>
<th>Degree of protection</th>
<th>Life expectancy L100°C (air leakage)</th>
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<td>60 000 / 30 000</td>
<td>102 500</td>
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<td>10 IPC</td>
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<td>35</td>
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<td>28</td>
<td>4.6</td>
<td>■</td>
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<td>1.9</td>
<td>4 100</td>
<td>-20...+65</td>
<td>80 000 / 40 000</td>
<td>135 000</td>
<td>IP 54 / IP 68</td>
<td>10 IPC</td>
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<td>70 000 / 40 000</td>
<td>117 500</td>
<td>IP 54 / IP 68</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 10360) 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
- Alarm with speed limit
- External temperature sensor
- PWM control input
- Analog control input
- Moisture protection

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, TR 64

Weight:
100 g

Series 600 J
VWC060JUECS

Nominal data

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<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC dB(A)</th>
<th>Bell(A)</th>
<th>Watts</th>
<th>rpm¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
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<td>12</td>
<td>7...13.6</td>
<td>53</td>
<td>6.4</td>
<td>7.7</td>
<td>11 700</td>
<td>-20...+70</td>
<td>57 500</td>
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<tr>
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<td>70</td>
<td>41.2</td>
<td>24</td>
<td>14...26.4</td>
<td>53</td>
<td>6.4</td>
<td>7.7</td>
<td>11 700</td>
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<td>57 500</td>
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Fan types with streamer and integrated guard grille:

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<th>VDC</th>
<th>VDC dB(A)</th>
<th>Bell(A)</th>
<th>Watts</th>
<th>rpm¹</th>
<th>°C</th>
<th>Hours</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 Lₐ,ISO 10302 measured on a hemisphere with a radius of 2 m.
Sound pressure level Lₚ,ISO 10302 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.

- 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: 33 g

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

### DC axial fans

#### Series 700 F
VWC0070FUEAS

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<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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<tbody>
<tr>
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<td>28</td>
<td>16.5</td>
<td>12</td>
<td>8...13.8</td>
<td>25</td>
<td>4.7</td>
<td>0.6</td>
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<td>60 000</td>
<td>30 000</td>
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<td>712 F/2M-006*</td>
<td>36</td>
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<td>12</td>
<td>8...13.8</td>
<td>32</td>
<td>5.0</td>
<td>1.1</td>
<td>4 300</td>
<td>-20...+70</td>
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<td>30 000</td>
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<td>8...13.8</td>
<td>38</td>
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<td>1.7</td>
<td>5 300</td>
<td>-20...+70</td>
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<td>30 000</td>
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<tr>
<td>714 F</td>
<td>44</td>
<td>25.9</td>
<td>24</td>
<td>18...28</td>
<td>38</td>
<td>5.3</td>
<td>1.5</td>
<td>5 300</td>
<td>-20...+70</td>
<td>60 000</td>
<td>30 000</td>
</tr>
</tbody>
</table>

Subject to change

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 10302 measured on a hemisphere with a radius of 2 m.

Sound pressure level \(L_{pA}\) measured at 1 m distance from fan axis.

The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.

In the event of deviation from the standard configuration, the parameters must be checked after installation!

For detailed information see http://www.ebmpapst.com/general conditions

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Max. 44 m\(^3\)/h

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### DC axial fans

#### Series 700 F
VWC0070FUEAS
Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level $L_{WA}$ ISO 10302 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/generalconditions

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 8450
**VWC0080AUEBS**

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<thead>
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<th>Nominal data</th>
<th>Type</th>
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<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>$\bullet$</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>18.8</td>
<td>12</td>
<td>8...15</td>
<td>14</td>
<td>3.3</td>
<td>0.4</td>
<td>1 700</td>
<td>-20...75</td>
<td></td>
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<tr>
<td>8452 M</td>
<td>58</td>
<td>34.1</td>
<td>12</td>
<td>8...15</td>
<td>32</td>
<td>4.7</td>
<td>1.3</td>
<td>3 100</td>
<td>-20...75</td>
<td></td>
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</tr>
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<td>8452/2 N</td>
<td>68</td>
<td>40.0</td>
<td>12</td>
<td>8...15</td>
<td>36</td>
<td>5.0</td>
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Models with 25 kHz PWM control and speed signal to 4-wire specification.
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<th>VDC</th>
<th>VDC</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>$\bullet$</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
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<th>Hours</th>
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<td>4 000</td>
<td>-20...70</td>
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<tr>
<td>8452/2 HHP</td>
<td>83</td>
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<td>12</td>
<td>10.8...13.2</td>
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</table>

Models with 1-30 kHz PWM control and speed signal.
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<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>$\bullet$</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
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</thead>
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<td>-20...70</td>
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Subject to change
### DC axial fans

<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 dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>Temperature range °C</th>
<th>Hours</th>
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</thead>
<tbody>
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<td>8412 NGL</td>
<td>33</td>
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<td>80</td>
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<td>2.0</td>
<td>3 100</td>
<td>-20...+70</td>
<td>70</td>
<td>35</td>
</tr>
</tbody>
</table>

### Notes
- **Max. 79 m³/h**
- **DC 80 x 25 mm**
- **Material:** Housing: GRP³ (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
- **Highlights:** Some models are suitable for use at high ambient temperatures up to 85 °C, 95 g
- **Weight:**

---

1) Fiberglass-reinforced plastic.
Max. 130 m³/h
S-Panther

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 26, TR 64
- 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
  - Salt spray protection
  - Degree of protection: IP 54 / IP 68

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow m³/h</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>rpm&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Temperature range</th>
<th>Service life L&lt;sub&gt;10&lt;/sub&gt;(40 °C)</th>
<th>Hours</th>
<th>Hours</th>
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<td>12</td>
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<td>97 500 / 37 500</td>
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<td>97 500 / 37 500</td>
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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<sub>WA</sub> ISO 10302
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

Finger guards from p. 254
### DC axial fans

#### 80 x 32 mm

- **Material:** Housing: GRP\(^1\) (PBT), Impeller: GRP\(^1\) (PA)
- **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

---

#### Series 8300 N

**Nominal data**

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<th>Type</th>
<th>Air flow m(^3)/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>Shaft sleeve bearings</th>
<th>Ball bearings</th>
<th>Power consumption Watts</th>
<th>rpm (^{-1})</th>
<th>Temperature range °C</th>
<th>Hours</th>
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<td>8.9</td>
<td>7 600</td>
<td>-20...+75</td>
<td>57 500</td>
<td>25 000</td>
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</table>

\(^1\) Fiberglass-reinforced plastic

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**Diagram:**

- 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
Max. 222 m³/h

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 24 (H3 and H4, AWG 22), TR 64
- Weight: 160 g (H3 and H4: 200 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
  - Degree of protection: IP 54 / IP 68

Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level $L_{WA}$ ISO 10302 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 8200 J
VWC0080JUFBS

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</th>
<th>°C</th>
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<td>7.3</td>
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<td>71</td>
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<td>78</td>
<td>48</td>
<td>36...53</td>
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<td>8400</td>
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<td>36</td>
<td>14000</td>
<td>-20...+70</td>
</tr>
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</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 up to maximum nominal speed. Standstill at 0% PWM, maximum speed if control cable is interrupted.
* Power consumption at free air flow. These values can be significantly higher in the operating point.

Air performance measured according to ISO 5801. Installation category A, without contact protection. Noise: Total sound power level $L_{WA}$ ISO 10302 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

Finger guards from p. 254
Max. 232 m³/h

DC axial fan unit 80 x 80 mm

- 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 22, TR 64
- Weight: 430 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

Series CoR 8200 J
VWK0075XFBS
Co-Rotating with Honeycomb

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>8.7</td>
<td>70**</td>
<td>14 000</td>
<td>-20...+70</td>
<td>50 000 / 25 000</td>
<td>85 000</td>
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<td>24</td>
<td>12...27.6</td>
<td>90</td>
<td>8.7</td>
<td>67**</td>
<td>14 000</td>
<td>-20...+70</td>
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</table>

Subject to change
* On request

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

Power consumption \( P_{ed} \) refer to CoR 8218 J.

Air performance measured according to ISO 5801. Installation category A, without contact protection. Noise: Total sound power level \( L_{eA} \) 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, TR 64

- **Weight:** 100 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
- Degree of protection: IP 54 / IP 68

### Series 3400 N VWC092YUEBS

#### Nominal data

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<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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Other 48 VDC models on request.

---

1) Fiberglass-reinforced plastic.

Air performance measured according to ISO 5801. Installation category A, without contact protection. Noise: Total sound pressure level (LpA) measured in 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\(^{1}\) (PBT)
- **Impeller:** GRP\(^{1}\) (PA)
- **Direction of airflow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Vis 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 WVC0092PUGBS

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<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 life</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L10 (40 °C)</th>
<th>Service life L10 (max)</th>
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Subject to change

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<th>L&lt;sub&gt;10&lt;/sub&gt;</th>
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Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L<sub>WA</sub> measured on a hemisphere with a radius of 2 m.
Sound pressure level L<sub>10</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.ebm-papst.com/general_conditions

---

1) Fiberglass-reinforced plastic.
DC axial fans

- Material: Housing: GRP³ (PBT)
  Impeller: GRP³ (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
VWC092PUGBS

Nominal data

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Subject to change

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Notes: Total sound power level Lw(A) measured on a hemisphere with a radius of 2 m.
Sound pressure level Lp(A) 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 configurations, 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: Clockwise, looking towards rotor
- Connection: Via single wires AWG 24 (H3 and H4: AWG 22), TR 64
- Weight: 240 g (H3 and H4: 280 g)

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

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.

Max. \(280\) m\(^3\)/h

Series 3200 J
VWC092JUGBS

Nominal data

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<th>Sound pressure level</th>
<th>Sound power level</th>
<th>Shaft sleeve bearings</th>
<th>Ball bearings</th>
<th>Power consumption*</th>
<th>Nominal speed</th>
<th>Temperature range</th>
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<td>65 000 / 32 500</td>
<td>110 000</td>
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<tr>
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<td>280</td>
<td>165</td>
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<td>8.2</td>
<td>■</td>
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</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.

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level \(L_{W\text{ISO}}\) measured on a hemisphere with a radius of 2 m.
Sound pressure level \(L_{p\text{A}}\) 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.
Max. 270 m³/h

DC axial fans

- Material: Housing: GRP\(^{11}\) (PBT)
  Impeller: GRP\(^{11}\) (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
VWC0092PUGCS

Nominal data

<table>
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<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>dBA</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>7 450</td>
<td>-20...+70</td>
<td>85 000 / 42 500</td>
<td>142 500</td>
</tr>
</tbody>
</table>

Änderungen vorbehalten

* 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 \( L_{PA} \) ISO 10322 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. 170 m³/h

**DC axial fans**

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

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

---

### 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>Shaft/sleeve bearings</th>
<th>Power consumption Watts</th>
<th>Nominal speed rpm⁻¹</th>
<th>Temperature range °C</th>
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<td>1 600</td>
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<td>10936</td>
<td>24</td>
<td>18...28</td>
<td>26</td>
<td>3.9</td>
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<td>1.2</td>
<td>1 600</td>
<td>-20...+75</td>
</tr>
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<td>18...28</td>
<td>26</td>
<td>3.9</td>
<td></td>
<td>1.2</td>
<td>1 600</td>
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<td>1.2</td>
<td>1 600</td>
<td>-20...+75</td>
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<td>18...28</td>
<td>26</td>
<td>3.9</td>
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<td>1 600</td>
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<td>26</td>
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<td>1.2</td>
<td>1 600</td>
<td>-20...+75</td>
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<td>10936</td>
<td>24</td>
<td>18...28</td>
<td>26</td>
<td>3.9</td>
<td></td>
<td>1.2</td>
<td>1 600</td>
<td>-20...+75</td>
</tr>
<tr>
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<td>10936</td>
<td>24</td>
<td>18...28</td>
<td>26</td>
<td>3.9</td>
<td></td>
<td>1.2</td>
<td>1 600</td>
<td>-20...+75</td>
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<td>18...28</td>
<td>26</td>
<td>3.9</td>
<td></td>
<td>1.2</td>
<td>1 600</td>
<td>-20...+75</td>
</tr>
</tbody>
</table>

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

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**Series 4400 F**

VWC0119FGAS

**Nominal data**

Air flow: 119 x 25 mm

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**
Finger guards
from p. 254

DC axial fans
Ø 127 mm

Max. 170 m³/h

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:
- 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
round
WVS0113FUGAS

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 dB(A) Bel(A)</th>
<th>Power consumption Watts</th>
<th>RPM min⁻¹</th>
<th>Temperature range °C</th>
<th>Service life L₁₀ (40 °C)</th>
<th>Life expectancy L₁₀ IPC (40 °C)</th>
</tr>
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<tbody>
<tr>
<td>4412 FGL-573</td>
<td>91</td>
<td>54</td>
<td>12</td>
<td>7...15</td>
<td>26</td>
<td>3.9</td>
<td>-20...+75</td>
<td>80 000 / 32 500</td>
<td>135 000</td>
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<tr>
<td>4412 FGMPR-197</td>
<td>140</td>
<td>82</td>
<td>12</td>
<td>7...12.6</td>
<td>38</td>
<td>4.8</td>
<td>-20...+65</td>
<td>75 000 / 27 500</td>
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<td>170</td>
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<td>12</td>
<td>8...12.6</td>
<td>43</td>
<td>5.3</td>
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<td>60 000 / 37 500</td>
<td>102 500</td>
</tr>
</tbody>
</table>

Subject to change

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 LₚW measured on a hemisphere with a radius of 2 m.
Sound pressure level Lₚ 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

---

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 LₚW measured on a hemisphere with a radius of 2 m.
Sound pressure level Lₚ 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. 254
Air performance measured according to: ISO 5801. Installation category A, without contact protection.

Noise: Total sound power level $L_{WA}$ ISO 10302 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 4400 FN VWC119FUJBS

Nominal data

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<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 $L_{10}(40, ^\circ\mathrm{C})$</th>
<th>Service life $L_{10}(T_{\text{max}})$</th>
<th>Life expectancy $L_{10}$</th>
<th>Curve</th>
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<td>9...13.2</td>
<td>55</td>
<td>6.7</td>
<td>12</td>
<td>5 400</td>
<td>-20...+70</td>
<td>60 000 / 30 000</td>
<td>102 500</td>
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<td>14...28</td>
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<td>6.5</td>
<td>8.3</td>
<td>4 850</td>
<td>-20...+70</td>
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<td>132</td>
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<td>18...26.4</td>
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<td>6.7</td>
<td>12</td>
<td>5 400</td>
<td>-20...+70</td>
<td>60 000 / 30 000</td>
<td>102 500</td>
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<td>2</td>
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</table>

Subject to change

1) Fiberglass-reinforced plastic.

AirFlow
m³/h
Nominal data
DC axial fans

Finger guards from p. 254
Max. 190 m³/h

S-Panther

DC axial fans

□ 119 x 32 mm

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

Direction of air flow:
- Exhaust over struts

Direction of rotation:
- Clockwise, looking towards rotor

Connection:
- Via single wires AWG 24, TR 64

Highlights:
- Ball bearings and sleeve bearings available

Weight:
- 250 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 4300 N
WC0119PUGBS

<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>Shaft sleeve bearings</th>
<th>Ball bearings</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Hours</th>
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<td>cfm</td>
<td>VDC</td>
<td>VDC</td>
<td>Bel(A)</td>
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<td>6...15</td>
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<td>6...15</td>
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<td>142 000</td>
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<td>12...28</td>
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<td>36...60</td>
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<td>-20...+75</td>
<td>72 500 / 30 000</td>
<td>122 000</td>
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Subject to change

1) Fiberglass-reinforced plastic.

<table>
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<th>Power consumption</th>
<th>n rpm⁻¹</th>
<th>Lw dB(A) (40 °C)</th>
<th>L10 (Tmax)</th>
<th>L10IPC (40 °C)</th>
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<td>4318 NN</td>
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<td>80 000</td>
<td>32 500</td>
<td>135 000</td>
</tr>
</tbody>
</table>

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level Lw(A) measured on a hemisphere with a radius of 2 m.
Sound pressure level Lp(A) measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see:
http://www.ebmpapst.com/general conditions
Max. 285 m³/h

DC axial fans

- Material: Housing: GRP\(^1\) (PBT) / Sintec sleeve bearings
- Direction of air flow: Exhaust over struts
- Direction of rotation: Clockwise, looking towards rotor
- Connection: Via single wires AWG 24, TR 64
- Highlights: Ball bearings and sleeve bearings available
- Weight: 250 g

Series 4300 N VWC0119PUGBS

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>
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<tr>
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<td>220</td>
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<td>12</td>
<td>6...15</td>
<td>47</td>
<td>5.8</td>
<td>7.6</td>
<td>3 150</td>
<td>-20...+75</td>
<td>62 500 / 25 000</td>
<td>105 000 ①</td>
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<td>87 500 ②</td>
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<td>285</td>
<td>168</td>
<td>12</td>
<td>7...13.2</td>
<td>55</td>
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<td>4 050</td>
<td>-20...+70</td>
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<td>75 000 ③</td>
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<td>24</td>
<td>12...28</td>
<td>47</td>
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<td>105 000 ①</td>
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<td>45 000 / 17 500</td>
<td>75 000 ③</td>
</tr>
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<td>129</td>
<td>48</td>
<td>36...60</td>
<td>47</td>
<td>5.8</td>
<td>6.7</td>
<td>3 150</td>
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<td>105 000 ①</td>
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<td>4 050</td>
<td>-20...+65</td>
<td>45 000 / 17 500</td>
<td>75 000 ③</td>
</tr>
</tbody>
</table>

Subject to change

Notes:
- Total sound power level (Lw, T\(^\text{max}\)) measured on a hemisphere with a radius of 2 m.
- Sound pressure level (Lp) 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 10302 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
- Degree of protection: IP 54

Subject to change

Further variants can be found on page 57.

Series 4400 VWC0119AUGBS

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</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>Shaft sleeve bearings</th>
<th>Power consumption</th>
<th>Normal speed</th>
<th>Temperature range</th>
<th>Service life $L_{10}$ (40 °C)</th>
<th>Service life $L_{10}$ (T$_{max}$)</th>
<th>Life expectancy $L_{10}$ IPC</th>
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<td>4.1</td>
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<td>110 000</td>
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<td>18...28</td>
<td>46</td>
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<td>3 650</td>
<td>-20...+70</td>
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<td>69 000 / 30 000</td>
<td>105 000</td>
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<tr>
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<td>36...60</td>
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<td>2.5</td>
<td>2 700</td>
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<td>69 000 / 32 500</td>
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<td>3.2</td>
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<td>69 000 / 30 000</td>
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</table>

Subject to change

Further variants can be found on page 57.

Further variants can be found on page 57.

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level $L_{WA}$ ISO 10302 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 (PBT) Impeller: GRP (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 24, TR 64
- **Weight:** 270 g

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

---

1) Fiberglass-reinforced plastic.
DC axial fans

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

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

**Series 4400 VWC0119AUGBS**

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>Air flow m³/h</th>
<th>Air flow cfm</th>
<th>Nominal voltage</th>
<th>Nominal current</th>
<th>Sound pressure level dB(A)</th>
<th>Sound power level Bel(A)</th>
<th>Power consumption Watts</th>
<th>Nominal speed rpm</th>
<th>Temperature range °C</th>
<th>Service life L(<em>{10}) (T(</em>{max}))</th>
<th>Service life L(_{10}) (40 °C)</th>
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<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>kW</td>
<td>rpm</td>
<td>°C</td>
<td>Hours</td>
<td>Hours</td>
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<td>12</td>
<td>7...14</td>
<td>50</td>
<td>6.0</td>
<td>8.6</td>
<td>4 300</td>
<td>-20...+70</td>
<td>57 500 / 27 500</td>
<td>97 500</td>
</tr>
<tr>
<td>4412/2 HHP</td>
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<td>168</td>
<td>12</td>
<td>7...14</td>
<td>55</td>
<td>6.4</td>
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<td>5 000</td>
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<td>50 000 / 25 000</td>
<td>85 000</td>
</tr>
<tr>
<td>4414 H</td>
<td>240</td>
<td>141</td>
<td>24</td>
<td>18...28</td>
<td>50</td>
<td>6.0</td>
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<td>-20...+70</td>
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<td>13.0</td>
<td>5 000</td>
<td>-20...+70</td>
<td>50 000 / 25 000</td>
<td>85 000</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\(_W\) ISO 10302 measured on a hemisphere with a radius 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

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Max. 285 m³/h

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Finger guards from p. 254
Air performance measured according to ISO 5801. Installation category A, without contact protection.

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

**Possible special versions:**
- 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 4100 N VUC0119YUJB5**

**Nominal data**

<table>
<thead>
<tr>
<th>Type</th>
<th>Flow m³/h</th>
<th>cfm</th>
<th>Voltage range</th>
<th>Sound pressure level</th>
<th>Sound power level</th>
<th>Nominal speed</th>
<th>Power consumption</th>
<th>Life expectancy L10a (40 °C)</th>
<th>Curve</th>
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<tr>
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<td>70 000 / 50 000</td>
<td>117 500</td>
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<td>49 5.7</td>
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<td>160</td>
<td>94</td>
<td>48 36...60</td>
<td>44 5.3</td>
<td>3.6 2 800</td>
<td>-20...+75</td>
<td>85 000 / 37 500</td>
<td>142 500</td>
<td>1</td>
</tr>
<tr>
<td>4188 N0M</td>
<td>160</td>
<td>94</td>
<td>48 36...60</td>
<td>44 5.3</td>
<td>3.5 2 800</td>
<td>-30...+75</td>
<td>85 000 / 37 500</td>
<td>142 500</td>
<td>1</td>
</tr>
</tbody>
</table>

Subject to change

**Air performance**

- **Max. 237 m³/h**
- **DC axial fans**
- **119 x 38 mm**
**DC axial fans**

- **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 22 UL 1007, TR 64
- **Highlights:** Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 390 g

---

**Series 4100 N**

High Performance

VUC0119YUJB5

**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>m/s</th>
<th>rpm</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>4118 NH6</td>
<td>260</td>
<td>153</td>
<td>12</td>
<td>9..15</td>
<td>60</td>
<td>6.8</td>
<td>12.0</td>
<td>5 000</td>
<td>-20...+65</td>
<td>70 000 / 40 000</td>
</tr>
<tr>
<td>4112 NH4</td>
<td>310</td>
<td>182</td>
<td>12</td>
<td>9..14</td>
<td>67</td>
<td>7.4</td>
<td>20.0</td>
<td>6 000</td>
<td>-20...+65</td>
<td>65 000 / 37 500</td>
</tr>
<tr>
<td>4114 NH3</td>
<td>355</td>
<td>209</td>
<td>12</td>
<td>16..30</td>
<td>60</td>
<td>6.8</td>
<td>12.0</td>
<td>5 000</td>
<td>-20...+65</td>
<td>65 000 / 35 000</td>
</tr>
<tr>
<td>4114 NH6</td>
<td>390</td>
<td>230</td>
<td>24</td>
<td>16..30</td>
<td>70</td>
<td>7.6</td>
<td>45.0</td>
<td>7 500</td>
<td>-20...+65</td>
<td>65 000 / 35 000</td>
</tr>
<tr>
<td>4118 NH5</td>
<td>440</td>
<td>259</td>
<td>24</td>
<td>16..30</td>
<td>73</td>
<td>8.1</td>
<td>65.0</td>
<td>8 400</td>
<td>-20...+65</td>
<td>60 000 / 32 500</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**

(See chapter DC fans - specials)

- Speed signal
- Go / NoGo alarm
- Alarm with speed limit
- External temperature sensor
- Internal temperature sensor
- PWM control input
- Analog control input
- Moisture protection
- Salt spray protection
- Degree of protection: IP 54 / IP 68

---

1) Fiberglass-reinforced plastic

**Max. 440 m³/h**

Air performance measured according to ISO 5801.

Installation category A, without contact protection.

Noise: Total sound power level Lₜₐₜ measured on a hemisphere with a radius of 2 m.

Sound pressure level L₁ₐ measured at 1 m distance from fan axis.

---

For detailed information see http://www.ebmpapst.com/general conditions

---

**Accessories**

AC centrifugal fans

DC centrifugal fans

DC axial fans – specials

AC axial fans

Representatives

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Finger guards from p. 254
Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level $L_{WA}$ ISO 10302 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 (standard)
- Analog control input
- Moisture protection

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

### 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</th>
<th>°C</th>
<th>Service life L₁₀ (40 °C)</th>
<th>Service life L₁₀ (Tₘₐₓ)</th>
<th>Life expectancy LIPC (40 °C)</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>4154 N/2 H7P</td>
<td>465</td>
<td>274</td>
<td>24</td>
<td>16...30</td>
<td>77</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>
<td>(1)</td>
<td></td>
</tr>
<tr>
<td>4154 N/2 H8P</td>
<td>540</td>
<td>315</td>
<td>24</td>
<td>16...30</td>
<td>80</td>
<td>8.9</td>
<td>120</td>
<td>11 000</td>
<td>-20...+75</td>
<td>55 000 / 22 500</td>
<td>92 500</td>
<td>(2)</td>
<td></td>
</tr>
<tr>
<td>4158 N/2 H7P</td>
<td>465</td>
<td>274</td>
<td>48</td>
<td>36...72</td>
<td>77</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>
<td>(1)</td>
<td></td>
</tr>
<tr>
<td>4158 N/2 H8P</td>
<td>540</td>
<td>315</td>
<td>48</td>
<td>36...72</td>
<td>80</td>
<td>8.9</td>
<td>120</td>
<td>11 000</td>
<td>-20...+75</td>
<td>55 000 / 22 500</td>
<td>92 500</td>
<td>(2)</td>
<td></td>
</tr>
</tbody>
</table>

Subject to change

Speed control range from 500 rpm 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 14.

* 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 10302 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 $L_{\text{WA}}$ ISO 10302 measured on a hemisphere with a radius of 2 m.
Sound pressure level $L_{\text{PA}}$ 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 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)

### Series DV 4100 VKC0119AUJBS

#### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow m(^3)/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>Power consumption* Watts</th>
<th>Nominal speed rpm (^{-1})</th>
<th>Temperature range °C</th>
<th>Life expectancy L(_{10}) IPC Hours</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>
</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>
</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>
</tr>
</tbody>
</table>

Subject to change

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

---

1) Fiberglass-reinforced plastic

---

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level $L_{\text{WA}}$ ISO 10302 measured on a hemisphere with a radius of 2 m.
Sound pressure level $L_{\text{PA}}$ 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. 254
Air performance measured according to ISO 5801. Installation category A, without contact protection.

Noise: Total sound power level $L_{\text{W}}$ ISO 10302 measured on a hemisphere with a radius of 2 m. Sound pressure level $L_{\text{p}}$ 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

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

Subject to change
* see drawing
** Power consumption at free air flow, these values can be significantly higher in the operating point.

Material: Housing: GRP\(^1\) (PBT)  
Impeller: GRP\(^1\) (PA)

Direction of air flow: Exhaust over struts

Direction of rotation: Counterclockwise, looking towards rotor

Connection: Via single wires AWG 22, TR 64

Weight: 310 g

1) Fiberglass-reinforced plastic.
### DC diagonal fan

**Material:** Housing: GRP\(^1\) (PBT)
Available in Die-cast aluminum
Metal flange
Impeller: GRP\(^1\) (PA)

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

**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)

---

**Nominal data**

<table>
<thead>
<tr>
<th>Type</th>
<th>m(^3)/h</th>
<th>cfm</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>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>70 000 / 40 000</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>70 000 / 40 000</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>70 000 / 40 000</td>
</tr>
<tr>
<td>DV 5214/2 HP</td>
<td>320</td>
<td>188</td>
<td>24</td>
<td>16...30</td>
<td>62</td>
<td>7.2</td>
<td>38.5</td>
<td>6 000</td>
<td>62 500 / 35 000</td>
</tr>
</tbody>
</table>

Standard model comes with speed signal and PWM control input. Other versions by request.

- 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.

---

**Series DV 5200 VKC0127AUJBS**

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

---

**Possible special versions:**
- 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

---

**Finger guards**

Finger guards from p. 254
Max. 260 m³/h

### DC axial fans

- **135 x 38 mm**

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

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

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

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

- **Highlights:** Housing with grounding lug for screw M4 x 8 (Torx) 48 V design incl. screws.

- **Weight:** 650 g

---

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

---

### Series 5100 N VWC0135YULBS

#### 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 pressure level</th>
<th>Sound power level</th>
<th>Shaft-sleeve bearings</th>
<th>Power consumption*</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L₁₀⁻¹₀⁻°C (40 °C)</th>
<th>Service life L₁₀⁻¹₀⁻°C (Tmax)</th>
<th>Life expectancy L₁₀⁻¹₀⁻°C (40 °C, see page 15)</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>5112 N</td>
<td>260</td>
<td>153</td>
<td>12</td>
<td>6...15</td>
<td>48</td>
<td>6.1</td>
<td>■</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>
<td>1</td>
</tr>
<tr>
<td>5114 N</td>
<td>260</td>
<td>153</td>
<td>24</td>
<td>12...30</td>
<td>48</td>
<td>6.1</td>
<td>■</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>
<td>1</td>
</tr>
<tr>
<td>5118 N</td>
<td>260</td>
<td>153</td>
<td>48</td>
<td>24...60</td>
<td>48</td>
<td>6.1</td>
<td>■</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>
<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 Lₚ,W measured on a hemisphere with a radius of 2 m.
Sound pressure level Lₚ,A 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.

- Material: Housing: 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 22, TR 64
- Highlights: Housing with grounding lug for screw M4 x 8 (Torx)
- Weight: 900 g

1) Fiberglass-reinforced plastic.

Series 5300
VUC0140AULCS

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 pressure level</th>
<th>Sound power level</th>
<th>Power consumption*</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life (L10)</th>
<th>Life expectancy (L1,000 hours)</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>5314/2 HP</td>
<td>340</td>
<td>200</td>
<td>VDC</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>VDC</td>
<td>48</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 $L_{W_{A}}$ ISO 10302 measured on a hemisphere with a radius of 2 m.

Sound pressure level $L_{p_{A}}$ 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
- Grade of protection: IP 54

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.

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow $m^3/h$</th>
<th>Air flow cfm</th>
<th>Nominal voltage VDC</th>
<th>Voltage range</th>
<th>Sound pressure level $L_{p_{A}}$ dB(A)</th>
<th>Bel(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>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>60</td>
<td>6000</td>
<td>-20...+70</td>
<td>70 000</td>
<td>35 000</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>60</td>
<td>6000</td>
<td>-20...+70</td>
<td>70 000</td>
<td>35 000</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>70</td>
<td>7000</td>
<td>-20...+70</td>
<td>62 500</td>
<td>30 000</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>60</td>
<td>6000</td>
<td>-20...+70</td>
<td>70 000</td>
<td>35 000</td>
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<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>70</td>
<td>7000</td>
<td>-20...+70</td>
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<td>30 000</td>
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<td>5318/2 TDH4P</td>
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<td>36...72</td>
<td>79</td>
<td>8.8</td>
<td>149</td>
<td>9200</td>
<td>-20...+65</td>
<td>57 500</td>
<td>32 500</td>
</tr>
</tbody>
</table>

Subject to change

Finger guards from p. 254
DC axial fans
Ø 150 x 38 mm

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

- Direction of air flow: Exhaust over struts

- Direction of rotation: Counterclockwise, looking towards rotor

- Connection: Via single wires AWG 22, TR 64

- Highlights: Housing with grounding lug for screw M4 x 8 (Torx)

- Weight: 620 g

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

### Nominal data

<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>Power consumption*</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L₁₀(40 °C)</th>
<th>Life expectancy LIPC</th>
<th>Curve</th>
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</thead>
<tbody>
<tr>
<td>7112 N</td>
<td>308</td>
<td>181</td>
<td>12</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>80 000 / 37 500</td>
<td>135 000</td>
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<tr>
<td>7114 N</td>
<td>308</td>
<td>181</td>
<td>24</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>80 000 / 37 500</td>
<td>135 000</td>
<td>1</td>
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<td>3 350</td>
<td>-25...+72</td>
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<td>2 850</td>
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<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.

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

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. 360 m³/h
Max. 360 m³/h

DC axial fans
Ø 150 x 55 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 22, TR 64
- **Highlights:** Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 725 g

1) Fiberglass-reinforced plastic

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

#### Series 7200 N
VWS0143XULCS

<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>Shaft sleeve bearings</th>
<th>Fan range</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 (Tmax), dem.pot standard</th>
<th>Life expectancy L₁₀ gen (40 °C)</th>
<th>See page 13</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></td>
<td>Watts</td>
<td>rpm</td>
<td>°C</td>
<td>Hours</td>
<td>Hours</td>
<td>Hours</td>
<td>Hours</td>
<td></td>
</tr>
<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></td>
<td></td>
<td>12.0</td>
<td>3 050</td>
<td>-25...+72</td>
<td>80 000 / 37 500</td>
<td>135 000</td>
<td>135 000</td>
<td>135 000</td>
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<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>
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<td>12.0</td>
<td>3 050</td>
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<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>
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<td>-25...+72</td>
<td>80 000 / 37 500</td>
<td>135 000</td>
<td>135 000</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 10302 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 elevation 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

---

Finger guards from p. 254
DC axial fans
172 x 150 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: 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

Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level $L_{WA}$ ISO 10302 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

#### Series 6400

| Type     | Air flow $m^3/h$ | Air flow cfm | Voltage range | Sound pressure level $dB(A)$ | Sound power level | Power consumption || Normal speed | Temperature range |
|----------|------------------|--------------|---------------|-----------------------------|-----------------|------------------|---------------|-----------------|
| 6412 M   | 350              | 206          | 12            | 8...15                      | 52              | 6.0              | ■             | 12              | 2 850            | -20...+72        | 80 000 / 37 500  | 135 000          |
| 6424 M   | 350              | 206          | 24            | 12...32                     | 52              | 6.0              | ■             | 12              | 2 850            | -20...+72        | 80 000 / 37 500  | 135 000          |
| 6424     | 410              | 241          | 24            | 12...28                     | 57              | 6.4              | ■             | 17              | 3 400            | -20...+72        | 75 000 / 35 000  | 127 500          |
| 6424 H   | 480              | 283          | 24            | 12...28                     | 63              | 7.1              | ■             | 26              | 4 000            | -20...+55**      | 70 000 / 50 000  | 117 500          |
| 6448     | 410              | 241          | 48            | 26...60                     | 57              | 6.4              | ■             | 17              | 3 400            | -20...+72        | 75 000 / 35 000  | 127 500          |
| 6448 H*  | 480              | 283          | 48            | 28...60                     | 63              | 7.1              | ■             | 26              | 4 000            | -20...+55**      | 70 000 / 50 000  | 117 500          |

Subject to change

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

### Nominal data

- Nominal voltage
- Nominal air flow
- Voltage range
- Sound pressure level
- Sound power level
- Power consumption
- Normal speed
- Temperature range
- Service life $L_{10}$ (40 °C) ebm-papst standard
- Service life $L_{0.1}(T)_{\text{avg}}$ ebm-papst standard
- Life expectancy $L_{10}$ (40 °C) see page 15
- Curve

| Type     | Air flow $m^3/h$ | Air flow cfm | Voltage range | Sound pressure level $dB(A)$ | Sound power level | Power consumption || Normal speed | Temperature range |
|----------|------------------|--------------|---------------|-----------------------------|-----------------|------------------|---------------|-----------------|
| 6412 M   | 350              | 206          | 12            | 8...15                      | 52              | 6.0              | ■             | 12              | 2 850            | -20...+72        | 80 000 / 37 500  | 135 000          |
| 6424 M   | 350              | 206          | 24            | 12...32                     | 52              | 6.0              | ■             | 12              | 2 850            | -20...+72        | 80 000 / 37 500  | 135 000          |
| 6424     | 410              | 241          | 24            | 12...28                     | 57              | 6.4              | ■             | 17              | 3 400            | -20...+72        | 75 000 / 35 000  | 127 500          |
| 6424 H   | 480              | 283          | 24            | 12...28                     | 63              | 7.1              | ■             | 26              | 4 000            | -20...+55**      | 70 000 / 50 000  | 117 500          |
| 6448     | 410              | 241          | 48            | 26...60                     | 57              | 6.4              | ■             | 17              | 3 400            | -20...+72        | 75 000 / 35 000  | 127 500          |
| 6448 H*  | 480              | 283          | 48            | 28...60                     | 63              | 7.1              | ■             | 26              | 4 000            | -20...+55**      | 70 000 / 50 000  | 117 500          |

Subject to change

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

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level $L_{WA}$ ISO 10302 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 $L_{W}$ ISO 10302 measured on a hemisphere with a radius of 2 m.
Sound pressure level $L_{p}$ A 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
- Reversible direction of rotation

Max. 900 m³/h

DC axial fans
172 x 150 x 51 mm

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

1) Fiberglass-reinforced plastic

Series 6400 TD VWS0143XULCS

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</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min Max</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>90</td>
<td>53</td>
<td>24</td>
<td>18</td>
<td>16...28</td>
<td>18</td>
<td>7.4</td>
<td>800</td>
<td>50</td>
<td>-20...+60</td>
<td>70 000 / 45 000</td>
</tr>
<tr>
<td>6448 TD...</td>
<td>90</td>
<td>53</td>
<td>48</td>
<td>18</td>
<td>40...55*</td>
<td>18</td>
<td>7.4</td>
<td>800</td>
<td>50</td>
<td>-20...+60</td>
<td>70 000 / 45 000</td>
</tr>
<tr>
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<td>90</td>
<td>53</td>
<td>48</td>
<td>18</td>
<td>36...72</td>
<td>18</td>
<td>8.6</td>
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<td>7500</td>
<td>-20...+60</td>
<td>70 000 / 45 000</td>
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</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 175.

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

Subject to change

Finger guards from p. 254
### DC diagonal fan

**Series DV 6400**

**VKS0154XULCS**

#### 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>
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<tbody>
<tr>
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<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>
</tr>
<tr>
<td>DV 6448/12</td>
<td>530</td>
<td>312</td>
<td>48</td>
<td>26...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>
</tr>
</tbody>
</table>

Subject to change

---

### Material:
- Housing: Die-cast aluminum
- Impeller: GRP\(^1\) (PA)

### Direction of air flow:
- Exhaust over struts

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

### Connection:
- Via single wires AWG 22, TR 64

### Highlights:
- Housing with grounding lug for screw M4 x 8 (Torx)
- 820 g

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

---

\(^1\) Fiberglass-reinforced plastic.

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Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level \(L_{W}\) ISO 10302 measured on a hemisphere with a radius 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

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**Finger guards from p. 254**
Max. 680 m³/h

DC diagonal fan
172 x 160 x 51 mm

- Material:
  Housing: Die-cast aluminum
  Impeller: GRP³ (PA)

- Direction of air flow:
  Exhaust over struts

- Direction of rotation:
  Counterclockwise, looking towards rotor

- Connection:
  Via single wire AWG 22, TR 64

- Highlights:
  3-phase fan drive with very smooth operation and high efficiency. Housing with grounding lug for screw M4 x 8 (Torx) 820 g

- Weight:

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

Series DV 6400 TD
TURBOFAN
VKS0154XULCS

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow</th>
<th>Air flow</th>
<th>Nominal voltage</th>
<th>Nominal voltage</th>
<th>Sound pressure level</th>
<th>Sound pressure level</th>
<th>Sound power level</th>
<th>Sound power level</th>
<th>Power consumption*</th>
<th>Power consumption*</th>
<th>Temperature range</th>
<th>Temperature range</th>
<th>Service life L&quot; (40 °C)</th>
<th>Service life L&quot; (40 °C)</th>
<th>Life expectancy L' (40 °C)</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min</td>
<td>Max</td>
<td>Min</td>
<td>Max</td>
<td>Min</td>
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<td>DV 6424 TD...</td>
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<td>DV 6448 TD...</td>
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<td>100</td>
<td>59</td>
<td>24</td>
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<td>29</td>
<td>71</td>
<td>7.9</td>
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<td>86</td>
<td>2</td>
<td>800</td>
<td>5 500</td>
</tr>
<tr>
<td>100</td>
<td>680</td>
<td>400</td>
<td>24</td>
<td>16...28</td>
<td>71</td>
<td>7.9</td>
<td>2</td>
<td>86</td>
<td>800</td>
<td>5 500</td>
<td>-20...+60</td>
<td>110 000</td>
<td>175 000</td>
<td>150 000</td>
<td>175 000</td>
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</tr>
</tbody>
</table>

Subject to change

Models DV 6424 TD... and DV 6448 TD... are available in customer-specific, custom-developed variants only.
The figures indicated are technically feasible benchmark values. The fans can be specially adapted to your application with signal outputs and control inputs.
For details of the technical possibilities, refer to the chapters on the sensor signal, alarm signal and control inputs beginning on page 175.
* 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_W ISO 10302 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_p A 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
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 18, 20 or AWG 22, TR 64, speed and alarm signals: AWG 22
- Highlights: Highly efficient and smoothly operating 3-phase fan drive
Housing with grounding lug for screw M4 x 8 (Torx)
- Weight: 875 g

Subject to change

Series 6300 NTD
VWS0148PULDS

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>Sound pressure level Wr</th>
<th>dB(A)</th>
<th>Bel(A)</th>
<th>Power consumption* Watts</th>
<th>Nominal speed rpm</th>
<th>Temperature range °C</th>
<th>Service life L10 (40 °C)</th>
<th>Service life L10 (Tmax)</th>
<th>Life expectancy L10 (IPC)</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>6318 N/2 TDH3P-303</td>
<td>1030</td>
<td>611</td>
<td>48</td>
<td>36...72</td>
<td>76</td>
<td>8.3</td>
<td>160</td>
<td>7 500</td>
<td>-20...+70</td>
<td>60 000 / 30 000</td>
<td>102 500</td>
<td>1</td>
<td></td>
<td></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.

Finger guards
from p. 254

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level LWA=ISO 10322 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 axial fans

**Max. 930 m³/h**

**S-Force**

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

### Direction of air flow:
- Exhaust over struts

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

### Connection:
- Via single wire 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

### 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

### Nominal data for Series 6300 TD VWS148XULDS

<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 TDIHP-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</td>
<td>25 000</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</td>
<td>20 000</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.

### Air performance measured according to ISO 5801:
- Installation category A, without contact protection.
- Noise: Total sound power level $L_{W}$ measured on a hemisphere with a radius 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
DC axial fans

- **Material:** Housing: Die-cast aluminum
  Impeller: GRP (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)
- **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 VWS0148PULCS**

**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 pressure level</th>
<th>Sound power level</th>
<th>Shaft sleeve bearings</th>
<th>Ball 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>Life expectancy Logn (40 °C)</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>6312 NM</td>
<td>340</td>
<td>200</td>
<td>12</td>
<td>8...16</td>
<td>5.7</td>
<td>8</td>
<td>2500</td>
<td>-20...+70</td>
<td>87 500 / 35 000</td>
<td>147 500</td>
<td>85 000 / 35 000</td>
<td>140 000</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>6312 NH</td>
<td>470</td>
<td>277</td>
<td>12</td>
<td>8...16</td>
<td>6.5</td>
<td>24</td>
<td>3500</td>
<td>-20...+70</td>
<td>82 500 / 32 500</td>
<td>134 500</td>
<td>85 000 / 32 500</td>
<td>140 000</td>
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<td>4</td>
<td></td>
</tr>
<tr>
<td>6314 NM</td>
<td>340</td>
<td>200</td>
<td>24</td>
<td>16...32</td>
<td>5.7</td>
<td>8</td>
<td>2500</td>
<td>-20...+70</td>
<td>87 500 / 35 000</td>
<td>147 500</td>
<td>85 000 / 35 000</td>
<td>140 000</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>6314 NN</td>
<td>420</td>
<td>247</td>
<td>24</td>
<td>16...32</td>
<td>6.3</td>
<td>13</td>
<td>3000</td>
<td>-20...+70</td>
<td>85 000 / 32 500</td>
<td>142 500</td>
<td>85 000 / 32 500</td>
<td>140 000</td>
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<td>3</td>
<td></td>
</tr>
<tr>
<td>6314 NH</td>
<td>470</td>
<td>277</td>
<td>24</td>
<td>16...32</td>
<td>6.5</td>
<td>20</td>
<td>3500</td>
<td>-20...+70</td>
<td>82 500 / 32 500</td>
<td>140 000</td>
<td>80 000 / 40 000</td>
<td>135 000</td>
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</tr>
<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>32</td>
<td>4000</td>
<td>-20...+70</td>
<td>80 000 / 40 000</td>
<td>135 000</td>
<td>80 000 / 40 000</td>
<td>135 000</td>
<td></td>
<td>5</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.

---

Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level Lₚ,W ISO 10302 measured on a hemisphere with a radius of 2 m.
Sound pressure level Lₚ,A 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 \( L_{W_{A}} \) ISO 10302 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 m³/h</th>
<th>cfm</th>
<th>VDC</th>
<th>VDC</th>
<th>Sound pressure level dB(A)</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm (^{-1})</th>
<th>Temp. range °C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>6314 N/2 TDHHP</td>
<td>990</td>
<td>583</td>
<td>24</td>
<td>16...36</td>
<td>75</td>
<td>8.3</td>
<td>156</td>
<td>7200</td>
<td>-20...+70</td>
<td>62 500</td>
<td>32 500</td>
</tr>
<tr>
<td>6318 N/2 TDHP</td>
<td>805</td>
<td>473</td>
<td>48</td>
<td>36...60</td>
<td>71</td>
<td>7.8</td>
<td>95</td>
<td>6000</td>
<td>-20...+70</td>
<td>75 000</td>
<td>37 500</td>
</tr>
<tr>
<td>6318 N/2 TDH3P</td>
<td>1030</td>
<td>606</td>
<td>48</td>
<td>36...72</td>
<td>76</td>
<td>8.4</td>
<td>160</td>
<td>7500</td>
<td>-20...+70</td>
<td>60 000</td>
<td>30 000</td>
</tr>
<tr>
<td>6318 N/2 TDH4P</td>
<td>1210</td>
<td>712</td>
<td>48</td>
<td>36...72</td>
<td>80</td>
<td>8.8</td>
<td>257</td>
<td>9000</td>
<td>-20...+65</td>
<td>45 000</td>
<td>25 000</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.

### DC axial fans

**S-Panther**

Max. 1210 m³/h

**Material:** Housing: Die-cast aluminum
Impeller: GRP\(^1\) (PA)

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

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

**Connection:**
- AWG 18, 20, UL 1007, TR 64; speed signal and control input: 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:** 890 g

---

1) Fiberglass-reinforced plastic.

---

Air performance measured according to ISO 5801. Installation category A, without contact protection. Noise: Total sound power level \( L_{W} \) ISO 10302 measured on a hemisphere with a radius 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

---

Finger guards from p. 254
### Series 6300 VWS0148XULCS

<table>
<thead>
<tr>
<th>Type</th>
<th>Nominal data</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>Ballbearings</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>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>6312/2 MP-204</td>
<td>360</td>
<td>211</td>
<td>12</td>
<td>8...16</td>
<td>49</td>
<td>5.8</td>
<td></td>
<td>15</td>
<td>3 500</td>
<td>-20...+65</td>
<td>82 500 / 47 500</td>
<td>140 000</td>
<td>1</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></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></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></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></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.

**Notes:**
- 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
- 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

**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
Max. 930 m³/h

**S-Force**

DC axial fans
Ø 172 x 51 mm

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

- **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

- **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)
- **Weight:** 910 g

---

**Series 6300 TD**
VWS0148XULDS

**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</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<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>■</td>
<td>40</td>
<td>5 500</td>
<td>-20...+70</td>
<td>75 000 / 37 500</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>■</td>
<td>42</td>
<td>5 500</td>
<td>-20...+65</td>
<td>75 000 / 42 500</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>■</td>
<td>40</td>
<td>5 500</td>
<td>-20...+75</td>
<td>75 000 / 30 000</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>■</td>
<td>67</td>
<td>7 000</td>
<td>-20...+75</td>
<td>62 500 / 25 000</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>■</td>
<td>150</td>
<td>9 200</td>
<td>-20...+75</td>
<td>52 500 / 20 000</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>■</td>
<td>42</td>
<td>5 500</td>
<td>-20...+65</td>
<td>75 000 / 42 500</td>
</tr>
<tr>
<td>6318/2 TDHP</td>
<td>600</td>
<td>353</td>
<td>48</td>
<td>36...72</td>
<td>60</td>
<td>7.3</td>
<td>■</td>
<td>40</td>
<td>5 500</td>
<td>-20...+75</td>
<td>75 000 / 30 000</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>■</td>
<td>67</td>
<td>7 000</td>
<td>-20...+75</td>
<td>62 500 / 25 000</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>■</td>
<td>150</td>
<td>9 200</td>
<td>-20...+75</td>
<td>52 500 / 20 000</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.*

---

**Type**

- **Fan type**
  - 6318/2 TDHHP
  - 6318/2 TDH4P

- **Optimum operating range (W)**
  - 115
  - 270

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: 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
**DC diagonal fan**

Ø 172 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:** (+) and GND: AWG 18, UL 1007, TR 64; speed and alarm signal: AWG 22, UL 1007, TR 64
- **Highlights:** Highly efficient and smoothly operating 3-phase fan drive
  Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 1050 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 DV 6300 TD VKS0168XULDS**

<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>Safe-decibel bearings</th>
<th>Endurance</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L10 (40 °C)</th>
<th>Service life L10 (T max)</th>
<th>Life expectancy L10 IPC (40 °C)</th>
<th>Curves</th>
</tr>
</thead>
<tbody>
<tr>
<td>DV 6314/2 TDHP</td>
<td>730 429 24</td>
<td>16…36 72</td>
<td>8.0</td>
<td>118 4850</td>
<td>-20...+60</td>
<td>75 000 / 47 000</td>
<td>127 500</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DV 6318/2 TDHP*</td>
<td>630 371 48</td>
<td>36…72 68</td>
<td>7.6</td>
<td>75 4000</td>
<td>-20...+65</td>
<td>70 000 / 40 000</td>
<td>117 500</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>DV 6318/2 TDHP**</td>
<td>730 429 48</td>
<td>36…72 72</td>
<td>8.0</td>
<td>118 4850</td>
<td>-20...+65</td>
<td>60 000 / 32 500</td>
<td>102 500</td>
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<td></td>
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<tr>
<td>DV 6318/2 TDH4P</td>
<td>1050 617 48</td>
<td>36…72 77</td>
<td>8.7</td>
<td>300 6500</td>
<td>-20...+65</td>
<td>50 000 / 27 500</td>
<td>85 000</td>
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</tr>
<tr>
<td>DV 6318/2 TDH5P**</td>
<td>1100 667 48</td>
<td>36…72 79</td>
<td>8.9</td>
<td>360 6800</td>
<td>-20...+65</td>
<td>40 000 / 22 500</td>
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<td></td>
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<td></td>
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</tr>
</tbody>
</table>

1) Fiberglass-reinforced plastic

Subject to change

* On request
** Rotor protrusion a = 3 mm

---

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

---

Speed control range from 1000 rpm² 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.
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)
- **Weight:** 1000 g

1) Fiberglass-reinforced plastic

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

### Nominal data

<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>Shaft sleeve bearings</th>
<th>Service life L₁₀ (40 °C) dem-papst standard</th>
<th>Service life L₁₀ (Tmax) dem-papst standard</th>
<th>Life expectancy L₁₀IPC (40 °C) see page 15</th>
<th>Nominal speed</th>
<th>rpm⁻¹</th>
<th>Temperature range °C</th>
<th>Hours</th>
<th>Hours</th>
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<tbody>
<tr>
<td>2214 F/2 TDHO</td>
<td>790</td>
<td>465</td>
<td>24</td>
<td>16...36</td>
<td>62</td>
<td>7.1</td>
<td></td>
<td>35</td>
<td>4250</td>
<td>-20...+75</td>
<td>90 000</td>
<td>42 500</td>
<td>152 500</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2214 F/2 TDHHO</td>
<td>940</td>
<td>553</td>
<td>24</td>
<td>16...36</td>
<td>66</td>
<td>7.4</td>
<td></td>
<td>48</td>
<td>5000</td>
<td>-20...+70</td>
<td>85 000</td>
<td>42 500</td>
<td>142 500</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>2218 F/2 TDHO</td>
<td>790</td>
<td>465</td>
<td>48</td>
<td>36...57</td>
<td>62</td>
<td>7.1</td>
<td></td>
<td>35</td>
<td>4250</td>
<td>-20...+75</td>
<td>90 000</td>
<td>42 500</td>
<td>152 500</td>
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<td>1</td>
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<tr>
<td>2218 F/2 TDHHO</td>
<td>940</td>
<td>553</td>
<td>48</td>
<td>36...72</td>
<td>66</td>
<td>7.4</td>
<td></td>
<td>48</td>
<td>5000</td>
<td>-20...+70</td>
<td>85 000</td>
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<tr>
<td>2218 F/2 TDHHO</td>
<td>1220</td>
<td>718</td>
<td>48</td>
<td>36...72</td>
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<td>8.2</td>
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<td>103</td>
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<td>-20...+65</td>
<td>70 000</td>
<td>40 000</td>
<td>117 500</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

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

### Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_WA 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. 254**
DC axial fans

- Material: Fan housing: Die-cast aluminum
  Impeller: GRP
- Direction of air flow: Exhaust over struts
- Direction of rotation: Counterclockwise, looking towards rotor
- Connection: Via terminal strip
- Highlights: 3-phase fan drive with very smooth operation
  Electrical commutation completely integrated
- Weight: 2.1 kg

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
- Degree of protection: IP 54

Series 2200 TD
VWS0196XULCS

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>Power consumption Watts</th>
<th>Nominal speed rpm⁻¹</th>
<th>Temperature range °C</th>
<th>Service life L₁₀(-10°C)</th>
<th>Life expectancy L₁₀PC (°C)</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>2214/2 TDO</td>
<td>1000</td>
<td>588</td>
<td>24</td>
<td>16...30</td>
<td>59</td>
<td>6.8</td>
<td>50</td>
<td>3 000</td>
<td>-20...+60</td>
<td>80 000 / 50 000</td>
<td>135 000</td>
<td>①</td>
</tr>
<tr>
<td>2218/2 TDO</td>
<td>1000</td>
<td>588</td>
<td>48</td>
<td>36...57</td>
<td>59</td>
<td>6.8</td>
<td>50</td>
<td>3 000</td>
<td>-20...+60</td>
<td>80 000 / 50 000</td>
<td>135 000</td>
<td>①</td>
</tr>
</tbody>
</table>

Subject to change

* 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 L₁₀ and ISO 10322 measured on a hemisphere with a radius of 2 m.

Sound pressure level Lₚ 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

Finger guards from p. 254
**DC diagonal module**

- **Material:** Housing and support bracket: Fiberglass-reinforced plastic (PA6)
  Impeller: Fiberglass-reinforced plastic (PA6)
  Rotor: Painted black

- **Number of blades:** 7

- **Direction of air flow:** "V"

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

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

- **Insulation class:** "B"

- **Installation position:** Any

- **Condensation drainage holes:** None, seen on rotor

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

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

---

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Curve</th>
<th>Nominal voltage</th>
<th>Nominal voltage range</th>
<th>Nominal air flow</th>
<th>Nominal speed</th>
<th>Power consumption</th>
<th>Input current</th>
<th>Sound power level</th>
<th>Admissible amb. temp.</th>
<th>Weight</th>
<th>Technical features and connection diagram</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>4.7</td>
<td>76</td>
<td>-25...+60</td>
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<td>p. 277 / J5</td>
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<td>24</td>
<td>16...28</td>
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<td>5.4</td>
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<td>-25...+70</td>
<td>1.7</td>
<td>p. 277 / J5</td>
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</tr>
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<td>M1G 074-BF</td>
<td>①</td>
<td>48</td>
<td>36...57</td>
<td>1095</td>
<td>3 650</td>
<td>3.4</td>
<td>77</td>
<td>-25...+60</td>
<td>1.8</td>
<td>p. 277 / J5</td>
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</tr>
<tr>
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<td>M1G 074-BF</td>
<td>①</td>
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<td>36...57</td>
<td>1245</td>
<td>4 140</td>
<td>5.6</td>
<td>81</td>
<td>-25...+70</td>
<td>1.7</td>
<td>p. 277 / J5</td>
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</tbody>
</table>

Subject to change.

---

![Curves](image)

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](http://www.ebmpapst.com/general conditions)
- **Technical features:**
  - See connection diagram p. 277
- **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. 277

---

**Technical specifications:**

- Ø4.6 (4x)
- 80 ±1

**Dimensions:**

- Ø276 ±0.5
- Ø288
- Ø267 ±0.5

**Accessories:**

- AWG 20 cable,
  - 4x crimped splices

---

**Information:**

- DC axial fans
- DC centrifugal fans
- AC axial fans
- AC centrifugal fans
- AMax / EC axial fans
- Accessories
- Representatives
- DC fans – specials

---

**Technical features:**

- See connection diagram p. 277
- Immunity to interference according to EN 61000-6-2 (industrial environment)
- Interference emission according to EN 55022 (Class B)
- Lateral
- I (with customer connection to grounding conductor)
- EN 60335-1
- 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. 277

---

**Technical specifications:**

- Ø4.6 (4x)
- 80 ±1

**Dimensions:**

- Ø276 ±0.5
- Ø288
- Ø267 ±0.5

**Accessories:**

- AWG 20 cable,
  - 4x crimped splices

---

**Information:**

- DC axial fans
- DC centrifugal fans
- AC axial fans
- AC centrifugal fans
- AMax / EC axial fans
- Accessories
- Representatives
- DC fans – specials
### DC diagonal module

- **Material:**
  - Housing and support bracket: Plastic (PA)
  - Impeller: Plastic (PA)
  - Rotor: Painted black

- **Number of blades:** 7

- **Direction of air flow:** “V”

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

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

- **Insulation class:** "B"

- **Installation position:** Any

- **Condensation drainage holes:** None, seen on rotor

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

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

---

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Curve</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>Sound power level</th>
<th>Admissible amb. temp.</th>
<th>Weight</th>
<th>Technical features and connection diagram</th>
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<td>1</td>
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<td>16...28</td>
<td>1240</td>
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<td>170</td>
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<td>p. 277 / J5</td>
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<td>-25...+60</td>
<td>2.3</td>
<td>p. 277 / J5</td>
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</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, LaA 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.

---

* Current measured at nominal voltage.
- **Technical features:** See connection diagram p. 277
- **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

### Technical features:
- **Cable exit:** Lateral
- **Conformity with standard(s):** EN 60335-1
- **Approvals:** (24 V) EAC
  (48 V) EAC, CCC

### EMC (48 V):
- Immunity to interference according to EN 61000-6-2 (industrial environment)
- Interference emission according to EN 55022 (Class B, household environment)
Max. 2070 m³/h

DC axial fans
Ø 250 mm

- **Material:**
  - Fan housing: Die-cast aluminum
  - Blades: Plastic (PP)
  - Rotor: Thick-film passivated

- **Number of blades:** 7

- **Direction of air flow:** "V"

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

- **Insulation class:** "B"

- **Installation position:** Any

- **Condensation drainage holes:** On rotor side

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

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

### VWT250XUNCS

#### 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>Pa</th>
<th>°C</th>
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<tr>
<td>W1G250-HJ87 -02</td>
<td>M1G 074-BF</td>
<td>24</td>
<td>16-28</td>
<td>2070</td>
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<td>M1G 074-BF</td>
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<td>36-57</td>
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<td>130</td>
<td>3.80</td>
<td>140</td>
<td>-25...+60</td>
</tr>
</tbody>
</table>

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, Leq measured at 1 m distance from fan axis. 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. 273
- **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

For self-tapping M5 screws

(1) Control input
(2) Speed monitoring
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

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

### 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>Pa</th>
<th>°C</th>
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</tr>
<tr>
<td>*1G 300</td>
<td>M1G 074-CF</td>
<td>48</td>
<td>36-57</td>
<td>2345</td>
<td>1830</td>
<td>80</td>
<td>1.90</td>
<td>100</td>
<td>-25..+60</td>
</tr>
</tbody>
</table>

Subject to change

### 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
- Technical features: See connection diagram p. 277
- EMC: Interference emission acc. to EN 55022 (Class B)
  Immunity to interference acc. to EN 61000-6-2 (industrial environment)
- Cable exit: Lateral
- Conformity with standard(s): EN 60950-1, UL 1004-1, CSA C22.2 no. 100
- Approvals: GOST, UL

### Technical Features

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

**Max. clearance for screw 6 mm**

**Connections diagrams** P. 277
DC centrifugal fans

DC centrifugal fan overview 93
DC centrifugal fans 95
DC tangential fans 148
DC centrifugal fans and blowers 150
**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 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 highly efficient RadiCal impellers.
## Centrifugal fans for DC operation

Overview of air performance

### Dimension

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Series</th>
<th>Air flow (m³/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>51 x 15</td>
<td>RLF 35</td>
<td>9.6</td>
</tr>
<tr>
<td>76 x 27</td>
<td>RL 48</td>
<td>22...28</td>
</tr>
<tr>
<td>97 x 93.5 x 33</td>
<td>RL 65</td>
<td>56...61</td>
</tr>
<tr>
<td>121 x 37</td>
<td>RL 90 N</td>
<td>40...55</td>
</tr>
<tr>
<td>127 x 25</td>
<td>RLF 100</td>
<td>64...80</td>
</tr>
<tr>
<td>135 x 38</td>
<td>RG 90 N</td>
<td>55</td>
</tr>
<tr>
<td>180 x 40</td>
<td>RG 125 N</td>
<td>60...137</td>
</tr>
<tr>
<td>180 x 40</td>
<td>RG 140 NTD</td>
<td>118</td>
</tr>
<tr>
<td>220 x 56</td>
<td>RG 160 N</td>
<td>139...209</td>
</tr>
<tr>
<td>220 x 56</td>
<td>RG 160 NTD</td>
<td>59...444</td>
</tr>
</tbody>
</table>

### Subject to change

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**Optional special versions** (see page 10)

On the catalog pages and in the overview on page 10, 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.

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 $L_W$ ISO 10302 measured on a hemisphere with a radius 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.

DC centrifugal fans

- **Material:** Scroll housing: GRP\(^1\)
- **Impeller:** GRP\(^1\)
- **Direction of air flow:** Axial: Intake, Centrifugal: Exhaust
- **Connection:** via single wires AWG 26, TR 64
- **Highlights:** Forward-curved impeller
- **Weight:** 40 g

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

Series RLF 35
VHS0035XUDAS

<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 power level</th>
<th>Sound power level</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life $L_{10}(40,^\circ C)$</th>
<th>Service life $L_{10}(T_{max})$</th>
<th>Life expectancy $L_{IPC}$ (40 °C)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RLF 35-8/12 N</td>
<td>9.6</td>
<td>5.6</td>
<td>VDC</td>
<td>8...13.2</td>
<td>5.5</td>
<td>3.5</td>
<td>6 700</td>
<td>-20...+70</td>
<td>60 000 / 30 000</td>
<td>102 500</td>
<td>(\text{subject to change})</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RLF 35-8/14 N</td>
<td>9.6</td>
<td>5.6</td>
<td>24</td>
<td>14...28</td>
<td>5.5</td>
<td>4.3</td>
<td>6 700</td>
<td>-20...+70</td>
<td>60 000 / 30 000</td>
<td>102 500</td>
<td>(\text{subject to change})</td>
<td></td>
</tr>
</tbody>
</table>

\(^1\) Fiberglass-reinforced plastic.

Max. 9.6 m\(^3\)/h

Subject to change

Air performance measured according to ISO 5801. Installation category A, without contact protection. Noise: Total sound power level $L_W$ ISO 10302 measured on a hemisphere with a radius 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.
DC centrifugal fans

- Material: Scroll housing: GRP<sup>1)</sup>
- Impeller: GRP<sup>1)</sup>
- Direction of air flow: Axial: Intake, Centrifugal: Exhaust
- Connection: via single wires AWG 26, TR 64
- Highlights: Forward-curved impeller
- Weight: 75 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

### Series RL 48
VHS0048XUEBS

#### 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</th>
<th>°C</th>
<th>Temperature range</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RL 48-19/12 ML</td>
<td>22</td>
<td>12.9</td>
<td>12</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>117 500</td>
<td></td>
</tr>
<tr>
<td>RL 48-19/12</td>
<td>28</td>
<td>16.5</td>
<td>12</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></td>
</tr>
<tr>
<td>RL 48-19/14 ML</td>
<td>22</td>
<td>12.9</td>
<td>24</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>117 500</td>
<td></td>
</tr>
<tr>
<td>RL 48-19/14</td>
<td>28</td>
<td>16.5</td>
<td>24</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></td>
</tr>
<tr>
<td>RL 48-19/18 R-016</td>
<td>27</td>
<td>15.8</td>
<td>48</td>
<td>36...56</td>
<td>5.7</td>
<td>4.6</td>
<td>4 400</td>
<td>-32...+70</td>
<td>60 000 / 30 000</td>
<td>102 500</td>
<td></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<sub>W</sub> ISO 10302 measured on a hemisphere with a radius of 2 m.
Sound pressure level L<sub>p</sub> A 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

<sup>1</sup) Fiberglass-reinforced plastic.
### DC centrifugal fans

**Series RL 65**

<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>RL 65-21/12</td>
<td>56</td>
<td>32.9</td>
<td>12</td>
<td>6.8..13.8</td>
<td>6.6</td>
<td>15.0</td>
<td>4 500</td>
<td>-20..+70</td>
<td>60 000 / 30 000</td>
<td>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>6.8</td>
<td>19.2</td>
<td>4 900</td>
<td>-20..+55</td>
<td>55 000 / 40 000</td>
<td>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>6.6</td>
<td>14.0</td>
<td>4 500</td>
<td>-20..+70</td>
<td>60 000 / 30 000</td>
<td>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>6.8</td>
<td>18.0</td>
<td>4 900</td>
<td>-20..+60</td>
<td>55 000 / 35 000</td>
<td>92 500</td>
</tr>
<tr>
<td>RL 65-21/18/2 HPR-180</td>
<td>61</td>
<td>35.8</td>
<td>48</td>
<td>36..60</td>
<td>6.8</td>
<td>17.3</td>
<td>4 900</td>
<td>-20..+70</td>
<td>55 000 / 27 500</td>
<td>92 500</td>
</tr>
</tbody>
</table>

**Nominal data**

- **Material:** Scroll housing: GRP³
- **Impeller:** GRP¹
- **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:** (See chapter DC fans - specials):
  - Speed signal
  - Go / NoGo alarm
  - Alarm with speed limit
  - External temperature sensor
  - Internal temperature sensor
  - PWM control input
  - Analog control input
  - Moisture protection

¹ Fiberglass-reinforced plastic

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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
Max. 55 m³/h

**DC centrifugal fans**

- **Material:** Scroll housing: GRP¹
  - Impeller: GRP¹
  - Base plate: Sheet steel
- **Direction of air flow:** Axial: Intake
- **Connection:** Centrifugal: Exhaust via single wires AWG 22, TR 64
- **Highlights:** Forward curved impeller
- **Weight:** 420 g

¹ Fiberglass-reinforced plastic

### Series RL 90 N
VHS0090XUJBS

<table>
<thead>
<tr>
<th>Nominal data</th>
<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>Air flow</td>
<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>6.3</td>
<td>2 500</td>
<td>-30...+75</td>
<td>62 500 / 27 500</td>
<td>105 000</td>
</tr>
<tr>
<td>Nominal voltage</td>
<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>5.6</td>
<td>2 500</td>
<td>-20...+75</td>
<td>62 500 / 27 500</td>
<td>105 000</td>
</tr>
<tr>
<td>Voltage range</td>
<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>5.6</td>
<td>2 500</td>
<td>-30...+75</td>
<td>62 500 / 27 500</td>
<td>105 000</td>
</tr>
<tr>
<td>Sound power level</td>
<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>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

### Air performance measured according to:
- **ISO 5801.**
- **Installation category A, without contact protection.**
- **Note:** Total sound power level $L_{WA}$, ISO 10302 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.
- 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)

### Screw clip M4 or 8-32UNC. Screw-in depth max. 12.5 min. 9.0
Air performance measured according to: ISO 5801.
Installation category A, without contact protection.

- **Noise:** Total sound power level \( L_{W, A} \) ISO 10302 measured on a hemisphere with a radius of 2 m.
- **Sound pressure level:** \( L_{p, A} \) 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)

- **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

### DC centrifugal fans

#### Series RLF 100

**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 power level sound power level [W]</th>
<th>Ball bearings Sintec sleeve bearing - Ball bearing</th>
<th>Power consumption [W]</th>
<th>Nominal speed rpm</th>
<th>Temperature range °C</th>
<th>Life expectancy L_{10IPC} (40°C)</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>RLF 100-11/12</td>
<td>64</td>
<td>37.7</td>
<td>12</td>
<td>8...15</td>
<td>6.4</td>
<td>■</td>
<td>8.0</td>
<td>5 100</td>
<td>-20...+75</td>
<td>80 000 / 30 000</td>
</tr>
<tr>
<td>RLF 100-11/14</td>
<td>64</td>
<td>37.7</td>
<td>24</td>
<td>16...30</td>
<td>6.4</td>
<td>■</td>
<td>8.0</td>
<td>5 100</td>
<td>-20...+75</td>
<td>80 000 / 30 000</td>
</tr>
<tr>
<td>RLF 100-11/18</td>
<td>64</td>
<td>37.7</td>
<td>48</td>
<td>36...60</td>
<td>6.4</td>
<td>■</td>
<td>8.6</td>
<td>5 100</td>
<td>-20...+75</td>
<td>80 000 / 30 000</td>
</tr>
</tbody>
</table>

High speed models with open-collector tachometer and PWM speed control.

<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 sound power level [W]</th>
<th>Ball bearings Sintec sleeve bearing - Ball bearing</th>
<th>Power consumption [W]</th>
<th>Nominal speed rpm</th>
<th>Temperature range °C</th>
<th>Life expectancy L_{10IPC} (40°C)</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>RLF 100-11/12/2 HP-200</td>
<td>80</td>
<td>47.1</td>
<td>12</td>
<td>10...13.2</td>
<td>7.5</td>
<td>■</td>
<td>18.6</td>
<td>6 400</td>
<td>-20...+60</td>
<td>72 500 / 45 000</td>
</tr>
<tr>
<td>RLF 100-11/18/2 HP-182</td>
<td>80</td>
<td>47.1</td>
<td>48</td>
<td>43...53</td>
<td>7.5</td>
<td>■</td>
<td>17.0</td>
<td>6 400</td>
<td>-20...+70</td>
<td>72 500 / 35 000</td>
</tr>
</tbody>
</table>

Subject to change

1) Fiberglass-reinforced plastic.

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**Accessories**

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

**Information**

- Representatives
- DC axial fans
- DC centrifugal fans
- DC fans - specials
- AC axial fans
- AC centrifugal fans
- ACmaxx / EC axial fans
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
  48 V model: Flat plug
  6.3 x 0.8 mm for ground
  conductor
- **Highlights:** Forward-curved impeller
- **Weight:** 440 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

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### Series RG 90 N

**VHS0090XUJBS**

<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 power level</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L&lt;sub&gt;10&lt;/sub&gt;(40 °C)</th>
<th>Service life L&lt;sub&gt;10&lt;/sub&gt;(τ=10000h)</th>
<th>Life expectancy L&lt;sub&gt;10&lt;/sub&gt;IPC (40 °C)</th>
</tr>
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<tbody>
<tr>
<td><strong>Type</strong></td>
<td>m³/h</td>
<td>cfm</td>
<td>VDC</td>
<td>VDC</td>
<td>Bel(A)</td>
<td>Watts</td>
<td>rpm&lt;sup&gt;1&lt;/sup&gt;</td>
<td>°C</td>
<td>Hours</td>
<td>Hours</td>
<td>Hours</td>
</tr>
<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 (1)</td>
<td></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 (1)</td>
<td></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 (1)</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<sub>WA</sub> ISO 10302
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
Max. 137 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 48 V model: Flat plug 6.3 x 0.8 mm for ground conductor
- Highlights: Backward-curved impeller
- Weight: 730 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 RG 125 N VCS0125XUJBS

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow Nominal voltage</th>
<th>Voltage range</th>
<th>Sound power level</th>
<th>Sinter sleeve bearings</th>
<th>Bearing type</th>
<th>Ball bearings</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L10D (40 °C)</th>
<th>Service life L10D (Tmax)</th>
<th>Life expectancy L10IPC (40 °C)</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG 125-19/12 NM</td>
<td>60.0</td>
<td>12</td>
<td>7...15</td>
<td>4.8</td>
<td></td>
<td></td>
<td>2.0</td>
<td>1 750</td>
<td>-30...+75</td>
<td>70 000 / 30 000</td>
<td>117 500</td>
<td>117 500</td>
<td>1</td>
</tr>
<tr>
<td>RG 125-19/12 N</td>
<td>87.5</td>
<td>15</td>
<td>7...15</td>
<td>5.2</td>
<td></td>
<td></td>
<td>5.2</td>
<td>2 550</td>
<td>-30...+75</td>
<td>62 500 / 27 500</td>
<td>105 000</td>
<td>105 000</td>
<td>2</td>
</tr>
<tr>
<td>RG 125-19/14 NM</td>
<td>60.0</td>
<td>24</td>
<td>12...28</td>
<td>4.8</td>
<td></td>
<td></td>
<td>2.0</td>
<td>1 750</td>
<td>-30...+75</td>
<td>70 000 / 30 000</td>
<td>117 500</td>
<td>117 500</td>
<td>1</td>
</tr>
<tr>
<td>RG 125-19/14 N</td>
<td>87.5</td>
<td>24</td>
<td>12...28</td>
<td>5.8</td>
<td></td>
<td></td>
<td>4.9</td>
<td>2 550</td>
<td>-30...+75</td>
<td>62 500 / 27 500</td>
<td>105 000</td>
<td>105 000</td>
<td>2</td>
</tr>
<tr>
<td>RG 125-19/18 N</td>
<td>87.5</td>
<td>48</td>
<td>36...56</td>
<td>5.8</td>
<td></td>
<td></td>
<td>4.8</td>
<td>2 550</td>
<td>-30...+75</td>
<td>62 500 / 27 500</td>
<td>105 000</td>
<td>105 000</td>
<td>2</td>
</tr>
<tr>
<td>RG 125-19/18 NH</td>
<td>137</td>
<td>48</td>
<td>36...56</td>
<td>7.0</td>
<td></td>
<td></td>
<td>19.0</td>
<td>4 000</td>
<td>-20...+70</td>
<td>55 000 / 27 500</td>
<td>92 500</td>
<td>92 500</td>
<td>3</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

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

DC centrifugal fans

- 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

- Highlights: Backward-curved impeller
  3-phase fan drive with special commutation electronics for extremely low-noise operation

- Weight: 750 g

\(^1\) Fiber-glass-reinforced plastic

### 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 power level Bel(A)</th>
<th>Power consumption Watts</th>
<th>Nominal speed rpm</th>
<th>Temperature range °C</th>
<th>Service life L₁₀(40 °C) hours</th>
<th>Service life L₁₀(T_max) hours</th>
<th>Life expectancy LIPC years</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG 140-22/12 N/2 TDAU-505</td>
<td>118</td>
<td>69.4</td>
<td>12</td>
<td>10.8...13.2</td>
<td>6.0</td>
<td>10.2</td>
<td>2 500</td>
<td>-20...+70</td>
<td>62 500 / 32 500</td>
<td>105 000</td>
</tr>
<tr>
<td>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.

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

Noise: Total sound power level \(L_W\) measured on a hemisphere with a radius 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
Air performance measured according to: ISO 5801.
Installation category A, without contact protection.

Noise: Total sound power level $L_W$ ISO 10302 measured on a hemisphere with a radius of 2 m.
Sound pressure level $L_p$ A 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 RG 160 N VCS0160XULCS**

<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 power level</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life $L_{10}$ (40 °C)</th>
<th>Service life $L_{10}$ (max)</th>
<th>Life expectancy $L_{10}$ IPC (40 °C)</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>Dal(A)</td>
<td>Watts</td>
<td>rpm⁻¹</td>
<td>°C</td>
<td>Hours</td>
<td>Hours</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>□</td>
<td>21.0</td>
<td>2 850</td>
<td>-20...+70</td>
<td>70 000 / 35 000</td>
<td>117 500</td>
<td>2</td>
</tr>
<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>□</td>
<td>7.0</td>
<td>1 900</td>
<td>-20...+70</td>
<td>80 000 / 40 000</td>
<td>135 000</td>
<td>1</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>□</td>
<td>20.0</td>
<td>2 850</td>
<td>-20...+70</td>
<td>70 000 / 35 000</td>
<td>117 500</td>
<td>2</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>□</td>
<td>20.0</td>
<td>2 850</td>
<td>-20...+70</td>
<td>70 000 / 35 000</td>
<td>117 500</td>
<td>2</td>
</tr>
</tbody>
</table>

Subject to change

---

- **Material:** Scroll housing: GRP¹
  Impeller: GRP¹
  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

---

¹ Fiberglass-reinforced plastic

---

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

---

**Max. 209 m³/h**

DC centrifugal fans

- **Nominal data**
  - Air flow: 220 x 56 mm

---

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level $L_W$ ISO 10302 measured on a hemisphere with a radius of 2 m.
Sound pressure level $L_p$ A 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 centrifugal fans

### 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 160-28/14 NTD...</td>
<td>59</td>
<td>34.7</td>
<td>24</td>
<td>16...28</td>
<td>—</td>
<td>2.0</td>
<td>800</td>
<td>-20...+60</td>
<td>55 000 / 35 000</td>
<td>92 500</td>
</tr>
<tr>
<td></td>
<td>308</td>
<td>181</td>
<td></td>
<td></td>
<td>7.5</td>
<td>64</td>
<td>4 200</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>
</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>
</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>
</tr>
<tr>
<td></td>
<td>308</td>
<td>181</td>
<td></td>
<td></td>
<td></td>
<td>59</td>
<td>4 200</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>
</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.
Noise: Total sound power level L₁ₐₐ ISO 10302 measured on a hemisphere with a radius of 2 m.
Sound pressure level L₁ₐₐ 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 $L_W$ ISO 10302 measured on a hemisphere with a radius 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

### 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

<table>
<thead>
<tr>
<th>Type</th>
<th>Nominal data</th>
<th>Air flow 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>Service life $L_{10}(40 °C)$</th>
<th>Service life $L_{10}(T_{\text{max}})$</th>
<th>Life expectancy $L_{10}$ (40 °C)</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG 190-39/14/2 TDML0</td>
<td></td>
<td>630</td>
<td>24</td>
<td>16...30</td>
<td>7.3</td>
<td>■ 55</td>
<td>3 000</td>
<td>-20...+60</td>
<td>55 000 / 35 000</td>
<td>92 500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RG 190-39/14/2 TDMM0</td>
<td></td>
<td>820</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>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RG 190-39/18/2 TDML0</td>
<td></td>
<td>630</td>
<td>48</td>
<td>36...57</td>
<td>7.3</td>
<td>■ 58</td>
<td>3 000</td>
<td>-20...+60</td>
<td>55 000 / 35 000</td>
<td>92 500</td>
<td></td>
<td></td>
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<td>RG 190-39/18/2 TDMM0</td>
<td></td>
<td>820</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>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RG 190-19/18/2 TDO</td>
<td></td>
<td>930</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>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Subject to change**

### Highlights:
- Highly efficient and smoothly operating 3-phase fan drive
- Backward-curved RadiCal impeller

**Weight:**
1210 g

**Material:**
- Scroll housing: GRP
- 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:**
1210 g

### DC centrifugal fans – RadiCal

<table>
<thead>
<tr>
<th>Replacement</th>
<th>Sheet size</th>
<th>Picture 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG 190-19/18/2 TDO</td>
<td>226 x 85 mm</td>
<td></td>
</tr>
</tbody>
</table>

**Max. 930 m³/h**

---

Subject to change

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.

1) Fiberglass-reinforced plastic

**Type**

<table>
<thead>
<tr>
<th>RG 190-39/14/2 TDML0</th>
<th>630</th>
<th>371</th>
<th>24</th>
<th>16...30</th>
<th>7.3</th>
<th>55</th>
<th>3 000</th>
<th>-20...+60</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG 190-39/14/2 TDMM0</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>
</tr>
<tr>
<td>RG 190-39/18/2 TDML0</td>
<td>630</td>
<td>371</td>
<td>48</td>
<td>36...57</td>
<td>7.3</td>
<td>58</td>
<td>3 000</td>
<td>-20...+60</td>
</tr>
<tr>
<td>RG 190-39/18/2 TDMM0</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>
</tr>
<tr>
<td>RG 190-19/18/2 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>
</tr>
</tbody>
</table>

---

**Information**

DC axial fans
DC centrifugal fans
DC fans – specials
AC axial fans
AC centrifugal fans
AC max/EC axial fans
Accessories
Representatives

---

**Finger guards**
P. 264
Max. 1100 m$^3$/h

**S-Force**

---

**DC centrifugal fans – RadiCal**

- **Material:** Scroll housing: GRP$^{1)}$
- **Impeller:** GRP$^{1)}$
- **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:** 1560 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
- Humidity protection
- Salt spray protection
- Degree of protection: IP 54

---

**Series RG 220 TD**

**VCS0220RULDS**

**Nominal data**

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow $^{2)}$ m$^3$/h</th>
<th>Air flow $^{2)}$ cfm</th>
<th>Nominal voltage VDC</th>
<th>Sound power level L$^{7)}$ ($^{2)}$A ISO 10302</th>
<th>Sintec sleeve bearings</th>
<th>Power consumption Watts</th>
<th>Nominal speed rpm</th>
<th>Temperature range °C</th>
<th>Service life $^{1)}$ L$^{10}$ (40 °C)</th>
<th>Service life $^{1)}$ L$^{10}$ (T$^{4)}_{max}$)</th>
<th>Temperature range °C</th>
<th>Life expectancy (years)</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG 220-43/2/2 TDMO</td>
<td>1100</td>
<td>647</td>
<td>24</td>
<td>16...36</td>
<td>7.5</td>
<td>■</td>
<td>101</td>
<td>3 000</td>
<td>-20...+55</td>
<td>55 000 / 40 000</td>
<td>92 500</td>
<td>1)</td>
<td></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>■</td>
<td>101</td>
<td>3 000</td>
<td>-20...+55</td>
<td>55 000 / 40 000</td>
<td>92 500</td>
<td>1)</td>
<td></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.
- Further types available on request.

---

Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L$^{7)}$ ($^{2)}$A ISO 10302 measured on a hemisphere with a radius of 2 m.
Sound pressure level L$^{p}$($^{A}$) 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. 264

---

106
2019-04
Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level $L_{WA}$ ISO 10302
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
- Humidity protection
- - Salt spray protection
- Degree of protection: IP 54

Series RG 225 TD
VCS0225RULDS

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>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life $L_{10}(T_{max})$ epm-papst standard</th>
<th>Life expectancy $L_{10}(40 \degree C)$ epm-papst standard</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG 225-55/14/2 TDMI0</td>
<td>1090</td>
<td>641</td>
<td>24</td>
<td>16...36</td>
<td>7.4</td>
<td>80</td>
<td>2 500</td>
<td>-20...+65</td>
<td>52 500 / 30 000</td>
<td>87 500</td>
<td>1</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>116</td>
<td>2 800</td>
<td>-20...+55</td>
<td>55 000 / 40 000</td>
<td>92 500</td>
<td>2</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>192</td>
<td>3 300</td>
<td>-20...+40</td>
<td>30 000 / 30 000</td>
<td>50 000</td>
<td>3</td>
</tr>
</tbody>
</table>

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

1) Fiberglass-reinforced plastic

---

**DC centrifugal fans – RadiCal**

---

**S-Force**

Max. 1450 m$^3$/h

---

- 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: 1750 g

---

More details can be found on page 15.

---

Finger guards

P. 264
### DC centrifugal fans

**Ø 85 x 68 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.
- **Highlights:** 3-phase fan drive with special commutation electronic for extremely low-noise operation
- **Weight:** 450 g

#### Possible special versions:
- Speed signal
- Go / No-go alarm
- Alarm with limit speed
- External temperature sensor
- PWM control input
- Analogue control input
- Multi-option control input (O)
- Protection against moisture

---

### 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>RET 85-42/14/2 TDLOR-402</td>
<td>94</td>
<td>55</td>
<td>24</td>
<td>20...28</td>
<td>5.6</td>
<td>11.3</td>
<td>2850</td>
<td>-20...+60</td>
<td>62 500 / 40 000</td>
<td>105 000</td>
</tr>
</tbody>
</table>

Subject to change

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All nominal data were measured in the scroll housing.

---

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Max.: Total sound power level L₁ₐ, ISO 10322 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 RET 85 TD VFS0085XUJCS

---

Max. 94 m³/h

---

**S-Force**
### DC centrifugal fans

**Type**: Ø 97 x 41 mm

#### 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>RET 97-25/14/2 TDP</td>
<td>220</td>
<td>129</td>
<td>24</td>
<td>16..32</td>
<td>8.1</td>
<td>135</td>
<td>6000</td>
<td>-20...+60</td>
<td>80 000 / 50 000</td>
<td>135 000</td>
</tr>
<tr>
<td>RET 97-25/18/2 TDP</td>
<td>220</td>
<td>129</td>
<td>48</td>
<td>36..60</td>
<td>8.1</td>
<td>160</td>
<td>6000</td>
<td>-20...+60</td>
<td>80 000 / 50 000</td>
<td>135 000</td>
</tr>
</tbody>
</table>

**Subject to change**

- **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

### 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

### Air performance measured according to ISO 5801.

**Installation category A, with ebm-papst scroll housing without contact protection.**

- **Noise**: Total sound power level $L_{W}$ ISO 10302 measured on a hemisphere with a radius of 2 m.
- **Sound pressure level** $L_{p}$ A 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 RET 97 TD VFS0097XUJC5**

**Nominal data**

- **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.**
- **All nominal data were measured in the scroll housing.**
DC centrifugal fans
Ø 104 x 25 mm

- 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

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 127 x 127 mm.
Cover plate 127 x 127 mm, with an air inlet opening Ø 70 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 $L_{W, A}$ ISO 10302 measured on a hemisphere with a distance of 2 m;
Sound pressure level $L_{p, A}$ 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

- 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:
(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

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 L_WA ISO 10302 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.

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\(^1\)
- 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

1) Fiberglass-reinforced plastic

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

### 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>Shaft 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>{max}))</th>
<th>Life expectancy L(_{10})IPC(S)</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<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>■</td>
<td>78</td>
<td>6 100</td>
<td>-20...+60</td>
<td>55 000 / 35 000</td>
<td>92 500</td>
<td>2</td>
<td></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>7.8</td>
<td>■</td>
<td>51</td>
<td>5 200</td>
<td>-20...+60</td>
<td>57 500 / 35 000</td>
<td>97 500</td>
<td>3</td>
<td></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>■</td>
<td>92</td>
<td>6 300</td>
<td>-20...+60</td>
<td>50 000 / 30 000</td>
<td>85 000</td>
<td>3</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 sound level were recorded under the following measurement parameters:

- Centrifugal fan mounted on a foundation plate 142 x 142 mm.
- Cover plate 142 x 142 mm, with an air inlet opening Ø 94.4 mm, arranged concentrically to the impeller.

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 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, with ebm-papst inlet ring without contact protection.

Noise: Total sound power level L\(_{A}\) ISO 10362 measured on a hemisphere with a distance of 2 m.

Sound pressure level L\(_{P}\) A 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>Curve</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>Sound pressure level</th>
<th>Admissible amb. temp.</th>
<th>Technical features and connection diagram</th>
</tr>
</thead>
</table>
| R1G 120 | M1G 045-BE | 24   | 16-28           | 16-28                 | 250      | 4060          | 26               | 1.20          | 62                   | -25..+50               | p. 274 / G | Subject to change

### Curves:

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

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, $L_p$ 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](http://www.ebmpapst.com/generalconditions)
### Technical features:
- See connection diagram p. 274

### 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>
</tbody>
</table>

**Clearance for screw max. 4 mm**

**Wire end splices**

**Dimensions:**
- 54 ±1
- 45.3 ±0.5
- 16
- 18
- 96 ±1
- 98
- 90
- 80 x 80
- 300 ±20
- 26
- 2
- 40.5
- 26
- 60
Max. 166 m³/h

DC centrifugal fans
Ø 138 x 35 mm

- Material: Impeller: GRP¹
- 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: 320 g

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

¹ Fiberglass-reinforced plastic

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.

<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 125-19/12 N</td>
<td>110</td>
<td>64.7</td>
<td>12</td>
<td>7...15</td>
<td>5.7</td>
<td>4.6</td>
<td>2 650</td>
<td>-30...+75</td>
<td>62 500</td>
<td>105 000</td>
</tr>
<tr>
<td>RER 125-19/14 N</td>
<td>110</td>
<td>64.7</td>
<td>24</td>
<td>12...28</td>
<td>5.7</td>
<td>4.3</td>
<td>2 650</td>
<td>-30...+75</td>
<td>62 500</td>
<td>105 000</td>
</tr>
<tr>
<td>RER 125-19/14 NH-172</td>
<td>166</td>
<td>97.7</td>
<td>24</td>
<td>12...28</td>
<td>7.0</td>
<td>13.0</td>
<td>4 000</td>
<td>-20...+70</td>
<td>55 000</td>
<td>92 500</td>
</tr>
<tr>
<td>RER 125-19/18 N</td>
<td>110</td>
<td>64.7</td>
<td>48</td>
<td>36...56</td>
<td>5.7</td>
<td>4.2</td>
<td>2 650</td>
<td>-30...+75</td>
<td>62 500</td>
<td>105 000</td>
</tr>
</tbody>
</table>

Subject to change

Series RER 125 N
VBS0125XUJBS

The air performance measured according to ISO 5801.
Installation category A, with ebm-papst inlet ring without contact protection.
Noise: Total sound power level L₁₁₀ dB(A) ISO 10302 measured on a hemisphere with a distance of 2 m.
Sound pressure level L₁₁₀ dB(A) 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. 268

RER 125-19/14 NH-172
### DC centrifugal fans

| Ø 133 x 91 mm |

- **Material:** Impeller: GRP\(^1\)
- **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
- **Weight:** 460 g RadCal

---

### 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

---

### Performance Data

<table>
<thead>
<tr>
<th>Type</th>
<th>Flow Rate</th>
<th>VDC</th>
<th>Sound Power Level</th>
<th>Power Consumption</th>
<th>Temperature Range</th>
<th>Service Life L(_{10})  (40 \text{°C})</th>
<th>Life Expectancy L(_{10})  (40 \text{°C})</th>
</tr>
</thead>
<tbody>
<tr>
<td>RER 133-41/14/2 TDMP</td>
<td>460</td>
<td>16...30</td>
<td>7.8</td>
<td>58</td>
<td>5 000</td>
<td>72 500 / 40 000</td>
<td>122 500</td>
</tr>
<tr>
<td>RER 133-41/14/2 TD</td>
<td>565</td>
<td>16...36</td>
<td>8.2</td>
<td>90</td>
<td>6 000</td>
<td>70 000 / 37 500</td>
<td>117 500</td>
</tr>
<tr>
<td>RER 133-41/18/2 TD</td>
<td>565</td>
<td>36...72</td>
<td>8.2</td>
<td>87</td>
<td>6 000</td>
<td>70 000 / 37 500</td>
<td>117 500</td>
</tr>
<tr>
<td>RadCal RER 133-33/18/2 TDMP</td>
<td>395</td>
<td>36...60</td>
<td>7.7</td>
<td>62</td>
<td>5 600</td>
<td>55 000 / 30 000</td>
<td>92 500</td>
</tr>
</tbody>
</table>

---

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 157 x 157 mm.
- Cover plate 157 x 157 mm, with an air inlet opening Ø 87 mm, arranged concentrically to the impeller.

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.

---

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 10302 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)
DC centrifugal fans
Ø 140 x 36 mm

- Material: Impeller: GRP
- Direction of air flow: Axial: Intake
  Centrifugal: Exhaust
- Direction of rotation: Clockwise, seen on rotor
- Connection: Via single wires AWG 22, TR 64
- Highlights: Backwards-curved impeller
  3-phase fan drive with special commutation electronic for extremely low-noise operation
- Mass: 360 g

Possible special versions:
- Go / No-go alarm
- Alarm with limit speed
- External temperature sensor
- Analogue control input
- Multi-option control input
- Protection against moisture
- Protection against salt fog
- Type of protection: IP 54

Series RER 140 TD
VBS0140XUJCS

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 140-22/14 N/2TDP</td>
<td>225</td>
<td>132</td>
<td>24</td>
<td>20-28</td>
<td>6.9</td>
<td>34</td>
<td>3 850</td>
<td>-20...+65</td>
<td>55 000/30 000</td>
<td>92 500</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 166 x 166 mm.
Cover plate 166 x 166 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 L_w,ISO 10302 measured on a hemisphere with a distance of 2 m;
Sound pressure level L_p,ISO 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 165 x 51 mm

- Material: Impeller: GRP\(^1\)
- Direction of air flow: Axial: Intake, Centrifugal: Exhaust
- Direction of rotation: Counterclockwise, looking towards rotor
- Connection: via single wires AWG 22, TR 64
- Highlights: Backward-curved impeller
- Weight: 590 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

Max. 255 m³/h

Series RER 160 N
VBS0160XULCS

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>Bel(A)</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L(10°C)</th>
<th>Life expectancy L(20°C)</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>RER 160-28/12 N</td>
<td>270</td>
<td>158.8</td>
<td>12</td>
<td>7.5...14</td>
<td>6.4</td>
<td>□</td>
<td>19.0</td>
<td>3 000</td>
<td>-20...+70</td>
<td>75 000 / 37 500</td>
<td>127 500</td>
<td>(1)</td>
</tr>
<tr>
<td>RER 160-28/14 N</td>
<td>270</td>
<td>158.8</td>
<td>24</td>
<td>12...28</td>
<td>6.4</td>
<td>□</td>
<td>19.0</td>
<td>3 000</td>
<td>-20...+70</td>
<td>75 000 / 37 500</td>
<td>127 500</td>
<td>(1)</td>
</tr>
<tr>
<td>RER 160-28/18 N*</td>
<td>270</td>
<td>158.8</td>
<td>48</td>
<td>28...60</td>
<td>6.4</td>
<td>□</td>
<td>19.0</td>
<td>3 000</td>
<td>-20...+70</td>
<td>75 000 / 37 500</td>
<td>127 500</td>
<td>(1)</td>
</tr>
</tbody>
</table>

Subject to change
* On request

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 266 x 266 mm.
Cover plate 266 x 266 mm, with an air inlet opening Ø 100 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 L_{WA}ISO 10302 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
DC centrifugal fans
Ø 165 x 51 mm

- 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: Highly efficient and smoothly operating 3-phase fan drive
- Weight: Backward curved impeller 590 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
- Humidity protection
- Degree of protection: IP 54

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 Lp,10,14 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

Series RER 160 NTD VBS0160XULCS
Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</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 160-28/14 NTD...</td>
<td>360</td>
<td>211</td>
<td>24</td>
<td>16...28</td>
<td>7.4</td>
<td>51</td>
<td>200</td>
<td>-20...+60</td>
<td>55 000 / 27 500 92 500</td>
</tr>
<tr>
<td>RER 160-28/18 NTD...</td>
<td>360</td>
<td>211</td>
<td>48</td>
<td>38...57</td>
<td>7.4</td>
<td>48</td>
<td>200</td>
<td>-20...+70</td>
<td>55 000 / 27 500 92 500</td>
</tr>
</tbody>
</table>

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 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 266 x 266 mm.
Cover plate 266 x 266 mm, with an air inlet opening Ø 100 mm, arranged concentrically to the impeller.

The air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions.
Max. 800 m³/h

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
VBS0175XULDS

<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 power level</th>
<th>Ball bearing</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range °C</th>
<th>Service life L10 (40 °C) [h]</th>
<th>Service life L10 (Tmax °C) [h]</th>
<th>Life expectancy L10 [h]</th>
<th>Curve</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></td>
<td>154</td>
<td>4 400</td>
<td>-20...+60</td>
<td>65 000 / 37 500</td>
<td>110 000</td>
<td></td>
<td></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 207 x 207 mm.
Cover plate 207 x 207 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 LWA ISO 10302 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 175 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
- 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

- Highlights:
  Highly efficient and smoothly operating 3-phase fan drive
  Backward-curved impeller
- Weight: 775 g

Series RER 175 TD
VBS0175XULCS
VBS0175RULDS
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 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>RadiCal RER 175-39/18/2 TDPR-113</td>
<td>948</td>
<td>556</td>
<td>48</td>
<td>36...72</td>
<td>8.4</td>
<td>178</td>
<td>5 400</td>
<td>-20...+65</td>
<td>72 500 / 40 000</td>
<td>122 500</td>
</tr>
</tbody>
</table>

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 207 x 207 mm.
Cover plate 207 x 207 mm, with an air inlet opening Ø 125.5 mm, arranged concentrically to the impeller.

Subject to change
Max. 970 m³/h

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

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 RER 190 TD
VBS0190RULCS
VBS0190RULDS

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>Bearing</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 (see page)</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>RER 190-39/14/2 TDML0</td>
<td>650</td>
<td>382</td>
<td>24</td>
<td>16...30</td>
<td>7.6</td>
<td>SFB</td>
<td>58</td>
<td>3 000</td>
<td>-20...+60</td>
<td>55 000 / 35 000</td>
<td>92 500</td>
<td>1</td>
<td></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>SFB</td>
<td>110</td>
<td>3 900</td>
<td>-20...+65</td>
<td>52 500 / 30 000</td>
<td>87 500</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>RER 190-39/18/2 TDML0</td>
<td>650</td>
<td>382</td>
<td>48</td>
<td>36...57</td>
<td>7.6</td>
<td>SFB</td>
<td>56</td>
<td>3 000</td>
<td>-20...+65</td>
<td>55 000 / 30 000</td>
<td>92 500</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>RER 190-39/18/2 TDMMOR211</td>
<td>860</td>
<td>506</td>
<td>48</td>
<td>36...72</td>
<td>7.9</td>
<td>SFB</td>
<td>105</td>
<td>3 900</td>
<td>-20...+65</td>
<td>52 500 / 30 000</td>
<td>87 500</td>
<td>2</td>
<td></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>SFB</td>
<td>148</td>
<td>4 400</td>
<td>-20...+65</td>
<td>40 000 / 22 500</td>
<td>67 500</td>
<td>3</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 sound level were recorded under the following measurement parameters:
Centrifugal fan mounted on a foundation plate 225 x 225 mm.
Cover plate 225 x 225 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 LWA ISO 10302 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

1 Fiberglass-reinforced plastic

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 225 x 225 mm.
Cover plate 225 x 225 mm, with an air inlet opening Ø 125.5 mm, arranged concentrically to the impeller.

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.
EC centrifugal fans – RadiCal
Ø 190 mm

- Material: Impeller: PA plastic
  Rotor: Galvanized
- Number of blades: 7
- Direction of rotation: Clockwise, looking towards rotor
- Degree of protection: Motor IP24 KM, electronics IP6K9K (mating connector installed)
  “B”
- Insulation class: “B”
- Installation position: Shaft horizontal or rotor on bottom; rotor on top on request
- Condensation drainage holes: On rotor side
- Mode of operation: Continuous operation (S1)
- Bearings: Ball bearing; (sealed)

VBS0190RUNCS

<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>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1G 190</td>
<td>M1G074-BF</td>
<td>12</td>
<td>8...16</td>
<td>565</td>
<td>3300</td>
<td>74</td>
<td>6.40</td>
<td>-25..+70</td>
</tr>
<tr>
<td>R1G 190</td>
<td>M1G074-BF</td>
<td>24</td>
<td>16...28</td>
<td>755</td>
<td>4200</td>
<td>135</td>
<td>5.60</td>
<td>-25..+60</td>
</tr>
<tr>
<td>R1G 190</td>
<td>M1G074-BF</td>
<td>48</td>
<td>36...57</td>
<td>820</td>
<td>4500</td>
<td>165</td>
<td>3.40</td>
<td>-25..+70</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 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. 820 m³/h
- Technical features: See connection diagram p. 278/279
- Cable exit: Axial
- Approvals: EAC, CSA C22.2 No. 113; UL 507

<table>
<thead>
<tr>
<th>Fan Type</th>
<th>Weight</th>
<th>Inlet Ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1G 190-RD61-02</td>
<td>1.45</td>
<td>09576-2-4013</td>
</tr>
<tr>
<td>R1G 190-RD79-02</td>
<td>1.46</td>
<td>09576-2-4013</td>
</tr>
<tr>
<td>R1G 190-RD16-02</td>
<td>1.30</td>
<td>09576-2-4013</td>
</tr>
</tbody>
</table>

Accessory part: inlet ring 09576-2-4013 not included in scope of delivery

Max. clearance for screw 6 mm

Cable PVC 4x AWG18, insulating hose, 4x splice
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

VBS0190RUNES

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Curve</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>Sound pressure level</th>
<th>Admissible amb. temp.</th>
<th>Technical features and connection diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 190</td>
<td>M3G 074-CF</td>
<td>①</td>
<td>24</td>
<td>16-28</td>
<td>880</td>
<td>4570</td>
<td>7.50</td>
<td>76</td>
<td>-25..+60</td>
<td>p. 277 / J5</td>
<td>p. 277 / J5</td>
</tr>
<tr>
<td>R3G 190</td>
<td>M3G 074-CF</td>
<td>③</td>
<td>48</td>
<td>36-57</td>
<td>930</td>
<td>4800</td>
<td>4.00</td>
<td>76</td>
<td>-25..+60</td>
<td>p. 277 / J5</td>
<td>p. 277 / J5</td>
</tr>
</tbody>
</table>

Subject to change

<table>
<thead>
<tr>
<th>Curves:</th>
<th>Air performance measured according to ISO 5801, Installation category A, with ebm-papst inlet ring without contact protection. Suction-side noise levels L1A according to ISO 13347, L1A 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 <a href="http://www.ebmpapst.com/general">http://www.ebmpapst.com/general</a> conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>n rpm&lt;sup&gt;-1&lt;/sup&gt;</td>
<td>P&lt;sub&gt;ed&lt;/sub&gt; W</td>
</tr>
<tr>
<td>①</td>
<td>4570</td>
</tr>
<tr>
<td>②</td>
<td>4525</td>
</tr>
<tr>
<td>③</td>
<td>4435</td>
</tr>
<tr>
<td>④</td>
<td>4520</td>
</tr>
<tr>
<td>⑤</td>
<td>4800</td>
</tr>
<tr>
<td>⑥</td>
<td>4690</td>
</tr>
<tr>
<td>⑦</td>
<td>4640</td>
</tr>
<tr>
<td>⑧</td>
<td>4740</td>
</tr>
</tbody>
</table>
– Technical features: See connection diagram p. 277
– Cable exit: Variable
– Conformity with standard(s): EN 60950-1
– Approvals: EAC

### Centrifugal fans

<table>
<thead>
<tr>
<th>Centrifugal fans</th>
<th>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
Max. 1080 m³/h

EC centrifugal fans – RadiCal
Ø 220 mm

- Material: Impeller: PA plastic
  Rotor: Galvanized
- Number of blades: 7
- Direction of rotation: Clockwise, looking towards rotor
- Degree of protection: Motor IP24 KM, electronics IP6K9K (mating connector installed)
  “B”
- Insulation class: “B”
- Installation position: Shaft horizontal or rotor on bottom; rotor on top on request
- Condensation drainage holes: On rotor side
- Mode of operation: Continuous operation (S1)
- Bearings: Ball bearing; (sealed)

VDS0220RUNCS

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>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1G 220</td>
<td>M1G 074-BF</td>
<td>12</td>
<td>8..16</td>
<td>925</td>
<td>2700</td>
<td>90</td>
<td>8.60</td>
<td>-25..+70</td>
</tr>
<tr>
<td>R1G 220</td>
<td>M1G 074-BF</td>
<td>24</td>
<td>16..28</td>
<td>1070</td>
<td>3050</td>
<td>125</td>
<td>5.20</td>
<td>-25..+60</td>
</tr>
<tr>
<td>R1G 220</td>
<td>M1G 074-BF</td>
<td>48</td>
<td>36..57</td>
<td>1080</td>
<td>3150</td>
<td>125</td>
<td>2.60</td>
<td>-25..+70</td>
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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

ebmpapst
- **Technical features:** See connection diagram p. 278/279
- **Cable exit:** Axial
- **Approvals:** EAC, CSA C22.2 No. 113; UL 507

<table>
<thead>
<tr>
<th>Centrifugal fans</th>
<th>Weight</th>
<th>Inlet ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1G 220-RD61-02</td>
<td>1.5 kg</td>
<td>09609-2-4013</td>
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<tr>
<td>R1G 220-RD10-02</td>
<td>1.5 kg</td>
<td>09609-2-4013</td>
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<td>R1G 220-RD02-02</td>
<td>1.5 kg</td>
<td>09609-2-4013</td>
</tr>
</tbody>
</table>

Accessory part: inlet ring 09609-2-4013 not included in scope of delivery

Max. clearance for screw 6 mm

Cable PVC 4x AWG18, insulating hose, 4x splice
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

VBS0220RUNES

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>
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</thead>
<tbody>
<tr>
<td>R3G 220</td>
<td>M3G 074-CF</td>
<td>①</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>
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<tr>
<td>R3G 220</td>
<td>M3G 074-CF</td>
<td>③</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>
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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, 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/generalconditions

<table>
<thead>
<tr>
<th>n (rpm⁻¹)</th>
<th>Pₑ (W)</th>
<th>I (A)</th>
<th>LWA (dB(A))</th>
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</thead>
<tbody>
<tr>
<td>① 3460</td>
<td>157</td>
<td>6.50</td>
<td>81</td>
</tr>
<tr>
<td>② 3420</td>
<td>171</td>
<td>7.11</td>
<td>77</td>
</tr>
<tr>
<td>③ 3360</td>
<td>182</td>
<td>7.59</td>
<td>74</td>
</tr>
<tr>
<td>④ 3455</td>
<td>168</td>
<td>6.97</td>
<td>79</td>
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<td>⑤ 3510</td>
<td>160</td>
<td>3.40</td>
<td>81</td>
</tr>
<tr>
<td>⑥ 3450</td>
<td>168</td>
<td>3.50</td>
<td>77</td>
</tr>
<tr>
<td>⑦ 3385</td>
<td>178</td>
<td>3.71</td>
<td>74</td>
</tr>
<tr>
<td>⑧ 3460</td>
<td>167</td>
<td>3.47</td>
<td>79</td>
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</tbody>
</table>
- Technical features:  See connection diagram p. 277
- Cable exit: Variable
- Conformity with standard(s): EN 60950-1
- Approvals: EAC

### Accessories

#### Centrifugal fans

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

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

- **Clearance for screw**
  - max. 12 - 14 mm

- **PVC AWG 16 cable,**
  - 4 x crimped ferrules

- **Accessories**

  - **Inlet rings** from p. 268
  - **Connection diagrams** P. 277
Max. 1250 m³/h

DC centrifugal fans – RadiCal

Ø 220 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: Backward-curved impeller 940 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
- Salt spray protection
- Degree of protection: IP 54

Series RER 220 TD
VBS200RULCS
VBS200RULDS

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>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L₁₀(T = 40 °C)</th>
<th>Service life L₁₀(T = 70 °C)</th>
<th>Life expectancy LIPC * Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>RER 220-43/14/2 TDMO*</td>
<td>1063</td>
<td>24</td>
<td>16...36</td>
<td>7.5</td>
<td>□</td>
<td>110</td>
<td>3 000</td>
<td>-20...+55</td>
<td>65 000 / 45 000</td>
<td>110 000</td>
<td>1</td>
</tr>
<tr>
<td>RER 220-43/18/2 TDMO</td>
<td>1063</td>
<td>48</td>
<td>36...72</td>
<td>7.5</td>
<td>□</td>
<td>110</td>
<td>3 000</td>
<td>-20...+55</td>
<td>65 000 / 45 000</td>
<td>110 000</td>
<td>1</td>
</tr>
<tr>
<td>RER 220-43/18/2 TDO</td>
<td>1250</td>
<td>48</td>
<td>36...72</td>
<td>7.8</td>
<td>□</td>
<td>160</td>
<td>3 500</td>
<td>-20...+55</td>
<td>60 000 / 42 500</td>
<td>102 500</td>
<td>2</td>
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</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 260 x 260 mm.
Cover plate 260 x 260 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 10302 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

¹ Fiberglass-reinforced plastic

Inlet rings from p. 268
Max. 1600 m³/h

DC centrifugal fans
 Ø 225 x 99 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 1030 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
- Salt spray protection
- Degree of protection: IP 54

Series RER 225 TD
VBS0225XULDS
VBS0225RULFS

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 225-63/18/2 TDMLO</td>
<td>1190</td>
<td>700</td>
<td>48</td>
<td>36...72</td>
<td>7.2</td>
<td>77</td>
<td>2 500</td>
<td>-20...+55</td>
<td>70 000 / 50 000</td>
<td>122 500</td>
</tr>
<tr>
<td>RER 225-63/18/2 TMLO</td>
<td>1340</td>
<td>789</td>
<td>48</td>
<td>36...72</td>
<td>7.8</td>
<td>108</td>
<td>2 800</td>
<td>-20...+55</td>
<td>55 000 / 40 000</td>
<td>92 500</td>
</tr>
<tr>
<td>RER 225-63/18/2 TD</td>
<td>1600</td>
<td>941</td>
<td>48</td>
<td>36...72</td>
<td>8.1</td>
<td>163</td>
<td>3 300</td>
<td>-20...+55</td>
<td>52 500 / 37 500</td>
<td>87 500</td>
</tr>
<tr>
<td>RadiCal RER 225-55/18/2 TD0</td>
<td>1540</td>
<td>906</td>
<td>48</td>
<td>36...72</td>
<td>8.0</td>
<td>225.6</td>
<td>3 500</td>
<td>-20...+55</td>
<td>50 000 / 35 000</td>
<td>85 000</td>
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</table>

Speed control range from 800 rpm⁻¹ at 7 % PWM up to nominal speed at > 90 % PWM.
Standstill at 0 % PWM, Type O: Standstill if control cable is interrupted. Type P: 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 266 x 266 mm.
Cover plate 266 x 266 mm, with an air inlet opening Ø 146 mm, arranged concentrically to the impeller.

Inlet rings from p. 268
Max. 1130 m³/h

EC centrifugal fans – RadiCal
Ø 225 mm

- Material: Impeller: PA plastic
  Rotor: Galvanized
- Number of blades: 7
- Direction of rotation: Clockwise, looking towards rotor
- Degree of protection: Motor IP24 KM, electronics IP6K9K (mating connector installed)
- Insulation class: “B”
- Installation position: Shaft horizontal or rotor on bottom; rotor on top on request
- Condensation drainage holes: On rotor side
- Mode of operation: Continuous operation (S1)
- Bearings: Ball bearing; (sealed)

### 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>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1G 225</td>
<td>M1G 074-BF</td>
<td>12</td>
<td>8...16</td>
<td>990</td>
<td>2350</td>
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</tr>
<tr>
<td>R1G 225</td>
<td>M1G 074-BF</td>
<td>24</td>
<td>16...28</td>
<td>1125</td>
<td>2700</td>
<td>120</td>
<td>4.90</td>
<td>-25...+70</td>
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<tr>
<td>R1G 225</td>
<td>M1G 074-BF</td>
<td>48</td>
<td>36...57</td>
<td>1130</td>
<td>2700</td>
<td>115</td>
<td>2.40</td>
<td>-25...+70</td>
</tr>
</tbody>
</table>

Subject to change

### Curves:

![Curves diagram]

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](http://www.ebmpapst.com/general conditions).
– Technical features: See connection diagram p. 278/279
– Cable exit: Axial
– Approvals: EAC, CSA C22.2 No. 113; UL 507

<table>
<thead>
<tr>
<th>Centrifugal fans</th>
<th>kg</th>
<th>Inlet ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1G 225-RD59-02</td>
<td>1.6</td>
<td>96358-2-4013</td>
</tr>
<tr>
<td>R1G 225-RD14-02</td>
<td>1.6</td>
<td>96358-2-4013</td>
</tr>
<tr>
<td>R1G 225-RD18-02</td>
<td>1.6</td>
<td>96358-2-4013</td>
</tr>
</tbody>
</table>

Accessory part: inlet ring 96358-2-4013 not included in scope of delivery

Max. clearance for screw 6 mm

4x90°

M4 (4x)

Cable PVC 4x AWG18, insulating hose, 4x splice

Inlet rings from p. 268
Connection diagrams P. 278/279
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

VBS0225RUNES

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 225</td>
<td>M3G 074-CF</td>
<td>①</td>
<td>24</td>
<td>16-28</td>
<td>1300</td>
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<td>205</td>
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<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>
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<td></td>
<td></td>
<td></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 LpA 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. 277
- Cable exit: Variable
- Conformity with standard(s): EN 60950-1
- Approvals: EAC

### Centrifugal fans

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

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

PVC AWG 16 cable, 4 x crimped ferrules

Clearance for screw max. 12 - 14 mm
max. 1505 m³/h

**EC centrifugal fans – RadiCal**

Ø 250 mm

- **Material:** Impeller: PA plastic
  Rotor: Galvanized
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** Motor IP24 KM, electronics IP6K9K (mating connector installed)
  “B”
- **Insulation class:** “B”
- **Installation position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensation drainage holes:** On rotor side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Ball bearing; (sealed)

### VBS0250RUNES

#### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Curve</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>Admissible amb. temp.</th>
<th>Technical features and connection diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1G 250</td>
<td>M1G.074-CF</td>
<td>①</td>
<td>12</td>
<td>8...16</td>
<td>1035</td>
<td>2000</td>
<td>64</td>
<td>5.40</td>
<td>-25...+70</td>
<td>p. 278 / Q)</td>
</tr>
<tr>
<td>R1G 250</td>
<td>M1G.074-CF</td>
<td>②</td>
<td>24</td>
<td>16...28</td>
<td>1295</td>
<td>2500</td>
<td>120</td>
<td>4.90</td>
<td>-25...+60</td>
<td>p. 278 / Q)</td>
</tr>
<tr>
<td>R1G 250</td>
<td>M1G.074-CF</td>
<td>③</td>
<td>48</td>
<td>36...57</td>
<td>1505</td>
<td>2850</td>
<td>175</td>
<td>3.70</td>
<td>-25...+60</td>
<td>p. 279 / R)</td>
</tr>
</tbody>
</table>

Subject to change

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**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. 278/279
- Cable exit: Axial
- Approvals: EAC, CSA C22.2 No. 113; UL 507

### Centrifugal fans

<table>
<thead>
<tr>
<th>Weight of centrifugal fans</th>
<th>Inlet ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0</td>
<td>96359-2-4013</td>
</tr>
</tbody>
</table>

- **R1G 250-RC77-02**
- **R1G 250-RC87-02**
- **R1G 250-RC89-02**

---

**Accessories**

- Inlet rings from p. 268
- Connection diagrams P. 278/279

---

**Clearance for screw max. 6 mm**

**Cable PVC 4x AWG18, insulating hose, 4x splice**
**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>Curve</th>
<th>Nominal voltage</th>
<th>Nominal voltage range</th>
<th>Air flow m³/h</th>
<th>rpm⁻¹</th>
<th>Power consumption W</th>
<th>Input current A</th>
<th>Sound pressure level dB(A)</th>
<th>Admissible amb. temp. °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 250</td>
<td>M3G 074-CF</td>
<td>①</td>
<td>VDC</td>
<td>24</td>
<td>16-28</td>
<td>1505</td>
<td>2850</td>
<td>175</td>
<td>7.20</td>
<td>-25...+60</td>
</tr>
<tr>
<td>R3G 250</td>
<td>M3G 074-CF</td>
<td>②</td>
<td>VDC</td>
<td>48</td>
<td>36-57</td>
<td>1640</td>
<td>3100</td>
<td>230</td>
<td>4.80</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, $L_{WA}$ 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. 277
- 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 250-RN46 -01</td>
<td>2.1</td>
<td>96359-2-4013</td>
</tr>
<tr>
<td>R3G 250-RNBS -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

Clearance for screw max. 12 - 14 mm

PVC AWG 16 cable, 4 x crimped ferrules
max. 2120 m³/h

EC centrifugal fans – RadiCal
Ø 280 mm

- Material:
  Impeller: PP plastic
  Rotor: Galvanized

- Number of blades:
  7

- Direction of rotation:
  Clockwise, looking towards rotor

- Degree of protection:
  Motor IP24 KM, electronics IP6K9K (mating connector installed)

- Insulation class:
  “B”

- Installation position:
  Shaft horizontal or rotor on bottom; rotor on top on request

- Condensation drainage holes:
  On rotor side

- Mode of operation:
  Continuous operation (S1)

- Bearings:
  Ball bearing; (sealed)

VBS028ORUNES

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Curve</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>Admissible amb. temp.</th>
<th>Technical features and connection diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1G 280</td>
<td>M1G 074-CF</td>
<td>① 12 8...16</td>
<td>1780</td>
<td>1500</td>
<td>75</td>
<td>7.20</td>
<td>-25...+70</td>
<td>p. 278 / Q)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R1G 280</td>
<td>M1G 074-CF</td>
<td>② 24 16...28</td>
<td>2035</td>
<td>1700</td>
<td>105</td>
<td>4.40</td>
<td>-25...+60</td>
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<td></td>
<td></td>
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<tr>
<td>R1G 280</td>
<td>M1G 074-CF</td>
<td>③ 48 36...57</td>
<td>2120</td>
<td>1800</td>
<td>115</td>
<td>2.40</td>
<td>-25...+60</td>
<td>p. 279 / R)</td>
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<td></td>
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</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 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. 278/279
- Cable exit: Variable
- Approvals: EAC; CSA C22.2 No. 113; UL 507

<table>
<thead>
<tr>
<th>Centrifugal fans</th>
<th>Weight centrifugal fans</th>
<th>Inlet ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1G 280-RC75-02</td>
<td>2.3 kg</td>
<td>98000-2-4013</td>
</tr>
<tr>
<td>R1G 280-RC71-02</td>
<td>2.3 kg</td>
<td>98000-2-4013</td>
</tr>
<tr>
<td>R1G 280-RC93-02</td>
<td>2.3 kg</td>
<td>98000-2-4013</td>
</tr>
</tbody>
</table>

Accessory part: inlet ring 28000-2-4013 not included in scope of delivery

Max. clearance for screw 6 mm

Cable PVC 4x AWG18, insulating hose, 4x splice
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>
<th>p. 277 / J5</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>
<td>p. 277 / J5</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>
<td>p. 277 / J5</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 LₚA 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).

**Curves:**

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

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

PVC AWG 16 cable, 4 x crimped ferrules

Technical features:
- See connection diagram p. 277
- 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 280-RN30-01</td>
<td>2.4</td>
<td>280000-2-4013</td>
</tr>
<tr>
<td>R3G 280-RNB1-02</td>
<td>2.4</td>
<td>280000-2-4013</td>
</tr>
</tbody>
</table>
- 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>
<td>108</td>
<td>4.50</td>
<td>64</td>
<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>

Curves:

Air performance measured according to ISO 5801, installation category A, with ebm-papst inlet ring without contact protection. Suction-side noise levels LₚA 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. 277
- **Cable exit:** Variable
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** EAC

<table>
<thead>
<tr>
<th>Centrifugal fans</th>
<th>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

PVC AWG 16 cable, 4 x crimped ferrules

Clearance for screw max. 12 - 14 mm

M5 (4x)
Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: 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 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!

Possible special versions:
- Speed signal
- Moisture protection

Series QG 030
VTS0030XUFBS
VTS0030XUFC5

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>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>QG 030-148/12</td>
<td>75</td>
<td>44</td>
<td>12</td>
<td>8...14</td>
<td>49</td>
<td>5.7</td>
<td>6.2</td>
<td>-20...+60</td>
<td>30 000</td>
<td>20 000</td>
</tr>
<tr>
<td>QG 030-198/12</td>
<td>100</td>
<td>59</td>
<td>12</td>
<td>8...14</td>
<td>51</td>
<td>5.8</td>
<td>8.0</td>
<td>-20...+60</td>
<td>30 000</td>
<td>20 000</td>
</tr>
<tr>
<td>QG 030-303/12</td>
<td>140</td>
<td>82</td>
<td>12</td>
<td>8...14</td>
<td>51</td>
<td>5.8</td>
<td>8.7</td>
<td>-20...+60</td>
<td>30 000</td>
<td>20 000</td>
</tr>
<tr>
<td>QG 030-353/12</td>
<td>155</td>
<td>91</td>
<td>12</td>
<td>8...14</td>
<td>51</td>
<td>5.9</td>
<td>9.6</td>
<td>-20...+60</td>
<td>30 000</td>
<td>20 000</td>
</tr>
<tr>
<td>QG 030-148/14</td>
<td>75</td>
<td>44</td>
<td>24</td>
<td>16...28</td>
<td>49</td>
<td>5.7</td>
<td>6.2</td>
<td>-20...+60</td>
<td>30 000</td>
<td>20 000</td>
</tr>
<tr>
<td>QG 030-198/14</td>
<td>100</td>
<td>59</td>
<td>24</td>
<td>16...28</td>
<td>51</td>
<td>5.8</td>
<td>8.0</td>
<td>-20...+60</td>
<td>30 000</td>
<td>20 000</td>
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<tr>
<td>QG 030-303/14</td>
<td>140</td>
<td>82</td>
<td>24</td>
<td>16...28</td>
<td>51</td>
<td>5.8</td>
<td>8.7</td>
<td>-20...+60</td>
<td>30 000</td>
<td>20 000</td>
</tr>
<tr>
<td>QG 030-353/14</td>
<td>155</td>
<td>91</td>
<td>24</td>
<td>16...28</td>
<td>51</td>
<td>5.9</td>
<td>9.6</td>
<td>-20...+60</td>
<td>30 000</td>
<td>20 000</td>
</tr>
</tbody>
</table>

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

The plots show the characteristic curves for the nominal data and the dimensions for the standard version.

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

The values given are applicable only under the specified measurement conditions and may differ depending on the installation conditions.

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

<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>
</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: $L_{PA}$ according to ISO 13347. $L_{PA}$ measured at 1 m distance from fan axis. The values given are only applicable 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. 274
- Cable exit: Axial
- Conformity with standard(s): EN 60950-1
- Approvals: EAC

<table>
<thead>
<tr>
<th>Centrifugal blowers with flange</th>
<th>Weight, centrifugal fans (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1G 085-AB05-01</td>
<td>0.8</td>
</tr>
</tbody>
</table>

- Clearance for screw: max. 4 mm
- Wire end splices
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>
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</thead>
<tbody>
<tr>
<td>*G 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>*G 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 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. 274
- 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>

Wire end splices

Clearance for screw max. 4 mm
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)
- **Bears:** 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)
- **Uᵩ** = 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, 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. 274
- 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>Centrifugal blowers with flange</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1G 108-AB17 -02</td>
<td>0.7 G1G 108-AB17 -02</td>
</tr>
<tr>
<td>R1G 108-AB41 -02</td>
<td>0.7 G1G 108-AB41 -02</td>
</tr>
</tbody>
</table>

Clearance for screw max. 6 mm

Wire end splices

Finger guards from p. 261
Inlet rings from p. 268
Air filter P. 269
Connection diagrams P. 274
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 055-80</td>
<td>24</td>
<td>16-28</td>
<td>255</td>
<td>2200</td>
<td>1.90</td>
<td>62</td>
<td>0</td>
<td>-25...+60</td>
<td>p. 274 / G)</td>
</tr>
<tr>
<td>*1G 120</td>
<td>M1G 055-80</td>
<td>48</td>
<td>36-57</td>
<td>255</td>
<td>2200</td>
<td>0.95</td>
<td>62</td>
<td>0</td>
<td>-25...+60</td>
<td>p. 274 / G)</td>
</tr>
</tbody>
</table>

---

Subject to change
- Technical features: See connection diagram p. 274
- 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>kg</th>
<th>Centrifugal blowers with flange</th>
<th>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>

Wire end splices

Clearance for screw max. 6 mm
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>4.0</td>
<td>10.8</td>
<td>64</td>
<td>0</td>
<td>-25...+60</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>4.0</td>
<td>10.8</td>
<td>64</td>
<td>0</td>
<td>-25...+60</td>
</tr>
</tbody>
</table>

Subject to change

---

**Curves:**

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

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

**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: \( L_{PA} \) 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. 274
- Cable exit: Lateral
- Protection class: I
- Conformity with standard(s): EN 60950-1
- Approvals: ☑ (24 VDC) UL, CSA, ☑ (48 VDC) CCC

### Centrifugal fans

<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 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>

Clearance for screw max. 6 mm
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>℃</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:

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

- **Uᵣ** = 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, 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. 410 m³/h
- **Technical features:** See connection diagram p. 274
- **Cable exit:** Axial
- **Protection class:** I
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** (48 VDC) CCC

### Weight

<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 140-AV17 -02</td>
<td>1.0</td>
<td>G1G 140-AV17 -02</td>
<td>2.3</td>
</tr>
<tr>
<td>R1G 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
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

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

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VDC</th>
<th>VDC m³/h</th>
<th>rpm</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>VFS0146XUNC</td>
<td>VHS0146XUNC</td>
<td>24</td>
<td>16-28</td>
<td>470</td>
<td>2200</td>
<td>100</td>
<td>5.00</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>
</tr>
</tbody>
</table>

Subject to change
- Technical features: See connection diagram p. 274
- 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>Centrifugal blowers with flange</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1G 146-AA07 -52</td>
<td>G1G 146-BA07 -52</td>
<td>2.8</td>
</tr>
<tr>
<td>R1G 146-AA11 -52</td>
<td>G1G 146-BA11 -52</td>
<td>2.8</td>
</tr>
</tbody>
</table>

Wire end splices

Clearance for screw max. 6 mm

Finger guards from p. 261
Inlet rings from p. 268
Air filter P. 269
Connection diagrams P. 274
### DC centrifugal fans and blowers

**$\varnothing$ 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

---

#### Curves:

- $U_n =$ nominal voltage (24 V / 48 V)
- $U_R =$ 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: $L_{PA}$ 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 data

<table>
<thead>
<tr>
<th>$n$ (rpm⁻¹)</th>
<th>$P_{ed}$ (W)</th>
<th>$L_{PA}$ (dB(A))</th>
<th>$\eta_{UL}$ (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1890</td>
<td>134</td>
<td>68</td>
<td>—</td>
</tr>
<tr>
<td>2200</td>
<td>118</td>
<td>67</td>
<td>52</td>
</tr>
<tr>
<td>2500</td>
<td>110</td>
<td>67</td>
<td>57</td>
</tr>
<tr>
<td>2900</td>
<td>102</td>
<td>69</td>
<td>52</td>
</tr>
<tr>
<td>1750</td>
<td>105</td>
<td>67</td>
<td>—</td>
</tr>
<tr>
<td>2030</td>
<td>95</td>
<td>66</td>
<td>52</td>
</tr>
<tr>
<td>2270</td>
<td>90</td>
<td>65</td>
<td>57</td>
</tr>
<tr>
<td>2550</td>
<td>81</td>
<td>67</td>
<td>44</td>
</tr>
<tr>
<td>1580</td>
<td>72</td>
<td>62</td>
<td>—</td>
</tr>
<tr>
<td>1810</td>
<td>66</td>
<td>62</td>
<td>52</td>
</tr>
<tr>
<td>2000</td>
<td>58</td>
<td>62</td>
<td>57</td>
</tr>
<tr>
<td>2200</td>
<td>48</td>
<td>63</td>
<td>54</td>
</tr>
</tbody>
</table>
- Technical features: See connection diagram p. 274
- 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 -52</td>
<td>1.4</td>
<td>G1G 160-BH29 -52</td>
<td>2.8</td>
</tr>
<tr>
<td>R1G 160-AH39 -52</td>
<td>1.4</td>
<td>G1G 160-BH39 -52</td>
<td>2.8</td>
</tr>
</tbody>
</table>

Wire end splices

Clearance for screw max. 6 mm

Finger guards from p. 261
Inlet rings from p. 268
Air filter P. 269
Connection diagrams P. 274
### 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 m³/h</th>
<th>RPM</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
<th>Technical features and connection diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1G 133</td>
<td>M1G.074-BF</td>
<td>②</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 -25...+60</td>
</tr>
<tr>
<td>D1G 133</td>
<td>M1G.074-BF</td>
<td>②</td>
<td>48</td>
<td>36-57</td>
<td>700</td>
<td>1780</td>
<td>105</td>
<td>2.80</td>
<td>62</td>
<td>50 -25...+60</td>
</tr>
</tbody>
</table>

Subject to change

### Curves:

- **Uₙ = nominal voltage** (24 V / 48 V)
- **U₀ = over-voltage** (28 V / 57 V)

| n | Pₑ | L₀₂ | ηₑ | ②  | ①  | ④  | ③  | ⑥  | ⑤  | ⑦  | ⑧  | ⑨  | ⑩ | ⑪ | ⑫ | ⑬ | ⑭ |
|---|----|-----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1780 | 105 | 62 | —  | 2050 | 121 | 63 | 49  | 2490 | 106 | 62 | 41  | 2820 | 100 | 62 | 37  | 2310 | 86  | 59 | 41  |
| 1900 | 97  | 61 | 49  | 2310 | 86  | 59 | 41  | 2820 | 100 | 62 | 37  | 2310 | 86  | 59 | 41  | 2630 | 80  | 60 | 37  |
| 1500 | 73  | 59 | —  | 1720 | 67  | 57 | 49  | 2020 | 58  | 56 | 41  | 2230 | 49  | 56 | 37  | 2230 | 49  | 56 | 37  |

Air performance measured according to ISO 5801, Installation category A, with ebm-papst scroll housing without contact protection. Suction-side noise levels: L₀₂ 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. 274
- **Cable exit:** Variable
- **Protection class:** I
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** UL, CSA; (48 VDC) also CCC

### Weight centrifugal blowers

<table>
<thead>
<tr>
<th>Centrifugal blowers without flange</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1G 133-AB29 -52</td>
<td>3.3</td>
</tr>
<tr>
<td>D1G 133-AB39 -52</td>
<td>3.3</td>
</tr>
</tbody>
</table>

![Diagram of a centrifugal blower](image)

- Wire end splices
- Dimensions (in mm): 215 x 190 x 170.5
- Finger guards from p. 261

Connection diagrams p. 274
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

VHD0133XUNES

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>
<td>118</td>
<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>
</tbody>
</table>

Subject to change

Curves:

- \( U_N = \text{nominal voltage} \) (24 V / 48 V)
- \( U_R = \text{over-voltage} \) (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: \( I_{pA} \) according to ISO 13347. \( I_{pA} \) 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. 274
- 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 133-DC13 -52</td>
<td>3.4</td>
</tr>
<tr>
<td>D1G 133-DC17 -52</td>
<td>3.4</td>
</tr>
</tbody>
</table>

Wire end splices
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

DC centrifugal blowers
Ø 146 mm

Max. 1000 m³/h

Technical features and connection diagram

VHD0146XUNES

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VDC</th>
<th>VDC 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 146</td>
<td>M1G 074-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>
</tr>
<tr>
<td>D1G 146</td>
<td>M1G 074-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>
</tr>
</tbody>
</table>

Subject to change

Curves:
- \( U_n \) = nominal voltage (24 V / 48 V)
- \( U_r \) = 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 level \( L_{NA} \) 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. 274
- 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>Product Code</th>
<th>Weight (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>
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

VHD0160XUNES

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VDC</th>
<th>VDC 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>②</td>
<td>24</td>
<td>16-28</td>
<td>980</td>
<td>1250</td>
<td>112</td>
<td>5.60</td>
<td>60</td>
</tr>
<tr>
<td>D1G 160</td>
<td>M1G 074-CF</td>
<td>②</td>
<td>48</td>
<td>36-57</td>
<td>980</td>
<td>1250</td>
<td>112</td>
<td>2.90</td>
<td>60</td>
</tr>
</tbody>
</table>

Subject to change
- Technical features: See connection diagram p. 274
- 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 160-DA19 -52</td>
<td>3.6</td>
</tr>
<tr>
<td>D1G 160-DA33 -52</td>
<td>3.6</td>
</tr>
</tbody>
</table>

- Wire end splices

max. 176,5
max. 107
max. 226

max. 202
87
100,5

DC fans - specials

- Speed signal
- Alarm signal
- Speed setting / Control input
- FanCheck
- Protected fans, degree of protection: IP 54 / IP 68
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 184.

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. **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.

Available on request:
- Electrically isolated speed signal circuit
- Varying voltage potentials for power and logic circuit

Electrical hookup

All voltages measured to ground. External load resistor $R_a / U_S / U_{BS}$ required.

Signal data

<table>
<thead>
<tr>
<th>Type</th>
<th>VDC</th>
<th>$I_{sink}$</th>
<th>$U_{high}$</th>
<th>$U_{low}$</th>
<th>$I_{max,sink}$</th>
<th>Pulses per revolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 / 24 V</td>
<td>≤ 0.4 mA</td>
<td>2</td>
<td>30</td>
<td>30</td>
<td>4 mA</td>
<td>2</td>
</tr>
<tr>
<td>48 V</td>
<td>≤ 0.4 mA</td>
<td>2</td>
<td>60</td>
<td>60</td>
<td>4 mA</td>
<td>2</td>
</tr>
</tbody>
</table>

Subject to change

Standard value, can vary depending on fan series.
* Depending on the fan electronics other values are feasible e.g. 3 or 6.

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.

Available on request:
- Electrically isolated speed signal circuit
- Varying voltage potentials for power and logic circuit

Electrical hookup

All voltages measured to ground.

Signal data

<table>
<thead>
<tr>
<th>Type</th>
<th>VDC</th>
<th>$I_{sink}$</th>
<th>$U_{high}$</th>
<th>$U_{low}$</th>
<th>$I_{max,sink}$</th>
<th>Pulses per revolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 / 24 / 48 V</td>
<td>≤ 0.4 mA</td>
<td>1</td>
<td>2.5—5.5 mA</td>
<td>1</td>
<td>1 mA</td>
<td>2</td>
</tr>
</tbody>
</table>

Subject to change

Standard value, can vary depending on fan series.
* Depending on the fan electronics other values are feasible e.g. 3 or 6.
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
Speed limit

- 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.

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

All voltages measured to ground.
External load resistor $R_b$ from $U_a$ to $U_{BA}$ required.

Electrical hookup

All voltages measured to ground.
External load resistor $R_b$ from $U_a$ to $U_{BA}$ required.

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
Speed limit

- 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.

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

All voltages measured to ground.
External load resistor $R_b$ from $U_a$ to $U_{BA}$ required.

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 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>
</tr>
</thead>
<tbody>
<tr>
<td>12 / 24 V</td>
<td></td>
<td>&lt;0.4</td>
<td>n &gt; n_G</td>
<td>2</td>
<td>&lt;30</td>
<td>n &lt; n_G</td>
</tr>
<tr>
<td>48 V</td>
<td></td>
<td>&lt;0.4</td>
<td>n &gt; n_G</td>
<td>2</td>
<td>&lt;60</td>
<td>n &lt; n_G</td>
</tr>
</tbody>
</table>

Subject to change: Standard value, can vary depending on fan series.

### Selectable parameters:
- Speed limit
- t<sub>s</sub> Alarm signal suppression during start-up
- t<sub>d</sub> Alarm delay time during run-up

For existing products, information about alarm signals is included in the product data sheet.
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.

Electrical hookup

All voltages measured to ground
External load resistor $R_A$ from $U_A$ to $U_{BA}$ required.

Available on request:
- Alarm circuit TTL compatible.

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 /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.

Electrical hookup

All voltages measured to ground
External load resistor $R_A$ from $U_A$ to $U_{BA}$ required.

* Speed limit $n_G = 0$ rpm
### 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>
</tr>
</thead>
<tbody>
<tr>
<td>12 / 24 V</td>
<td>≤ 0.4</td>
<td>n &gt; n_G</td>
<td>≤ 30</td>
<td>n &lt; n_G</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>48 V</td>
<td>≤ 0.4</td>
<td>n &gt; n_G</td>
<td>≤ 60</td>
<td>n &lt; n_G</td>
<td>0</td>
<td>60</td>
</tr>
</tbody>
</table>

For existing products, information about alarm signals is included in the product data sheet.
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. 272) is required (not included in the standard scope of delivery)

Internal temperature sensor type I

- NTC integrated in the fan hub

Standard speed/temperature curve for type T and type I

![Graph showing the standard speed/temperature curve for type T and type I.](image)

<table>
<thead>
<tr>
<th>Temperature °C</th>
<th>Minimum Speed n min</th>
<th>Maximum Speed n max</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>0.5 n max</td>
<td>n max</td>
</tr>
<tr>
<td>50</td>
<td>0.5 n max</td>
<td>n max</td>
</tr>
</tbody>
</table>

Optionally available with selectable temperature/speed curve

![Graph showing the optionally available speed/temperature curve with selectable temperature/speed curve.](image)

<table>
<thead>
<tr>
<th>Temperature °C</th>
<th>Minimum Speed n min</th>
<th>Maximum Speed n max</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>800 1/2 n min</td>
<td>n max</td>
</tr>
<tr>
<td>85</td>
<td>85 °C</td>
<td>n max, based on model</td>
</tr>
</tbody>
</table>

n_{\text{min}} = \frac{1}{2} n_{\text{max}}
T_{\text{min}} = 30 \degree C; T_{\text{max}} = 50 \degree C

n_{\text{min}} = 800 \frac{1}{2} n_{\text{min}}
T_{\text{min}} = 5 \degree C; T_{\text{max}} < 85 \degree C, based on model
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

**Standard P / A curve**

- Optionally available with selectable P / A speed curve

Typical input resistance > 10 k

Internal reference = + 5 V
R1 typical 4.7...10 kΩ
R2 typical 100 kΩ
Speed setting via multi-option 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. 185).
- To reach the maximum speed, the control cable must be connected to the U_B.
- The control input is usually combined with an open collector tachometer (type /2, see page 178).

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

<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>

### Application instructions for various control options

- **Temperature control module**
  - 50002-1-0174
  - 50003-1-0174

- **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**
  - PWM 1 - 10 kHz
  - 10 V -> n = max
  - < 1 V -> n = min
  - Startup at > 1.4 V

- **Full speed**
  - 1 V - 10 V

- **Lin/PWM control input**
  - 0-10 VDC / PWM

---

**Connection**

- **Speed display**
- **Alarm**
- **Controller**
- **Counter**

**Customer circuit**

- **Supply voltage ripple** ±3.5%
- **Lin/PWM control input** 0-10 VDC / PWM
- **I_sink** max. 10 mA
- **Tach output pulses per revolution**
- **GND**

**Fan**

### Wire 1

- **Red**
- **Blue**
- **White**
- **Purple**

- **Wire**
  - **Connection**
  - **Color**
  - **Assignment/function**

<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>0-10 V / PWM</td>
<td>Purple</td>
<td>Control input (impedance 100 kV)</td>
</tr>
</tbody>
</table>

---

*ebm papst*
FanCheck is a diagnostic tool integrated into the fan electronics for determining the remaining service life of the fan, dependent upon temperature, speed, and preset environmental parameters. The FanCheck system emits a pulse width modulated signal, which reflects the remaining service life of the fan. The pulse width is proportional to the remaining service life of the fan. The FanCheck signal has a pulse width of 10% at the end of the service life and a pulse width of 90% with full service life. Basic data, such as the ball bearing system, bearing lubrication or lubricant used, are programmed in advance as parameters into the software. The customer defines the environmental conditions, such as the use of fans in moist, dusty, or dirty environments; other parameters such as ambient temperature and speed are determined continuously. Based on all the influencing parameters, the software can, by means of a complex algorithm, calculate the remaining service life for each individual fan. To be able to better demonstrate function, the FanCheck system possesses a demo function for samples, in which the service life expires much more quickly than in real time. Using the alarm signal, tacho signal or an additional lead, the remaining service life can be retrieved and analyzed. Depending on the selected feature, the remaining service life can be emitted in the form of a PWM or an analog signal. In this way, optimum benefit is gained from the individual service life of each fan; thus, a fan exchange that is too early or too late can be avoided.

**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</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>6318 N/2 H3P-305</td>
<td>675</td>
<td>397</td>
<td>48</td>
<td>36...60</td>
<td>-</td>
<td>7.5</td>
<td>58</td>
<td>5 000</td>
<td>-20...+70</td>
<td>77 500 / 40 000</td>
<td>130 000</td>
</tr>
</tbody>
</table>

Subject to change.

**Functionality**

- **End of Life Indication**
- **Output via alarm, PWM, analog or digital signal**
- **Environment**
- **Temperature**
- **Measurement**
- **Used Lifetime CALC**
- **Knowledge & Behavior of Fan Bearing-System**
- **Lubricant**
- **Pollution**
- **Knowledge & Behavior of Fan Bearing-System**
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>Water protection (second digit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protection against foreign bodies and accidental contact (first digit)</td>
<td>Protection against dripping water or condensation</td>
</tr>
<tr>
<td>X No protection</td>
<td>X No protection</td>
</tr>
<tr>
<td>1 Protection against foreign objects &gt; 50 mm (back of the hand)</td>
<td>1 Protection against dripping water, fans tilted 15° from vertical</td>
</tr>
<tr>
<td>2 Protection against foreign objects &gt; 12 mm (finger)</td>
<td>2 Protection against sprayed water up to 60° from vertical</td>
</tr>
<tr>
<td>3 Protection against foreign objects &gt; 2.5 mm (tool)</td>
<td>3 Protection against sprayed water from all sides</td>
</tr>
<tr>
<td>4 Protection against foreign objects &gt; 1 mm (wire)</td>
<td>4 Protection against low-pressure water jets</td>
</tr>
<tr>
<td>5 Protection against dust in harmful quantities</td>
<td>5 Protection against high-pressure water jets</td>
</tr>
<tr>
<td>6 Dust-proof</td>
<td>6 Protection against temporary submersion (15 cm - 1 m)</td>
</tr>
<tr>
<td>8 Protection against continuous submersion</td>
<td>8 Protection against continuous submersion</td>
</tr>
</tbody>
</table>

* IP = International degree of protection marking
For AC- and EC-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.
ACmaxx / EC axial fans

Technical information about ACmaxx
Overview
ACmaxx axial fans
GreenTech EC tubaxial 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 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.
ebm-papst offers two generations of ACmaxx products that meet different needs.

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 tubaxial fans offer the same features for moisture protection, splash water, and tougher environmental conditions.

Particular design features of the GreenTech EC tubaxial 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 ACi 4400 GreenTech EC tubaxial 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 tubaxial fans – it’s that simple.

The GreenTech EC tubaxial fan is more efficient!
ACmaxx saves energy, and the GreenTech EC tubaxial 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 tubaxial 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 tubaxial 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 tubaxial fan is quieter!
The ACi 4400 GreenTech EC tubaxial 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 tubaxial 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 175.
Or you can simply contact our application engineers to discuss your ideal ACmaxx or GreenTech EC tubeaxial fan.
Fans for AC operation

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>
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<td>196</td>
</tr>
<tr>
<td>92 x 38</td>
<td>AC 3200 J</td>
<td>144</td>
<td>197</td>
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<tr>
<td>119 x 25</td>
<td>AC 4400 FN</td>
<td>205</td>
<td>198</td>
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<td>AC 4300</td>
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<td>199</td>
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<td>119 x 38</td>
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<td>AC 4400</td>
<td>100...175</td>
<td>201</td>
</tr>
<tr>
<td>Ø 172 x 51</td>
<td>AC 6200 N</td>
<td>350</td>
<td>202</td>
</tr>
<tr>
<td>Ø 130</td>
<td>W1G 130</td>
<td>220...370</td>
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</tr>
<tr>
<td>Ø 200</td>
<td>W3G 200</td>
<td>560...1065</td>
<td>206</td>
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<tr>
<td>Ø 250</td>
<td>W3G 250</td>
<td>900...1910</td>
<td>208</td>
</tr>
<tr>
<td>Ø 98.5 x 130</td>
<td>AC 100</td>
<td>40...135</td>
<td>210</td>
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</table>

Subject to change

Overview of technically feasible designs

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>V/F, Ul, CCQ, Soft Start</th>
<th>SW/SW, Brake bearings / clutch setting</th>
<th>Speed signal</th>
<th>Go / No go alarm</th>
<th>Alarm with speed limit</th>
<th>External temperature sensor</th>
<th>Internal temperature sensor</th>
<th>PWM control input</th>
<th>Analog control input</th>
<th>Moisture protection</th>
<th>Salt spray protection</th>
<th>Page</th>
</tr>
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<tbody>
<tr>
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<td>AC 4400 FN</td>
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<td>•</td>
<td>•</td>
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<tr>
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<td>–</td>
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</tr>
<tr>
<td>119 x 38</td>
<td>AC 4400 N</td>
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<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<td>119 x 38</td>
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<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>–</td>
<td>201</td>
</tr>
<tr>
<td>Ø 172 x 51</td>
<td>AC 6200 N</td>
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<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>–</td>
<td>202</td>
</tr>
<tr>
<td>Ø 98.5 x 130</td>
<td>AC 100</td>
<td>*</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>210</td>
</tr>
</tbody>
</table>

Subject to change

- Not yet available
- Sleeve bearings
- Available
- Ball bearings

* Partially granted, partially in registration stage.

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 $L_{WA}$ ISO 10302 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
- Salt spray protection
- Moisture protection
- Degree of protection: IP 65

### Series AC 8300
**VWC0080ASJAS**

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>Type</th>
<th>Air flow m³/h</th>
<th>Air flow cfm</th>
<th>Nominal voltage VAC</th>
<th>Frequency Hz</th>
<th>Voltage range VAC</th>
<th>Sound pressure level dB(A)</th>
<th>Sound power level Bel(A)</th>
<th>Watts</th>
<th>Nominal speed rpm⁻¹</th>
<th>Temperature range °C</th>
<th>Service life L_{10}(40 °C</th>
<th>Service life L_{10}(T_{max})</th>
<th>Life expectancy L_{10}(40 °C</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC 8300 H</td>
<td>80</td>
<td>47</td>
<td>100...240</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>
<td>92 500</td>
<td>Life expectancy L_{10}(40 °C see page 15)</td>
<td></td>
<td></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 $L_{WA}$ ISO 10302 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:
ACmaxx axial fans

- Material: Housing: GRP (PBTP)
  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
- Highlights: Universally usable for all power voltages between 85 and 265 VAC
- Weight: 325 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 65

Finger guards
P. 258

Max. 144 m³/h

Subject to change

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level $L_{W_{A}}$ ISO 10302 measured on a hemisphere with a radius of 2 m.
Sound pressure level $L_{p_{A}}$ 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 3200 J
VWC092J5GBS

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>
</tr>
</thead>
<tbody>
<tr>
<td>AC 3200 JLU</td>
<td>70</td>
<td>41</td>
<td>100...240</td>
<td>50 / 60</td>
<td>85...265</td>
<td>36</td>
<td>4.6</td>
<td>2.6</td>
<td>3 360</td>
<td>-20...+70</td>
<td>70 000 / 35 000</td>
<td>117 500</td>
</tr>
<tr>
<td>AC 3200 JH</td>
<td>144</td>
<td>85</td>
<td>100...240</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>

Speed variants available on request.

1) Fiberglass-reinforced plastic
Max. 205 m³/h

---

ACmaxx axial fans

- Material:
  - Housing: GRP
  - 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: 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

---

Series AC 4400 FN
VWC0119FSJBS

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow</th>
<th>Air flow</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Nominal sound pressure level</th>
<th>Nominal sound power level</th>
<th>Sound power level</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Life expectancy L(10 IPC) (40 °C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC 4400 FNN</td>
<td>205</td>
<td>121</td>
<td>100...240</td>
<td>50 / 60</td>
<td>85...265</td>
<td>53</td>
<td>6.2</td>
<td>12</td>
<td>4 850</td>
<td>-20...+70</td>
<td>60 000 / 30 000</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_W ISO 10302 measured on a hemisphere with a radius 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

---

Material:
- Housing: GRP (PBTP)
- Impeller: GRP (PA)

1) Fiberglass-reinforced plastic

---
ACmaxx axial fans

- 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

- 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 65

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L\(_{\text{WA}}\) ISO 10302 measured on a hemisphere with a radius of 2 m.
Sound pressure level L\(_{\text{AP}}\) 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 4300
VWC0119ASJAZ

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow m(^{3})/h</th>
<th>Air flow cfm</th>
<th>Nominal voltage VAC</th>
<th>Frequency Hz</th>
<th>Air flow VAC</th>
<th>Voltage range dB(A)</th>
<th>Sound pressure level Bel(A) Watts</th>
<th>Nominal speed rpm</th>
<th>Temperature range °C</th>
<th>Service life L(_{\text{10}}) (40 °C) Hours</th>
<th>Service life L(<em>{\text{10}}) (T(</em>{\text{max}})) Hours</th>
<th>Life expectancy L(_{\text{IPC}}) (40 °C) see page 15 Hours</th>
<th>Curve</th>
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<tbody>
<tr>
<td>AC 4300</td>
<td>170</td>
<td>100</td>
<td>100...240</td>
<td>50 / 60</td>
<td>85...265</td>
<td>45</td>
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<td>45 000 / 22 500</td>
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<td>AC 4300 H</td>
<td>204</td>
<td>120</td>
<td>100...240</td>
<td>50 / 60</td>
<td>85...265</td>
<td>51</td>
<td>6.4</td>
<td>12</td>
<td>3 400</td>
<td>-20...+70</td>
<td>45 000 / 22 500</td>
<td>75 500</td>
<td>117 500</td>
</tr>
</tbody>
</table>

Subject to change

Speed variants available on request.

1) Fiberglass-reinforced plastic.
**GreenTech EC tubeaxial fans**

- **Material:** Housing: GRP\(^\text{1)}\) (PBT)  
  Impeller: GRP\(^\text{1)}\) (PA)
- **Direction of air flow:** Exhaust over struts  
  - Possible special versions:  
    (See chapter DC fans - specials)  
    - Moisture protection  
    - Salt spray protection  
    - Degree of protection: IP 65
- **Direction of rotation:** Clockwise, looking towards rotor  
- **Connection:** Via single wires AWG 24  
- **Highlights:** Power supply and drive electronics completely integrated. Universally usable for all power voltages between 90 and 264 VAC. Compact design.  
  250 g
- **Weight:**

---

**Series ACi 4400 N**  
**VWC0120YSGBS**

### Nominal data

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<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</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACi 4400 NLU</td>
<td>78</td>
<td>46</td>
<td>100..240</td>
<td>50 / 60</td>
<td>90..264</td>
<td>23</td>
<td>3.7</td>
<td>1.1</td>
<td>1500</td>
<td>-40...+75</td>
<td>65 000 / 25 000</td>
<td>110 000</td>
</tr>
<tr>
<td>ACi 4400 NMLU</td>
<td>100</td>
<td>59</td>
<td>100..240</td>
<td>50 / 60</td>
<td>90..264</td>
<td>25</td>
<td>4.1</td>
<td>1.7</td>
<td>1850</td>
<td>-40...+75</td>
<td>65 000 / 25 000</td>
<td>110 000</td>
</tr>
<tr>
<td>ACi 4400 NNU</td>
<td>140</td>
<td>82</td>
<td>100..240</td>
<td>50 / 60</td>
<td>90..264</td>
<td>36</td>
<td>4.8</td>
<td>2.8</td>
<td>2700</td>
<td>-40...+75</td>
<td>65 000 / 25 000</td>
<td>110 000</td>
</tr>
<tr>
<td>ACi 4400 NHU</td>
<td>160</td>
<td>94</td>
<td>100..240</td>
<td>50 / 60</td>
<td>90..264</td>
<td>39</td>
<td>5.2</td>
<td>3.8</td>
<td>3000</td>
<td>-40...+70</td>
<td>65 000 / 25 000</td>
<td>110 000</td>
</tr>
<tr>
<td>ACi 4400 NHHU</td>
<td>175</td>
<td>103</td>
<td>100..240</td>
<td>50 / 60</td>
<td>90..264</td>
<td>43</td>
<td>5.5</td>
<td>4.6</td>
<td>3300</td>
<td>-40...+70</td>
<td>65 000 / 25 000</td>
<td>110 000</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 10302  
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. 175 m³/h

GreenTech EC tubeaxial fans

- Material: Housing: GRP; Impeller: GRP (PA)
- Direction of air flow: Exhaust over struts
- Direction of rotation: Clockwise, looking towards rotor
- Connection: Via single wires AWG 24
- Highlights: Power supply and drive electronics completely integrated. Universally usable for all power voltages between 90 and 264 VAC. Compact design. 250 g
- Possible special versions: (See chapter DC fans - specials)
  - Speed signal
  - PWM control input
  - Analog control input
  - Moisture protection
  - Salt spray protection
  - Degree of protection: IP 65
  - Approval for refrigeration products acc. to EN60335-24 / EN60335-89 and ATEX acc. to EN60079-15

Series ACi 4400
VWC0120YSGBS

<table>
<thead>
<tr>
<th>Nominal data</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>Series-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 (40 °C)</th>
<th>Life expectancy L10γ (40 °C)</th>
<th>Curve</th>
</tr>
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<tbody>
<tr>
<td>Type</td>
<td>m³/h</td>
<td>cfm</td>
<td>VAC</td>
<td>Hz</td>
<td>VAC</td>
<td>dB(A)</td>
<td>Bel(A)</td>
<td>Watts</td>
<td>rpm</td>
<td>°C</td>
<td>Hours</td>
<td>Hours</td>
<td>Hours</td>
<td>Hours</td>
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<td>103</td>
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<td>50 / 60</td>
<td>90...264</td>
<td>43</td>
<td>5.5</td>
<td>4.6</td>
<td>3 300</td>
<td>-40...+75</td>
<td>65 000 / 25 000</td>
<td>110 000</td>
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<td>100...240</td>
<td>50 / 60</td>
<td>90...264</td>
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<td>5.5</td>
<td>4.6</td>
<td>3 300</td>
<td>-40...+75</td>
<td>65 000 / 25 000</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 $L_{W A}$ measured on a hemisphere with a radius of 2 m. Sound pressure level $L_{p A}$ 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)
- Impeller: GRP (PA)

Weight:
250 g

Degree of protection:
IP 65

Approval for refrigeration products acc. to EN60335-24 / EN60335-89 and ATEX acc. to EN60079-15
Air performance measured according to: ISO 5801.
Installation category A, without contact protection.

- **Noise:** Total sound power level $L_{W}$ ISO 10302 measured on a hemisphere with a radius of 2 m.
- **Sound pressure level** $L_p$ A 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 65

### 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) Fiber glass-reinforced plastic

### Nominal data

#### Series AC 6200 N
VWS0143XSLCS

<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 (0 °C)</th>
<th>Life expectancy L100°C</th>
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</thead>
<tbody>
<tr>
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<td>206</td>
<td>100...240</td>
<td>50 / 60</td>
<td>85...265</td>
<td>50</td>
<td>5.7</td>
<td>14</td>
<td>2 850</td>
<td>-20...+70</td>
<td>80 000 / 40 000</td>
<td>135 000</td>
</tr>
</tbody>
</table>

Subject to change

Speed variants available on request.
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

---

**VWS0130XSLBS**

### 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>W1G130-AA49 -01</td>
<td>M1G 055-Al</td>
<td>1–115</td>
<td>50/60</td>
<td>3200</td>
<td>24</td>
<td>0.38</td>
<td>90</td>
<td>-30..+60</td>
<td>0.75</td>
</tr>
<tr>
<td>W1G130-AA25 -01</td>
<td>M1G 055-Al</td>
<td>1–230</td>
<td>50/60</td>
<td>3200</td>
<td>24</td>
<td>0.19</td>
<td>90</td>
<td>-30..+70</td>
<td>0.75</td>
</tr>
</tbody>
</table>

Subject to change

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

---

### 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.
- 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 $n_{\text{min}}$ and $n_{\text{max}}$ can be programmed

Connection lead (total length 450 mm) is fitted ex works and can be detached.
### 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

### 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>Curve</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>M3G 055-BD</td>
<td>1 – 200–240</td>
<td>900</td>
<td>54</td>
<td>0.55</td>
<td>96</td>
<td>-25..+60</td>
<td>1.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>W3G200-HD23 -10</td>
<td>M3G 055-BD</td>
<td>1 – 115</td>
<td>2900</td>
<td>65</td>
<td>1.00</td>
<td>94</td>
<td>-25..+60</td>
<td>1.6</td>
<td></td>
<td></td>
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</table>

Subject to change

<table>
<thead>
<tr>
<th>n [rpm⁻¹]</th>
<th>Pₚₑₜ [W]</th>
<th>I [A]</th>
<th>Lₚₐ [dB(A)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>2970</td>
<td>50</td>
<td>0.49</td>
<td>65</td>
</tr>
<tr>
<td>2890</td>
<td>54</td>
<td>0.53</td>
<td>64</td>
</tr>
<tr>
<td>2830</td>
<td>58</td>
<td>0.56</td>
<td>65</td>
</tr>
<tr>
<td>2900</td>
<td>54</td>
<td>0.55</td>
<td>70</td>
</tr>
<tr>
<td>2645</td>
<td>36</td>
<td>0.37</td>
<td>62</td>
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<td>2575</td>
<td>39</td>
<td>0.40</td>
<td>61</td>
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<td>2530</td>
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<td>62</td>
</tr>
<tr>
<td>2500</td>
<td>43</td>
<td>0.43</td>
<td>67</td>
</tr>
<tr>
<td>2970</td>
<td>50</td>
<td>0.49</td>
<td>65</td>
</tr>
<tr>
<td>2890</td>
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<td>0.53</td>
<td>64</td>
</tr>
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<td>2830</td>
<td>58</td>
<td>0.56</td>
<td>65</td>
</tr>
<tr>
<td>2900</td>
<td>54</td>
<td>0.55</td>
<td>70</td>
</tr>
<tr>
<td>3150</td>
<td>62</td>
<td>1.00</td>
<td>66</td>
</tr>
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<td>3050</td>
<td>65</td>
<td>1.00</td>
<td>66</td>
</tr>
<tr>
<td>2930</td>
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<td>72</td>
</tr>
<tr>
<td>2900</td>
<td>65</td>
<td>1.00</td>
<td>74</td>
</tr>
</tbody>
</table>

Air performance measured according to ISO 5801. Installation category A without contact protection. Suction-side noise levels Lₚₐ dB(A) according to ISO 13347, Lₚₑₜ dB(A) 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. 275/276
- **Touch current:** $\leq 3.5$ 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

Diagram showing finger guards from p. 260 and connection diagrams p. 275/276.
## 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
  - “B”
- **Insulation class:** 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>W3G250-HH07 -01</td>
<td>M3G 055-CF</td>
<td>②</td>
<td>1–200-240</td>
<td>50/60</td>
<td>2 330</td>
<td>83</td>
<td>0.72</td>
<td>100</td>
<td>-25...+60</td>
</tr>
<tr>
<td>W3G250-HH07 -03</td>
<td>M3G 055-CF</td>
<td>②</td>
<td>1–200-240</td>
<td>50/60</td>
<td>2 330</td>
<td>83</td>
<td>0.72</td>
<td>100</td>
<td>-25...+60</td>
</tr>
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<td>W3G250-HH53 -03</td>
<td>M3G 055-CF</td>
<td>③</td>
<td>1–115</td>
<td>50/60</td>
<td>2 040</td>
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<td>80</td>
<td>-25...+50</td>
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<td>M3G 055-CF</td>
<td>③</td>
<td>1–115</td>
<td>50/60</td>
<td>2 700</td>
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<td>1.90</td>
<td>130</td>
<td>-25...+60</td>
</tr>
</tbody>
</table>

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 ⑤ Speed-controlled

Air performance measured according to ISO 5801. Installation category A, without contact protection. Suction-side noise levels $L_{pA}$ 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. 275/276
- **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
Max. 135 m³/h

ACmaxx in-line duct fan
Ø 98.5 x 130 mm

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

- Direction of air flow: Intake over struts

- Direction of rotation: Clockwise, looking towards rotor

- Connection: Via 3-pin Europa terminal strip
  max. 1.5 mm²

- Highlights: Universally usable for all main voltages between 85 and 265 VAC, 50-60 Hz, Boost function
  Vibration-isolated motor
  Optional: new impeller for high pressure. Two speeds over jumper adjustable

- Weight: 400 g

Possible special versions:
(See chapter DC fans - specials)
- Speed signal
- PWM control input
- Analog control input 0...10 VDC
- Moisture protection
- Degree of protection: IP 44 (IP 45 possible depending on installation position)

Series AC 100
VUS0092XSGBS

Nominal data

<table>
<thead>
<tr>
<th>Type high air flow</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>Series-sleeve bearings</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L₁₀, (40 °C)</th>
<th>Sintec sleeve bearings</th>
<th>Ball bearings</th>
<th>Life expectancy L₁₀ipc (40 °C)</th>
<th>Curve</th>
</tr>
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<tbody>
<tr>
<td>Nominal boost</td>
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<td>32</td>
<td>100...240</td>
<td>50-60</td>
<td>85...265</td>
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<td>1.8</td>
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<td>2 750</td>
<td>-10...+55</td>
<td>70 000 / 50 000</td>
<td>117 500</td>
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<td></td>
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<td>100...240</td>
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<td>85...265</td>
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<td>tbd</td>
<td>tbd</td>
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</tr>
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</table>

Subject to change
* On request

Impeller

<table>
<thead>
<tr>
<th>Impeller Type</th>
<th>Type</th>
<th>Boost off, Jumper low</th>
<th>Boost off, Jumper high</th>
<th>Boost on</th>
</tr>
</thead>
<tbody>
<tr>
<td>High air flow</td>
<td>AC 100 MR</td>
<td>1 250</td>
<td>2 050</td>
<td>3 150</td>
</tr>
<tr>
<td>High air flow</td>
<td>AC 100 NR</td>
<td>2 200*</td>
<td>2 750</td>
<td>3 500</td>
</tr>
<tr>
<td>High pressure</td>
<td>AC 100 MR*</td>
<td>1 250*</td>
<td>2 050*</td>
<td>3 150*</td>
</tr>
<tr>
<td>High pressure</td>
<td>AC 100 NR-017</td>
<td>2 180</td>
<td>2 680</td>
<td>3 300</td>
</tr>
</tbody>
</table>

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level Lₑ₀ dbA measured on a hemisphere with a radius of 2 m.
Sound pressure level Lₚ dbA measured at 1 m distance from fan axis.
The values given are only applicable 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

For detailed information see:
http://www.ebmpapst.com/general conditions

http://www.ebmpapst.com/general conditions
ACmaxx in-line duct fan
Ø 98.5 x 130 mm

- Material: Housing: GRP\(^1\) (PBT)
  - Grilles: GRP\(^1\) (PA)
- Direction of air flow: Intake over struts
- Direction of rotation: Clockwise, looking towards rotor
- Connection: Via 3-pin Europa terminal strip
  max. 1.5 mm\(^2\)
- Highlights: Universally usable for all main voltages between 85 and 265 VAC, 50-60 Hz, Boost function
  Vibration-isolated motor
  Optional: new impeller for high pressure. Two speeds over jumper adjustable
- Weight: 400 g

Subject to change
* on request

Series AC 100
VUS092 Knox GS

Nominal data

<table>
<thead>
<tr>
<th>Type high pressure</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>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nominal Boost</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>AC 100 MR(^*)</td>
<td>40</td>
<td>23</td>
<td>100...240</td>
<td>50-60</td>
<td>85...265.</td>
<td>31</td>
<td>4.2</td>
<td>tbd</td>
<td>2 050(^*)</td>
<td>-10...+55</td>
<td>70 000 / 50 000</td>
<td>117 500</td>
</tr>
<tr>
<td></td>
<td>62</td>
<td>36</td>
<td></td>
<td></td>
<td></td>
<td>38</td>
<td>4.7</td>
<td>tbd</td>
<td>3 150(^*)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Nominal Boost</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC 100 NR-017</td>
<td>53</td>
<td>31</td>
<td>100...240</td>
<td>50-60</td>
<td>85...265.</td>
<td>33</td>
<td>4.4</td>
<td>2.8</td>
<td>2 680</td>
<td>-10...+55</td>
<td>70 000 / 50 000</td>
<td>117 500</td>
</tr>
<tr>
<td></td>
<td>66</td>
<td>39</td>
<td></td>
<td></td>
<td></td>
<td>40</td>
<td>5.0</td>
<td>3.5</td>
<td>3 300</td>
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</tr>
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</table>

Subject to change
* on request

Impeller

<table>
<thead>
<tr>
<th>Impeller</th>
<th>Type</th>
<th>Boost off, Jumper low</th>
<th>Boost off, Jumper high</th>
<th>Boost on</th>
</tr>
</thead>
<tbody>
<tr>
<td>High air flow</td>
<td>AC 100 MR</td>
<td>1 250</td>
<td>2 050</td>
<td>3 150</td>
</tr>
<tr>
<td>High air flow</td>
<td>AC 100 NR</td>
<td>2 200(^*)</td>
<td>2 750</td>
<td>3 500</td>
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<tr>
<td>High pressure</td>
<td>AC 100 MR(^*)</td>
<td>1 250(^*)</td>
<td>2 050(^*)</td>
<td>3 150(^*)</td>
</tr>
<tr>
<td>High pressure</td>
<td>AC 100 NR-017</td>
<td>2 180</td>
<td>2 680</td>
<td>3 300</td>
</tr>
</tbody>
</table>

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Note: Total sound power level L\(_{WA}\) ISO 10302
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
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
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”.

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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

AC axial fans
### Overview of Air Performance

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Series</th>
<th>Air Flow</th>
<th>m³/h</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80 x 38</td>
<td>8000 N</td>
<td>yes</td>
<td>30...61</td>
</tr>
<tr>
<td>97 x 37</td>
<td>8000 TV</td>
<td>yes</td>
<td>24...47</td>
</tr>
<tr>
<td>92 x 25</td>
<td>3900</td>
<td>yes</td>
<td>31...70</td>
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<tr>
<td>92 x 38</td>
<td>3000</td>
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<td>119 x 25</td>
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<td>yes</td>
<td>84...135</td>
</tr>
<tr>
<td>119 x 38</td>
<td>4000 N</td>
<td>yes</td>
<td>80...180</td>
</tr>
<tr>
<td>119 x 38</td>
<td>4000 Z</td>
<td>yes</td>
<td>100...180</td>
</tr>
<tr>
<td>127 x 38</td>
<td>3900</td>
<td>yes</td>
<td>125...140</td>
</tr>
<tr>
<td>135 x 38</td>
<td>5600</td>
<td>yes</td>
<td>235...270</td>
</tr>
<tr>
<td>150 x 172 x 38</td>
<td>W2E 142</td>
<td>yes</td>
<td>320...380</td>
</tr>
<tr>
<td>150 x 55</td>
<td>W2S 130-AA</td>
<td>yes</td>
<td>325...380</td>
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<td>150 x 55</td>
<td>W2S 130-BM</td>
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<td>380...425</td>
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<td>172 x 51</td>
<td>W2E 143</td>
<td>yes</td>
<td>375...500</td>
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<tr>
<td>225 x 80</td>
<td>W2E 200</td>
<td>yes</td>
<td>880...1030</td>
</tr>
<tr>
<td>280 x 80</td>
<td>W2E 250</td>
<td>yes</td>
<td>1865</td>
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</tbody>
</table>

### Overview of Technically Feasible Designs

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Series</th>
<th>OPTIONAL</th>
<th>P.</th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
<td>80 x 38</td>
<td>8000 N</td>
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<td>218</td>
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<td>78 x 37</td>
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<td>92 x 25</td>
<td>3900</td>
<td>yes</td>
<td>220</td>
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<td>92 x 38</td>
<td>3000</td>
<td>yes</td>
<td>221</td>
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<td>9900</td>
<td>yes</td>
<td>222</td>
</tr>
<tr>
<td>119 x 38</td>
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<td>223</td>
</tr>
<tr>
<td>119 x 38</td>
<td>4000 Z</td>
<td>yes</td>
<td>224</td>
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<td>108 x 37</td>
<td>4600 T2</td>
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<td>135 x 38</td>
<td>5600</td>
<td>yes</td>
<td>227</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 10302 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)

### Possible special versions:
- Moisture protection
- Salt spray protection
- Degree of protection: IP 54 / IP 65

### Fan type

<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>8880 N</td>
<td>30</td>
<td>17.7</td>
<td>230</td>
<td>50</td>
<td>18</td>
<td>3.3</td>
<td>9.0</td>
<td>1 750</td>
<td>-10...+80</td>
<td>60 000 / 20 000</td>
<td>102 500</td>
</tr>
<tr>
<td>8850 N</td>
<td>37</td>
<td>21.8</td>
<td>230</td>
<td>50</td>
<td>24</td>
<td>3.9</td>
<td>12.5</td>
<td>2 150</td>
<td>-10...+70</td>
<td>52 500 / 27 500</td>
<td>87 500</td>
</tr>
<tr>
<td>8550 N</td>
<td>50</td>
<td>29.4</td>
<td>230</td>
<td>50</td>
<td>30</td>
<td>4.4</td>
<td>12.0</td>
<td>2 700</td>
<td>-10...+70</td>
<td>52 500 / 27 500</td>
<td>87 500</td>
</tr>
<tr>
<td>8856 N</td>
<td>50</td>
<td>29.4</td>
<td>230</td>
<td>50</td>
<td>31</td>
<td>4.5</td>
<td>12.0</td>
<td>2 800</td>
<td>-40...+90</td>
<td>52 500 / 10 000</td>
<td>87 500</td>
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<td>115</td>
<td>60</td>
<td>21</td>
<td>3.7</td>
<td>8.0</td>
<td>1 950</td>
<td>-10...+80</td>
<td>62 500 / 20 000</td>
<td>105 000</td>
</tr>
<tr>
<td>8800 N</td>
<td>47</td>
<td>27.7</td>
<td>115</td>
<td>60</td>
<td>28</td>
<td>4.3</td>
<td>11.0</td>
<td>2 500</td>
<td>-10...+70</td>
<td>55 000 / 27 500</td>
<td>92 500</td>
</tr>
<tr>
<td>8500 N</td>
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<td>35.9</td>
<td>115</td>
<td>60</td>
<td>34</td>
<td>4.8</td>
<td>11.0</td>
<td>3 200</td>
<td>-10...+75</td>
<td>55 000 / 22 500</td>
<td>92 500</td>
</tr>
<tr>
<td>8506 N</td>
<td>61</td>
<td>35.9</td>
<td>115</td>
<td>60</td>
<td>35</td>
<td>5.0</td>
<td>11.0</td>
<td>3 300</td>
<td>-40...+95</td>
<td>55 000 / 9 000</td>
<td>92 500</td>
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</table>

Subject to change

### Fan type and Length "L" connections wires

<table>
<thead>
<tr>
<th>Type</th>
<th>Length &quot;L&quot;</th>
<th>Connection wires</th>
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</thead>
<tbody>
<tr>
<td>8880 N</td>
<td>310 mm long</td>
<td>AWG 18, TR 64</td>
</tr>
<tr>
<td>8856 N</td>
<td>310 mm long</td>
<td>AWG 22</td>
</tr>
<tr>
<td>8850 N</td>
<td>440 mm long</td>
<td>AWG 18, TR 64</td>
</tr>
</tbody>
</table>

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

Noise: Total sound power level $L_{WA}$ ISO 10302 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)
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.
AC axial fans

Max. 70 m³/h


- 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: 280 g

- Noise: Total sound power level $L_{WA}$ ISO 10302 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 page 10)
- Moisture protection

Series 3900
VWC0092AQFBS

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>
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<tbody>
<tr>
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<td>31</td>
<td>18.2</td>
<td>230</td>
<td>50</td>
<td>24</td>
<td>3.8</td>
<td>6.0</td>
<td>1550</td>
<td>-10...+80</td>
<td>70 000 / 22 500</td>
<td>117 500</td>
</tr>
<tr>
<td>3956 L</td>
<td>31</td>
<td>18.2</td>
<td>230</td>
<td>50</td>
<td>24</td>
<td>3.8</td>
<td>6.0</td>
<td>1550</td>
<td>-40...+80</td>
<td>70 000 / 22 500</td>
<td>117 500</td>
</tr>
<tr>
<td>3950 M</td>
<td>45</td>
<td>26.5</td>
<td>230</td>
<td>50</td>
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<td>4.2</td>
<td>6.0</td>
<td>2150</td>
<td>-10...+80</td>
<td>70 000 / 22 500</td>
<td>117 500</td>
</tr>
<tr>
<td>3956 M</td>
<td>45</td>
<td>26.5</td>
<td>230</td>
<td>50</td>
<td>29</td>
<td>4.2</td>
<td>6.0</td>
<td>2150</td>
<td>-40...+80</td>
<td>70 000 / 22 500</td>
<td>117 500</td>
</tr>
<tr>
<td>3950</td>
<td>59</td>
<td>34.7</td>
<td>230</td>
<td>50</td>
<td>35</td>
<td>4.7</td>
<td>11.0</td>
<td>2650</td>
<td>-20...+80</td>
<td>55 000 / 17 500</td>
<td>92 500</td>
</tr>
<tr>
<td>3956</td>
<td>59</td>
<td>34.7</td>
<td>230</td>
<td>50</td>
<td>35</td>
<td>4.7</td>
<td>11.0</td>
<td>2650</td>
<td>-40...+80</td>
<td>55 000 / 17 500</td>
<td>92 500</td>
</tr>
<tr>
<td>3900 L</td>
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<td>23.0</td>
<td>115</td>
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<td>27</td>
<td>4.0</td>
<td>5.0</td>
<td>1850</td>
<td>-10...+80</td>
<td>70 000 / 22 500</td>
<td>117 500</td>
</tr>
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<td>3906 L</td>
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<td>27</td>
<td>4.0</td>
<td>5.0</td>
<td>1850</td>
<td>-40...+80</td>
<td>70 000 / 22 500</td>
<td>117 500</td>
</tr>
<tr>
<td>3900 M</td>
<td>53</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 $L_{WA}$ ISO 10302 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. 254
Cables P. 270
Information

DC axial fans

AC axial fans

Accessories

Representatives

AC maxx / EC axial fans

DC centrifugal fans

DC centrifugal fans

Max. 89 m³/h

AC axial fans

□ 92 x 38 mm

- 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, grounding lug for M4 x 8
- Weight: 420 g
- Note: Please note our ACmaxx series.
  With identical mounting dimensions and voltages, this series achieves greater energy efficiency.
  See page 197.

Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level $L_{WA}$ ISO 10302
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 page 10)
- Moisture protection
- Salt spray protection
- Degree of protection: IP 54 / IP 65

[@-] 92 x 38 mm

Subject to change

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Fan type   Length "L"  Connection wires
With sleeve bearings   310 mm long  AWG 18, TR 64
With ball bearings    310 mm long  AWG 18

Subject to change

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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 $L_{WA}$ ISO 10302
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. 135 m³/h

AC axial fans

- 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 ACmaxx series.
  With identical mounting dimensions and voltages, this series achieves greater energy efficiency.
  See page 198.

Series 9900
VWC0119AOFBS

Nominal data

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Subject to change

Finger guards
from p. 254

Cables
P. 270

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

Subject to change
AC axial fans

- **Material:** Housing: Die-cast aluminum Impeller: painted sheet steel
- **Direction of air flow:** Intake over struts Types 4890 N and 4840 N 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
- **Note:** Please note our ACmaxx series. With identical mounting dimensions and voltages, this series achieves greater energy efficiency. See from page 200.

### Nominal data

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<td>40 000/25 000</td>
<td>67 500</td>
</tr>
<tr>
<td>4606 N</td>
<td>180</td>
<td>106</td>
<td>115</td>
<td>60</td>
<td>51</td>
<td>5.8</td>
<td>18.0</td>
<td>3 100</td>
<td>-40...+90</td>
<td>40 000/8 000</td>
<td>67 500</td>
</tr>
</tbody>
</table>

Subject to change

---

**Series 4000 N**

VUC0119XQHCS

**Nominal data**

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VUC0119XQHCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4890 N</td>
<td>80</td>
<td>47.0</td>
<td></td>
</tr>
<tr>
<td>4850 N*</td>
<td>100</td>
<td>58.8</td>
<td></td>
</tr>
<tr>
<td>4580 N*</td>
<td>123</td>
<td>72.3</td>
<td></td>
</tr>
<tr>
<td>4550 N*</td>
<td>145</td>
<td>85.2</td>
<td></td>
</tr>
<tr>
<td>4650 N</td>
<td>160</td>
<td>94.1</td>
<td></td>
</tr>
<tr>
<td>4656 N</td>
<td>160</td>
<td>94.1</td>
<td></td>
</tr>
<tr>
<td>4840 N</td>
<td>85</td>
<td>50.0</td>
<td></td>
</tr>
<tr>
<td>4800 N*</td>
<td>97</td>
<td>57.0</td>
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</tr>
<tr>
<td>4530 N*</td>
<td>151</td>
<td>88.8</td>
<td></td>
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<tr>
<td>4500 N*</td>
<td>169</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>4600 N</td>
<td>180</td>
<td>106</td>
<td></td>
</tr>
<tr>
<td>4606 N</td>
<td>180</td>
<td>106</td>
<td></td>
</tr>
</tbody>
</table>

---

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

* Fan with 3 blades.
Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level $L_W$ ISO 10302 measured on a hemisphere with a radius of 2 m.
Sound pressure level $L_p$ A 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 10)
- Speed signal
- Moisture protection
- Salt spray protection
- Degree of protection: IP 54 / IP 65

Max. 180 m$^3$/h

AC axial fans

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 ACmaxx series.
With identical mounting dimensions and voltages, this series achieves greater energy efficiency.
See from page 200.

Series 4000 Z
VWC0119XHCS

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow m$^3$/h</th>
<th>Air flow cfm</th>
<th>Nominal voltage VAC</th>
<th>Frequency Hz</th>
<th>Sound pressure level dB(A)</th>
<th>Sound power level Bel(A)</th>
<th>Shaft sleeve bearings</th>
<th>Ball bearing</th>
<th>Power consumption Watts</th>
<th>Nominal speed rpm$^{-1}$</th>
<th>Temperature range °C</th>
<th>Service life at $L_10$ (40 °C)</th>
<th>Service life at $L_10$ (T$\max$)</th>
<th>dem.pont standard</th>
<th>dem.pont standard</th>
<th>Life expectancy L$\lvert_{10}$g.c (40 °C)</th>
<th>see page 15</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>4850 Z</td>
<td>100</td>
<td>58.8</td>
<td>230</td>
<td>50</td>
<td>26</td>
<td>4.0</td>
<td></td>
<td></td>
<td>13.0</td>
<td>1 700</td>
<td>-10...+65</td>
<td>50 000 / 27 500</td>
<td>85 000</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4856 Z</td>
<td>100</td>
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<td>26</td>
<td>4.0</td>
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<td>13.0</td>
<td>1 700</td>
<td>-40...+75</td>
<td>50 000 / 20 000</td>
<td>85 000</td>
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<tr>
<td>4580 Z</td>
<td>115</td>
<td>67.6</td>
<td>230</td>
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<td>30</td>
<td>4.3</td>
<td></td>
<td></td>
<td>13.0</td>
<td>1 900</td>
<td>-10...+65</td>
<td>50 000 / 27 500</td>
<td>85 000</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4586 Z</td>
<td>115</td>
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<td>30</td>
<td>4.3</td>
<td></td>
<td></td>
<td>13.0</td>
<td>1 900</td>
<td>-40...+75</td>
<td>50 000 / 20 000</td>
<td>85 000</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>4650 Z</td>
<td>160</td>
<td>94.1</td>
<td>230</td>
<td>50</td>
<td>40</td>
<td>5.3</td>
<td></td>
<td></td>
<td>19.0</td>
<td>2 650</td>
<td>-10...+50</td>
<td>37 500 / 30 000</td>
<td>62 500</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4656 Z</td>
<td>160</td>
<td>94.1</td>
<td>230</td>
<td>50</td>
<td>40</td>
<td>5.3</td>
<td></td>
<td></td>
<td>19.0</td>
<td>2 650</td>
<td>-40...+75</td>
<td>37 500 / 15 000</td>
<td>62 500</td>
<td></td>
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<td></td>
<td></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></td>
<td></td>
<td>12.0</td>
<td>1 800</td>
<td>-10...+70</td>
<td>52 500 / 27 500</td>
<td>87 500</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4806 Z</td>
<td>105</td>
<td>61.7</td>
<td>115</td>
<td>60</td>
<td>28</td>
<td>4.1</td>
<td></td>
<td></td>
<td>12.0</td>
<td>1 800</td>
<td>-40...+75</td>
<td>52 500 / 20 000</td>
<td>87 500</td>
<td></td>
<td></td>
<td>4</td>
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<tr>
<td>4536 Z</td>
<td>120</td>
<td>70.5</td>
<td>115</td>
<td>60</td>
<td>32</td>
<td>4.4</td>
<td></td>
<td></td>
<td>12.0</td>
<td>2 000</td>
<td>-40...+75</td>
<td>52 500 / 20 000</td>
<td>87 500</td>
<td></td>
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<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>
<td></td>
<td></td>
<td>18.0</td>
<td>3 100</td>
<td>-10...+60</td>
<td>40 000 / 25 000</td>
<td>67 500</td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4606 Z</td>
<td>180</td>
<td>106</td>
<td>115</td>
<td>60</td>
<td>45</td>
<td>5.6</td>
<td></td>
<td></td>
<td>18.0</td>
<td>3 100</td>
<td>-40...+85</td>
<td>40 000 / 10 000</td>
<td>67 500</td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Subject to change
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 10)
- 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>rpm³</th>
<th>°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>
<td>50</td>
<td>42</td>
<td>19.0</td>
<td>2 600</td>
<td>-10...+50</td>
<td>37 500 / 30 000</td>
<td>62 500</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>62 500</td>
</tr>
<tr>
<td>4600 TZ</td>
<td>140</td>
<td>82.4</td>
<td>115</td>
<td>60</td>
<td>45</td>
<td>18.0</td>
<td>2 950</td>
<td>-10...+50</td>
<td>40 000 / 32 500</td>
<td>67 500</td>
</tr>
<tr>
<td>4606 TZ</td>
<td>140</td>
<td>82.4</td>
<td>115</td>
<td>60</td>
<td>45</td>
<td>18.0</td>
<td>2 950</td>
<td>-40...+75</td>
<td>40 000 / 15 000</td>
<td>67 500</td>
</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>
</tr>
</thead>
<tbody>
<tr>
<td>4650 TZ</td>
<td>AWG 22, TR 32</td>
</tr>
<tr>
<td>4656 TZ</td>
<td>AWG 18</td>
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</tbody>
</table>
Air performance measured according to: ISO 5801. Installation category A, without contact protection. Noise: Total sound power level $L_{wA}$ ISO 10302 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 page 10)
- Moisture protection

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

Max. 206 m$^3$/h

Series 5900
VWC0127AQGDS

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow m$^3$/h</th>
<th>Air flow cfm</th>
<th>Nominal voltage VAC</th>
<th>Frequency Hz</th>
<th>Sound pressure level dB(A)</th>
<th>Sound power level Bel(A)</th>
<th>Shaft sleeve bearings</th>
<th>Power consumption Watts</th>
<th>Nominal speed rpm$^{-1}$</th>
<th>Temperature range °C</th>
<th>Service life at $T=40,^{\circ}\mathrm{C}$</th>
<th>Service life at $T=\max,\mathrm{max}$</th>
<th>Life expectancy $L_{IPC}$ (40 °C)</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>5988</td>
<td>150</td>
<td>88.2</td>
<td>230</td>
<td>50</td>
<td>37</td>
<td>4.9</td>
<td>Sintec sleeve bearings</td>
<td>13.0</td>
<td>2 250</td>
<td>-30...+55</td>
<td>35 000 / 25 000</td>
<td>60 000</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>5950</td>
<td>180</td>
<td>106</td>
<td>230</td>
<td>50</td>
<td>43</td>
<td>5.4</td>
<td>Ball bearings</td>
<td>18.0</td>
<td>2 700</td>
<td>-20...+50</td>
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<td>67 500</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>5958</td>
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<td>106</td>
<td>230</td>
<td>50</td>
<td>44</td>
<td>5.5</td>
<td>Ball bearings</td>
<td>18.0</td>
<td>2 750</td>
<td>-30...+60</td>
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<td>3</td>
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<td>5938</td>
<td>162</td>
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<td>115</td>
<td>60</td>
<td>40</td>
<td>4.9</td>
<td>Sintec sleeve bearings</td>
<td>12.0</td>
<td>2 500</td>
<td>-30...+55</td>
<td>35 000 / 25 000</td>
<td>60 000</td>
<td>2</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>Ball bearings</td>
<td>17.0</td>
<td>3 050</td>
<td>-20...+55</td>
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<td>72 500</td>
<td>4</td>
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<td>5908</td>
<td>206</td>
<td>121</td>
<td>115</td>
<td>60</td>
<td>47</td>
<td>5.8</td>
<td>Ball bearings</td>
<td>17.0</td>
<td>3 100</td>
<td>-30...+75</td>
<td>42 500 / 17 500</td>
<td>72 500</td>
<td>4</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 $L_{wA}$ ISO 10302 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

Possible special versions:
(See page 10)
- Moisture protection
- Salt spray protection
- Degree of protection: IP 54

Series 5600
VWC0135AQKCS

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</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>5656 S</td>
<td>235</td>
<td>138</td>
<td>230</td>
<td>50</td>
<td>46</td>
<td>5.9</td>
<td>30.0</td>
<td>2700</td>
<td>-35...+70</td>
<td>45 000 / 22 500</td>
<td>75 000</td>
</tr>
<tr>
<td>5606 S</td>
<td>270</td>
<td>159</td>
<td>115</td>
<td>60</td>
<td>50</td>
<td>6.2</td>
<td>26.0</td>
<td>3100</td>
<td>-35...+80</td>
<td>47 500 / 15 000</td>
<td>80 000</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 \( \text{L} \text{W ISO 10302} \)
measured on a hemisphere with a radius of 2 m.
Sound pressure level \( \text{L} \text{pA} \) 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 $L_{W(A)}$ ISO 10302 measured on a hemisphere with a radius of 2 m.
- **Sound pressure level $L_{p(A)}** 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

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 ACmaxx series. With identical mounting dimensions and voltages, this series achieves greater energy efficiency. See page 202.

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow $m^3/h$</th>
<th>Air flow $cfm$</th>
<th>Nominal voltage $V$</th>
<th>Frequency $Hz$</th>
<th>Sound pressure level $dB(A)$</th>
<th>Sound power level $dB(A)$</th>
<th>Bearing</th>
<th>Power consumption $W$</th>
<th>Nominal speed $rpm^{-1}$</th>
<th>Temperature range $^°C$</th>
<th>Hours 1</th>
<th>Hours 2</th>
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</thead>
<tbody>
<tr>
<td>W2E 142-BB01-01</td>
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<td>188</td>
<td>230</td>
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<td>51</td>
<td>6.4</td>
<td>Sintec</td>
<td>27.0</td>
<td>2 800</td>
<td>-25...+55</td>
<td>60 000</td>
<td>42 500</td>
</tr>
<tr>
<td>W2E 142-BB05-01</td>
<td>380</td>
<td>224</td>
<td>115</td>
<td>60</td>
<td>56</td>
<td>6.8</td>
<td>Ball</td>
<td>28.0</td>
<td>3 350</td>
<td>-25...+65</td>
<td>55 000</td>
<td>30 000</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 $L_{W(A)}$ ISO 10302 measured on a hemisphere with a radius of 2 m. Sound pressure level $L_{p(A)}$ 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
- Impeller: painted sheet steel
- Direction of air flow: Exhaust 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 ACmaxx series. With identical mounting dimensions and voltages, this series achieves greater energy efficiency. See page 202 and 204.

VWS0130XQLDS

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow m³/h</th>
<th>Air flow cfm</th>
<th>Nominal voltage V</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, (40 °C)</th>
<th>Service life L₁₀, (Tmax)</th>
<th>Life expectancy LIPC (40 °C) see page 15</th>
</tr>
</thead>
<tbody>
<tr>
<td>W2S 130-AA03-01</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>2800</td>
<td>-25...+50</td>
<td>60 000 / 47 500</td>
<td>102 500</td>
<td></td>
</tr>
<tr>
<td>W2S 130-AA03-97</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>2800</td>
<td>-25...+70</td>
<td>60 000 / 30 000</td>
<td>102 500</td>
<td></td>
</tr>
<tr>
<td>W2S 130-AA25-01</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>3250</td>
<td>-25...+90</td>
<td>60 000 / 12 500</td>
<td>102 500</td>
<td></td>
</tr>
<tr>
<td>W2S 130-AA25-97</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>3250</td>
<td>-25...+90</td>
<td>60 000 / 12 500</td>
<td>102 500</td>
<td></td>
</tr>
</tbody>
</table>

Subject to change

Max. 380 m³/h

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level Lₘₐₓ, ISO 10302 measured on a hemisphere with a radius of 2 m.
Sound pressure level Lₚₐₜ 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
  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 ACmaxx series.
  With identical mounting dimensions and voltages,
  this series achieves greater energy efficiency.
  See page 202 and 204.

VUS0130XQLDS

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</th>
<th>Sound power level</th>
<th>Shaft sleeve bearings</th>
<th>Motor consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L10b (40 °C)</th>
<th>Service life L10b (Tmax)</th>
<th>dem-patent standard</th>
<th>dem-patent standard</th>
<th>Life expectancy L10g (40 °C)</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>W2S 130-BM03-01</td>
<td>380</td>
<td>224</td>
<td>230</td>
<td>50</td>
<td>60</td>
<td>6.8</td>
<td>■</td>
<td>47.0</td>
<td>2 700</td>
<td>-25…+50</td>
<td>65 000 / 52 500</td>
<td>110 000</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W2S 130-BM15-01</td>
<td>425</td>
<td>250</td>
<td>115</td>
<td>60</td>
<td>62</td>
<td>6.9</td>
<td>■</td>
<td>46.0</td>
<td>3 050</td>
<td>-25…+70</td>
<td>50 000 / 25 000</td>
<td>85 000</td>
<td>2</td>
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<td></td>
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</tbody>
</table>

Subject to change

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level $L_{W, A}$ ISO 10302
measured on a hemisphere with a radius of 2 m.
Sound pressure level $L_{p, A}$ 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. 254
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 grounding lug for M4 x 6
- Weight: 1.0 kg

Note:
Please note our ACmaxx series.
With identical mounting dimensions and voltages, this series achieves greater energy efficiency.
See pages 202.

VWS0143X2LCS

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow m³/h</th>
<th>Air flow 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>W2E 143-AA09-01</td>
<td>375</td>
<td>221</td>
<td>230</td>
<td>50</td>
<td>55</td>
<td>5.9</td>
<td>24.0</td>
<td>2 800</td>
<td>-25...+70</td>
<td>62 500 / 32 500</td>
<td>105 000</td>
</tr>
<tr>
<td>W2E 143-AB09-01</td>
<td>420</td>
<td>247</td>
<td>230</td>
<td>50</td>
<td>54</td>
<td>6.3</td>
<td>26.0</td>
<td>2 800</td>
<td>-25...+60</td>
<td>62 500 / 40 000</td>
<td>105 000</td>
</tr>
<tr>
<td>W2E 143-AA15-01</td>
<td>440</td>
<td>259</td>
<td>115</td>
<td>60</td>
<td>60</td>
<td>6.4</td>
<td>26.0</td>
<td>3 300</td>
<td>-25...+70</td>
<td>57 000 / 30 000</td>
<td>97 500</td>
</tr>
<tr>
<td>W2E 143-AB15-01</td>
<td>500</td>
<td>284</td>
<td>115</td>
<td>60</td>
<td>58</td>
<td>6.7</td>
<td>29.0</td>
<td>3 300</td>
<td>-25...+75</td>
<td>57 000 / 22 500</td>
<td>97 500</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 Lₘₐₓ ISO 10302 measured on a hemisphere with a radius of 2 m.
Sound pressure level Lₚ A 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. 254
Max. 1000 m³/h

- **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

### AC axial fans

**VWT0200X2MCS**

#### 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>

Subject to change

---

Air performance measured according to ISO 5801, Installation category A. For detailed information on the measurement setup, contact ebm-papst. Suction-side noise levels $L_{A}$ 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:**
  - EAC, UL 507, VDE, CSA C22.2 no. 113, CCC
  - EAC, UL 2111, VDE, CSA C22.2 no. 113, CCC

---

**Diagram:**

- Dimensions:
  - Ø260
  - Ø240
  - 80 ±0.3
  - 80 ±3
  - 7
  - 7
  - Ø4.5 ±0.2

- Labeling:
  - “V”
  - PE
  - N
  - L

---

**Additional Information:**

- Finger guards from p. 260
- Connection diagrams P. 280
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

VWT0250X2MES

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>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>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>
</tbody>
</table>

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

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 Lₙₐ according to ISO 13347, Lₕₐ 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:**
  - UL 2111, CSA C22.2 no. 77
  - EAC, UL 2111, CSA C22.2 no. 77

---

**Diagram: W2E 250-HP08-01 and W2E 250-HP06-01**
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><strong>K2E 200-AA12 -01</strong></td>
<td>M2E 068-CF</td>
<td>⑤</td>
<td>1~ 115</td>
<td>50</td>
<td>780</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>
</tr>
<tr>
<td></td>
<td></td>
<td>⑥</td>
<td>1~ 115</td>
<td>60</td>
<td>630</td>
<td>2910</td>
<td>68</td>
<td>0.77</td>
<td>6.0/250</td>
<td>72</td>
<td>240</td>
<td>-25..+65</td>
</tr>
</tbody>
</table>

Subject to change

---

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](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

---

**Connection diagrams**

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

**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
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

VJH0200X2MES

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Curve</th>
<th>Minimal voltage</th>
<th>Frequency</th>
<th>Air flow</th>
<th>Nominal speed</th>
<th>Power consumption</th>
<th>input current</th>
<th>Capacitor</th>
<th>Sound power level</th>
<th>Max. back-pressure</th>
<th>Admisible amb. temp.</th>
<th>Weight</th>
<th>Connection diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>K2E 200-AA52 -02</td>
<td>M2E 068-CF</td>
<td>①</td>
<td>1~ 230</td>
<td>50</td>
<td>765</td>
<td>2650</td>
<td>65</td>
<td>0.30</td>
<td>2.0/400</td>
<td>70</td>
<td>200 -25..+80</td>
<td>2.1</td>
<td>P.280 / A1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>②</td>
<td>1~ 230</td>
<td>60</td>
<td>845</td>
<td>2950</td>
<td>90</td>
<td>0.40</td>
<td>2.0/400</td>
<td>73</td>
<td>245 -25..+80</td>
<td>2.1</td>
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</tbody>
</table>

Subject to change

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

1 = not used
2 = N + capacitor
3 = L
4 = PE
Max. 880 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>Curves</th>
<th>Minimal voltage</th>
<th>Frequency</th>
<th>Air flow</th>
<th>Nominal speed</th>
<th>Power consumption</th>
<th>input current</th>
<th>Sound power level</th>
<th>Max. back-pressure</th>
<th>Admissible amb. temp.</th>
<th>Weight</th>
<th>Connection diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>K2D 200- AA02 -02</td>
<td>M2D 068-CF</td>
<td>⑤</td>
<td>3~ 400 V</td>
<td>50</td>
<td>780</td>
<td>2700</td>
<td>65</td>
<td>0.15</td>
<td>---</td>
<td>71</td>
<td>210</td>
<td>-25..+75</td>
<td>2.0</td>
</tr>
</tbody>
</table>
- **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
AC centrifugal fans

AC centrifugal fan overview
AC centrifugal fans

245
246
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 65 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”.

### Overview of air performance

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Series</th>
<th>Air flow m³/h</th>
</tr>
</thead>
<tbody>
<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>Centrifugal fans</th>
<th>Dimensions</th>
<th>KEC, C1, C3</th>
<th>VDE, UL, CSA</th>
<th>Speed signal</th>
<th>Moisture protection IP &gt;= 54</th>
<th>Salt spray protection IP 65</th>
<th>Shaft type</th>
<th>Sleeve bearings</th>
<th>Ball bearings</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>121 x 37</td>
<td>RL 90</td>
<td>yes</td>
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<td>yes</td>
<td>-</td>
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<td>180 x 40</td>
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<tr>
<td>220 x 56</td>
<td>RG 160</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>249</td>
</tr>
<tr>
<td>Ø 138 x 40</td>
<td>RER 125</td>
<td>yes</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>250</td>
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<tr>
<td>Ø 176 x 54</td>
<td>RER 160</td>
<td>yes</td>
<td>-</td>
<td>-</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>251</td>
</tr>
</tbody>
</table>

Subject to change

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

\(^1\) Fiberglass-reinforced plastic

---

### Series RL 90 VHS0090XQHCS

**Nominal data**

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow (m^3/h)</th>
<th>Air flow (cfm)</th>
<th>Nominal voltage (V)</th>
<th>Frequency (Hz)</th>
<th>Sound power level (L_{WA ISO})</th>
<th>Ball bearing</th>
<th>Power consumption</th>
<th>Nominal speed (\text{rpm}^{-1})</th>
<th>Temperature range (^\circ\text{C})</th>
<th>Service life (L_{10}) at (40%)</th>
<th>at (T_{\text{max}}) Hours</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></td>
<td>20.0</td>
<td>2 450</td>
<td>-10...+50</td>
<td>37 500 / 30 000</td>
<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></td>
<td>20.0</td>
<td>2 450</td>
<td>-30...+70</td>
<td>37 500 / 20 000</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></td>
<td>19.5</td>
<td>2 550</td>
<td>-10...+60</td>
<td>37 500 / 25 000</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></td>
<td>19.5</td>
<td>2 550</td>
<td>-30...+85</td>
<td>37 500 / 15 000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Fan type**

<table>
<thead>
<tr>
<th>Fan type</th>
<th>Connection wires</th>
</tr>
</thead>
<tbody>
<tr>
<td>RL 90-18/50</td>
<td>RL 90-18/00</td>
</tr>
<tr>
<td>RL 90-18/56</td>
<td>RL 90-18/06</td>
</tr>
</tbody>
</table>

**Connection wires**

- RL 90-18/50: AWG 18, TR 32
- RL 90-18/56: AWG 22
- RL 90-18/00: AWG 22

---

Subject to change

---

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

---

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

**Notes:**
1. Total sound power level \(L_{WA ISO}\) measured on a hemisphere with a radius of 2 m.
2. Sound pressure level \(L_{PA}\) measured at 1 m distance from fan axis.
3. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions and the described measurement set-up and may vary depending on the installation situation.

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 10302 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 RG 90

<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>rpm¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Air flow</td>
<td>Type</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></td>
</tr>
<tr>
<td>Air flow</td>
<td>Type</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></td>
</tr>
<tr>
<td>Nominal voltage</td>
<td>Type</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></td>
</tr>
<tr>
<td>Frequency</td>
<td>Type</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>
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<tr>
<td>Sound power level</td>
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<td></td>
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<td>Power consumption</td>
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<td>at 40°C</td>
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<td>at Tₘₐₓ</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1) Fiberglass-reinforced plastic.

---

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: Clockwise, looking towards rotor
- Connection: To 2 single wires AWG 22.
- Highlights: Forward-curved impeller
- Weight: 560 g

### Possible special versions:
(See page 10)
- Moisture protection
- Salt spray protection
- Degree of protection: IP 54

---

Max. 54 m³/h

AC centrifugal fans

- 135 x 38 mm

### 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>rpm¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</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></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></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></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></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 10302 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.

### Series RG 125 VCS0125XQHCS

<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 $L_{WA}$</th>
<th>Ball bearing</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life $L_{10}$</th>
<th>at $T_{max}$</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG 125-19/56</td>
<td>86</td>
<td>51</td>
<td>230</td>
<td>50</td>
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<td>20.0</td>
<td>2 550</td>
<td>-30...+70</td>
<td>37 500 / 20 000</td>
<td>37 500</td>
<td></td>
<td></td>
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<tr>
<td>RG 125-19/06</td>
<td>94</td>
<td>55</td>
<td>115</td>
<td>60</td>
<td>6.0</td>
<td></td>
<td>19.0</td>
<td>2 750</td>
<td>-30...+80</td>
<td>40 000 / 15 000</td>
<td>40 000</td>
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</tbody>
</table>

Subject to change

### Possible special versions:
- Moisture protection
- Salt spray protection
- Degree of protection: IP 54

### Highlights:
- Backward-curved impeller
- Weight: 850 g

### 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.

### Weight:
- 850 g

---

**Subject to change**

1) Fiberglass-reinforced plastic.
AC centrifugal fans

- **Material:** Scroll housing: GRP<sup>1)</sup> (PBT)  
  Impeller: GRP<sup>1)</sup> (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

### Series RG 160
VCS0160XQKDS

#### 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>Sound power level</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>RG 160-28/S6S</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>
<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>
<td></td>
</tr>
</tbody>
</table>

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

Air performance measured according to ISO 5801. Installation category A, without contact protection. Noise: Total sound power level L<sub>WA</sub> ISO 10302 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](http://www.ebmpapst.com/general conditions)
AC centrifugal fans
Ø 138 x 40 mm

- Material:
  Scroll housing: GRP\(^{(1)}\) (PBT)
  Impeller: GRP\(^{(1)}\) (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

Possible special versions:
(See page 10)
- Moisture protection
- Salt spray protection
- Degree of protection: IP 54

Series RER 125
VBS0125XQHCS

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow</th>
<th>Frequency</th>
<th>Sound power level</th>
<th>Power consumption</th>
<th>Nominal speed</th>
<th>Temperature range</th>
<th>Service life L10</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>
</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>
</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 220 x 220 mm.
Cover plate 220 x 220 mm with an air inlet of Ø 86 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 10362 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.
AC centrifugal fans

Ø 176 x 54 mm

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

\(^1\) Fiberglass-reinforced plastic.

<table>
<thead>
<tr>
<th>Type</th>
<th>Air flow m(^3)/h</th>
<th>Air flow cfm</th>
<th>Nominal voltage VAC</th>
<th>Frequency Hz</th>
<th>Bel(A)</th>
<th>Sound power level</th>
<th>Nominal speed rpm(^{-1})</th>
<th>Power consumption Watts</th>
<th>Power consumption rpm(^{-1})</th>
<th>Temperature range °C</th>
<th>Nominal life L(_{10}) at 40 °C</th>
<th>Warranty at (T)(_{\text{max}})</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<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>230</td>
<td>30 000 / 20 000</td>
<td>-30...+60</td>
<td>30 000 / 20 000</td>
<td>10 hours</td>
<td></td>
</tr>
<tr>
<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>300</td>
<td>30 000 / 15 000</td>
<td>-30...+70</td>
<td>30 000 / 15 000</td>
<td>10 hours</td>
<td>2</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.

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

Noise: Total sound power level \(L_{W, ISO}\) ISO 10362 measured on a hemisphere with a distance of 2 m.

Sound pressure level \(L_{p, A}\) 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
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.

### Finger guards

<table>
<thead>
<tr>
<th>Fan size</th>
<th>Fan series</th>
<th>Type</th>
<th>Order number</th>
<th>Side</th>
<th>Drawing see page</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 x 40</td>
<td>400 F, 400, 420 J</td>
<td>LZ29-1</td>
<td>9920029001</td>
<td>Intake/Outlet</td>
<td>255</td>
</tr>
<tr>
<td>50 x 50</td>
<td>500 F</td>
<td>LZ31</td>
<td>9920031000</td>
<td>Intake/Outlet</td>
<td>255</td>
</tr>
<tr>
<td>60 x 60</td>
<td>600 F, 620, 630, 600 N, 600 J</td>
<td>LZ28, LZ28-1</td>
<td>9920028000, 9920028001</td>
<td>Intake/Outlet</td>
<td>255</td>
</tr>
<tr>
<td>80 x 80</td>
<td>8450, 8400 N, 8300 N, 8200 J, 8000 N, CoR 8200 J</td>
<td>LZ22-2, LZ22-4, LZ22-N, LZ32-14</td>
<td>9920022002, 9920022004, 9920022001, 9920145006</td>
<td>Intake/Outlet</td>
<td>255</td>
</tr>
<tr>
<td>92 x 92</td>
<td>3400 N, 3300 N, 3200 J, 3250 J, 3900, 3000 J</td>
<td>LZ23, LZ23-1</td>
<td>9920023000, 9920023001</td>
<td>Intake/Outlet</td>
<td>255</td>
</tr>
<tr>
<td>119 x 119</td>
<td>4400 F, 4400 FN, 4300 N, 4400, 4100 N, 4000 N, 4000 Z, 9900</td>
<td>LZ20, LZ30, LZ30-3, LZ30-4, LV 4100</td>
<td>9920020000, 9920030000, 9920030003, 9920030004, 9920030004</td>
<td>Intake/Outlet</td>
<td>255, 256</td>
</tr>
<tr>
<td>127 x 127</td>
<td>5200 F, 5200 N, 5900</td>
<td>LZ35, LZ35-2</td>
<td>9920035000, 9920035002</td>
<td>Intake/Outlet</td>
<td>256</td>
</tr>
<tr>
<td>135 x 135</td>
<td>5100 N, 5600</td>
<td>LZ25</td>
<td>9920025000</td>
<td>Intake/Outlet</td>
<td>256</td>
</tr>
<tr>
<td>140 x 140</td>
<td>5300, 5300 TD</td>
<td>LZ53</td>
<td>9920053000</td>
<td>Intake/Outlet</td>
<td>256</td>
</tr>
<tr>
<td>Ø 150</td>
<td>7100 N, 7200 N</td>
<td>LZ24, LZ27</td>
<td>9920024000, 9920027000</td>
<td>Intake/Outlet</td>
<td>256</td>
</tr>
<tr>
<td>Ø 172</td>
<td>6300 N, 6300 NTD, 6300, 6300 TD</td>
<td>LZ26, LZ27, LZ27-10, LZ38, LV 6300</td>
<td>9920026000, 9920037000, 9920145004, 9920038000</td>
<td>Intake/Outlet</td>
<td>257</td>
</tr>
<tr>
<td>172 x 150</td>
<td>6400, 6400 TD</td>
<td>LZ38</td>
<td>9920038000</td>
<td>Intake/Outlet</td>
<td>257</td>
</tr>
<tr>
<td>172 x 160</td>
<td>DV 6400, DV 6400 TD</td>
<td>LZ38</td>
<td>9920038000</td>
<td>Intake/Outlet</td>
<td>257</td>
</tr>
<tr>
<td>220 x 200</td>
<td>2200 FTD</td>
<td>LZ22</td>
<td>9920022000</td>
<td>Intake/Outlet</td>
<td>257</td>
</tr>
<tr>
<td>Fan unit</td>
<td>LV 228</td>
<td>LZ38-1</td>
<td>9920038001</td>
<td>Intake/Outlet</td>
<td>257</td>
</tr>
</tbody>
</table>

Subject to change

All measurements are given in mm.
Finger guards

LZ29-1  Fan size 40 x 40
LZ31  Fan size 50 x 50
LZ28  Fan size 60 x 60

LZ28-1  Fan size 60 x 60
LZ22-2  Fan size 80 x 80
LZ32-4  Fan size 80 x 80

LZ22-N  Fan size 80 x 80
LZ32-14  Fan size 80 x 80
LZ23  Fan size 92 x 92

LZ23-1  Fan size 92 x 92
LZ20  Fan size 119 x 119
LZ30  Fan size 119 x 119
Finger guards

<table>
<thead>
<tr>
<th>LZ38-1</th>
<th>Fan unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø179</td>
<td>9,25,32,4</td>
</tr>
<tr>
<td>3,8</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>LZ39</th>
<th>Fan size Ø 172</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø172</td>
<td>12,5,12,5,12,5</td>
</tr>
<tr>
<td>5,75</td>
<td>10,2</td>
</tr>
<tr>
<td>148,5</td>
<td>+</td>
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<table>
<thead>
<tr>
<th>LZ38</th>
<th>Fan size</th>
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</thead>
<tbody>
<tr>
<td>172 x 150</td>
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</tr>
<tr>
<td>172 x 160</td>
<td></td>
</tr>
<tr>
<td>Ø 172</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LZ39</th>
<th>Fan size Ø 172</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø172</td>
<td>12,5,12,5,12,5</td>
</tr>
<tr>
<td>5,75</td>
<td>10,2</td>
</tr>
<tr>
<td>148,5</td>
<td>+</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>LZ52</th>
<th>Fan size Ø 172</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø174,5</td>
<td></td>
</tr>
<tr>
<td>5,45</td>
<td></td>
</tr>
<tr>
<td>1,5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LZ22</th>
<th>Fan size 220 x 200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø195,5</td>
<td>4,95</td>
</tr>
<tr>
<td>5,45</td>
<td>1,5</td>
</tr>
</tbody>
</table>

Changes in dimensions:
- LZ38-1: Ø179, 9,25,32,4, 3,8
- LZ39: Ø172, 12,5,12,5,12,5, 5,75, 10,2, 148,5
- LZ38: 172 x 150, 172 x 160, Ø 172
- LZ52: Ø174,5, 5,45
- LZ22: Ø195,5, 4,95, 5,45, 1,5
### Finger guards made of metal

<table>
<thead>
<tr>
<th>Fan size</th>
<th>Fan series</th>
<th>Type</th>
<th>Order number</th>
<th>Side</th>
<th>Drawing see page</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 x 80</td>
<td>AC 8300 H</td>
<td>LZ32-4</td>
<td>9920032004</td>
<td>Intake side</td>
<td>255</td>
</tr>
<tr>
<td></td>
<td>AC 8300 H</td>
<td>LZ22-2</td>
<td>9920022002</td>
<td>Intake side</td>
<td>255</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LZ32-14</td>
<td>9920145006</td>
<td>Intake side</td>
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<tr>
<td></td>
<td></td>
<td>LZ32-7</td>
<td>9920032007</td>
<td>Outlet side</td>
<td>259</td>
</tr>
<tr>
<td>92 x 92</td>
<td>AC 3200 J</td>
<td>LZ23-6</td>
<td>9920023006</td>
<td>Outlet side</td>
<td>259</td>
</tr>
<tr>
<td></td>
<td>AC 3200 J</td>
<td>LZ23</td>
<td>9920023000</td>
<td>Intake side</td>
<td>255</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LZ23-1</td>
<td>9920023001</td>
<td>Intake side</td>
<td>255</td>
</tr>
<tr>
<td>119 x 119</td>
<td>AC 4400, AC 4400 N</td>
<td>LZ20</td>
<td>9920020000</td>
<td>Intake side</td>
<td>255</td>
</tr>
<tr>
<td></td>
<td>AC 4400 FN</td>
<td>LZ30</td>
<td>9920030000</td>
<td>Intake side</td>
<td>256</td>
</tr>
<tr>
<td></td>
<td>AC 4400 FN</td>
<td>LZ30-3</td>
<td>9920030003</td>
<td>Intake side</td>
<td>256</td>
</tr>
<tr>
<td></td>
<td>AC 4400 FN</td>
<td>LZ30-4</td>
<td>9920030004</td>
<td>Intake side</td>
<td>256</td>
</tr>
<tr>
<td></td>
<td>AC 4300</td>
<td>LZ30-9</td>
<td>9920030009</td>
<td>Outlet side</td>
<td>259</td>
</tr>
<tr>
<td>Ø 172</td>
<td>AC 6200 N</td>
<td>LZ26</td>
<td>9920026000</td>
<td>Intake side</td>
<td>256</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LZ37</td>
<td>9920037000</td>
<td>Intake side</td>
<td>257</td>
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<td>LZ37-10</td>
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<tr>
<td></td>
<td></td>
<td>LZ52</td>
<td>9920052000</td>
<td>Intake side</td>
<td>257</td>
</tr>
<tr>
<td></td>
<td>AC 6200 N</td>
<td>LZ37-2</td>
<td>99200370002</td>
<td>Outlet side</td>
<td>259</td>
</tr>
</tbody>
</table>

Subject to change

All measurements are given in mm.

### Finger guards made of plastic

<table>
<thead>
<tr>
<th>Fan size</th>
<th>Fan series</th>
<th>Type</th>
<th>Order number</th>
<th>Side</th>
<th>Drawing see page</th>
</tr>
</thead>
<tbody>
<tr>
<td>119 x 119</td>
<td>AC 4400 FN, AC 4400 N</td>
<td>LZ30-5</td>
<td>9920030005</td>
<td>Intake side</td>
<td>263</td>
</tr>
<tr>
<td></td>
<td>AC 4400, AC 4400 N</td>
<td>LZ30-6</td>
<td>9920030006</td>
<td>Intake side</td>
<td>263</td>
</tr>
<tr>
<td>119 x 119</td>
<td>AC 4400, AC 4400 N</td>
<td>LZ30-P</td>
<td>9920030001</td>
<td>Intake/Outlet</td>
<td>263</td>
</tr>
</tbody>
</table>

Subject to change

All measurements are given in mm.
Finger guards

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

<table>
<thead>
<tr>
<th>Fan size</th>
<th>Fan series</th>
<th>Order number</th>
<th>Side</th>
<th>Drawing see page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø 200</td>
<td>W3G 200</td>
<td>78128-2-4039</td>
<td>Intake/Outlet</td>
<td>260</td>
</tr>
<tr>
<td>Ø 250</td>
<td>W1G 250</td>
<td>09418-2-4039</td>
<td>Intake/Outlet</td>
<td>260</td>
</tr>
</tbody>
</table>

Subject to change

*All measurements are given in mm.*
Finger guards

- Material: Steel wire

Finger guards for centrifugal blowers with dual inlet

<table>
<thead>
<tr>
<th>Fan size</th>
<th>Order no.</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>Coating</th>
<th>Highlights</th>
</tr>
</thead>
<tbody>
<tr>
<td>097</td>
<td>83319-2-4039</td>
<td>96.0</td>
<td>3.5</td>
<td>71.0</td>
<td>Phosphated, plastic-coated in RAL no. 9005</td>
<td>for D2E097-CH</td>
</tr>
<tr>
<td>097</td>
<td>09485-2-4039</td>
<td>114.0</td>
<td>3.5</td>
<td>88.0</td>
<td>Phosphated, plastic-coated in RAL no. 9005</td>
<td>for D2E097-B</td>
</tr>
<tr>
<td>133 / 146</td>
<td>09500-2-4039</td>
<td>145.0</td>
<td>4.0</td>
<td>122.0</td>
<td>Phosphated, plastic-coated in RAL no. 9005</td>
<td></td>
</tr>
</tbody>
</table>

Subject to change

All measurements are given in mm.

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

<table>
<thead>
<tr>
<th>Fan size</th>
<th>Order no.</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
</tr>
</thead>
<tbody>
<tr>
<td>160</td>
<td>35000-2-4039</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

All measurements are given in mm.

- Material: Phosphated steel wire, plastic-coated, silver-metallic gloss
**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>Fan size</th>
<th>Order no.</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>Highlights</th>
</tr>
</thead>
<tbody>
<tr>
<td>085</td>
<td>09489-2-4039</td>
<td>90.0</td>
<td>74.0</td>
<td>84.0</td>
<td>3 drilled holes staggered by 120°</td>
</tr>
<tr>
<td>108</td>
<td>09490-2-4039</td>
<td>126.0</td>
<td>110.0</td>
<td>118.0</td>
<td></td>
</tr>
<tr>
<td>120</td>
<td>09494-2-4039</td>
<td>140.0</td>
<td>124.0</td>
<td>132.0</td>
<td></td>
</tr>
<tr>
<td>140/146</td>
<td>09492-2-4039</td>
<td>168.0</td>
<td>152.0</td>
<td>158.0</td>
<td></td>
</tr>
<tr>
<td>160</td>
<td>09503-2-4039</td>
<td>183.0</td>
<td>170.0</td>
<td>175.0</td>
<td>see picture fan size 160</td>
</tr>
</tbody>
</table>

Subject to change

All measurements are given in mm.

---

### Finger guards for centrifugal blowers with single inlet

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

Subject to change

All measurements are given in mm.
Finger guards

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

### Finger guards

<table>
<thead>
<tr>
<th>Fan size</th>
<th>Fan series</th>
<th>Type</th>
<th>Order number</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>Mounting</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 x 60</td>
<td>600 F, 620, 630, 600 N, 600 J</td>
<td>LZ28-3</td>
<td>9920028003</td>
<td>60±0.5</td>
<td>50.0±0.2</td>
<td>3.0</td>
<td>24</td>
<td>A3</td>
</tr>
<tr>
<td>80 x 80</td>
<td>8450, 8400 N, 8300 N, 8200 J, 8000 N, CeR 8200 J</td>
<td>LZ32-2</td>
<td>9920032002</td>
<td>80±0.5</td>
<td>71.5±0.2</td>
<td>7.0</td>
<td>34</td>
<td>A1, A2, A3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LZ32-P</td>
<td>9920032001</td>
<td></td>
<td></td>
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<td></td>
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<td>LZ32-3</td>
<td>9920032003</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>92 x 92</td>
<td>3400 N, 3300 N, 3200 J, 3250 J, 3900, 3000</td>
<td>LZ23-2</td>
<td>9920023002</td>
<td>92±0.5</td>
<td>82.5±0.2</td>
<td>6.5</td>
<td>46</td>
<td>A1, A2, A3</td>
</tr>
<tr>
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<td>LZ23-3</td>
<td>9920023003</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>119 x 119</td>
<td>4400 F, 4400 FN, 4300 N, 4400, 4100 N, 4000 N, 4000 Z, 9900, DV 4100</td>
<td>LZ30-5</td>
<td>9920030005</td>
<td>119±0.5</td>
<td>105±0.2</td>
<td>6.5</td>
<td>50</td>
<td>A2, A4, A2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LZ30-6</td>
<td>9920030006</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td>9920030001</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>127 x 127</td>
<td>5200 N, DV 5200, 5900</td>
<td>LZ33-1</td>
<td>9920033001</td>
<td>127±0.5</td>
<td>113±0.2</td>
<td>6.5</td>
<td>50</td>
<td>A2, A4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LZ33-2</td>
<td>9920033002</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Subject to change

---

**Material:** Fiberglass-reinforced plastic

**Note:** Finger guard according to DIN EN ISO 13857 (previously EN 294). Plastic guards may not be used for the following models:

- 8200 JH3 / JH4
- 3200 JH3 / JH4
- 4100 NH5 - NH8

---

**Table:**

- **Fan size:** refers to the dimensions of the fan's frame (e.g., 60 x 60 indicates a frame size of 60mm x 60mm).
- **Fan series:** identifies series of fans sharing similar specifications.
- **Type:** denotes the specific model of the fan (e.g., LZ28-3).
- **Order number:** provides the unique identifier for the ordered product.
- **B:** specifies the length of the bore hole from the right section, measured in millimeters.
- **C:** notes the length of the bore hole from the upper section, measured in millimeters.
- **D:** indicates the thickness of the finger guard, measured in millimeters.
- **E:** shows the mounting type, with A1, A2, A3 indicating different mounting methods.

---

**Diagrams:**

- **Screw connection:** illustrates the arrangement of screws for mounting the finger guards.
- **Barbed inserts:** demonstrates the placement of barbed inserts, which secure the finger guards to the frame.

---

**Notes:**

- All measurements are given in millimeters.
- Finger guards are only suitable for bore hole diameters of 4.3 – 4.7 mm.
Filter fan guards
119 x 119

- **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>
<th>ACi fan series</th>
</tr>
</thead>
<tbody>
<tr>
<td>4400 F</td>
<td>AC 4300</td>
<td>ACi 4400</td>
</tr>
<tr>
<td>4400 FN</td>
<td>9900</td>
<td></td>
</tr>
<tr>
<td>4300 N</td>
<td>4000 N</td>
<td>AC 4400 N</td>
</tr>
<tr>
<td>4400</td>
<td>4000 Z</td>
<td></td>
</tr>
<tr>
<td>4100 N</td>
<td>AC 4400 FN</td>
<td></td>
</tr>
<tr>
<td>DV 4100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Subject to change
All measurements are given in mm.
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.

---

<table>
<thead>
<tr>
<th>Fan size</th>
<th>Fan series</th>
<th>Type</th>
<th>Order number</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>Replacement filter</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 x 60</td>
<td>600 F, 620, 630, 600 N, 600 J</td>
<td>FF60</td>
<td>9920034001</td>
<td>65</td>
<td>65</td>
<td>13.5</td>
<td>50.0</td>
<td>RF 60</td>
</tr>
<tr>
<td>80 x 80</td>
<td>8450, 8400 N, 8300 N, 8200 J, 8000 N, CoR 8200 J</td>
<td>FF80</td>
<td>9920034002</td>
<td>85</td>
<td>85</td>
<td>14.0</td>
<td>71.5</td>
<td>RF 80</td>
</tr>
<tr>
<td>92 x 92</td>
<td>3400 N, 3300 N, 3200 J, 3250 J, 3900, 3000</td>
<td>FF92</td>
<td>9920034003</td>
<td>125</td>
<td>105</td>
<td>17.5</td>
<td>82.5</td>
<td>RF 92</td>
</tr>
<tr>
<td>119 x 119</td>
<td>4400 F, 4400 FN, 4300 N, 4400, 4100 N, 4000 N, 4000 Z, 9900, DV 4100</td>
<td>FF119</td>
<td>9920034004</td>
<td>162</td>
<td>136</td>
<td>18.5</td>
<td>104.5</td>
<td>RF 119</td>
</tr>
<tr>
<td>Ø 172</td>
<td>DV 6300, 6300, 6300 N, 6300 TD, 6300 NTD, DV 6300 TD, DV 6400, 6400, 6400 TD, DV 6400 TD</td>
<td>FF172</td>
<td>9920034005</td>
<td>226</td>
<td>190</td>
<td>19.5</td>
<td>162.0</td>
<td>RF 172</td>
</tr>
</tbody>
</table>

Subject to change

* Replacement filter available only in packages of 5.

All measurements are given in mm.

---

**Filter performance**

The filter fan guard filters 75 % of dust particles with a size of 5-10 microns and can withstand temperatures of up to 100 °C. Filter class G3 according to DIN EN 779. Flame-retardant according to DIN 53438, class F1. When a clean filter is installed, a reduction of air flow of 20-30 % is possible.
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 size</th>
<th>Fan series</th>
<th>Type</th>
<th>Order number</th>
<th>a</th>
<th>b</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø 190</td>
<td>RG 190 TD</td>
<td>LZ46-1</td>
<td>9920046001</td>
<td>133</td>
<td>9.0</td>
</tr>
<tr>
<td>Ø 220</td>
<td>RG 220 TD</td>
<td>LZ47-1</td>
<td>9920047001</td>
<td>166</td>
<td>8.7</td>
</tr>
<tr>
<td>Ø 225</td>
<td>RG 225 TD</td>
<td>LZ48-1</td>
<td>9920048001</td>
<td>158</td>
<td>8.7</td>
</tr>
</tbody>
</table>

Subject to change

All measurements are given in mm.
### Air inlet grill

- **Material:** PA plastic, fiberglass-reinforced
- **Note:** For axial and diagonal fans
  Assembled on the air intake, the fan grid reduces the noise emission dramatically and minimizes disturbing low frequency sound.

<table>
<thead>
<tr>
<th>Fan size</th>
<th>Fan series</th>
<th>Type</th>
<th>Order number</th>
<th>Side</th>
<th>Drawing see page</th>
</tr>
</thead>
<tbody>
<tr>
<td>119 x 119</td>
<td>ACi 4400, ACi 4400 N, 4400, 4400 F, 4400 FN, AC 4400 FN, AC 4300, 4300 N, 4100 N, 4000 N, 4000 Z, 9900, DV 4100</td>
<td>FG 119</td>
<td>9920070000</td>
<td>Intake side</td>
<td>265</td>
</tr>
</tbody>
</table>

Subject to change

All measurements are given in mm.

---

**FG 119**

Fan size 119 x 119

---

**Material:** PA plastic, fiberglass-reinforced

**Note:** For axial and diagonal fans

Assembled on the air intake, the fan grid reduces the noise emission dramatically and minimizes disturbing low frequency sound.

### Diagram

![Diagram of FG 119 Air inlet grill](image-url)
Inlet rings
For centrifugal fans

Inlet rings for backward curved centrifugal fans

<table>
<thead>
<tr>
<th>Fan size (1)</th>
<th>Type</th>
<th>Order number</th>
<th>Version</th>
<th>k</th>
<th>m</th>
<th>q</th>
<th>r₁</th>
<th>s</th>
<th>t</th>
<th>u</th>
</tr>
</thead>
<tbody>
<tr>
<td>RER 120 (S)/120 (P)</td>
<td>LZ 1000-120</td>
<td>96120-2-4013</td>
<td>1</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>
</tr>
<tr>
<td>RER 133 (P)</td>
<td>LZ 1000-133</td>
<td>09566-2-4013</td>
<td>1</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>
</tr>
<tr>
<td>RER 160 (S)</td>
<td>LZ 1000-160</td>
<td>09569-2-4013</td>
<td>1</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>
</tr>
<tr>
<td>RER 175/190 (P)</td>
<td>LZ 1000-175</td>
<td>09576-2-4013</td>
<td>1</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>
</tr>
<tr>
<td>RER 220 TD (P)</td>
<td>LZ 1000-220</td>
<td>09609-2-4013</td>
<td>2</td>
<td>252.0</td>
<td>155.0</td>
<td>21.0</td>
<td>0.80</td>
<td>21.8</td>
<td>242.0</td>
<td>6x5.5</td>
</tr>
<tr>
<td>RER 225 TD (P)</td>
<td>LZ 1000-225</td>
<td>09658-2-4013</td>
<td>1</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>
</tr>
</tbody>
</table>

Subject to change

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

All measurements are given in mm.

Inlet rings for forward curved centrifugal fans

<table>
<thead>
<tr>
<th>Fan size</th>
<th>Order number</th>
<th>Version</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>
<th>Highlights</th>
</tr>
</thead>
<tbody>
<tr>
<td>085</td>
<td>09560-2-4013</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>
<td>3 drilled holes staggered by 120°</td>
</tr>
<tr>
<td>097</td>
<td>09563-2-4013</td>
<td>1</td>
<td>116.0</td>
<td>80.0</td>
<td>108.0</td>
<td>10.0</td>
<td>3x4.5</td>
<td>0.80</td>
<td>10.0</td>
<td>—</td>
<td>3 drilled holes staggered by 120°</td>
</tr>
<tr>
<td>108</td>
<td>09566-2-4013</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>
<td>—</td>
</tr>
<tr>
<td>120</td>
<td>09569-2-4013</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>
<td>—</td>
</tr>
<tr>
<td>133</td>
<td>09572-2-4013</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>
<td>—</td>
</tr>
<tr>
<td>140/146</td>
<td>09576-2-4013</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>
<td>—</td>
</tr>
<tr>
<td>160</td>
<td>09588-2-4013</td>
<td>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>
<td>—</td>
</tr>
</tbody>
</table>

Subject to change

All measurements are given in mm.
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>Fan size</th>
<th>Order number</th>
<th>Version</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>190</td>
<td>09576-2-4013</td>
<td>1</td>
<td>See corresponding product page</td>
</tr>
<tr>
<td>220</td>
<td>09609-2-4013</td>
<td>2</td>
<td>See corresponding product page</td>
</tr>
<tr>
<td>225</td>
<td>96358-2-4013</td>
<td>1</td>
<td>See corresponding product page</td>
</tr>
<tr>
<td>250</td>
<td>96359-2-4013</td>
<td>1</td>
<td>See corresponding product page</td>
</tr>
<tr>
<td>280</td>
<td>28000-2-4013</td>
<td>1</td>
<td>See corresponding product page</td>
</tr>
<tr>
<td>310</td>
<td>31000-2-4013</td>
<td>1</td>
<td>See corresponding product page</td>
</tr>
</tbody>
</table>

Subject to change

---

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

<table>
<thead>
<tr>
<th>Fan size</th>
<th>Order number</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>108/120</td>
<td>95777-1-5171</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>140/146/160</td>
<td>95778-1-5171</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

---

- **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

---

All measurements are given in mm.
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>Order number</th>
<th>Type</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>9920120000</td>
<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>9920120004</td>
<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>9920120005</td>
<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>9920120006</td>
<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>9920120010</td>
<td>LZ120-10</td>
<td>2 500</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>9920120011</td>
<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>AC</td>
</tr>
<tr>
<td>9920120013</td>
<td>LZ120-13</td>
<td>5 000</td>
<td>0.5 mm²</td>
<td>G</td>
<td>B</td>
<td>2.8 x 0.5</td>
<td>DC</td>
</tr>
<tr>
<td>9920120016</td>
<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>9920120017</td>
<td>LZ120-17</td>
<td>3 000</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>9920120018</td>
<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>9920120060</td>
<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>9920127000</td>
<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>9920130001</td>
<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>9920140000</td>
<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>

All measurements are given in mm. * UL-approved
Cables for energy-saving motors 115/230 VAC

<table>
<thead>
<tr>
<th>Order number</th>
<th>a</th>
</tr>
</thead>
<tbody>
<tr>
<td>13060-4-1040</td>
<td>450</td>
</tr>
<tr>
<td>13061-4-1040</td>
<td>1500</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>Order number</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>Type</th>
<th>Order number</th>
</tr>
</thead>
<tbody>
<tr>
<td>4300 N</td>
<td>LZ212</td>
<td>9920212000</td>
</tr>
<tr>
<td>3400 N, 4400 F, 8400 N, 8450</td>
<td>LZ281</td>
<td>9920261000</td>
</tr>
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<td>4000, 5100, 5200, 5600, 5900, 7100, 7200, 9000</td>
<td>LZ2110</td>
<td>9920210000</td>
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<tr>
<td>6200, 6300, 6300 N, 6400, 7100, 7200</td>
<td>LZ215</td>
<td>9920215000</td>
</tr>
<tr>
<td>For all temperature-controlled fans</td>
<td>LZ370</td>
<td>4871104201</td>
</tr>
<tr>
<td>For all fans with mounting holes of 4.3 mm</td>
<td>LZ550</td>
<td>6030020000</td>
</tr>
<tr>
<td></td>
<td>LZ551</td>
<td>6030053002</td>
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</table>

**LZ212**
- Screw clip of rustproof spring steel.
- For mounting fans with threaded pin 3.5 DIN EN ISO 1478 (7970).

**LZ281**
- Spacer of fiberglass-reinforced plastic.
- For mounting with screws through both fan mounting flanges.

**LZ210**
- Screw clip of hardened steel.
- For mounting fans with threaded pin 6-32 UNC or 3.5 DIN 7970.

**LZ370**
- Temperature sensor for speed-controlled fan operation. Temperature range 30...50 °C.

**LZ550**
- Rubber anti-vibration mounts for fans with a hole diameter of 4.3 ±0.2 mm and flange thickness of 3 to 5.5 mm.
- For a carrier plate with a hole diameter of 6.5 ±0.15 mm and plate thickness of 1 to 2 mm.

**LZ551**
- Rubber anti-vibration mounts for fans with a hole diameter of 4.3 ±0.2 mm and flange thickness of 2 to 4 mm.
- For a carrier plate with a hole diameter of 4.4 ±0.15 mm and plate thickness of 1 to 2 mm.
Connection diagrams EC E)

Technical features (nominal voltage 24 / 48 VDC):

- Tach output
- Motor current limitation
- Soft start
- Control input 0-10 VDC / PWM
- Overvoltage detection
- Thermal overload protection for electronics
- Reverse polarity protection

<table>
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<tr>
<th>Wire</th>
<th>Designation</th>
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<th>Assignment/function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>UN +24 VDC</td>
<td>Red</td>
<td>Power supply 24 VDC, supply voltage ripple ± 3.5 %</td>
</tr>
<tr>
<td></td>
<td>0-10V /PWM</td>
<td>Yellow</td>
<td>Control input Re &gt; 40 K</td>
</tr>
<tr>
<td></td>
<td>Tach</td>
<td>White</td>
<td>Tach output, 3 pulses per revolution, Isink max. = 10 mA</td>
</tr>
<tr>
<td></td>
<td>GND</td>
<td>Blue</td>
<td>Reference ground</td>
</tr>
</tbody>
</table>

Connection diagrams EC
Connection diagrams EC G)

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

- Tach output
- Soft start
- Control input 0-10 VDC / PWM

---

### Wire 1

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<td>Power supply 24/48 VDC, supply voltage ripple ± 3.5 %</td>
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<td>1-10V /PWM</td>
<td>Yellow</td>
<td>Control input Re &gt; 100 K</td>
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<tr>
<td></td>
<td>Tach</td>
<td>White</td>
<td>Tach output:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2 pulses/revolution (M1G045/M1G055)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3 pulses/revolution (M1G074/M1G084)</td>
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<td>Reference ground</td>
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Connection diagrams EC H3)

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

- Speed setting input (230V)
- Power limitation
- Motor current limitation
- Soft start
- Thermal overload protection for electronics / motor
- Line undervoltage detection

<table>
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<th>Assignment/function</th>
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<tr>
<td>1</td>
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<td>Black</td>
<td>Power supply 230 VAC, 50 - 60 Hz, see type plate for voltage range</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>Blue</td>
<td>Neutral conductor</td>
</tr>
<tr>
<td></td>
<td>PE</td>
<td>Green/yellow</td>
<td>Ground conductor</td>
</tr>
<tr>
<td></td>
<td>SL</td>
<td>Brown</td>
<td>Speed selection: switch open = speed 1; switch closed = speed 2</td>
</tr>
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</table>
**Technical features** (M3G 055 speed-controlled):

- Output 10 VDC max. 1.1 mA
- Tach output
- Power limitation
- Motor current limitation
- Soft start
- Control input 0-10 VDC / PWM
- Control interface with SELV potential safely disconnected from the mains
- Overvoltage detection
- Thermal overload protection for electronics / motor
- Line undervoltage detection

### Wire ASSIGNMENT/FUNCTION

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<tr>
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<td>Power supply 115/230 VAC, 50 - 60 Hz, see type plate for voltage range</td>
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<td>N</td>
<td>Blue</td>
<td>Neutral conductor</td>
</tr>
<tr>
<td></td>
<td>PE</td>
<td>Green/yellow</td>
<td>Ground conductor</td>
</tr>
<tr>
<td>2</td>
<td>GND</td>
<td>Blue</td>
<td>GND - Connection for control interface</td>
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<tr>
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<td>0-10 V PWM</td>
<td>Yellow</td>
<td>Control input 0-10 V or PWM, electrically isolated</td>
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<tr>
<td></td>
<td>10 V/max. 1,1 mA</td>
<td>Red</td>
<td>Voltage output +10 V / 1.1 mA, electrically isolated, not short-circuit-proof</td>
</tr>
<tr>
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<td>Tach</td>
<td>White</td>
<td>Tach output: Open collector, 1 pulse per revolution, electrically isolated</td>
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Connection diagrams EC J5)

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

- Control input 0-10 VDC / PWM
- Output 10 VDC max. 1.1 mA
- Power limitation
- Soft start
- Motor current limitation
- Tach output
- Thermal overload protection for electronics / motor
- Overvoltage detection
- Line undervoltage detection
- Control interface with SELV potential safely disconnected from the mains

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<td>Power supply 24/48 VDC, supply voltage ripple ± 3.5 %</td>
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<td>Yellow</td>
<td>Control input Re &gt;100 K</td>
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<td>Tach</td>
<td>White</td>
<td>Tach output, 3 pulses per revolution, Isink max. = 10 mA</td>
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<tr>
<td></td>
<td>GND</td>
<td>Blue</td>
<td>Reference ground</td>
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</table>
Technical features:

- Tach output
- Motor current limitation
- Soft start
- Control input 0-10 VDC / PWM
- Overvoltage detection
- Thermal overload protection for electronics
- Reverse polarity protection

<table>
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<th>Assignment/function</th>
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<td>1</td>
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<td>Red</td>
<td>Power supply 12/24 VDC, supply voltage ripple ± 3.5 %</td>
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<td>Control input Re &gt; 40 K</td>
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<td>Tach</td>
<td>White</td>
<td>Tach output, 3 pulses per revolution, Isink max. = 10 mA</td>
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<tr>
<td></td>
<td>GND</td>
<td>Blue</td>
<td>Reference ground</td>
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</table>
Technical features:

- Tach output
- Motor current limitation
- Soft start
- Control input 0-10 VDC / PWM
- Overvoltage detection
- Thermal overload protection for electronics
- Reverse polarity protection

Connection diagrams EC R)

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<td>UN +48 VDC</td>
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<td>Power supply 48 VDC, supply voltage ripple ± 3.5 %</td>
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<td>Control input Re &gt; 100 K</td>
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<td>Tach output, 3 pulses per revolution, Isink max. = 10 mA</td>
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<td></td>
<td>GND</td>
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<td>Reference ground</td>
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Connection diagrams AC
A1) / A3) / C2)

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

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

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

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<tr>
<th>Speed selection</th>
<th>Open (L1 or N)</th>
<th>Closed (L1 or N)</th>
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<td>S</td>
<td>n1</td>
<td>n2</td>
</tr>
</tbody>
</table>

- Line voltage
- Line voltage
- Speed selection L1 or N
- Energy-saving motor / fan (ESM)

- Black
- Blue
- Brown
### Munich
A. Schweiger GmbH
Ohmstraße 1
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Fax +49 8104 897-90
info@schweiger-gmbh.de
www.schweiger-gmbh.com

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Fax +49 89/55875-421
info@buerklin.com
www.buerklin.com

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Fax +49 8121 2506-200
multi.bauelemente@mbs.to

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<tr>
<td>Austria</td>
<td>ebm-papst Motoren &amp; Ventilatoren GmbH 4030 Linz AUSTRIA Phone +43 732 321150-0 Fax +43 732 321150-20 <a href="mailto:info@at.ebmpapst.com">info@at.ebmpapst.com</a> <a href="http://www.ebmpapst.at">www.ebmpapst.at</a></td>
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<td><a href="http://www.ebmpapst.at">www.ebmpapst.at</a></td>
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<tr>
<td>Belarus</td>
<td>ebm-papst Bel AgmBiH 4th Montaznikov side street Office 332 223010 Minsk BELARUS Phone +375 17 3851556 Fax +375 17 3851556 <a href="mailto:info@by.ebmpapst.com">info@by.ebmpapst.com</a> <a href="http://www.ebmpapst.by">www.ebmpapst.by</a></td>
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<td><a href="http://www.ebmpapst.by">www.ebmpapst.by</a></td>
</tr>
<tr>
<td>Belgium</td>
<td>ebm-papst Benelex B.V. Sales office Belgium-Luxemburg Romainestraat 6 0101 Research Park Haasrode 3001 Heverlee-Leuven BELGIUM Phone +32 16 396-200 Fax +32 16 396-220 <a href="mailto:info@be.ebmpapst.com">info@be.ebmpapst.com</a> <a href="http://www.ebmpapst.be">www.ebmpapst.be</a></td>
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<td><a href="http://www.ebmpapst.be">www.ebmpapst.be</a></td>
</tr>
<tr>
<td>Croatia</td>
<td>ebm-papst Industries Kft. Ezerd u. 2. 1044 Budapest HUNGARY Phone +36 1 8722-190 Fax +36 1 8722-194 <a href="mailto:office@hu.ebmpapst.com">office@hu.ebmpapst.com</a></td>
<td>+36 1 8722-190</td>
<td>+36 1 8722-194</td>
<td><a href="mailto:office@hu.ebmpapst.com">office@hu.ebmpapst.com</a></td>
<td><a href="http://www.ebmpapst.cz">www.ebmpapst.cz</a></td>
</tr>
</tbody>
</table>

### Express Service-Center (1 to 5 pieces)

North
Breuell + Hilgenfeldt GmbH
Oststraße 96
22844 Norderstedt
GERMANY
Phone +49 40 538092-20
Fax +49 40 538092-84
info@breuell-hilgenfeldt.de

South
Scheffel
elektrotechnischer Vertrieb GmbH
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Fax +49 7156 49425
info@ebmpapst-service.de

### HDS Ventilatoren Vertriebs GmbH
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Phone +49 7937 80355-0
Fax +49 7937 80355-25
info@hds-gmbh.net
www.hds-gmbh.net

### Finland
ebm-papst Oy Puistotie 1 02760 Espoo FINLAND Phone +358 9 887022-0 Fax +358 9 887022-13 mailbox@ebmpapst.fi www.ebmpapst.fi

### France
ebm-papst sarl Parc d’Activités Nord BP 62 67212 Obernai Cedex FRANCE Phone +33 820 326266 Fax +33 8 86673883 info@ebmpapst.fr www.ebmpapst.fr

### Representatives

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<th>Address</th>
<th>Phone</th>
<th>Fax</th>
<th>Email</th>
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</thead>
<tbody>
<tr>
<td>Austria</td>
<td>ebm-papst Motoren &amp; Ventilatoren GmbH Straubingstraße 17 4030 Linz AUSTRIA Phone +43 732 321150-0 Fax +43 732 321150-20 <a href="mailto:info@at.ebmpapst.com">info@at.ebmpapst.com</a> <a href="http://www.ebmpapst.at">www.ebmpapst.at</a></td>
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<td>Belgium</td>
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<td>Croatia</td>
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<td>+36 1 8722-190</td>
<td>+36 1 8722-194</td>
<td><a href="mailto:office@hu.ebmpapst.com">office@hu.ebmpapst.com</a></td>
</tr>
<tr>
<td>Czech Republic</td>
<td>ebm-papst CZ s.r.o. Kaštánová 34a 620 00 Brno CZECH REPUBLIC Phone +420 544 502-411 Fax +420 547 232-622 <a href="mailto:info@ebmpapst.cz">info@ebmpapst.cz</a> <a href="http://www.ebmpapst.cz">www.ebmpapst.cz</a></td>
<td>+420 544 502-411</td>
<td>+420 547 232-622</td>
<td><a href="mailto:info@ebmpapst.cz">info@ebmpapst.cz</a></td>
</tr>
<tr>
<td>Denmark</td>
<td>ebm-papst Denmark ApS Vallenstuevej 21 2605 Brambly DENMARK Phone +45 43 631111 Fax +45 43 630505 <a href="mailto:mail@dk.ebmpapst.com">mail@dk.ebmpapst.com</a> <a href="http://www.ebmpapst.dk">www.ebmpapst.dk</a></td>
<td>+45 43 631111</td>
<td>+45 43 630505</td>
<td><a href="mailto:mail@dk.ebmpapst.com">mail@dk.ebmpapst.com</a></td>
</tr>
<tr>
<td>Estonia</td>
<td>ebm-papst Oy, Eesti Filiaal Keisk tee 13 Aaviku küla, Jüri Tehnopark 75301 Rae Vald, Harjumaa ESTONIA Phone +372 65569-78 Fax +372 65569-79 <a href="http://www.ebmpapst.ee">www.ebmpapst.ee</a></td>
<td>+372 65569-78</td>
<td>+372 65569-79</td>
<td><a href="http://www.ebmpapst.ee">www.ebmpapst.ee</a></td>
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ebm-papst in Asia and Oceania

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<th>Fax</th>
<th>Email</th>
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<tbody>
<tr>
<td>China</td>
<td>ebm-papst Ventilator (Shanghai) Co., Ltd.</td>
<td>+86 21 5046-0183</td>
<td>+86 21 5046-1119</td>
<td><a href="mailto:sales@cn.ebmpapst.com">sales@cn.ebmpapst.com</a></td>
</tr>
<tr>
<td></td>
<td>No. 418, Hua Jing Road</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wai Gao Qiao Free Trade Zone No. 2001, Yang Gao (N) Road 20131 Shanghai</td>
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<td>P.R. of CHINA</td>
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</tr>
<tr>
<td></td>
<td>Phone +86 21 5046-0183</td>
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<td>Fax +86 21 5046-1119</td>
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</tr>
<tr>
<td>Hong Kong</td>
<td>ebm-papst Hong Kong Ltd.</td>
<td>+852 2 366213-24</td>
<td>+852 2 366213-26</td>
<td><a href="mailto:info@hk.ebmpapst.com">info@hk.ebmpapst.com</a></td>
</tr>
<tr>
<td></td>
<td>Room 17E, MG Tower</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>133 Hoi Bun Road, Kwun Tong Hong Kong</td>
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<td></td>
<td>Phone +852 2 366213-24</td>
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