

# Compact Fans for AC and DC

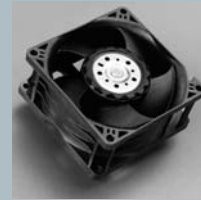
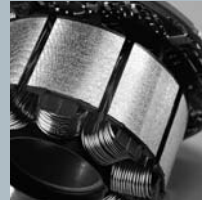
Catalogue 2008



**ebmpapst**

# Trendsetter in Fan Technology

*Uncompromising quality  
made by ebm-papst*



## Among the best.

Trendsetting with innovative technologies. Listening to customers' needs. Developing new ideas to meet requirements and realising them with pioneering spirit. This philosophy has made ebm-papst the technological leader in the world of fans.

A brand which has very few alternatives because every fan is a product of decades of application know-how gained from large-volume production and because we are in a position to produce highly efficient quality products. Our intelligent solutions for electronic cooling ensure that you are one step ahead of competitors thanks to innovative, reliable top quality technology which is cost-favorable and in line with market requirements. And if required, tailor-made right down to the last detail. In other words if you need fans which don't actually exist, contact us.

Insist on ebm-papst.



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## Company profile: ebm-papst

The entire scope of ventilation and drive technology: this is the world of ebm-papst. More than 9,800 people – in Germany and throughout the world – develop, produce and sell our motors and fans. Our global presence and our unique range of products based on a quality standard that surpasses every other have made us what we are: world market leader in motors and fans. Expertly knowing what our customers need and incessantly striving to arrive at the perfect application solution for a wide variety of different industries is what determines our daily work. Those who know us know the high standards we apply to our work and know our creed: to be as close to our customers as possible and to simply be the best in terms of innovation and reliability.



*Our location in St. Georgen*





*Left:  
Our headquarters in Mulfingen  
Right:  
Our location in Landshut*

### **Our history – Our drive**

Rooted in ebm, PAPST and mvl, the three leading innovators in the development and production of motors and fans, ebm-papst has established itself as the world market leader. Now as ever, our legendary inventive spirit shines through in products that set standards in many segments of industry worldwide. We are proud to say that despite difficult competition, our performance has always been exemplary and outstanding – in business, in our personal relationship with our customers, and of course with respect to technology and engineering. For decades, we have contributed to the world of air technology and drive engineering with small revolutions and large milestones.

To maintain this advantage in skills and knowledge to get maximum quality and thus the highest degree of customer satisfaction, our employees around the world put their passion and dedication to work for you.

### **Passionately involved in R&D**

Our catalogues just list the results of our incessant efforts in R&D: products of highest quality and reliability. After all, it is our passion to constantly try something new and improve what we have. In doing so, we take advantage of the latest development methods and state-of-the-art technology and invest quite heavily in R&D facilities. Best of all, though, we rely on excellently trained and skilled engineers and technicians to be at your service in R&D and Sales & Distribution.

### **Producing and safeguarding high-quality products and services**

This is our promise without any compromise. Whether produced in one of our five factories in Germany or one of our eleven international production sites, our products always have the same high level of quality. This quality control is something you can definitely rely on! And this across all levels of production and throughout all processes: consulting customers, development, material selection through to picking certified, choice suppliers and on to the production of parts and final delivery. On top of this, our products have to pass the most rigorous tests under all realistic operating conditions: continuous stress test, salt spray test, vibration test, or precision noise measuring, just to mention a few. And the product gets clearance for serial production only after all the desired characteristics have been deter-

mined to be just right.

Environmental care is another priority with ebm-papst. This is why we have developed our product line in EC technology, which makes for very low power consumption. Due to our manufacturing philosophy, there is absolute focus on environmental care in production, recycling, waste and waste water disposal.

### **Global Domestic**

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

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

## Drive know-how

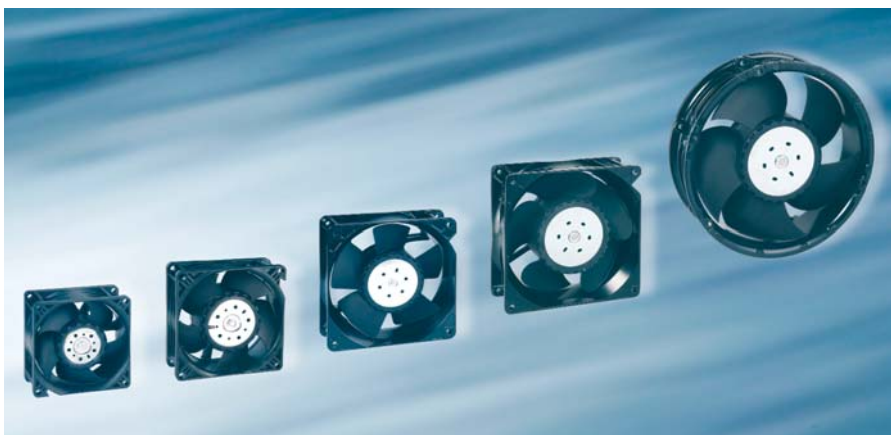
For the past 60 years all conceivable types and applications of drive technology have played an essential role at ebm-papst. A commitment that is the foundation for the development of optimum drive solutions – regardless of the type of fan and its usage. DC fans are generally equipped with electronically commutated 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 mostly driven 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.

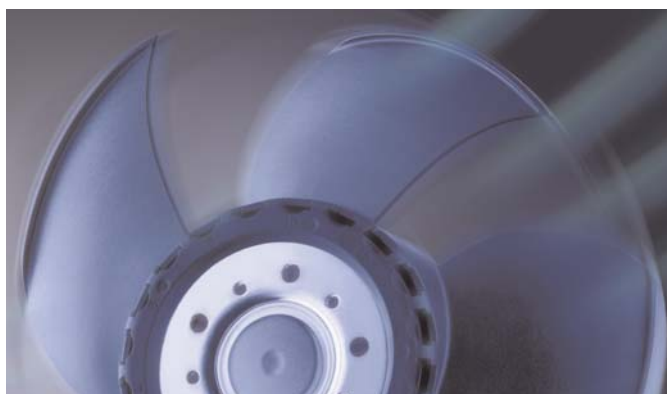
## Low noise performance

Our aerodynamically optimised design and high mechanical precision produces outstanding noise properties in series production. So-called “soft” commutation electronics of the DC fans ensure an excellent noise performance. By avoiding steep switching ramps when the individual coils are switched, this reduces the structure-borne noise from the motor. Computer-aided measurements performed in the most modern 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 life time and quietness of equipment fans. The SINTEC compact bearing provides most of the equipment 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. Also, with regard to temperature endurance, Sintec compact bearings can be used without problems in most applications. Despite the slightly higher noise and shock sensitivity of ball bearings, this bearing technology should be given preference when exposed to extreme thermal and adverse application conditions (e.g. extreme environmental conditions, critical installation position, etc.). The service life data provided in this catalogue is based on extensive service life tests and mathematically / scientifically proven service life calculations. Our product descriptions are continuously updated with all relevant data obtained from long-term tests.





### Streamline: Aerodynamics

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

### Sturdy construction – in metal or plastic

Fans of metal construction: Sturdy and indestructible. The housing is made of an aluminium alloy whereas the metal surfaces that are subject to corrosion are permanently protected by a black, impact- and abrasion resistant electrophoretic baked enamel. This particular version is highly recyclable. Fans with fibreglass reinforced plastic housing and impeller: Excellent stability and low weight distinguish this highly efficient fan concept. The 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; as such, their function is determined in the customer unit.

### Safety all inclusive

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 60335-1 or EN 60950 plus those of the UL (Underwriter 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. ACmaxx fans are protection class 2 / AC fans protection class 1. ebm-papst fans meet the highest requirements of electrical safety. Depending on the type, they are either impedance protected or equipped with a temperature safety switch, a scheme to prevent locked rotor, alarm function or have speed monitoring and speed control.

### Quality in detail

It is the seemingly trivial that makes the difference when a product is labelled 'made by ebm-papst': consistent maintenance of development and construction specifications; target-oriented design; and assured quality across the entire process chain are the reasons why running times of over 150,000 hours are not unusual. 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 final assembly. The sum of all these apparently minor details results in ventilation products with superior lifetimes and reliability.



# Tailor-made to Meet Your Special Requirements

## Practice-oriented: Fans – specified and intelligent



ebm-papst has always developed customer-specific intelligent fans which meet the exact requirements of the application. We provide a wide range of standard fan types, in many sizes and designs; with intelligent motor features, monitoring and control functions as well as special constructions for use under extreme conditions. They are all based on the standard type fan which you will find in this catalogue. 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 “inside intelligence”. Its programmed intelligence thanks to customer-specific 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 precision of control functions.

### Higher protection class for every type of application

ebm-papst provides on request, a variety of fan series which conform to the requirements of Protection Class IP 54: 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 safety.

### Virtually everything is possible

Regardless of your cooling and ventilation tasks, we develop the right solution and what is more, the most economical one. Based on the fans listed in this catalogue, well over 4000 different versions are available.

### Temperature-controlled fans

Fans with temperature-controlled speed have particularly quiet cooling characteristics. Thanks to IC technology, they adapt their speed to the current cooling requirements which results in a drastic reduction of noise in most operating modes. A temperature sensor provides the fan with thermal information: Either externally via a single lead 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 which already have standard interfaces for varying speed via internal switching and control circuits. The main applications are units which demand load-dependent individual speed profiles or systems with stand-by minimum cooling requirements and varied speed increase at varying power peaks.

### “Electronic tachometer” thanks to sensor signal

You wish to be informed about the current fan speed at all times? ebm-papst has fans with an integrated “electronic tachometer” which registers the actual value of the fan speed. Via an integrated sensor, the fan generates speed-dependent signals which can be directly utilised. Depending on the number of poles of the motor (2, 4 or 6 pole), 1, 2 or 3 pulses per revolution are generated.

### Alarm signal for more 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 is either static, already evaluated or interface-compatible. The alarm signal output provides reliable long term monitoring and status signal when critical operating conditions evolve.

### TURBOFAN

The DC fans with the 3-phase EC motor technology for exact speed control and high power margin. The drive and control electronics of the TD motors is pre-wired and already integrated in the fans.

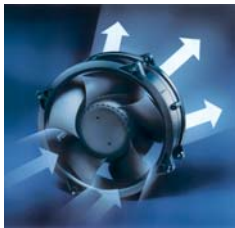
# Types of Fans and their Function



## **Axial fans:**

### **High air flow with medium to relatively high pressure build-up**

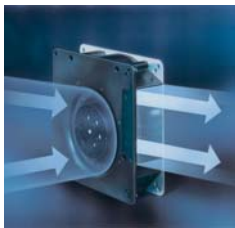
The air flow in axial fans, whose blower wheel is similar to that of a propeller, is conducted to a great extent in parallel to the axis of rotation, in other words in the axial direction. Axial fans with free air delivery at zero static pressure have the lowest power input that rises with increasing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



## **Diagonal fans:**

### **High flow rate at relatively high pressure**

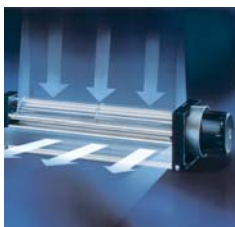
At first glance diagonal fans only differ slightly from axial fans. Intake is axial whereas exhaust is diagonal. Due to the conical shape of the wheel and housing the air is pressurised higher. In direct comparison with axial fans of the same size and comparable performance, these fans are distinguished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



## **Radial fans:**

### **Limited flow rate at high pressure**

Many of the cooling problems that occur can be optimally solved by axial and/or diagonal fans. If for example the required cooling air has to be conducted round an angle of 90° or if high pressure is necessary, radial fans are more effective. For your application, ebm-papst offers not only complete radial fans but also motor/blower wheel combinations without external housing.



## **Cross flow blower:**

### **High flow rate at low pressure**

Cross flow blowers are used above all, for large-surface air flow in appliances. The air flows through the blade roller twice in the radial direction: At the suction point from the outside to the inside and at the exhaust point from the inside to the outside. Whirls form in the roller due to the vanes which guarantee a steady flow of air through the blower wheel.



## 1. Dissipated heat

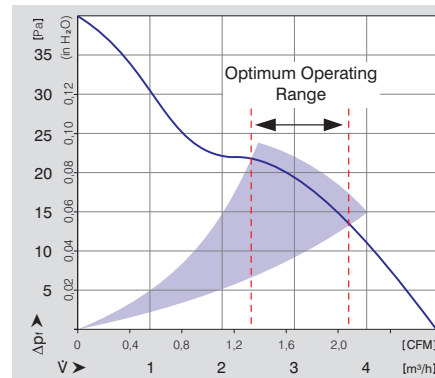
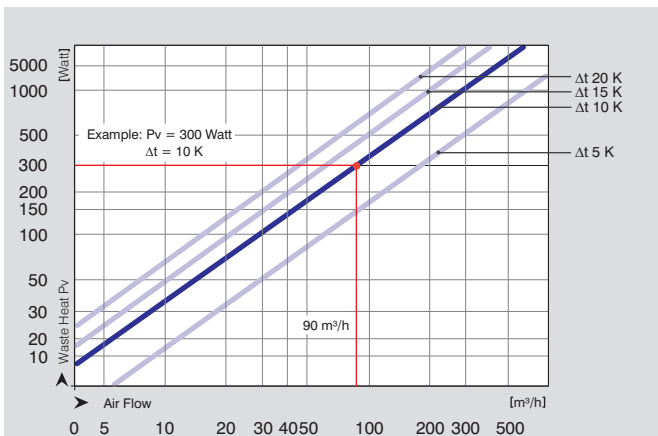
A large amount of the energy consumed by electrical and electronic devices is converted into heat. In selecting the correct fan, therefore, it is important to determine the dissipated heat that must be removed. The electrical power consumption of the unit to be cooled, often represents a suitable value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

## 2. Permissible temperature rise

The air flow which the selected fan is required to generate, is determined by the dissipated heat and the permissible rise ( $\Delta T$ ) of the cooling air flow (from entry to exit of the device to be cooled). The max. allowable  $\Delta T$  depends greatly on the temperature sensitivity of the individual device components.  $\Delta T = 5K$  means e.g. that the average air flow leaving the device to be cooled may only be  $5^\circ C$  warmer than the ambient temperature (a large volume of air is required for this purpose). A lower air flow rate is sufficient if a higher temperature difference (e.g.  $\Delta T = 20K$ ), can be tolerated.

## 3. Required cooling air flow

- In the below diagram a horizontal line is drawn from the dissipated heat to intersect with the selected  $\Delta T$  line.



- Read down from this point to obtain the required value for the cooling air flow.

Diagram-formula:

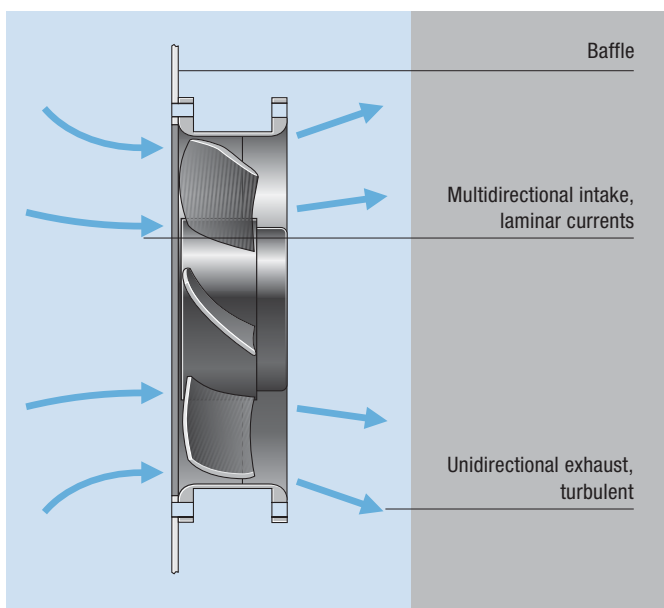
$$\dot{V} [\text{m}^3/\text{h}] \approx 3 \cdot \frac{P_v [\text{W}]}{\Delta T [\text{K}]}$$

## 4. Optimum operating range

The required fan, however, must also be able to deliver a suitable static pressure  $\Delta p_f$  in order to force the cooling air through the appliance. A fan must therefore be selected that provides the required air flow performance within its optimum operating range (see also the performance curves under technical data).

## 5. Fan selection

If the requirements of an application are fulfilled by more than one fan, the noise level, space requirements, economy and ambient conditions will assist in making the final choice.



## Information on installation

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

- The values stated in this catalogue were determined under optimum, constant and comparable measurement conditions.
- Ideal mounting conditions under which free air intake and exhaust are present is seldom feasible in practice. Quite frequently the fans must be mounted in the proximity of other components or cabinet panels. As a consequence, the intake and exhaust currents may be restricted causing the air flow to diminish and the noise level to increase. Fans are particularly sensitive to obstructions which are positioned directly in front of the output cross section as 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 mounting depth of the fan.

## Intake or exhaust side installation

Under ideal conditions, the operating point is represented as the intersection between the characteristic fan and device 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 additional 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, while it flows on a preferred direction, e.g. axial for an axial fan. The turbulences of the exhaust intensify the heat transfer from components within the air currents, so that mounting the fan at the air intake side of the device is recommended for cooling and heating. Mounting the fan at the device intake is also advantageous because the fan will not be subjected to the dissipation heat of the device. Therefore, it operates at low ambient temperatures and has a higher life expectancy.



### Accident prevention



The turning rotor and the high speeds that are sometimes involved mean that our fan products carry an inherent risk of injury. They may only be operated after correct installation and with suitable protective facilities (e.g. with a guard grille). More information can be found in the internet at:

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



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

## Service life data from ebm-papst St. Georgen

Our fans catalogue give three different values for the service life of each product. The first column usually states the service life  $L_{10}$  at  $40^{\circ}\text{C}$ . 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  $L_{10\Delta}$  ( $40^{\circ}\text{C}$ ).

### Service life $L_{10}$ ( $40^{\circ}\text{C}$ ) and $L_{10}$ ( $T_{\text{max}}$ )

The values given in the first two columns have been derived from intensive, internal service life endurance tests, in which our products are operated in various positions at  $40^{\circ}\text{C}$  and  $70^{\circ}\text{C}$  until they fail. A fan is deemed to have failed when it deviates from its defined airflow and speed values, or when the operating noise becomes noticeable. Such tests can take several years before a representative number of failures have been registered, and even today, some fans are still in the process of endurance testing, even though they began tests in the 1980s. These fans are proof of the legendary reliability of fans from the Black Forest.

Test results are presented in a diagram and the service life of the product  $L_{10}$  at the temperature tested is determined on the basis of the Weibull distribution. These tests have given us years of experience of the way various design parameters and temperatures can affect the service life of a product. Service life at various temperatures data for new products can be stated with a very high degree of precision on the basis of tests, product specifications and of commonalities in the design of the product.

### New: Life expectancy $L_{10\Delta}$ ( $40^{\circ}\text{C}$ )

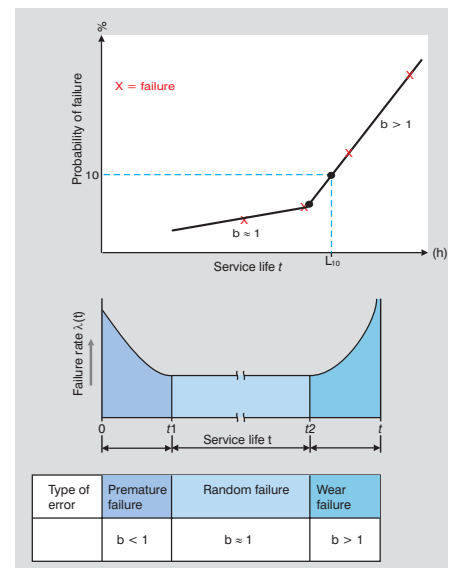
The new third service life column states the expected service life  $L_{10\Delta}$ . This value is based on the calculation methods conventionally applied in the compact fan market. Again here, the foundations for the service life values are our service life endurance tests at high ambient temperatures. 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:

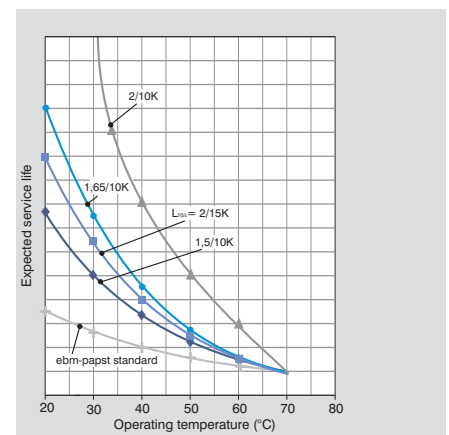
The value given for the life expectancy  $L_{10\Delta}$  should help the user to compare our service life figures with those of other manufacturers. The service life  $L_{10}$  in the first and second columns the service life verified by years of practical testing of our products.

Noise	Noise	Sinter-Screw Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life ( $L_{10}$ , $20^{\circ}\text{C}$ ) ebm-papst Standard	Service Life ( $L_{10}$ , $60^{\circ}\text{C}$ ) ebm-papst Standard	Product life expectancy $L_{10\Delta}$ , ( $40^{\circ}\text{C}$ )	Curve
dB(A)	Bel	□ / ■	Watt	min <sup>-1</sup>	$^{\circ}\text{C}$	Hours	Hours	Hours	
5	< 3	■	0.2	6 000	-10...+70	45 000 / 14 000	45 000	45 000	1

Example of the service life figures on the page of the catalogue.



Bathtub curve and Weibull distribution.



Example of the influence of factors from various manufacturers on the expected service life.



## Nominal Voltage (Volts)

The voltage at which the nominal values (the tabular values listed in this catalogue) 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 permissible voltage range that is specified on the nameplate of each fan.

## Frequency (Hz)

PAPST AC fans are made for operating frequencies of 50 Hz or 60 Hz. Their technical data alter accordingly.

## Volumetric Flow Rate (m<sup>3</sup>/h)

The air flow performance of the fan in free air operation, i.e. the fan blows into the free space without static pressure.

## Fan Curves

The fan curves are determined in accordance with DIN 24 163 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 may be estimated with the formula  $\Delta p_2 = \Delta p_1 (\rho_2/\rho_1)$ .

The nominal speed values, airflow and power input listed in the table were measured in free air operation with horizontal shaft at an ambient temperature of 20 +5 °C, air density  $\rho = 1.2 \text{ kg/m}^3$  after a warm-up period of 5 min.

## Optimum Application

During operation, fans are required to produce an airflow with a simultaneous increase of pressure. These operating conditions are described in the section "Optimum Operating Range".

The optimum operating range is therefore always indicated in this catalogue in the shaded area. In this range the fans operate best with respect to efficiency and noise level. Within this optimum operating range the noise level only fluctuates insignificantly.

## Noise (dB(A), Bel)

### 1. Noise Pressure Level – dB(A)

Noise ratings of the fan in free air operation, i.e. at maximum flow rate.

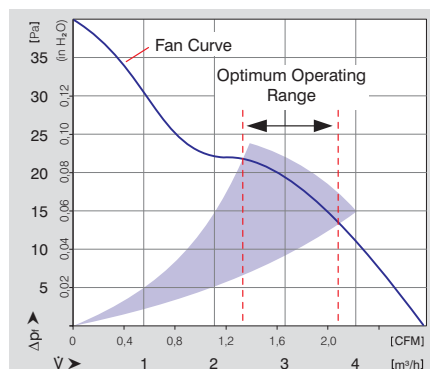
### 2. Sound Power Level – Bel

Extent of the overall sound radiation of the fan. The sound power level is determined in the optimum operating range.

## Sintec® Sleeve Bearings

A particularly efficient bearing system with excellent qualities:

- Very precise, large sintered bearings
- Low running noise
- High service life expectancy
- Insensitive to shock and vibration



Subject to technical alterations.

Our products are not designed for use in the aerospace industry!

German and international patents, registered designs and utility models.

ebm-papst, PAPST, Vario-Pro, SINTEC, TURBOFAN and VARIO-FAN are trademarks of ebm-papst St. Georgen GmbH & Co.KG. and are registered in many countries of the world.

## Ball Bearings

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

## Power Input (Watt)

Input performance of the fan motor when operating at nominal voltage.

## Temperature Range (°C)

The permissible ambient temperature range within which the fan can be expected to run continuously.

## Service Life [h]

### Service life L<sub>10</sub> at 40°C and T<sub>max</sub>

Standard figures for service life at ebm-papst. These two temperatures are based on intensive, internal endurance tests and on the experience more than 60 years developing fans.

### Life expectancy L<sub>10Δ</sub> (40°C)

Figures orientated around the calculation methods employed by other fan manufacturers. Data based on the internal expected service life at 70°C, optimistically extrapolated to 40°C.

## Unit conversion

### Air Flow

1 cfm = 1,7 m<sup>3</sup>/h

1 l/s = 3.6 m<sup>3</sup>/h

1 l/min = 0.06 m<sup>3</sup>/h

### Pressure

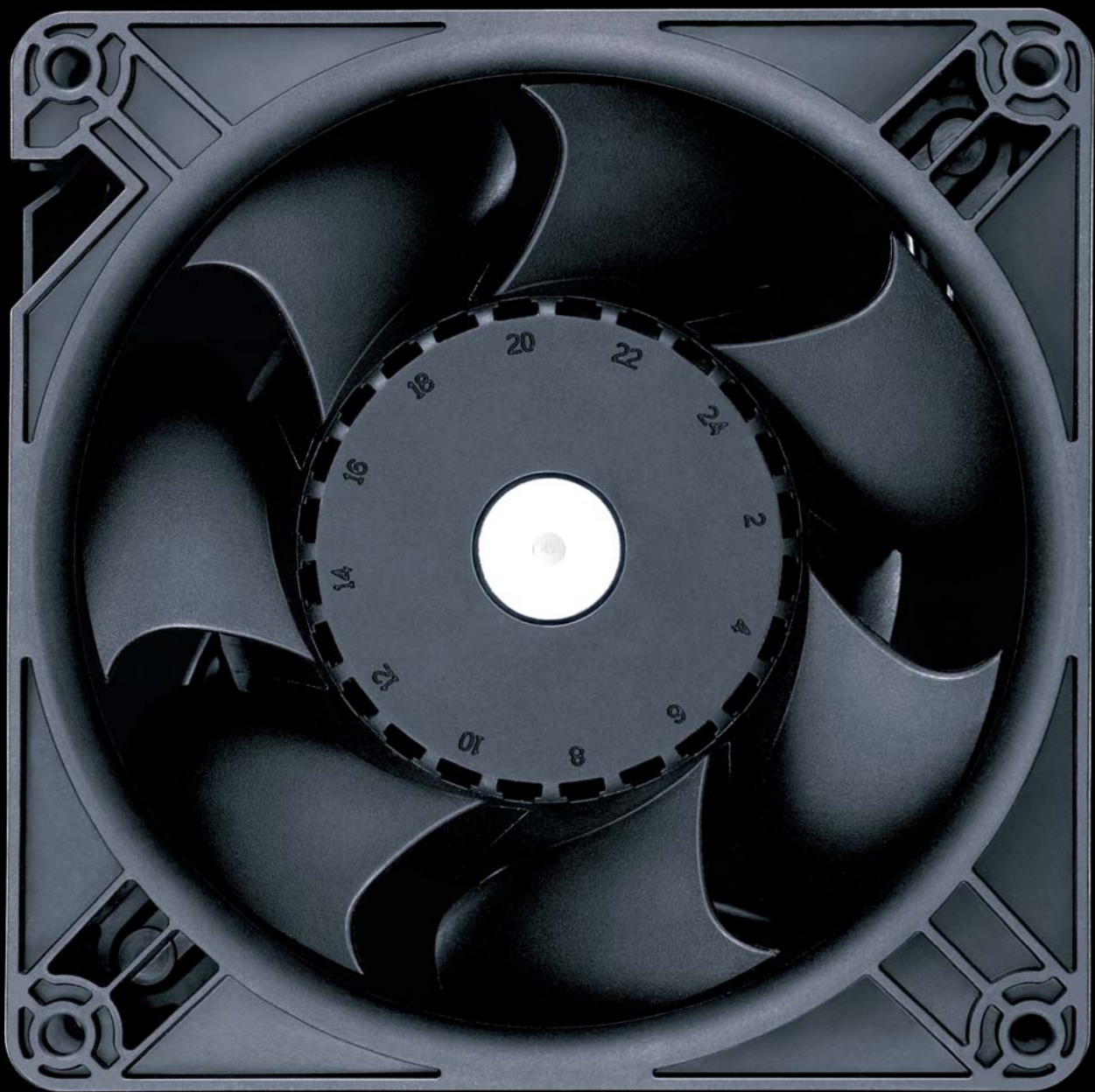
1 Pa = 1x10<sup>-5</sup> bar

1 inch H<sub>2</sub>O = 249 Pa

1 mm H<sub>2</sub>O = 9.81 Pa

# DC Fans

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## Technical Information

### Range of fans

Users of ebm-papst fans have the widest range of DC axial fans at their disposal: From 25 mm to 280 mm in size. Every single type of fan can be optimally integrated in the respective appliance concept. The highly economic brushless motor technology of these fans provides a unique variety of intelligent innovations that can be realised today at prices that would have been unthinkable just 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 conveniently located in the fan hub.

### Product life expectancy

A distinctive feature of DC fan technology is the convincingly high product life expectancy. Thanks to the excellent efficiency of the brushless drives, the thermal load of the bearings is reduced thus considerably increasing the life expectancy of the fans.

### Protection Class

DC fans with sleeve and ball bearings are powered by Class E insulated motors. All ebm-papst fans conform to the requirements of Protection Class IP 20. Fans conforming to IP 54 and special protection classes are also available.



### Supply voltage

The supply voltage of ebm-papst DC fans can be varied thus the airflow can be matched optimally to the cooling requirements and noise reduced to a minimum. ebm-papst DC fans can be driven with voltages that are reduced as much as 50 % or increased by 25 % of their nominal voltage (see voltage range in the tables containing technical data).

### Speed control

VARIOFAN – the fans with IC technology and temperature-dependent speed control. VARIOFANS always cool at the speed required by the appliance resulting in speeds as much as 50% lower than those of standard fans and a drastic reduction of the noise level in almost all operating conditions. VARIOFANS are controlled without dissipation losses: At lower speeds their power consumption is reduced proportionally.

### S-Force

The new S-Force fans with their extremely high blower capacity of up to 950 m<sup>3</sup>/h and pressure build-up of up to 1200 Pascal 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 individually adapted for any application. S-Force fans are available in 5 standard dimensions.

# Axial Fans for DC Operation

## Overview Air Flow

Dimensions	Series	Air Flow	Air Flow (m³/h)																Page					
			10	20	30	40	50	60	70	80	90	100	200	300	400	500	600	700		800	900	1000	2000	3000
	□ 25 x 8	250	2.1...4.5																					21
NEW	□ 40 x 10	400 F	6...9																					22
NEW	□ 40 x 20	400	10...13.5																					23
	□ 40 x 25	400 J	19...24																					24
NEW	□ 50 x 15	500 F	11...20																					25
NEW	□ 60 x 15	600 F	19...33																					26
NEW	□ 60 x 25	620	21...67																					27
	□ 60 x 25	600 N	21...56																					28
	□ 60 x 25	600 N VARIOFAN	16...41																					29
	□ 60 x 32	600 J	70																					30
	□ 70 x 15	700 F	28...44																					31
NEW	□ 80 x 25	8450	33...88																					32
	□ 80 x 25	8400 N	33...79																					33
	□ 80 x 25	8400 N VARIOFAN	20...58																					34
	□ 80 x 32	8300	32...80																					35
NEW	□ 80 x 38	8200 J	132...222																					36
	□ 92 x 25	3400 N	61...102																					37
	□ 92 x 25	3400 N VARIOFAN	44...84																					38
	□ 92 x 32	3300	56...107																					39
NEW	□ 92 x 38	3200 J	130...280																					40
	□ 119 x 25	4400 F	94...170																					41
	□ 119 x 25	4400 FN	200...225																					42
	□ 119 x 32	4300 N	93...198																					43
	□ 119 x 32	4300	95...204																					44
	□ 119 x 32	4300 VARIOFAN	61...170																					45
NEW	□ 119 x 38	4400	150...285																					46
	□ 119 x 38	4200	86...184																					47
	□ 119 x 38	4100 N	160...237																					48
	□ 119 x 38	4100 NHH-H6	260...440																					49
NEW	□ 119 x 38	4100 NH7-8	500...570																					50
	□ 119 x 38	DV 4100	275																					51
	□ 127 x 38	5200 N	187...338																					52
NEW	□ 127 x 38	DV 5200	270...324																					53
	□ 135 x 38	5100 N	122...250																					54
NEW	□ 140 x 51	5300	410...670																					55
	∅ 150 x 38	7100 N	360...420																					56
	∅ 150 x 55	7200 N	360																					57
NEW	∅ 172 x 51	6300	600...950																					58
	∅ 172 x 51	6200 N	205...480																					59
	∅ 172 x 51	6200 NTD	90...600																					60
	∅ 172 x 51	DV 6200	540																					61
NEW	∅ 172 x 51	DV 6200 TD	100...700																					62
	172x150x51	6400	205...480																					63
	172x150x51	6400 TD	90...900																					64
	172x160x51	DV 6400	530																					65
	172x160x51	DV 6400 TD	100...680																					66
	∅ 200 x 70	W1G 180	900...925																					67
	□ 225 x 80	W1G 200	1005...1090																					68
	∅ 232 x 80	W1G 208	1050																					69
	□ 280 x 80	W1G 250	1920																					70



# Radial Fans for DC Operation

## Overview Air Flow

Dimensions	Series	Air Flow	Air Flow																Page							
			mm	m <sup>3</sup> /h	10	20	30	40	50	60	70	80	90	100	200	300	400	500		600	700	800	900	1000	2000	3000
105 x 59 x 79	RV 40	18...24																								71
□ 51 x 15	RLF 35	9.6																								72
□ 76 x 27	RL 48	22...28																								73
97 x 93.5 x 33	RL 65	56...61																								74
□ 121 x 37	RL 90 N	40...55																								75
NEW □ 127 x 25	RLF 100	64...80																								76
□ 135 x 38	RG 90 N	55																								77
NEW □ 180 x 40	RG 125 N	60...137																								78
□ 220 x 56	RG 160 N	139...209																								79
□ 220 x 56	RG 160 NTD	59...370																								80
∅ 104 x 25	REF 100	86...104																								81
NEW ∅ 101 x 52	RER 101	190																								82
NEW ∅ 138 x 35	RER 125 N	74...166																								83
∅ 165 x 51	RER 160 N	255																								84
∅ 165 x 51	RER 160 NTD	66...354																								85
201...413 x 50 x 48	QG 030	75...155																								86



## Information Pictograms

On the pages of the catalogue and on the following overview pages, the pictograms illustrated below provide information about technically possible special versions in the fan line presented.

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 not usually available off the shelf.



### Speed Signal

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 90.



### Go / No Go Alarm

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 97.



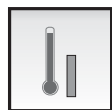
### Alarm with limit speed

If the speed drops below a certain level defined in the fan's electronics, the fan will emit a static signal, thus providing information about whether or not the rotor is turning. For technical details, please refer to page 94.



### External temperature sensor

An NTC is connected to the fan via a separate wire and the fan changes its speed depending on the temperature at the NTC. For technical details, please refer to page 100.



### 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 100.



### 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 details, please refer to page 101.



### Analogue 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 details, please refer to page 101.



### Protection against moisture

Protection for the fan's electronics against moisture and condensation. For details, please refer to page 102.



### IP 54

Protection of motor and PCB board against splashed water and humidity. For details, please refer to page 102.



### Protection against salt spray fog

Protection of fan against the damaging effects of salt spray fog. For details, please refer to page 102.

# Fans for DC Operation

## Overview of technically feasible designs

Axial Fans		Dimensions	VDE UL, CSA	SINTEC-Sleeve Bearings / Ball Bearings	Sensor	Go / No Go Alarm	Alarm with limit speed	External Temperature sensor	Internal Temperature sensor	PWM Control Input	Analogue Control Input	Humidity protection	IP >= IP54	Salt fog protection	Page
Series	mm														
250	25 x 25 x 8	yes	□	•	-	-	-	-	-	•	-	-	-	-	21
NEW 400 F	40 x 40 x 10	yes	□	•	•	-	-	-	-	•	-	-	-	-	22
NEW 400	40 x 40 x 20	yes	□	•	•	-	-	-	-	•	-	-	-	-	23
400 J	40 x 40 x 25	yes	■	•	•	-	-	-	-	•	•	-	-	-	24
NEW 500 F	50 x 50 x 15	yes	□	•	•	-	-	-	•	-	-	-	-	-	25
NEW 600 F	60 x 60 x 15	yes	□	•	•	-	-	-	•	-	-	-	-	-	26
NEW 620	60 x 60 x 25	yes	■	•	•	•	•	•	•	•	•	-	-	-	27
600 N	60 x 60 x 25	yes	□/■	•	•	-	•	•	-	-	•	•	-	-	28
600 N VARIOFAN	60 x 60 x 25	yes	□/■	•	•	-	•	•	-	-	•	•	-	-	29
600 J	60 x 60 x 32	*	■	•	•	-	-	-	-	•	-	-	-	-	30
700 F	70 x 70 x 15	yes	□	•	•	-	-	-	-	•	-	-	-	-	31
NEW 8450	80 x 80 x 25	*	□	•	•	-	-	-	•	-	-	-	-	-	32
8400 N	80 x 80 x 25	yes	□/■	•	•	•	•	•	•	•	•	-	-	-	33
8400 N VARIOFAN	80 x 80 x 25	yes	□	•	•	-	•	•	-	-	•	-	-	-	34
8300	80 x 80 x 32	yes	□/■	•	•	•	•	•	•	•	•	•	•	•	35
NEW 8200 J S-Force	80 x 80 x 38	*	■	•	•	•	•	•	•	•	•	-	-	-	36
3400 N	92 x 92 x 25	yes	□/■	•	•	•	•	•	•	•	•	-	-	-	37
3400 N VARIOFAN	92 x 92 x 25	yes	□	•	•	-	•	•	-	-	•	-	-	-	38
3300	92 x 92 x 32	yes	□/■	•	•	•	•	•	•	•	•	•	•	•	39
NEW 3200 J	92 x 92 x 38	yes	■	•	•	•	•	•	•	•	•	-	-	-	40
4400 F	119 x 119 x 25	yes	□/■	•	•	•	•	•	•	•	•	-	-	-	41
4400 FN	119 x 119 x 25	*	■	•	•	•	•	•	•	•	•	-	-	-	42
4300 N	119 x 119 x 32	yes	□/■	•	•	-	-	-	-	•	-	-	-	-	43
4300	119 x 119 x 32	yes	□/■	•	•	•	•	•	•	•	•	•	•	•	44
4300 VARIOFAN	119 x 119 x 32	yes	■	•	•	•	•	•	•	•	•	-	-	-	45
NEW 4400	119 x 119 x 38	*	■	•	•	•	•	•	•	•	•	-	-	-	46
4200	119 x 119 x 38	yes	□/■	•	•	•	•	•	•	•	•	•	•	•	47
4100 N	119 x 119 x 38	yes	□/■	•	•	•	•	•	•	•	•	•	•	•	48
4100 NHH-H6	119 x 119 x 38	*	■	•	•	•	•	•	•	•	•	•	-	-	49
NEW 4100 NH S-Force	119 x 119 x 38	*	■	•	•	•	•	•	•	•	•	-	-	-	50
DV 4100	119 x 119 x 38	yes	■	•	•	•	•	•	•	•	•	•	•	•	51
5200 N	127 x 127 x 38	yes	■	•	•	•	•	•	•	•	•	•	•	•	52
NEW DV 5200	127 x 127 x 38	yes	■	•	•	•	•	•	•	•	•	•	•	•	53
5100 N	135 x 135 x 38	yes	■	•	•	•	•	•	•	•	•	•	•	•	54
NEW 5300 S-Force	140 x 140 x 51	*	■	•	•	•	•	•	•	•	•	-	-	-	55
7100 N	150 Ø x 38	yes	■	•	•	•	•	•	•	•	•	•	•	•	56
7200 N	150 Ø x 55	yes	■	•	•	•	•	•	•	•	•	•	•	•	57
NEW 6300 S-Force	172 Ø x 51	*	■	•	•	•	•	•	•	•	•	-	-	-	58
6200 N	172 Ø x 51	yes	■	•	•	•	•	•	•	•	•	•	•	•	59
6200 NTD	172 Ø x 51	yes	■	•	•	•	•	•	•	•	•	•	•	•	60
DV 6200	172 Ø x 51	yes	■	•	•	•	•	•	•	•	•	•	•	•	61
NEW DV 6200 TD	172 Ø x 51	yes	■	•	•	•	•	•	•	•	•	•	•	•	62
6400	172 x 150 x 51	yes	■	•	•	•	•	•	•	•	•	•	•	•	63
6400 TD	172 x 150 x 51	yes	■	•	•	•	•	•	•	•	•	•	•	•	64
DV 6400	172 x 160 x 51	yes	■	•	•	•	•	•	•	•	•	•	•	•	65
DV 6400 TD	172 x 160 x 51	yes	■	•	•	•	•	•	•	•	•	•	•	•	66

\* approvals applied for  
 - unavailably  
 • availably  
 □ Sleeve Bearings  
 ■ Ball Bearings

Axial Fans		Dimensions	VDE UL, CSA	SINTEC-Sleeve Bearings / Ball Bearings	Sensor	Go / No Go Alarm	Alarm with limit speed	External Temperature sensor	Internal Temperature sensor	PWM Control Input	Analogue C Control Input	Humidity protection	IP >= IP54	Salt fog protection	Page
Series	mm														
RV 40	105 x 59 x 79	yes	■	-	•	-	-	-	•	-	-	-	-	-	71
RLF 35	51 x 51 x 15	*	■	•	-	-	-	-	-	•	-	-	-	-	72
RL 48	76 x 76 x 27	yes	■	•	•	-	-	-	-	•	-	-	-	-	73
RL 65	97 x 93,5 x 33	*	■	•	•	•	•	•	•	•	•	-	-	-	74
RL 90 N	121 x 121 x 37	yes	□/■	•	•	•	•	•	•	•	•	•	•	•	75
NEW RLF 100	127 x 127 x 25	yes	■	•	•	•	•	•	•	•	•	•	•	-	76
RG 90 N	135 x 135 x 38	yes	□/■	•	•	•	•	•	•	•	•	•	•	•	77
NEW RG 125 N	180 x 180 x 40	yes	■	•	•	•	•	•	•	•	•	•	•	•	78
RG 160 N	220 x 220 x 56	yes	■	•	•	•	•	•	•	•	•	•	•	•	79
RG 160 NTD	220 x 220 x 56	yes	■	•	•	•	•	•	•	•	•	•	•	•	80
REF 100	104 Ø x 25	yes	■	•	•	•	•	•	•	•	•	•	•	-	81
NEW RER 101	101 Ø x 52	*	■	•	•	•	•	•	•	•	•	•	-	-	82
NEW RER 125 N	138 Ø x 35	yes	■	•	•	•	•	•	•	•	•	•	-	-	83
RER 160 N	165 Ø x 51	yes	■	•	•	•	•	•	•	•	•	•	•	•	84
RER 160 NTD	165 Ø x 51	yes	■	•	•	•	•	•	•	•	•	•	•	•	85
QG 030	201...413 x 50 x 48	yes	■	•	-	-	-	-	-	-	-	-	-	-	86

Please note that these special versions are not possible for all voltages and speeds, and not in all combinations.

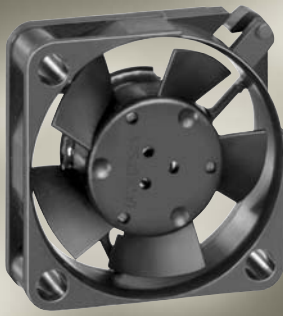
The special versions are designed for specific customers and projects. As a rule they are not available off the shelf and are tied to minimum volumes.

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

max. 4.5 m<sup>3</sup>/h

# DC Axial Fans

Series 250 25 x 25 x 8 mm



### Highlights:

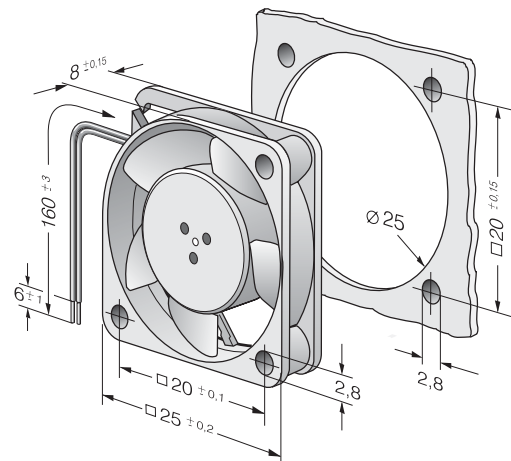
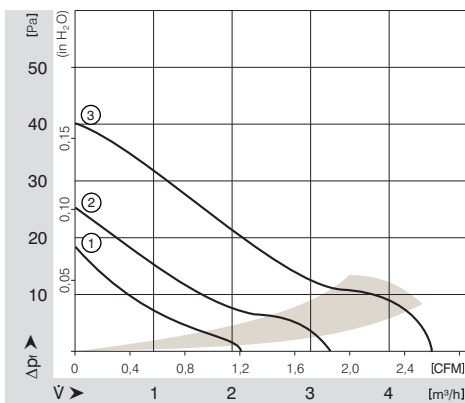
- Compact fan with low power consumption.

### General characteristics:

- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Connection via single wire AWG 28, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 5 g.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (20 °C) ebm-papst Standard	Service Life L <sub>10</sub> (60 °C) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see Page 13	Curve	Specials
	m <sup>3</sup> /h	CFM													
255 M	2.1	1.2	5	4.5...5.5	5	< 3	■	0.2	6 000	-10...+70	45 000 / 14 000	45 000	1		
255 N	3.2	1.9	5	4.5...5.5	16	< 3	■	0.4	9 600	-10...+70	40 000 / 12 000	40 000	2	/2	
255 H	4.5	2.6	5	4.5...5.5	23	4.4	■	0.6	12 000	-10...+55	35 000 / 10 000*	30 000	3	/2	
252 N	3.2	1.9	12	10...14	15	< 3	■	0.5	9 000	-10...+70	40 000 / 12 000	40 000	2	/2	

\* at 55 °C



max. 9 m³/h

# DC Axial Fans

Series 400 F 40 x 40 x 10 mm



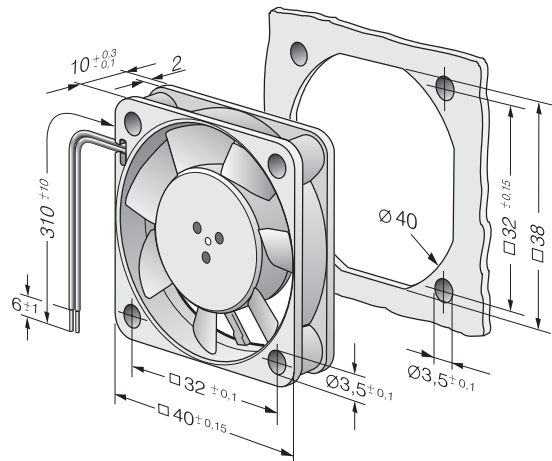
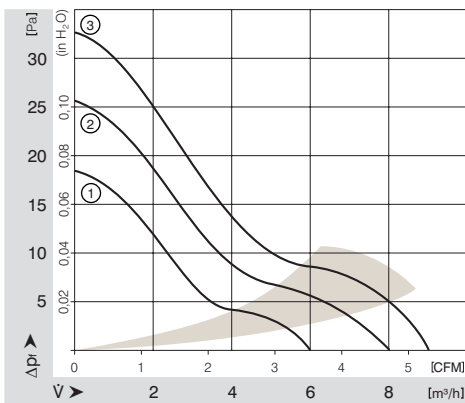
### Highlights:

- Compact fan with low power consumption.
- Some models suitable for use at high ambient temperatures.

### General characteristics:

- Material: fiberglass-reinforced plastic. impeller PA, housing PBT.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 28, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 17 g.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Voltage Range	Noise	Sound Power	Sintec-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (20 °C) ebm-papst Standard	Service Life (60 °C) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
Type		m³/h	CFM	V DC	V DC	dB(A)	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours		P. 90	
405 F		8	4.7	5	4.5...5.5	22.1	4.4	■	0.7	5 400	-20...+70	45 000 / 15 000	47 500	2	/2	
405 FH		9	5.3	5	4.5...5.5	26.0	4.6	■	0.9	6 000	-20...+70	45 000 / 15 000	47 500	3	/2	
412 FM		6	3.5	12	10...14	16.5	3.8	■	0.6	4 300	-20...+70	45 000 / 15 000	47 500	1		
412 F		8	4.7	12	10...14	22.1	4.4	■	0.7	5 400	-20...+70	45 000 / 15 000	47 500	2		
412 FH		9	5.3	12	10...14	26.0	4.6	■	0.8	6 000	-20...+70	45 000 / 15 000	47 500	3	/2	
414 F		8	4.7	24	20...28	22.1	4.4	■	0.8	5 400	-20...+70	45 000 / 15 000	47 500	2	/2	
414 FH		9	5.3	24	21.6...26.4	26.0	4.4	■	0.9	6 000	-20...+70	45 000 / 15 000	47 500	3		
<b>Models with Temperature range up to +85 °C.</b>																
NEW	412 FM-074	6	3.5	12	10...14	16.5	3.8	■	0.4	4 300	-20...+85	45 000 / 15 000	47 500	1	/2	
NEW	412 F-130	8	4.7	12	10...14	22.1	4.4	■	0.6	5 400	-20...+85	45 000 / 15 000	47 500	2		
NEW	412 FH-132	9	5.3	12	10...14	26.0	4.6	■	0.7	6 000	-20...+85	45 000 / 15 000	47 500	3		



max. 13.5 m<sup>3</sup>/h

# DC Axial Fans

Series 400 40 x 40 x 20 mm



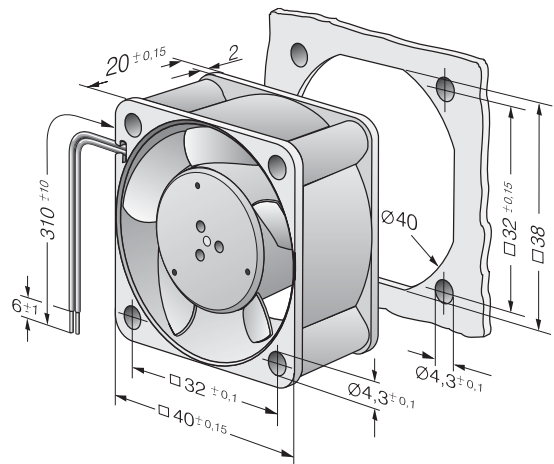
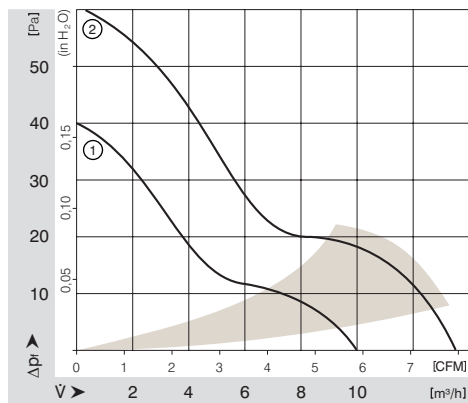
### Highlights:

- Compact fan with low power consumption.
- Some models suitable for use at high ambient temperatures.

### General characteristics:

- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 28, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 27 g.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (20 °C) ebm-papst Standard	Service Life (60 °C) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
Type		m <sup>3</sup> /h	CFM	V DC	V DC	dB(A)	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours		P. 90/98	
405		10.0	5.9	5	4.5...5.5	18	3.8	■	0.9	6 000	-20...+70	50 000 / 20 000	62 500	1	/2	
412		10.0	5.9	12	10...14	18	3.8	■	0.9	6 000	-20...+70	50 000 / 20 000	62 500	1	/2;/39	
412 H		13.5	7.9	12	10...14	29	4.7	■	1.6	8 100	-20...+60	45 000 / 15 000	47 500	2	/39	
414		10.0	5.9	24	20...28	18	3.8	■	1.0	6 000	-20...+70	50 000 / 20 000	62 500	1	/2	
414 H		13.5	7.9	24	20...26.5	29	4.7	■	1.6	8 100	-20...+60	45 000 / 15 000	47 500	2	/2	
Model with Temperature range up to +85 °C.																
NEW 412-099		10.0	5.9	12	10...14	18	3.8	■	0.8	6 000	-20...+85	50 000 / 20 000	62 500	1		





max. 24 m<sup>3</sup>/h

# DC Axial Fans

Series 400 J 40 x 40 x 25 mm



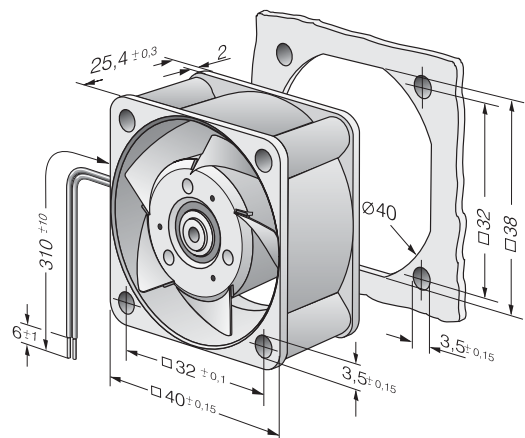
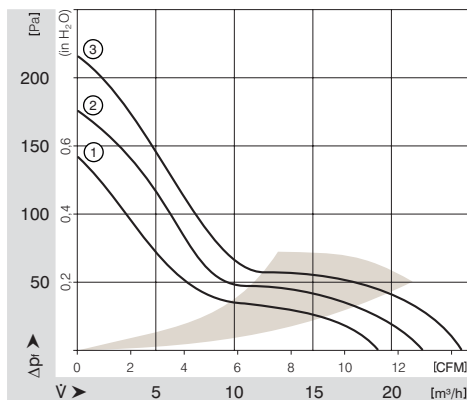
### Highlights:

- Highly stable characteristic curve for high air flow with high back pressure.
- Low operating noise at high back pressure.

### General characteristics:

- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 26, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 50 g.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM													
412 J	19	11.2	12	8...14	39	5.5	■	2.4	10 300	-20...+70	60 000 / 30 000	120 000	120 000	1	
412 JH	22	12.9	12	8...13.5	43	5.8	■	3.0	11 700	-20...+70	60 000 / 30 000	120 000	120 000	2	/2
412 JHH	24	14.1	12	8...13.5	46	6.1	■	3.3	13 000	-20...+60	57 500 / 35 000	110 000	110 000	3	/2
414 J	19	11.2	24	18...27	39	5.5	■	2.4	10 300	-20...+70	60 000 / 30 000	120 000	120 000	1	
414 JH	22	12.9	24	18...27	43	5.8	■	3.0	11 700	-20...+70	60 000 / 30 000	120 000	120 000	2	/2
414 JHH	24	14.1	24	18...27	46	6.1	■	3.6	13 000	-20...+60	57 500 / 35 000	110 000	110 000	3	/2



max. 20 m<sup>3</sup>/h

# DC Axial Fans

Series 500 F 50 x 50 x 15 mm



**New Models**

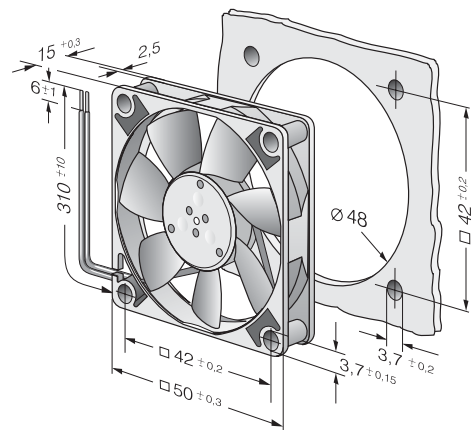
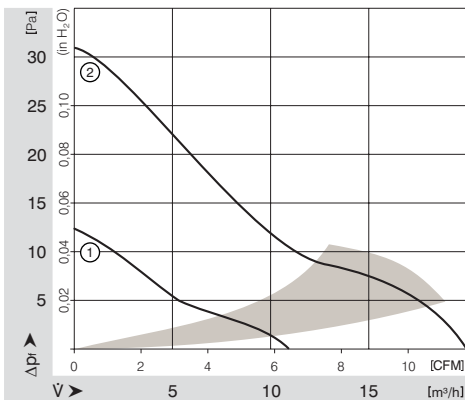
### Highlights:

- Compact fan with low power consumption.
- Some models suitable for use at high ambient temperatures.

### General characteristics:

- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 28, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 25 g.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (20 °C) ebm-papst Standard	Service Life L <sub>10</sub> (60 °C) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
Type	m <sup>3</sup> /h	CFM	V DC	V DC	dB(A)	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours	Hours	P. 90		
512 F	20	11.8	12	10.8...13.2	30	4.5	■	1.0	5 000	-20...+70	50 000 / 20 000	62 500	2	/2		
514 F	20	11.8	24	21.6...26.4	30	4.5	■	1.0	5 000	-20...+70	50 000 / 20 000	62 500	2	/2		
<b>Models with Temperature range up to +85 °C.</b>																
NEW 512 FL-547	11	6.5	12	11.5...13.2	12	3.7	■	0.4	3 000	-20...+85	50 000 / 20 000	65 500	1			
NEW 512 F-532	20	11.8	12	10.8...13.2	30	4.5	■	0.9	5 000	-20...+85	50 000 / 20 000	65 500	2	/2		



max. 33 m<sup>3</sup>/h

# DC Axial Fans

Series 600 F 60 x 60 x 15 mm



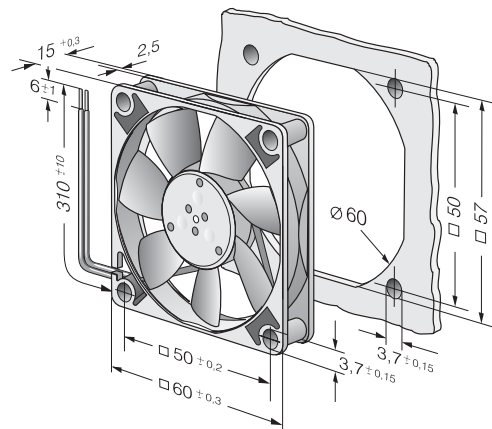
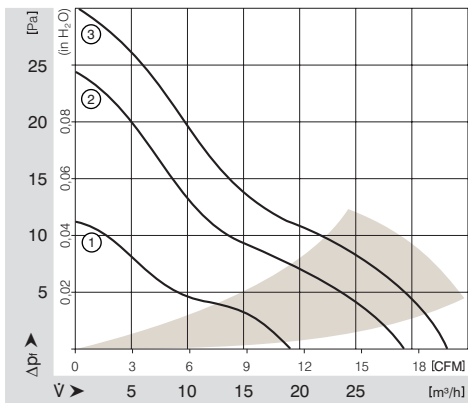
### Highlights:

- Compact fan with low power consumption.
- Some models suitable for use at high ambient temperatures.

### General characteristics:

- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 28, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 30 g.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (20 °C) ebm-papst Standard	Service Life L <sub>10</sub> (60 °C) ebm-papst Standard	Life expectancy L <sub>10Δ</sub> (40 °C) see page 13	Curve	Specials
Type		m <sup>3</sup> /h	CFM	V DC	V DC	dB(A)	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours		P. 90/98	
605 F		29	17.1	5	4.5...5.2	27	4.4	■	1.1	4 000	-20...+50	50 000 / 20 000	50 000		2	
612 FL		19	11.2	12	11.5...13.2	16	3.6	■	0.4	2 650	0...+70	50 000 / 20 000	62 500		1 /39	
612 F		29	17.1	12	10.8...13.2	27	4.4	■	1.0	3 900	-20...+70	50 000 / 20 000	62 500		2 /2	
612 FH		33	19.4	12	10.0...13.2	31	4.8	■	1.4	4 500	-20...+60	45 000 / 15 000	47 500		3 /2	
614 F		29	17.1	24	21.6...26.4	27	4.4	■	1.1	3 900	-20...+70	50 000 / 20 000	62 500		2 /2	
Models with Temperature range up to +80 / 85 °C.																
NEW	612 FL-680	19	11.2	12	11.5...14	16	3.6	■	0.5	2 650	-20...+85	50 000 / 20 000	62 500		1	
NEW	612 F-637	29	17.1	12	10.8...12.6	27	4.4	■	1.0	3 900	-20...+80	50 000 / 20 000	62 500		2	



max. 67 m<sup>3</sup>/h

# DC Axial Fans

Series 620 60 x 60 x 25 mm



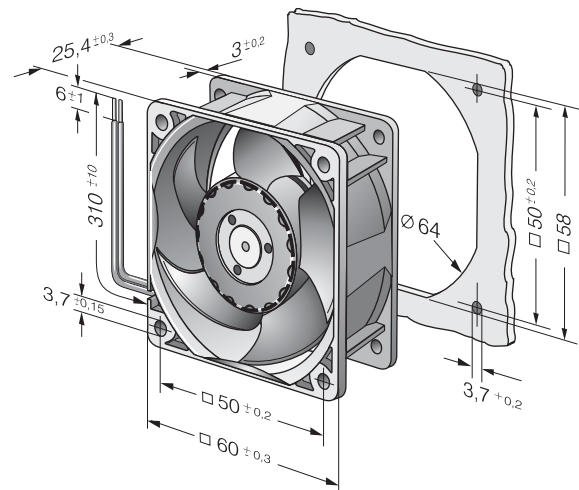
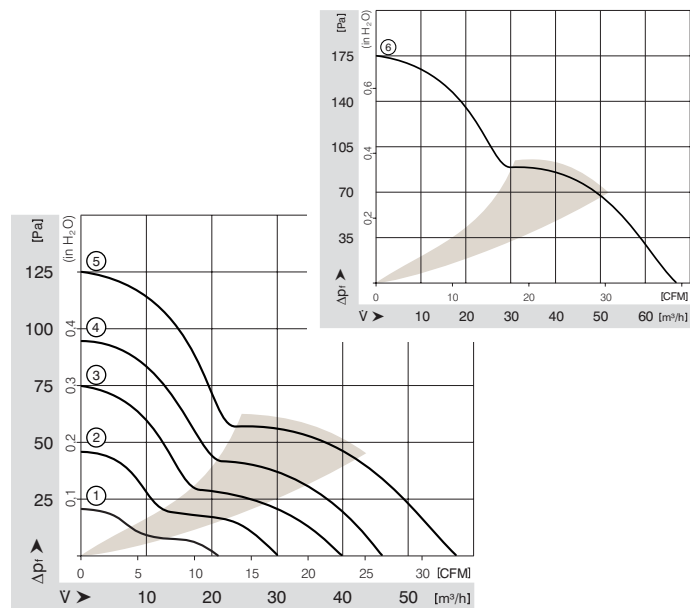
### Highlights:

- Highly stable characteristic curve for high air flow with high back pressure.
- Motor with very low structure-borne noise.
- Innovative impeller with winglets for low noise.
- Control inputs, alarm and speed signals available on request.

### General characteristics:

- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CW looking at rotor.
- Mass: 85 g.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> (Δ) (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM													
622 L	21	12.4	12	8...15	20	3.7	■	0.5	3 200	-20...+85	80 000 / 20 000	160 000	1		
622 M	30	17.7	12	8...15	29	4.3	■	1.0	4 550	-20...+75	77 500 / 30 000	150 000	2		
622 N	40	23.5	12	8...15	35	4.7	■	1.9	6 100	-20...+70	72 500 / 35 000	140 000	3	/2	
622 H	46	27.1	12	8...15	39	5.1	■	2.3	6 850	-20...+70	70 000 / 35 000	140 000	4		
622 HH	56	33.0	12	8...15	43	5.6	■	3.5	8 200	-20...+70	65 000 / 32 500	130 000	5		
NEW 622 H3	67	39.4	12	8...13.2	48	5.9	■	6.3	9 700	-20...+60	52 500 / 32 500	105 000	6		
624 L	21	12.4	24	18...28	20	3.7	■	1.0	3 200	-20...+70	80 000 / 40 000	160 000	1		
624 M	30	17.7	24	18...28	29	4.3	■	1.5	4 550	-20...+70	77 500 / 37 500	150 000	2		
624 N	40	23.5	24	18...28	35	4.7	■	2.2	6 100	-20...+70	72 500 / 35 000	140 000	3		
624 H	46	27.1	24	18...28	39	5.1	■	2.4	6 850	-20...+70	70 000 / 35 000	140 000	4		
624 HH	56	33.0	24	18...28	43	5.6	■	3.6	8 200	-20...+70	65 000 / 32 500	130 000	5	/2	
NEW 624 H3	67	39.4	24	18...28	48	5.9	■	5.8	9 700	-20...+60	52 500 / 32 500	105 000	6		
NEW 628 HH	56	33.0	48	36...56	43	5.6	■	4.2	8 200	-20...+70	65 000 / 32 500	130 000	5		



max. 56 m<sup>3</sup>/h

# DC Axial Fans

Series 600 N 60 x 60 x 25 mm



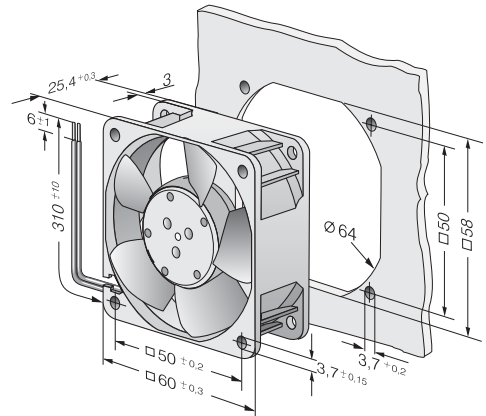
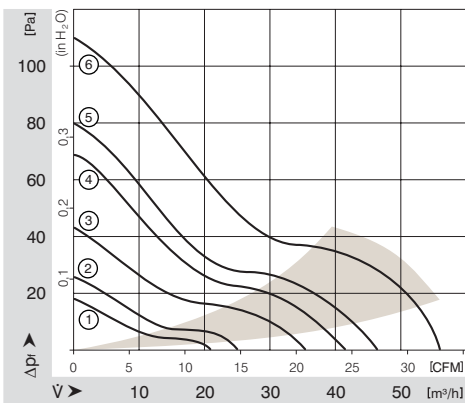
### Highlights:

- Ball bearings and sleeve bearings available.
- Some models suitable for use at high ambient temperatures to 85 °C.

### General characteristics:

- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CW looking at rotor.
- Mass: 66 g.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
	Type	m <sup>3</sup> /h													
612 NGL	21	12.4	12	8...15	16	3.6	□	0.6	2 500	-20...+85	80 000 / 27 500	160 000	160 000	1	
612 NLE	21	12.4	12	8...15	16	3.6	■	0.4	2 500	-20...+85	80 000 / 27 500	160 000	160 000	1	
612 NGLME	25	14.7	12	8...15	19	3.9	□	0.7	3 000	-20...+80	80 000 / 32 500	160 000	160 000	2	
612 NMLE	25	14.7	12	8...15	19	3.9	■	0.4	3 000	-20...+85	80 000 / 27 500	160 000	160 000	2	/2
612 NGME	35	20.6	12	8...15	28	4.6	□	1.2	4 100	-20...+75	80 000 / 35 000	160 000	160 000	3	
612 NME	35	20.6	12	8...15	28	4.6	■	0.8	4 100	-20...+75	80 000 / 35 000	160 000	160 000	3	/2
612 NN	42	24.7	12	8...15	35	5.0	■	1.6	5 100	-20...+70	70 000 / 35 000	140 000	140 000	4	/2
612 NH	46	27.1	12	8...15	37	5.3	■	2.0	5 600	-20...+70	70 000 / 35 000	140 000	140 000	5	/2
612 NHH-118	56	33.0	12	8...15	41	5.7	■	2.9	6 800	-20...+70	60 000 / 30 000	120 000	120 000	6	/2
614 NGL	21	12.4	24	18...28	16	3.6	□	1.0	2 500	-20...+70	80 000 / 40 000	160 000	160 000	1	
614 NL	21	12.4	24	18...28	16	3.6	■	0.9	2 500	-20...+70	80 000 / 40 000	160 000	160 000	1	/2
614 NGML	25	14.7	24	18...28	19	3.9	□	1.2	3 000	-20...+70	80 000 / 40 000	160 000	160 000	2	/2
614 NML	25	14.7	24	18...28	19	3.9	■	1.0	3 000	-20...+70	80 000 / 40 000	160 000	160 000	2	
614 NGM	35	20.6	24	18...28	28	4.6	□	1.7	4 100	-20...+70	80 000 / 40 000	160 000	160 000	3	/12
614 NM	35	20.6	24	18...28	28	4.6	■	1.4	4 100	-20...+70	80 000 / 40 000	160 000	160 000	3	/2;/39
614 NN	42	24.7	24	18...28	35	5.0	■	1.8	5 100	-20...+70	70 000 / 35 000	140 000	140 000	4	
614 NH	46	27.1	24	18...26	37	5.3	■	2.1	5 600	-20...+70	70 000 / 35 000	140 000	140 000	5	/2
614 NHH	56	33.0	24	18...26	41	5.7	■	3.0	6 850	-20...+70	60 000 / 30 000	120 000	120 000	6	
614 NHH-119	56	33.0	24	18...28	41	5.7	■	3.0	6 850	-20...+70	60 000 / 30 000	120 000	120 000	6	/2
618 NM	35	20.6	48	36...56	28	4.6	■	1.4	4 100	-20...+70	80 000 / 40 000	160 000	160 000	3	
618 NN	42	24.7	48	36...56	35	5.0	■	2.1	5 100	-20...+65	70 000 / 40 000	140 000	140 000	4	/2;/12;/39





max. 41 m<sup>3</sup>/h

# DC Axial Fans

Series 600 N VARIOFAN 60 x 60 x 25 mm



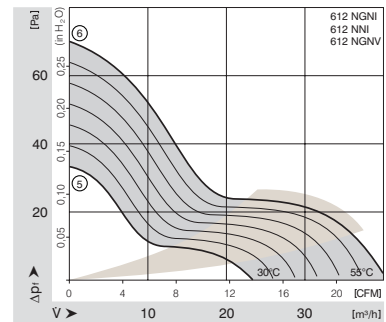
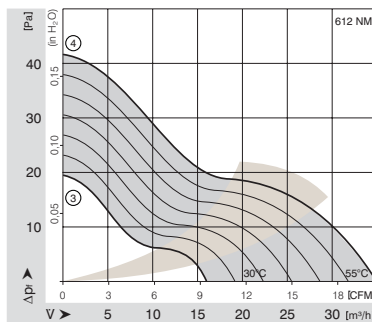
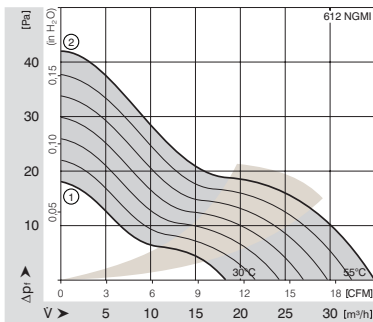
### Highlights:

- Open loop speed control by means of external or internal temperature sensor.
- Automatic speed adjustment according to cooling requirements.

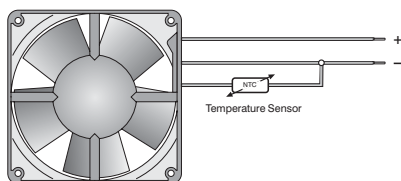
### General characteristics:

- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CW looking at rotor.
- Mass: 66 g.

Nominal Data		Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
Type		m <sup>3</sup> /h	CFM	V DC	V DC	dB(A)	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours		P. 97	
30°C 55°C	612 NGMI	18	10.6	12	8...12.6	14	3.5	□	1.3	2 150	-20...+65	80 000 / 45 000	160 000		1	
		35	20.6			28	4.6		1.7	4 100						
30°C 55°C	612 NMI	16	9.4	12	8...12.6	16	3.6	■	1.0	2 400	-20...+65	80 000 / 45 000	160 000		3	
		35	20.6			28	4.6		1.4	4 100						
30°C 55°C	612 NGNI	23	13.5	12	8...12.6	18	3.8	□	1.7	2 900	-20...+65	70 000 / 40 000	142 500		5	
		41	24.1			35	5.0		2.4	5 100						
30°C 55°C	612 NNI	23	13.5	12	8...12.6	18	3.8	■	1.2	2 900	-20...+65	70 000 / 40 000	142 500		5	
		41	24.1			35	5.0		1.5	5 100						
30°C 55°C	612 NGNV	23	13.5	12	8...12.6	18	3.8	□	1.7	2 900	-20...+65	70 000 / 40 000	142 500		5	
		41	24.1			35	5.0		2.4	5 100						

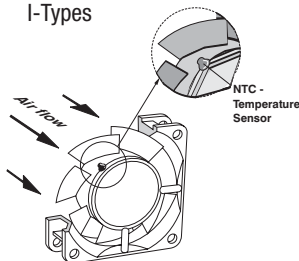


### V-Types

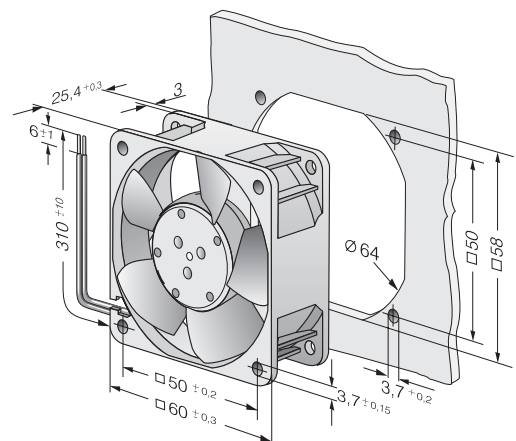


The temperature sensor for controlling the motor speed is not included in delivery.  
Temperature sensor LZ 370 see accessories.

### I-Types



Temperature sensor (NTC-resistor) for controlling the motor speed is positioned directly in the air flow.



max. 70 m<sup>3</sup>/h

# DC Axial Fans

Series 600 J 60 x 60 x 32 mm



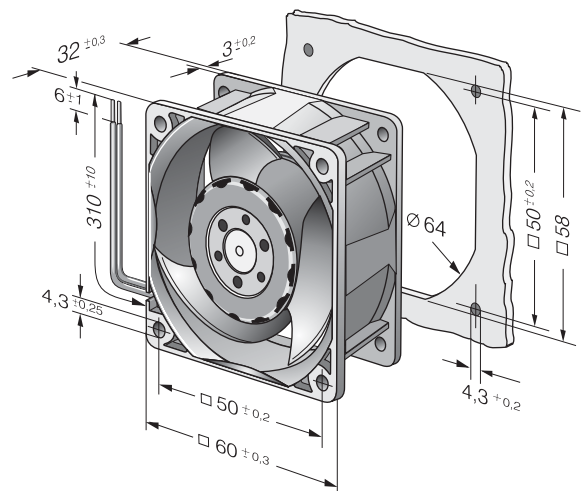
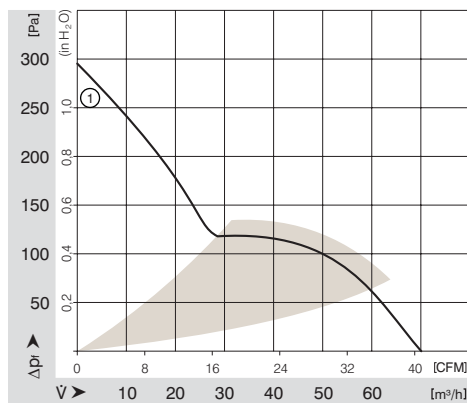
### Highlights:

- Highly stable characteristic curve for high air flow with high back pressure.
- Innovative impeller with winglets for low noise.

### General characteristics:

- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 24, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CW looking at rotor.
- Mass: 100 g.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Voltage Range	Noise	Sound Power	Sintec-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
Type		m <sup>3</sup> /h	CFM	V DC	V DC	dB(A)	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours	Hours	P.90	
612 JH		70	41.1	12	7...13.6	53	6.4	■	7.7	11 700	-20...+70	57 500 / 27 500	110 000	110 000	1	/2
614 JH		70	41.1	24	14...26.4	53	6.4	■	7.7	11 700	-20...+70	57 500 / 27 500	110 000	110 000	1	/2
618 JH		70	41.1	48	36...60	53	6.4	■	7.7	11 700	-20...+70	57 500 / 27 500	110 000	110 000	1	



max. 44 m<sup>3</sup>/h

# DC Axial Fans

Series 700 F 70 x 70 x 15 mm



### Highlights:

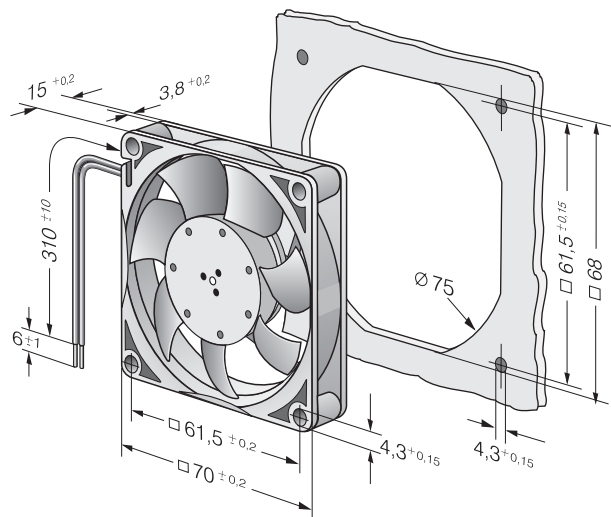
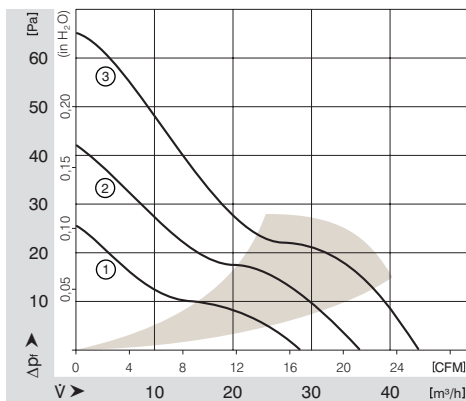
- Highly stable characteristic curve for high air flow with high back pressure.
- Low operating noise at high back pressure.

### General characteristics:

- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 28, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 53 g.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM													
712 F/2L-005*	28	16.5	12	8...13.8	25	4.7	□	0.6	3 300	-20...+70	60 000 / 30 000	120 000	120 000	1	/2
712 F/2M-006*	36	21.2	12	8...13.8	32	5.0	■	1.1	4 300	-20...+70	60 000 / 30 000	120 000	120 000	2	/2
712 F	44	25.9	12	8...13.8	38	5.3	■	1.7	5 300	-20...+70	60 000 / 30 000	120 000	120 000	3	/2
714 F	44	25.9	24	18...28	38	5.3	■	1.5	5 300	-20...+70	60 000 / 30 000	120 000	120 000	3	

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



max. 88 m<sup>3</sup>/h

# DC Axial Fans

Series 8450 80 x 80 x 25 mm



### Highlights:

- Highly stable characteristic curve for high air flow at high back pressure.
- Motor with very low structure-borne noise properties.
- Innovative impeller with winglets for low noise.
- Extremely quiet Sintec-sleeve bearing.
- Models with 25 kHz PWM control and speed signal.

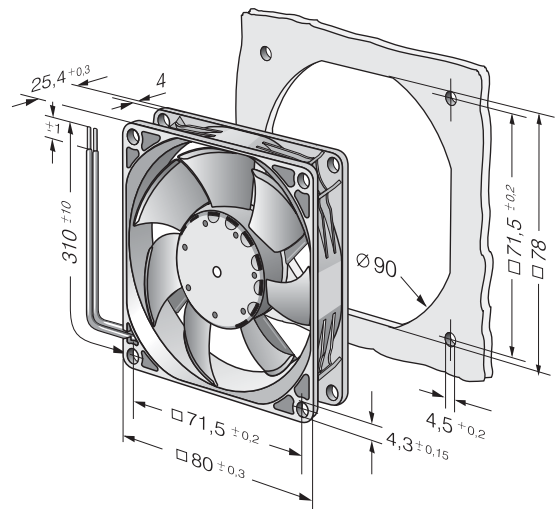
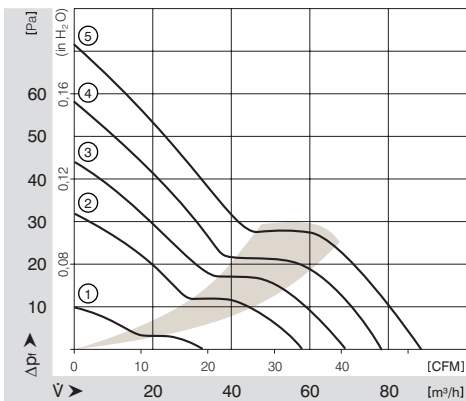
### General characteristics:

- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 24, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 105 g.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Voltage Range	Noise	Sound Power	Sintec-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10Δ</sub> (40 °C) see page 13	Curve	Specials
Type		m <sup>3</sup> /h	CFM	V DC	V DC	dB(A)	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours	Hours	P.	
NEW 8452 GL		33	19.4	12	10.8...13.2	16	3.6	■	0.5	1 700	0**...70	80 000 / 40 000	160 000	160 000	1	
NEW 8452 GM		58	34.1	12	10.8...13.2	32	4.7	■	1.4	3 000	0**...70	80 000 / 40 000	160 000	160 000	2	
NEW 8452 GN		69	40.6	12	10.8...13.2	35	5.1	■	2.0	3 600	0**...70	70 000 / 35 000	140 000	140 000	3	
Models with 25 kHz PWM control and speed signal. Range of speed control from 1000 min <sup>-1</sup> .																
NEW 8452 /2 GHP		79	46.5	12	10.8...13.2	38	5.3	■	2.8	4 000	0**...70	70 000 / 35 000	140 000	140 000	4	
NEW 8452 /2 GHHP		88	51.8	12	10.8...13.2	43	5.5	■	4.2	4 400	0**...60	65 000* / 40 000*	130 000*	130 000*	5	

\*\* - 20 °C on request.

\* Preliminary



max. 79 m<sup>3</sup>/h

# DC Axial Fans

Series 8400 N 80 x 80 x 25 mm



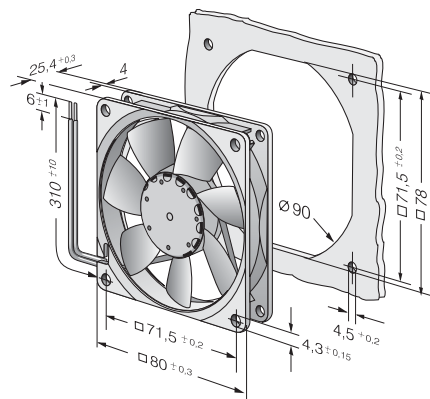
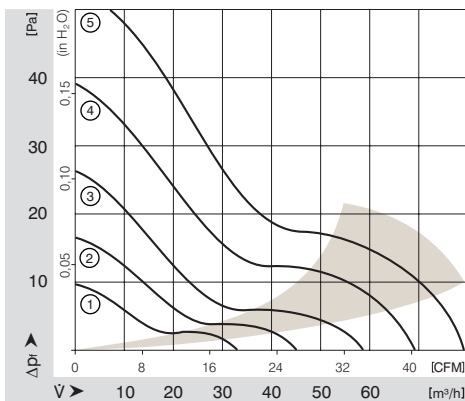
### Highlights:

- Ball bearings and sleeve bearings available.
- Some models suitable for use at high ambient temperatures to 85 °C.

### General characteristics:

- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 24, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 95 g.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10Δ</sub> (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM													
8412 NGLE	33	19.4	12	8...15	12	3.5	□	0.5	1 500	-20...+85	80 000 / 27 500	160 000	1	/2	
8412 NLE	33	19.4	12	8...15	17	3.7	■	0.3	1 500	-20...+85	80 000 / 27 500	160 000	1		
8412 NGMLE	45	26.5	12	8...15	19	3.9	□	0.9	2 050	-20...+80	80 000 / 32 500	160 000	2	/2	
8412 NMLE	45	26.5	12	8...15	21	4.0	■	0.6	2 050	-20...+85	80 000 / 27 500	160 000	2		
8412 NGME	58	34.1	12	8...15	26	4.3	□	1.4	2 600	-20...+75	80 000 / 35 000	160 000	3	/2	
8412 NME	58	34.1	12	8...15	27	4.4	■	1.0	2 600	-20...+75	80 000 / 35 000	160 000	3		
8412 NG	69	40.6	12	8...15	32	4.7	□	2.0	3 100	-20...+70	70 000 / 35 000	140 000	4	/2	
8412 N	69	40.6	12	8...15	32	4.7	■	2.0	3 100	-20...+70	70 000 / 35 000	140 000	4	/2	
8412 NH	79	46.5	12	8...13.2	37	5.0	■	2.2	3 600	-20...+70	70 000 / 35 000	140 000	5	/2;/12	
8412 NH-217	79	46.5	12	8...15	37	5.0	■	2.4	3 600	-20...+70	70 000 / 35 000	140 000	5		
8414 NGL	33	19.4	24	18...28	12	3.5	□	0.7	1 500	-20...+70	80 000 / 40 000	160 000	1	/2	
8414 NL	33	19.4	24	18...28	17	3.7	■	0.7	1 500	-20...+70	80 000 / 40 000	160 000	1		
8414 NGML	45	26.5	24	18...28	19	3.9	□	1.1	2 050	-20...+70	80 000 / 40 000	160 000	2		
8414 NML	45	26.5	24	18...28	21	4.0	■	1.1	2 050	-20...+70	80 000 / 40 000	160 000	2		
8414 NGM	58	34.1	24	18...28	26	4.3	□	1.4	2 600	-20...+70	80 000 / 40 000	160 000	3	/2	
8414 NM	58	34.1	24	18...28	27	4.4	■	1.4	2 600	-20...+70	80 000 / 40 000	160 000	3		
8414 NG	69	40.6	24	18...28	32	4.7	□	2.0	3 100	-20...+70	70 000 / 35 000	140 000	4	/2	
8414 N	69	40.6	24	18...28	32	4.7	■	2.0	3 100	-20...+70	70 000 / 35 000	140 000	4	/2	
8414 NH	79	46.5	24	18...26	37	5.0	■	2.4	3 600	-20...+70	70 000 / 35 000	140 000	5	/2	
8414 NH-221	79	46.5	24	18...28	37	5.0	■	2.4	3 600	-20...+70	70 000 / 35 000	140 000	5		
8418 N	69	40.6	48	36...56	32	4.7	■	2.0	3 100	-20...+70	70 000 / 35 000	140 000	4		





max. 58 m<sup>3</sup>/h

# DC Axial Fans

Series 8400 N VARIOFAN 80 x 80 x 25 mm



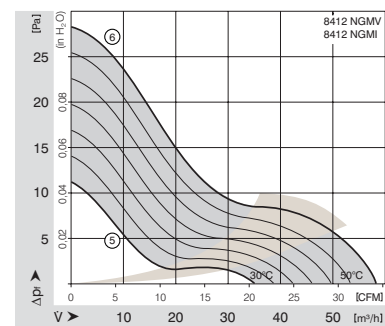
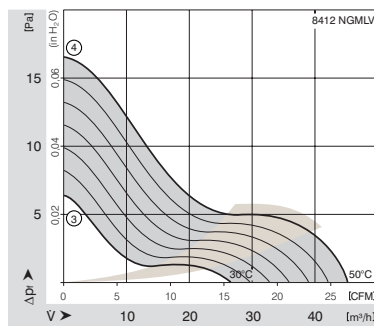
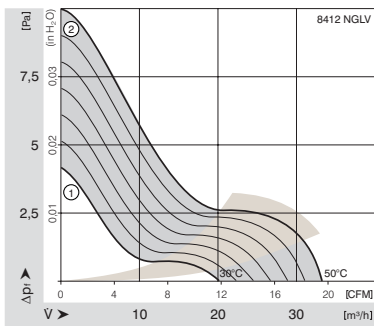
### Highlights:

- Open loop speed control by means of external or internal temperature sensor.
- Automatic speed adjustment according to cooling requirements.

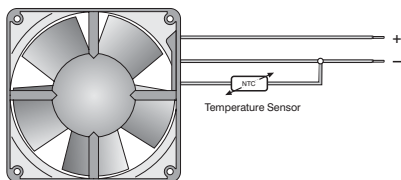
### General characteristics:

- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 24, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 95 g.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings	Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C)	Service Life L <sub>10</sub> (T <sub>max</sub> )	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
Type		m <sup>3</sup> /h	CFM	V DC	V DC	dB(A)	Bel	□ / ■		Watt	min <sup>-1</sup>	°C	Hours	Hours	Hours	P. 97	
30°C 50°C	8412 NGLV	20	11.8	12	10...14	< 10	< 3	□		0.9	900	-20...+70	80 000 / 40 000	160 000		1	
		33	19.4			12	3.5			1.1	1 500						
30°C 50°C	8412 NGMLV	27	15.9	12	8...14	< 10	3.0	□		1.1	1 200	-20...+70	80 000 / 40 000	160 000		3	/37
		45	26.6			19	3.9			1.5	2 050						
30°C 50°C	8412 NGMV	35	20.6	12	8...14	< 13	3.5	□		1.4	1 600	-20...+70	80 000 / 35 000	125 000		5	
		58	34.1			26	4.3			2.0	2 600						
30°C 50°C	8412 NGMI	35	20.6	12	8...14	< 13	3.5	□		1.4	1 600	-20...+70	80 000 / 35 000	125 000		5	
		58	34.1			26	4.3			2.0	2 600						

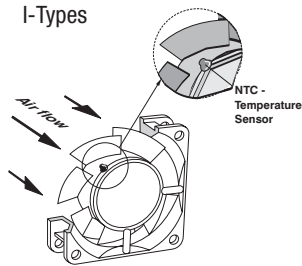


### V-Types

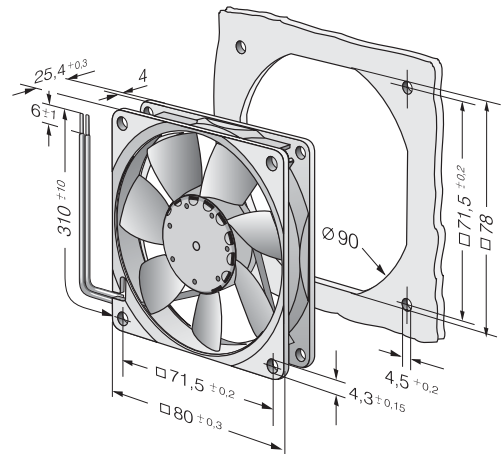


The temperature sensor for controlling the motor speed is not included in delivery.  
Temperature sensor LZ 370 see accessories.

### I-Types



Temperature sensor (NTC-resistor) for controlling the motor speed is positioned directly in the air flow.



max. 80 m<sup>3</sup>/h

# DC Axial Fans

Series 8300 80 x 80 x 32 mm



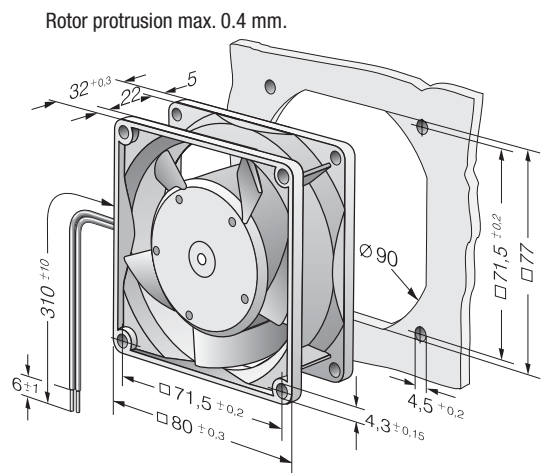
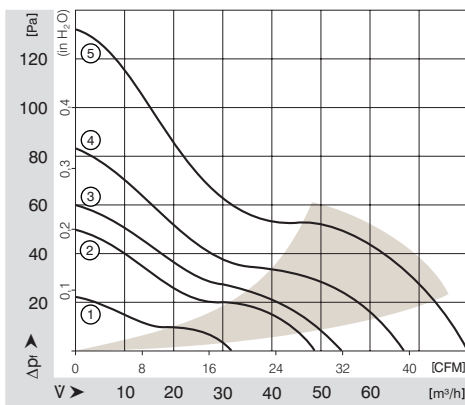
### Highlights:

- Ball bearings and sleeve bearings available.
- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications.

### General characteristics:

- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CW looking at rotor.
- Mass: 170 g.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) eIm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) eIm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM													
8305 G	48	28.3	5	4.5...5.5	34	5.0	□	2.2	3 050	-20...+75	70 000 / 25 000	135 000	2		
8312 GL	32	18.8	12	6...15	24	4.0	□	1.0	2 000	-20...+75	80 000 / 35 000	147 500	1		
8312 L	32	18.8	12	6...15	24	4.0	■	1.0	2 000	-20...+75	80 000 / 35 000	147 500	1		
8312 M	48	28.3	12	6...15	34	5.0	■	1.8	3 000	-20...+75	70 000 / 30 000	135 000	2		
8312 G	54	31.8	12	6...15	36	5.2	□	2.5	3 300	-20...+75	70 000 / 30 000	135 000	3		
8312	54	31.8	12	6...15	36	5.2	■	2.2	3 300	-20...+75	70 000 / 30 000	135 000	3	/12	
8312 HL	67	39.4	12	6...15	43	5.8	■	4.0	4 200	-20...+75	62 500 / 27 500	122 500	4	/2	
8312 H	80	47.1	12	7...12.6	48	6.2	■	5.5	5 000	-20...+60	50 000 / 25 000	100 000	5		
8314 L	32	18.8	24	12...28	24	4.0	■	1.0	2 000	-20...+75	80 000 / 35 000	147 500	1		
8314 M	48	28.3	24	12...28	34	5.0	■	2.1	3 000	-20...+75	70 000 / 30 000	135 000	2		
8314 G	54	31.8	24	12...28	36	5.2	□	2.5	3 300	-20...+75	70 000 / 30 000	135 000	3		
8314	54	31.8	24	12...28	36	5.2	■	2.5	3 300	-20...+75	70 000 / 30 000	135 000	3	/2;/12	
8314 HL	67	39.4	24	12...28	43	5.8	■	4.3	4 200	-20...+75	62 500 / 27 500	122 500	4	/2	
8314 H	80	47.1	24	12...26.5	48	6.2	■	6.0	5 000	-20...+75	55 000 / 25 000	100 000	5	/2;/12;/19	
8318	54	31.8	48	36...56	36	5.2	■	2.6	3 300	-20...+75	70 000 / 30 000	135 000	3	/2;/17	
8318 HL	67	39.4	48	36...56	43	5.8	■	4.3	4 200	-20...+75	62 500 / 27 500	122 500	4	/2;/12	
8318 H	80	47.1	48	36...56	48	6.2	■	5.8	5 000	-20...+65	55 000 / 30 000	100 000	5	/12;/17	



max. 222 m<sup>3</sup>/h

# DC Axial Fans

Series 8200 J 80 x 80 x 38 mm



New  
S-Force Models

### Highlights:

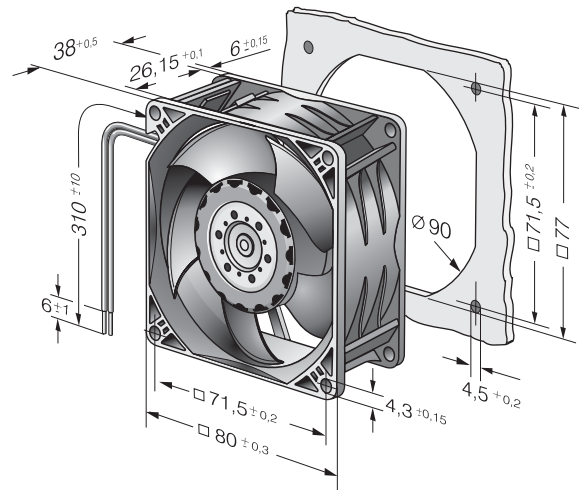
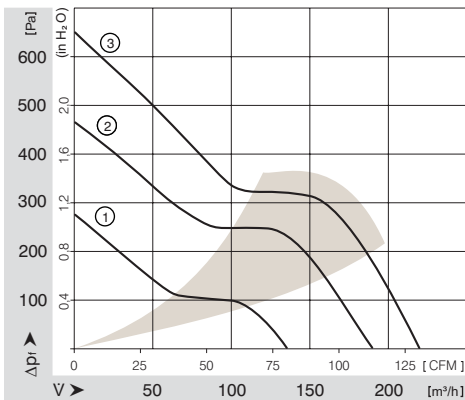
- Highly stable characteristic curve for high air flow with high back pressure.
- Innovative impeller with winglets for low noise.
- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications.

### General characteristics:

- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation. Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 24 (H3 and H4: AWG 22), TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 160 g (H3 and H4: 200 g).

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM													
8212 JN	132	77.7	12	7...13.8	55	6.6	■	10	8400	-20...+70	62 500 / 32 500	130 000	1	/2	
NEW 8212 JH3	190	111.8	12	6...13.8	66	7.3	■	25	12 000	-20...+70	55 000 / 27 500	110 000	2	/2	
NEW 8212 JH4	222	130.7	12	6...13.8	71	7.8	■	39	14 000	-20...+70	50 000 / 25 000	100 000	3	/2	
8214 JN	132	77.7	24	18...26.4	55	6.6	■	10	8400	-20...+70	62 500 / 32 500	130 000	1	/2	
NEW 8214 JH3	190	111.8	24	12...27.6	66	7.3	■	25	12 000	-20...+70	55 000 / 27 500	110 000	2	/2	
NEW 8214 JH4	222	130.7	24	12...27.6	71	7.8	■	37	14 000	-20...+70	50 000 / 25 000	100 000	3	/2	
8218 JN	132	77.7	48	36...53	55	6.6	■	11	8400	-20...+70	62 500 / 32 500	130 000	1	/2	
NEW 8218 JH3	190	111.8	48	20...58	66	7.3	■	25	12 000	-20...+70	55 000 / 27 500	110 000	2	/2	
NEW 8218 JH4	222	130.7	48	20...58	71	7.8	■	37	14 000	-20...+70	50 000 / 25 000	100 000	3	/2	

8200 JH3 and JH4 also as standard with PWM control input and speed signal.  
Speed control range from 2000 min<sup>-1</sup> up to maximum nominal speed. Stationary at 0 % PWM, maximum speed when no sensor is connected.



max. 102 m<sup>3</sup>/h

# DC Axial Fans

Series 3400 N 92 x 92 x 25 mm



### Highlights:

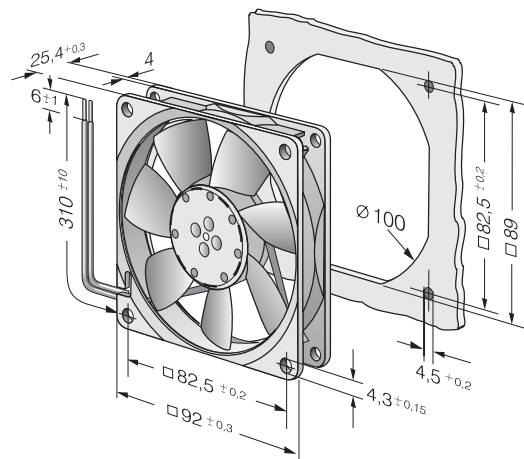
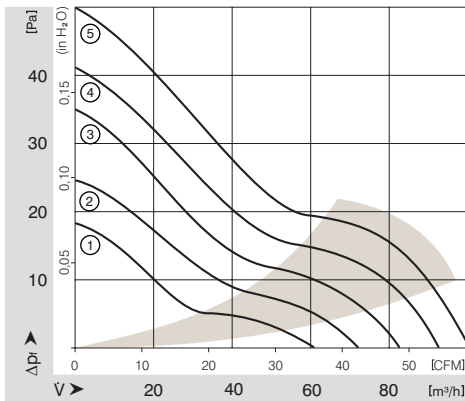
- Ball bearings and sleeve bearings available.
- Some models suitable for use at high ambient temperatures to 85 °C.

### General characteristics:

- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 24, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 100 g.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings	Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM														
3412 NGL	61	35.9	12	8...15	23	4.0	□	■	1.1	1 950	-20...+80	80 000 / 30 000	160 000	1		
3412 NLE	61	35.9	12	8...15	23	4.0	■	■	0.8	1 950	-20...+85	80 000 / 27 500	160 000	1		
3412 NGME	72	42.4	12	8...15	28	4.3	□	■	1.6	2 300	-20...+75	75 000 / 32 500	150 000	2		
3412 NME	72	42.4	12	8...15	28	4.3	■	■	1.1	2 300	-20...+75	75 000 / 32 500	150 000	2	/2	
3412 NG	84	49.4	12	8...15	32	4.7	□	■	2.2	2 700	-20...+70	70 000 / 35 000	140 000	3	/2	
3412 N	84	49.4	12	8...15	32	4.7	■	■	2.2	2 700	-20...+70	70 000 / 35 000	140 000	3	/2	
3412 NGH	94	55.3	12	8...15	36	5.0	□	■	2.5	3 000	-20...+70	70 000 / 35 000	140 000	4		
3412 NH	94	55.3	12	8...15	36	5.0	■	■	2.5	3 000	-20...+70	70 000 / 35 000	140 000	4	/2;/39	
3412 NGH	102	60.0	12	8...13.2	39	5.1	□	■	3.2	3 250	-20...+60	70 000 / 45 000	140 000	5	/2	
3412 NHH	102	60.0	12	8...13.2	39	5.1	■	■	3.2	3 250	-20...+60	70 000 / 45 000	140 000	5	/2	
3412 NHH-379	102	60.0	12	8...15	39	5.1	■	■	2.7	3 250	-20...+70	70 000 / 35 000	140 000	5		
3414 NGL	61	35.9	24	18...28	23	4.0	□	■	1.4	1 950	-20...+70	80 000 / 40 000	160 000	1		
3414 NL	61	35.9	24	18...28	23	4.0	■	■	1.4	1 950	-20...+70	80 000 / 40 000	160 000	1		
3414 NGM	72	42.4	24	18...28	28	4.3	□	■	1.8	2 300	-20...+70	75 000 / 37 500	150 000	2		
3414 NM	72	42.4	24	18...28	28	4.3	■	■	1.8	2 300	-20...+70	75 000 / 37 500	150 000	2		
3414 NG	84	49.4	24	18...28	32	4.7	□	■	2.3	2 700	-20...+70	70 000 / 35 000	140 000	3		
3414 N	84	49.4	24	18...28	32	4.7	■	■	2.3	2 700	-20...+70	70 000 / 35 000	140 000	3	/2	
3414 NGH	94	55.3	24	18...26	36	5.0	□	■	3.0	3 000	-20...+70	70 000 / 35 000	140 000	4	/2	
3414 NH	94	55.3	24	18...26	36	5.0	■	■	3.0	3 000	-20...+70	70 000 / 35 000	140 000	4		
3414 NGH	102	60.0	24	18...26	39	5.1	□	■	3.2	3 250	-20...+70	70 000 / 35 000	140 000	5		
3414 NGH-389	102	60.0	24	18...28	39	5.1	□	■	3.2	3 250	-20...+70	70 000 / 35 000	140 000	5		
3414 NHH	102	60.0	24	18...26	39	5.1	■	■	3.2	3 250	-20...+70	70 000 / 35 000	140 000	5	/39	
3414 NHH-386	102	60.0	24	18...28	39	5.1	■	■	3.2	3 250	-20...+70	70 000 / 35 000	140 000	5		
3418 N	84	49.4	48	36...56	32	4.7	■	■	2.4	2 700	-20...+70	70 000 / 35 000	140 000	3		

Other 48 V DC Models on request.



max. 84 m<sup>3</sup>/h

# DC Axial Fans

Series 3400 N VARIOFAN 92 x 92 x 25 mm



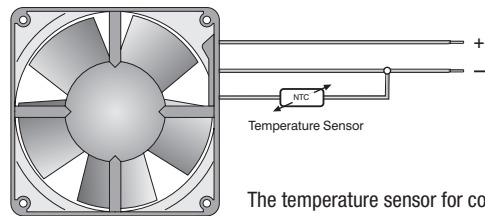
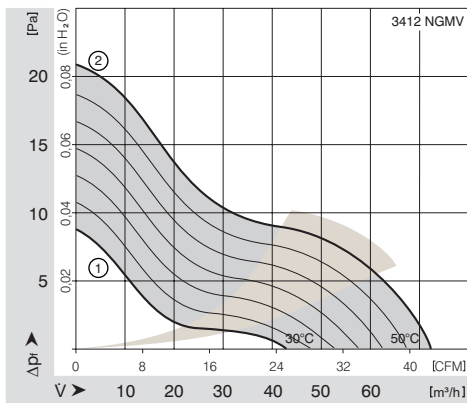
### Highlights:

- Open loop speed control by means of external or internal temperature sensor.
- Automatic speed adjustment according to cooling requirements.

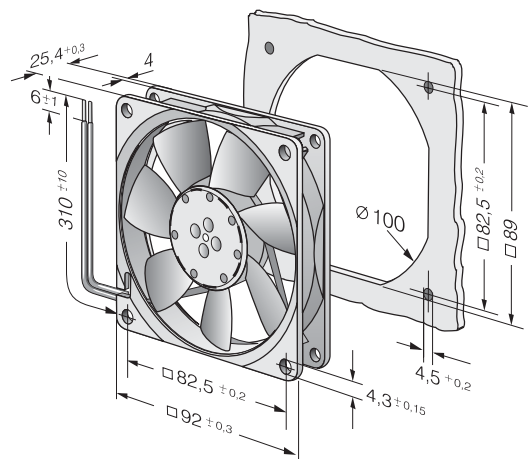
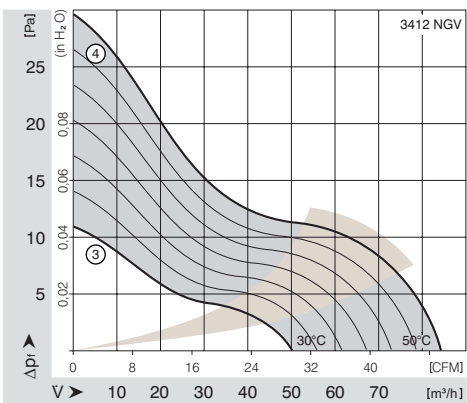
### General characteristics:

- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 24, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 100 g.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) eum-papst-Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) eum-papst-Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
Type		m <sup>3</sup> /h	CFM	V DC	V DC	dB(A)	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours		P.97	
30°C 50°C	3412 NGMV	44	25.9	12	8...14	14	3.5	■	1.5	1 400	-20...+70	75 000 / 37 500	142 500	1	/37	
		72	42.4			28	4.3		2.0	2 300						
30°C 50°C	3412 NGV	50	29.4	12	8...12.6	16	3.7	■	1.6	1 600	-20...+70	75 000 / 37 500	142 500	3	/37	
		84	49.4			32	4.7		2.5	2 700						



The temperature sensor for controlling the motor speed is not included in delivery. Temperature sensor LZ 370 see accessories.





max. 107 m<sup>3</sup>/h

# DC Axial Fans

Series 3300 92 x 92 x 32 mm



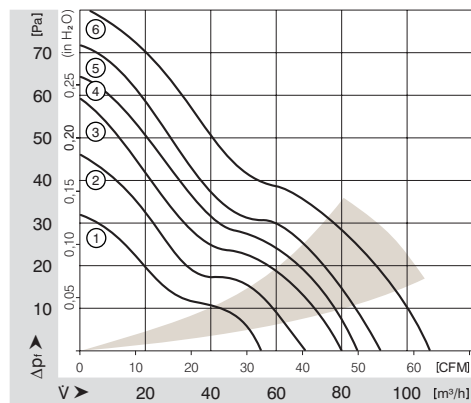
### Highlights:

- Ball bearings and sleeve bearings available.
- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications.

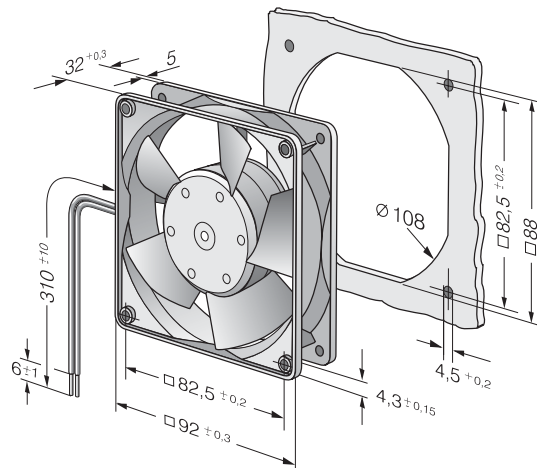
### General characteristics:

- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CW looking at rotor.
- Mass: 190 g.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM													
3312 GL	56	33.0	12	6...15	29	4.5	□	1.4	2 150	-20...+75	80 000 / 35 000	147 500	1		
3312 L	56	33.0	12	6...15	29	4.5	■	1.4	2 150	-20...+75	80 000 / 35 000	147 500	1		
3312 GM	68	40.0	12	6...15	34	4.8	□	1.7	2 600	-20...+75	70 000 / 30 000	135 000	2		
3312 M	68	40.0	12	6...15	34	4.8	■	1.7	2 600	-20...+75	70 000 / 30 000	135 000	2		
3312 G	80	47.1	12	6...15	37	5.2	□	2.4	3 000	-20...+75	70 000 / 30 000	135 000	3		
3312	80	47.1	12	6...15	37	5.2	■	2.4	3 000	-20...+75	70 000 / 30 000	135 000	3	/2; /17	
3312-177	93	54.7	12	6...15	43	5.7	■	3.5	3 500	-20...+75	65 000 / 27 500	122 500	5		
3314 G	80	47.1	24	12...28	37	5.2	□	2.6	3 000	-20...+75	70 000 / 30 000	135 000	3		
3314	80	47.1	24	12...28	37	5.2	■	2.6	3 000	-20...+75	70 000 / 30 000	135 000	3	/17	
3314-140	85	50.0	24	12...28	40	5.4	■	3.0	3 200	-20...+75	70 000 / 30 000	135 000	4		
3314 H	107	63.0	24	12...28	47	6.0	■	5.3	4 000	-20...+75	57 500 / 25 000	112 500	6	/2	
3318	80	47.1	48	36...56	37	5.2	■	2.7	3 000	-20...+75	70 000 / 30 000	135 000	3	/2	
3318 H	107	63.0	48	36...56	47	6.0	■	4.3	4 000	-20...+60	57 500 / 35 000	112 500	6	/2;/12;/17	



Rotor protrusion max. 0.4 mm.



max. 280 m<sup>3</sup>/h

# DC Axial Fans

Series 3200 J 92 x 92 x 38 mm



New  
S-Force Models

### Highlights:

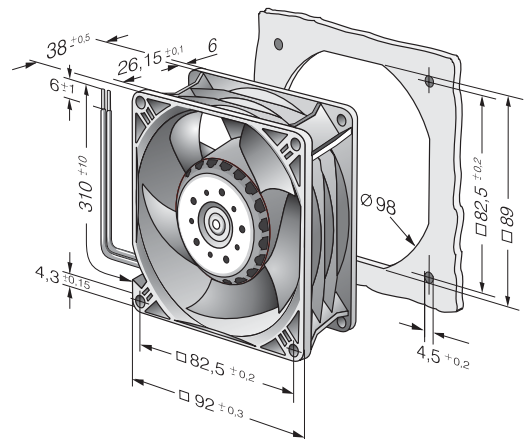
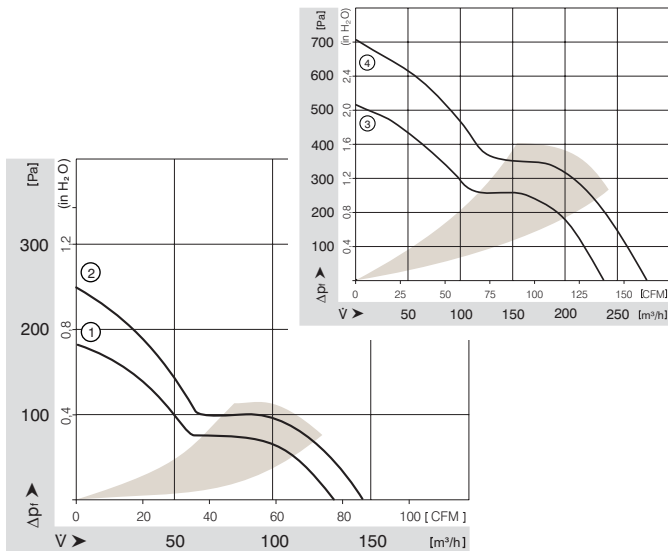
- Highly stable characteristic curve for high air flow with high back pressure.
- Innovative impeller with winglets for low noise.
- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications.

### General characteristics:

- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation. Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 24 (H3 and H4: AWG 22), TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CW looking at rotor.
- Mass: 240 g (H3 and H4: 280 g).

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM													
3212 JN	130	76.5	12	7...13.8	51	6.1	■	7.5	6 000	-20 ...+70	70 000 / 35 000	140 000	140 000	1	/2
3212 JH	146	86.0	12	7...15.0	55	6.4	■	9.0	6 800	-20 ...+70	70 000 / 35 000	140 000	140 000	2	
NEW 3212 JH3	237	139.5	12	6...13.8	69	7.8	■	30.0	11 000	-20 ...+70	65 000 / 32 500	130 000	130 000	3	/2
NEW 3212 JH4	280	164.8	12	6...13.8	73	8.2	■	50.0	13 000	-20 ...+70	60 000 / 30 000	120 000	120 000	4	/2
3214 JN	130	76.5	24	11...28.0	51	6.1	■	8.0	6 000	-20 ...+70	70 000 / 35 000	140 000	140 000	1	
3214 JH	146	86.0	24	11...30.0	55	6.4	■	9.0	6 800	-20 ...+70	70 000 / 35 000	140 000	140 000	2	/2
NEW 3214 JH3	237	139.5	24	12...27.6	69	7.8	■	30.0	11 000	-20 ...+70	65 000 / 32 500	130 000	130 000	3	/2
NEW 3214 JH4	280	164.8	24	12...27.6	73	8.2	■	50.0	13 000	-20 ...+70	60 000 / 30 000	120 000	120 000	4	/2
3218 JN	130	76.5	48	36...56.0	51	6.1	■	7.0	6 000	-20 ...+70	70 000 / 35 000	140 000	140 000	1	
3218 JH	146	86.0	48	36...53.0	55	6.4	■	9.5	6 800	-20 ...+70	70 000 / 35 000	140 000	140 000	2	
NEW 3218 JH3	237	139.5	48	20...58.0	69	7.8	■	30.0	11 000	-20 ...+70	65 000 / 32 500	130 000	130 000	3	/2
NEW 3218 JH4	280	164.8	48	20...58.0	73	8.2	■	50.0	13 000	-20 ...+70	60 000 / 30 000	120 000	120 000	4	/2

3200 JH3 and JH4 also as standard with PWM control input and speed signal.  
Speed control range from 2000 min<sup>-1</sup> up to maximum nominal speed. Stationary at 0 % PWM, maximum speed when no sensor is connected.



max. 170 m<sup>3</sup>/h

# DC Axial Fans

Series 4400 F 119 x 119 x 25 mm



### Highlights:

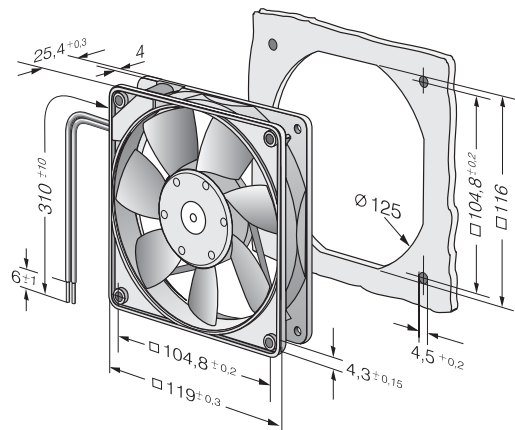
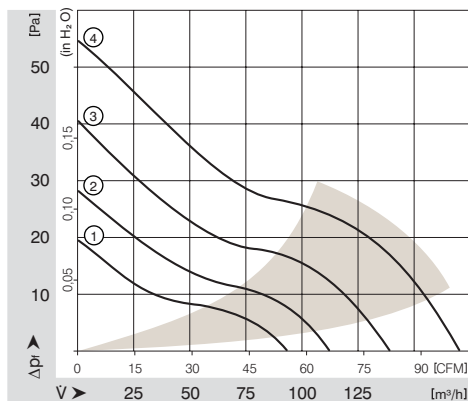
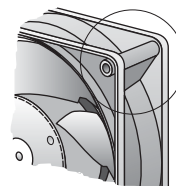
- Ball bearings and sleeve bearings available.
- Open loop speed control available on request.
- Alarm and speed signals available on request.

### General characteristics:

- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 24, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 175 g.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10Δ</sub> (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM													
4412 FGL	94	55.3	12	7...14	26	3.9	□	1.3	1 600	-20...+75	80 000 / 35 000	157 500	1	/2;/39	
4412 FGML	114	67.1	12	7...12.6	32	4.3	□	2.0	1 950	-20...+75	75 000 / 32 500	145 000	2	/2	
4412 FML	114	67.1	12	7...12.6	32	4.3	■	2.0	1 950	-20...+75	75 000 / 32 500	145 000	2		
4412 FGM	140	82.4	12	7...12.6	38	4.8	□	3.2	2 400	-20...+75	70 000 / 30 000	135 000	3	/12	
4412 FM	140	82.4	12	7...12.6	38	4.8	■	3.2	2 400	-20...+75	70 000 / 30 000	135 000	3	/2	
4412 FG	170	100.1	12	8...12.6	43	5.3	□	5.3	2 900	-20...+60	60 000 / 37 500	120 000	4		
4412 F	170	100.1	12	8...12.6	43	5.3	■	5.3	2 900	-20...+60	60 000 / 37 500	120 000	4	/2	
4414 FL	94	55.3	24	18...28	26	3.9	■	1.0	1 600	-20...+75	80 000 / 35 000	157 500	1	/2	
4414 FM	140	82.4	24	12...28	38	4.8	■	3.2	2 400	-20...+75	70 000 / 30 000	135 000	3	/2	
4414 FG	170	100.1	24	12...28	43	5.3	□	5.0	2 900	-20...+60	60 000 / 37 500	120 000	4	/2	
4414 F	170	100.1	24	12...28	43	5.3	■	5.0	2 900	-20...+60	60 000 / 37 500	120 000	4	/2;/12;/39	
4418 FG	170	100.1	48	28...53	43	5.3	□	5.5	2 900	-20...+60	60 000 / 37 500	120 000	4		
4418 F	170	100.1	48	28...53	43	5.3	■	5.5	2 900	-20...+60	60 000 / 37 500	120 000	4	/2;/12;/39	

Available on request:  
Fan housing with moulded-in  
spacers. For mounting over  
both flanges.



max. 225 m<sup>3</sup>/h

# DC Axial Fans

Series 4400 FN 119 x 119 x 25 mm



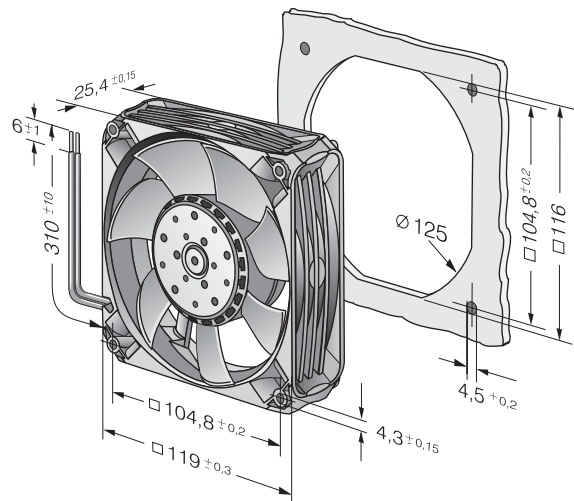
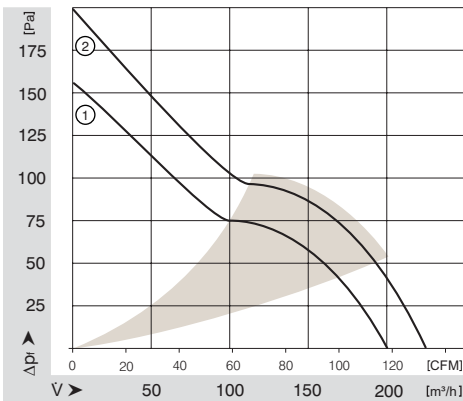
### Highlights:

- Highly stable characteristic curve for high air flow with high back pressure.
- Innovative impeller with winglets for low noise.
- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications.

### General characteristics:

- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 240 g.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst-Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst-Standard	Life expectancy L <sub>10</sub> /Δ (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM													
4412 FNH	225	132.4	12	7...13.2	55	6.7	■	12	5 400	-20...+70	60 000 / 30 000	120 000	2	/2	
4414 FNN	200	117.7	24	14...28	52	6.5	■	8.5	4 850	-20...+70	60 000 / 30 000	120 000	1	/2	
4414 FNH	225	132.4	24	18...26.4	55	6.7	■	12	5 400	-20...+70	60 000 / 30 000	120 000	2	/39	
4418 FNH	225	132.4	48	36...53	55	6.7	■	12	5 400	-20...+70	60 000 / 30 000	120 000	2		



max. 198 m<sup>3</sup>/h

# DC Axial Fans

Series 4300 N 119 x 119 x 32 mm



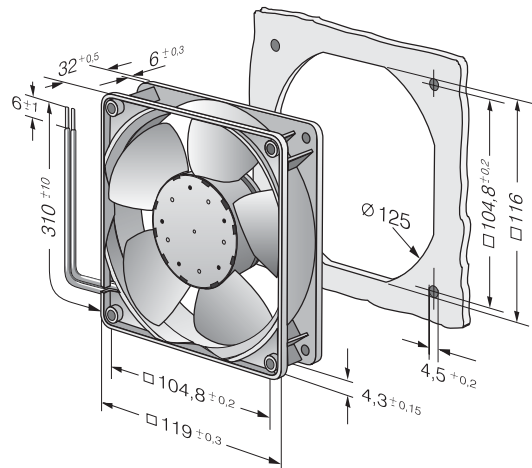
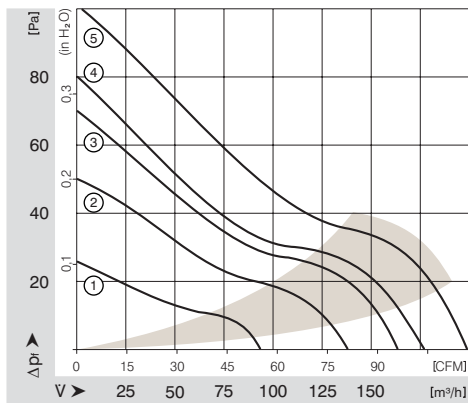
### Highlights:

- Ball bearings and sleeve bearings available.

### General characteristics:

- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 230 g.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM													
4312 NGL	93	54.7	12	7...14.5	27	4.1	□	1.2	1 650	-20...+70	80 000 / 40 000	160 000	160 000	1	
4312 NL	93	54.7	12	7...14.5	27	4.1	■	1.2	1 650	-20...+70	80 000 / 40 000	160 000	160 000	1	
4312 NGM	137	80.6	12	7...14.5	37	5.1	□	2.6	2 450	-20...+70	70 000 / 35 000	140 000	140 000	2	
4312 NGN	166	97.7	12	7...14.5	43	5.6	□	4.0	3 000	-20...+70	60 000 / 30 000	120 000	120 000	3	
4312 NN	166	97.7	12	7...14.5	43	5.6	■	4.0	3 000	-20...+70	60 000 / 30 000	120 000	120 000	3	
4312 NH	176	103.6	12	7...14.5	45	5.8	■	4.5	3 150	-20...+70	60 000 / 30 000	120 000	120 000	4	/2
4312 NHH	198	116.5	12	7...14.5	49	6.2	■	6.5	3 600	-20...+60	57 500 / 35 000	100 000	100 000	5	
4314 NGL	93	54.7	24	12...28	27	4.1	□	1.2	1 650	-20...+70	80 000 / 40 000	160 000	160 000	1	
4314 NL	93	54.7	24	12...28	27	4.1	■	1.2	1 650	-20...+70	80 000 / 40 000	160 000	160 000	1	
4314 NGM	137	80.6	24	12...28	37	5.1	□	2.6	2 450	-20...+70	70 000 / 35 000	140 000	140 000	2	
4314 NGN	166	97.7	24	12...28	43	5.6	□	4.3	3 000	-20...+70	60 000 / 30 000	120 000	120 000	3	
4314 NN	166	97.7	24	12...28	43	5.6	■	4.3	3 000	-20...+70	60 000 / 30 000	120 000	120 000	3	
4314 NH	176	103.6	24	12...28	45	5.8	■	4.5	3 150	-20...+70	60 000 / 30 000	120 000	120 000	4	
4314 NHH	198	116.5	24	12...28	49	6.2	■	6.0	3 600	-20...+70	57 500 / 27 500	100 000	100 000	5	/2
4318 NGN	166	97.7	48	36...56	43	5.6	□	4.1	3 000	-20...+70	60 000 / 30 000	120 000	120 000	3	





max. 204 m<sup>3</sup>/h

# DC Axial Fans

Series 4300 119 x 119 x 32 mm



### Highlights:

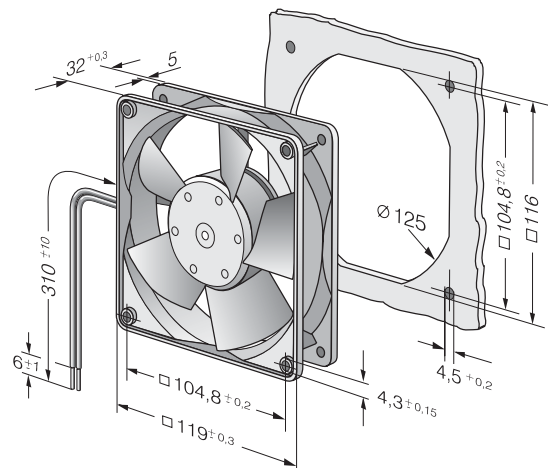
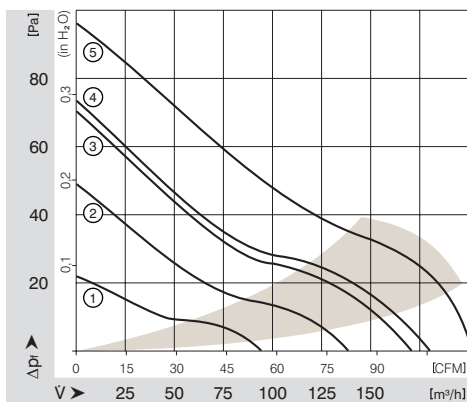
- Ball bearings and sleeve bearings available.
- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications

### General characteristics:

- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CW looking at rotor.
- Mass: 220 g.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst-Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst-Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM													
4312 GL	95	55.9	12	6...15	30	4.3	□	1.2	1 550	-20...+75	80 000 / 35 000	157 500	1		
4312 L	95	55.9	12	6...15	30	4.3	■	1.2	1 550	-20...+75	80 000 / 35 000	157 500	1		
4312 GM	140	82.4	12	6...15	39	5.3	□	2.6	2 300	-20...+75	70 000 / 30 000	135 000	2		
4312 M	140	82.4	12	6...15	39	5.3	■	2.6	2 300	-20...+75	70 000 / 30 000	135 000	2	/12	
4312 G	170	100.1	12	6...15	45	5.8	□	5.0	2 800	-20...+75	62 500 / 27 500	122 500	3		
4312	170	100.1	12	6...15	45	5.8	■	5.0	2 800	-20...+75	62 500 / 27 500	122 500	3	/2;/19	
4312-143	180	105.9	12	6...15	47	6.1	■	5.8	3 000	-20...+75	57 500 / 25 000	112 500	4		
4312-179	204	120.1	12	6...13.2	51	6.4	■	8.5	3 400	-20...+75	47 500 / 20 000	90 000	5		
4314 L	95	55.9	24	12...28	30	4.3	■	1.2	1 550	-20...+75	80 000 / 35 000	157 500	1		
4314 M	140	82.4	24	12...28	39	5.3	■	2.6	2 300	-20...+75	70 000 / 30 000	135 000	2		
4314 G	170	100.1	24	12...28	45	5.8	□	5.0	2 800	-20...+75	62 500 / 27 500	122 500	3		
4314	170	100.1	24	12...28	45	5.8	■	5.0	2 800	-20...+75	62 500 / 27 500	112 500	3	/2;/12	
4314-147	180	105.9	24	12...28	47	6.1	■	5.8	3 000	-20...+75	57 500 / 25 000	112 500	4		
4314-180	204	120.1	24	12...26.5	51	6.4	■	9.5	3 400	-20...+75	45 000 / 20 000	90 000	5		
4318 M	140	82.4	48	36...56	39	5.3	■	3.5	2 300	-20...+75	70 000 / 30 000	135 000	2	/2;/17	
4318	170	100.1	48	36...53	45	5.8	■	5.0	2 800	-20...+75	62 500 / 27 500	112 500	3	/2;/17	

Rotor protrusion max. 0.4 mm.



max. 170 m<sup>3</sup>/h

# DC Axial Fans

Series 4300 VARIOFAN 119 x 119 x 32 mm



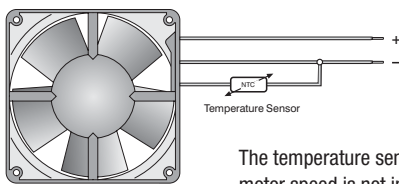
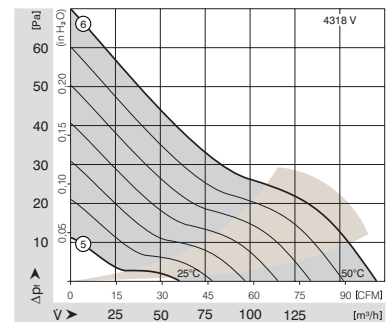
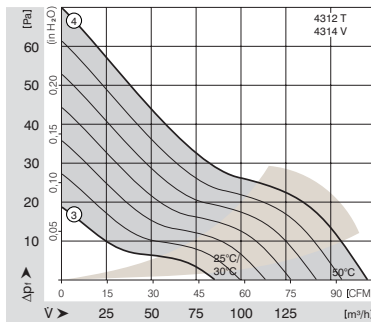
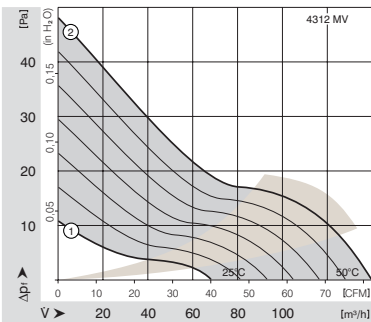
### Highlights:

- Open loop speed control by means of external or internal temperature sensor.
- Automatic speed adjustment according to cooling requirements.

### General characteristics:

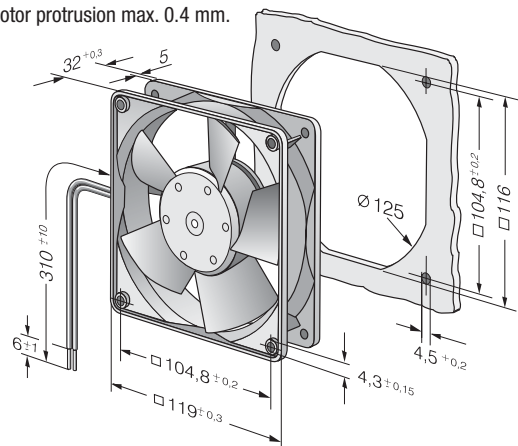
- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CW looking at rotor.
- Mass: 220 g.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
Type		m <sup>3</sup> /h	CFM	V DC	V DC	dB(A)	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours		P. 94	
25°C 50°C	4312 MV	68	40.4	12	8...15	22	3.7	■	1.5	1 150	-20...+65	70 000 / 40 000	142 500	1	/17	
		140	82.4			39	5.3		3.0	2 300						
25°C 50°C	4312 T	85	50.0	12	8...13.2	29	4.2	■	2.4	1 400	-20...+65	65 000 / 35 000	132 500	3	/17	
		170	100.1			45	5.8		5.5	2 800						
30°C 50°C	4314 V	85	50.0	24	21...27	29	4.2	■	3.0	1 400	-20...+65	65 000 / 35 000	132 500	3	/17	
		170	100.1			45	5.8		5.4	2 800						
25°C 50°C	4318 V	61	35.9	48	40...53	21	—	■	2.6	1 000	-20...+65	65 000 / 35 000	132 500	5	/17	
		170	100.1			45	5.8		5.4	2 800						



The temperature sensor for controlling the motor speed is not included in delivery.  
Temperature sensor LZ 370 see accessories.

Rotor protrusion max. 0.4 mm.



max. 285 m<sup>3</sup>/h

# DC Axial Fans

Series 4400 119 x 119 x 38 mm



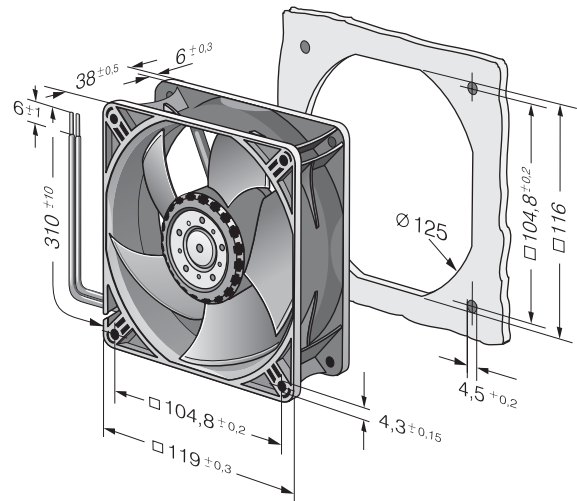
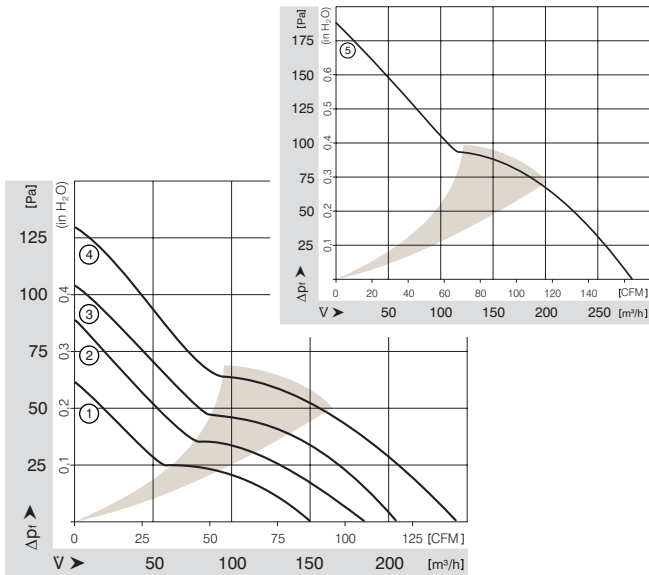
### Highlights:

- Innovative impeller with winglets for low noise.
- Control inputs, alarm and speed signals available on request.

### General characteristics:

- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 24, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CW looking at rotor.
- Mass: 250 g.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM													
4412 L	150	88.3	12	7...14	37	5.0	■	2.5	2 700	-20...+70	67 500 / 35 000	140 000	140 000	1	
4412 M	184	108.3	12	7...14	42	5.3	■	4.2	3 300	-20...+70	65 000 / 32 500	130 000	130 000	2	
4412 N	205	120.7	12	7...14	46	5.6	■	5.5	3 650	-20...+70	62 500 / 30 000	120 000	120 000	3	/2
4412 H	240	141.3	12	7...14	49	6.0	■	8.9	4 300	-20...+70	57 500 / 27 500	110 000	110 000	4	/2
4414 L	150	88.3	24	18...28	37	5.0	■	2.5	2 700	-20...+70	67 500 / 35 000	140 000	140 000	1	
4414 M	184	108.3	24	18...28	42	5.3	■	4.0	3 300	-20...+70	65 000 / 32 500	130 000	130 000	2	
4414 N	205	120.7	24	18...28	46	5.6	■	5.2	3 650	-20...+70	62 500 / 30 000	120 000	120 000	3	
4414 H	240	141.3	24	18...28	49	6.0	■	8.6	4 300	-20...+70	57 500 / 27 500	110 000	110 000	4	/2
NEW 4414 HH	285	164.8	24	16...28	52	6.4	■	14.0	5 000	-20...+70	50 000 / 25 000	100 000	100 000	5	
4418 L	150	88.3	48	36...60	37	5.0	■	2.5	2 700	-20...+70	67 500 / 35 000	140 000	140 000	1	
4418 M	184	108.3	48	36...60	42	5.3	■	4.2	3 300	-20...+70	65 000 / 32 500	130 000	130 000	2	
4418 N	205	120.7	48	36...60	46	5.6	■	5.2	3 650	-20...+70	62 500 / 30 000	120 000	120 000	3	
4418 H	240	141.3	48	36...60	49	6.0	■	8.6	4 300	-20...+70	57 500 / 27 500	110 000	110 000	4	/2



max. 184 m<sup>3</sup>/h

# DC Axial Fans

Series 4200 119 x 119 x 38 mm



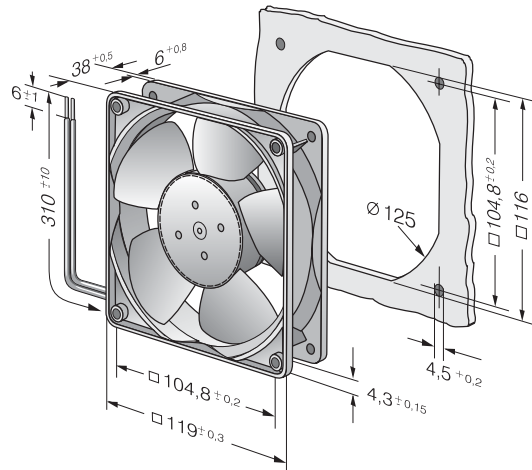
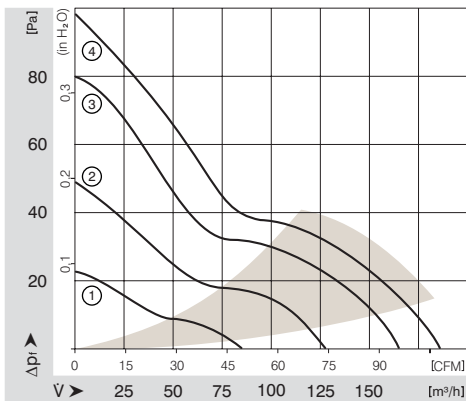
### Highlights:

- Ball bearings and sleeve bearings available.
- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications.

### General characteristics:

- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 290 g.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM													
4212 L	86	50.6	12	7...14.5	29	4.2	■	1.2	1 600	-20...+75	80 000 / 35 000	112 500	1		
4212 M	127	74.7	12	7...14.5	38	4.9	■	2.2	2 350	-20...+75	70 000 / 30 000	112 500	2		
4212	165	97.1	12	7...14.5	45	5.6	■	4.3	3 050	-20...+75	62 500 / 27 500	122 500	3	/2;/12	
4212 H	184	108.3	12	7...14.5	49	5.9	■	5.3	3 400	-20...+65	60 000 / 32 500	115 000	4	/2;/12	
4214 L	86	50.6	24	12...28	29	4.2	■	1.2	1 600	-20...+75	80 000 / 35 000	112 500	1		
4214 G	165	97.1	24	12...28	45	5.6	□	4.3	3 050	-20...+75	62 500 / 27 500	90 000	3		
4214	165	97.1	24	12...28	45	5.6	■	4.3	3 050	-20...+75	62 500 / 27 500	122 500	3	/2;/12;/17	
4214 H	184	108.3	24	12...28	49	5.9	■	5.3	3 400	-20...+65	60 000 / 32 500	115 000	4	/2;/12;/39	
4218	165	97.1	48	36...56	45	5.6	■	4.3	3 050	-20...+75	62 500 / 27 500	112 500	3	/2;/12	
4218 H	184	108.3	48	36...56	49	5.9	■	5.6	3 400	-20...+65	60 000 / 32 500	115 000	4	/12;/39	



max. 237 m<sup>3</sup>/h

# DC Axial Fans

Series 4100 N 119 x 119 x 38 mm



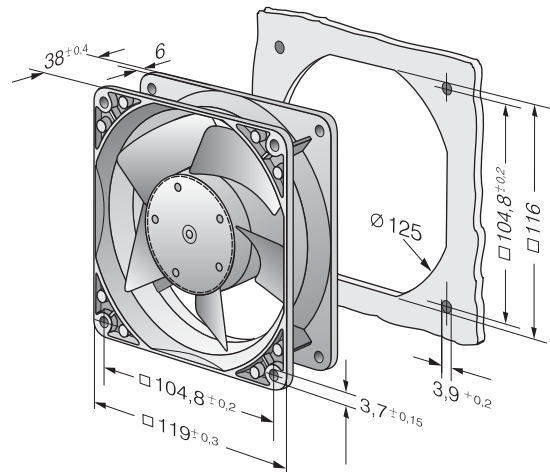
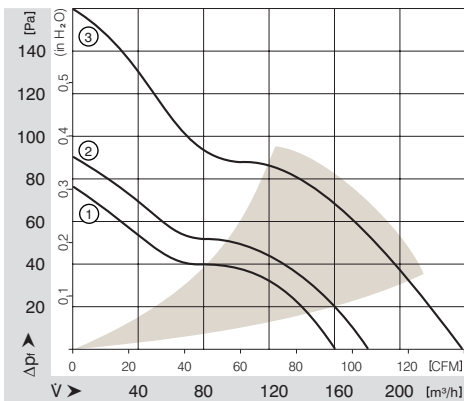
### Highlights:

- Highly stable characteristic curve for high air flow with high back pressure.
- Low operating noise at high back pressure.
- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications.

### General characteristics:

- Material: aluminium housing, fiberglass-reinforced PA impeller; housing with grounding lug for screw M4 x 8 (Torx).
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection with flat pin terminals, 2.8 x 0.5 mm. Optional with leads.
- Air intake over struts. Rotational direction CCW looking at rotor.
- Mass: 390 g.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10Δ</sub> (40 °C) see page 13	Curve
	m <sup>3</sup> /h	CFM												
4182 NGX	160	94.2	12	7...15	44	5.3	□	3.5	2 800	-10...+75	85 000 / 37 500	167 500	1	/2
4182 NX	180	105.9	12	7...15	49	5.7	■	4.5	3 200	-30...+75	85 000 / 37 500	167 500	2	/2;/12
4182 NXH	237	139.5	12	7...14	57	6.5	■	11.0	4 400	-30...+55	70 000 / 50 000	142 500	3	
4184 NGX	160	94.2	24	12...30	44	5.3	□	3.5	2 800	-10...+75	85 000 / 37 500	167 500	1	/2
4184 NXM	160	94.2	24	12...30	44	5.3	■	3.5	2 800	-30...+75	85 000 / 37 500	167 500	1	
4184 NX	180	105.9	24	12...29	49	5.7	■	4.5	3 200	-30...+75	85 000 / 37 500	167 500	2	/2;/17
4184 NXH	237	139.5	24	12...25	57	6.5	■	11.0	4 400	-30...+55	70 000 / 50 000	142 500	3	/2
4188 NGX	160	94.2	48	36...56	44	5.3	□	3.8	2 800	-10...+75	85 000 / 37 500	167 500	1	
4188 NXM	160	94.2	48	36...56	44	5.3	■	3.5	2 800	-30...+75	85 000 / 37 500	167 500	1	/12





max. 440 m<sup>3</sup>/h

# DC Axial Fans

Series 4100 N High Performance 119 x 119 x 38 mm



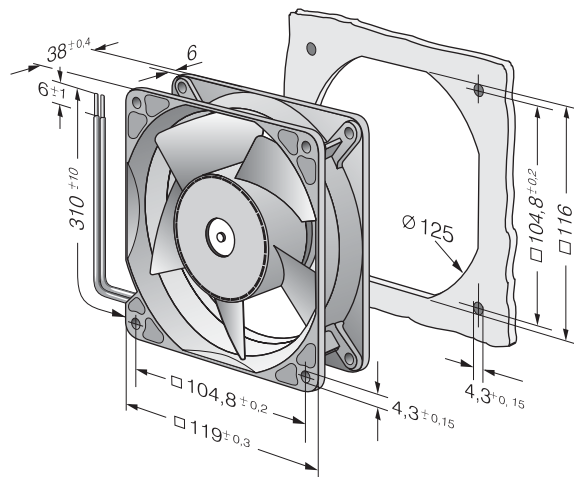
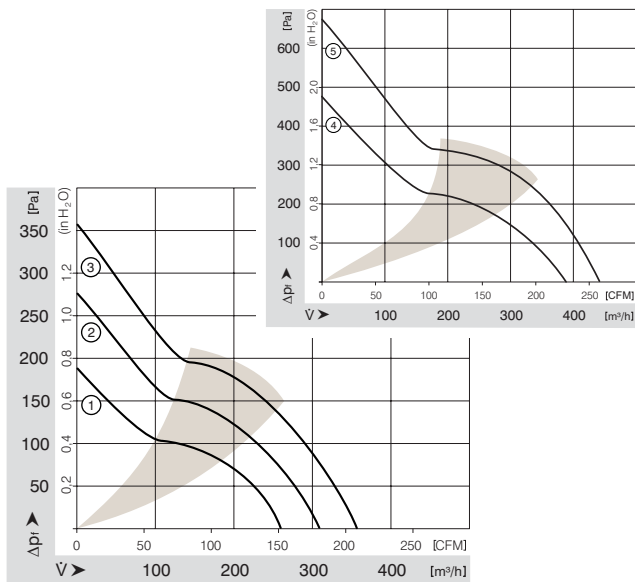
### Highlights:

- Highly stable characteristic curve for high air flow with high back pressure.
- Low operating noise at high back pressure.
- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications.

### General characteristics:

- Material: aluminium housing, fiberglass-reinforced PA impeller; housing with grounding lug for screw M4 x 8 (Torx).
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 22, UL1007, TR 64, bared and tin-plated
- Air intake over struts. Rotational direction CCW looking at rotor.
- Mass: 390 g.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst-Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst-Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
Type		m <sup>3</sup> /h	CFM	V DC	V DC	dB(A)	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours		P. 90	
4112 NHH		260	152.9	12	9...15	60	6.8	■	15.5	5 000	-20...+65	70 000 / 55 000	147 500	1		
4112 NH3		310	182.4	12	9...15	65	7.2	■	19.5	6 000	-20...+65	65 000 / 37 500	132 500	2	/2	
4112 NH4		355	208.9	12	9...14	67	7.4	■	32.0	6 800	-20...+65	62 500 / 35 000	125 000	3	/2	
4114 NHH		260	152.9	24	16...30	60	6.8	■	12.5	5 000	-20...+65	70 000 / 52 500	147 500	1		
4114 NH3		310	182.4	24	16...30	65	7.2	■	19.5	6 000	-20...+65	65 000 / 37 500	132 500	2	/2	
4114 NH4		355	208.9	24	16...30	67	7.4	■	30.0	6 800	-20...+65	62 500 / 35 000	125 000	3	/2	
4114 NH5		390	229.5	24	16...30	70	7.6	■	45.0	7 500	-20...+65	62 500 / 35 000	125 000	4	/2	
4114 NH6		440	259.0	24	16...30	73	8.1	■	60.0	8 400	-20...+65	62 500 / 35 000	125 000	5	/2	
4118 NHH		260	152.9	48	36...60	60	6.8	■	15.5	5 000	-20...+65	70 000 / 52 500	147 500	1		
4118 NH3		310	182.4	48	36...60	65	7.2	■	19.5	6 000	-20...+65	65 000 / 37 500	132 500	2	/2	
4118 NH4		355	208.9	48	36...60	67	7.4	■	28.0	6 800	-20...+65	62 500 / 35 000	125 000	3	/2	
4118 NH5		390	229.5	48	36...60	70	7.6	■	42.0	7 500	-20...+65	62 500 / 35 000	125 000	4	/2	
4118 NH6		440	259.0	48	36...60	73	8.1	■	55.0	8 400	-20...+65	62 500 / 35 000	125 000	5	/2	



max. 570 m<sup>3</sup>/h

# DC Axial Fans

Series 4100 N High Performance 119 x 119 x 38 mm



### Highlights:

- Highly stable characteristic curve for high air flow with high back pressure.
- Low operating noise at high back pressure.
- Available as standard with PWM control input and speed signal, additional inputs and outputs on request. 3-phase fan drive with high degree of running smoothness.

### General characteristics:

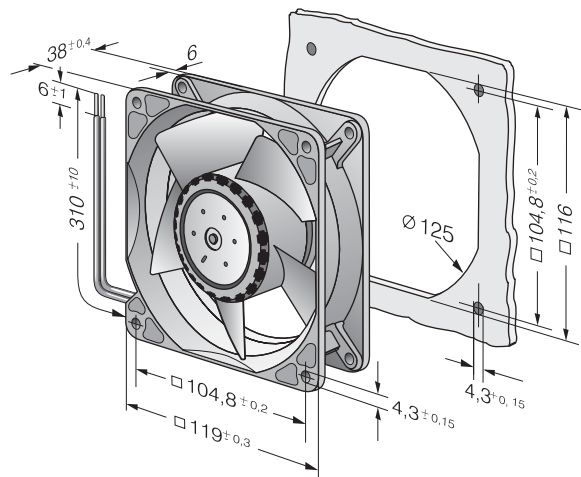
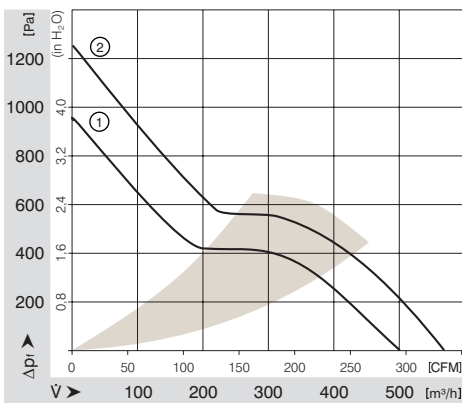
- Material: aluminium housing, fiberglass-reinforced PA impeller; housing with grounding lug for screw M4 x 8 (Torx).
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 20, sensor and control leads AWG 22, UL1007, TR 64. Stripped and tinned ends.
- Air intake over struts. Rotational direction CW looking at rotor.
- Mass: 425 g.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM													
NEW 4114 N/2H7P	500	294.2	24	16...30	76	8.5	■	90	9 500	-20...+75	57 500 / 25 000	115 000	1	/2	
NEW 4114 N/2H8P	570	335.5	24	16...30	78	8.9	■	120	11 000	-20...+75	55 000 / 22 500	110 000	2	/2	
NEW 4118 N/2H7P	500	294.2	48	36...60*	76	8.5	■	90	9 500	-20...+75	57 500 / 25 000	115 000	1	/2	
NEW 4118 N/2H8P	570	335.5	48	36...60*	78	8.9	■	120	11 000	-20...+75	55 000 / 22 500	110 000	2	/2	

To achieve the specified life, it is advisable to wire up an external capacitor with 470 μF between the positive and negative strands.

\*36...72 V DC on request.

Speed control range from 500 min<sup>-1</sup> up to maximum nominal speed. Stationary at 0 % PWM, maximum speed when no sensor is connected.



max. 275 m<sup>3</sup>/h

# DC Diagonal Fans

Series DV 4100 119 x 119 x 38 mm



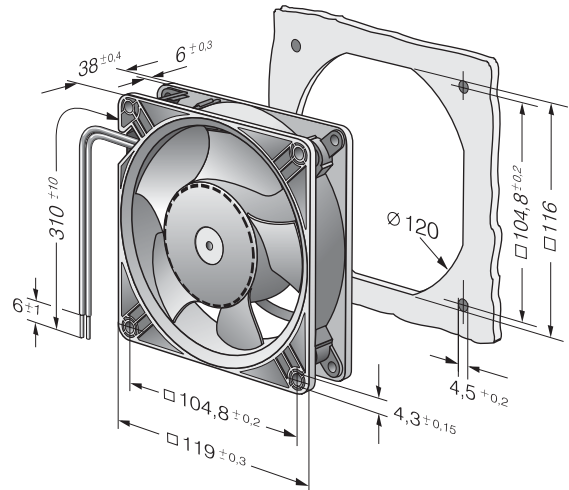
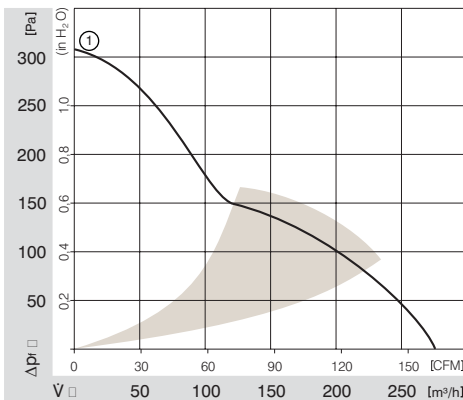
### Highlights:

- Diagonal compact fan with low noise and high pressure saddle.
- Highly stable characteristic curve for high air flow with high back pressure.
- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications.

### General characteristics:

- Material: aluminium housing, fiberglass-reinforced PA impeller; housing with grounding lug for screw M4 x 8 (Torx).
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 22, TR 64, bared and tin-plated
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 375 g (with aluminium housing : 455 g).

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst-Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst-Standard	Life expectancy L <sub>10</sub> (Δ (40 °C) see page 13	Curve	Specials
Type		m <sup>3</sup> /h	CFM	V DC	V DC	dB(A)	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours		P. 90	
DV 4112 N		275	161.9	12	9...15	60	6.7	■	21.0	6 000	-20...+65	70 000 / 40 000	142 500		1	
DV 4114 N		275	161.9	24	16...30	60	6.7	■	21.0	6 000	-20...+65	70 000 / 40 000	142 500		1	/2
DV 4118 N		275	161.9	48	36...60	60	6.7	■	21.0	6 000	-20...+65	70 000 / 40 000	142 500		1	



max. 338 m<sup>3</sup>/h

# DC Axial Fans

Series 5200 N 127 x 127 x 38 mm



### Highlights:

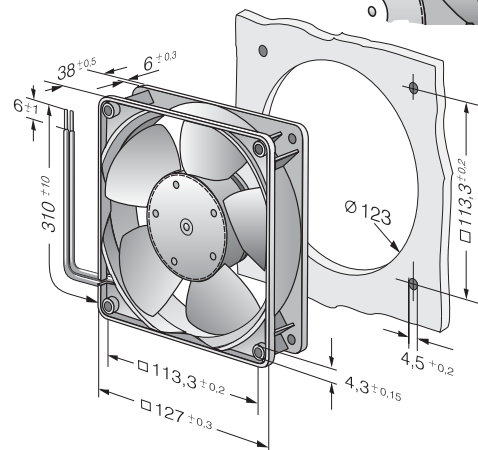
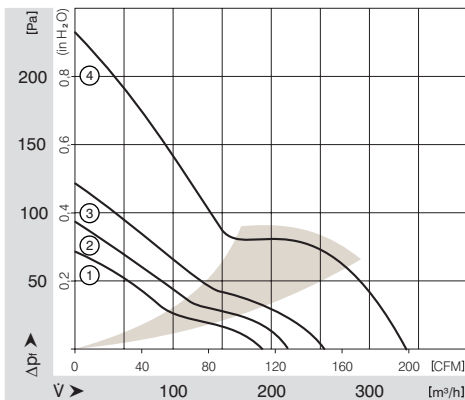
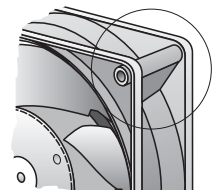
- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications.

### General characteristics:

- Material: fiberglass-reinforced plastic. Impeller PA, housing PBT.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 310 g.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> /Δ (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM													
5212 NM	187	110.1	12	7...14.5	43	5.3	■	4.6	2 750	-20...+75	62 500 / 27 500	122 500	1		
5212 NN	216	127.1	12	7...14	46	5.6	■	6.0	3 150	-20...+75	57 500 / 25 000	112 500	2	/2	
5212 NH	252	148.3	12	7...14	51	6.0	■	9.8	3 650	-20...+70	45 000 / 22 500	90 000	3		
5212 NHH*	338	198.9	12	9...15	58	6.6	■	19.0	4 900	-20...+65	45 000 / 25 000	90 000	4	/2	
5214 NM	187	110.1	24	12...28	43	5.3	■	4.6	2 750	-20...+75	62 500 / 27 500	122 500	1		
5214 NN	216	127.1	24	12...28	46	5.6	■	6.0	3 150	-20...+75	57 500 / 25 000	112 500	2	/2	
5214 NH	252	148.3	24	12...28	51	6.0	■	9.8	3 650	-20...+70	45 000 / 22 500	90 000	3	/2; /12	
5214 NHH*	338	198.9	24	16...30	58	6.6	■	17.5	4 900	-20...+65	45 000 / 25 000	90 000	4	/2	
5218 NM	187	110.1	48	40...56	43	5.3	■	5.0	2 750	-20...+75	62 500 / 27 500	122 500	1		
5218 NN	216	127.1	48	40...56	46	5.6	■	6.5	3 150	-20...+65	57 500 / 32 500	112 500	2		
5218 NH	252	148.3	48	40...56	51	6.0	■	10.0	3 650	-20...+55	45 000 / 32 500	90 000	3	/2	
5218 NHH*	338	198.9	48	36...60	58	6.6	■	18.0	4 900	-20...+65	45 000 / 25 000	90 000	4	/2	

\*Modelle NHH: Fan housing with moulded-in spacers.



max. 324 m<sup>3</sup>/h

# DC Diagonal Fans

Series DV 5200 127 x 127 x 38 mm



### Highlights:

- Diagonal compact fan with low noise and high pressure saddle.
- Highly stable characteristic curve for high air flow with high back pressure.
- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications.
- DV 5214 /2HP with PWM control input and speed signal, additional inputs and outputs on request.

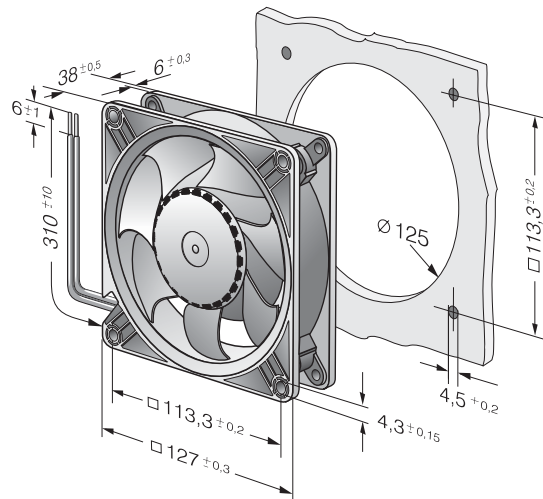
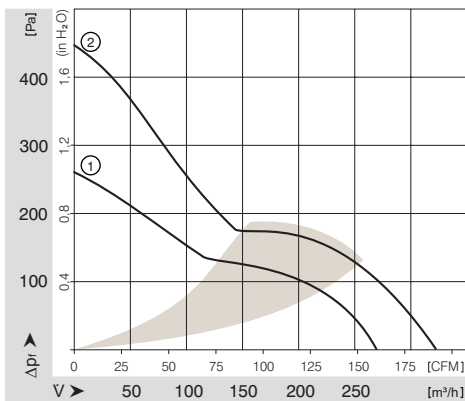
### General characteristics:

- Material: housing of fiberglass-reinforced plastic, optional of aluminium. Metal flange. Impeller of fiberglass-reinforced plastic PA; housing with grounding lug for screw M4 x 8 (Torx).
- Fully integrated electronic commutation. Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 22, TR 64, bared and tin-plated.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 415 g (with metal housing: 490 g).

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst-Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst-Standard	Life expectancy L <sub>10/Δ</sub> (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM													
DV 5212 N	270	158.9	12	9...15	56	6.4	■	21.0	5 000	-20...+65	70 000 / 40 000	142 500	1	/2	
DV 5214 N	270	158.9	24	16...30	56	6.4	■	19.0	5 000	-20...+65	70 000 / 40 000	142 500	1	/2	
DV 5218 N	270	158.9	48	36...60	56	6.4	■	19.0	5 000	-20...+65	70 000 / 40 000	142 500	1	/2	
Model available as standard with PWM control input and speed signal. Other models on request.															
NEW DV 5214 /2HP	324	190.7	24	16...30	62	7.2	■	38.5	6 000	-20...+65	62 500*/35 000*	125 000*	2		

\*preliminarily

Speed control range from 1000 min<sup>-1</sup> up to maximum nominal speed. Stationary at 0 % PWM, maximum speed when no sensor is connected.





max. 250 m<sup>3</sup>/h

# DC Axial Fans

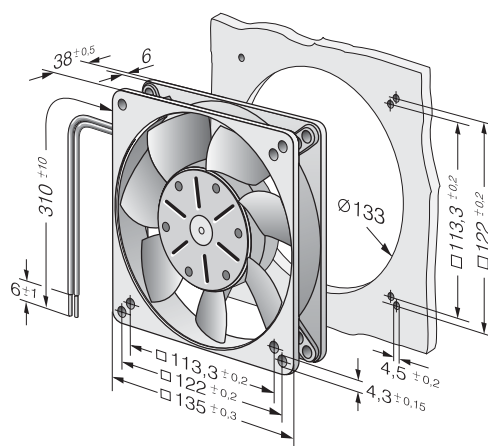
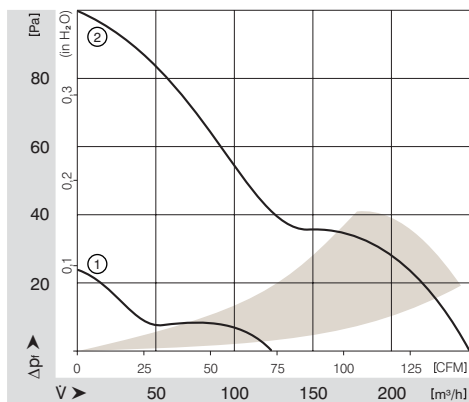
Series 5100 N 135 x 135 x 38 mm



### General characteristics:

- Material for aluminium housing and impeller; housing with grounding lug for screw M4 x 8 (Torx). 48 V version incl. screws.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 22, TR 64, bared and tin-plated.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 650 g.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM													
5112 N	250	147.1	12	6...15	48	6.1	■	9.5	2 900	-25...+72	80 000 / 37 500	157 500	2	/2;/17	
5114 N	250	147.1	24	12...30	48	6.1	■	9.5	2 900	-25...+72	80 000 / 37 500	157 500	2	/2	
5118 NL	122	71.8	48	24...60	28	4.1	■	2.6	1 400	-25...+72	85 000 / 40 000	167 500	1		
5118 N	250	147.1	48	24...60	48	6.1	■	9.5	2 900	-25...+72	80 000 / 37 500	157 500	2	/2;/12	



max. 670 m<sup>3</sup>/h

# DC Axial Fans

Series 5300 140 x 140 x 51 mm



### Highlights:

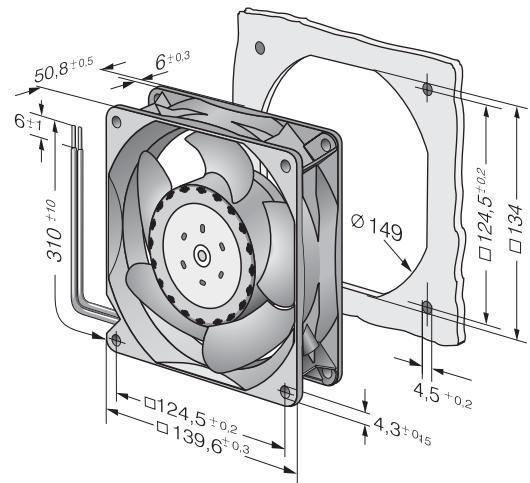
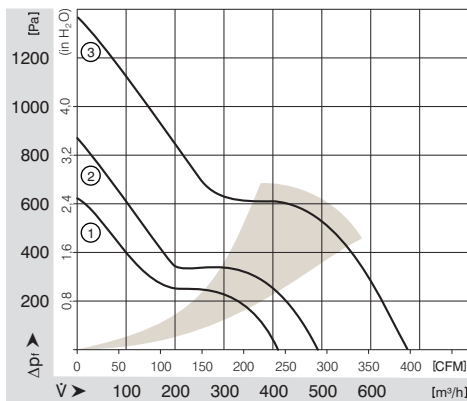
- 3-phase fan drive high degree of running smoothness.
- Highly stable characteristic curve for high air flow with high back pressure.
- Low operating noise at high back pressure.
- Standard with PWM control input and speed signal, additional inputs and outputs on request.

### General characteristics:

- Material: aluminium housing, fiberglass-reinforced PA impeller; housing with grounding lug for screw M4 x 8 (Torx).
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 20, TR 64. Stripped and tinned ends.
- Air intake over struts. Rotational direction CCW looking at rotor.
- Mass: 900 g.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst-Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst-Standard	Life expectancy L <sub>10Δ</sub> (40 °C) see page 13	Curve	Specials
Type		m <sup>3</sup> /h	CFM	V DC	V DC	dB(A)	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours		P. 90, 101	
NEW 5312 /2 TDHP		410	241.3	12	8...16	70	7.7	■	41	6 000	-20...+70	70 000 / 35 000	140 000	1	/2	
NEW 5314 /2 TDHP		410	241.3	24	16...36	70	7.7	■	41	6 000	-20...+70	70 000 / 35 000	140 000	1	/2	
NEW 5314 /2 TDHHP		490	288.4	24	16...36	75	8.1	■	67	7 000	-20...+70	62 500 / 30 000	120 000	2	/2	
NEW 5318 /2 TDHP		410	241.3	48	36...72	70	7.7	■	41	6 000	-20...+70	70 000 / 35 000	140 000	1	/2	
NEW 5318 /2 TDHHP		490	288.4	48	36...72	75	8.1	■	67	7 000	-20...+70	62 500 / 30 000	120 000	2	/2	
NEW 5318 /2 TDH4P		670	394.3	48	36...72	79	8.8	■	144	9 200	-20...+65	57 500 / 32 500	115 000	3	/2	

Speed control range from 1000 min<sup>-1</sup> up to maximum nominal speed. Stationary at 0 % PWM, maximum speed when no sensor is connected.



max. 420 m<sup>3</sup>/h

# DC Axial Fans

Series 7100 N 150 Ø x 38 mm



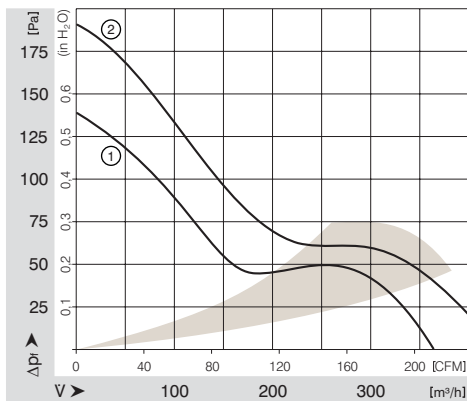
### Highlights:

- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications.

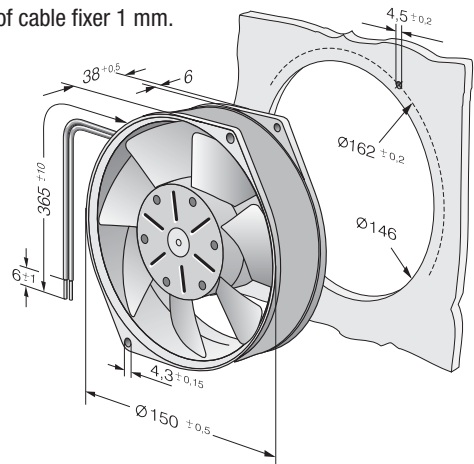
### General characteristics:

- Material: Aluminium housing and impeller; housing with grounding lug for screw M4 x 8 (Torx).
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 22, TR 64, bared and tin-plated.
- Air intake over struts. Rotational direction CCW looking at rotor.
- Mass: 620 g.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10Δ</sub> (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM													
7112 N	360	211.9	12	6...15	55	6.5	■	12.0	2 850	-25...+72	80 000 / 37 500	157 500	1	/2	
7114 N	360	211.9	24	12...30	55	6.5	■	12.0	2 850	-25...+72	80 000 / 37 500	157 500	1	/2	
7114 NH	420	247.2	24	12...26.5	59	7.0	■	19.0	3 350	-25...+72	75 000 / 35 000	147 500	2		
7118 N	360	211.9	48	24...60	55	6.5	■	12.0	2 850	-25...+72	80 000 / 37 500	157 500	1	/2;/12	



Leads fixed with cable fixer :  
supernatant of cable fixer 1 mm.



max. 360 m<sup>3</sup>/h

# DC Axial Fans

Series 7200 N 150 Ø x 55 mm



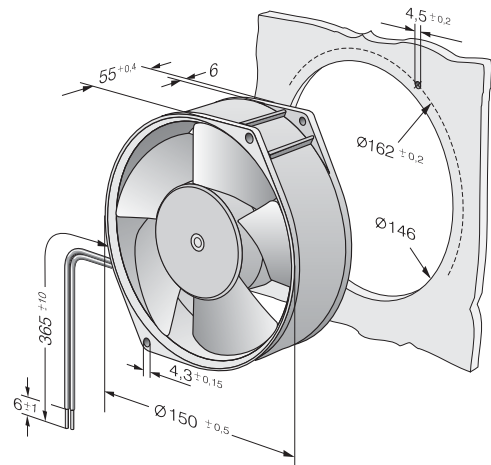
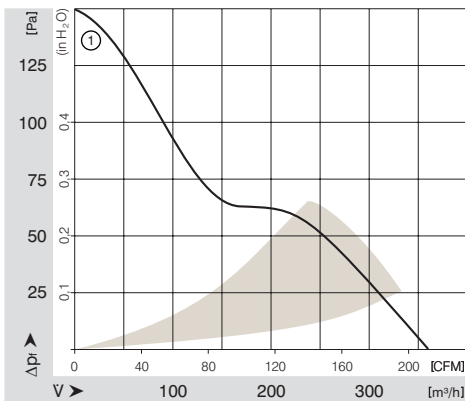
### Highlights:

- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications.

### General characteristics:

- Material: aluminium housing, fiberglass-reinforced PA impeller; housing with grounding lug for screw M4 x 8 (Torx).
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 22, TR 64, bared and tin-plated.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 725 g.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst-Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst-Standard	Life expectancy L <sub>10Δ</sub> (40 °C) see page 13	Curve	Specials
Type		m <sup>3</sup> /h	CFM	V DC	V DC	dB(A)	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours		P.90-96	
7212 N		360	211.9	12	6...15	53	6.2	■	12.0	3 050	-25...+72	80 000 / 37 500	157 500	1	/2	
7214 N		360	211.9	24	12...30	53	6.2	■	12.0	3 050	-25...+72	80 000 / 37 500	157 500	1	/12;/17;/19	
7218 N		360	211.9	48	24...60	53	6.2	■	12.0	3 050	-25...+72	80 000 / 37 500	157 500	1		



max. 950 m<sup>3</sup>/h

# DC Axial Fans

Series 6300 172 Ø x 51 mm



### Highlights:

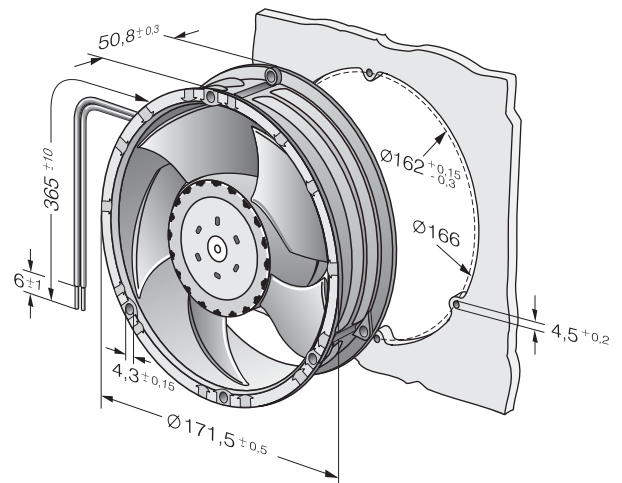
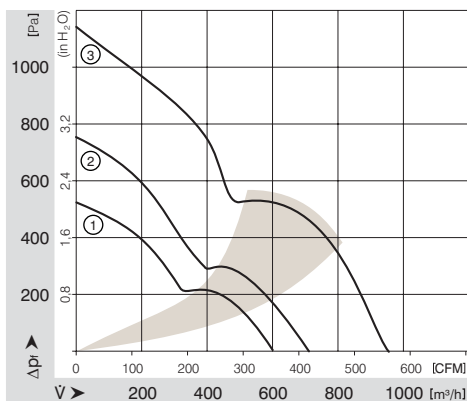
- 3-phase fan drive high degree of running smoothness.
- Highly stable characteristic curve for high air flow with high back pressure.
- Low operating noise at high back pressure.
- Standard with PWM control input and speed signal, additional inputs and outputs on request.

### General characteristics:

- Material: aluminium housing, fiberglass-reinforced PA impeller; housing with grounding lug for screw M4 x 8 (Torx).
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 20, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 910 g.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> /Δ (40 °C) see page 13	Curve	Specials
Type		m <sup>3</sup> /h	CFM	V DC	V DC	dB(A)	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours		P. 90, 101	
NEW 6312 /2TDHP		600	353.1	12	8...16	64	7.6	■	41	6 000	-20...+70	70 000 / 35 000	140 000		1	/2
NEW 6314 /2TDHP		600	353.1	24	16...36	64	7.6	■	41	6 000	-20...+70	70 000 / 35 000	140 000		1	/2
NEW 6314 /2TDHHP		710	417.9	24	16...36	69	7.9	■	67	7 000	-20...+70	62 500 / 30 000	120 000		2	/2
NEW 6318 /2TDHP		600	353.1	48	36...72	64	7.6	■	41	6 000	-20...+70	70 000 / 35 000	140 000		1	/2
NEW 6318 /2TDHHP		710	417.9	48	36...72	69	7.9	■	67	7 000	-20...+70	62 500 / 30 000	120 000		2	/2
NEW 6318 /2TDH4P		950	559.1	48	36...72	75	8.4	■	150	9 200	-20...+65	52 500 / 30 000	107 500		3	/2

Speed control range from 1000 min<sup>-1</sup> up to maximum nominal speed. Stationary at 0 % PWM, maximum speed when no sensor is connected.





max. 480 m<sup>3</sup>/h

# DC Axial Fans

Series 6200 N 172 Ø x 51 mm



### Highlights:

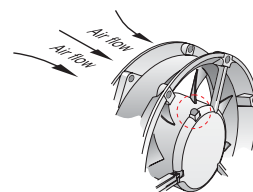
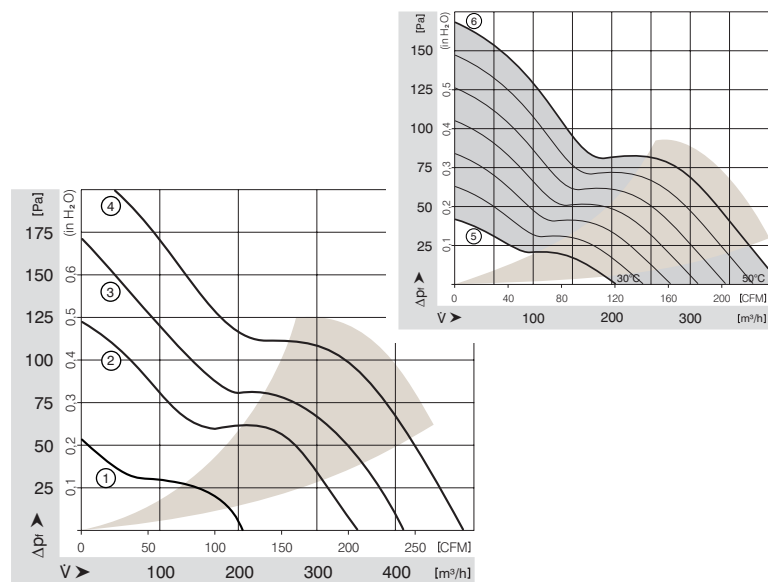
- VARIOFAN models available with external temperature sensor.
- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications.

### General characteristics:

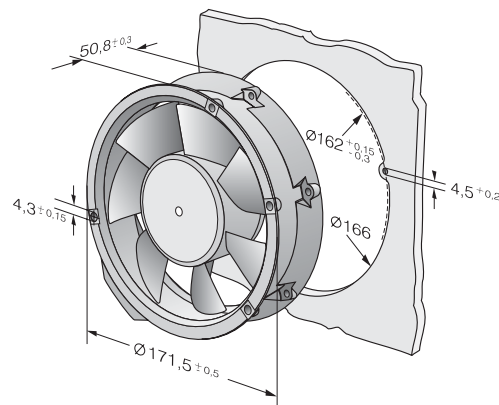
- Material: aluminium housing, fiberglass-reinforced PA impeller; housing with grounding lug for screw M4 x 8 (Torx). 48 V version incl. screws.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection with flat pin terminals 3 x 0.5 mm. Optional: Version with leads.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 820 g.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> (Δ (40 °C) see page 13	Curve	Specials
Type	m <sup>3</sup> /h	CFM	V DC	V DC	dB(A)	Bel	□ / ■	Watt	min <sup>-1</sup>	°C	Hours	Hours	Hours	P90-96		
6212 NM	350	206.0	12	8...15	50	5.7	■	12.0	2 850	-20...+72	80 000 / 37 500	157 500	2			
6224 NM	350	206.0	24	12...32	50	5.7	■	12.0	2 850	-20...+72	80 000 / 37 500	157 500	2	/12		
6224 N	410	241.3	24	12...28	55	6.1	■	18.0	3 400	-20...+72	75 000 / 35 000	125 000	3	2/12/19		
6224 NH	480	282.5	24	12...28	61	6.9	■	26.0	4 000	-20...+55*	70 000 / 50 000	110 000	4			
6248 NL	205	120.7	48	28...60	35	4.5	■	4.0	1 700	-20...+72	86 000 / 40 000	167 500	1			
6248 NM	350	206.0	48	28...60	50	5.7	■	11.5	2 850	-20...+72	80 000 / 37 500	157 500	2			
6248 N	410	241.3	48	28...60	55	6.1	■	17.0	3 400	-20...+72	75 000 / 35 000	125 000	3	2/12		
6248 NH	480	282.5	48	36...56	61	6.9	■	26.0	4 000	-20...+55*	70 000 / 50 000	110 000	4			
<b>VARIOFAN – DC fans with temperature-dependent speed control.</b>																
30°C 50°C	6224 NT	205	120.7	24	12...28	35	4.5	■	8.5	1 700	-10...+72	77 500 / 35 000	125 000	5	6	
		410	241.3		55	6.1	18.0		3 400							
30°C 50°C	6248 NT	205	120.7	48	28...60	35	4.5	■	8.5	1 700	-10...+72	77 500 / 35 000	125 000	5	6	
		410	241.3		55	6.1	17.0		3 400							

\* 72 °C upon on request.



Temperature sensor (NTC-resistor) for controlling the motor speed is positioned directly in the air flow.



max. 600 m<sup>3</sup>/h

# DC Axial Fans

Series 6200 NTD TURBOFAN 172 Ø x 51 mm



### Highlights:

- 3-phase fan drive with high degree of running smoothness.
- Highly stable characteristic curve for high air flow with high back pressure.
- Control inputs, alarm and speed signals available on request.

### General characteristics:

- Material: aluminium housing, fiberglass-reinforced PA impeller; housing with grounding lug for screw M4 x 8 (Torx). 48 V version incl. screws.
- Fully integrated electronic commutation.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor. Optional change direction of rotation.
- Mass: 820 g.

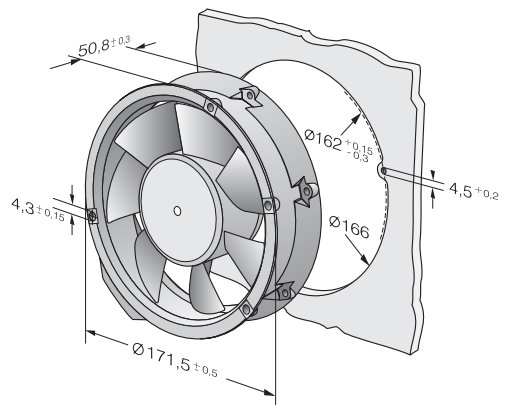
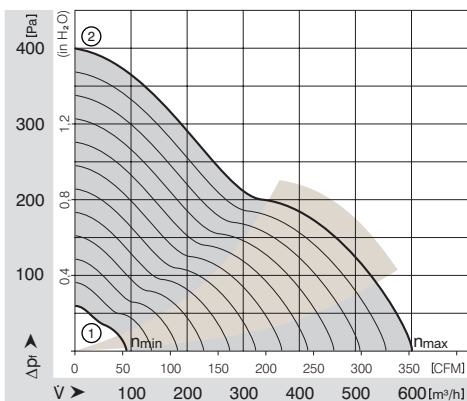
Nominal Data		Air Flow	Air Flow	Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
Type		m <sup>3</sup> /h	CFM	V DC	V DC	dB(A)	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours	Hours	P.	
min max	6224 NTD...	90	53.0	24	16...28	18	—	■	2.0	800	-20...+60	70 000 / 45 000	110 000	1	90-96;100-102	
		600	353.1			65	7.4		50.0	5 100						
min max	6248 NTD...	90	53.0	48	40...55*	18	—	■	2.0	800	-20...+60	70 000 / 45 000	110 000	1	90-96;100-102	
		600	353.1			65	7.4		50.0	5 100						

\*Fan with extended voltage range available on request.

Models 6224 NTD... and 6248 NTD... are available in customer-specific, custom-developed variants only.

The data specified here is 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 88.



max. 540 m<sup>3</sup>/h

# DC Diagonal Fans

Series DV 6200 172 Ø x 51 mm



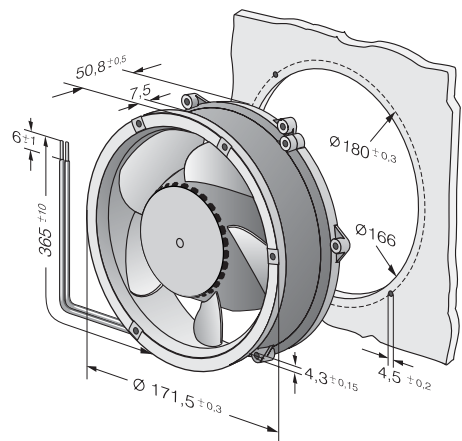
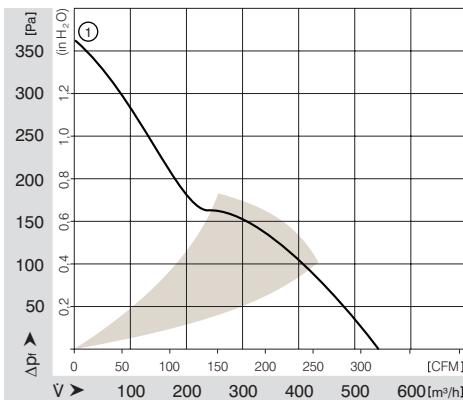
### Highlights:

- Diagonal compact fan with low noise and high pressure saddle.
- Highly stable characteristic curve for high air flow with high back pressure.

### General characteristics:

- Material: aluminium housing, fiberglass-reinforced PA impeller; housing with grounding lug for screw M4 x 8 (Torx). 48 V version incl. screws.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 820 g.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM													
DV 6224	540	317.8	24	16...28	63	7.1	■	40.0	4 300	-20...+75	90 000 / 40 000	180 000	1	/2;/12;/17	
DV 6248	540	317.8	48	28...60	63	7.1	■	40.0	4 300	-20...+75	90 000 / 40 000	180 000	1	/2;/12	



max. 700 m<sup>3</sup>/h

# DC Diagonal Fans

Series DV 6200 TD TURBOFAN 172 Ø x 51 mm



### Highlights:

- Diagonal compact fan with low noise and high pressure saddle.
- 3-phase fan drive with high degree of running smoothness.
- Highly stable characteristic curve for high air flow with high back pressure.
- Control inputs, alarm and speed signals available on request.

### General characteristics:

- Material: aluminium housing, fiberglass-reinforced PA impeller; housing with grounding lug for screw M4 x 8 (Torx). 48 V version incl. screws.
- Fully integrated electronic commutation.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 820 g.

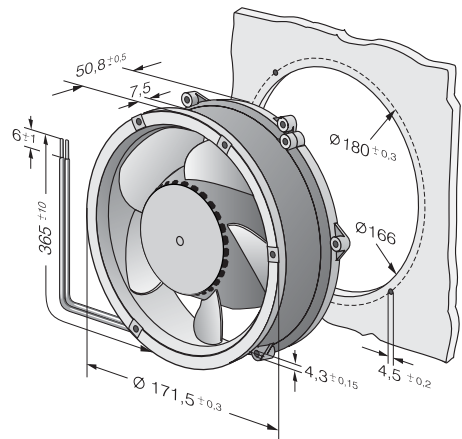
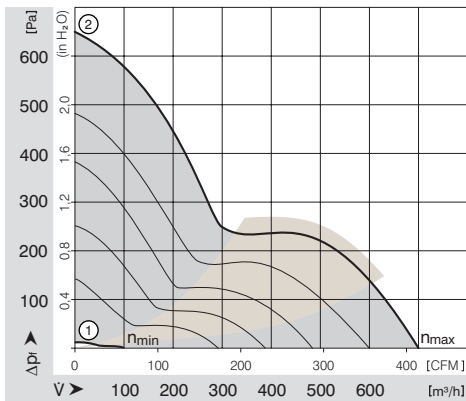
Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM													
NEW DV 6212 TD	700	421.0	12	8...13.5	69	7.8	■	84.0	5 500	-20...+50	65 000 / 50 000	130 000	2		
DV 6224 TD	700	421.0	24	16...36	69	7.8	■	89.0	5 500	-20...+60	65 000 / 40 000	130 000	2		
DV 6248 TD	700	421.0	48	40...55	69	7.8	■	89.0	5 500	-20...+60	65 000 / 40 000	130 000	2		
min max	100	58.9	24	16...36	29	—	■	2.0	800	-20...+60	65 000	130 000	1	90-96;100-102	
	700	421.0			69	7.8		89.0	5 500						
min max	100	58.9	48	40...55*	29	—	■	2.0	800	-20...+60	65 000 / 40 000	130 000	1	90-96;100-102	
	700	421.0			69	7.8		89.0	5 500						

\*Fan with extended voltage range available on request.

Models DV 6224 TD... and DV 6248 TD... are available in customer-specific, custom-developed variants only.

The data specified here 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 88.



max. 480 m<sup>3</sup>/h

# DC Axial Fans

Series 6400 172 x 150 x 51 mm



### Highlights:

- VARIOFAN models available with external temperature sensor.
- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications.

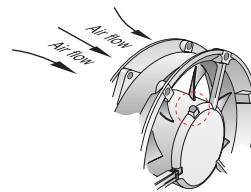
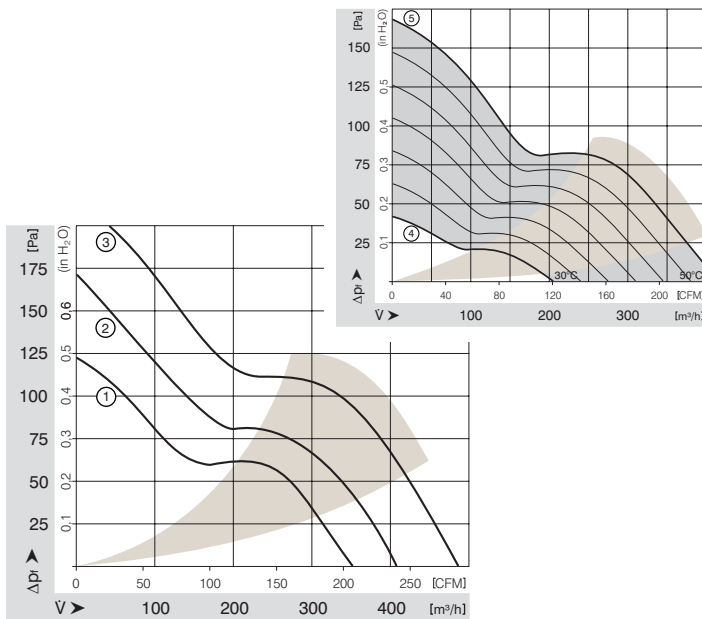
### General characteristics:

- Material: aluminium housing, fiberglass-reinforced PA impeller; housing with grounding lug for screw M4 x 8 (Torx). 48 V version incl. screws.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection with flat pin terminals 3 x 0.5 mm.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 620 g.

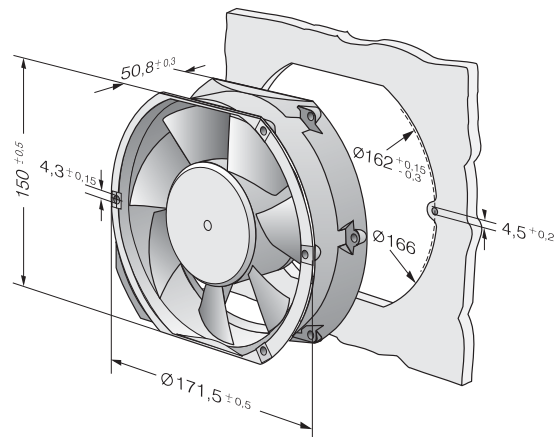
Nominal Data		Air Flow	Air Flow	Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
Type		m <sup>3</sup> /h	CFM	V DC	V DC	dB(A)	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours		P. 90-92	
6412 M		350	206.0	12	8...15	52	6.0	■	12.0	2 850	-20...+72	80 000 / 37 500	157 500	1		
6424 M		350	206.0	24	12...32	52	6.0	■	12.0	2 850	-20...+72	80 000 / 37 500	157 500	1		
6424		410	241.3	24	12...28	57	6.4	■	18.0	3 400	-20...+72	75 000 / 35 000	125 000	2	/2	
6424 H		480	282.5	24	12...28	63	7.1	■	26.0	4 000	-20...+55*	70 000 / 50 000	110 000	3	/12	
6448 M		350	206.0	48	28...60	52	6.0	■	11.5	2 850	-20...+72	80 000 / 37 500	157 500	1		
6448		410	241.3	48	28...60	57	6.4	■	17.0	3 400	-20...+72	75 000 / 35 000	125 000	2	/2	
6448 H*		480	282.5	48	28...60	63	7.1	■	26.0	4 000	-20...+55**	70 000 / 50 000	110 000	3	/2	
<b>VARIOFAN – DC fans with temperature-dependent speed control.</b>																
30°C	6424 T	205	120.7	24	12...28	37	4.9	■	8.5	1 700	-10...+72	77 500 / 35 000	125 000	4		
50°C		410	241.3													
30°C	6448 T	205	120.7	48	28...60	37	4.9	■	8.5	1 700	-10...+72	77 500 / 35 000	125 000	4		
50°C		410	241.3													

\* Leads 310 mm.

\*\* 72 °C upon request.



Temperature sensor (NTC-resistor) for controlling the motor speed is positioned directly in the air flow.





max. 900 m<sup>3</sup>/h

# DC Axial Fans

Series 6400 TD TURBOFAN 172 x 150 x 51 mm



### Highlights:

- 3-phase fan drive with high degree of running smoothness.
- Highly stable characteristic curve for high air flow with high back pressure.
- Control inputs, alarm and speed signals available on request.

### General characteristics:

- Material: aluminium housing, fiberglass-reinforced PA impeller; housing with grounding lug for screw M4 x 8 (Torx). 48 V version incl. screws.
- Fully integrated electronic commutation.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor. Direction of rotation reversible.
- Mass: 760 g.

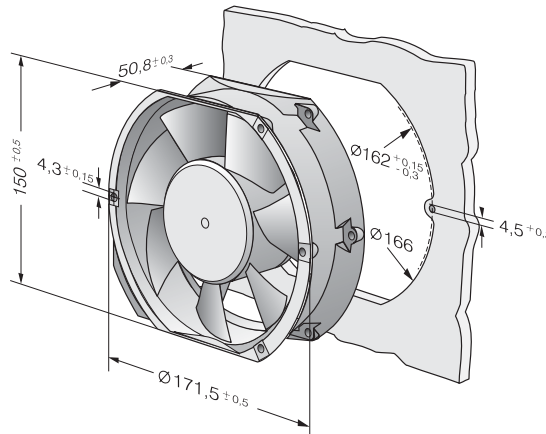
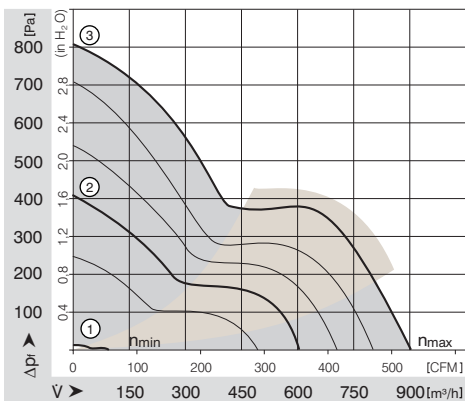
Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM													
min max	6424 TD...	90	53.0	24	16...28	18	—	■	2.0	800	-20...+60	70 000 / 45 000	110 000	1	2
		600	353.1			65	7.4								
min max	6448 TD...	90	53.0	48	40...55*	18	—	■	2.0	800	-20...+60	70 000 / 45 000	110 000	1	90-96;100-102
		600	353.1			65	7.4								
min max	6448 TDHH...	90	53.0	48	36...72	18	—	■	2.0	800	-20...+60	70 000 / 45 000	110 000	1	90-96;100-102
		900	529.7			78	8.6								

\*Fan with extended voltage range available on request.

Models 6424 TD, 6448 TD... and 6448 TDHH... are available in customer-specific, custom-developed variants only.

The data specified here 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 88.



max. 530 m<sup>3</sup>/h

# DC Diagonal Fans

Series DV 6400 172 x 160 x 51 mm



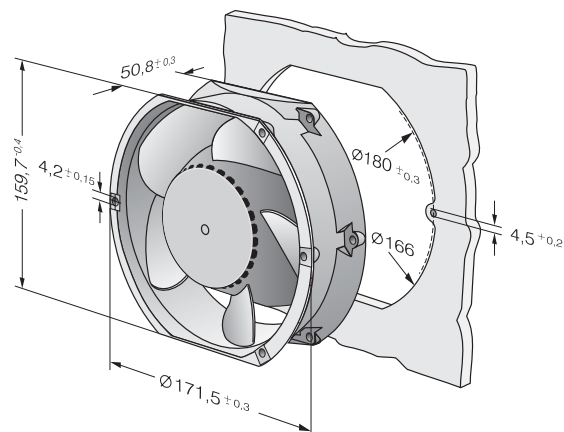
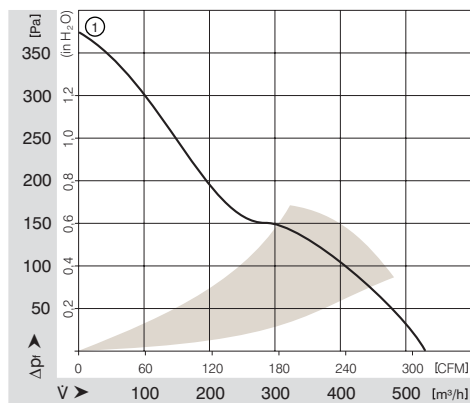
### Highlights:

- Diagonal compact fan with low noise and high pressure saddle.
- Highly stable characteristic curve for high air flow with high back pressure.
- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications.

### General characteristics:

- Material: aluminium housing, fiberglass-reinforced PA impeller; housing with grounding lug for screw M4 x 8 (Torx). 48 V version incl. screws.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 820 g.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
Type		m <sup>3</sup> /h	CFM	V DC	V DC	dB(A)	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours		P. 92	
DV 6424		530	311.9	24	16...28	65	7.3	■	40.0	4 300	-20...+75	90 000 / 45 000	180 000		1	/12
DV 6448		530	311.9	48	28...60	65	7.3	■	40.0	4 300	-20...+75	90 000 / 45 000	180 000		1	/12



max. 680 m<sup>3</sup>/h

# DC Diagonal Fans

Series DV 6400 TD TURBOFAN 172 x 160 x 51 mm



### Highlights:

- Diagonal compact fan with low noise and high pressure saddle.
- 3-phase fan drive with high degree of running smoothness.
- Highly stable characteristic curve for high air flow with high back pressure.
- Control inputs, plus alarm and speed signals available on request.

### General characteristics:

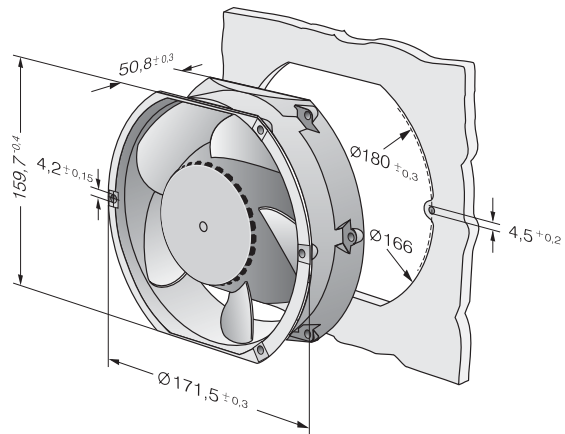
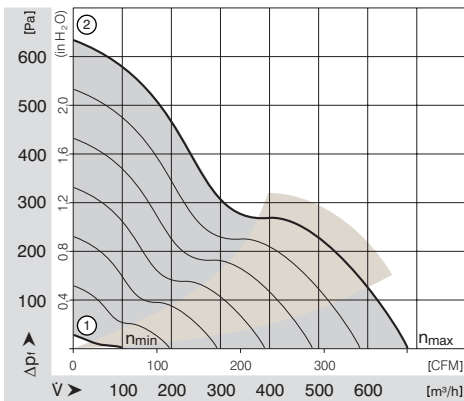
- Material: aluminium housing, fiberglass-reinforced PA impeller; housing with grounding lug for screw M4 x 8 (Torx). 48 V version incl. screws.
- Fully integrated electronic commutation.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor. Direction of rotation reversible.
- Mass: 820 g.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM													
DV 6424 TD	680	400.2	24	16...28	71	7.9	■	91.0	5 500	-20...+60	65 000 / 40 000	130 000	2		
min max DV 6424 TD...	100	58.9	24	16...28	29	—	■	2.0	800	-20...+60	65 000 / 40 000	130 000	1	90-96;100-102	
	680	400.2			71	7.9		91.0	5 500						
min max DV 6448 TD...	100	58.9	48	40...55	29	—	■	2.0	800	-20...+60	65 000 / 40 000	130 000	1	90-96;100-102	
	680	400.2			71	7.9		86.0	5 500						

Models DV 6424 TD... and DV 6448 TD... are available in customer-specific, custom-developed variants only.

The data specified here 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 88.



max. 925 m<sup>3</sup>/h

# DC Diagonal Fans

W1G 180 Ø 200 x 70 mm



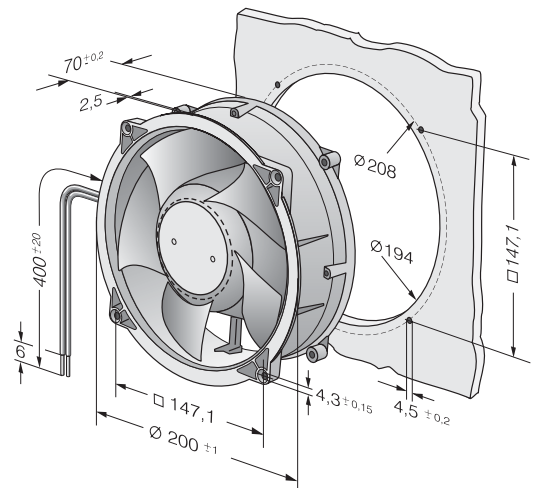
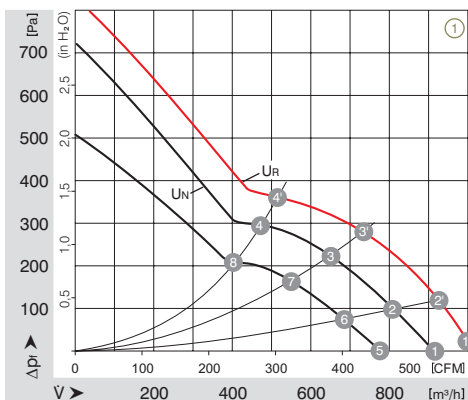
- Material: Die-cast aluminium wall ring, 5 plastic PA blades. Rotor galvanized.
- Polarity and locked rotor protection, soft start.
- Direction of air flow: "V", exhaust over struts. Rotational direction CCW looking at rotor.
- Type of protection: IP 20. Insulation class: "B".
- Maintenance-free ball bearings.
- Control input 0-10 V DC / PWM and tach output.
- Lateral cable exit.
- Continuous operation (S1).
- Mass: 1.8 kg.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Curve	Specials
	m <sup>3</sup> /h	CFM												
W1G 180-AB31-01	900	529.7	24	16...28	68	—	■	93.0	4 550	-25...+60	42 000 / 40 000		1	
W1G 180-AB47-01	925	544.4	48	36...57	69	—	■	100.0	4 600	-25...+60	42 000 / 40 000		1	

	n [min <sup>-1</sup> ]	P <sub>1</sub> [W]	η <sub>11</sub> [%]	L <sub>DA</sub> [dBA]
① ①'	5180	133	—	71
① ②'	4970	141	70	70
① ③'	4760	146	67	68
① ④'	5010	140	55	69
① ①	4600	100	—	69
① ②	4500	106	70	68
① ③	4340	112	67	66
① ④	4550	105	55	67
① ⑤	3920	60	—	66
① ⑥	3790	64	70	65
① ⑦	3660	68	67	63
① ⑧	3790	63	55	63

Connection leads:

- red = +
- blue = -
- yellow = control input PWM/Lin
- white = speed output



max. 1090 m<sup>3</sup>/h

# DC Axial Fans

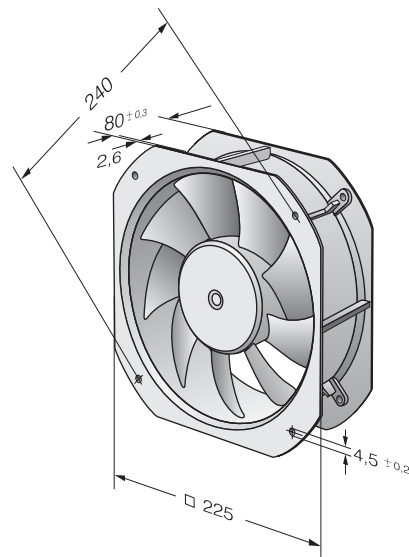
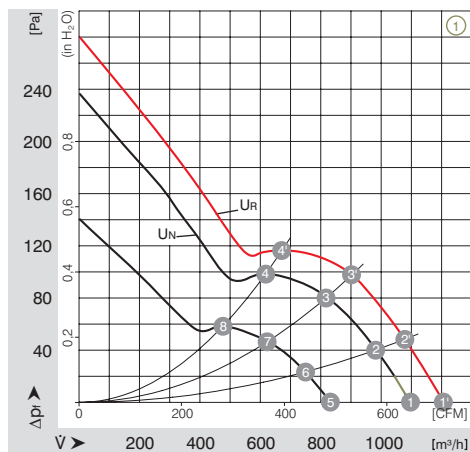
W1G 200 225 x 225 x 80 mm



- Material: Die-cast aluminium wall ring, 9 sheet steel blades. Blades and rotor coated in black.
- Polarity and locked rotor protection.
- Direction of air flow: "V", exhaust over struts. Rotational direction CCW looking at rotor.
- Type of protection: IP 42. Insulation class: "B".
- Maintenance-free ball bearings.
- Control input 0-10 V DC / PWM and tach output.
- Connection leads with terminal strip.
- Continuous operation (S1).
- Mass: 2.1 kg.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Curve	Specials
	m <sup>3</sup> /h	CFM												
W1G 200-HH77-52	1090	641.6	48	16...28	60	—	■	55.0	2 950	-25...+60	57 000 / 55 000		1	
W1G 200-HH01-52	1005	591.5	48	36...57	60	—	■	45.0	2 750	-25...+60	57 000 / 57 000		1	

	n [min <sup>-1</sup> ]	P <sub>1</sub> [W]	η <sub>II</sub> [%]	L <sub>pA</sub> [dBA]
① ①	2300	73	—	63
① ②	2970	77	67	62
① ③	3100	80	64	63
① ④	2970	80	54	66
① ⑤	2950	55	—	60
① ⑥	2890	58	67	60
① ⑦	2800	61	64	61
① ⑧	2780	63	54	64
① ⑨	2270	27	—	55
① ⑩	2230	28	67	54
① ⑪	2170	29	64	54
① ⑫	2130	30	54	57





max. 1050 m<sup>3</sup>/h

# DC Diagonal Fans

W1G 208 Ø 232 x 80 mm



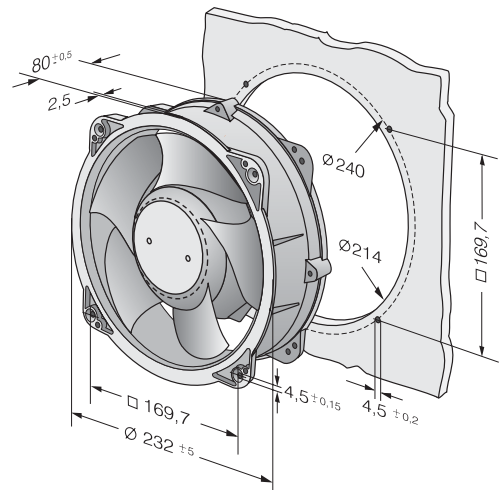
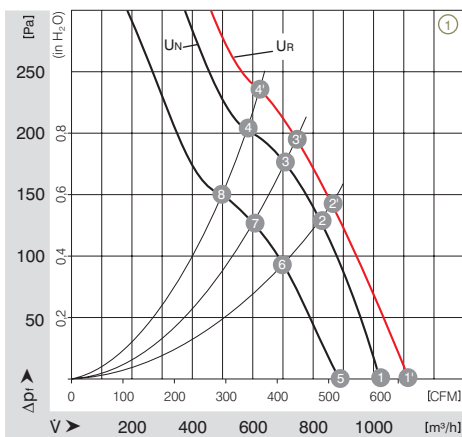
- Material: Die-cast aluminium wall ring, 5 plastic PA blades. Rotor galvanized.
- Polarity and locked rotor protection.
- Direction of air flow: "V", exhaust over struts. Rotational direction CCW looking at rotor.
- Type of protection: IP 20. Insulation class: "B".
- Maintenance-free ball bearings.
- Control input 0-10 V DC / PWM and tach output.
- Connection leads with terminal strip.
- Continuous operation (S1).
- Mass 2.3 kg.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Curve	Specials
	m <sup>3</sup> /h	CFM												
W1G 208-BA35-52	1050	618.0	24	16...28	74	—	■	96.0	3 500	-25...+72	51 000 / 40 000		1	
W1G 208-BA73-52	1050	618.0	48	36...57	74	—	■	96.0	3 500	-25...+72	51 000 / 40 000		1	

	n [min <sup>-1</sup> ]	P <sub>1</sub> [W]	η <sub>II</sub> [%]	L <sub>DA</sub> [dBA]
① 1'	3740	116	—	75
① 2'	3500	118	52	74
① 3'	3450	119	53	73
① 4'	3530	118	48	75
① 1	3500	96	—	74
① 2	3300	99	52	72
① 3	3250	100	53	72
① 4	3330	99	48	73
① 5	2960	58	—	70
① 6	2830	63	52	69
① 7	2780	64	53	68
① 8	2840	62	48	70

Connection leads:

- red = +
- blue = -
- yellow = control input PWM/Lin
- white = speed output



max. 1920 m<sup>3</sup>/h

# DC Axial Fans

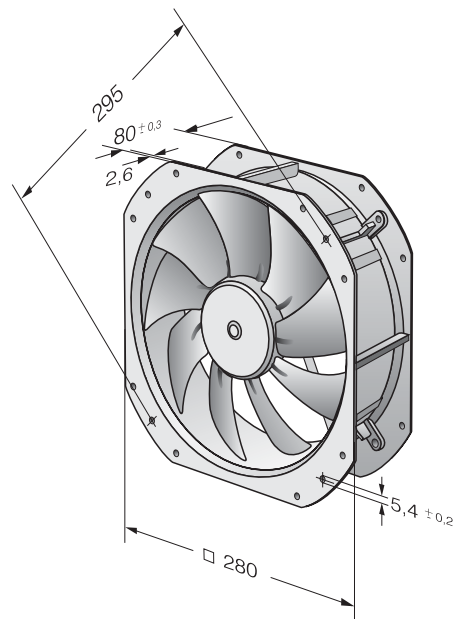
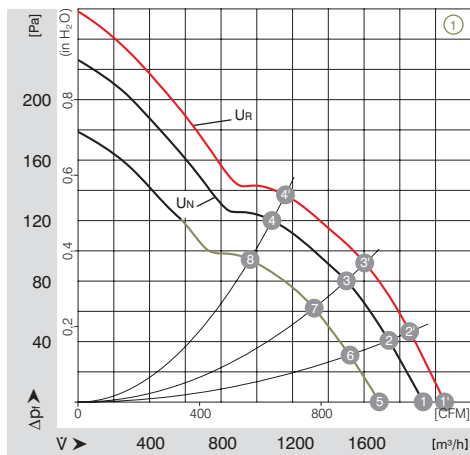
W1G 250 280 x 280 x 80 mm



- Material: Die-cast aluminium wall ring, 7 sheet steel blades. Blades and rotor coated in black.
- Polarity and locked rotor protection.
- Direction of air flow: "V", exhaust over struts. Rotational direction CCW looking at rotor.
- Type of protection: IP 42. Insulation class: "B".
- Maintenance-free ball bearings.
- Control input 0-10 V DC / PWM and tach output.
- Connection leads with terminal strip.
- Continuous operation (S1).
- Mass: 2.5 kg.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Curve	Specials
	m <sup>3</sup> /h	CFM												
W1G 250-HH37-52	1920	1130.1	24	16...28	70	—	■	105.0	2 750	-25...+60	57 000 / 46 000		1	
W1G 250-HH67-52	1920	1130.1	48	36...57	70	—	■	105.0	2 750	-25...+60	57 000 / 46 000		1	

	n [min <sup>-1</sup> ]	P <sub>1</sub> [W]	η <sub>II</sub> [%]	LpA [dBA]
① ①	2920	129	—	71
① ②	2800	132	63	72
① ③	2680	135	60	71
① ④	2600	139	45	72
① ⑤	2750	105	—	70
① ⑥	2630	110	63	69
① ⑦	2520	111	60	69
① ⑧	2440	114	45	70
① ⑨	2610	73	—	66
① ⑩	2320	75	63	67
① ⑪	2230	78	60	67
① ⑫	2170	80	45	68



max. 24 m<sup>3</sup>/h

# DC Radial Fans

Series RV 40 105 x 59 x 79 mm

### Highlights:

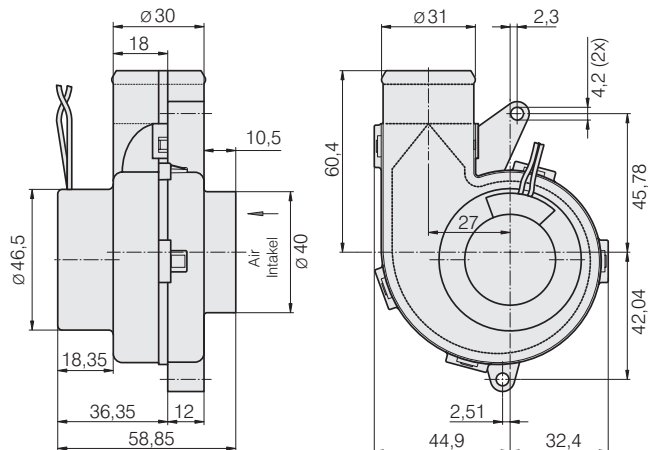
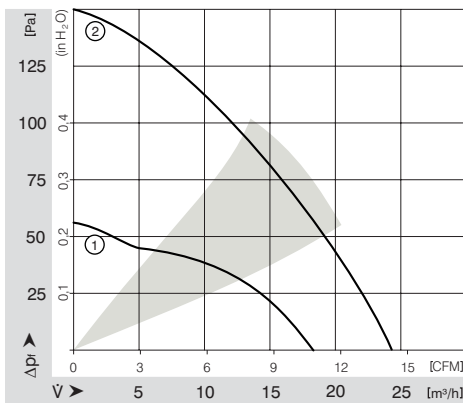
- Pressure-optimized blower.
- Motor with very low structure-borne noise properties.
- Forward curved impeller.

### General characteristics:

- Fiberglass-reinforced plastic scroll housing and impeller.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Direction of air flow: axial suction, radial air outlet.
- Electrical connection via single leads AWG 26, TR 64. Stripped and tinned ends.
- Mass: 100 g.



Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM												
RV 40-18/12 L	18	10.6	12	9...16	4.0	■	2.0	3 900	-20...+70	70 000 / 35 000	110 000	1		
RV 40-18/12 H	24	14.1	12	9...16	5.0	■	4.5	4 800	-20...+70	50 000 / 25 000	80 000	2		



max. 9,6 m<sup>3</sup>/h

# DC Radial Fans

Series RLF 35 51 x 51 x 15 mm



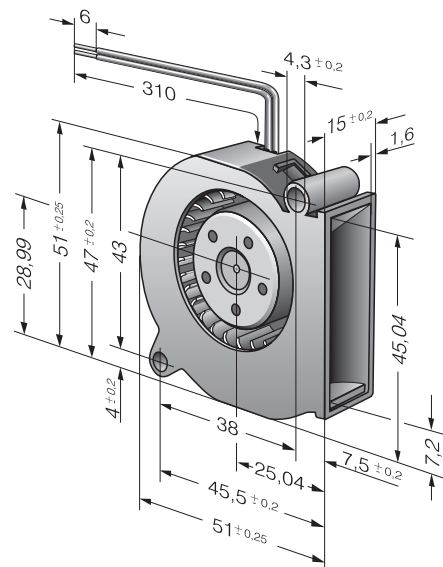
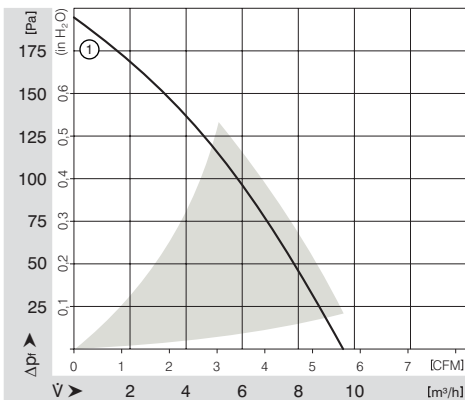
### Highlights:

- Noise-optimized air outlet in scroll housing.
- Very flat and powerful radial compact fan..
- Forward curved impeller.

### General characteristics:

- Fiberglass-reinforced plastic scroll housing and impeller.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Direction of air flow: axial suction, radial air outlet.
- Electrical connection via single leads AWG 26, TR 64. Stripped and tinned ends.
- Mass: 40 g.

Nominal Data	Air Flow	Air Flow	Nominal Voltage	Voltage Range	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10Δ</sub> (40 °C) see page 13	Curve	Specials
Type	m <sup>3</sup> /h	CFM	V DC	V DC	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours	Hours	P.	P.
RLF 35-8/12 N	9,6	5.7	12	9...14	5.5	■	3.5	7 200	-20...+70	60 000 / 30 000	120 000	120 000	1	
RLF 35-8/14 N	9,6	5.7	24	14...28	5.5	■	4.3	7 200	-20...+70	60 000 / 30 000	120 000	120 000	1	



max. 28 m<sup>3</sup>/h

# DC Radial Fans

Series RL 48 76 x 76 x 27 mm



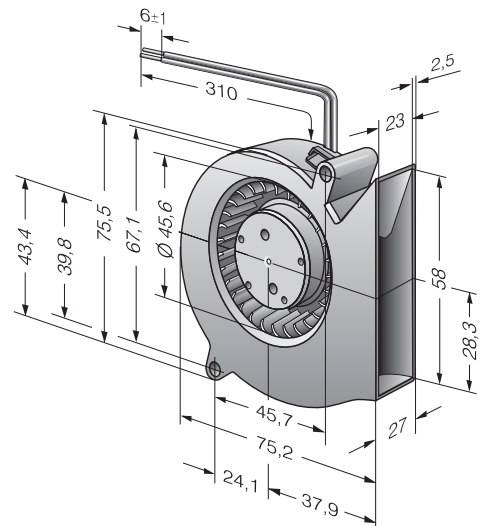
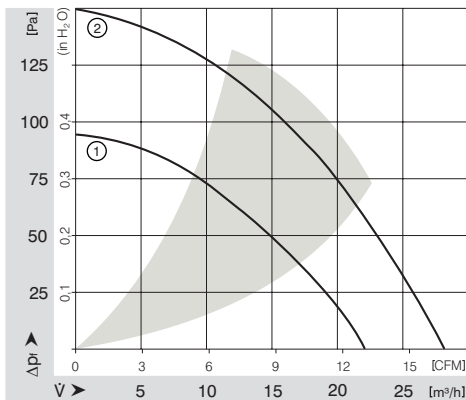
### Highlights:

- Pressure-optimized blower.
- Noise-optimized air outlet in scroll housing.
- Forward curved impeller.

### General characteristics:

- Fiberglass-reinforced plastic scroll housing and impeller.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Direction of air flow: axial suction, radial air outlet.
- Electrical connection via single leads AWG 26, TR 64. Stripped and tinned ends.
- Mass: 75 g.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM												
RL 48-19/12 ML	22	12.9	12	8...15	5.3	■	2.9	3 500	-20...+70	70 000 / 35 000	140 000	1		
RL 48-19/12	28	16.5	12	8...13.5	5.7	■	5.0	4 400	-20...+70	60 000 / 30 000	120 000	2	/2	
RL 48-19/14 ML	22	12.9	24	18...28	5.3	■	2.9	3 500	-20...+70	70 000 / 35 000	140 000	1		
RL 48-19/14	28	16.5	24	18...26.4	5.7	■	5.0	4 400	-20...+70	60 000 / 30 000	120 000	2	/2	





max. 61 m<sup>3</sup>/h

# DC Radial Fans

Series RL 65 97 x 93,5 x 33 mm



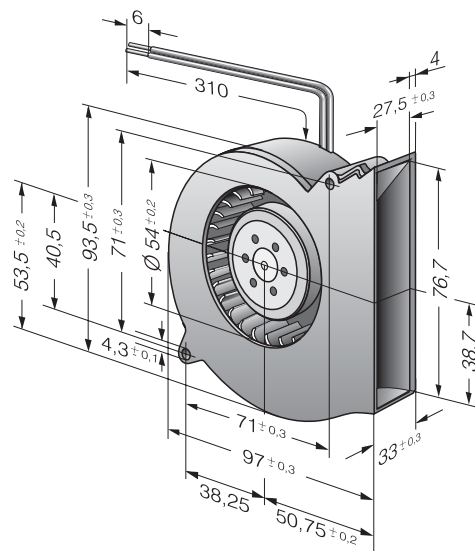
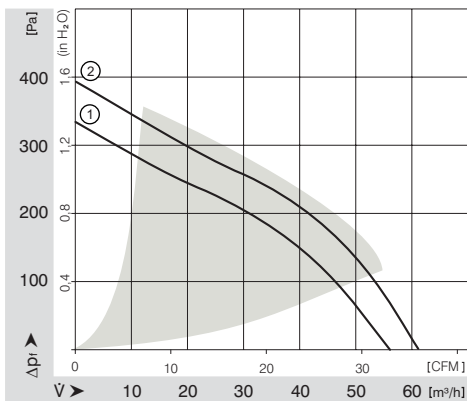
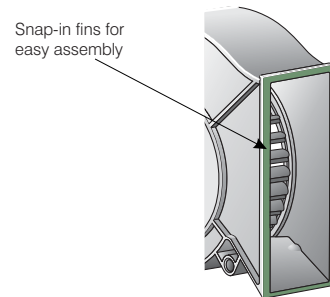
### Highlights:

- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications.
- Pressure-optimized blower. Noise-optimized air outlet in scroll housing.
- Forward curved impeller.
- Integrated retaining ribs for rational assembly.

### General characteristics:

- Fiberglass-reinforced plastic scroll housing and impeller.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Direction of air flow: axial suction, radial air outlet.
- Electrical connection via single leads AWG 24, TR 64. Stripped and tinned ends.
- Mass: 170 g.

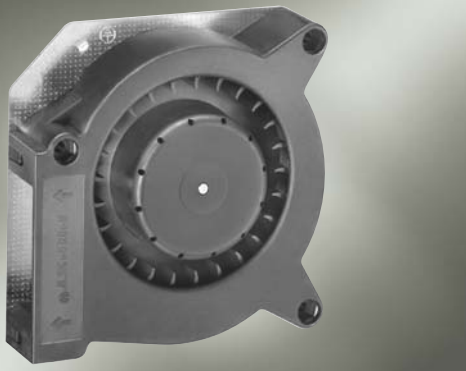
Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) eIm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) eIm-papst Standard	Life expectancy L <sub>10Δ</sub> (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM												
RL 65-21/12	56	33.0	12	6.8...13.8	6.6	■	15.0	4 500	-20...+70	60 000 / 30 000	120 000	120 000	1	/2
RL 65-21/12H	61	35.9	12	6.8...13.2	6.8	■	19.2	4 900	-20...+55	55 000 / 37 500	105 000	105 000	2	
RL 65-21/14	56	33.0	24	12...26.4	6.6	■	14.0	4 500	-20...+70	60 000 / 30 000	120 000	120 000	1	
RL 65-21/14H	61	35.9	24	12...26.4	6.8	■	18.0	4 900	-20...+60	55 000 / 35 000	105 000	105 000	2	



max. 55 m³/h

# DC Radial Fans

Series RL 90 N 121 x 121 x 37 mm



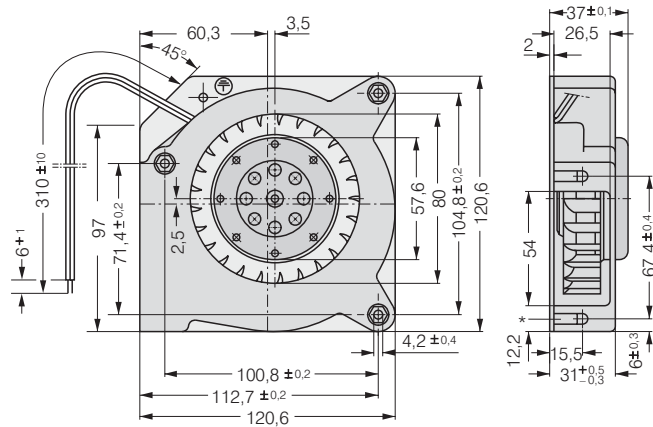
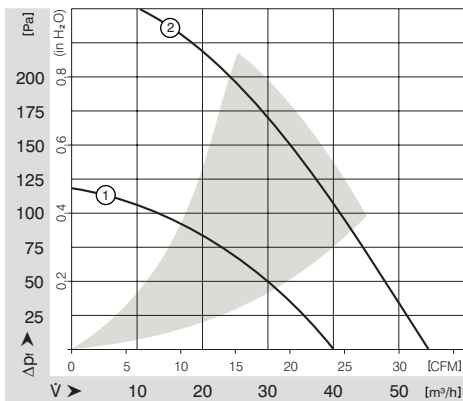
### Highlights:

- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications.
- Forward curved impeller.

### General characteristics:

- Fiberglass-reinforced plastic scroll housing and impeller; Housing base of steel plate.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Direction of air flow: axial suction, radial air outlet.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Mass: 420 g.

Nominal Data	Air Flow	Air Flow	Nominal Voltage	Voltage Range	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
Type	m³/h	CFM	V DC	V DC	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours	Hours	P. 90	
RL 90-18/12 NG	40	23.5	12	7...15	5.8	□	5.5	2 500	-10...+75	62 500 / 27 500	112 500	112 500	1	
RL 90-18/12 N	40	23.5	12	7...15	5.8	■	5.5	2 500	-30...+75	62 500 / 27 500	112 500	112 500	1	/2
RL 90-18/14 NG	40	23.5	24	12...28	5.8	□	5.0	2 500	-10...+75	62 500 / 27 500	112 500	112 500	1	
RL 90-18/14 N	40	23.5	24	12...28	5.8	■	5.0	2 500	-30...+75	62 500 / 27 500	112 500	112 500	1	/2
RL 90-18/18 NH	55	32.4	48	40...53	6.9	■	15.0	3 500	-30...+55	32 500 / 22 500	62 500	62 500	2	



\*Speed nut M4 or 8-32UNC. Screw-in depth max.12,5 min 9,0

max. 80 m<sup>3</sup>/h

# DC Radial Fans

Series RLF 100 127 x 127 x 25 mm



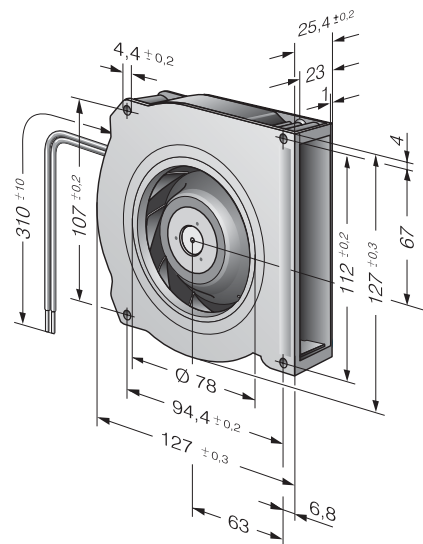
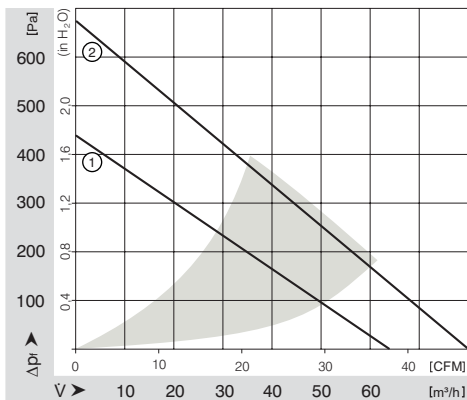
### Highlights:

- Very flat and powerful radial compact fans. Pressure-optimized blower.
- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications.
- Some models available as standard with PWM control input and speed signal.
- Backward curved impeller.

### General characteristics:

- Fiberglass-reinforced plastic scroll housing and impeller. Housing base of galvanised steel plate.
- Fully integrated electronic commutation. Protected against reverse polarity and blocking.
- Direction of air flow: axial suction, radial air outlet.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Mass: 320 g.

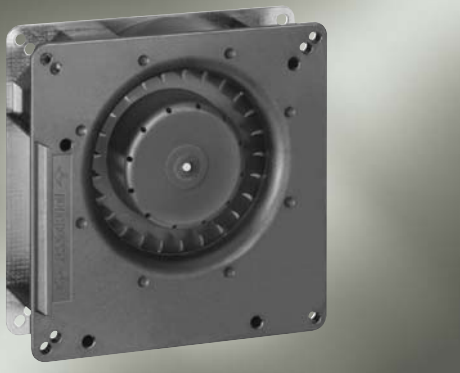
Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM												
RLF 100-11/12	64	37.7	12	8...15	6.4	■	8.0	5 100	-20...+75	80 000 / 30 000		150 000	1	/2
RLF 100-11/14	64	37.7	24	16...30	6.4	■	8.0	5 100	-20...+75	80 000 / 30 000		150 000	1	/19
RLF 100-11/18	64	37.7	48	36...60	6.4	■	8.6	5 100	-20...+75	80 000 / 30 000		150 000	1	
High Speed models with Open Collector Tacho and PWM speed control.														
NEW RLF 100-11/12/2HP-200	80	47.1	12	10...13.2	7.5	■	18.6	6 400	-20...+60	72 500 / 45 000		112 500	2	/2
NEW RLF 100-11/18/2HP-182	80	47.1	48	43...53	7.5	■	17.0	6 400	-20...+70	72 500 / 35 000		112 500	2	/2



max. 55 m³/h

# DC Radial Fans

Series RG 90 N 135 x 135 x 38 mm



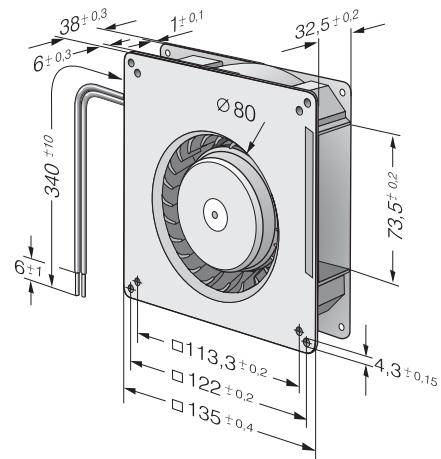
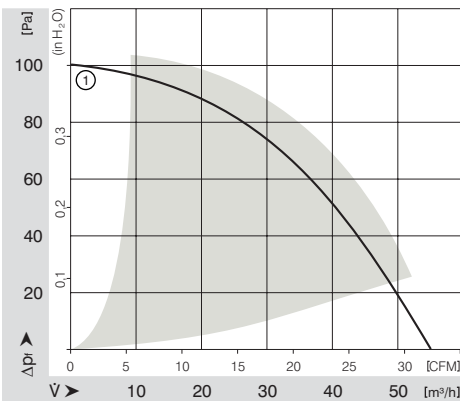
### Highlights:

- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications.
- Backward curved impeller.

### General characteristics:

- Fiberglass-reinforced plastic scroll housing and impeller; Housing base of steel plate.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Direction of air flow: axial suction, radial air outlet.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- 48 V Model: Flat pin 6.3 x 0.8 mm for grounding wire.
- Mass: 440 g.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10Δ</sub> (40 °C) see page 13	Curve	Specials
	m³/h	CFM												
RG 90-18/12 NG	55	32.4	12	7...15	5.5	□	6.0	2 200	-10...+75	62 500 / 27 500	112 500	112 500	1	
RG 90-18/12 N	55	32.4	12	7...15	5.5	■	6.0	2 200	-30...+75	62 500 / 27 500	112 500	112 500	1	/2
RG 90-18/14 NG	55	32.4	24	12...28	5.5	□	5.5	2 200	-10...+75	62 500 / 27 500	112 500	112 500	1	
RG 90-18/14 N	55	32.4	24	12...28	5.5	■	5.5	2 200	-30...+75	62 500 / 27 500	112 500	112 500	1	/2
RG 90-18/18 N	55	32.4	48	36...56	5.5	■	5.5	2 200	-30...+75	62 500 / 27 500	112 500	112 500	1	



max. 137 m<sup>3</sup>/h

# DC Radial Fans

Series RG 125 N 180 x 180 x 40 mm



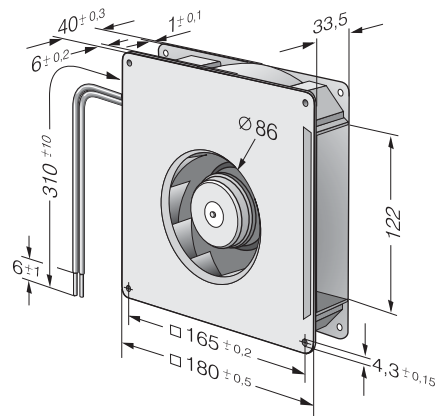
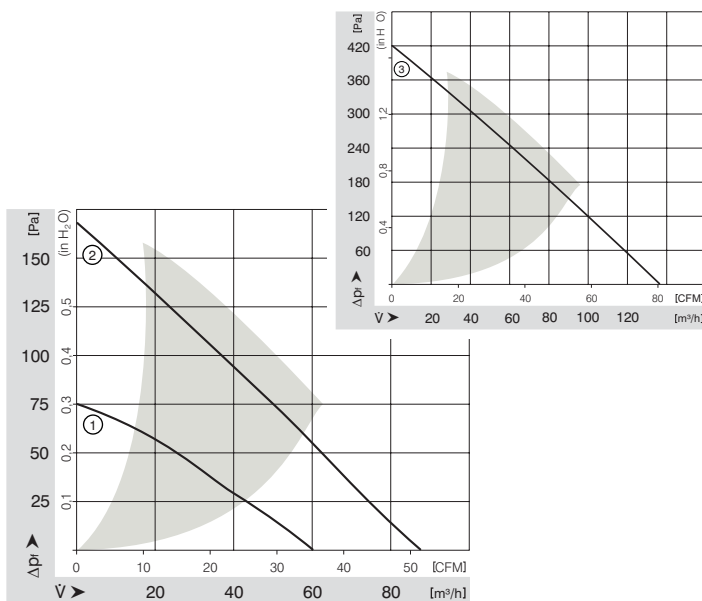
### Highlights:

- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications.
- Backward curved impeller.

### General characteristics:

- Fiberglass-reinforced plastic scroll housing and impeller; Housing base of steel plate.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Direction of air flow: axial suction, radial air outlet.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- 48 V Model: Flat pin 6.3 x 0.8 mm for grounding wire.
- Mass: 730 g.

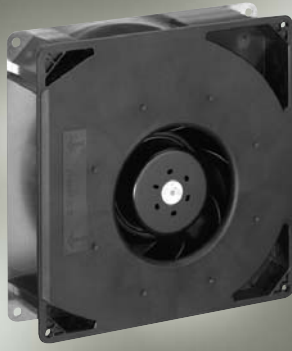
Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM												
RG 125-19/12 NM	60.0	35.3	12	7...15	4.8	■	2.0	1 750	-30...+75	70 000 / 30 000	135 000	135 000	1	
RG 125-19/12 N	87.5	51.5	12	7...15	5.8	■	5.0	2 550	-30...+75	62 500 / 27 500	125 000	125 000	2	/2; /12
RG 125-19/14 NM	60.0	35.3	24	12...28	4.8	■	2.0	1 750	-30...+75	70 000 / 30 000	135 000	135 000	1	
RG 125-19/14 N	87.5	51.5	24	12...28	5.8	■	5.0	2 550	-30...+75	62 500 / 27 500	125 000	125 000	2	/2
RG 125-19/18 N	87.5	51.5	48	36...56	5.8	■	5.0	2 550	-30...+75	62 500 / 27 500	125 000	125 000	2	/2
NEW RG 125-19/18 NH	137	80.6	48	36...56	7.0	■	19.0	4 000	-20...+70	55 000 / 27 500	110 000	110 000	3	



max. 209 m<sup>3</sup>/h

# DC Radial Fans

Series RG 160 N 220 x 220 x 56 mm



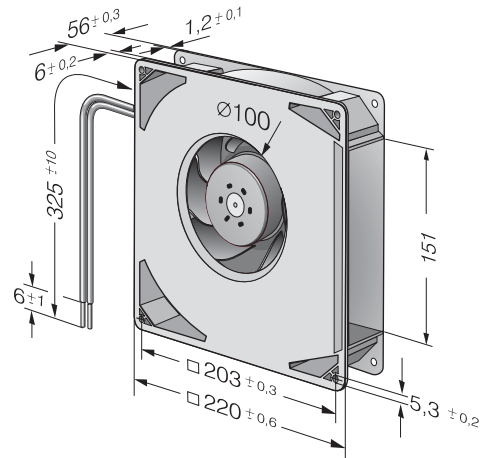
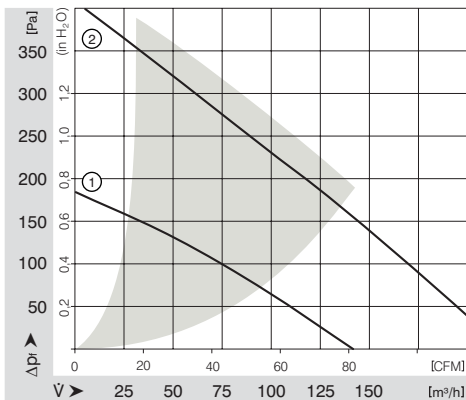
### Highlights:

- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications.
- Backward curved impeller.

### General characteristics:

- Fiberglass-reinforced plastic scroll housing and impeller; Housing base of steel plate.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Direction of air flow: axial suction, radial air outlet.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- 48 V Model: Flat pin 6.3 x 0.8 mm for grounding wire.
- Mass: 1.4 kg.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10Δ</sub> (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM												
RG 160-28/12 NM	139	81.1	12	7...14	5.6	■	7.5	1 900	-20...+70	80 000 / 40 000	160 000	1		
RG 160-28/12 N	209	123.0	12	7.5...14	6.6	■	21.0	2 850	-20...+70	70 000 / 35 000	140 000	2	/12	
RG 160-28/14 NM	139	81.1	24	12...28	5.6	■	7.0	1 900	-20...+70	80 000 / 40 000	120 000	1		
RG 160-28/14 N	209	123.0	24	12...28	6.6	■	20.0	2 850	-20...+70	70 000 / 35 000	120 000	2	/2	
RG 160-28/18 N	209	123.0	48	28...60	6.6	■	20.0	2 850	-20...+70	70 000 / 35 000	120 000	2	/12	

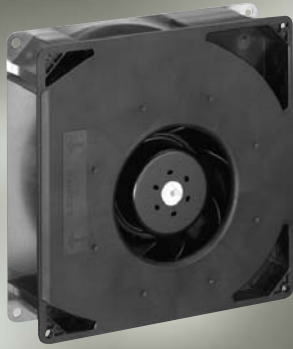




max. 370 m<sup>3</sup>/h

# DC Radial Fans

Series RG 160 NTD TURBOFAN 220 x 220 x 56 mm



### Highlights:

- Control inputs, alarm and speed signals available on request.
- 3-phase fan drive with high degree of running smoothness.
- High pressure built-up.
- Backward curved impeller.

### General characteristics:

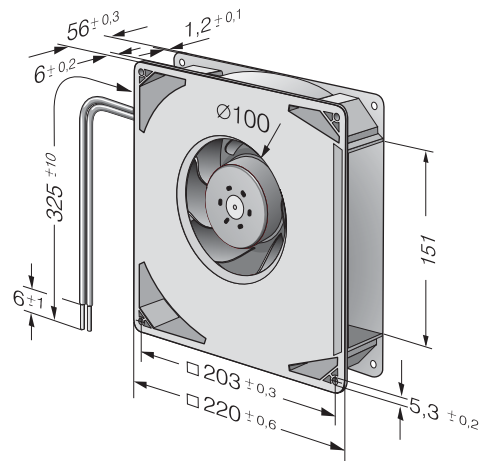
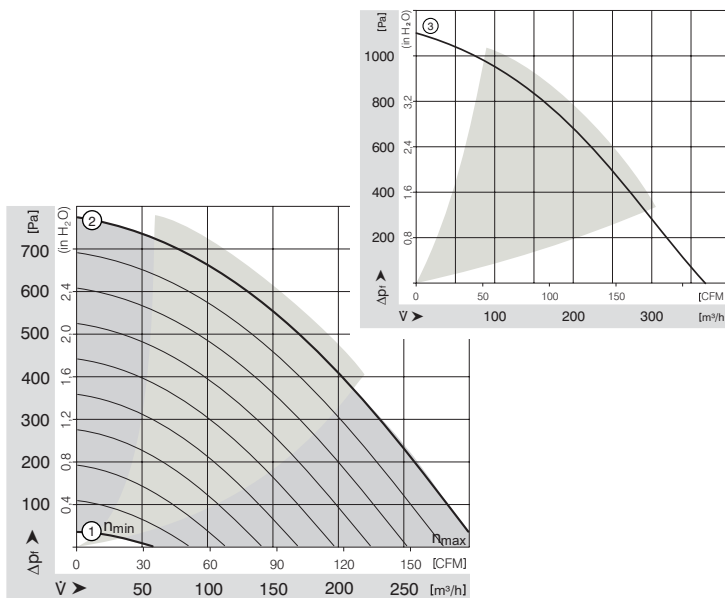
- Fiberglass-reinforced plastic scroll housing and impeller; Housing base of galvanised steel plate.
- Fully integrated electronic commutation.
- Direction of air flow: axial suction, radial air outlet.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends. 48 V Model: Flat pin 6.3 x 0.8 mm for grounding wire.
- Mass: 1.4 kg.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Voltage Range	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
Type		m <sup>3</sup> /h	CFM	V DC	V DC	Bel	□ / ■	Watt	min <sup>-1</sup>	°C	Hours	Hours			P.
RG 160-28/14 NTD		308	181.3	24	16...28	7.5	■	64.0	4 200	-20...+60	55 000 / 35 000	110 000		2	
RG 160-28/14 NTDH		370	217.8	24	16...28	7,8	■	101.0	5 000	-20...+60	50 000 / 32 500	102 500		3	
min. max.	RG 160-28/14 NTD...	59	34.7	24	16...28	—	■	2.0	800	-20...+60	55 000 / 27 500	110 000		1	90-96;100-102
		308	217.8			7.5		64.0							
min. max.	RG 160-28/18 NTD...	59	181.3	48	38...57	—	■	2.0	800	-20...+70	55 000 / 27 500	110 000		1	90-96;100-102
		308	217.8			7.5		59.0							

Models RG 160-28/14 NTD... and RG 160-28/18 NTD... are available in customer-specific, custom-developed variants only.

The data specified here 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 88.



max. 104 m<sup>3</sup>/h

# DC Radial Fans

Series REF 100 104 Ø x 25 mm



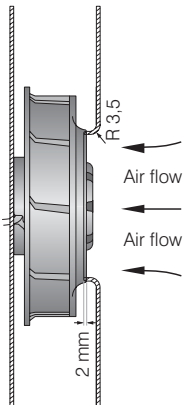
### Highlights:

- Pressure-optimized blower.
- Very flat and powerful radial compact fans.
- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications.
- Backward curved impeller.

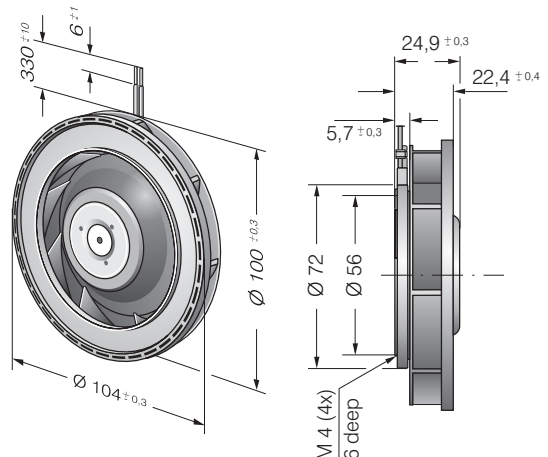
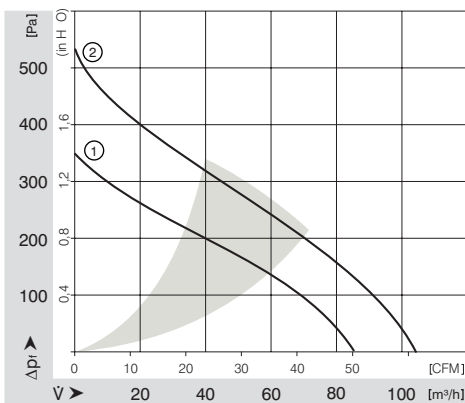
### General characteristics:

- Fiberglass-reinforced plastic scroll housing and impeller.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Direction of air flow: axial suction, radial air outlet.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Mass: 160 g.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM												
REF 100-11/12	86	50.6	12	8...15	6.3	■	7.5	5 400	-20...+75	80 000 / 30 000	135 000	1	/2	
REF 100-11/14	86	50.6	24	16...30	6.3	■	7.5	5 400	-20...+75	80 000 / 30 000	135 000	1	/2	
REF 100-11/18	86	50.6	48	36...60	6.3	■	7.5	5 400	-20...+75	80 000 / 30 000	135 000	1	/2	
REF 100-11/18 H	104	61.2	48	36...56	6.9	■	14.8	6 700	-20...+70	67 500 / 30 000	120 000	2		



The air flow and noise level of fans without external housing depends on the installation conditions. The stated air flow and noise levels have been measured under the following conditions:  
Centrifugal fan mounted on a base plate 127 x 127 mm.  
Cover plate 127 x 127 mm with an air-inlet of Ø 70 mm, concentric to the blower wheel.



max. 190 m<sup>3</sup>/h

# DC Radial Fans

Series RER 101 101 Ø x 52 mm



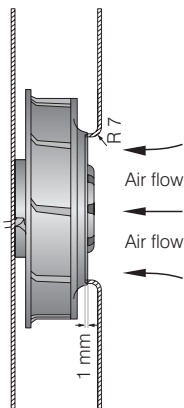
### Highlights:

- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications.
- Backward curved impeller.

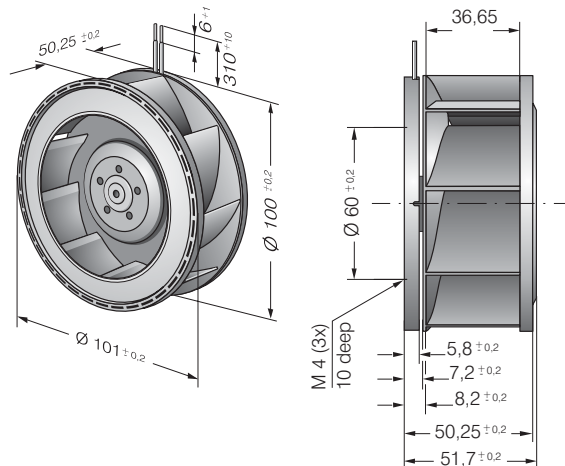
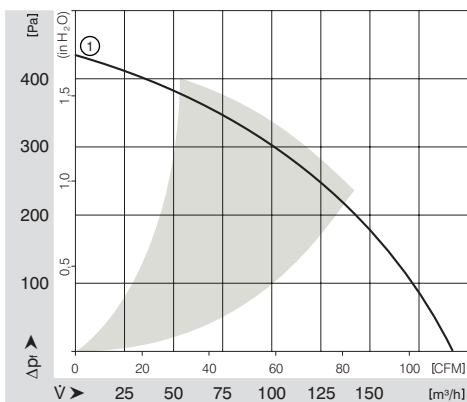
### General characteristics:

- Fiberglass-reinforced plastic scroll housing and impeller.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Direction of air flow: axial suction, radial air outlet.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Mass: 305 g.

Nominal Data	Air Flow	Air Flow	Nominal Voltage	Voltage Range	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
Type	m <sup>3</sup> /h	CFM	V DC	V DC	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours	Hours	P. 96	
NEW RER 101-36/12NHH	190	111.8	12	9..13.6	7.2	■	20.5	5 900	-20...+70	60 000 / 30 000	120 000	120 000	1	
RER 101-36/14NHH	190	111.8	24	18..27.2	7.2	■	20.0	5 900	-20...+70	60 000 / 30 000	120 000	120 000	1	
RER 101-36/18NHH	190	111.8	48	43...52	7.2	■	19.0	5 900	-20...+70	60 000 / 30 000	120 000	120 000	1	/19



The air flow and noise level of fans without external housing depends on the installation conditions. The stated air flow and noise levels have been measured under the following conditions:  
Centrifugal fan mounted on a base plate 148 x 148 mm.  
Cover plate 148 x 148 mm with an air-inlet of Ø 66 mm, concentric to the blower wheel.



max. 116 m<sup>3</sup>/h

# DC Radial Fans

Series RER 125 N 138 Ø x 35 mm



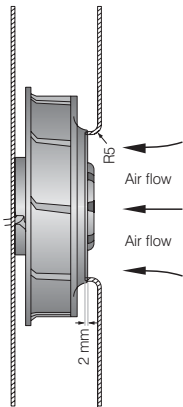
### Highlights:

- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications.
- Backward curved impeller.

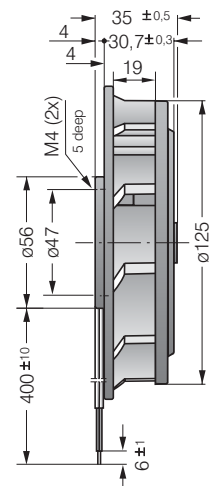
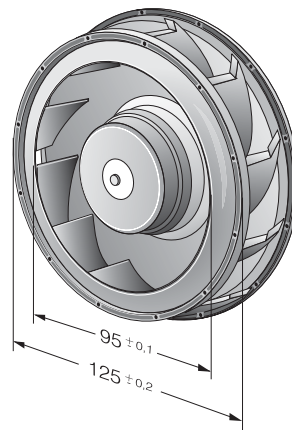
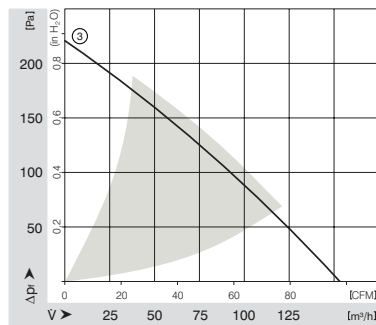
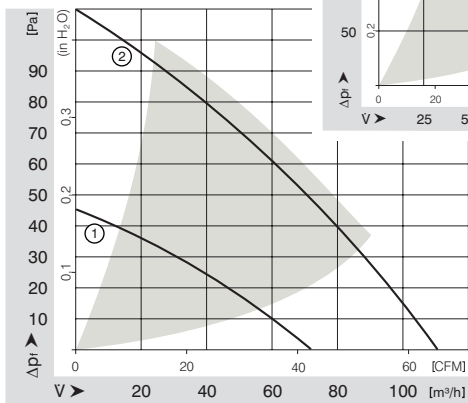
### General characteristics:

- Fiberglass-reinforced plastic scroll housing and impeller.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Direction of air flow: axial suction, radial air outlet.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Mass: 320 g.

Nominal Data	Air Flow	Air Flow	Nominal Voltage	Voltage Range	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
Type	m <sup>3</sup> /h	CFM	V DC	V DC	Bel	□ / ■	Watt	min <sup>-1</sup>	°C	Hours	Hours	Hours	P. 90/92	
RER 125-19/12 N	110	64.7	12	7...15	5.7	■	4.5	2 650	-30...+75	62 500 / 27 500	125 000	125 000	2 /12	
RER 125-19/14 NM	74	43.6	24	12...28	4.8	■	2.0	1 750	-30...+75	62 500 / 27 500	125 000	125 000	1	
RER 125-19/14 N	110	64.7	24	12...28	5.7	■	4.5	2 650	-30...+75	62 500 / 27 500	125 000	125 000	2 /2	
NEW RER 125-19/14 NH	166	97.7	24	12...28	7.0	■	13.0	4 000	-20...+70	55 000 / 27 500	110 000	110 000	3	
RER 125-19/18 N	110	64.7	48	36...56	5.7	■	5.0	2 650	-30...+75	62 500 / 27 500	125 000	125 000	2	



The air flow and noise level of fans without external housing depends on the 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 blower wheel.



max. 255 m<sup>3</sup>/h

# DC Radial Fans

Series RER 160 N 165 Ø x 51 mm



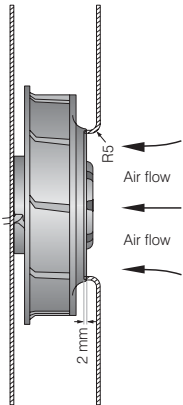
### Highlights:

- Optional Vario-Pro: Highly adaptable software configuration of the fan enables a tailor-made solution to the specific requirements of your applications.
- Backward curved impeller.

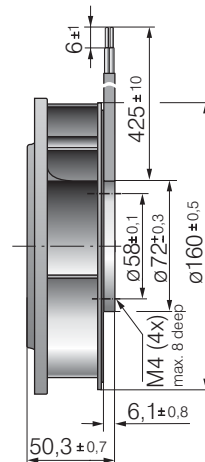
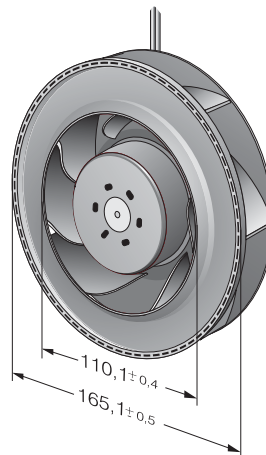
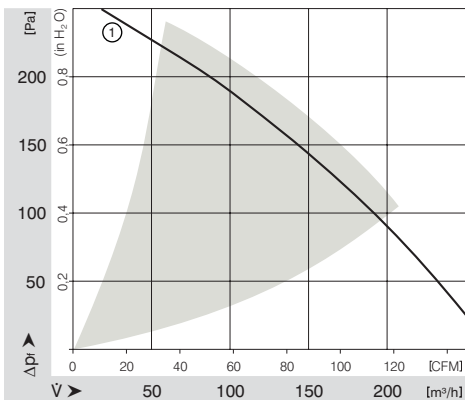
### General characteristics:

- Fiberglass-reinforced plastic scroll housing and impeller.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Direction of air flow: axial suction, radial air outlet.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Mass: 590 g.

Nominal Data	Air Flow	Air Flow	Nominal Voltage	Voltage Range	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
Type	m <sup>3</sup> /h	CFM	V DC	V DC	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours	Hours	P. 92	
RER 160-28/12 N	255	150.1	12	7...14	6.4	■	19.0	3 000	-20...+70	75 000 / 35 000	140 000	140 000	1	/12
RER 160-28/14 N	255	150.1	24	12...28	6.4	■	19.0	3 000	-20...+70	75 000 / 35 000	140 000	140 000	1	
RER 160-28/18 N	255	150.1	48	28...60	6.4	■	19.0	3 000	-20...+70	75 000 / 35 000	140 000	140 000	1	/12



The air flow and noise level of fans without external housing depends on the 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 blower wheel.



max. 354 m<sup>3</sup>/h

# DC Radial Fans

Series RER 160 NTD TURBOFAN 165 Ø x 51 mm



### Highlights:

- Control inputs, alarm and speed signals available on request.
- 3-phase fan drive with high degree of running smoothness.
- High pressure built-up.
- Backward curved impeller.

### General characteristics:

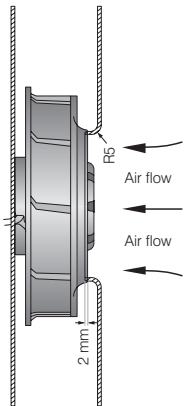
- Fiberglass-reinforced plastic scroll housing and impeller; Housing base of steel plate.
- Fully integrated electronic commutation.
- Direction of air flow: axial suction, radial air outlet.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Mass: 590 g.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Voltage Range	Sound Power	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
Type		m <sup>3</sup> /h	CFM	V DC	V DC	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours		P.	
min. max.	RER 160-28/18 NTD...	66	38.8	48	38...57	—	■	2.0	800	-20...+70	55 000 / 27 500	110 000	1	90-96;100-102	
		354	208.4			7.4		43.0	4 200						2

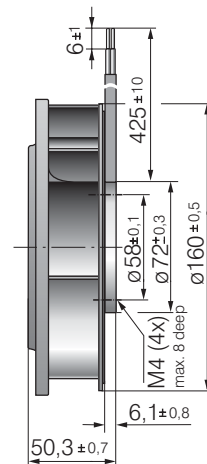
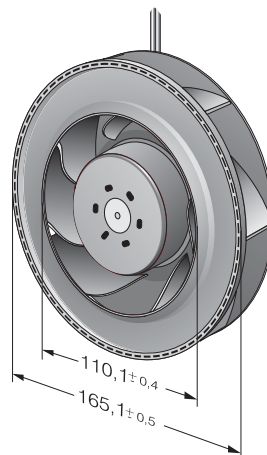
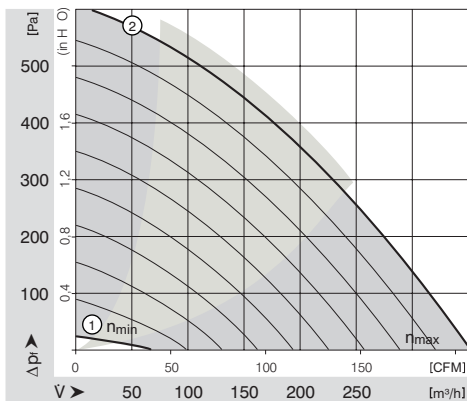
Model RER 160-28/18 NTD... is available in customer-specific, custom-developed variant only.

The data specified here 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 88.



The air flow and noise level of fans without external housing depends on the 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 blower wheel.





max. 155 m<sup>3</sup>/h

# DC-Cross-flow Blowers

Series QG 030 201...413 x 50 x 48 mm



### Highlights:

- Tangential fans with high air flow.
- Large outlet area.

### General characteristics:

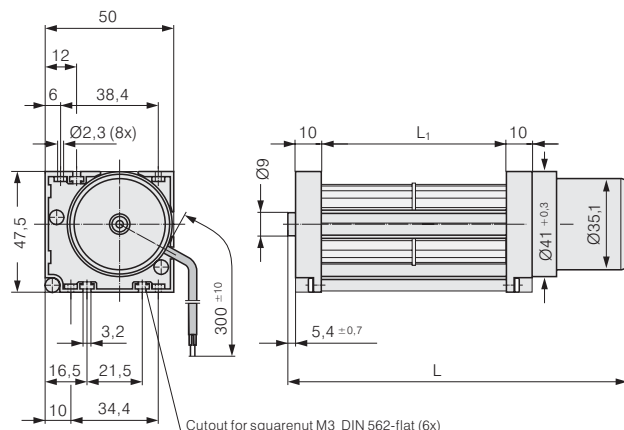
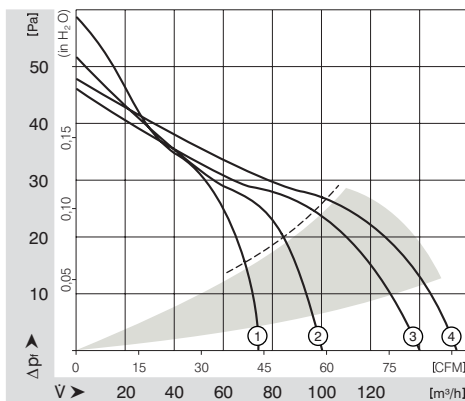
- Motor with ball bearing system. Blower wheel mounting plate with sleeve bearings.
- Fan blower and air duct housing of aluminium. Plastic flanges.
- Fully integrated electronic commutation.
- Protected against reverse polarity and blocking.
- Air exhaust through housing port.
- Electrical connection via single leads. Stripped and tinned ends.
- Mass: 235 / 290 / 380 / 415 g.

Nominal Data	Air Flow		Nominal Voltage	Voltage Range	Noise	Sound Power	Sleeve Bearings Ball Bearings	Power Input	Temperature Range	Service Life L <sub>10</sub> (40 °C) ebm-papst Standard	Service Life L <sub>10</sub> (T <sub>max</sub> ) ebm-papst Standard	Life expectancy L <sub>10</sub> Δ (40 °C) see page 13	Curve	Specials
	m <sup>3</sup> /h	CFM												
QG 030-148/12	75	44.1	12	8...14	49	5.7	□/■	6.2	-20...+60	30 000 / 10 000		32 500	1	
QG 030-198/12	100	58.9	12	8...14	51	5.8	□/■	8.0	-20...+60	30 000 / 10 000		32 500	2	
QG 030-303/12	140	82.4	12	8...14	51	5.8	□/■	8.7	-20...+60	30 000 / 10 000		32 500	3	
QG 030-353/12	155	91.3	12	8...14	51	5.9	□/■	9.6	-20...+60	30 000 / 10 000		32 500	4	
QG 030-148/14	75	44.1	24	16...28	49	5.7	□/■	6.2	-20...+60	30 000 / 10 000		32 500	1	
QG 030-198/14	100	58.9	24	16...28	51	5.8	□/■	8.0	-20...+60	30 000 / 10 000		32 500	2	
QG 030-303/14	140	82.4	24	16...28	51	5.8	□/■	8.7	-20...+60	30 000 / 10 000		32 500	3	
QG 030-353/14	155	91.3	24	16...28	51	5.9	□/■	9.6	-20...+60	30 000 / 10 000		32 500	4	

Cross-flow fans are only suitable for operation with high rate and low counterpressure.

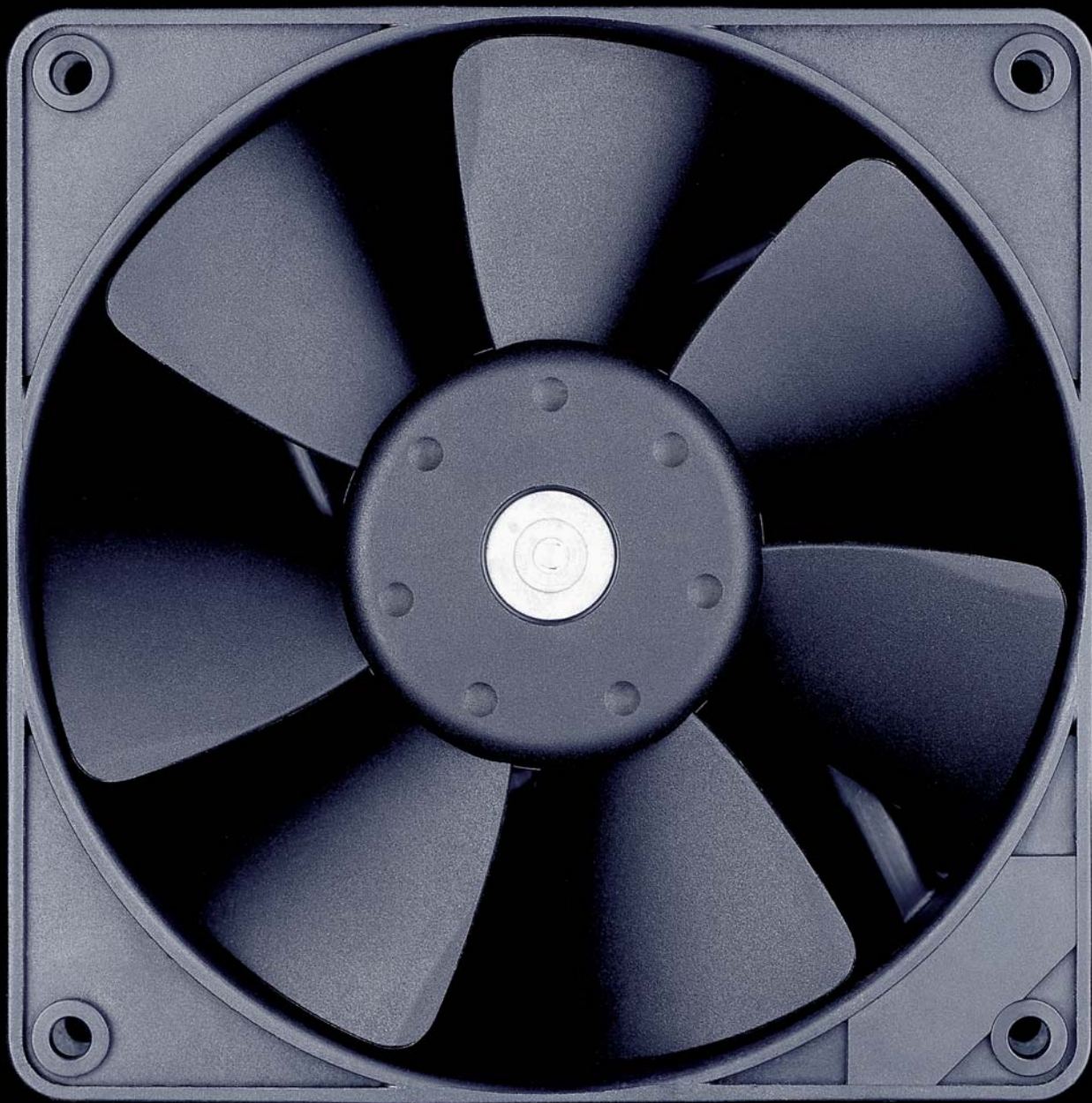
Type	Dimension:	L	L <sub>1</sub>
QG 030-148/ ..		201 <sup>+1.5</sup>	148
QG 030-198/ ..		258 <sup>+1.5</sup>	198
QG 030-303/ ..		363 <sup>+1.5</sup>	303
QG 030-353/ ..		413 <sup>+1.5</sup>	353

The service life values refer to horizontal installation of the blower.



# DC Fans with Added Features

Sensor Signal	90
Alarm Signal	94
Vario-Pro / Speed setting / Control Input	99 / 100
Protection against ambient influences	102



## Technical Information

### Cooling capacity and efficiency

Greater power density, increasing miniaturization and extreme electronic component density are posing increased demands on the cooling capacity and efficiency of fans. The intelligent and space-saving integration of the fan in the appliance configuration is therefore of major importance:

- 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.

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

#### 1. Speed adaptation via NTC sensor

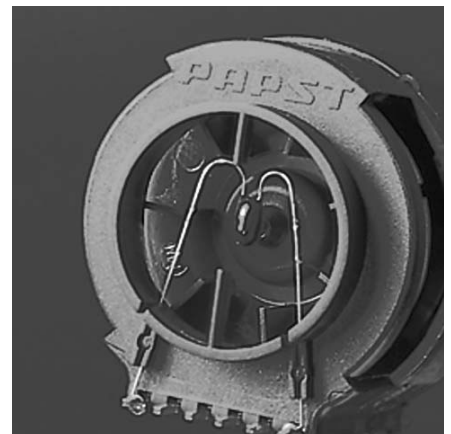
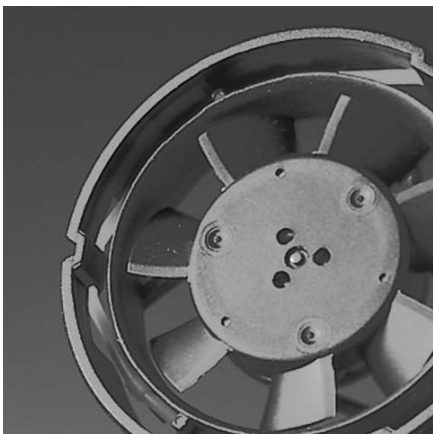
Standard fans in electronic cooling—millionfold tried and tested and nevertheless a temporary solution because standard fans have a distinct disadvantage: With constant speed and a corresponding high noise factor they continuously provide the airflow required in extreme cases. This extreme case only occurs, if it occurs at all, for a fraction of the service life. What is needed is the intelligent fan that automatically adapts to the current cooling requirements.

The ebmpapst answer: A complete range of DC fans with temperature-controlled speed adaptation - in all standard dimensions.

Installation is simple. The control electronics receive their thermal information for speed adaptation steplessly and loss-free via a temperature sensor either externally via a single lead, positioned as required, or internally directly in the fan hub in the airflow.

#### 2. DC fans with separate control input

Speed control is also possible with DC fans that have a separate control input. A variation in speed can thus be realized via a control voltage or a pulse-width modulated signal. These possibilities are used above all in devices that have appropriate standard interfaces and thus require a load-dependent variation of the fans.



Fans with TD motor  
Programmable fans  
Vario-Pro®  
Fans with sensor signal  
Fans with alarm signal



## Technical Information

### 3. Sensor signal

DC fans with sensor signal.

The integrated „electronic tacho“ continuously provides an actual speed signal for external evaluation. The user is informed at all times of the current fan speed via an extremely simple signal evaluation by the customer. The sensor signal is via a separate lead.

### 4. Alarm signal

For applications which require monitored fan operation with alarm signal, ebm-papst has numerous alarm signal versions, either a static, pre-processed or interface-compatible long-or short-term signal depending on the type of fan.

### 5. Turbo drives

Fans with three-phase EC drives and fully integrated operating electronics. These three-phase motors whose torque is virtually non-reliant on the rotor position are used for extremely high power. These motors can also be operated in both directions of rotation so that in special cases reverse operation of the fans can be realized.

### 6. Vario-Pro fans

This High-End fan concept by ebmpapst with programmed intelligence and customer-specific integrated functions makes your electronic cooling even more variable and competitive. Vario-Pro ensures fresh impetus as far as economy is concerned for all demanding cooling tasks – e.g. where reliability, more flexibility and intelligent function features such as alarm function, speed control etc. are required.

The successful concept of Vario-Pro is: Tailor-made software instead of a fixed hardware because programmed software modules for motor control and application intelligence are responsible for the work that analogue components were responsible for in the past. This central control unit of the Vario-Pro comprises of a microcontroller and an EEPROM, on which all characteristics are stored.

### 7. Protection against environmental influences

Some applications are demanding on the fans' resistance to ambient influences, such as dust, humidity, water and salt. ebm-papst offer solutions for adapting fans to various ambient conditions.

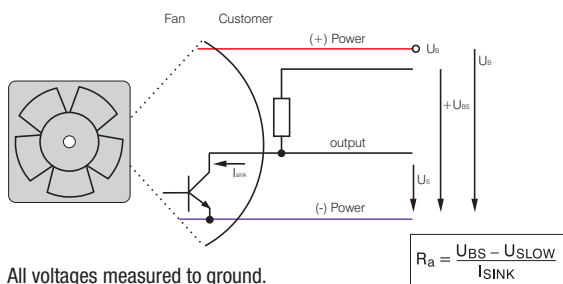


# Sensor signal /2 “tacho”



- Speed-proportional rectangular pulse for external speed monitoring of fan motor.
- 2 pulses per revolution / 6 pulses per revolution with TURBOFANS.
- Open-Collector signal output.
- Extremely wide operating voltage range (5 ... 60 V).
- Easy adaptation to user interface.
- Connection via separate lead.
- The sensor signal also serves as a major comparison variable for setting and maintaining the desired speed for interactive or controlled cooling with one or several interconnected fans.

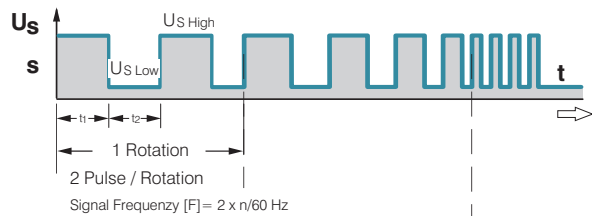
## Electrical connection



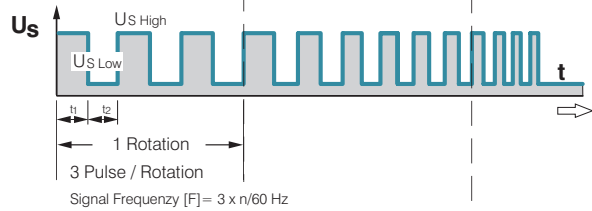
All voltages measured to ground.  
External load resistance  $R_a$  /  $U_s$  /  $U_{BS}$  required.

## Signal output voltage

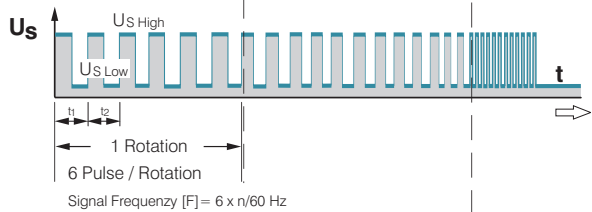
Standard signal for all models (exemptions see below)



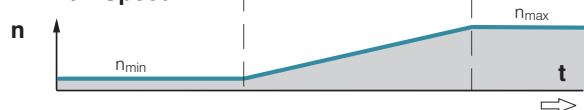
only for 4100 NH7 and NH8



6200 NTD, 6400 TD, DV 6200 TD, DV 6400 TD, RER / RG 160 NTD



## Fan Speed



Signal data	Sensor signal $U_{S, Low}$	Condition: $I_{sink}$	Sensor signal $U_{S, High}$	Condition: $I_{source}$	Sensor operating voltage $U_{BS}$	Perm. sink current $I_{sink, max}$	Fan description
Type	V DC	mA	V DC	mA	V DC	mA	Page
250	≤0.4	≤2	30	0	≤30	2	21
400 F	≤0.4	1	30	0	≤30	≤2	22
400	≤0.4	1	30	0	≤30	≤2	23
400 J	≤0.4	2	30	0	≤30	≤4	24
500 F	≤0.4	1	30	0	≤30	≤2	25
600 F	≤0.4	1	30	0	≤30	≤2	26
620	≤0.4	2	30	0	≤30	≤4	27
600 N	≤0.4	2	30	0	≤30	≤4	28
600 J	≤0.4	2	30	0	≤30	≤4	30
700 F	≤0.4	2	30	0	≤30	≤4	31
8400 N	≤0.4	2	28	0	≤28	≤4	33
8300	≤0.4	2	30	0	≤30	≤4	35
8200 J	≤0.4	2	30	0	≤30	≤4	36
3400 N	≤0.4	2	28	0	≤28	≤4	37
3300	≤0.4	2	30	0	≤30	≤4	39
3200 J	≤0.4	2	30	0	≤30	≤4	40
4400 F	≤0.4	2	30	0	≤30	≤4	41
4400 FN	≤0.4	2	30	0	≤30	≤4	42
4300 N	≤0.4	2	30	0	≤30	≤4	43
4300	≤0.4	2	30	0	≤30	≤4	44
4400	≤0.4	2	30	0	≤30	≤4	46
4212	≤0.4	2	30	0	≤30	≤4	47
4214	≤0.4	2	30	0	4-30	≤4	47
4218	≤0.4	2	30	0	4-30	≤4	47
4100 N	≤0.4	2	30	0	4-30	≤4	48
4100 NHH...H6	≤0.4	2	≤60	0	≤60	≤10	49
4100 NH7 / H8	≤0.4	2	≤60	0	60	≤20	50
DV 4100	≤0.4	2	30	0	≤30	≤4	51
5200 N	≤0.4	2	30	0	4-30	≤4	52
DV 5200	≤0.4	2	30	0	≤30	≤4	53
5112 N	≤0.4	2	15	0	≤5	≤20	54
5114 N	≤0.4	2	60	0	≤60	≤20	54
5118 N	≤0.4	2	60	0	≤60	≤20	54
5300	≤0.4	2	≤72	0	≤72	≤4	55

**Available on request:**

- Galvanically separated sensor and signal circuit.
- Varying voltage potentials for power and logic circuit.

Signal data		Sensor signal $U_{S,low}$		Condition: $I_{sink}$		Sensor signal $U_{S,high}$		Condition: $I_{source}$		Sensor operating voltage $U_{BS}$		Perm. sink current $I_{sink,max.}$		Fan description
Type	V DC	mA	V DC	mA	V DC	mA	V DC	mA	V DC	mA	Page			
7112 N	≤0.4	2	60	0	≤60	≤20	56							
7114 N	≤0.4	2	30	0	≤30	≤20	56							
7118 N	≤0.4	2	60	0	≤60	≤20	56							
7200 N	≤0.4	2	15	0	≤15	≤20	57							
6300	≤0.4	2	≤72	0	≤72	≤20	58							
6224 N	≤0.4	8	30	0	≤30	≤20	59							
6248 N	≤0.4	8	60	0	≤30	≤20	59							
DV 6200	≤0.4	2	30	0	≤60	≤20	61							
6400	≤0.4	2	60	0	≤60	≤20	63							
RL 48	≤0.4	2	28	0	4–30	≤4	73							
RL 65	≤0.4	2	30	0	≤30	≤4	74							
RL 90 N	≤0.4	2	30	0	≤30	≤4	75							
RLF 100	≤0.4	2	30	0	≤30	≤4	76							
RG 90 N	≤0.4	2	30	0	≤30	≤4	77							
RG 125 N	≤0.4	2	30	0	≤30	≤4	78							
RG 160 N	≤0.4	2	30	0	≤30	≤20	79							
REF 100	≤0.4	2	30	0	≤30	≤4	81							
RER 125	≤0.4	2	30	0	≤30	≤4	83							

**Attention:**

With these fan options, deviations in regard to temperature range, voltage range and power consumption are possible compared with standard fan data.

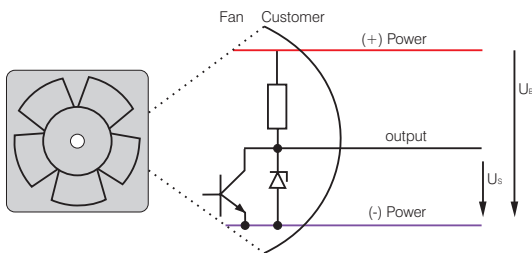


# Sensor signal /12



- 2 pulses per revolution / 6 pulses per revolution with TURBOFANS.
- TTL-compatible.
- Integrated pull-up resistor.
- Connection via separate lead.
- The sensor signal also serves as a major comparison variable for setting and maintaining the desired speed for interactive or controlled cooling with one or more interconnected fans.

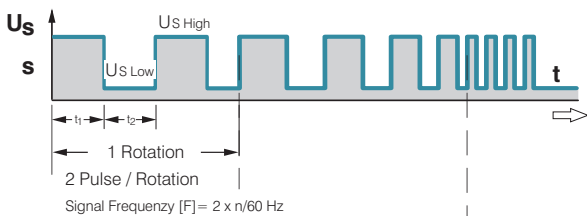
## Electrical Connection



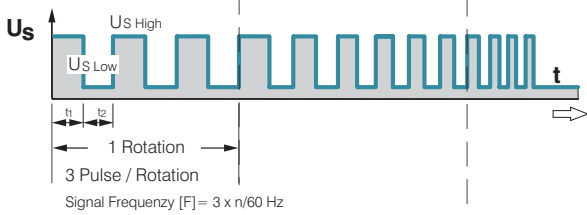
All voltages measured to ground.

## Signal output voltage

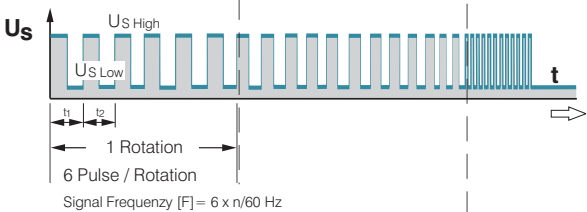
Standard signal for all models (exemptions see below)



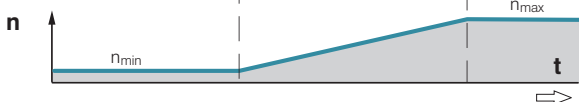
only for 4100 NH7 and NH8



6200 NTD, 6400 TD, DV 6200 TD, DV 6400 TD, RER / RG 160 NTD



## Fan Speed



Signal data	Sensor signal $U_{S, Low}$	Condition: $I_{Sink}$	Sensor signal $U_{S, High}$	Condition: $I_{Source}$	Perm. sink current $I_{Sink, max}$	Fan description
Type	V DC	mA	V DC	mA	mA	Page
614 N/12 GM	$\leq 0.4$	1	2.5–5.5	1	1	28
618 N/12 N	$\leq 0.4$	1	2.5–5.5	1	1	28
8412 N/12 H	$\leq 0.4$	1	2.5–5.5	1	1	33
8312 /12	$\leq 0.4$	1	2.5–5.5	1	1	35
8314 /12	$\leq 0.4$	1	2.5–5.5	1	1	35
8314 /12 H	$\leq 0.4$	1	2.5–5.5	1	1	35
8318 /12 HL	$\leq 0.4$	1	2.5–5.5	1	1	35
8318 /12 H	$\leq 0.4$	1	2.5–5.5	1	1	35
3318 /12 H	$\leq 0.4$	1	2.5–5.5	1	1	39
4412 F/12 GM	$\leq 0.4$	1	2.5–5.5	1	1	41
4414 F/12	$\leq 0.4$	1	2.5–5.5	1	1	41
4418 F/12	$\leq 0.4$	1	2.5–5.5	1	1	41
4312 /12 M	$\leq 0.4$	1	2.5–5.5	1	1	44
4314 /12	$\leq 0.4$	1	2.5–5.5	1	1	44
4212 /12	0.4	1	2.5–5.5	1	1	47
4212 /12 H	$\leq 0.4$	1	2.5–5.5	1	1	47
4214 /12	$\leq 0.4$	1	2.5–5.5	1	1	47
4214 /12 H	$\leq 0.4$	1	2.5–5.5	1	1	47
4218 /12	$\leq 0.4$	1	2.5–5.5	1	1	47
4218 /12 H	$\leq 0.4$	1	2.5–5.5	1	1	47
4182 N/12 X	$\leq 0.4$	1	2.5–5.5	1	1	48
4188 N/12 XM	0.4	1	2.5–5.5	1	1	48
5214 N/12 H	$\leq 0.4$	1	2.5–5.5	1	$\leq 1$	52

## Attention:

With these fan options, deviations in regard to temperature range, voltage range and power consumption are possible compared with standard fan data.

**Available on request:**

- Galvanically separated sensor and signal circuit.
- Varying voltage potentials for power and logic circuit.

Signal data	Sensor signal $U_{S, Low}$	Condition: $I_{Sink}$	Sensor signal $U_{S, High}$	Condition: $I_{Source}$	Perm. sink current $I_{Sink, max.}$	Fan description
Type	V DC	mA	V DC	mA	mA	Page
5118 N/12	≤0.4	2	2.5–5.5	1	≤20	54
7118 N/12	≤0.4	2	2.5–5.5	1	≤20	56
7214 N/12	≤0.4	2	2.5–5.5	1	≤20	57
6224 N/12 M	≤0.4	2	2.5–5.5	1	≤20	59
6224 N/12	≤0.4	2	2.5–5.5	1	≤20	59
6248 N/12	≤0.4	2	2.5–5.5	1	≤20	59
DV 6224 /12	≤0.4	2	4.5–5.25	2	≤12	61
DV 6248 /12	≤0.4	2	4.5–5.25	2	≤12	61
6424 /12 H	≤0.4	2	2.5–5.5	1	≤20	63
DV 6424 /12	≤0.4	2	4.5–5.25	2	≤12	65
DV 6448 /12	≤0.4	2	4.5–5.25	2	≤12	65
RG 125-19/12N/12	≤0.4	1	2.5–5.5	1	≤1	78
RG 160-28/12N/12	≤0.4	2	2.5–5.5	1	≤5	79
RG 160-28/18N/12	≤0.4	2	2.5–5.5	1	≤20	79
RER 125-19/12N/12	≤0.4	1	2.5–5.5	1	≤1	83
RER 160-28/12N/12	≤0.4	2	2.5–5.5	1	≤5	84
RER 160-28/18N/12	≤0.4	2	2.5–5.5	1	≤20	84

**Attention:**

With these fan options, deviations in regard to temperature range, voltage range and power consumption are possible compared with standard fan data.

# Alarm signal /17

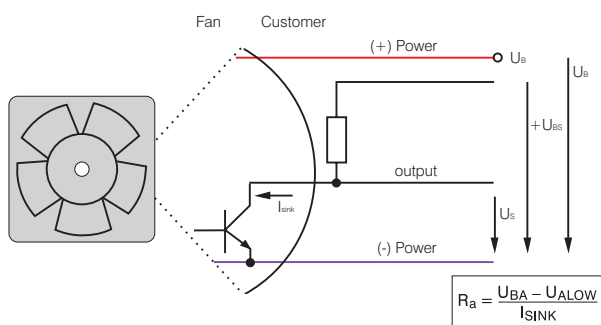


- Alarm signal for speed monitoring.
- Signal output via open collector.
- The fan emits a high continuous signal during trouble-free operation within the permissible voltage range.
- Low signal when speed limit is not reached.
- After elimination of fault, the fan returns to its desired speed; the alarm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

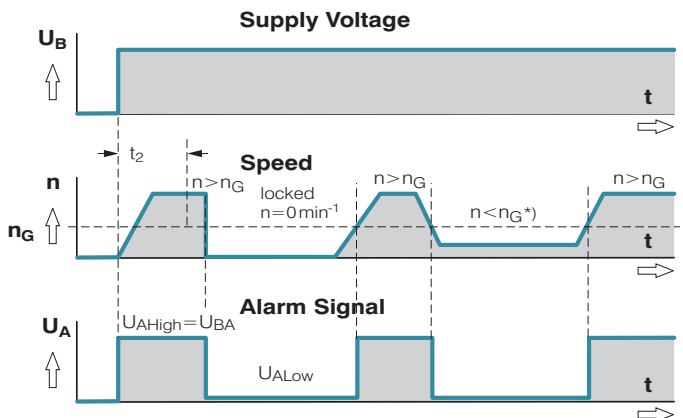
Alarm signal-data	Alarm output-voltage $U_{A,Low}$	Condition:	Condition: $I_{sink} =$	Alarm output-voltage $U_{A,High}$	Condition:	Condition: $I_{source}$	Alarm operating-voltage $U_{A,max}$	Max. permissible Sink current	Alarm delay time $t_2$	Condition:	Speed limit $n_G$	Fan description
Type	V DC		mA	V DC		mA	V DC	mA	S		min <sup>-1</sup>	Page
8318 /17	≤0.4	$n < n_G$	2	60	$n > n_G$	0	≤60	20	≤15	*	1500 ± 100	35
8318 /17 H	≤0.4	$n < n_G$	2	60	$n > n_G$	0	≤60	20	≤15	*	1500 ± 100	35
3312 /17	≤0.4	$n < n_G$	2	60	$n > n_G$	0	≤60	20	≤15	*	1500 ± 100	39
3314 /17	≤0.4	$n < n_G$	2	60	$n > n_G$	0	≤60	20	≤15	*	1500 ± 100	39
3318 /17 H	≤0.4	$n < n_G$	2	60	$n > n_G$	0	≤60	20	≤15	*	1500 ± 100	39
4318 /17 M	≤0.4	$n < n_G$	2	60	$n > n_G$	0	≤60	20	≤15	*	1150 ± 100	44
4318 /17	≤0.4	$n < n_G$	2	60	$n > n_G$	0	≤60	20	≤15	*	850 ± 100	44
4214 /17	≤0.4	$n < n_G$	2	60	$n > n_G$	0	≤60	20	≤15	*	1150 ± 100	47
4184 N /17 X	≤0.4	$n < n_G$	2	60	$n > n_G$	0	≤60	20	≤15	*	1500 ± 100	48

**Attention:** With these fan specials, deviations as regards temperature range, voltage range and power consumption are possible compared with standard fans.

## Electrical connection



All voltages measured to ground.  
 External load resistance  $R_a$  from  $U_A$  to  $U_{BA}$  required.  
 With VARIOFANS with external temperature sensor for controlling the motor speed, the NTC sensor is not included in the scope of delivery.  
 Temperature sensor LZ 370, see Accessories.



$t_2$  = Alarm signal suppression during start-up  
 \*  $n < n_G$  by braking or blocking.

**Available on request:**

- With integrated signal latching for subsequent recognition of short-time faults.
- Alarm circuit open collector or TTL.
- Galvanically isolated for maximum device safety;  
Defects in the power circuit do not affect the alarm circuit.

Alarm signal-data	Alarm output-voltage $U_{A,Low}$	Condition:	Condition: $I_{sink} =$	Alarm output-voltage $U_{A,High}$	Condition:	Condition: $I_{source} =$	Alarm operating-voltage $U_{A,max}$	Max. permissible Sink current	Alarm delay-time $t_2$	Condition:	Speed limit $n_c$	Fan description
Type	V DC		mA	V DC		mA	V DC	mA	S		min <sup>-1</sup>	Page
4312/17 MV VARIOFAN	≤ 0.4	n < nG	2	60	n > nG	0	≤ 60	20	≤ 15	*	1500 ± 100	45
4312/17 T VARIOFAN	≤ 0.4	n < nG	2	60	n > nG	0	≤ 60	20	≤ 15	*	1500 ± 100	45
4314/17 V VARIOFAN	≤ 0.4	n < nG	2	60	n > nG	0	≤ 60	20	≤ 15	*	1150 ± 100	45
4318/17 V VARIOFAN	≤ 0.4	n < nG	2	60	n > nG	0	≤ 60	20	≤ 15	*	850 ± 100	45
5112 N/17	≤ 0.4	n < nG	2	60	n > nG	0	≤ 60	20	≤ 15	*	1250 ± 50	54
7214 N/17	≤ 0.4	n < nG	2	60	n > nG	0	≤ 60	15	≤ 15	*	1330 ± 60	57
DV 6224/17	≤ 0.4	n < nG	2	60–28	n > nG	0	≤ 60	10	10 ± 4	*	1900 ± 100	61

\* After switching on  $U_b$ **Attention:**

With these fan specials, deviations as regards temperature range, voltage range and power consumption are possible compared with standard fans.

# Alarm signal /19



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

Alarm signal-data	Alarm output-voltage $U_{A,Low}$	Condition:	Condition: $I_{SINK} =$	Alarm output-voltage $U_{A,High}$	Condition:	Condition: $I_{SOURCE} =$	Alarm operating-voltage $U_{A, max.}$	Max. permissible Sink current	Alarm delay-time $t_2$	Condition:	Speed limit $n_G$	Fan description
Type	V DC		mA	V DC		mA	V DC	mA	S		min <sup>-1</sup>	Page
8314 /19 H	≤ 0.4	$n > n_G$	2	60	$n < n_G$	0	≤ 60	20	≤ 15	*	1500 ± 100	35
4312 /19	≤ 0.4	$n > n_G$	2	60	$n < n_G$	0	≤ 60	20	≤ 15	*	1500 ± 100	44
7214 N /19	≤ 0.4	$n > n_G$	2	60	$n < n_G$	0	4.5–60	10	10 ± 4	*	1800 ± 20	57
6224 N /19	≤ 0.4	$n > n_G$	2	≤ 28	$n < n_G$	0	16–28	10	10 ± 4	*	1900 ± 100	59
RLF 100-11/14 /19	≤ 0.4	$n > n_G$	2	≤ 28	$n < n_G$	0	16–28	10	10 ± 4	*	1900 ± 100	76
RER 101-36/18N /19 H	≤ 0.4	$n > n_G$	2	≤ 28	$n < n_G$	0	16–28	10	10 ± 4	*	1900 ± 100	82

\* After switching on  $U_B$

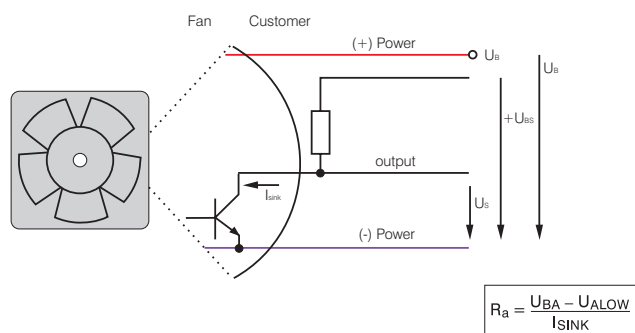
## Attention:

With these fan specials, deviations as regards temperature range, voltage range and power consumption are possible compared with standard fans.

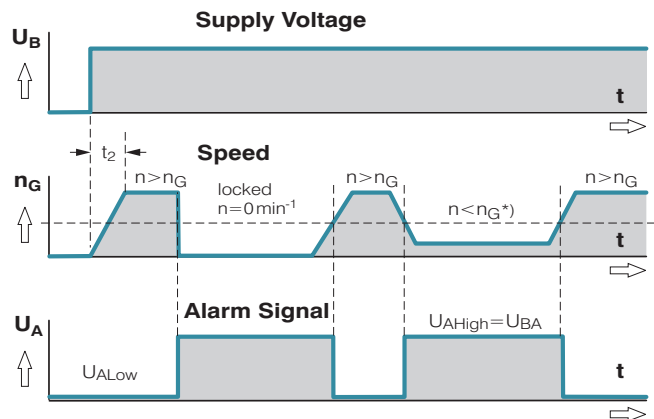
## Available on request:

- With integrated signal latching for subsequent recognition of short-term faults.
- Alarm circuit open collector or TTL.
- Galvanically separated for max. device safety; defects in power circuit have no effect on the alarm circuit.

## Electrical connection



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



$t_2$  = Alarm signal suppression during start-up.  
\*  $n < n_G$  by braking or blocking.

## Alarm signal /37



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

### Available on request:

- Alarm circuit TTL compatible.

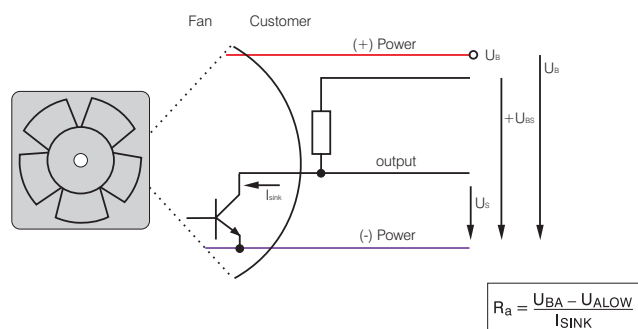
Alarm signal data	Alarm output-voltage $U_{A,Low}$	Condition:	Condition: $I_{sink} =$	Alarm output-voltage $U_{A,High}$	Condition:	Condition: $I_{source} =$	Alarm operating-voltage $U_{A, max}$	Max. permissible Sink current $I_{sink}$	Alarm delay-time $t_2$	Condition:	Speed limit $n_6$	Fan description
Type	V DC		mA	V DC		mA	V DC	mA	S		min <sup>-1</sup>	Page
612 N/37 GNV	≤ 0.4	$n \leq n_G$	2	28	$n > n_G$	0	≤ 28	10	< 1	*	0	29
8412 N/37 GMLV	≤ 0.4	$n \leq n_G$	2	28	$n > n_G$	0	≤ 28	10	< 1	*	0	33
3412 N/37 GMV	≤ 0.4	$n \leq n_G$	2	28	$n > n_G$	0	≤ 28	10	< 1	*	0	37
3412 N/37 GV	≤ 0.4	$n \leq n_G$	2	28	$n > n_G$	0	≤ 28	10	< 1	*	0	37

\* After switching on  $U_B$

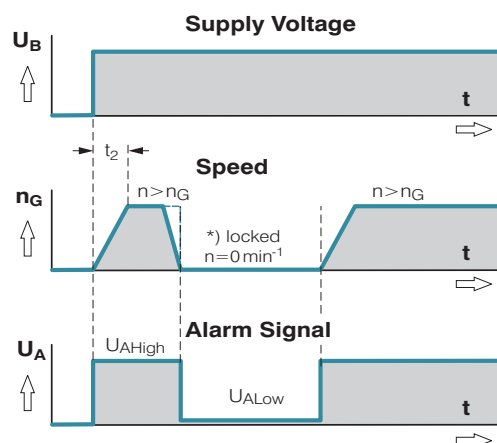
### Attention:

With these fan specials, deviations as regards temperature range, voltage range and power consumption are possible compared with standard fans.

### Electrical connection



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



$t_2$  = Alarm signal suppression during start-up.

\*  $n < n_6$  by braking or blocking.



# Alarm signal /39



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

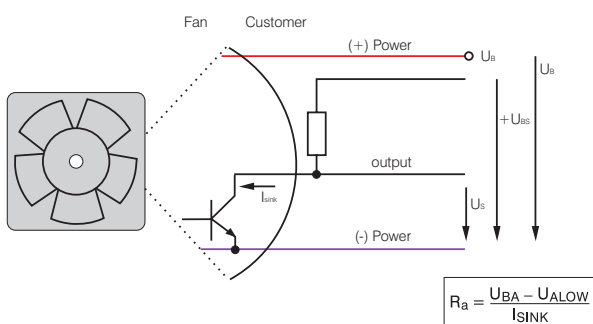
Alarm signal-data	Alarm output-voltage $U_{A,Low}$	Condition:	Condition: $I_{SINK} =$	Alarm output-voltage $U_{A,High}$	Condition:	Condition: $I_{SOURCE} =$	Alarm operating-voltage $U_{A, max.}$	Max. permissible Sink current $I_{SINK}$	Alarm delay-time $t_2$	Condition:	Speed limit $n_0$	Fan description
Type	V DC		mA	V DC		mA	V DC	mA	S		min <sup>-1</sup>	Page
412 /39	≤0.5	n > nG	2	28	n = nG	0	≤28	10	<1	*	0	23
412 /39H	≤0.5	n > nG	2	28	n = nG	0	≤28	10	<1	*	0	23
612 /39FL	≤0.5	n > nG	2	28	n = nG	0	≤28	10	<1	*	0	26
614 N /39M	≤0.5	n > nG	2	28	n = nG	0	≤28	10	<1	*	0	28
618 N /39 N	≤0.5	n > nG	2	28	n = nG	0	≤28	10	<1	*	0	28
3412 N/39 H	≤0.5	n > nG	2	28	n = nG	0	≤28	10	<1	*	0	37
3414 N/39 HH	≤0.5	n > nG	2	28	n = nG	0	≤28	10	<1	*	0	37
4412 F/39 GL	≤0.5	n > nG	2	28	n = nG	0	≤28	10	<1	*	0	41
4414 F/39	≤0.5	n > nG	2	28	n = nG	0	≤28	10	<1	*	0	41
4418 F/39	≤0.5	n > nG	2	28	n = nG	0	≤28	10	<1	*	0	41
4414 FN/39 H	≤0.4	n > nG	2	≤30	n = nG	0	≤30	4	<1	*	0	41
4214 /39 H	≤0.4	n > nG	2	≤30	n = nG	0	≤30	4	<1	*	0	47
4218 /39 H	≤0.4	n > nG	2	≤30	n = nG	0	≤30	4	<1	*	0	47

\* after switching on  $U_B$

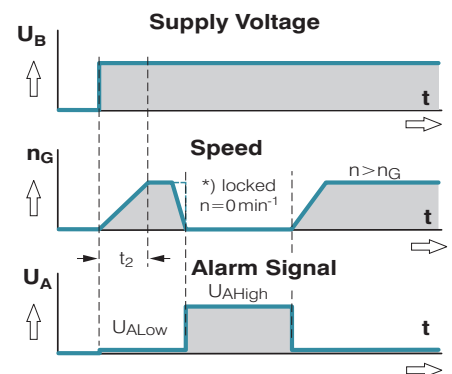
## Attention:

With these fan specials, deviations as regards temperature range, voltage range and power consumption are possible compared with standard fans.

## Electrical connection



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



$t_2$  = Alarm signal suppression during start-up  
\*  $n <$  Speed limit  $n_0$  by braking or blocking

# Vario-Pro®



- "Software instead of hardware" – aptly describes the unique fan concept, equipped at the plant with tailor-made intelligence for cooling electronics.
- Flexible configuration using software, allows quicker availability, sampling from the factory and the ability to supply customer-specific solutions in any quantity.

## Vario-Pro-Features

### Externally Speed setting

- Speed Setting via temperature, PWM or analog control voltage. On Page 100 (Speed setting).
- Description of speed curve with up to 14 selectable interpolation points. Linear interpolation between the points.
- 0 rpm. possible.
- Recognition of sensor failure: In case of loss of sensor, the fan operates at programmable (fail-safe) speed.

### Alarm- and tacho functions

- Optional alarm/or tacho function
- Selectable alarm speed limit (with hysteresis) and alarm delay time
- Latching of alarm signal
- Delay only when starting or permanently active
- Output signal "High" or "Low" in case of alarm
- Optional alarm when temperature sensor fails.
- Optional alarm in case of excess temperature.

### Motor management

- High control accuracy due to digital motor management
- Higher operating efficiency due to optimum adaption of motor hardware and software.

Fan series	Page
620	27
8400 N	33
8300	35
8200 J	36
3400 N	37
3300	39
3200 J	40
4400 FN	42
4300	44
4200	47
4100 N	48
4100 NH	49
4100 NH 7-8	50

Fan series	Page
DV 4100	51
5200 N	52
DV 5200	53
5100 N	54
5300	55
7100 N	56
7200 N	57
6300	58
6200 N	59
DV 6200	61
6400	63
DV 6400	65

Fan series	Page
RL 90 N	75
RLF 100	76
RG 90 N	77
RG 125 N	78
RG 160 N	79
REF 100	81
RER 101	82
RER 125 N	83
RER 160 N	84

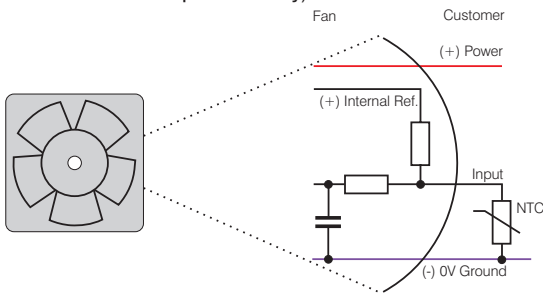
# Speed setting with temperature



- ebmpapst fans can come equipped with optional fan speed control.
- Temperature, analog voltage or a PWM can serve as control variables.

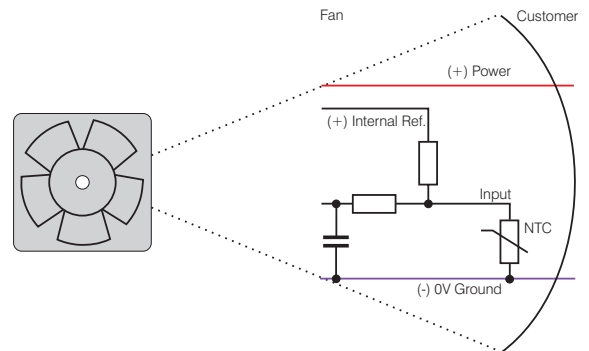
## External Temperature sensor Type T

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

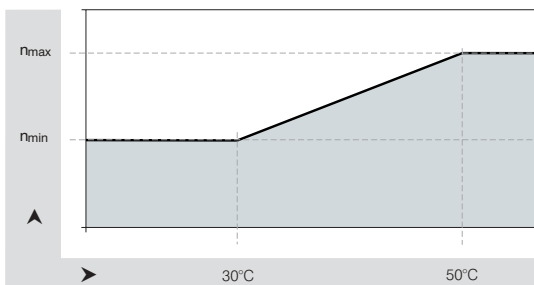


## Internal Temperature sensor Type I

- NTC integrated in fan hub.



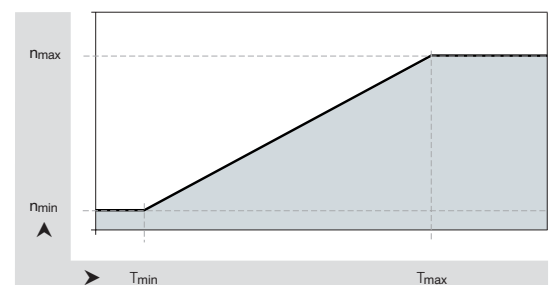
## Standard speed-temperature curve for type T and type I



$$n_{\min} \approx \frac{1}{2} n_{\max}$$

$$T_{\min} \approx 30\text{ }^{\circ}\text{C}; T_{\max} = 50\text{ }^{\circ}\text{C}$$

## Optionally available with user-selectable temperature-speed curve control



$$n_{\min} \approx 800\text{ }^1/\text{min}$$

$$n_{\max} \text{ model-dependent}$$

$$T_{\min} \approx 5\text{ }^{\circ}\text{C}$$

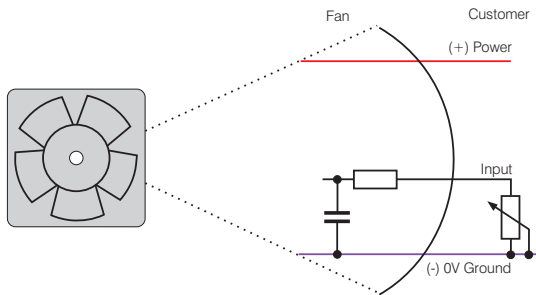
$$T_{\max} \leq 85\text{ }^{\circ}\text{C, model-dependent}$$

# Speed Setting with control voltage or PWM

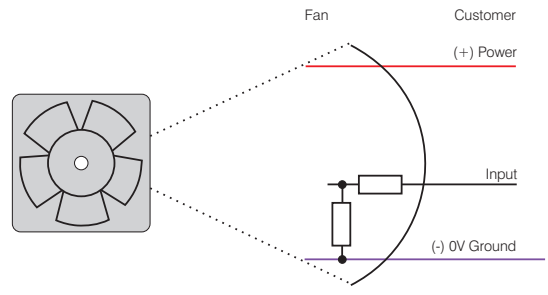


## Speed setting via control voltage Type A

– Standard control range 0 ... 5 V.



– Optional control range 0 ... 10 V.

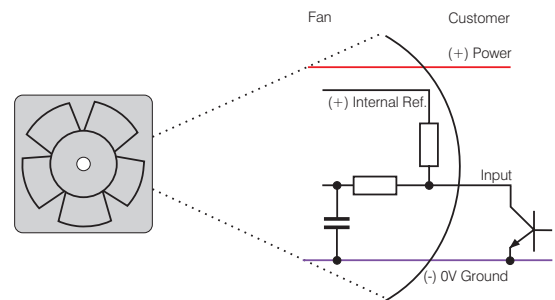


## Speed setting via PWM Type P

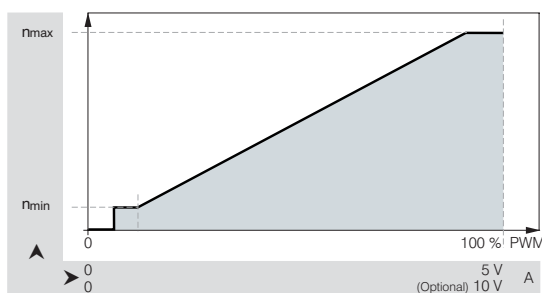
– Speed setting via PWM signal that is user generated as a controlled variable.

PWM signal: 2 KHz (0–100 %)

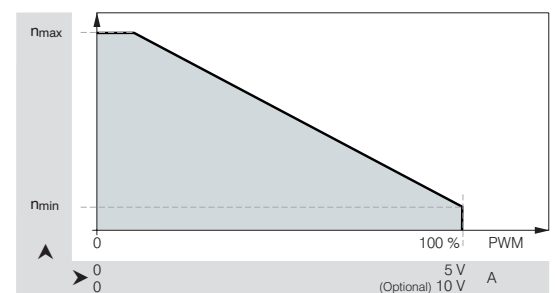
Open collector input



## Standard curve P / A



## Optional – selectable curve P / A



# Protected Fans

against environmental influences



- Meeting special requirements for a broad range of applications.
- Resistant to environmental influences, such as dust, splash water, humidity, spray water and salt fog.
- Highly competent solutions for adapting fans to environmental conditions.

## Humidity protection

A coating on the motor and printed circuit board protects against humidity and condensation.

## IP 54 protection

The motor and circuit board are coated to protect them against splash water and humidity. High protection classes up to IP 67 are available on request.

## Salt fog protection

Salt fog is extremely demanding on the resistance of the product. ebm-papst make use of technologies that protect fans and blowers from salt fog reliably and durably.

## Stainless steel bearings

Special bearings made of stainless steel provide additional protection.

The solutions that are available and in use can differ depending on size. We would be glad to develop solutions tailored for the demands of your application.



ACmaxx Overview	106
ACmaxx Axial Fans	108





## Technical Information

### Progress made by ebm-papst

The best example: The ACmaxx fans from ebm-papst, which, thanks to an ingenious yet simple improvement over conventional AC fans, provide substantial benefits.

The aim in developing the new ACmaxx series was to raise the technology standard of the conventional AC fan and, in the process, facilitate the transition to the new technology by retaining the overall mounting dimensions. In short, to ensure the fans can be replaced 1:1 without any peripheral changes or changes to the voltage situation.

The outstanding features of ACmaxx fans:

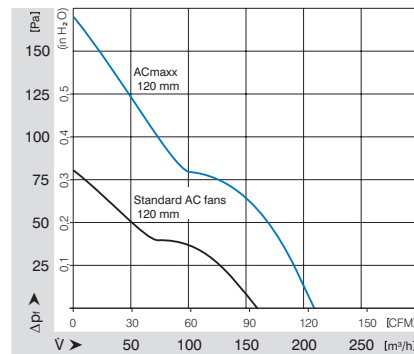
#### 1. Designed for all AC voltages

The ACmaxx generation of fans is designed for direct connection to all AC voltages and frequencies with no switching required, handling from 85 to 265 V AC and frequencies of 50 to 60 Hertz.

Voltage fluctuations in the power system are automatically compensated for. Its universal power supply allows for great potential savings in reduced stockholding and logistics.

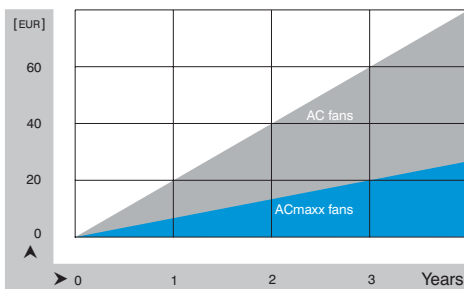
#### 2. More power, more flexibility

In contrast to conventional AC technology, the modern drive concept of this fan series is not linked to a fixed power frequency. Hence the motor speed can be increased over a wide range. As such, ACmaxx provides significantly higher air flow and increased pressure.



### 3. Highest energy efficiency

The ACmaxx drive concept is based on state-of-the-art EC technology with outstanding motor efficiency. Compared to AC fans of the same size, ACmaxx energy consumption is up to 75% lower – for higher cooling capacity! The energy difference alone means that the ACmaxx pays for itself after a few months. The savings over the entire service life, especially in systems with multiple fans, is considerable.

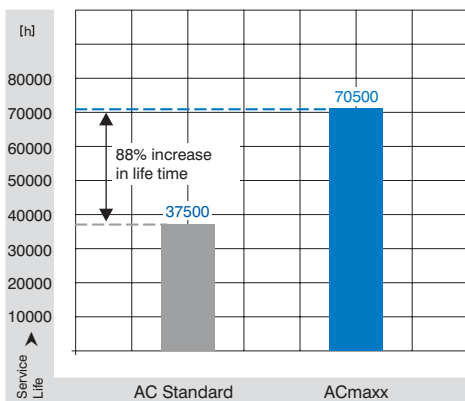


Energy cost comparison: Standard AC fan versus ACmaxx, at the higher air performance.

### 4. Long service life

The ACmaxx motor efficiency is up to 75% greater than that of conventional AC fan variants. This not only saves energy, it also means less intrinsic heating in the motor. The reduced heating has a direct, positive affect on the bearing system, which is why ACmaxx fans have a service life that is up to 85% longer than conventional AC fans!

This also lengthens the service and maintenance intervals significantly. The expense of replacement fans, and even more expensive downtimes, are kept to a minimum.



### 5. Flexible and failsafe

The flexibility of ACmaxx is one-of-a-kind. With its intelligent features, ACmaxx can be individually adapted 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 setting to alarm or speed signal outputs, ACmaxx offers optional interfaces with which you can quickly and easily implement operation monitoring.

You can find further information about these fan options in the "Specialized fans" chapter, starting on page 87. Or you can simply contact our application engineers to discuss your ideal ACmaxx fan.

### 6. Security

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

### 7. Environment

- Optional: improved humidity protection or Protection Class IP 54.



## Information Pictograms

On the pages of the catalogue and on the following overview pages, the pictograms illustrated below provide information about technically possible special versions in the fan line presented.

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 not usually available off the shelf.



### Speed Signal

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 90.



### Go / No Go Alarm

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 97.



### Alarm with limit speed

If the speed drops below a certain level defined in the fan's electronics, the fan will emit a static signal, thus providing information about whether or not the rotor is turning. For technical details, please refer to page 94.



### External temperature sensor

An NTC is connected to the fan via a separate wire and the fan changes its speed depending on the temperature at the NTC. For technical details, please refer to page 100.



### 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 100.



### 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 details, please refer to page 101.



### Analogue 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 details, please refer to page 101.



### Protection against moisture

Protection for the fan's electronics against moisture and condensation. For details, please refer to page 102.



### IP 54

Protection of motor and PCB board against splashed water and humidity. For details, please refer to page 102.



### Protection against salt spray fog

Protection of fan against the damaging effects of salt spray fog. For details, please refer to page 102.

max. 80 m<sup>3</sup>/h

# ACmaxx Axial Fans

Series AC 8300 80 x 80 x 32 mm



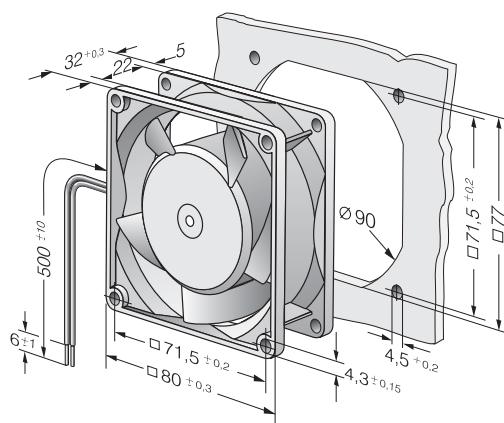
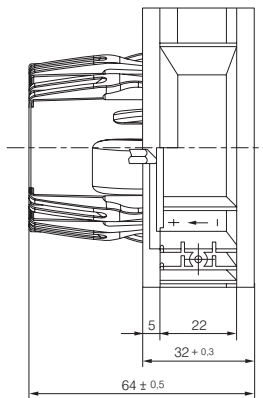
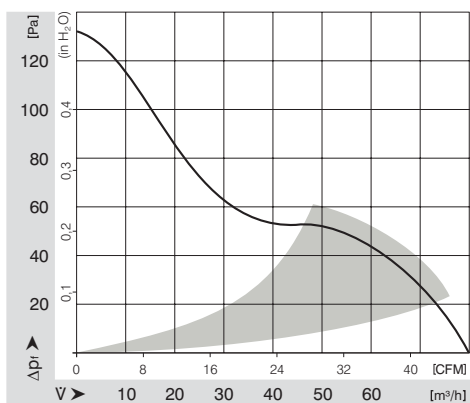
### Highlights:

- Universally suitable for all AC voltages between 85 and 265 V.
- Fan speed not dependent on line frequency.
- Significantly reduced power consumption compared to conventional AC fans.
- Open loop speed control, sensor and alarm signal possible on request.

### General attributes:

- Material: fibreglass reinforced plastic. PA impeller, PBTP housing.
- Fully integrated electronic commutation.
- Protected against blocking.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 325 g.

Nominal Date	Air Flow		Nominal Voltage	Frequency	Voltage Range	Noise		Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> at 40 °C		Curve
	m <sup>3</sup> /h	CFM				dB(A)	Bel					Hours	Hours	
AC 8300 H	80	47.1	115 / 230	50 / 60	85 ... 265	48	6.2	■	7.5	5 000	-20...+75	55 000 / 25 000	1	



max. 144 m<sup>3</sup>/h

# ACmaxx Axial Fans

Series AC 3200 J 92 x 92 x 38 mm



New Model

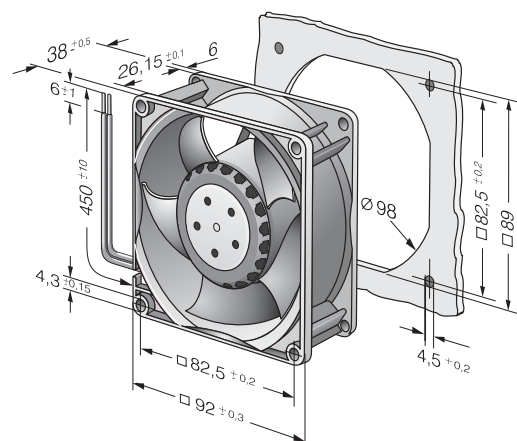
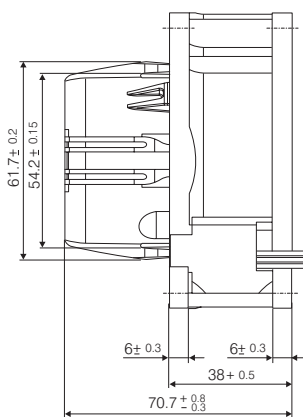
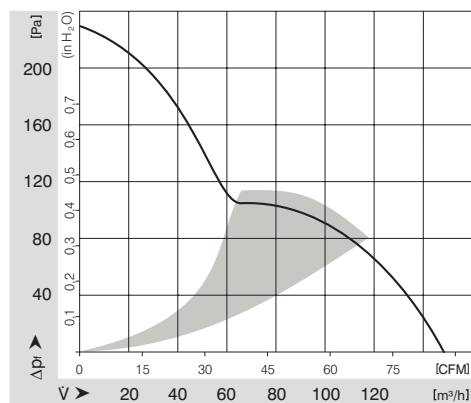
## Highlights

- Universally suitable for all AC voltages between 85 and 265 V.
- Fan speed not dependent on line frequency.
- Significantly reduced power consumption compared to conventional AC fans.
- Open loop speed control, sensor and alarm signal possible on request.
- Highly compression-insensitive characteristic curve for high air flow with high back pressure.
- Innovative impeller with winglets for low noise levels.

## General attributes:

- Material: fibreglass reinforced plastic. PA impeller, PBTP housing.
- Fully integrated electronic commutation. Protected against blocking.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 325 g.

Nominal Date	Air Flow		Nominal Voltage	Frequency	Voltage Range	Noise	Sintec-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> at 40 °C	at T <sub>max</sub>	Curve	
	m <sup>3</sup> /h	CFM												
Type	m <sup>3</sup> /h	CFM	V	Hz	V AC	dB(A)	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours	
AC 3200 JH	144	84.8	115 / 230	50 / 60	85 ... 265	55	6.4	■	11	6 800	-20...+70	70 000 / 35 000		1





max. 205 m<sup>3</sup>/h

# ACmaxx Axial Fans

Series AC 4400 FN 119 x 119 x 25 mm



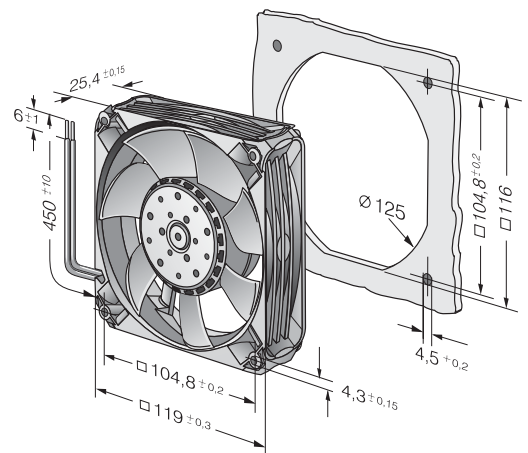
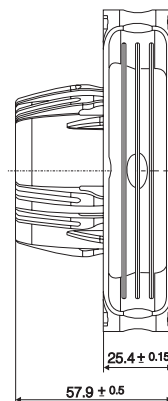
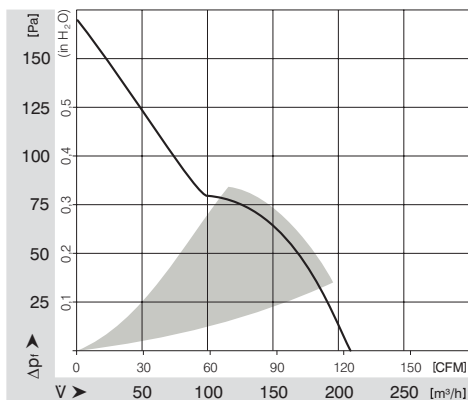
### Highlights:

- Universally suitable for all AC voltages between 85 and 265 V.
- Fan speed not dependent on line frequency.
- Significantly reduced power consumption compared to conventional AC fans.
- Open loop speed control, sensor and alarm signal possible on request.
- Highly compression-insensitive characteristic curve for high air flow with high back pressure.
- Innovative impeller with winglets for low noise levels.

### General attributes:

- Material: fibreglass reinforced plastic. PA impeller, PBTP housing.
- Fully integrated electronic commutation. Protected against blocking.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 370 g.

Nominal Date	Air Flow	Air Flow	Nominal Voltage	Frequency	Voltage Range	Noise		Sintec-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> at 40 °C	at T <sub>max</sub>	Curve
Type	m <sup>3</sup> /h	CFM	V	Hz	V AC	dB(A)	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours	
AC 4400 FNN	205	120.7	115 / 230	50 / 60	85 ... 265	53	6.2	■	12	4 850	-20...+70	60 000 / 30 000		1



max. 204 m<sup>3</sup>/h

# ACmaxx Axial Fans

Series AC 4300 119 x 119 x 32 mm



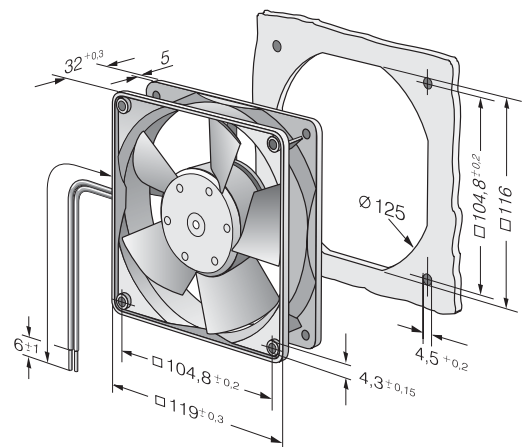
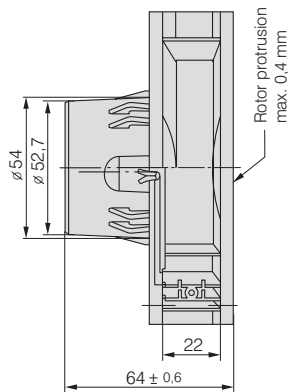
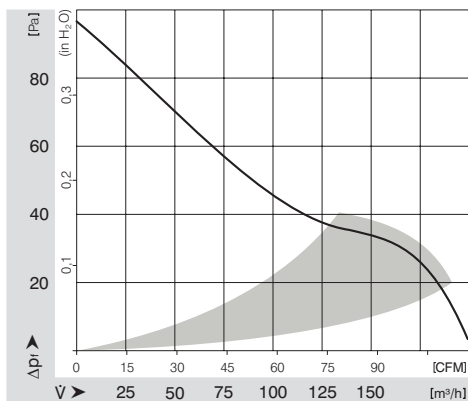
### Highlights:

- Universally suitable for all AC voltages between 85 and 265 V.
- Fan speed not dependent on line frequency.
- Significantly reduced power consumption compared to conventional AC fans.
- Open loop speed control, sensor and alarm signal possible on request.

### General attributes:

- Material: fibreglass reinforced plastic. PA impeller, PBTP housing.
- Fully integrated electronic commutation.
- Protected against blocking.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 325 g.

Nominal Date	Air Flow	Air Flow	Nominal Voltage	Frequency	Voltage Range	Noise	Sinter-Sleeve Bearings	Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> at 40 °C	at T <sub>max</sub>	Curve
Type	m <sup>3</sup> /h	CFM	V	Hz	V AC	dB(A)	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours	
AC 4300 H	204	120.1	115 / 230	50 / 60	85 ... 265	51	6.4	■	11	3 400	-20...+70	45 000 / 22 500		1



max. 350 m<sup>3</sup>/h

# ACmaxx Axial Fans

Series AC 6100 N 172 ø x 52 mm



### Highlights:

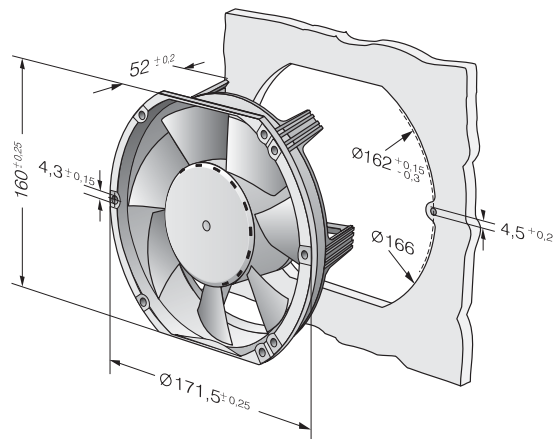
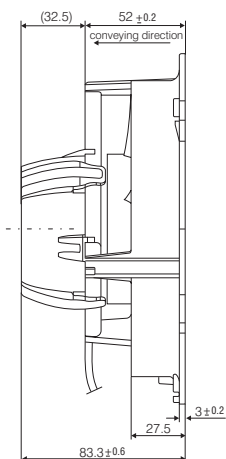
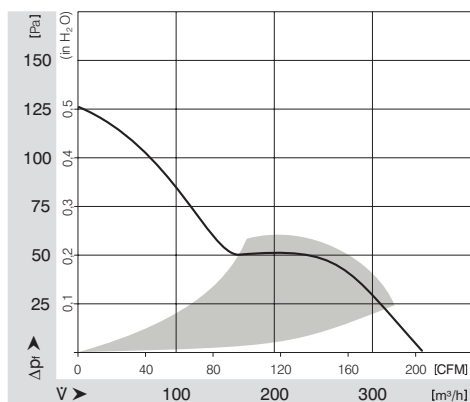
- Universally suitable for all AC voltages between 85 and 265 V.
- Fan speed not dependent on line frequency.
- Significantly reduced power consumption compared to conventional AC fans.
- Open loop speed control, sensor and alarm signal possible on request.

### General attributes:

- Material: aluminium housing, fiberglass-reinforced PA impeller. Housing with grounding lug for screw M4 x 8 (Torx).
- Fully integrated electronic commutation.
- Protected against blocking.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 760 g.

Nominal Data	Air Flow		Nominal Voltage	Frequency	Voltage Range	Noise		Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub>		Curve
	m <sup>3</sup> /h	CFM				V	Hz					V AC	dB(A)	
AC 6100 NM	350	206.0	115 / 230	50 / 60	85 ... 265	52	6.1	■	14	2 850	-20...+70	80 000 / 37 500	1	

Extended speed monitoring on request.



max. 350 m<sup>3</sup>/h

# ACmaxx Axial Fans

Series AC 6200 N 172 ø x 51 mm



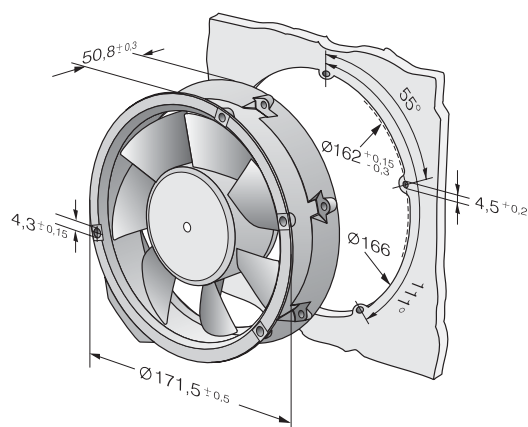
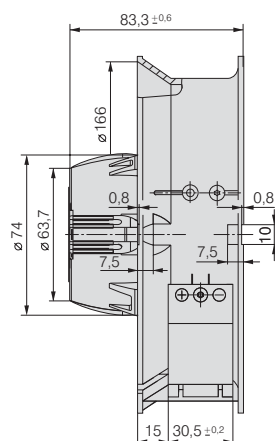
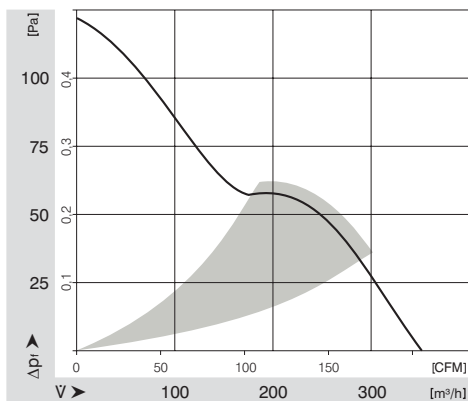
### Highlights:

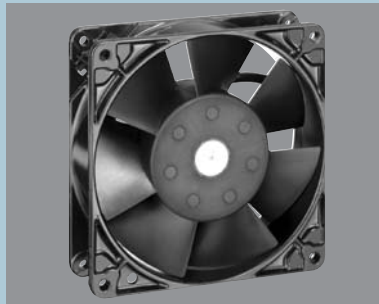
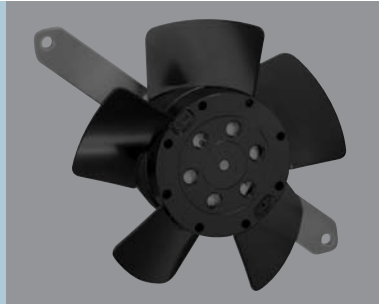
- Universally suitable for all AC voltages between 85 and 265 V.
- Fan speed not dependent on line frequency.
- Significantly reduced power consumption compared to conventional AC fans.
- Open loop speed control, sensor and alarm signal possible on request.

### General attributes:

- Material: aluminium housing, fiberglass-reinforced PA impeller. Housing with grounding lug for screw M4 x 8 (Torx).
- Fully integrated electronic commutation.
- Protected against blocking.
- Electrical connection via single leads AWG 22, TR 64. Stripped and tinned ends.
- Blowing over struts. Rotational direction CCW looking at rotor.
- Mass: 900 g.

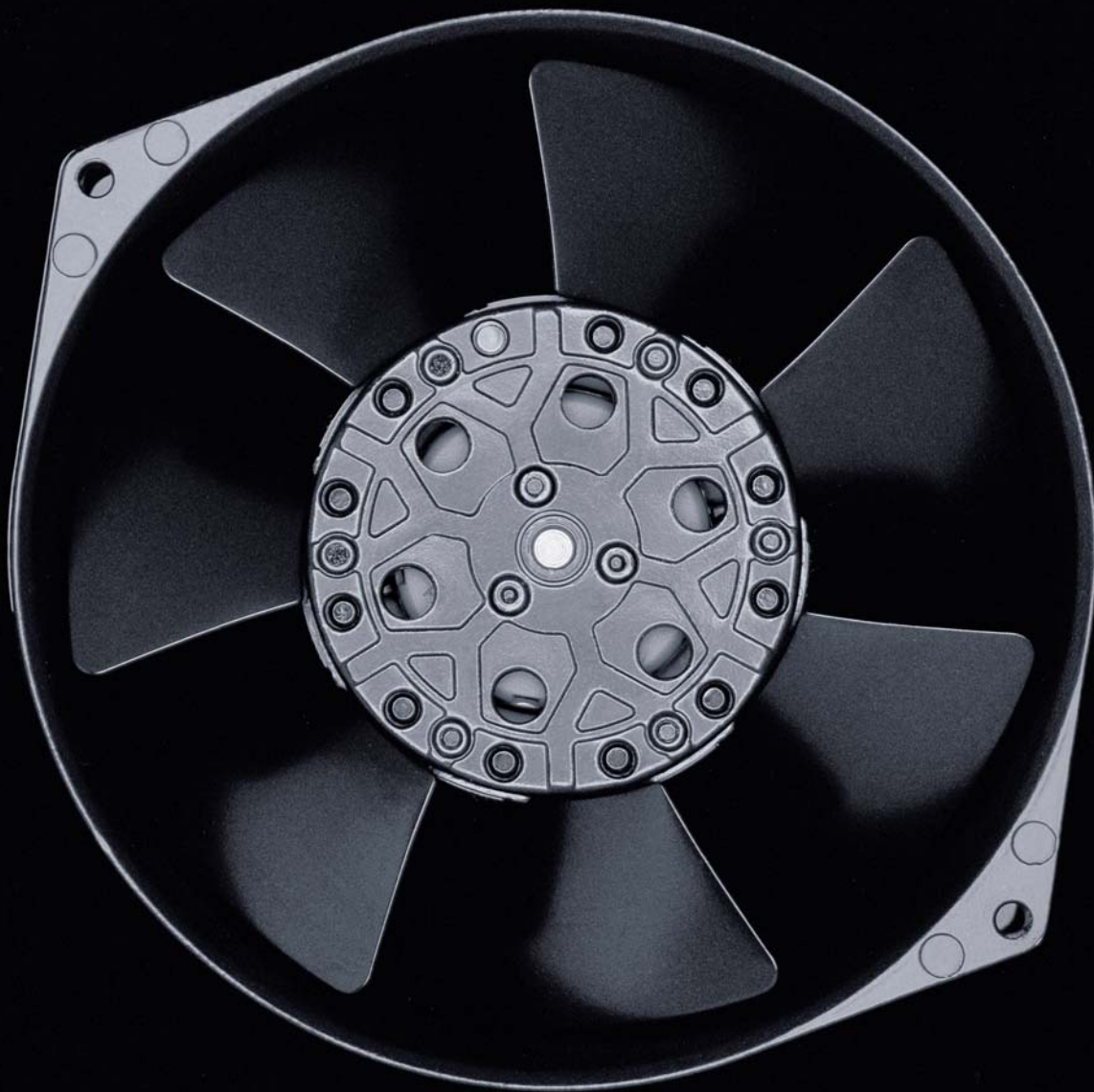
Nominal Data	Air Flow		Nominal Voltage	Frequency	Voltage Range	Noise	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> at 40 °C	at T <sub>max</sub>	Curve
	m <sup>3</sup> /h	CFM											
AC 6200 NM	350	206.0	115 / 230	50 / 60	85 ... 265	50	5.7	■	14	2 850	-20...+70	80 000 / 40 000	1





# AC Fans

AC Fans Overview	117
AC Axial Fans	118
AC Radial Fans	138





## Technical Informations

### Program

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 activity, millions of units in series production and competence in innovation of a world-wide technological leader.

A wide range of fans for AC operation are presented in this catalogue. In addition to complete equipment fans, you will also find fans without external housing, providing a particularly economical advantage when the air duct can be integrated in the respective appliance.

### 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 or for extreme ambient conditions; Fans with ball bearings are available pin connection or free-hanging leads.

### Shaded-pole or capacitor motors

Fan drive 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 thus combining both high performance and profitability.

### Flat built AC fans

ebm-papst also has particularly flat built AC fans with internal rotor motor. Their advantage being, quick start to full speed. A plastic impeller and the both smaller and lighter internal rotor motor lead to a lower moment of 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.

### Protection class

All ebm-papst fans conform to the requirements of IP 20. Fans conforming to IP 54 and special types of protection class are also available.

### AC voltage

The line of AC fans for Euro voltage according to IEC 38 (230 V + 6 %, -10 %) is basically also available for 115 V.

### Frequencies

AC fans can be operated at frequencies of 50 Hz or 60 Hz. However, their technical data then changes accordingly.

### Capacitor

Fans driven by capacitor external motors provide particularly high operating efficiency. Generally, the required phase-shift capacitor is already integrated in the fan housing.

### Overloading

Almost all AC fans are protected against overloading (e.g. due to blocked rotor) the drive motors are either impedance protected (marked "Impedance protected", and/or "Z.P.") or are equipped with a thermal switch (marked "Thermally protected" or "Th.P."). The model designation of these fans ends with "S".

# Axial- and Radial Fans for AC Operation

## Overview Air Flow

Dimension	Series	Air Flow	Air Flow (m³/h)											Page											
			10	20	30	40	50	60	70	80	90	100	200		300	400	500	600	700	800	900	1000	2000	3000	
□ 80 x 38	8000 A	29...57																						118	
□ 80 x 38	8000 N	30...61																							119
∅ 76 x 37	8000 TA	23...45																							120
∅ 76 x 37	8000 TV	24...47																							121
□ 92 x 25	3900	31...70																							122
□ 92 x 38	3000	49...89																							123
□ 119 x 25	9900	84...135																							124
□ 119 x 38	4000 N	80...180																							125
□ 119 x 38	4000 Z	100...180																							126
∅ 113 x 37	4600 TA	138...147																							127
∅ 108 x 37	4600 TZ	125...140																							128
□ 127 x 38	5900	150...206																							129
□ 135 x 38	5600	235...270																							130
150 x 172 x 38	7000	330...390																							131
∅ 150 x 55	7800	325...380																							132
∅ 150 x 55	7400	390...445																							133
∅ 172 x 51	6000	375...500																							134
∅ 225 x 80	W**200	450...1030																							135
∅ 232 x 80	W2*208	815...925																							136
□ 280 x 80	W2E 250	1865																							137
□ 121 x 37	RL 90	40...42																							138
□ 135 x 38	RG 90	47...54																							139
□ 180 x 40	RG 125	86...94																							140
□ 220 x 56	RG 160	202...223																							141
∅ 138 x 40	RER 125	104...115																							142
∅ 176 x 54	RER 160	234...274																							143

## Overview of technically feasible designs

Dimension	Axial-/Radial Fans		VDE, UL, CSA	Sinter Sleeve Bearings/ Ball Bearings	Sensor	Humidity protection IP >= IP54	Salt fog protection	Page
	Series	mm						
8000 A	80 x 80 x 38	yes	□/■	-	• • • •			118
8000 N	80 x 80 x 38	yes	□/■	-	• • • •			119
8000 TA	76 ∅ x 37	yes	□/■	-	• • • •			120
8000 TV	76 ∅ x 37	yes	□/■	-	• • • •			121
3900	92 x 92 x 25	yes	□/■	-	• - - -			122
3000	92 x 92 x 38	yes	□/■	-	• • • •			123
9900	119 x 119 x 25	yes	□/■	-	• - - -			124
4000 N	119 x 119 x 38	yes	□/■	•	• • • •			125
4000 Z	119 x 119 x 38	yes	□/■	•	• • • •			126
4600 TA	113 ∅ x 37	yes	□/■	-	• • • •			127
4600 TZ	108 ∅ x 37	yes	□/■	-	• • • •			128
5900	127 x 127 x 38	yes	□/■	-	• - - -			129
5600	135 x 135 x 38	yes	■	-	• • • •			130
7000	150 x 172 x 38	yes	■	-	- - - -			131
7800	150 ∅ x 55	yes	■	•	- - - -			132
7400	150 ∅ x 55	yes	■	-	- - - -			133
6000	172 ∅ x 51	yes	■	-	- - - -			134
RL 90	121 x 121 x 37	yes	□/■	-	• • • •			138
RG 90	135 x 135 x 38	yes	□/■	-	• • • •			139
RG 125	180 x 180 x 40	yes	■	-	• • • •			140
RG 160	220 x 220 x 56	yes	■	-	• • • •			141
RER 125	138 ∅ x 40	yes	■	-	• • • •			142
RER 160	176 ∅ x 54	yes	■	-	• • • •			143

• available - unavailably □ Sleeve-Bearings ■ Ball Bearings

## Information Pictograms

On the pages of the catalogue and on the following overview pages, the pictograms illustrated below provide information about technically possible special versions in the fan line presented.

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 not usually available off the shelf.



### Speed Signal

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 90.



### Protection against moisture

Protection for the fan's electronics against moisture and condensation. For details, please refer to page 102.



### IP 54

Protection of motor and PCB board against splashed water and humidity. For details, please refer to page 102.



### Protection against salt spray fog

Protection of fan against the damaging effects of salt spray fog. For details, please refer to page 102.

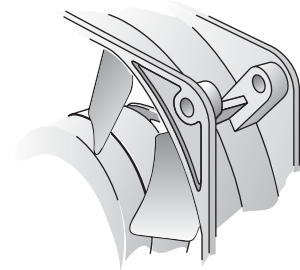
# AC Axial Fans

Series 8000 A 80 x 80 x 38 mm

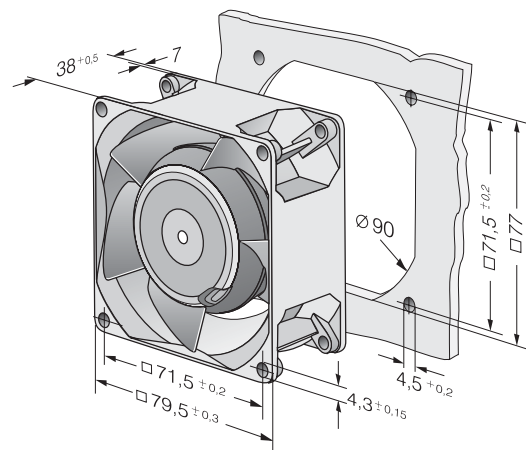
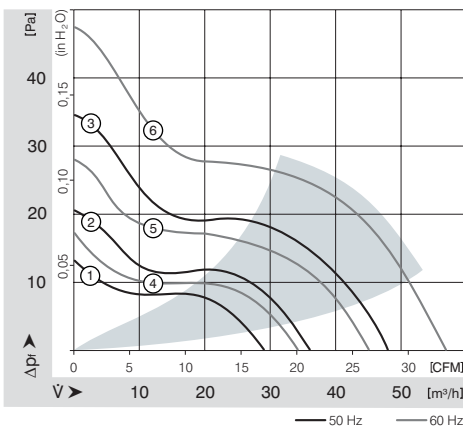


- AC fans with external rotor shaded-pole motor. Impedance protected against overloading.
- Metal fan housing and impeller.
- Air intake over struts. Rotational direction CW looking at rotor.
- Electrical connection via 2 flat pins 2.8 x 0.5 mm.
- Fan housing with ground lug and screw M4 x 8 (TORX).
- Mass: 490 g.
- Also available with electrical connection via leads.
- Also available with air-exhaust over struts and of rotation cw.

Nominal Data	Air Flow		Nominal Voltage	Frequency	Noise		Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub>		Curve
	m <sup>3</sup> /h	CFM			V	Hz					dB(A)	Bel	
8880 A	29	17.1	230	50	26	4.1	□	9.0	1 750	-10...+80	60 000 / 25 000		1
8850 A	36	21.2	230	50	31	4.6	□	12.5	2 150	-10...+70	52 500 / 25 000		2
8550 A	48	28.3	230	50	36	5.0	□	12.0	2 700	-10...+70	52 500 / 25 000		3
8556 A	48	28.3	230	50	37	5.1	■	12.0	2 800	-40...+90	52 500 / 15 000		3
8830 A	34	20.0	115	60	29	4.3	□	8.0	1 950	-10...+80	62 500 / 25 000		4
8800 A	45	26.5	115	60	34	4.8	□	11.0	2 500	-10...+70	55 000 / 27 500		5
8500 A	57	33.5	115	60	41	5.5	□	11.0	3 200	-10...+75	55 000 / 25 000		6
8506 A	57	33.5	115	60	42	5.7	■	11.0	3 300	-40...+95	55 000 / 15 000		6



Series 8000 A with mounting bosses



# AC Axial Fans

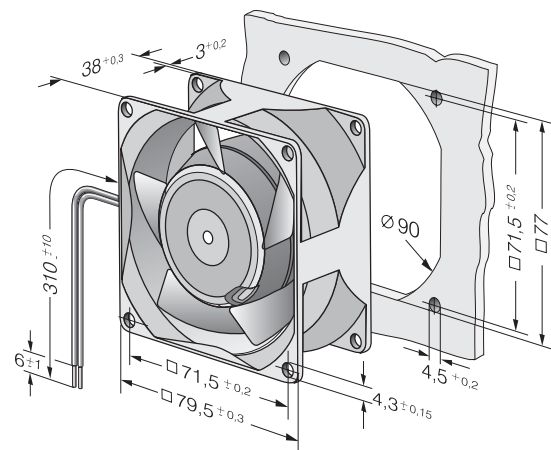
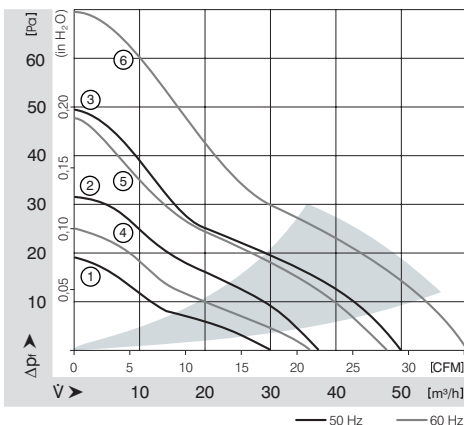
Series 8000 N 80 x 80 x 38 mm



- AC fans with external rotor shaded-pole motor. Impedance protected against overloading.
- Metal fan housing and impeller.
- Air exhaust over struts. Rotational direction CW looking at rotor.
- Electrical connection via 2 leads. Stripped and tinned ends.
- Fan housing with ground lug for screw M4 x 8 (TORX).
- Mass: 490 g.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Frequency	Noise		Sinter-Sleeve Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub>	Curve
Type		m <sup>3</sup> /h	CFM	V	Hz	dB(A)	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours
8880 N		30	17.7	230	50	18	3.3	□	9.0	1 750	-10...+80	60 000 / 25 000	1
8850 N		37	21.8	230	50	24	3.9	□	12.5	2 150	-10...+70	52 500 / 25 000	2
8550 N		50	29.4	230	50	30	4.4	□	12.0	2 700	-10...+70	52 500 / 25 000	3
8556 N		50	29.4	230	50	31	4.5	■	12.0	2 800	-40...+90	52 500 / 15 000	3
8830 N		36	21.2	115	60	21	3.7	□	8.0	1 950	-10...+80	62 500 / 25 000	4
8800 N		47	27.7	115	60	28	4.3	□	11.0	2 500	-10...+70	55 000 / 27 500	5
8500 N		61	35.9	115	60	34	4.8	□	11.0	3 200	-10...+75	55 000 / 25 000	6
8506 N		61	35.9	115	60	35	5.0	■	11.0	3 300	-40...+95	55 000 / 15 000	6

Fan Type				Lead Wires	
8830 N	8800 N	8550 N	8500 N	310 mm long	AWG 18, TR 64
8880 N				310 mm long	AWG 18, TR 64
8556 N	8506 N			310 mm long	AWG 22
8850 N				440 mm long	AWG 18, TR 64



# AC Axial Fans

Series 8000 TA 76 Ø x 37 mm

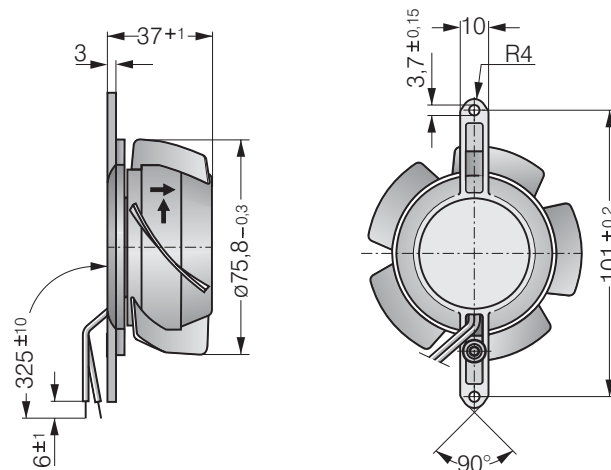


- AC fans with external rotor shaded-pole motor. Impedance protected against overloading.
- Impeller and mounting bracket of metal.
- Air intake over mounting bracket. Rotational direction CW looking at rotor.
- Electrical connection via 2 leads. Stripped and tinned ends.
- Mass: 370 g.

Nominal Data	Air Flow		Nominal Voltage	Frequency	Noise	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub>		Curve
	m <sup>3</sup> /h	CFM								at 40 °C	at T <sub>max</sub>	
Type	m <sup>3</sup> /h	CFM	V	Hz	dB(A)	□ / ■	Watt	min <sup>-1</sup>	°C	Hours	Hours	
8880 TA	23	13.5	230	50	15	□	9.0	1 650	-10...+80	60 000 / 25 000		-
8850 TA	30	17.7	230	50	19	□	12.0	2 100	-10...+70	52 500 / 25 000		-
8550 TA	38	22.4	230	50	25	□	12.0	2 650	-10...+70	52 500 / 25 000		-
8556 TA	38	22.4	230	50	26	■	12.0	2 750	-40...+90	52 500 / 15 000		-
8830 TA	26	15.3	115	60	18	□	8.0	1 850	-10...+80	62 500 / 25 000		-
8800 TA	34	20.0	115	60	23	□	11.0	2 450	-10...+70	55 000 / 27 500		-
8500 TA	45	26.5	115	60	30	□	11.0	3 150	-10...+75	55 000 / 25 000		-
8506 TA	45	26.5	115	60	31	■	11.0	3 250	-40...+95	55 000 / 15 000		-

The air flow and noise level of fans without external housing depends on the installation conditions. The stated air flow and noise has been measured with an orifice 76.5 mm Ø at a distance of approx. 17 mm from the mounting bracket. Under exceptionally favourable mounting conditions, the air flow of fan series 8000 A is achievable. The noise in the optimal operating range can only be measured for these fans in a specific application.

Fan Type				Lead Wires	
8880 TA	8850 TA	8830 TA	8800 TA	325 mm long	AWG 18, TR 64
8550 TA	8500 TA			325 mm long	AWG 18, TR 64
8556 TA	8506 TA			325 mm long	AWG 18



# AC Axial Fans

Series 8000 TV 76 Ø x 37 mm

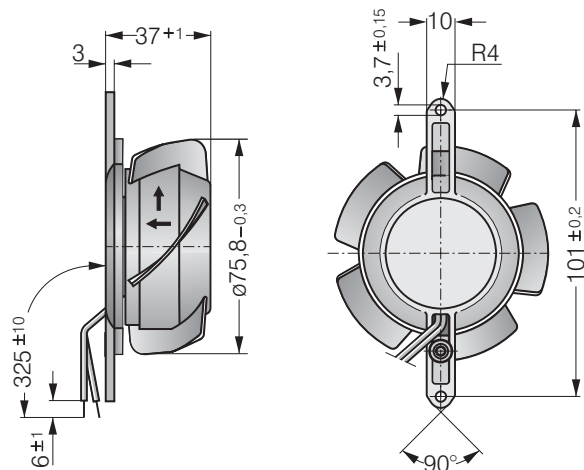


- AC fans with external rotor shaded-pole motor. Impedance protected against overloading.
- Impeller and mounting bracket of metal.
- Air exhaust over struts. Rotational direction CW looking at rotor.
- Electrical connection via 2 leads. Stripped and tinned ends.
- Mass: 370 g.

Nominal Data	Air Flow		Nominal Voltage	Frequency	Noise	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> at 40 °C		Curve
	m <sup>3</sup> /h	CFM								V	Hz	
8880 TV	24	14.1	230	50	15	□	9.0	1 650	-10...+80	60 000 / 25 000		-
8850 TV	31	18.2	230	50	20	□	12.0	2 100	-10...+70	52 500 / 25 000		-
8550 TV	40	23.5	230	50	27	□	12.0	2 650	-10...+70	52 500 / 25 000		-
8556 TV	40	23.5	230	50	28	■	12.0	2 750	-40...+90	52 500 / 15 000		-
8830 TV	27	15.9	115	60	18	□	8.0	1 850	-10...+80	62 500 / 25 000		-
8800 TV	36	21.2	115	60	24	□	11.0	2 450	-10...+70	55 000 / 27 500		-
8500 TV	47	27.7	115	60	32	□	11.0	3 150	-10...+75	55 000 / 25 000		-
8506 TV	47	27.7	115	60	33	■	11.0	3 250	-40...+95	55 000 / 15 000		-

The air flow and noise level of fans without external housing depends on the installation conditions. The stated air flow and noise has been measured with an orifice 76.5 mm Ø at a distance of approx. 17 mm from the mounting bracket. Under exceptionally favourable mounting conditions, the air flow of fan series 8000 N is achievable. The noise in the optimal operating range can only be measured for these fans in a specific application.

Fan Type				Lead Wires	
8880 TV	8850 TV	8830 TV	8800 TV	325 mm long	AWG 18, TR 64
8550 TV	8500 TV			325 mm long	AWG 18, TR 64
8556 TV	8506 TV			325 mm long	AWG 18





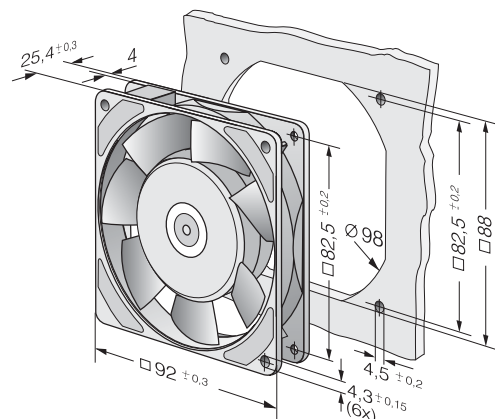
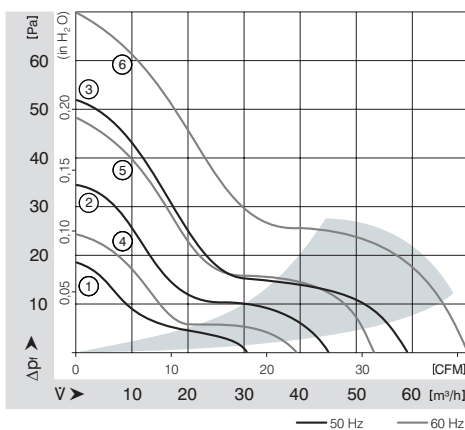
# AC Axial Fans

Series 3900 92 x 92 x 25 mm



- AC fans with internal rotor shaded-pole motor. Impedance protected against overloading.
- Metal fan housing, impeller of mineral-reinforced plastic PA.
- Air exhaust over struts. Rotational direction CCW looking at rotor.
- Electrical connection via 2 flat pins 2.8 x 0.5 mm.
- Fan housing with ground lug for screw M4.
- Mass: 280 g.

Nominal Data	Air Flow		Nominal Voltage	Frequency	Noise		Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub>		Curve
	m <sup>3</sup> /h	CFM			V	Hz					dB(A)	Bel	
3950 L	31	18.2	230	50	24	3.8	□	6.0	1 550	-10...+80	70 000 / 27 500		1
3956 L	31	18.2	230	50	24	3.8	■	6.0	1 550	-40...+80	70 000 / 27 500		1
3950 M	45	26.5	230	50	29	4.2	□	6.0	2 150	-10...+80	70 000 / 27 500		2
3956 M	45	26.5	230	50	29	4.2	■	6.0	2 150	-40...+80	70 000 / 27 500		2
3950	59	34.7	230	50	35	4.7	□	11.0	2 650	-20...+80	55 000 / 20 000		3
3956	59	34.7	230	50	35	4.7	■	11.0	2 650	-40...+80	55 000 / 20 000		3
3900 L	39	23.0	115	60	27	4.0	□	5.0	1 850	-10...+80	70 000 / 27 500		4
3906 L	39	23.0	115	60	27	4.0	■	5.0	1 850	-40...+80	70 000 / 27 500		4
3900 M	53	31.2	115	60	34	4.6	□	5.0	2 600	-10...+80	70 000 / 27 500		5
3906 M	53	31.2	115	60	34	4.6	■	5.0	2 600	-40...+80	70 000 / 27 500		5
3900	70	41.2	115	60	40	5.1	□	9.0	3 150	-20...+80	60 000 / 22 500		6
3906	70	41.2	115	60	40	5.1	■	9.0	3 150	-40...+80	60 000 / 22 500		6



# AC Axial Fans

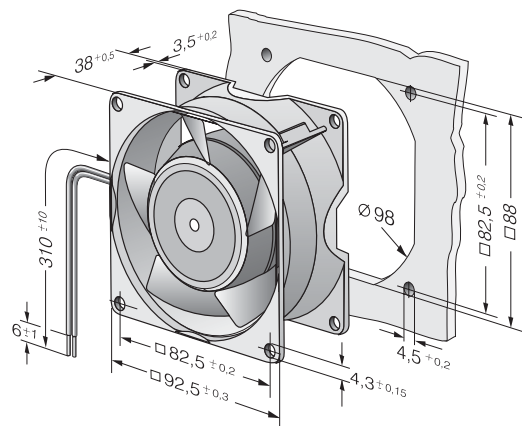
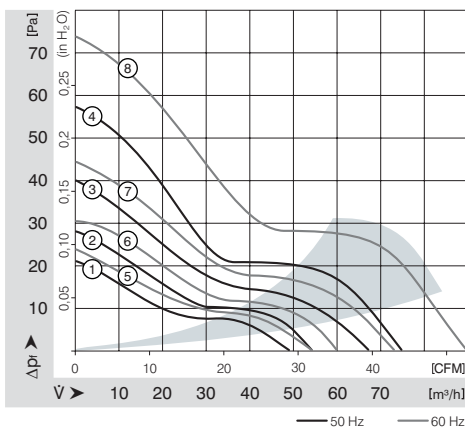
Series 3000 92 x 92 x 38 mm



- AC fans with external rotor shaded-pole motor. Impedance protected against overloading.
- Metal fan housing and impeller.
- Air exhaust over struts. Rotational direction CW looking at rotor.
- Electrical connection via 2 leads. Stripped and tinned ends.
- Fan housing with ground lug and screw M4 x 8 (TORX).
- Mass: 420 g.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Frequency	Noise		Sinter-Sleeve Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub>		Curve
Type		m <sup>3</sup> /h	CFM	V	Hz	dB(A)	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours	
3850		49	28.8	230	50	24	3.7	□	9.0	1 750	-10...+75	60 000 / 27 500		1
3856		54	31.8	230	50	26	3.9	■	9.0	1 950	-40...+90	60 000 / 20 000		2
3550		67	39.4	230	50	32	4.4	□	9.0	2 300	-10...+80	60 000 / 25 000		3
3556		67	39.4	230	50	33	4.5	■	9.0	2 400	-40...+90	60 000 / 20 000		3
3650		75	44.1	230	50	36	4.8	□	12.0	2 650	-10...+55	52 500 / 37 500		4
3656		75	44.1	230	50	37	4.9	■	12.0	2 700	-40...+75	52 500 / 22 500		4
3800		54	31.8	115	60	26	3.9	□	8.0	1 900	-10...+80	62 500 / 25 000		5
3806		60	35.3	115	60	29	4.2	■	8.0	2 150	-40...+95	62 500 / 17 500		6
3500		73	43.0	115	60	35	4.6	□	8.0	2 500	-10...+80	62 500 / 25 000		7
3506		73	43.0	115	60	36	4.7	■	8.0	2 600	-40...+95	62 500 / 17 500		7
3600		89	52.4	115	60	41	5.1	□	11.0	3 100	-10...+65	55 000 / 30 000		8
3606		89	52.4	115	60	42	5.2	■	11.0	3 200	-40...+75	55 000 / 25 000		8

Fan Type	Lead Wires	
With Sleeve bearings	310 mm long	AWG 18, TR 64
With Ball bearings	310 mm long	AWG 18



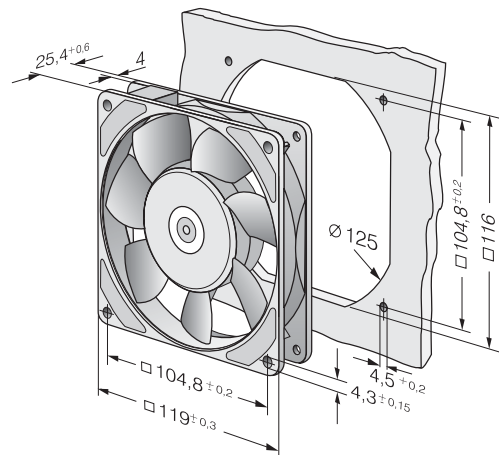
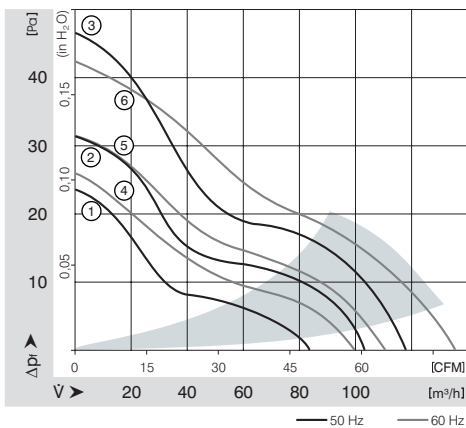
# AC Axial Fans

Series 9900 119 x 119 x 25 mm



- AC fans with external rotor shaded-pole motor. Protected against overloading by thermal cutout.
- Metal fan housing and impeller.
- Air exhaust over struts. Rotational direction CCW looking at rotor.
- Electrical connection via 2 flat pins 2.8 x 0.5 mm.
- Fan housing with ground lug and screw M4 x 8 (TORX).
- Mass: 800 g.

Nominal Data	Air Flow		Nominal Voltage	Frequency	Noise		Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub>		Curve
	m <sup>3</sup> /h	CFM			V	Hz					dB(A)	Bel	
9956 L	84	49.4	230	50	29	4.4	■	9.5	1 850	-40...+80	57 500 / 22 500		1
9956 M	104	61.2	230	50	35	4.7	■	10.0	2 250	-40...+80	57 500 / 22 500		2
9950	117	68.9	230	50	37	5.0	□	14.0	2 450	-20...+70	47 500 / 22 500		3
9956	117	68.9	230	50	37	5.0	■	14.0	2 450	-40...+70	47 500 / 22 500		3
9906 L	100	58.9	115	60	34	4.6	■	8.0	2 100	-40...+80	62 500 / 25 000		4
9906 M	111	65.3	115	60	37	5.0	■	8.0	2 450	-40...+80	62 500 / 25 000		5
9900	135	79.5	115	60	42	5.4	□	12.0	2 850	-20...+70	52 500 / 25 000		6
9906	135	79.5	115	60	42	5.4	■	12.0	2 850	-40...+70	52 500 / 25 000		6



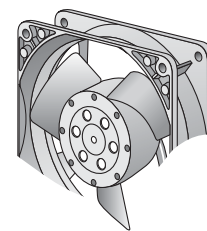
# AC Axial Fans

Series 4000 N 119 x 119 x 38 mm

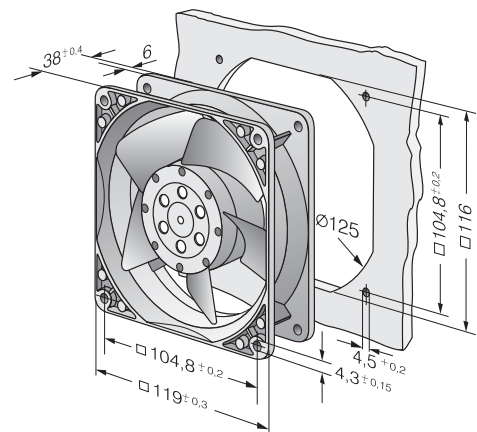
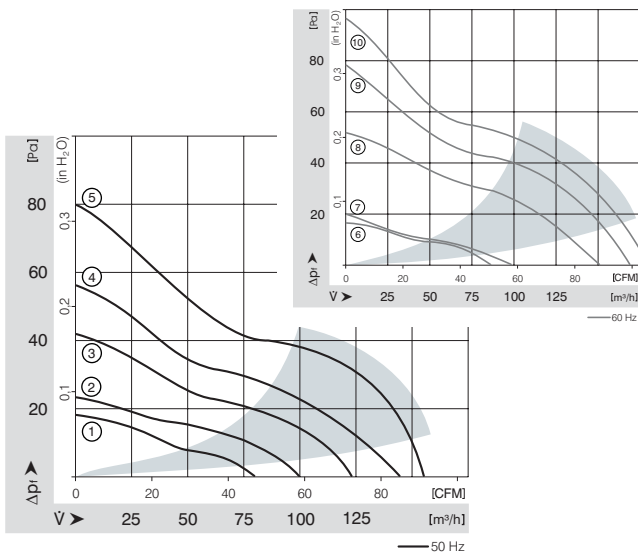


- AC fans with external rotor shaded-pole motor. Impedance protected against overloading.
- Metal fan housing and impeller
- Air intake over struts. Rotational direction CW looking at rotor. Types 4890 N and 4840 N air exhaust over struts.
- Electrical connection via 2 flat pins 3.0 x 0.5 mm.
- Also available: Models with mounting bosses and single leads.
- Fan housing with ground lug for screw M 4 and UNC.
- Mass: 550 g.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Frequency	Noise		Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> at 40 °C	at T <sub>max</sub>	Curve
Type		m <sup>3</sup> /h	CFM	V	Hz	dB(A)	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours	
4890 N		80	47.1	230	50	25	4.0	□	11.0	1 550	-10...+70	55 000 / 27 500		1
4850 N*		100	58.9	230	50	32	4.4	□	10.0	1 800	-10...+70	57 500 / 27 500		2
4580 N*		123	72.4	230	50	41	5.2	□	18.0	2 350	-10...+55	40 000 / 27 500		3
4550 N*		145	85.3	230	50	44	5.4	□	16.5	2 550	-10...+55	42 500 / 30 000		4
4650 N		160	94.2	230	50	46	5.4	□	19.0	2 650	-10...+55	37 500 / 27 500		5
4656 N		160	94.2	230	50	47	5.5	■	19.0	2 650	-40...+85	37 500 / 15 000		5
4840 N		85	50.0	115	60	26	4.1	□	10.0	1 650	-10...+75	57 500 / 25 000		6
4800 N*		97	57.1	115	60	32	4.3	□	9.0	1 750	-10...+75	60 000 / 27 500		7
4530 N*		151	88.9	115	60	45	5.4	□	16.0	2 700	-10...+65	42 500 / 25 000		8
4500 N*		169	99.5	115	60	48	5.7	□	15.0	3 000	-10...+65	47 500 / 25 000		9
4600 N		180	105.9	115	60	50	5.7	□	18.0	3 100	-10...+60	40 000 / 25 000		10
4606 N		180	105.9	115	60	51	5.8	■	18.0	3 100	-40...+90	40 000 / 15 000		10



\* Fan with 3 blades.



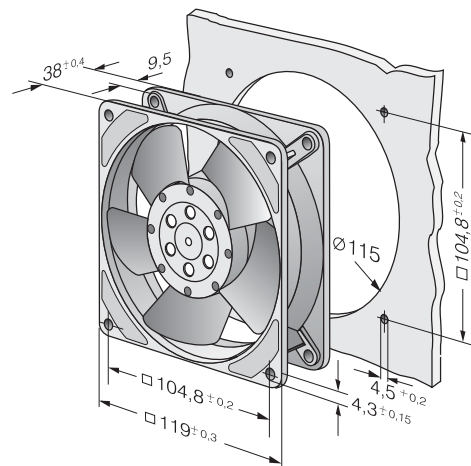
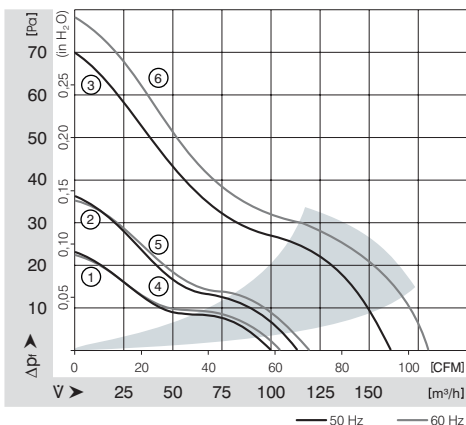
# AC Axial Fans

Series 4000 Z 119 x 119 x 38 mm



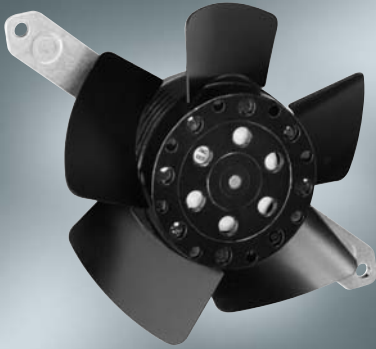
- AC fans with external rotor shaded-pole motor. Impedance protected against overloading.
- Metal fan housing and impeller.
- Air exhaust over struts. Rotational direction CW looking at rotor.
- Electrical connection via 2 flat pins 2.8 x 0.5 mm.
- Also available: Models with mounting bosses and single leads.
- Fan housing with ground lug and screw M4 x 8 (TORX).
- Mass: 540 g.

Nominal Data	Air Flow		Nominal Voltage	Frequency	Noise		Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub>		Curve
	m <sup>3</sup> /h	CFM			V	Hz					dB(A)	Bel	
4850 Z	100	58.9	230	50	26	4.0	□	13.0	1 700	-10...+65	50 000 / 27 500		1
4856 Z	100	58.9	230	50	26	4.0	■	13.0	1 700	-40...+75	50 000 / 20 000		1
4580 Z	115	67.7	230	50	30	4.3	□	13.0	1 900	-10...+65	50 000 / 27 500		2
4586 Z	115	67.7	230	50	30	4.3	■	13.0	1 900	-40...+75	50 000 / 20 000		2
4650 Z	160	94.2	230	50	40	5.3	□	19.0	2 650	-10...+50	37 500 / 30 000		3
4656 Z	160	94.2	230	50	40	5.3	■	19.0	2 650	-40...+75	37 500 / 17 500		3
4800 Z	105	61.6	115	60	28	4.1	□	12.0	1 800	-10...+70	52 500 / 25 000		4
4806 Z	105	61.6	115	60	28	4.1	■	12.0	1 800	-40...+75	52 500 / 17 500		4
4530 Z	120	70.6	115	60	32	4.4	□	12.0	2 000	-10...+70	52 500 / 25 000		5
4536 Z	120	70.6	115	60	32	4.4	■	12.0	2 000	-40...+75	52 500 / 17 500		5
4600 Z	180	105.9	115	60	45	5.6	□	18.0	3 100	-10...+60	40 000 / 25 000		6
4606 Z	180	105.9	115	60	45	5.6	■	18.0	3 100	-40...+85	40 000 / 15 000		6



# AC Axial Fans

Series 4600 TA 113 Ø x 37 mm

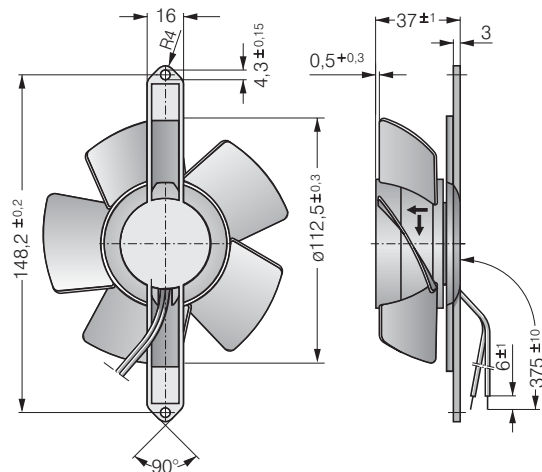


- AC fans with external rotor shaded-pole motor. Impedance protected against overloading.
- Impeller and mounting bracket of metal.
- Air intake over mounting bracket. Rotational direction CW looking at rotor.
- Electrical connection via 2 leads. Stripped and tinned ends.
- Mass: 430 g.

Nominal Data	Air Flow		Nominal Voltage	Frequency	Noise	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub>		Curve
	m <sup>3</sup> /h	CFM								at 40 °C	at T <sub>max</sub>	
Type	m <sup>3</sup> /h	CFM	V	Hz	dB(A)	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours	
4650 TA	138	81.2	230	50	41	□	19.0	2 550	-10...+45	37 500 / 32 500		-
4656 TA	138	81.2	230	50	42	■	19.0	2 550	-40...+75	37 500 / 17 500		-
4600 TA	147	86.5	115	60	43	□	18.0	2 900	-10...+50	40 000 / 32 500		-
4606 TA	147	86.5	115	60	44	■	18.0	2 900	-40...+80	40 000 / 17 500		-

The air flow and noise level of fans without external housing depends on the installation conditions. The stated air flow and noise has been measured with an orifice 109 mm Ø at a distance of approx. 17 mm from the mounting bracket. Under exceptionally favourable mounting conditions, the air flow of fan series 4600 N is achievable. The noise in the optimal operating range can only be measured for these fans in a specific application.

Fan Type	Lead Wires
4650 TA	4600 TA
4656 TA	4606 TA
	AWG 22, TR 32
	AWG 18





# AC Axial Fans

Series 4600 TZ 108 Ø x 37 mm

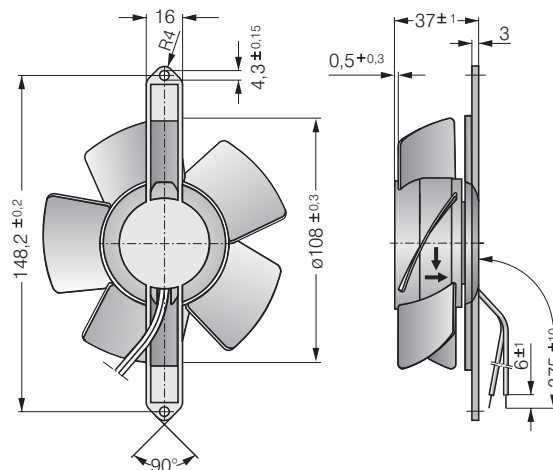


- AC fans with external rotor shaded-pole motor. Impedance protected against overloading.
- Impeller and mounting bracket of metal.
- Air exhaust over struts. Rotational direction CW looking at rotor.
- Electrical connection via 2 leads. Stripped and tinned ends.
- Mass: 430 g.

Nominal Data	Air Flow		Nominal Voltage	Frequency	Noise	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub>		Curve
	m <sup>3</sup> /h	CFM								at 40 °C	at T <sub>max</sub>	
Type	m <sup>3</sup> /h	CFM	V	Hz	dB(A)	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours	
4650 TZ	125	73.6	230	50	42	□	19.0	2 600	-10...+50	37 500 / 37 500	-	-
4656 TZ	125	73.6	230	50	42	■	19.0	2 600	-40...+65	37 500 / 20 000	-	-
4600 TZ	140	82.4	115	60	45	□	18.0	2 950	-10...+50	40 000 / 32 500	-	-
4606 TZ	140	82.4	115	60	45	■	18.0	2 950	-40...+75	40 000 / 17 500	-	-

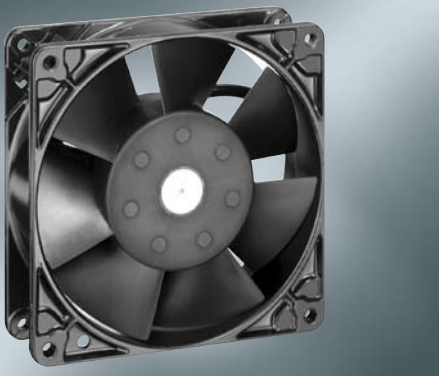
The air flow and noise level of fans without external housing depends on the installation conditions. The stated air flow and noise has been measured with an orifice 109 mm Ø at a distance of approx. 17 mm from the mounting bracket. Under exceptionally favourable mounting conditions, the air flow of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

Fan Type	Lead Wires
4650 TZ	4600 TZ AWG 22, TR 32
4656 TZ	4606 TZ AWG 18



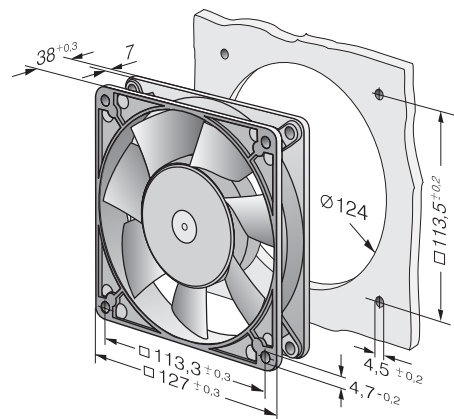
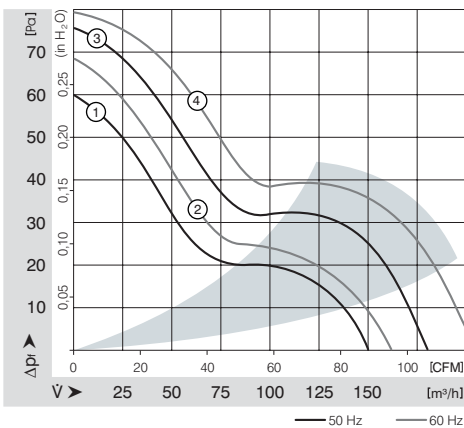
# AC Axial Fans

Series 5900 127 x 127 x 38 mm



- AC fans with internal rotor shaded-pole motor. Impedance protected against overloading.
- Metal fan housing and impeller of fibreglass reinforced plastic PA.
- Air exhaust over struts. Rotational direction CCW looking at rotor.
- Electrical connection via 2 flat pins 2.8 x 0.8 mm.
- Fan housing with ground lug and screw M4 x 6.
- Mass: 570 g.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Frequency	Noise	Sinter-Sleeve Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub>	Curve
Type		m <sup>3</sup> /h	CFM	V	Hz	dB(A)	Bel	Watt	min <sup>-1</sup>	°C	Hours	Hours
5988		150	88.3	230	50	37	4.9	13.0	2 250	-30...+55	35 000 / 20 000	1
5950		180	105.9	230	50	43	5.4	18.0	2 700	-20...+50	40 000 / 32 500	3
5958		180	105.9	230	50	44	5.5	18.0	2 750	-30...+60	40 000 / 25 000	3
5938		162	95.3	115	60	40	4.9	12.0	2 500	-30...+55	35 000 / 20 000	2
5900		206	121.2	115	60	46	5.7	17.0	3 050	-20...+55	42 500 / 30 000	4
5908		206	121.2	115	60	47	5.8	17.0	3 100	-30...+75	42 500 / 20 000	4



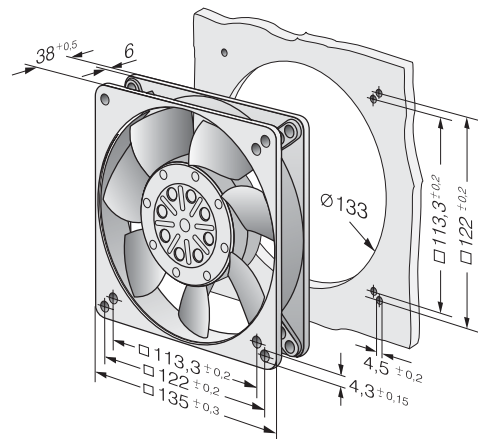
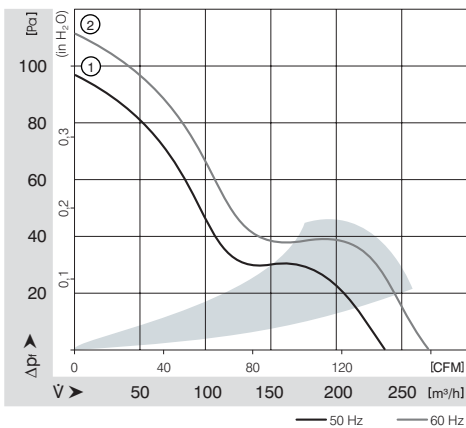
# AC Axial Fans

Series 5600 135 x 135 x 38 mm



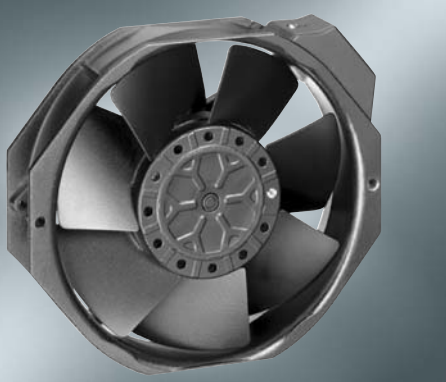
- AC fans with external rotor shaded-pole motor.  
Protected against overloading by thermal cutout.
- Metal fan housing and impeller.
- Air exhaust over struts. Rotational direction CCW looking at rotor.
- Electrical connection via 2 flat pins 2.8 x 0.5 mm.
- Fan housing with ground lug and screw M4 x 8 (TORX).
- Mass: 800 g.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Frequency	Noise		Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> at 40 °C	at T <sub>max</sub>	Curve
Type		m <sup>3</sup> /h	CFM	V	Hz	dB(A)	Bel	□ / ■	Watt	min <sup>-1</sup>	°C	Hours	Hours	
5656 S		235	138.3	<b>230</b>	<b>50</b>	46	5.9	■	30.0	2 700	-35...+70	45 000 / 20 000		1
5606 S		270	158.9	<b>115</b>	<b>60</b>	50	6.2	■	26.0	3 100	-35...+80	47 500 / 20 000		2



# AC Axial Fans

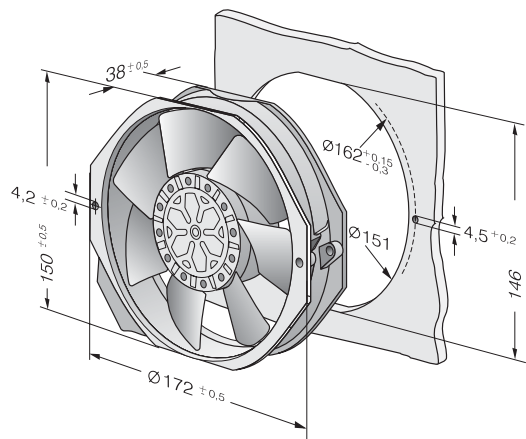
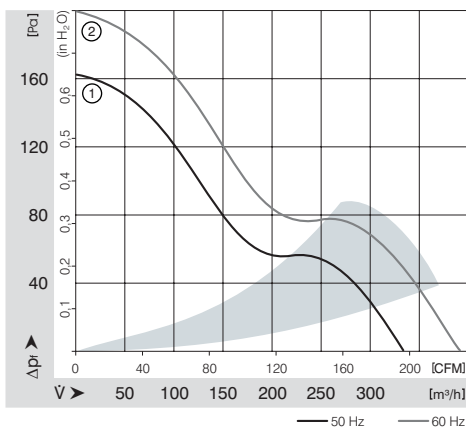
Series 7000 150 x 172 x 38 mm



- AC fans with external rotor capacitor motor. Protected against overloading by integrated thermal cutout.
- Metal fan housing and impeller.
- Air exhaust over struts. Rotational direction CCW looking at rotor.
- Electrical connection via 2 flat pins 2.8 x 0.5 mm.
- Fan housing with ground lug and screw M4 x 6.
- Mass: 900 g.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Frequency	Noise	Sinter-Sleeve Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub>	Curve
Type		m <sup>3</sup> /h	CFM	V	Hz	dB(A)	Bel	Watt	min <sup>-1</sup>	°C	Hours	Hours
7056 ES		330	194.2	<b>230</b>	<b>50</b>	52	6.4	29.0	2 800	-30...+65	60 000 / 32 000	1
7006 ES		390	229.5	<b>115</b>	<b>60</b>	57	6.8	24.0	3 300	-30...+80	55 000 / 18 000	2

Minimum ambient temperature -15 °C, admissible for a short time at -30 °C; without reaching dew point.



# AC Axial Fans

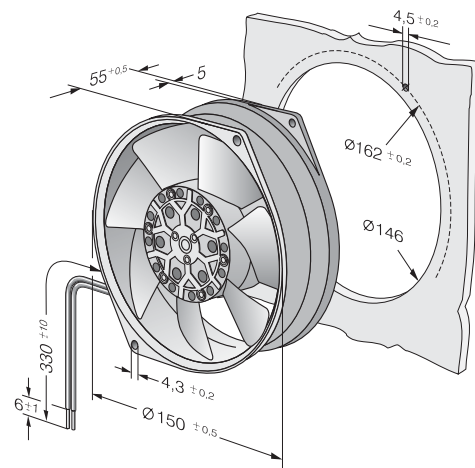
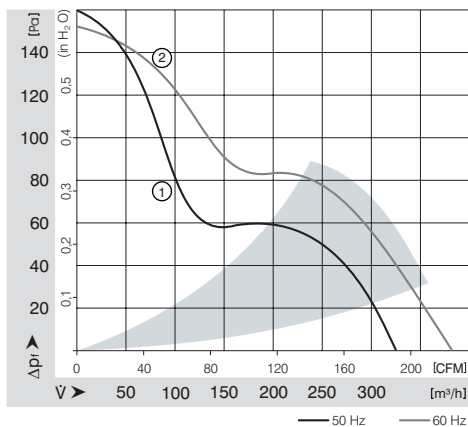
Series 7800 150 Ø x 55 mm



- AC fans with external rotor shaded-pole motor. Protected against overloading by integrated thermal cutout.
- Metal fan housing and impeller.
- Air exhaust over struts. Rotational direction CCW looking at rotor.
- Electrical connection via 2 leads. Stripped and tinned ends.
- Fan housing with ground lug and screw M4 x 6.
- Mass: 1000 g.

Nominal Data	Air Flow		Nominal Voltage	Frequency	Noise		Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub>		Curve
	m <sup>3</sup> /h	CFM			V	Hz					dB(A)	Bel	
7855 ES	325	191.3	230	50	48	6.0	■	45.0	2 800	-30...+50	40 000 / 21 000		1
7856 ES	325	191.3	230	50	48	6.0	■	45.0	2 800	-30...+70	40 000 / 12 000		1
7805 ES	380	223.7	115	60	52	6.4	■	38.0	3 250	-30...+75	40 000 / 19 000		2
7806 ES	380	223.7	115	60	52	6.4	■	38.0	3 250	-30...+90	40 000 / 12 500		2

Minimum ambient temperature -15 °C, admissible for a short time at -30 °C; without reaching dew point.



# AC Axial Fans

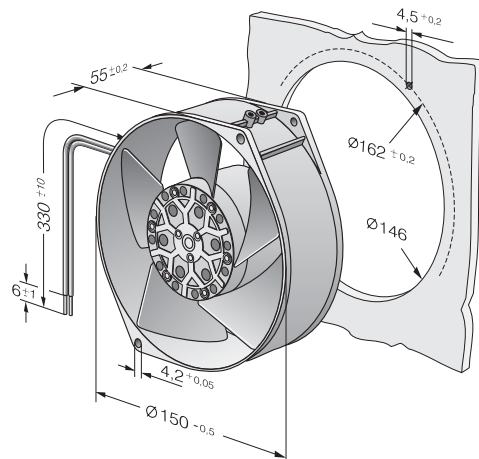
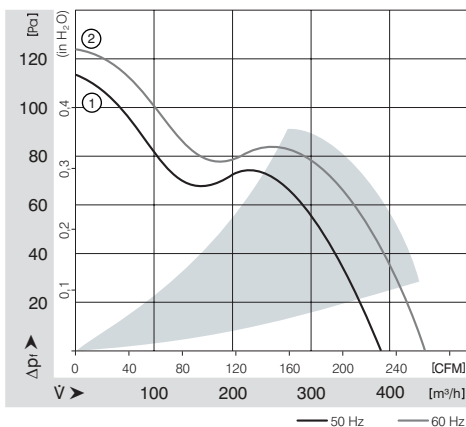
Series 7400 150 Ø x 55 mm



- AC fans with external rotor shaded-pole motor. Protected against overloading by integrated thermal cutout.
- Metal fan housing and impeller.
- Air intake over struts. Rotational direction CCW looking at rotor.
- Electrical connection via 2 leads. Stripped and tinned ends.
- Fan housing with ground lug and screw M4 x 6.
- Mass: 1000 g.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Frequency	Noise	Sinter-Sleeve Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub>	Curve
Type		m <sup>3</sup> /h	CFM	V	Hz	dB(A)	Bel	Watt	min <sup>-1</sup>	°C	Hours at 40 °C	Hours at T <sub>max</sub>
7450 ES		390	229.5	230	50	58	6.8	47.0	2 700	-30...+60	40 000 / 18 000	1
7400 ES		445	261.9	115	60	60	6.9	46.0	3 050	-30...+80	38 000 / 15 000	2

Minimum ambient temperature -15 °C, admissible for a short time at -30 °C; without reaching dew point.





# AC Axial Fans

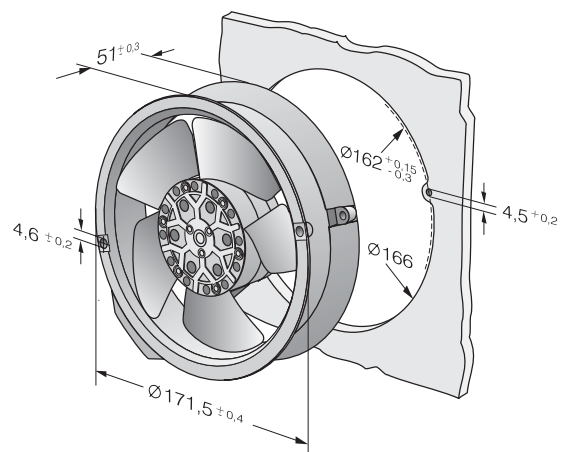
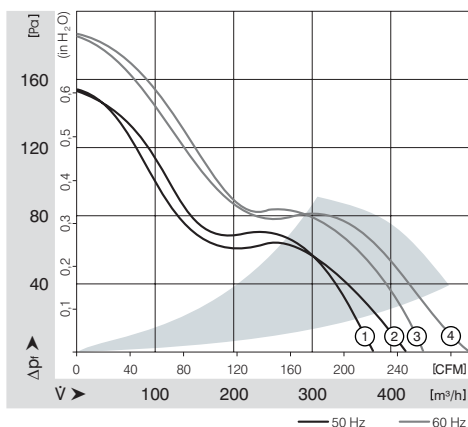
Series 6000 172 Ø x 51 mm



- AC fans with external rotor capacitor motor. Protected against overloading by integrated thermal cutout.
- Metal fan housing and impeller.
- Air exhaust over struts. Rotational direction CCW looking at rotor.
- Electrical connection via 2 flat pins 2.8 x 0.5 mm.
- Fan housing with ground lug and screw M4 x 6.
- Mass: 1000 g.

Nominal Data	Air Flow		Nominal Voltage	Frequency	Noise		Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub>		Curve
	m <sup>3</sup> /h	CFM			V	Hz					dB(A)	Bel	
6058 ES	375	220.7	230	50	54	5.9	■	24.0	2 800	-30...+70	48 000 / 32 000		1
6078 ES	420	247.2	230	50	54	6.3	■	26.0	2 800	-30...+75	37 500 / 20 000		2
6008 ES	440	259.0	115	60	58	6.4	■	26.0	3 300	-30...+70	42 000 / 28 000		3
6028 ES	500	284.3	115	60	58	6.7	■	29.0	3 300	-30...+75	40 000 / 20 000		4

Minimum ambient temperature -15 °C, admissible for a short time at -30 °C; without reaching dew point.



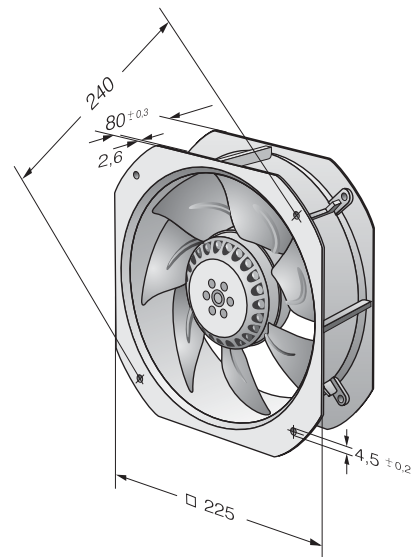
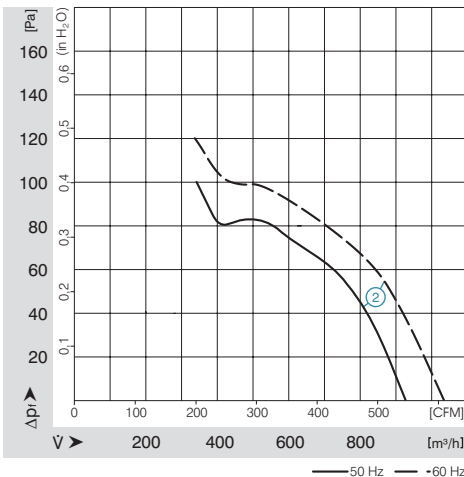
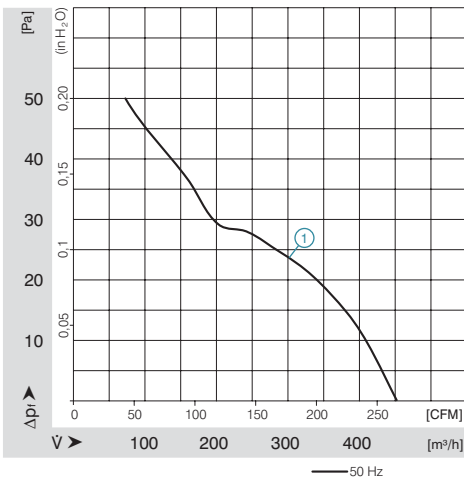
# AC Axial Fans

W\*\* 200 Ø 225 x 225 x 80 mm



- External-single-phase motor.\*
- External-current motor.\*\*
- Motor protection: TOP wired internally.
- Material: Wall ring die-cast aluminium, seven blades sheet steel. Blades and rotor coated in black.
- Direction of air flow "V", exhaustover struts. Direction of rotation: counter-clockwise, seen on rotor.
- Electrical connection: Terminal strips (operating capacitor connected).
- Continuous operation (S1).
- Insulation class: "F"
- Mass: 2000 g.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Frequency	Noise		Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> at 40 °C	at T <sub>max</sub>	Curve
Type		m <sup>3</sup> /h	CFM	V	Hz	dB(A)	Bel	□ / ■	Watt	min <sup>-1</sup>	°C	Hours	Hours	
W2E200-HK86-01*		1030	606.2	115	60	61	4.1	■	80.0	2 800	-25...+65	60 000 / 58 000		2
W2E200-HK38-01*		925	544.4	230	50	59	4.6	■	64.0	2 550	-25...+60	63 000 / 60 000		2
W4S200-HK04-01**		450	264.9	230	50	40	5.0	■	30.0	1 370	-25...+70	85 000 / 80 000		1



# AC Diagonal Fans

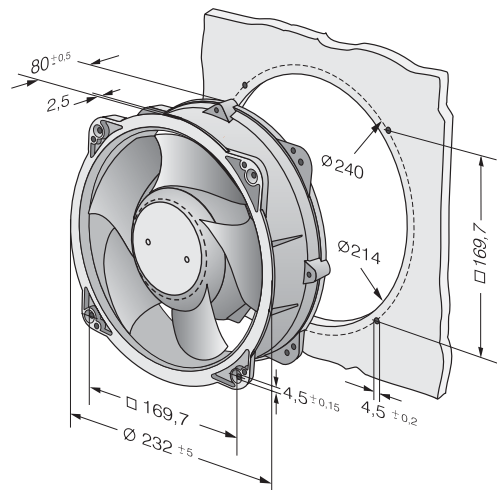
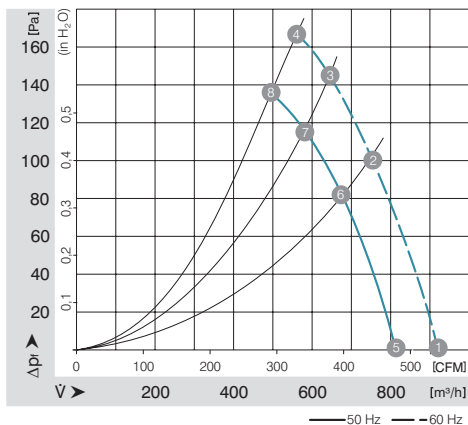
W2\*208 Ø 232 x 80 mm



- External-single-phase motor.\*
- External-current motor.\*\*
- Material: wall ring die-cast aluminium, five blades plastic PA. Rotor coated in black.
- Motor protection: Without TOP\*\*; TOP wired internally\*.
- Direction of air flow "V", exhaustover struts. Direction of rotation: counter-clockwise, seen on rotor.
- Electrical connection: Terminal strips (operating capacitor connected).
- Continuous operation (S1).
- Insulation class: "F"
- Mass: 2800 g.

Nominal Data	Air Flow		Nominal Voltage	Frequency	Noise	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub>		Curve
	m <sup>3</sup> /h	CFM								at 40 °C	at T <sub>max</sub>	
Type	m <sup>3</sup> /h	CFM	V	Hz	dB(A)	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours	
W2E 208-BA86-01*	925	544.4	115	60	70	■	87.0	3 100	-25...+72	57 000 / 54 000		1
W2E 208-BA20-01*	815	479.7	230	50	68	■	67.0	2 750	-25...+72	61 000 / 58 000		1
W2D 208-BA02-01**	820	482.6	400 Y	50	67	■	60.0	2 740	-25...+70	61 000 / 58 000		1
	920	541.5		60	70		80.0	3 090				

Model	Frequency	Curve	Speed (min <sup>-1</sup> )	Flow (m <sup>3</sup> /h)	Flow (CFM)	Noise (dB(A))
W2D 208-BA	50	1	3090	80	70	
		2	2990	93	69	
		3	2960	96	69	
	60	4	2990	92	70	
		5	2740	60	67	
		6	2690	69	67	
W2E 208-BA	50	1	3100	87	70	
		2	2990	100	70	
		3	2960	102	69	
	60	4	3020	97	70	
		5	2750	67	68	
		6	2690	74	67	
	7	2680	75	66		
	8	2700	72	68		



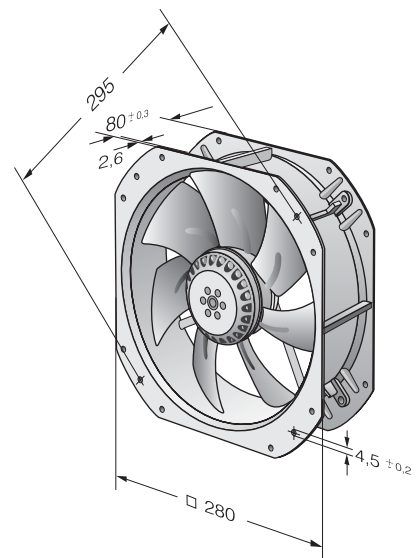
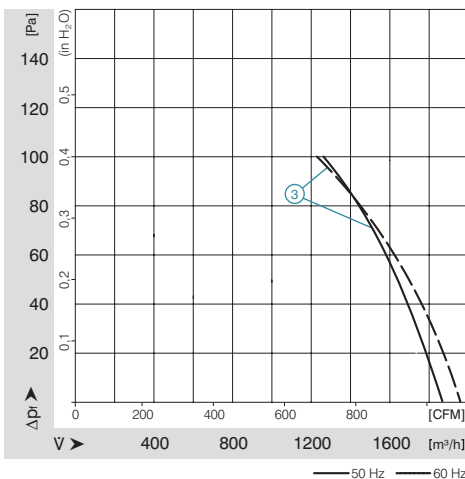
# AC Axial Fans

W2E 250 280 x 280 x 80 mm



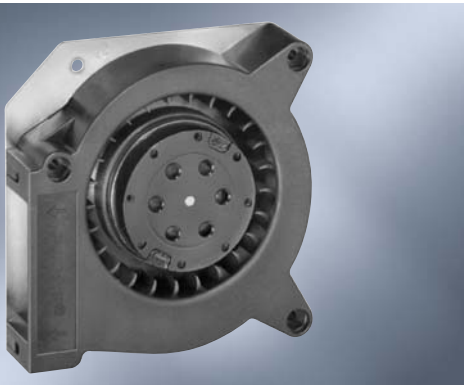
- External single-phase motor.
- Motor protection: TOP wired internally.
- Material: Wall ring die-cast aluminium, seven blades sheet steel. Blades and rotor coated in black.
- Direction of air flow "V", exhaustover struts. Direction of rotation: counter-clockwise, seen on rotor.
- Electrical connection: Terminal strips (operating capacitor connected).
- Continuous operation (S1).
- Insulation class: "F"
- Mass: 2000 g.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Frequency	Noise		Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> at 40 °C	at T <sub>max</sub>	Curve
Type		m <sup>3</sup> /h	CFM	V	Hz	dB(A)	Bel	□ / ■	Watt	min <sup>-1</sup>	°C	Hours	Hours	
W2E 250-HL06-01		1865	1077.1	230	50	69	4.1	■	127.0	2 550	-15...+60	63 000 / 70 000		3



# AC Radial Fans

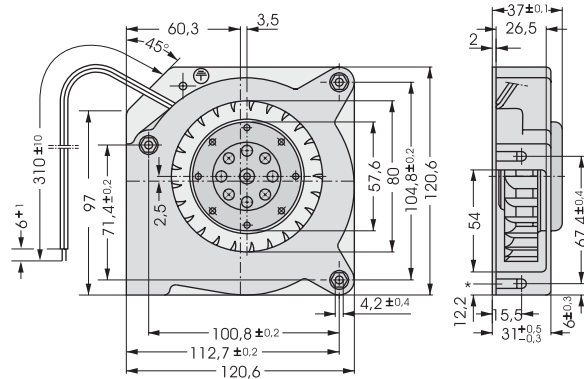
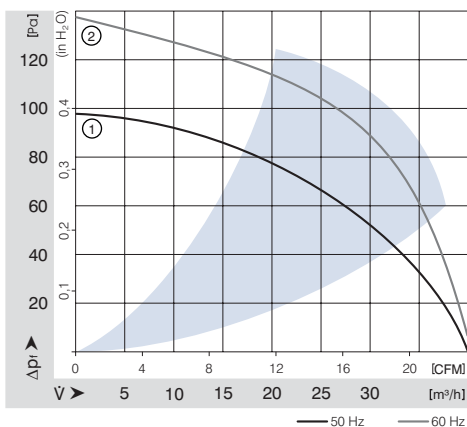
Series RL 90 121 x 121 x 37 mm



- AC radial blower with external rotor shaded-pole motor. Impedance protected against overloading.
- Spiral housing and blower wheel of fibreglass-reinforced plastic. Housing base of galvanised steel plate.
- Air exhaust radial, through housing port. Rotational direction CW looking at rotor.
- Electrical connection via 2 leads. Stripped and tinned ends.
- Mass: 680 g.

Nominal Data	Air Flow		Nominal Voltage	Frequency	Noise	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub>		Curve
	m <sup>3</sup> /h	CFM								at 40 °C	at T <sub>max</sub>	
Type	m <sup>3</sup> /h	CFM	V	Hz	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours	
RL 90-18/50	40	23.5	230	50	5.6	□	20.0	2 450	-10...+50	37 500 / 30 000		1
RL 90-18/56	40	23.5	230	50	5.6	■	20.0	2 450	-30...+70	37 500 / 20 000		1
RL 90-18/00	42	24.7	115	60	6.0	□	19.5	2 550	-10...+60	37 500 / 25 000		2
RL 90-18/06	42	24.7	115	60	6.0	■	19.5	2 550	-30...+85	37 500 / 15 000		2

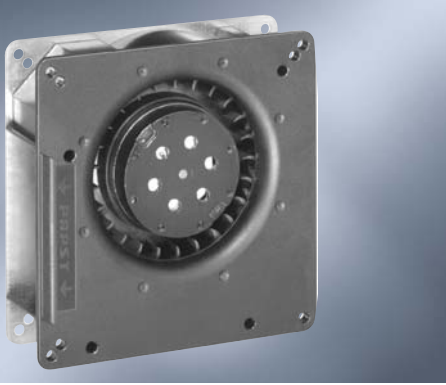
Fan Type		Lead Wires
RL 90-18/50	RL 90-18/00	AWG 18, TR 32
RL 90-18/56	RL 90-18/06	AWG 22



\*Speed nut M4 or 8-32UNC. Screw-in depth max, 12.5 min 9.0

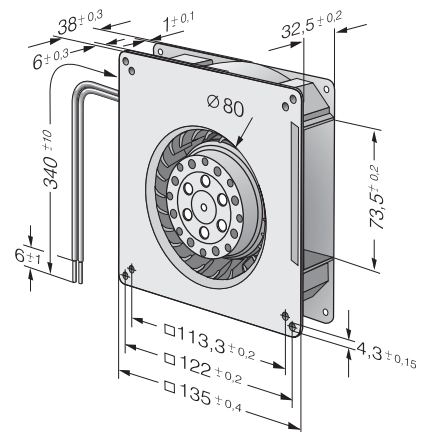
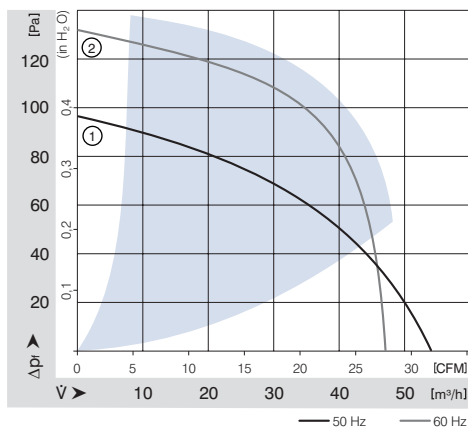
# AC Radial Fans

Series RG 90 135 x 135 x 38 mm



- AC radial blower with external rotor shaded-pole motor. Impedance protected against overloading.
- Spiral housing and blower wheel of fibreglass-reinforced plastic. Housing base of galvanised steel plate.
- Air exhaust radial, through housing port. Rotational direction CW looking at rotor.
- Electrical connection via 2 leads AWG 22. Stripped and tinned ends.
- Mass: 560 g.

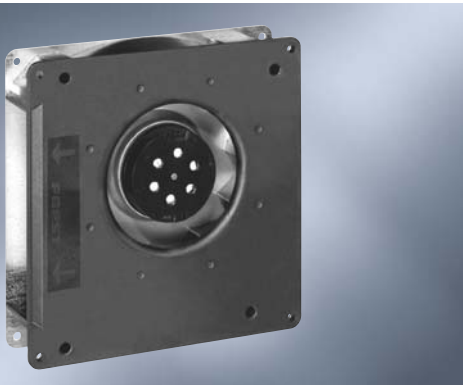
Nominal Data		Air Flow	Air Flow	Nominal Voltage	Frequency	Noise	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> at 40 °C	at T <sub>max</sub>	Curve
Type		m <sup>3</sup> /h	CFM	V	Hz	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours	
RG 90-18/50		54	31.8	230	50	5.8	□	22.0	2 200	-30...+60	35 000 / 20 000		1
RG 90-18/56		54	31.8	230	50	5.8	■	22.0	2 200	-30...+60	35 000 / 20 000		1
RG 90-18/00		47	27.7	115	60	6.2	□	22.0	1 900	-30...+65	35 000 / 20 000		2
RG 90-18/06		47	27.7	115	60	6.2	■	22.0	1 900	-30...+65	35 000 / 20 000		2





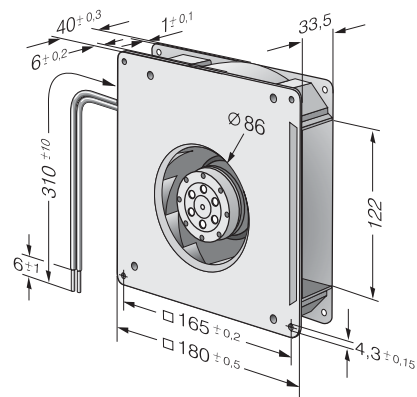
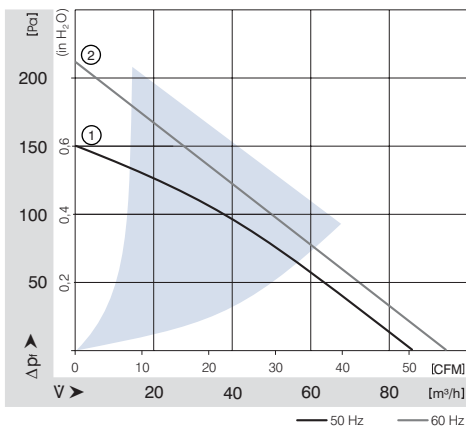
# AC Radial Fans

Series RG 125 180 x 180 x 40 mm



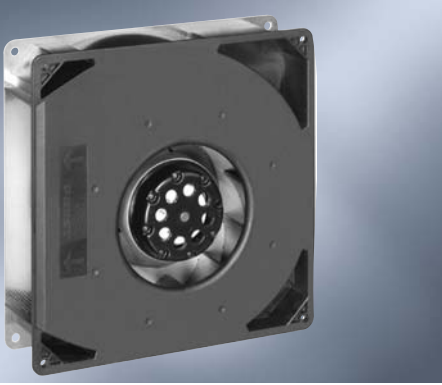
- AC radial blower with external rotor shaded-pole motor. Impedance protected against overloading.
- Spiral housing and blower wheel of fibreglass-reinforced plastic. Housing base of galvanised steel plate.
- Air exhaust radial, through housing port. Rotational direction CW looking at rotor.
- Electrical connection via 2 leads AWG 22. Stripped and tinned ends.
- Mass: 850 g.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Frequency	Noise	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> at 40 °C	at T <sub>max</sub>	Curve
Type		m <sup>3</sup> /h	CFM	V	Hz	Bel	□ / ■	Watt	min <sup>-1</sup>	°C	Hours	Hours	
RG 125-19/56		86	50.6	230	50	5.8	■	20.0	2 550	-30...+70	37 500 / 20 000		1
RG 125-19/06		94	55.3	115	60	6.0	■	19.0	2 750	-30...+80	40 000 / 15 000		2



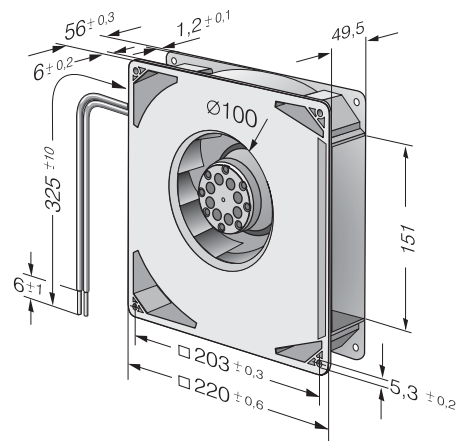
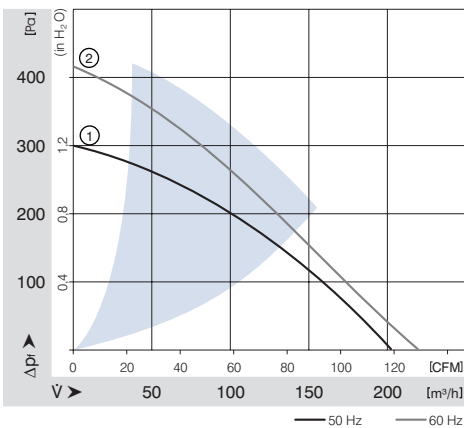
# AC Radial Fans

Series RG 160 220 x 220 x 56 mm



- AC radial blower with external rotor shaded-pole motor. Thermal contactor as protection against thermal overloading.
- Spiral housing and blower wheel of fibreglass-reinforced plastic. Housing base of galvanised steel plate.
- Air exhaust radial, through housing port. Rotational direction CCW looking at rotor.
- Electrical connection via leads AWG 18. Stripped and tinned ends.
- Mass: 1.7 kg.

Nominal Data		Air Flow	Air Flow	Nominal Voltage	Frequency	Noise	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> at 40 °C	at T <sub>max</sub>	Curve
Type		m <sup>3</sup> /h	CFM	V	Hz	Bel	□/■	Watt	min <sup>-1</sup>	°C	Hours	Hours	
RG 160-28/56S		202	118.9	<b>230</b>	<b>50</b>	6.6	■	47.0	2 750	-30...+70	30 000 / 15 000		1
RG 160-28/06S		223	131.3	<b>115</b>	<b>60</b>	6.9	■	50.0	3 050	-30...+80	27 500 / 12 500		2



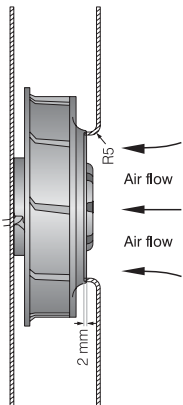
# AC Radial Fans

Series RER 125 138 Ø x 40 mm



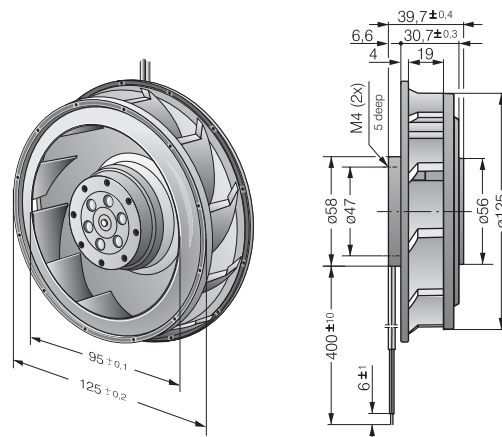
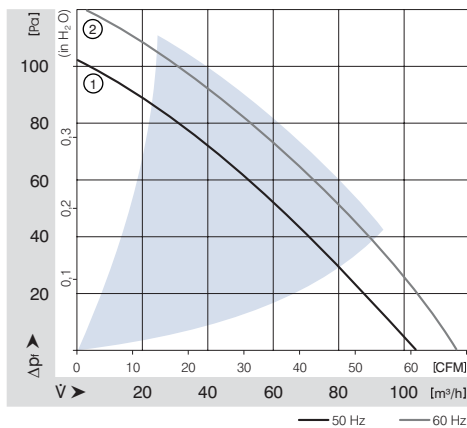
- AC radial blower with external rotor shaded-pole motor. Impedance protected against overloading.
- Blower wheel of fibreglass-reinforced plastic, with steel plate reinforced.
- Air exhaust radial. Rotational direction CW looking at rotor.
- Electrical connection via leads AWG 22. Stripped and tinned ends.
- Mass: 500 g.

Nominal Data	Air Flow	Air Flow	Nominal Voltage	Frequency	Noise	Sirtec-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> at 40 °C	at T <sub>max</sub>	Curve
Type	m <sup>3</sup> /h	CFM	V	Hz	Bel	□ / ■	Watt	min <sup>-1</sup>	°C	Hours	Hours	
RER 125-19/56	104	61.2	230	50	6.2	■	19.0	2 600	-30...+60	37 500 / 22 500		1
RER 125-19/06	115	67.7	115	60	6.5	■	18.0	2 850	-30...+70	40 000 / 20 000		2



The air flow and noise level of fans without external housing depend on the 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 blower wheel.



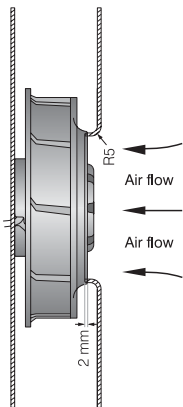
# AC Radial Fans

Series RER 160 176 Ø x 54 mm

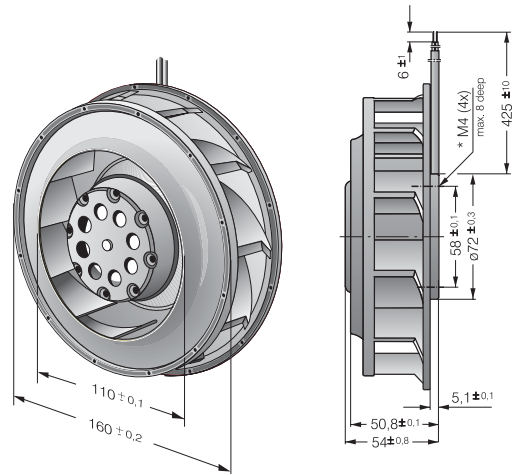
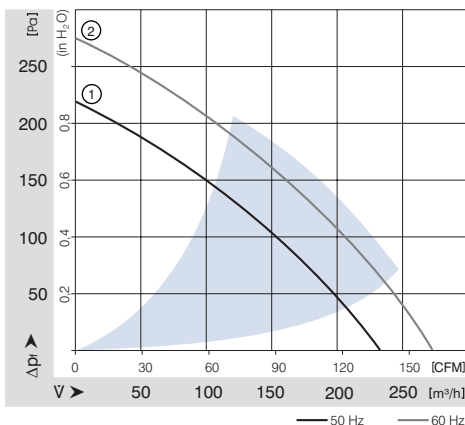


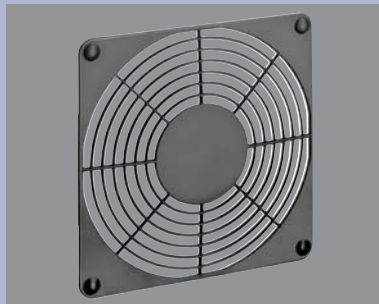
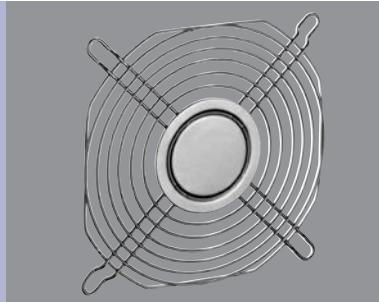
- AC radial blower with external rotor shaded-pole motor. Impedance protected against overloading.
- Blower wheel of fibreglass-reinforced plastic, with steel plate reinforced.
- Air exhaust radial. Rotational direction CCW looking at rotor.
- Electrical connection via leads AWG 18. Stripped and tinned ends.
- Mass: 1000 g.

Nominal Data	Air Flow		Nominal Voltage	Frequency	Noise	Sinter-Sleeve Bearings Ball Bearings	Power Input	Nominal Speed	Temperature Range	Service Life L <sub>10</sub> at 40 °C		Curve
	m <sup>3</sup> /h	CFM								V	Hz	
RER 160-28/56S	234	137.7	<b>230</b>	<b>50</b>	6.6	■	45.0	2 800	-30...+60	30 000 / 20 000	1	
RER 160-28/06S	274	161.3	<b>115</b>	<b>60</b>	6.8	■	46.0	3 250	-30...+70	30 000 / 15 000	2	

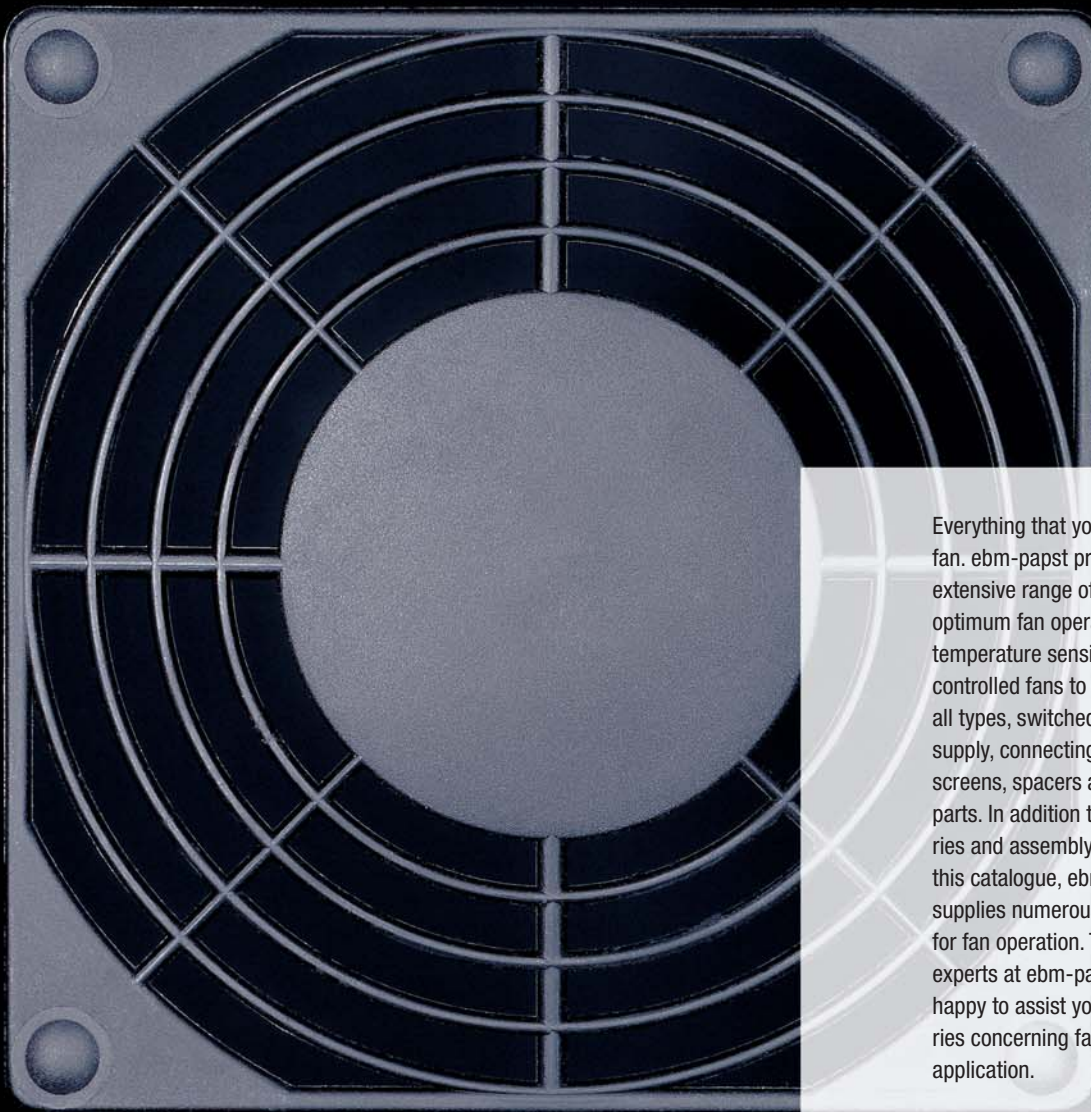


The air flow and noise level of fans without external housing depend on the installation conditions. The stated air flow and noise levels have been measured under the following conditions:  
Centrifugal fan mounted on a base plate 260 x 260 mm. Cover plate 260 x 260 mm with an air-inlet of Ø 100 mm,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





Finger Guards	146
Fan Finger Guards	151
Connector cable	153
Accessories	154



Everything that you need for your fan. ebm-papst provides an extensive range of accessories for optimum fan operation: From temperature sensing for speed-controlled fans to finger guards of all types, switched-mode power supply, connecting cable, filter, screens, spacers and assembly parts. In addition to the accessories and assembly parts listed in this catalogue, ebm-papst also supplies numerous special parts for fan operation. The sales experts at ebm-papst will be happy to assist you in your enquiries concerning fan assembly and application.

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



# Finger Guards



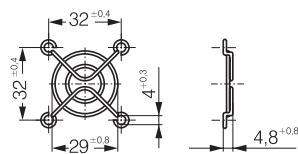
- Finger guards as per EN 294, of rust-proof steel wire for equipment fans.
- Further finger guards that do not conform to EN 294 can be supplied on request.

Fan series	Finger Guards
400	LZ29-1
500	LZ31
600	LZ28-1
3000	LZ23-1
8000	LZ32-4 / LZ22-2
9000	LZ30-4 / LZ 30
4000	LZ30-4 / LZ 30
5100	LZ25

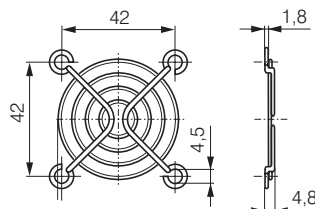
Fan series	Finger Guards
5600	LZ25
5200	LZ35
5900	LZ35
7000	LZ36
6200	LZ37
6300	LZ 37
6400	LZ38

Fan series	Finger Guards
DV 6200	LZ37 suction face
DV 6200	LZ39 blade face
DV 6400	LZ38 suction face
DV 6400	LZ39 blade face

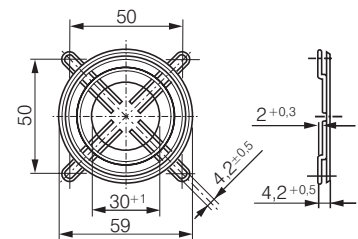
**LZ29-1** Fan size 40 x 40



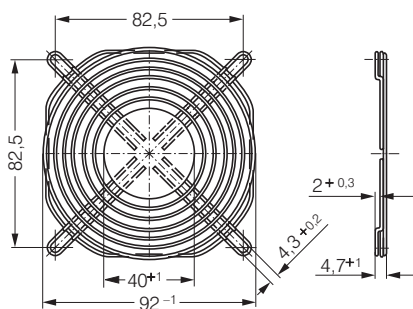
**LZ31** Fan size 50 x 50



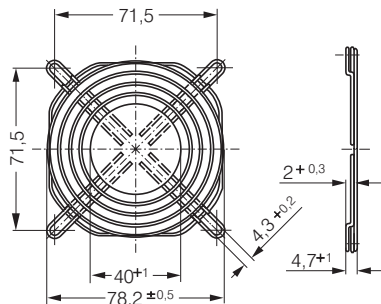
**LZ28-1** Fan size 60 x 60



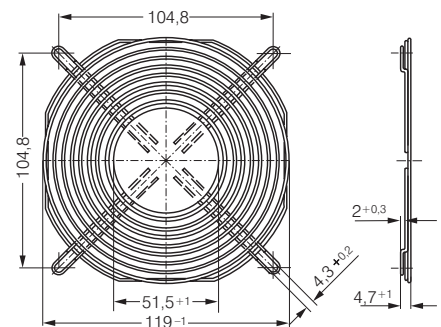
**LZ23-1** Fan size 92 x 92

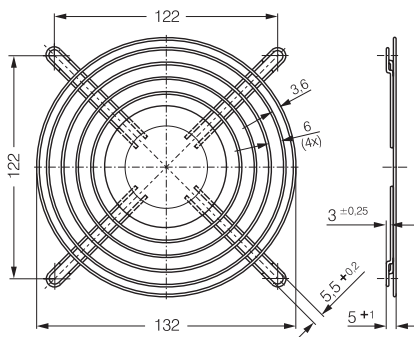
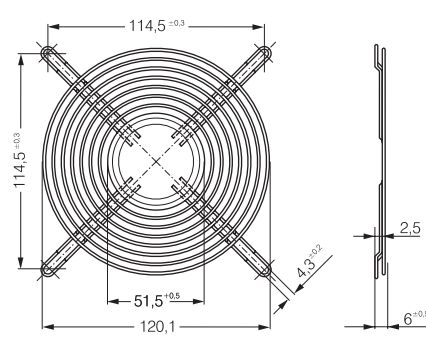
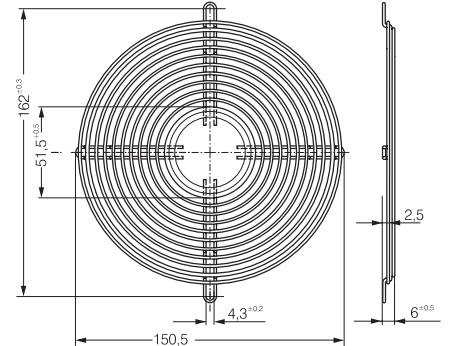
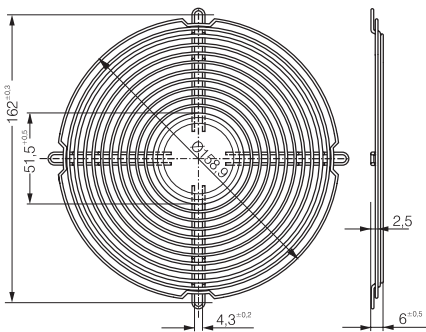
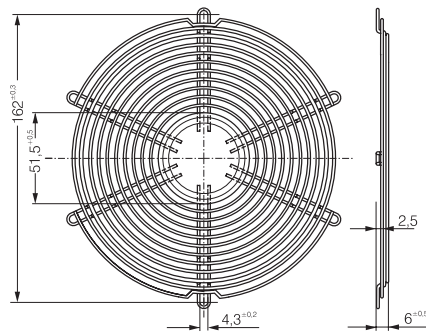
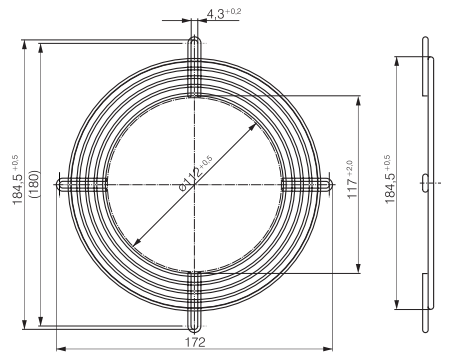
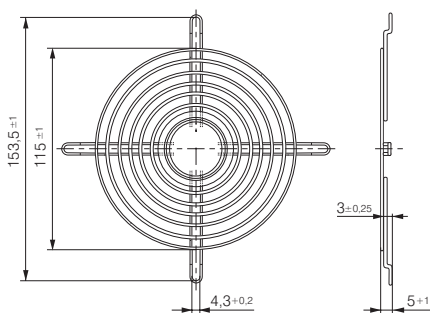
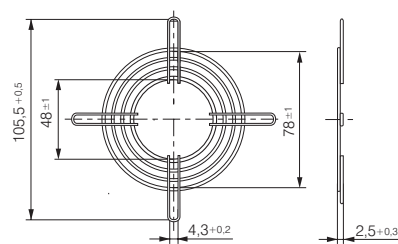


**LZ32-4** Fan size 80 x 80



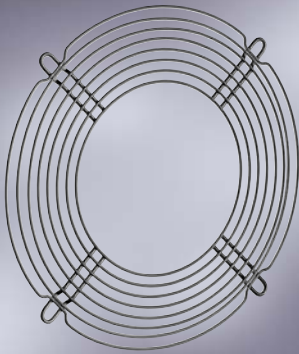
**LZ30-4** Fan size 119 x 119



**LZ25** Fan size 135 x 135**LZ35** Fan size 127 x 127**LZ36** Fan size 150 x 172**LZ37** Fan size 172 Ø x 51**LZ38** Fan size 172 Ø x 51**LZ39** Fan size 172 Ø x 51**LZ30** Fan size 119 x 119**LZ22-2** Fan size 80 x 80

# ACmaxx Axial Fans Finger Guards

– Finger guards as per EN 294, of rust-proof steel wire for equipment fans.

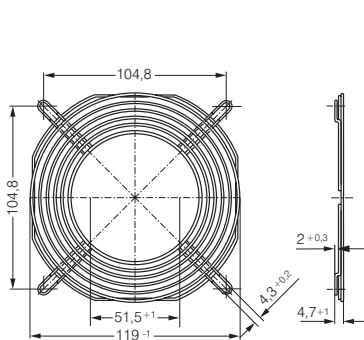


Fan series	Finger Guards	
AC 8300	LZ32-4	suction face
AC 8300 H	*	blade face
AC 3200 J	LZ23-1	suction face
AC 3200 J	*	blade face
AC 4400 FN	LZ30-4	suction face
AC 4400 FN	LZ30-9	blade face
AC 4300	LZ30-4	suction face
AC 4300	LZ30-9	blade face

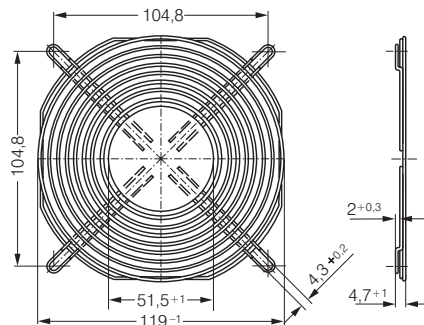
Fan series	Finger Guards	
AC 6200 N	LZ37	suction face
AC 6200 N	LZ37-2	blade face
AC 6100 N	LZ37	suction face
AC 6100 N	*	blade face

\*Blade face finger guards on request.

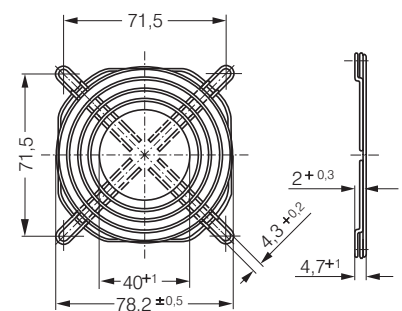
**LZ30-9** Fan size 119 X 119



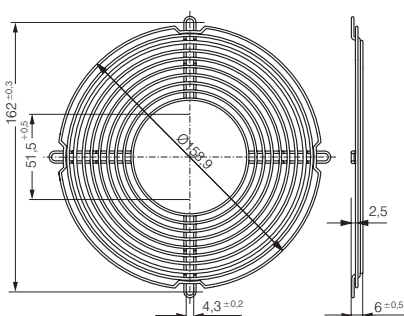
**LZ30-4** Fan size 119 x 119



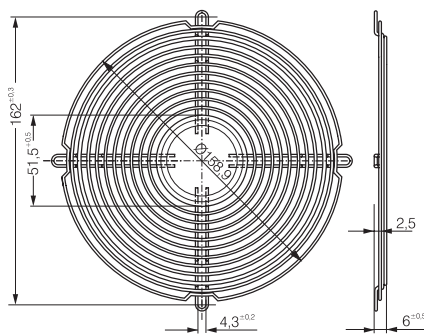
**LZ32-4** Fan size 80 x 80



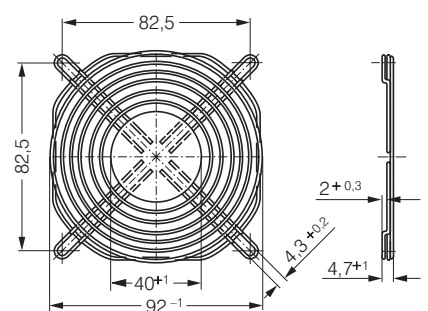
**LZ37-2** Fan size 172 Ø X 51



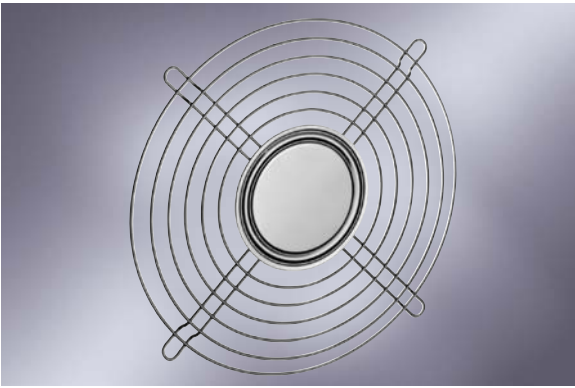
**LZ37** Fan size 172 Ø x 51



**LZ23-1** Fan size 92 x 92



# Finger Guards

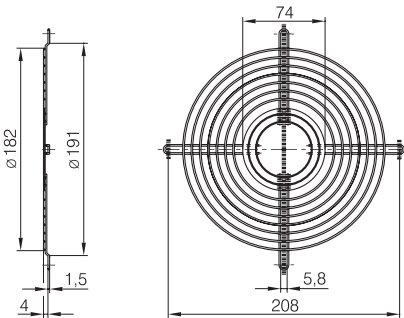


- Size 180: galvanised steel wire, chromatised in blue.
- Size 200 / 208 / 250: steel wire, plastic coated, silver metallic gloss.

Fan series	Finger Guards	Fan series	Finger Guards
W1G 180	26388-2-4039	W4S 200	78128-2-4039
W1G 200	78128-2-4039	W2E 208	35139-2-4039
W1G 208	35139-2-4039		35138-2-4039
	35138-2-4039	W2D 208	35139-2-4039
W1G 250	09418-2-4039		35138-2-4039
W2E 200	78128-2-4039	W2E 250	09418-2-4039

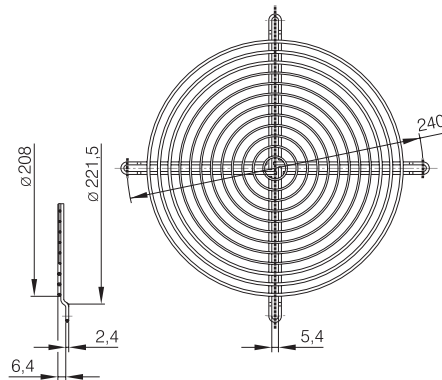
26388-2-4039

Fan size 180



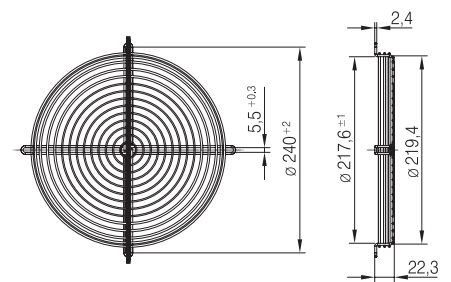
78128-2-4039

Fan size 200



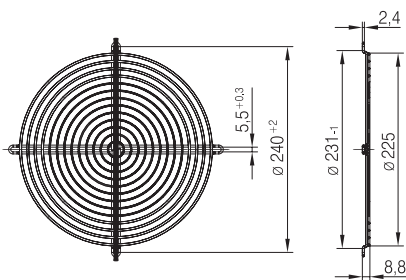
35139-2-4039

Fan size 208



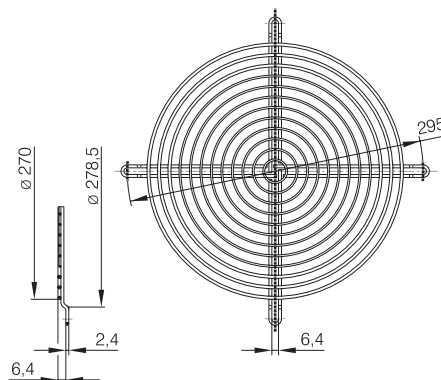
35138-2-4039

Fan size 208



09418-2-4039

Fan size 250



# Finger Guards



- Finger guards of black, fibreglass reinforced plastik (conform to EN 294).
- Plastic protective grilles must not be used for the following models:  
8200 JH3 / JH4  
3200 JH3 / JH4  
4100 NH5 - NH8

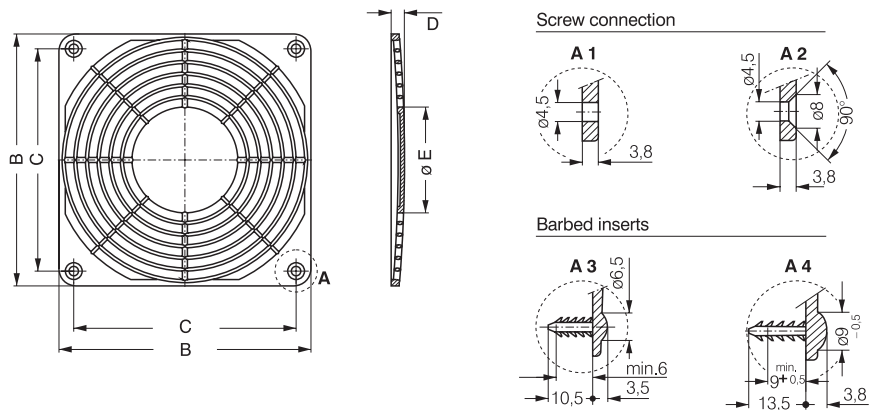
Finger Guards	Mounting	B	C	D	E	Finger Guards	Mounting	B	C	D	E
LZ32-2	A1	80 <sup>-0.5</sup>	71.5 <sup>±0.2</sup>	7.0	34	LZ30-5	A2	119 <sup>-0.5</sup>	105 <sup>±0.2</sup>	6.5	50
LZ32-3	A3	80 <sup>-0.5</sup>	71.5 <sup>±0.2</sup>	7.0	34	LZ30-6	A4	119 <sup>-0.5</sup>	105 <sup>±0.2</sup>	6.5	50
LZ23-2	A1	92.5 <sup>-0.5</sup>	82.5 <sup>±0.2</sup>	6.5	46	LZ33-1	A2	127 <sup>-0.5</sup>	113.5 <sup>±0.2</sup>	6.5	50
LZ23-3	A3	92.5 <sup>-0.5</sup>	82.5 <sup>±0.2</sup>	6.5	46	LZ33-2	A4	127 <sup>-0.5</sup>	113.5 <sup>±0.2</sup>	6.5	50

LZ32-2 / LZ32-3 Fan size 80 x 80

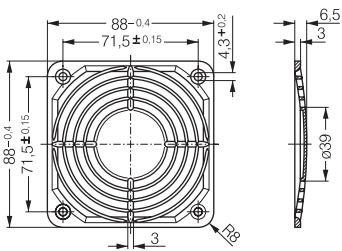
LZ23-2 / LZ23-3 Fan size 92 x 92

LZ30-5 / LZ30-6 Fan size 119 x 119

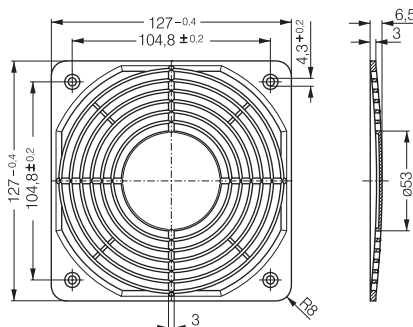
LZ33-1 / LZ33-2 Fan size 127 x 127



LZ32P Fan size 80 x 80



LZ30P Fan size 119 x 119



# Fan Filter Guards



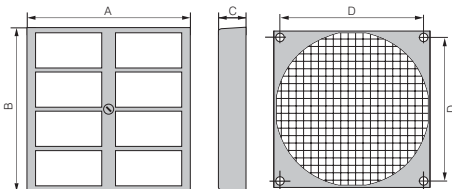
- Fan filter guards for installation on axial fan series for sizes 60 mm, 80 mm, 92 mm, 119 mm, 172 mm. All filter units fit directly onto the existing installation holes on the fans.
- Fan filter guards consist of 3 parts: the outer grille, the inner fastening plate and the replaceable filter mat.
- Grille is molded of polycarbonate (PC) with a matt surface.
- A quick-release on the grille allows for quick and easy filter mat replacement.
- Wire-mesh fastening plate, black powder coating.
- Filter mat replacement can be performed on running fans, welded wire-mesh protection.
- Filter mat made of white, synthetically bonded fibers.

Protection Filter	Fan size	A	B	C	D	Replacement filter*
FF60	60 x 60 mm	65	65	13.5	50.0	RF 60
FF80	80 x 80 mm	85	85	14.0	71.5	RF 80
FF92	92 x 92 mm	125	105	17.5	82.5	RF 92
FF119	119 x 119 mm	162	136	18.5	104.5	RF 119
FF172	∅ 172 mm	226	190	19.5	162.0	RF 172

\* Replacement filters only in packs of 5.

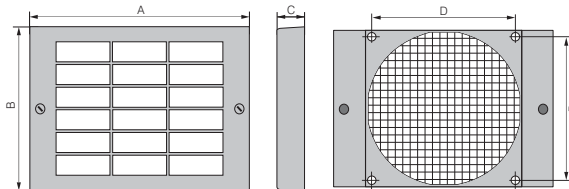
## FF60 / FF80

Fan size: 60 x 60 mm  
80 x 80 mm



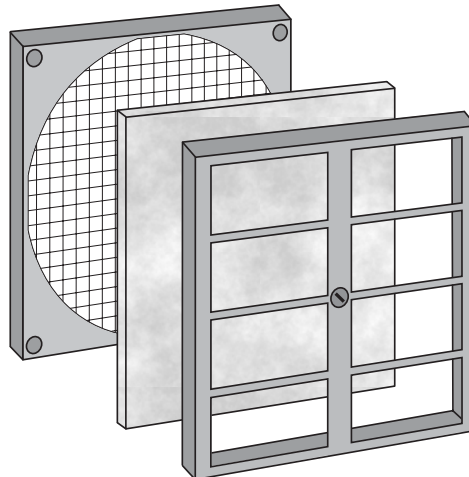
## FF92 / FF 119 / FF 172

Fan size: 92 x 92 mm  
119 x 119 mm  
∅ 172 mm



### Filter capacity

A fan filter guard filters out up to 75% of dust particles up to a size of 5-10 microns and withstands temperatures of up to 100°C. Flame retardant in accordance with DIN 53438, grade F1. For installed, clean filters, an air flow reduction of 20 – 30% can be assumed.



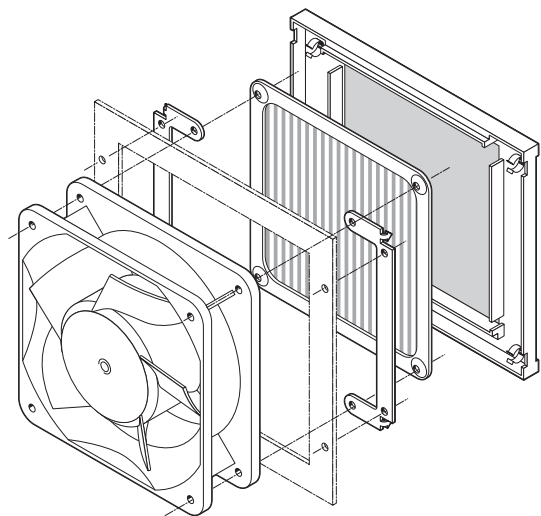


# Filter class

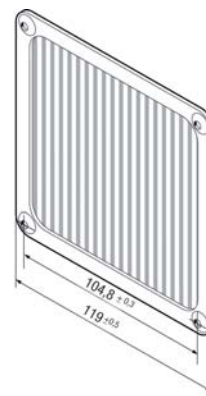
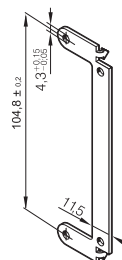
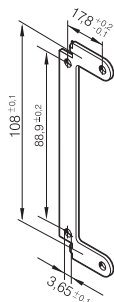
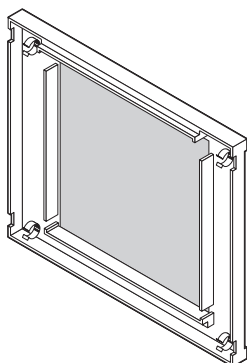


- Protective filter grille comprising mounting strap, filter and screen.
- Screen LZ40 N made of black, fiberglass-reinforced plastic with inserted wire netting (LZ60).
- LZ 60 filter made of Nirosta wire mesh.
- LZ40-1 mounting strap for assembly.

Fan series DC	Fan series AC
4400 F	AC 4300
4400 FN	9900
4300	4000 N
4300 N	4000 Z
4400	
4200	
4100 N	



LZ40N	Screen	LZ40-1	Bracket	LZ60	Filter
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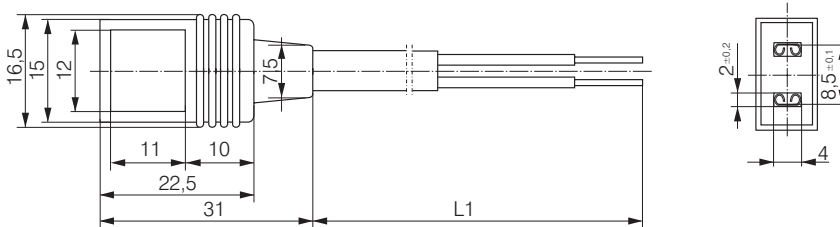
# Connector cable



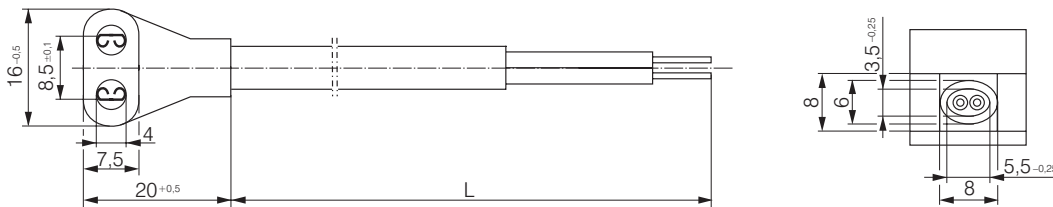
- Connector cable with injection moulded plug in various lengths.
- Strand ends with core-crimping sleeve, core-end sleeve or tin-plated.
- Straight or angled plug.
- For all types of fan with flat plug 2.8 / 3.0 x 0.5.

Plug model	L1 (mm)	Plug	Leads end	Leads colour	Application
LZ120	610	G	C	black/black	AC
LZ120-4	2 000	G	A	black/black	AC
LZ120-5	380	W	B	red/black	DC
LZ120-6	610	W	B	red/black	DC
LZ120-11	2 000	G	A	red/black	DC
LZ120-16	800	G	B	black/black	AC
LZ120-18	4 000	G	A	black/black	AC
LZ126	1 000	G	C	black/black	AC
LZ127	1 600	G	B	black/black	AC
LZ130-1	610	G	C	black/black	AC
LZ140	610	G	B	black/black	AC

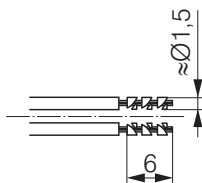
Connector cable Straight plug (G)



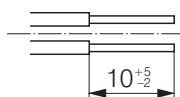
Connector cable Angled plug (W)



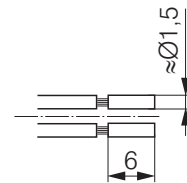
Core crimp sleeve Leads end A



Tin-plated Leads end B

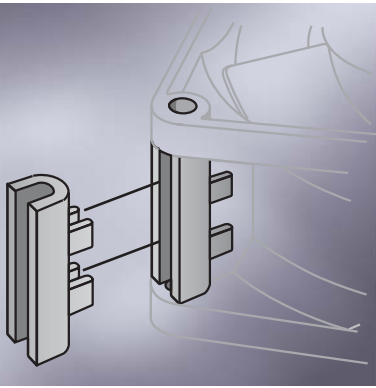


Core-end sleeve Leads end C



# Accessories

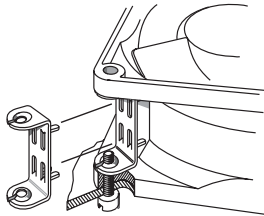
In addition to the accessories and assembly parts listed in this catalogue, ebm-papst also supplies numerous special parts for fans. The sales experts at ebm-papst will be happy to assist you in your enquiries concerning fan assembly and application.



Fan series	Accessories
8300	LZ212 / LZ260
8400 N	LZ261
3300	LZ212 / LZ260
3400 N	LZ261
9000	LZ210
4000	LZ210
4300	LZ212 / LZ260
8300	LZ212

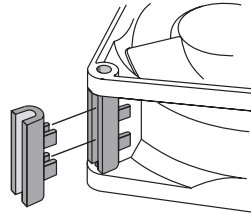
Fan series	Accessories
5100	LZ210
5600	LZ210
5200	LZ210
5900	LZ210
7000	LZ210
VARIOFAN	LZ370

## LZ212



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

## LZ260/LZ261



Spacer of fibreglass reinforced plastic. For screw mounting over both fan mounting flanges.

## LZ210



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

## LZ370

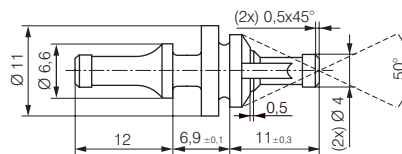


Required performance data:




$R_{25} = 100 \text{ K}\Omega \pm 5\% @ 25^\circ\text{C}$   
 $B\text{-value} = 4190 \pm 2\%$   
 $P_{\text{max}} = 0,25 \text{ W}$

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

## LZ550



Rubber anti vibration mounts for fans with a hole  $\varnothing$  of  $4,3 \pm 0,2 \text{ mm}$  and flange thickness of 3 - 5.5 mm. For a carrier plate with a hole  $\varnothing$  of  $6,5 \pm 0,15 \text{ mm}$  and plate thickness of 1 - 2 mm.

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# Distributors of ebm-papst

## Germany

### ebm-papst St. Georgen GmbH & Co. KG

Hermann-Papst-Straße 1  
D-78112 ST. GEORGEN  
Phone +49 (0) 77 24 / 81-0  
Fax +49 (0) 77 24 / 81-13 09  
info2@de.ebmpapst.com

www.ebmpapst.com

### ebm-papst Muldfingen GmbH & Co. KG

Bachmühle 2  
D-74673 MULDFINGEN  
Phone +49 (0) 79 38 / 81-0  
Fax +49 (0) 79 38 / 81-110  
info1@de.ebmpapst.com

www.ebmpapst.com




### ebm-papst Landshut GmbH

Hofmark-Aich-Straße 25  
D-84030 LANDSHUT  
Phone +49 (0) 8 71 / 707-0  
Fax +49 (0) 8 71 / 707-465  
info3@de.ebmpapst.com

www.ebmpapst.com

## Agencies

### Berlin

 Dipl.-Ing. (TH) Jens Duchow  
 Händelstraße 7  
16341 Panketal  
 Phone +49 (0) 30 / 94 41 49 62  
Fax +49 (0) 30 / 94 41 49 63  
Jens.Duchow@de.ebmpapst.com




### Dortmund

 Dipl.-Ing. (FH) Hans-Joachim Pundt  
 Auf den Steinern 3  
59519 Möhnese-see-Völlinghausen  
 Phone +49 (0) 29 25 / 80 04 07  
Fax +49 (0) 29 25 / 80 04 08  
Hans-Joachim.Pundt@de.ebmpapst.com




### Frankfurt

 Dipl.-Ing. Christian Kleffmann  
 Dr. Hermann-Krause Straße 23  
63452 Hanau  
 Phone +49 (0) 61 81 / 18 98 12  
Fax +49 (0) 61 81 / 18 98 13  
Christian.Kleffmann@de.ebmpapst.com




### Halle

 Dipl.-Ing. (TU) Michael Hanning  
 Lerchenweg 4  
06120 Lieskau  
 Phone +49 (0) 3 45 / 5 51 24 56  
Fax +49 (0) 3 45 / 5 51 24 57  
Michael.Hanning@de.ebmpapst.com




### Hamburg

 Ingenieurbüro Breuell GmbH  
 Elektro.-Ing. Dirk Kahl  
Grütmühlenweg 40  
22339 Hamburg  
 Phone +49 (0) 40 / 53 80 92 10  
Fax +49 (0) 40 / 53 80 92 84  
Dirk.Kahl@de.ebmpapst.com


### Kassel

 Dipl.-Ing. (FH) Ralph Brück  
 Hoherainstraße 3 b  
35075 Gladenbach  
 Phone +49 (0) 64 62 / 40 71 10  
Fax +49 (0) 64 62 / 40 71 11  
Ralph.Brueck@de.ebmpapst.com




### Koblenz

 Winfried Schaefer  
 Hinter der Kirch 10  
56767 Uersfeld  
 Phone +49 (0) 26 57 / 16 96  
Fax +49 (0) 26 57 / 16 76  
Winfried.Schaefer@de.ebmpapst.com




### München

 Dipl.-Wirt.-Ing. (FH) Jens Peter  
 Steinbergweg 6  
82285 Hattenhofen  
 Phone +49 (0) 81 45 / 80 92 25  
Fax +49 (0) 81 45 / 80 92 26  
Jens.Peter@de.ebmpapst.com




### Nürnberg

 Friedrich Klein  
 Adlerstraße 49/1  
73540 Heubach  
 Phone +49 (0) 71 73 / 49 83  
Fax +49 (0) 71 73 / 80 53  
Friedrich.Klein@de.ebmpapst.com




### Offenburg

 Dipl.-Ing (FH) Ralf Braun  
 Hubeneck 21  
77704 Oberkirch  
 Phone +49 (0) 78 02 / 98 22 52  
Fax +49 (0) 78 02 / 98 22 53  
Ralf.Braun@de.ebmpapst.com




### Paderborn

 Wolf-Jürgen Weber  
 Niehausweg 13  
33739 Bielefeld  
 Phone +49 (0) 5206 / 91 73 231  
Fax +49 (0) 5206 / 91 73 235  
wolf-juergen.weber@de.ebmpapst.com

### Stuttgart

 Dipl.-Ing. (FH) Rudi Weinmann  
 Mühlhaldenweg 13  
73207 Plochingen  
 Phone +49 (0) 71 53 / 92 89 80  
Fax +49 (0) 71 53 / 92 89 81  
Rudi.Weinmann@de.ebmpapst.com

### Ulm

 Günter Wilhelm  
 Allgäuer Str. 7  
89269 Vöhringen  
 Phone +49 (0) 73 06 / 92 46 08  
Fax +49 (0) 73 06 / 92 46 48  
Gunter.Wilhelm@de.ebmpapst.com


## Distributors

 **Burgdorf**  
 ETB Electronic Team  
 Beratungs- u. Vertriebs GmbH  
 Wundramweg 1  
 31303 Burgdorf  
 Phone +49 (0) 51 36 / 9 72 29-30  
 Fax +49 (0) 51 36 / 9 72 29-39  
 info@etb-electronic.de  
 www.etb-electronic.de

 **Frankfurt**  
 R.E.D. Handelsgesellschaft mbH  
 Gutenbergstraße 3  
 63110 Rodgau - Jügesheim  
 Phone +49 (0) 61 06 / 84 10  
 Fax +49 (0) 61 06 / 84 11 11  
 info@red-elektromechanik.de  
 www.red-elektromechanik.de


 **SPOERLE ELECTRONIC**  
 Max-Planck-Straße 1-3  
 63303 Dreieich  
 Phone +49 (0) 61 03 / 3 04-0  
 Fax +49 (0) 61 03 / 3 04-82 01  
 spoerle@spoerle.com  
 www.spoerle.com

 **Hamburg**  
 Breuell + Hilgenfeldt GmbH  
 Grützmühlenweg 40  
 22339 Hamburg  
 Phone +49 (0) 40 / 53 80 92 20  
 Fax +49 (0) 40 / 53 80 92 84  
 info@breuell.de

 **Walter Kluxen GmbH**  
 Neuer Höltigbaum 6  
 20097 Hamburg  
 Phone +49 (0) 40 / 23 70 10  
 Fax +49 (0) 40 / 23 70 13 09


 **Klausdorf**  
 ETB Electronic Team  
 Beratungs- u. Vertriebs GmbH  
 Zossener Straße 27  
 15838 Klausdorf  
 Phone +49 (0) 3 37 03 / 69-0  
 Fax +49 (0) 3 37 03 / 69-14 9  
 info@etb-electronic.de  
 www.etb-electronic.de


 **München**  
 A. Schweiger GmbH  
 Ohmstraße 1  
 82054 Sauerlach  
 Phone +49 (0) 81 04 / 8 97 0  
 Fax +49 (0) 81 04 / 8 97 90  
 info@schweiger-gmbh.de  
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 **Multi-Bauelemente Service**  
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### ● Express Service-Center

Service and Consulting Center for sales of small quantities.

 **North**  
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 Phone +49 (0) 40 / 53 80 92 20  
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 ebmpapst@breuell.de

 **South**  
 Scheffel  
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 Schuckertstr. 4  
 71254 Ditzingen  
 Phone +49 (0) 1 80 / 1 55 50 00  
 Fax +49 (0) 71 56 / 4 94 25  
 ebmpapst-pes-sued@t-online.de

## Europe

 **Austria**  
 ebm-papst Motoren & Ventilatoren GmbH  
 Westbahnstr. 5  
 A-4490 Florian  
 Phone +43 / 7224 / 66 011-0  
 Fax +43 / 7224 / 66 011-20  
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 A-1150 Vienna  
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 Fax +43 / 1 / 86 64 22 50  
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 **Belarus**  
 ebm-papst Bel AgmbH  
 Prospekt Nesavisimosti 11/2  
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 **Belgium**  
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 Sales office Belgium-Luxemburg  
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 B-3001 Heverlee-Leuven  
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 Fax +32 / 16 / 39 62 20  
 info@vibobenelux.com



 **Avnet Time Diegem**  
 Eagle Building  
 Kouterveldstraat 20  
 B-1831 Diegem  
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 **Bulgaria**  
 ebm-papst Romania S.R.L.  
 Str. Tirnavei Nr. 20  
 RO-500327 Brasov  
 Phone +40 / 2 68 / 31 28 05  
 Fax +40 / 2 68 / 31 28 05  
 dudasludovic@xnet.ro


  **Compex Ges.m.b.H**  
Wurlitzergasse 10/3  
A -1160 Wien  
Phone +43 / 1 / 4 80 42 23  
Fax +43 / 1 / 4 86 42 30  
compex.wien@utanet.at

#### Croatia



  **ebm-papst Industries Kft.**  
Mátyás u. 1/A  
H-2220 Vecsés  
Phone +36 / 29 / 55 01 90  
Fax +36 / 29 / 55 01 94  
office@hu.ebmpapst.com  
www.ebmpapst.hu

  **Compex Ges.m.b.H**  
Wurlitzergasse 10/3  
A -1160 Wien  
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Fax +43 / 1 / 4 86 42 30  
compex.wien@utanet.at

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Fax +4 20 / 5 / 47 23 26 22  
info@ebmpapst.cz  
www.ebmpapst.com

  **Compex KFT.**  
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Phone +36 / 1 / 2 / 06 57 25  
Fax +36 / 1 / 2 / 06 57 71  
compex@vnet.hu

  **Mechatronic spol s .r. o.**  
Kloknerova 9  
CZ 148 00 Praha 4  
Phone +4 20 / 2 / 67 91 39 73  
Fax +4 20 / 2 / 67 91 39 73  
mechatronic@volny.cz  
www.mechatronic.cz

#### Denmark

  **Jenk ApS**  
Vallensbækvej 21  
DK-2605 Brøndby  
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Fax +45 / 43 63 05 05  
jenk@jenk.dk  
www.jenk.dk

#### Estonia

  **ebm-papst OY Eesti Filiaal**  
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EE-10621 Tallinn  
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Fax +372 / 6556 / 979  
www.ebmpapst.ee

#### Finland

  **ebm-papst OY**  
Puistotie 1  
FIN-02760 Espoo  
Phone +358 / 9 / 88 70 22 0  
Fax +358 / 9 / 88 70 22 13  
mailbox@ebmpapst.fi  
www.ebmpapst.fi

#### France

  **ebm-papst sarl**  
BP 62  
F-67212 Obernai-Cedex  
Phone +33 / 820 326 266  
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www.ebmpapst.fr

#### Great Britain

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Fax +44 / 12 45 / 46 63 36  
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www.ebmpapst.co.uk

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The Smithy, Fidlers Lane  
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www.ebmpapst.co.uk

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Fax +30 / 2 10 / 9 51 34 90  
contact@helcoma.gr  
www.helcoma.gr

 **Assimacopoulos S.A.**  
11, Karitsi Square  
GR-10561 Athens  
Phone +30 / 10 / 3 22 17 37  
Fax +30 / 10 / 3 22 57 08  
assimac@interagora.gr  
www.assimacopoulos.gr

#### Hungary

  **ebm-papst Industries Kft.**  
Mátyás u. 1/A  
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Fax +36 / 29 / 55 01 94  
office@hu.ebmpapst.com  
www.ebmpapst.hu

  **Compex KFT.**  
Elete út 56/B  
H-1115 Budapest  
Phone +36 / 1 / 2 / 06 57 25  
Fax +36 / 1 / 2 / 06 57 71  
compex@vnet.hu

#### Iceland



  **RJ Engineers**  
Stangarhyl 1A  
IS-110 Reykjavik  
Phone +354 / 567 80 30  
Fax +354 / 567 80 15  
rj@rj.is  
www.rj.is



#### Ireland

  **ebm-papst Ltd.**  
Portlaoise Business & Technology Park  
Mountrath Road  
IRL-Portlaoise, Co. Laois  
Phone +353 / 8 66 43 43  
Fax +353 / 8 66 43 46  
sales@ie.ebmpapst.com  
www.ebmpapst.ie



## Italy




 ebm-papst S.r.l.  
 Via Cornaggia 108  
 I-22076 Mozzate (Co)  
 Phone +39 / 03 31 / 83 62 01  
 Fax +39 / 03 31 / 82 15 10  
 info@it.ebmpapst.com  
 www.ebmpapst.it

 Pamoco S.r.l.  
 Via Gallarate, 184  
 I-2220 Vecsés  
 Phone +39 / 02 / 3 45 60 91  
 Fax +39 / 02 / 33 10 43 42  
 pamoco@berger-lahr.com  
 www.berger-lahr.com/it

## Macedonia

 ebm-papst Industries Kft.  
 Mátyás u. 1/A  
 H-2220 Vecsés  
 Phone +36 / 29 / 55 01 90  
 Fax +36 / 29 / 55 01 94  
 office@hu.ebmpapst.com  
 www.ebmpapst.hu

## Netherlands




 VIBO Benelux B. V.  
 Engelseweg 127  
 Postbus 230  
 NL-5705 AC Helmond  
 Phone +31 / 4 92 / 50 29 00  
 Fax +31 / 4 92 / 50 29 50  
 verkoop@vibobenelux.com  
 www.vibobenelux.com



 Avnet Time Breda  
 Takkebijsters 2  
 NL-4817 BL Breda  
 Phone +31 / 76 5 / 72 23 00  
 Fax +31 / 76 5 / 72 23 03  
 Time NL@avnet.com  
 http://www.avnettime.com

## Norway

 Ziehl-ebm as  
 P.B. 173 Holmlia  
 N-1203 Oslo  
 Phone +47 / 22 / 76 33 40  
 Fax +47 / 22 / 61 91 73  
 mailbox@ziehl-ebm.no  
 www.ziehl-ebm.no

## Poland

 ebm-papst Polska Sp. z o.o.  
 ul. Modlinska 4  
 PL-03-216 Warszawa  
 Phone +48 / 22 / 675 78 19  
 Fax +48 / 22 / 676 95 87  
 office@ebmpapst.pl  
 www.ebmpapst.pl



 Compex Ges.m.b.H  
 Wurlitzergasse 10/3  
 A -1160 Wien  
 Phone +43 / 1 / 4 80 42 23  
 Fax +43 / 1 / 4 86 42 30  
 compex.wien@utanet.at

## Portugal




 ebm-papst (Portugal), Lda  
 Av. Marechal Gomes da Costa, 35 e  
 Rua Conselheiro Emidio Navarro  
 P-1800-255 Lisboa  
 Phone +351 / 21 / 839 48 80  
 Fax +351 / 21 / 839 47 59  
 info@pt.ebmpapst.com  
 www.ebmpapst.pt


## Romania




 ebm-papst Romania S.R.L.  
 Str. Tirnavei Nr. 20  
 RO-500327 Brasov  
 Phone +40 / 2 68 / 31 28 05  
 Fax +40 / 2 68 / 31 28 05  
 dadasludovic@xnet.ro

 Compex Ges.m.b.H  
 Wurlitzergasse 10/3  
 A -1160 Wien  
 Phone +43 / 1 / 4 80 42 23  
 Fax +43 / 1 / 4 86 42 30  
 compex.wien@utanet.at

## Russia

 ebm-papst Ural GmbH  
 Rosa Luxemburg Strasse 59, 4-12  
 RU-620026 Jekaterinburg  
 Phone +7 / 343 / 378 31 75  
 Fax +7 / 343 / 378 31 89  
 Konstantin.Molokov@ru.ebmpapst.com  
 www.ebmpapst.ur.ru




 ebm-papst Rus GmbH  
 Nizhegorodskaya 32, str. 15 office 420  
 RU-109029 Moskau  
 Phone +7 / 4 95 / 6 71 53 93  
 Fax +7 / 4 95 / 6 71 53 95  
 info@ebmpapst.ru  
 www.ebmpapst.ru

 ebm-papst Rus  
 Saint-Petersburg's Filial  
 Zastavskaya 7  
 RU-196084 Sankt-Petersburg  
 Phone +7 / 8 12 / 4 49 96 07  
 Fax +7 / 8 12 / 4 49 96 07  
 spb@ru.ebmpapst.com




## Serbia & Montenegro

 ebm-papst Industries Kft.  
 Mátyás u. 1/A  
 H-2220 Vecsés  
 Phone +36 / 29 / 55 01 90  
 Fax +36 / 29 / 55 01 94  
 office@hu.ebmpapst.com  
 www.ebmpapst.hu

## Spain

 ebm-papst Ibérica S.L.  
 Avda. del Sistema Solar, 29  
 C/Monton de Trigo, Nr. 3  
 E-28830 San Fernando  
 de Henares (Madrid)  
 Phone +34 / 91 / 6 78 08 94  
 Fax +34 / 91 / 6 78 15 30  
 ventas@ebmpapst.es

## Sweden

 ebm-papst AB  
 Aeggelundavägen 2  
 S-17562 Järfälla  
 Phone +46 / 8 / 7 61 94 00  
 Fax +46 / 8 / 36 23 06  
 info@ebmpapst.se  
 www.ebmpapst.se

## Switzerland

 ebm-papst AG  
 Rütisbergstraße 1  
 CH-8156 Oberhasli  
 Phone +41 / 44 / 732 20 70  
 Fax +41 / 44 / 732 20 77  
 verkauf@ebmpapst.ch  
 www.ebmpapst.ch

 Omni Ray AG  
 Im Schörl 5  
 CH-8600 Dübendorf  
 Phone +41 / 44 / 8 02 28 80  
 Fax +41 / 44 / 8 02 28 28  
 r.borner@omniray.ch  
 www.omniray.ch

## Turkey

 Akantel Elektronik San. Tic. LTD. Sti.  
Atatürk Organize Sanayi  
Bölgesi 10007 SK. No.:6  
 TR-35620 Cigli-Izmir  
Phone +90 / 2 32 / 32 82 090 -91  
Fax +90 / 2 32 / 32 80 270  
akantel@akantel.com.tr  
www.akantel.com.tr

## Ukraine

 ebm Industries Ukraine GmbH  
Lepse Boulevard 4, Haus 47 Etage 5  
UA-03680 Kiev  
 Phone +38 / 0 44 / 2 06 30 91  
Fax +38 / 0 44 / 2 06 30 91  
mail@ebmpapst.ua  
www.ebm-papst.ua

## Americas

### Argentina

 ebm-papst de Argentina S.A.  
Hernandarias 148 Lomas del Mirador  
1752 Buenos Aires  
 Phone +54 / 11 46 57-61 35  
 Fax +54 / 11 46 57-20 92  
ventas@ar.ebmpapst.com

### Brazil

 ebm-papst Motores Ventiladores Ltda.  
Rua Francisco D'Amico, 155  
Bairro Pirajussara  
 BR-06785-290 Taboão da Serra-SP  
Phone +55 / 11 / 41 38 50 90  
Fax +55 / 11 / 41 38 50 86  
vendas@br.ebmpapst.com  
www.ebmpapst.com.br

### Canada


 ebm-papst Canada Inc.  
1800 Ironstone Manor, Unit 2  
CDN-Pickering, Ontario, L1W3J9  
 Phone +1 / 905 / 420 / 35 33  
 Fax +1 / 905 / 420 / 37 72  
sales@ca.ebmpapst.com  
www.ebmpapst.ca

### Mexico

 ebm Industrial S.de R.L. de C.V.  
Paseo de Tamarindos 400-A-5to Piso  
Col. Bosques de las Lomas  
 MEX-Mexico 05120, D.F.  
Phone +52 / 55 / 50 91 44 44  
Fax +52 / 55 / 50 91 44 43  
sales@mx.ebmpapst.com  
www.ebmpapst.com.mx


### USA


 ebm-papst Inc.  
P.O. Box 4009  
100 Hyde Road  
 USA-Farmington, CT 06034  
Phone +1 / 860 / 674 15 15  
Fax +1 / 860 / 674 85 36  
sales@us.ebmpapst.com  
www.ebmpapst.us

 ebm-papst Automotive and Drives, Inc.  
3200 Greenfield, Suite 255  
Dearborn, MI 48120  
Phone +1 / 313 / 406 80 80  
Fax +1 / 313 / 406 80 81  
automotive@us.ebmpapst.com  
www.ebmpapst-automotive.us

## Africa

### South Africa

 ebm-papst South Africa (Pty) Ltd.  
P.O. Box 3124  
1119 Yacht Ave.  
 ZA-2040 Honeydew Ext. 20  
Phone +27 / 11 / 794 57 06  
Fax +27 / 11 / 794 50 20  
info@za.ebmpapst.com  
www.ebmpapst.co.za

 Retron CC  
P.O. Box 3 94 48, Bramley, 2018  
SSF-Building, 706 - 4th Street, Wynberg  
Johannesburg  
Phone +27 / 11 / 7 86 05 53  
Fax +27 / 11 / 4 40 82 75

## Asia




### China

 ebm-papst Ventilator (Shanghai) Co., Ltd.  
No. 418, Hua Jing Road  
Wai Gao Qiao Free Trade Zone  
 No. 2001, Yang Gao (N) Road  
200131 Shanghai, P.R. of China  
Phone +86 / 21 / 50 46 01 83  
Fax +86 / 21 / 50 46 11 19  
sales@cn.ebmpapst.com  
www.ebmpapst.com.cn/

### Hong Kong

 ebm-papst Ventilator (Shanghai) Co., Ltd.  
Oversea Company Hong Kong  
Unit 13, 9/F, Technology Park  
 18 On Lai Street, Sha Tin, N.T.  
HK-Hong Kong, P.R. of China  
Phone +852 / 21 45 / 86 78  
Fax +852 / 21 45 / 76 78  
chenghong@cn.ebmpapst.com

 Qualtek Electronics, Ltd.  
Room 1608-1613, Park-In Commercial Centre  
56 Dundas Street  
Kowloon / Hongkong  
Phone +8 52 / 27 80 13 39  
Fax +8 52 / 27 80 82 29  
info@qualtekhk.com  
www.qualtekhk.com








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# Distributors of ebm-papst

## India

 ebm NADI International Pvt. Ltd.  
 26/3, G.N.T. Road, Erukkencherry  
 IND-Chennai-600118  
 Phone +91 / 44 / 26 72 01 03  
 Fax +91 / 44 / 25 37 11 49  
 ebmnadi@md2.vsnl.net.in  
 www.ebmnadi.com

## Indonesia

 ebm-papst Indonesia  
 Representative Office  
 Jalan Puri Kencana, Blok K7/3T  
 RI-Jakarta 11610  
 Phone +62 / 21 / 582 / 31 18  
 Fax +62 / 21 / 582 / 31 17  
 sonny.sanjaya@id.ebmpapst.com

## Israel

 Polak Bros. Import Agencies Ltd.  
 P.O. Box 995  
 10, Hayarkon Street  
 IL-Bnei-Brak 51108  
 Phone +972 / 3 / 617 73 33  
 Fax +972 / 3 / 579 66 79  
 polak@polak.co.il

## Japan

 ebm-papst Industries Japan K.K.  
 12 Floor, Benex S-3 Bldg.  
 3-20-8 Shinyokohama, Kohoku-ku  
 J-222-0033 Yokohama  
 Phone +81 / 45 / 470 / 57 51  
 Fax +81 / 45 / 470 / 57 52  
 info@jp.ebmpapst.com  
 www.ebmpapst.jp

## Korea

 ebm-papst Korea Co. Ltd.  
 6th Floor TRUTEK Building  
 B6-2, Digital Media City (DMC)  
 Sangam-Dong, Mapo-Ku  
 ROK-Seoul 121-270  
 Phone +82 / 2 / 36 62 / 13 24  
 Fax +82 / 2 / 36 62 / 13 26  
 info@kr.ebmpapst.com  
 www.ebmpapst.co.kr

## Malaysia

 ebm-papst Malaysia  
 Representative Office  
 Block F1, 9A-4, Jalan PJU 1/42  
 Dataran Prima  
 MAL-47301 Petaling Jaya  
 Phone +60 / 3 / 78 06 54 40  
 Fax +60 / 3 / 78 06 54 41  
 john.bulder@my.ebmpapst.com

## Singapore

 ebm-papst SEA Pte. Ltd.  
 23 Ubi Road 4, #05-00  
 Olympia Industrial Building  
 SGP-Singapore 408620  
 Phone +65 / 68 42 84 38  
 Fax +65 / 68 42 84 39  
 salesdept@sg.ebmpapst.com

## Taiwan

 ETECO Engineering & Trading Corp.  
 10F-I, No. 92, Teh-Wei Str.  
 RC-Tsow-Inn District, Kaohsiung  
 Phone +886 / 7 / 557 42 68  
 Fax +886 / 7 / 557 27 88  
 eteco@ms22.hinet.net

 Qualtek International Corp.  
 14 FL, 138, SEC. 3, Chung Hsing Road,  
 Hsin Tien, Taipei Hsien, Taiwan, Roc  
 Phone +8 86 / 2 / 29 17 / 11 81  
 Fax +8 86 / 2 / 29 11 / 79 00  
 qualtek@msg.hinet.net  
 www.qualtek.com

## Thailand

 ebm-papst Thailand Co. Ltd.  
 Representative Office  
 99/349 Chaeng Wattana Road, Laksi  
 Bangkok 10210, Thailand  
 Phone +66 / 2 / 576 / 15 24-5  
 Fax +66 / 2 / 576 / 15 42  
 salesdept@th.ebmpapst.com






## United Arab Emirates

 ebm-papst Middle East FZE  
 PO Box 17755  
 Jebel Ali Free Zone / FZS1 / AP05  
 UAE-Dubai  
 Phone +9 71 / 4 / 8 86 08 26  
 Fax +9 71 / 4 / 8 86 08 27  
 info@ae.ebmpapst.com

## Australia

### Australia

 ebm-papst Australia Pty. Ltd.  
 2 Silverton Close  
 AUS-Laverton North, Victoria 3026  
 Phone +61 / 3 / 83 25 64 00  
 Fax +61 / 3 / 83 25 64 64  
 sales@ebmpapst.com.au  
 www.ebmpapst.com.au

 Adilam Electronics Pty Ltd.  
 14 Nicole Close  
 AUS-North Bayswater, Victoria 3153  
 Phone +61 / 3 / 97 37 49 00  
 Fax +61 / 3 / 97 37 49 99

### New Zealand

 ebm-papst Australia Pty Ltd.  
 N.Z.Division  
 102 Henderson Valley Road  
 NZ-Henderson, Auckland 1230  
 Phone +64 / 9 / 837 18 84  
 Fax +64 / 9 / 837 18 99  
 sales@ebmpapst.com.au  
 www.ebmpapst.com.au/

 ADILAM Electronics Pty. Ltd.  
 5 A Tenauhaun Place Sockburn  
 Christchurch  
 PO Box 6032 Upper Riccarton  
 NZ-CHRISTCHURCH; New Zealand  
 Phone +64 / 3 / 3 41 30 50  
 Fax +64 / 3 / 3 41 30 40



**ebm-papst**  
**St. Georgen GmbH & Co. KG**

Hermann-Papst-Straße 1  
D-78112 St. Georgen  
Phone +49 (0) 7724 / 81-0  
Fax +49 (0) 7724 / 81-1309  
info2@de.ebmpapst.com

**ebm-papst**  
**Mulfingen GmbH & Co. KG**

Bachmühle 2  
D-74673 Mulfingen  
Phone +49 (0) 7938 / 81-0  
Fax +49 (0) 7938 / 81-110  
info1@de.ebmpapst.com

**ebm-papst**  
**Landshut GmbH**

Hofmark-Aich-Straße 25  
D-84030 Landshut  
Phone +49 (0) 871 / 707-0  
Fax +49 (0) 871 / 707-465  
info3@de.ebmpapst.com

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