Fans and motors for refrigerated display cases

Refrigeration applications in supermarkets make very exacting demands on the technologies used. Alongside great energy efficiency, the most important properties include high reliability and a long service life. Hygiene and product protection are however also absolutely essential. And in certain cases, there is a need to find an appropriate solution for extreme temperatures and particularly confined spaces.

Our fans excel in all these respects. They also offer extremely good performance and smooth operation. Which makes them ideal for use specifically in the refrigeration and freezer sector. ebm-papst can supply a broad product portfolio of energy-saving fans for all areas of application.
Fans and motors for refrigerated display cases

**Information**
- About ebm-papst
- The ideal solution for all refrigerated display cases
- Quick, simple, retrofit: 1:1 replacement with NiQ
- F-gas regulation and natural refrigerants

**Products**
- Compact fans
  - Axial fans
  - Diagonal fans
  - Tangential fans
- NiQ motors

**Accessories**
- Cables
- Hand-held programmer
- Plug-in module
- Air-inlet grille
- Guard grilles
- Axial impellers
- Mounting brackets
- Fan housings

**Technology**
- Connection diagrams
- Technical parameters and scope

**ebm-papst agents**
ebm-papst is a leader in ventilation and drive engineering technology and a much sought-after engineering partner in many industries. With around 20,000 different products, we have the perfect solution for practically every requirement. We have placed the highest emphasis on economy and ecology for many years.

We believe the consistent further development of our highly-efficient GreenTech EC technology provides our customers with the best opportunities for the future in industrial digitization. With GreenIntelligence, ebm-papst already offers intelligent networked complete solutions that are unique anywhere in the world today and that secure our customers a decisive advantage.

Six reasons that make us the ideal partner:

Our systems expertise.
You want the best solution for every project. The entire ventilation system must thus be considered as a whole. And that’s what we do – with motor technology that sets standards, sophisticated electronics and aerodynamic designs – all from a single source and perfectly matched.

Our spirit of invention.
We are also always able to develop customized solutions for you with our versatile team of over 600 engineers and technicians.

Our lead in technology.
We are not only pioneers and trailblazers in the development of highly efficient EC technology, we also recognized the opportunities of digitization at an early stage. Therefore, we can offer solutions today that combine the highest energy efficiency with the advantages of IoT and digital networking.

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

Our standard of quality.
Our quality management is uncompromising, at every step in every process. This is underscored by our certification according to international standards including DIN EN ISO 9001, TS declaration of conformity and DIN EN ISO 14001.

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

1963 Founding of Elektrobau Mulfingen GmbH & Co. KG by Gerhard Sturm and Heinz Ziehl.
1965 First tubeaxial fan developed in EC/DC technology.
1966 ebm-papst’s success takes off with the new 68 motor.
1972 The first ebm foreign subsidiary is established in Sweden.
1988 Gerhard Sturm is awarded the Federal Cross of Merit.
1990 The sixty-millionth external-rotor fan is produced.
1992 Acquisition of PAPST Motoren GmbH in St. Georgen.
1997 Buyout of the Landshut (mvl) plant.
1998 Development of first fans with integrated electronics.
2003 Change of name to ebm-papst.
2008 The HyBlade® range of fans sets new efficiency standards.
2010 GreenTech – our sign for energy efficiency and resource preservation.
2011 RadiCal defines a new standard for EC centrifugal fans.
2013 ebm-papst takes over the gearbox specialist Zeitlauf and wins the German Sustainability Award.
2014 Team partnership with Mercedes-AMG Petronas Formula 1 team.
2015 RadiPac pushes the limits of efficiency.
2016 AxiBlade sets new standards in ventilation, refrigeration and air-conditioning.
2017 Factory expansions Germany: logistics center in Hollenbach and production unit in Hagenmoos.
2018 GreenIntelligence becomes the new byword for smart complete solutions.
Keep cool – even when the requirements are very special.
Refrigeration applications in supermarkets pose special challenges on the technology used. Apart from high energy efficiency, high reliability and long service life are the most important properties. But hygiene and goods protection are also absolutely necessary. In some cases, a suitable solution must also be found for extreme temperatures or particularly tight spaces.

Compact energy-saving fans for refrigerated display cases and freezer cabinets.
Our fans with GreenTech EC technology score excellently in all these points. And they deliver impressively high performance at low noise levels. This makes them ideally suited for normal refrigeration or freezer applications.

No matter the application, ebm-papst provides a broad and consistent product portfolio of energy-saving EC fans. Axial fans are designed for installation beneath the shelves in refrigerated display cases and freezer cabinets, for example. On the other hand, we designed our diagonal fans especially for the back walls of refrigerated display cases and the tight installation situation they often present. Thanks to their extremely flat design, they fit into even the smallest gaps to enable optimum operation.

ebm-papst motors and fans prove their excellence in a wide range of refrigerated display cases and freezer cabinets in supermarkets. What all our solutions have in common: They continuously set new standards, whether it's lowering energy consumption, extending service life, reducing noise or when it comes to speed control and monitoring. Our motors and fans for refrigeration and air-conditioning are able to look back at a long history of success. Write the next chapter in the story and discover the highly innovative, reliable solutions available at ebm-papst.
Saving energy has no closing time.

An investment that quickly pays off.
Refrigeration systems such as the refrigerated display cases in supermarkets are typically in operation 24/7. Obviously, the energy they consume is a major cost factor. Nowadays, it is more important than ever to save energy. The fans in these systems have long operating times, making them prime candidates for major energy savings.

ebm-papst fans are highly efficient, which not only translates into environmental benefits. Ultimately, efficiency has a positive impact on end users’ budgets as well. After all, one of the fans’ most outstanding properties is their tremendous energy efficiency. And the more fans in use, the greater the potential for savings. Refrigerated display cases are the perfect example.

Small calculation example.
Per running meter, two fans typically operate in a refrigerated display case. If 200 GreenTech EC fans in size 200 are used in a typical supermarket with a total of 100 meters of refrigerated display cases, the energy savings compared to conventional shaded-pole motors would be 70%. Their higher efficiency results in lower intrinsic heat of the energy-saving motor, thus a reduction in operating costs. Every year, this results in a savings potential of 38 MWh and 22 t CO₂. For the environment, this means more than 22 t less carbon emissions (with today’s typical energy mix).

At the same time, at an electricity price of 0.1169 €/kWh, users have annual savings of over €4,400. This makes converting existing systems highly profitable, since the investment pays for itself in less than 12 months.

Even small supermarkets benefit from this investment: 40 GreenTech EC fans would save over 9.4 MWh per year. That equals 5.6 t CO₂ and at the electricity price mentioned above, a €1,080 saving on costs.

Energy-saving potential in all areas.
Quick, simple, retrofit:  
1:1 replacement with NiQ.

Even today, many fans are still driven by uncontrolled asynchronous motors. Their comparatively low efficiency has an effect on energy consumption in almost all applications. With ebm-papst, you can replace typically inefficient fans containing AC motors 1:1 with highly efficient EC technology of the same mechanical design.

EC motors are extremely efficient, unbeatably compact and run very smoothly. Switching from AC to EC fans not only pays for the environment and user budgets, it also enhances comfort.

The latest generation of energy-saving motors.
Many renowned supermarket chains already use our proven iQ motors today and successfully save energy. In the latest generation, the NiQ, we have not only enhanced the existing advantages but have also added new ones. A modified winding technique and optimized material selection allowed us to improve the product’s properties.
With the plastic used, approval in applications involving indirect contact with food (for example in open vegetable display cases) is possible. And in addition to making operations more economical, the NiQ solution was designed to further increase efficiency. Thanks to GreenTech EC technology, it delivers up to 70% more efficiency compared to our old motor concept. Even compared to the iQ and iQ², we were able to increase efficiency in some areas while extending service life and reducing noise.

Ready to retrofit.
Its many benefits and cost savings compared to older motors make our NiQ the first choice when it comes to new developments. But retrofitting existing applications with them also pays off after just a short time. Since the NiQ is mechanically compatible with both shaded-pole motors and the iQ motor series and has the same installation dimensions, 1:1 replacement is possible. This makes ecological and economical sense.
Clear statement: the EU regulation on fluorinated greenhouse gases.

The use of fluorinated greenhouse gases has been officially regulated since 2006. Regulation (EU) 517/2014, also known as the Fluorinated Gas Regulation, has been in force since 1 January 2015. It specifies a reduction in the emission of fluorinated greenhouse gases by 70 million tons of CO₂-equivalent in the EU by 2030. And it is also designed to support the use of alternatives such as natural refrigerants.

HFC phasedown.
Another major issue with regard to refrigerated display cases is the refrigerant they use. Partially fluorinated hydrocarbons (HFC) are often used, but they severely damage the climate and contribute to increasing the greenhouse effect. The relative contribution of a refrigerant to the greenhouse effect is called Global Warming Potential (GWP) and expressed in CO₂ equivalents. In fact, commercial refrigeration plants are the biggest source of HFC emissions in Germany. The industry emitted 3.4 million tons of CO₂-equivalent in 2006, which is almost 35% of total German HFC emissions. This is why the use and phasedown of HFC are officially regulated.

In effect: EU regulation no. 517/2014.
The figure below shows the steps involved in official regulation and the prohibitions that have gone into effect.

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage of maximum quantity of HFCs to be placed on the market</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>100%</td>
</tr>
<tr>
<td>2016-2017</td>
<td>93%</td>
</tr>
<tr>
<td>2018-2020</td>
<td>63%</td>
</tr>
<tr>
<td>2021-2023</td>
<td>45%</td>
</tr>
<tr>
<td>2024-2026</td>
<td>31%</td>
</tr>
<tr>
<td>2027-2029</td>
<td>24%</td>
</tr>
<tr>
<td>2030</td>
<td>21%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>From 1 January 2015</th>
<th>From 1 January 2020</th>
<th>From 1 January 2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic refrigerators and freezers that contain HFCs with GWP of 150 or more.</td>
<td>Stationary refrigeration equipment, that contains, or whose functioning relies upon, HFCs with GWP of 2,500 or more except equipment intended for application designed to cool products to temperatures below -50 °C.</td>
<td>Multipack centralised refrigeration systems for commercial use with a rated capacity of 40 kW or more that contain, or whose functioning relies upon, F-gases with GWP of 150 or more, except in the primary refrigerant circuit of cascade systems where F-gases with a GWP of less than 1,500 may be used.</td>
</tr>
<tr>
<td>Refrigerators and freezers for commercial use (hermetically sealed equipment) that contain HFCs with GWP of 2,500 or more.</td>
<td>Refrigerators and freezers for commercial use (hermetically sealed equipment) that contain HFCs with GWP of 150 or more.</td>
<td>Refrigerators and freezers for commercial use (hermetically sealed equipment) that contain HFCs with GWP of 150 or more.</td>
</tr>
</tbody>
</table>
Stop and rethink.
In the wake of the Fluorinated Gas Regulation, the choice of refrigerant has gained in importance. As environmentally friendly alternatives to HFC, natural refrigerants such as propane (P290) and carbon dioxide CO$_2$ (R744) are increasingly popular. They enjoy virtually unlimited availability, have a minimal global warming potential and ensure a beneficial climate balance in refrigerated display cases. When malfunctions occur, flammable refrigerants such as R290 (refrigerants of safety class A3) can form highly explosive mixtures in combination with air. This is why switching to low-GWP refrigerants means refrigerating plants and integrated components with special construction requirements and variants. They are specified in European standard DIN EN 378.

Play it safe with ebm-papst.
To provide a safe cooling solution, all our motors and complete systems meet the European standard EN 60335-2-24 or -89 (Household appliance standard) as standard. This is fully adequate for most refrigerated display cases, since their cooling circuits work with the 150 or 500 g maximum refrigerant quantity required by the standard. In these cases, ATEX components are usually not necessary.

For refrigerating plants with over 150 or 500 g refrigerant, it may make sense to divide the plants into several circuits. If that is not possible, we also offer a suitable solution: ebm-papst fans with energy-saving motors with ATEX approval II 3G nA IIA T4. They meet ATEX standard EN 60079 and are therefore also approved for use in large refrigerated display cases, composite and cascade systems.
## Compact fans

<table>
<thead>
<tr>
<th>Model</th>
<th>Dimensions</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>8300N</td>
<td>□ 80 x 32 mm</td>
<td>14</td>
</tr>
<tr>
<td>3300N</td>
<td>□ 92 x 32 mm</td>
<td>16</td>
</tr>
<tr>
<td>4300N</td>
<td>□ 119 x 32 mm</td>
<td>18</td>
</tr>
<tr>
<td>ACi4400</td>
<td>□ 119 x 38 mm</td>
<td>20</td>
</tr>
<tr>
<td>ACi4400N</td>
<td>□ 119 x 38 mm</td>
<td>22</td>
</tr>
</tbody>
</table>
DC compact fans

80 x 32 mm

**Material/surface**
- Housing: plastic
- Impeller: plastic

**Mechanical data**
- Number of blades: 5
- Direction of airflow: blowing over struts ("V")
- Direction of rotation: counter-clockwise viewed toward rotor
- Degree of protection: IP 68
- Insulation class: "E"
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

**Electrical data**
- Motor protection: EP (Electronic Protection)
- Electrical hookup: leads AWG 26 stripped and tin-plated
- Cable exit: lateral
- Protection class: III
- Speed levels: with infinitely variable control (optional)

**Standards and approvals**
- Conformity with standards: EN 60335-1; EN 60335-2-24; EN 60335-2-89; EN 60335-2-80
- Approvals:
  - VDE: EN 60950-1; EN 62368-1
  - UL: UL 507
  - CSA: C22.2 No. 113-15
  - TÜV: EN 60079-07

* Customer back-up fuse necessary to satisfy this standard. The fuse rating is available on request.

---

Measuring requirements:
Air performance measured according to: ISO 5801, installation category A, in ebm-papst full nozzle without contact protection.
Intake-side sound level: $L_A$ according to ISO 13347, $L_A$ measured at 1 m distance from fan axis. The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked in installed condition.
## DC compact fans □ 80 x 32 mm

### Curve

<table>
<thead>
<tr>
<th>Nominal voltage</th>
<th>Speed n</th>
<th>Max. input power P</th>
<th>Max. input current I</th>
<th>Sound power level L</th>
<th>Max. back pressure</th>
<th>Perm. ambient temp. °C</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>VDC min⁻¹</td>
<td>W</td>
<td>A</td>
<td>dB(A)</td>
<td>Pa</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage range 6-15 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A 12</td>
<td>2300</td>
<td>1.0</td>
<td>0.08</td>
<td>40</td>
<td>5</td>
<td>-20...+75</td>
<td></td>
</tr>
<tr>
<td>B 12</td>
<td>3800</td>
<td>1.8</td>
<td>0.15</td>
<td>45</td>
<td>20</td>
<td>-20...+75</td>
<td></td>
</tr>
<tr>
<td>Voltage range 6-12.8 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C 12</td>
<td>8500</td>
<td>13</td>
<td>1.08</td>
<td>66</td>
<td>125</td>
<td>-20...+70</td>
<td></td>
</tr>
<tr>
<td>Voltage range 12-28 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D 24</td>
<td>2300</td>
<td>1.0</td>
<td>0.04</td>
<td>40</td>
<td>5</td>
<td>-20...+75</td>
<td></td>
</tr>
<tr>
<td>E 24</td>
<td>3800</td>
<td>1.8</td>
<td>0.08</td>
<td>45</td>
<td>20</td>
<td>-20...+75</td>
<td></td>
</tr>
<tr>
<td>Voltage range 18-28 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F 24</td>
<td>8500</td>
<td>12</td>
<td>0.50</td>
<td>66</td>
<td>125</td>
<td>-20...+75</td>
<td></td>
</tr>
</tbody>
</table>

Subject to change. (1) Max. recommended back pressure before saddle area.

### DC compact fans

<table>
<thead>
<tr>
<th>Part number</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>A 8312 NLU</td>
<td>0.16</td>
</tr>
<tr>
<td>B 8312 NNU</td>
<td>0.16</td>
</tr>
<tr>
<td>C 8314 NH4U</td>
<td>0.16</td>
</tr>
<tr>
<td>D 8314 NLU</td>
<td>0.16</td>
</tr>
<tr>
<td>E 8314 NNU</td>
<td>0.16</td>
</tr>
<tr>
<td>F 8314 NH4U</td>
<td>0.16</td>
</tr>
</tbody>
</table>

### Engineering drawing

Dimensions in mm

- Fan diameter cutout
- Tin plated
DC compact fans

92 x 32 mm

Material/surface
- Housing: plastic
- Impeller: plastic

Mechanical data
- Number of blades: 5
- Direction of airflow: blowing over struts ("V")
- Direction of rotation: clockwise viewed toward rotor
- Degree of protection: IP 68
- Insulation class: "E"
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Motor protection: EP (Electronic Protection)
- Electrical hookup: leads AWG 24 stripped and tin-plated
- Cable exit: lateral
- Protection class: III
- Speed levels: with infinitely variable control (optional)

Standards and approvals
- Conformity with standards: EN 60335-1*, EN 60335-2-24*, EN 60335-2-89*, EN 60335-2-80*
- Approvals:
  - VDE: EN 60950-1, EN 62368-1
  - UL: UL 507
  - CSA: C22.2 No. 113-15
  - TÜV: EN 60079-07

* Customer back-up fuse necessary to satisfy this standard. The fuse rating is available on request.

Measuring requirements
Air performance measured according to: ISO 5801, installation category A, in ebm-papst full nozzle without contact protection.
Intake-side sound level: L_A according to ISO 13347, measured at 1 m distance from fan axis. The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked in installed condition.
### DC compact fans □ 92 x 32 mm

**Voltage range 6-15 VDC**

<table>
<thead>
<tr>
<th>Curve</th>
<th>Part number</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>3312 NLU</td>
<td>0.19</td>
</tr>
<tr>
<td>B</td>
<td>3312 NNU</td>
<td>0.19</td>
</tr>
<tr>
<td>C</td>
<td>3312 NH3U</td>
<td>0.19</td>
</tr>
<tr>
<td>D</td>
<td>3314 NLU</td>
<td>0.19</td>
</tr>
<tr>
<td>E</td>
<td>3314 NNU</td>
<td>0.19</td>
</tr>
<tr>
<td>F</td>
<td>3314 NH3U</td>
<td>0.19</td>
</tr>
</tbody>
</table>

**Dimensions in mm**

- **Fan diameter cutout**: Ø43.0±0.3
- **Tin plated**: Ø100.1+0.3
- **8x**: 8x

---

**Curve**

<table>
<thead>
<tr>
<th>Voltage range 6-14 VDC</th>
<th>Voltage range 12-28 VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage range 6-14 VDC</td>
<td></td>
</tr>
<tr>
<td>Part number</td>
<td>Weight kg</td>
</tr>
<tr>
<td>A</td>
<td>3312 NLU</td>
</tr>
<tr>
<td>B</td>
<td>3312 NNU</td>
</tr>
<tr>
<td>C</td>
<td>3312 NH3U</td>
</tr>
<tr>
<td>D</td>
<td>3314 NLU</td>
</tr>
<tr>
<td>E</td>
<td>3314 NNU</td>
</tr>
<tr>
<td>F</td>
<td>3314 NH3U</td>
</tr>
</tbody>
</table>

---

**Part number**

- **A**
- **B**
- **C**
- **D**
- **E**
- **F**

---

### Engineering drawing

- **Fan diameter cutout**: Ø43.0±0.3
- **Tin plated**: Ø100.1+0.3
- **8x**: 8x

---

**Subject to change.** (1) Max. recommended back pressure before saddle area.
DC compact fans
□ 119 x 32 mm

Material/surface
- Housing: plastic
- Impeller: plastic

Mechanical data
- Number of blades: 5
- Direction of airflow: blowing over struts ("V")
- Direction of rotation: clockwise viewed toward rotor
- Degree of protection: IP 68
- Insulation class: "E"
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Motor protection: EP (Electronic Protection)
- Electrical hookup: Leads AWG 24 stripped and tin-plated
- Cable exit: lateral
- Protection class: III
- Speed levels: with infinitely variable control (optional)

Standards and approvals
- Conformity with standards: EN 60335-1*
  EN 60335-2-24*; EN 60335-2-89*; EN 60335-2-80*
- Approvals:
  VDE: EN 60950-1; EN 62368-1
  UL: UL 507
  CSA: C22.2 No. 113-15
  TÜV: EN 60079-07

* Customer back-up fuse necessary to satisfy this standard.
The fuse rating is available on request.

Measuring requirements
Air performance measured according to: ISO 5801, installation category A, in ebm-papst full nozzle without contact protection.
Intake-side sound level: L_A according to ISO 13347, L_A measured at 1 m distance from fan axis. The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked in installed condition.
DC compact fans □ 119 x 32 mm

<table>
<thead>
<tr>
<th>Curve</th>
<th>Nominal voltage</th>
<th>Speed n</th>
<th>Max. input power P_{ed}</th>
<th>Max. input current I</th>
<th>Sound power level L_{A}</th>
<th>Max. back pressure (1)</th>
<th>Perm. ambient temp.</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VDC min⁻¹ W A dB(A) Pa °C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage range 6-15 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>12 1450 0.9 0.08 41 5 -20...+75</td>
<td>ESM8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>12 2100 2.2 0.18 47 15 -20...+75</td>
<td>ESM8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>12 2700 4.3 0.36 54 25 -20...+75</td>
<td>ESM8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage range 7-13.2 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>12 4050 12 1.00 66 50 -20...+70</td>
<td>ESM8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage range 12-28 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>24 1450 1.0 0.04 41 5 -20...+75</td>
<td>ESM8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>24 2100 2.4 0.10 47 15 -20...+75</td>
<td>ESM8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>24 2700 4.1 0.17 54 25 -20...+75</td>
<td>ESM8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage range 14-26.4 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>24 4050 11 0.46 66 50 -20...+70</td>
<td>ESM8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Subject to change. (1) Max. recommended back pressure before saddle area.

DC compact fans

<table>
<thead>
<tr>
<th>Curve</th>
<th>Part number</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4312 NLU</td>
<td>0.25</td>
</tr>
<tr>
<td>B</td>
<td>4312 NNU</td>
<td>0.25</td>
</tr>
<tr>
<td>C</td>
<td>4312 NMU</td>
<td>0.25</td>
</tr>
<tr>
<td>D</td>
<td>4312 NH3U</td>
<td>0.25</td>
</tr>
<tr>
<td>E</td>
<td>4314 NLU</td>
<td>0.25</td>
</tr>
<tr>
<td>F</td>
<td>4314 NNU</td>
<td>0.25</td>
</tr>
<tr>
<td>G</td>
<td>4314 NMU</td>
<td>0.25</td>
</tr>
<tr>
<td>H</td>
<td>4314 NH3U</td>
<td>0.25</td>
</tr>
</tbody>
</table>

Dimensions in mm

- Fan diameter cutout
- Tin plated
- Rotor protrusion max. 0.4 mm
EC compact fans

119 x 38 mm

Material/surface
- Housing: plastic
- Impeller: plastic

Mechanical data
- Number of blades: 5
- Direction of airflow: blowing over struts ("V")
- Direction of rotation: clockwise viewed toward rotor
- Degree of protection: IP 65
- Insulation class: "E"
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Motor protection: EP (Electronic Protection)
- Electrical hookup: Leads AWG 24 stripped and tin-plated
- Cable exit: lateral
- Protection class: built-in fan
- Speed levels: with infinitely variable control (optional)

Standards and approvals
- Conformity with standards: EN 60335-2-80
- Approvals:
  - VDE: EN 60950-1; EN 62368-1; EN 60335-1; EN 60335-2-24; EN 60335-2-89
  - UL: UL 507; UL 1004-1; UL 1004-7; UL 508C
  - CSA: C22.2 No. 113-15

Measuring requirements
Air performance measured according to: ISO 5801, installation category A, in ebm-papst full nozzle without contact protection.
Intake-side sound level: $L_A$ according to ISO 13347, $L_A$ measured at 1 m distance from fan axis. The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked in installed condition.
### EC compact fans □ 119 x 38 mm

<table>
<thead>
<tr>
<th>Curve</th>
<th>Nominal voltage</th>
<th>Speed n</th>
<th>Max. input power $P_{in}$</th>
<th>Max. input current $I_{in}$</th>
<th>Sound power level $L_{wA}$</th>
<th>Max. back pressure</th>
<th>Ambient temp.</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAC</td>
<td>min⁻¹</td>
<td>W</td>
<td>A</td>
<td>dB(A)</td>
<td>Pa</td>
<td>°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>100…240</td>
<td>1330</td>
<td>4.6</td>
<td>0.10</td>
<td>55</td>
<td>30</td>
<td>-40…+75</td>
<td>ESM5</td>
</tr>
<tr>
<td>B</td>
<td>100…240</td>
<td>1330</td>
<td>4.6</td>
<td>0.10</td>
<td>55</td>
<td>30</td>
<td>-40…+75</td>
<td>ESM6</td>
</tr>
</tbody>
</table>

Subject to change. (1) Max. recommended back pressure before saddle area.

### EC compact fans

<table>
<thead>
<tr>
<th>Part number</th>
<th>Weight</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACI 4400/2 HHAU (2)</td>
<td>0.275</td>
<td></td>
</tr>
<tr>
<td>ACI 4400/2 HHPU (3)</td>
<td>0.275</td>
<td></td>
</tr>
</tbody>
</table>

(2) With analog input 5-10 V. (3) With PWM interface.

### Engineering drawing

Dimensions in mm:
1. Dimension for worktop mounting
2. Tin plated
3. Rotor protrusion max. 0.6 mm

---

Voltage range 90-264 VAC

With analog input 5-10 V. With PWM interface.
EC compact fans

119 x 38 mm

Material/surface
- Housing: plastic
- Impeller: plastic

Mechanical data
- Number of blades: 5
- Direction of airflow: blowing over struts ("V")
- Direction of rotation: clockwise viewed toward rotor
- Degree of protection: IP 65
- Insulation class: "E"
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Motor protection: EP (Electronic Protection)
- Electrical hookup: Einzellitzen AWG 24 abisoliert und verzinkt
- Cable exit: lateral
- Protection class: built-in fan
- Speed levels: with infinitely variable control (optional)

Standards and approvals
- Conformity with standards: EN 60335-2-80
- Approvals:
  - VDE: EN 60950-1; EN 62368-1; EN 60335-2-24; EN 60335-2-89
  - UL: UL 507; UL 60335
  - CSA: C22.2 No. 113-15

Connection diagrams and technical features

More at www.ebmpapst.com

119 x 38 mm

Accessories

Connection diagrams and technical features

Technical parameters and scope

More at www.ebmpapst.com

Fans and motors for refrigerated display cases - Edition 2019-07

Measuring requirements
Air performance measured according to ISO 5801, installation category A, in ebm-papst full nozzle without contact protection.
Intake-side sound level: LwA according to ISO 13347, LPA measured at 1 m distance from fan axis. The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked in installed condition.
### EC compact fans □ 119 x 38 mm

<table>
<thead>
<tr>
<th>Curve</th>
<th>Nominal voltage</th>
<th>Speed n</th>
<th>Max. input power P&lt;sub&gt;ed&lt;/sub&gt;</th>
<th>Max. input current I&lt;sub&gt;ed&lt;/sub&gt;</th>
<th>Sound power level L&lt;sub&gt;A&lt;/sub&gt;</th>
<th>Max. back pressure (1)</th>
<th>Perm. ambient temp.</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>100...240 VAC</td>
<td>1500</td>
<td>3.1</td>
<td>0.04</td>
<td>37</td>
<td>5</td>
<td>-40...+75</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>100...240 VAC</td>
<td>1850</td>
<td>3.7</td>
<td>0.06</td>
<td>41</td>
<td>8</td>
<td>-40...+75</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>100...240 VAC</td>
<td>2700</td>
<td>2.8</td>
<td>0.13</td>
<td>48</td>
<td>25</td>
<td>-40...+75</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>100...240 VAC</td>
<td>3000</td>
<td>3.6</td>
<td>0.15</td>
<td>52</td>
<td>30</td>
<td>-40...+70</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>100...240 VAC</td>
<td>3300</td>
<td>4.4</td>
<td>0.15</td>
<td>55</td>
<td>35</td>
<td>-40...+70</td>
<td></td>
</tr>
</tbody>
</table>

Subject to change. (1) Max. recommended back pressure before saddle area.

### Engineering drawing

**Dimensions in mm**

- Fan diameter cutout
- Tin plated
- Rotor protrusion max. 0.6 mm
## Axial fans

<table>
<thead>
<tr>
<th>Diameter (mm)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø 130</td>
<td>26</td>
</tr>
<tr>
<td>Ø 154</td>
<td>28</td>
</tr>
<tr>
<td>Ø 172</td>
<td>32</td>
</tr>
<tr>
<td>Ø 200</td>
<td>36</td>
</tr>
<tr>
<td>Ø 230</td>
<td>52</td>
</tr>
<tr>
<td>Ø 250</td>
<td>54</td>
</tr>
<tr>
<td>Ø 300</td>
<td>58</td>
</tr>
</tbody>
</table>
EC axial fans
Ø 130 mm, 2 speed levels (programmable)

Material/surface
- Housing: plastic
- Impeller: plastic

Mechanical data
- Number of blades: 7
- Direction of airflow: blowing over struts ("V")
- Direction of rotation: counter-clockwise viewed toward rotor
- Degree of protection: IP 55
- Insulation class: "B"
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Motor protection: thermal overload protector (TOP) internally connected
- Electrical hookup: cable for connection on motor side
- Cable exit: lateral
- Protection class: II
- Speed levels: 2 (programmable)

EMC
- Immunity to interference: according to EN 61000-6-2 (industrial environment)
- Interference emission: according to EN 61000-6-3 (household environment)
- System disturbance: according to EN 61000-3-2/3

Standards and approvals
- Conformity with standards: EN 60335-1; EN 60335-2-24; EN 60335-2-80; EN 60335-2-89; CE
- Approvals:
  A. UL 1004-3 + 60730-1; EAC; VDE; CSA C22.2 No. 77 + CAN/CSA-E60730-1
  B. UL 1004-3 + 60730-1; EAC; VDE; CCC; CSA C22.2 No. 77 + CAN/CSA-E60730-1

Measuring requirements
Air performance measured according to: ISO 5801, installation category A, in ebm-papst full nozzle without contact protection.
Intake-side sound level: L_wA according to ISO 13347, L_pA measured at 1 m distance from fan axis. The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked in installed condition.
### EC axial fans Ø 130 mm

#### Nominal voltage 115 VAC

<table>
<thead>
<tr>
<th>Curve</th>
<th>Operating point</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed n</th>
<th>Input power P ed</th>
<th>Input current I</th>
<th>Sound power level Lw A</th>
<th>Back pressure (Pa)</th>
<th>Permanent temp. °C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>VAC</td>
<td>Hz</td>
<td>min⁻¹</td>
<td>W</td>
<td>A</td>
<td>dB(A)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 1</td>
<td>115 50/60</td>
<td>3200</td>
<td>23</td>
<td>0.35</td>
<td>63</td>
<td>0</td>
<td>-30...+60</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stage 1</td>
<td>115 50/60</td>
<td>3200</td>
<td>24</td>
<td>0.37</td>
<td>61</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stage 2</td>
<td>115 50/60</td>
<td>2800</td>
<td>15</td>
<td>0.24</td>
<td>61</td>
<td>90</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stage 2</td>
<td>115 50/60</td>
<td>2800</td>
<td>16</td>
<td>0.25</td>
<td>61</td>
<td>46</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stage 1</td>
<td>115 50/60</td>
<td>3200</td>
<td>24</td>
<td>0.38</td>
<td>62</td>
<td>90</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stage 2</td>
<td>115 50/60</td>
<td>2800</td>
<td>16</td>
<td>0.24</td>
<td>61</td>
<td>24</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stage 2</td>
<td>115 50/60</td>
<td>2800</td>
<td>16</td>
<td>0.25</td>
<td>61</td>
<td>46</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stage 2</td>
<td>115 50/60</td>
<td>2800</td>
<td>16</td>
<td>0.24</td>
<td>61</td>
<td>70</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stage 1</td>
<td>115 50/60</td>
<td>3200</td>
<td>24</td>
<td>0.38</td>
<td>62</td>
<td>90</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stage 2</td>
<td>115 50/60</td>
<td>2800</td>
<td>16</td>
<td>0.24</td>
<td>61</td>
<td>24</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stage 2</td>
<td>115 50/60</td>
<td>2800</td>
<td>16</td>
<td>0.25</td>
<td>61</td>
<td>46</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stage 2</td>
<td>115 50/60</td>
<td>2800</td>
<td>16</td>
<td>0.24</td>
<td>61</td>
<td>70</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Nominal voltage 230 VAC

<table>
<thead>
<tr>
<th>Curve</th>
<th>Operating point</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed n</th>
<th>Input power P ed</th>
<th>Input current I</th>
<th>Sound power level Lw A</th>
<th>Back pressure (Pa)</th>
<th>Permanent temp. °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Stage 1</td>
<td>230 50/60</td>
<td>3200</td>
<td>23</td>
<td>0.19</td>
<td>63</td>
<td>0</td>
<td>-30...+60</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 1</td>
<td>230 50/60</td>
<td>3200</td>
<td>24</td>
<td>0.19</td>
<td>61</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 1</td>
<td>230 50/60</td>
<td>3200</td>
<td>24</td>
<td>0.19</td>
<td>60</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 2</td>
<td>230 50/60</td>
<td>2800</td>
<td>15</td>
<td>0.13</td>
<td>60</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 2</td>
<td>230 50/60</td>
<td>2800</td>
<td>16</td>
<td>0.13</td>
<td>58</td>
<td>24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 2</td>
<td>230 50/60</td>
<td>2800</td>
<td>16</td>
<td>0.13</td>
<td>57</td>
<td>47</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 2</td>
<td>230 50/60</td>
<td>2800</td>
<td>16</td>
<td>0.13</td>
<td>61</td>
<td>70</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Values set in blue are nominal data at operating point with maximum load and 115 or 230 VAC.
Subject to change. ⚠️ Max. recommended back pressure before saddle area.

### Engineering drawing

#### Dimensions in mm

- Direction of airflow: "V"
- Cable PVC AWG20, 3x crimped splice
- Use should preferably be made of 2x Remform screws WN-156-2 5.0x16 Torx galvanized from Arnold. Alternatively, 2x metric M4 bolts fastened with nuts
EC axial fans
Ø 154 mm, 2 speed levels (not programmable), 100-240 V

Material/surface
- Housing: plastic
- Impeller: plastic

Mechanical data
- Number of blades: 5
- Direction of airflow: blowing over struts ("V")
- Direction of rotation: counter-clockwise viewed toward rotor
- Degree of protection: IP 55
- Insulation class: "B"
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Motor protection: electronic
- Electrical hookup: cable for connection on motor side
- Cable exit: lateral
- Protection class: II
- Speed levels: 2 (not programmable)

Standards and approvals
- Conformity with standards: EN 60335-1; EN 60335-2-24; EN 60335-2-80; EN 60335-2-89
- Approvals: EAC; VDE; UL 1004-7 + 60730; CSA C22.2 No. 77 + CAN/CSA-E60730-1

Measuring requirements
Air performance measured according to: ISO 5801, installation category A, in ebm-papst full nozzle without contact protection.
Intake-side sound level: $L_A$ according to ISO 13347, $L_A$ measured at 1 m distance from fan axis. The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked in installed condition.
EC axial fans Ø 154 mm

### Curve

<table>
<thead>
<tr>
<th>Curve</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed n</th>
<th>Input power P&lt;sub&gt;ed&lt;/sub&gt;</th>
<th>Input current I</th>
<th>Sound power level L&lt;sub&gt;WA&lt;/sub&gt;</th>
<th>Back pressure (1)</th>
<th>Perm. ambient temp.</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Voltage range 200-240 VAC</td>
<td>230 50/60</td>
<td>2700</td>
<td>11</td>
<td>0.10</td>
<td>57</td>
<td>0</td>
<td>-30…+50</td>
<td>ESM1)</td>
</tr>
<tr>
<td>B</td>
<td>Voltage range 100-240 VAC</td>
<td>230 50/60</td>
<td>2700</td>
<td>14</td>
<td>0.12</td>
<td>58</td>
<td>40</td>
<td>-30…+50</td>
<td>ESM1)</td>
</tr>
</tbody>
</table>

### Engineering drawing

Dimensions in mm

Fan also available with flat-type fan housing (type B). See page 105.

1. Direction of airflow: "V"
2. Cable PVC AWG20, 3x splice
**EC axial fan**

Ø 154 mm, 2 speed levels (not programmable), 100-240 V

---

**Material/surface**
- Housing: plastic
- Impeller: plastic

**Mechanical data**
- Number of blades: 5
- Direction of airflow: blowing over struts ("V")
- Direction of rotation: counter-clockwise viewed toward rotor
- Degree of protection: IP 55
- Insulation class: "B"
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

**Electrical data**
- Motor protection: electronic
- Electrical hookup: cable for connection on motor side
- Cable exit: lateral
- Protection class: II
- Speed levels: 2 (not programmable)

**Standards and approvals**
- Conformity with standards: EN 60335-1; EN 60335-2-24; EN 60335-2-80; EN 60335-2-89; CE
- Approvals: UL 1004-7 + 60730; VDE; CSA C22.2 No. 77

---

**Measuring requirements**

Air performance measured according to: ISO 5801, installation category A, in ebm-papst full nozzle without contact protection.

Intake-side sound level: $L_A$ according to ISO 13347, $L_A$ measured at 1 m distance from fan axis. The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked in installed condition.
**EC axial fan Ø 154 mm**

### Curve

<table>
<thead>
<tr>
<th>Operating point</th>
<th>Nominal voltage</th>
<th>Frequency (Hz)</th>
<th>Speed (min⁻¹)</th>
<th>Input power P&lt;sub&gt;ed&lt;/sub&gt; (W)</th>
<th>Input current I (A)</th>
<th>Sound power level L&lt;sub&gt;WA&lt;/sub&gt; (dB(A))</th>
<th>Back pressure (Pa)</th>
<th>Permanent temp (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1</td>
<td>115</td>
<td>50/60</td>
<td>1600</td>
<td>9</td>
<td>0.14</td>
<td>54</td>
<td>0</td>
<td>-30...+50</td>
</tr>
<tr>
<td>Stage 1</td>
<td>115</td>
<td>50/60</td>
<td>1600</td>
<td>10</td>
<td>0.15</td>
<td>53</td>
<td>10</td>
<td>ESM1)</td>
</tr>
<tr>
<td>Stage 1</td>
<td>115</td>
<td>50/60</td>
<td>1600</td>
<td>10</td>
<td>0.15</td>
<td>52</td>
<td>20</td>
<td></td>
</tr>
</tbody>
</table>

### Part number

<table>
<thead>
<tr>
<th>Part number</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>W1G154E65705</td>
<td>0.9</td>
</tr>
</tbody>
</table>

**Values set in blue** are nominal data at operating point with maximum load and 115 VAC.

Subject to change. ESM1) Max. recommended back pressure before saddle area.

---

**Engineering drawing**

- **Direction of airflow:** "V"
- **Cable PVC AWG20, 3x splice**

Fan also available with flat-type fan housing (type B). See page 105.
EC axial fan
Ø 172 mm, 2 speed levels (not programmable), 100-240 V

Material/surface
- Housing: plastic
- Impeller: plastic

Mechanical data
- Number of blades: 5
- Direction of airflow: blowing over struts ("V")
- Direction of rotation: counter-clockwise viewed toward rotor
- Degree of protection: IP 55
- Insulation class: "B"
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Motor protection: thermal overload protector (TOP) internally connected
- Electrical hookup: cable for connection on motor side
- Cable exit: lateral
- Protection class: II
- Speed levels: 2 (not programmable)

Standards and approvals
- Conformity with standards: EN 60335-1; EN 60335-2-24; EN 60335-2-80; EN 60335-2-89; CE; VDE
- Approvals: UL 1004-7 + 60730; CSA C22.2 No. 77; VDE; EAC

Measuring requirements
Air performance measured according to: ISO 5801, installation category A, in ebm-papst full nozzle without contact protection.
Intake-side sound level: $L_{wA}$ according to ISO 13347, $L_{pA}$ measured at 1 m distance from fan axis. The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked in installed condition.
### EC axial fan Ø 172 mm

<table>
<thead>
<tr>
<th>Operating point</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed n</th>
<th>Input power P&lt;sub&gt;ed&lt;/sub&gt;</th>
<th>Input current I</th>
<th>Sound power level L&lt;sub&gt;WA&lt;/sub&gt;</th>
<th>Back pressure (1)</th>
<th>Perm. ambient temp.</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1</td>
<td>115 50/60</td>
<td>1800</td>
<td>9</td>
<td>0.14</td>
<td>54</td>
<td>0</td>
<td>-30…+50</td>
<td>ESM1</td>
<td>A</td>
</tr>
<tr>
<td>Stage 1</td>
<td>115 50/60</td>
<td>1800</td>
<td>10</td>
<td>0.15</td>
<td>53</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 2</td>
<td>115 50/60</td>
<td>1800</td>
<td>10</td>
<td>0.15</td>
<td>52</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 2</td>
<td>115 50/60</td>
<td>1400</td>
<td>5</td>
<td>0.08</td>
<td>48</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 2</td>
<td>115 50/60</td>
<td>1400</td>
<td>5</td>
<td>0.09</td>
<td>47</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 2</td>
<td>115 50/60</td>
<td>1400</td>
<td>6</td>
<td>0.09</td>
<td>46</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 2</td>
<td>115 50/60</td>
<td>1400</td>
<td>6</td>
<td>0.09</td>
<td>46</td>
<td>18</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Values set in blue are nominal data at operating point with maximum load and 115 VAC.

Subject to change. (1) Max. recommended back pressure before saddle area.

### EC axial fan

<table>
<thead>
<tr>
<th>Part number</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>W1G172EC8280</td>
<td>0.9</td>
</tr>
</tbody>
</table>

### Engineering drawing

Dimensions in mm:

- Direction of airflow: "V"
- Cable AWG20, 4x crimped splice

Fan also available with flat-type fan housing (type B). See page 105.
**EC axial fans**

Ø 172 mm, 2 speed levels (programmable)

---

**Material/surface**
- Housing: plastic
- Impeller: plastic

**Mechanical data**
- Number of blades: 5
- Direction of airflow: blowing over struts ("V")
- Direction of rotation: counter-clockwise viewed toward rotor
- Degree of protection: IP 55
- Insulation class: "B"
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

**Electrical data**
- Motor protection: thermal overload protector (TOP) internally connected
- Electrical hookup: cable for connection on motor side
- Cable exit: lateral
- Protection class: II
- Speed levels: 2 (programmable) compatible with plug-in module CCC000-AE**-**

**EMC**
- Immunity to interference: according to EN 61000-6-2 (industrial environment)
- System disturbance: according to EN 61000-3-2/3
- Interference emission: according to EN 61000-6-3 (household environment)

**Standards and approvals**
- Conformity with standards: EN 60335-1; EN 60335-2-24; EN 60335-2-80; EN 60335-2-89; CE
- Approvals: UL 1004-3; VDE; EAC; CSA C22.2 No. 77

---

**Measuring requirements**
Air performance measured according to: ISO 5801, installation category A, in ebm-papst full nozzle without contact protection.
Intake-side sound level: $L_{A}$ according to ISO 13347, $L_{A}$ measured at 1 m distance from fan axis. The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked in installed condition.

---

**Connection diagrams and technical features**
on Page 108

**Technical parameters and scope**
on Page 120

More at www.ebmpapst.com
EC axial fans Ø 172 mm

### Operating point

<table>
<thead>
<tr>
<th>Curve</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed n</th>
<th>Input power P_{ed}</th>
<th>Input current I</th>
<th>Sound power level L_{WA}</th>
<th>Back pressure (1)</th>
<th>Perm. ambient temp.</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VAC</td>
<td>Hz</td>
<td>min⁻¹</td>
<td>W</td>
<td>A</td>
<td>dB(A)</td>
<td>Pa</td>
<td>°C</td>
<td></td>
</tr>
<tr>
<td>Nominal voltage 115 VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>❶ Stage 1</td>
<td>115</td>
<td>50/60</td>
<td>2500</td>
<td>20</td>
<td>0.28</td>
<td>62</td>
<td>0</td>
<td>-30…+50</td>
<td>ESM1)</td>
</tr>
<tr>
<td>❷ Stage 1</td>
<td>115</td>
<td>50/60</td>
<td>2500</td>
<td>21</td>
<td>0.30</td>
<td>63</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>❸ Stage 1</td>
<td>115</td>
<td>50/60</td>
<td>2500</td>
<td>21</td>
<td>0.30</td>
<td>63</td>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>❹ Stage 1</td>
<td>115</td>
<td>50/60</td>
<td>2500</td>
<td>21</td>
<td>0.30</td>
<td>63</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>❺ Stage 2</td>
<td>115</td>
<td>50/60</td>
<td>1700</td>
<td>9</td>
<td>0.14</td>
<td>54</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>❻ Stage 2</td>
<td>115</td>
<td>50/60</td>
<td>1700</td>
<td>10</td>
<td>0.16</td>
<td>53</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>❼ Stage 2</td>
<td>115</td>
<td>50/60</td>
<td>1700</td>
<td>11</td>
<td>0.16</td>
<td>53</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>❽ Stage 2</td>
<td>115</td>
<td>50/60</td>
<td>1700</td>
<td>10</td>
<td>0.16</td>
<td>54</td>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal voltage 230 VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>❶ Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>2500</td>
<td>21</td>
<td>0.17</td>
<td>62</td>
<td>0</td>
<td>-30…+50</td>
<td>ESM1)</td>
</tr>
<tr>
<td>❷ Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>2500</td>
<td>22</td>
<td>0.18</td>
<td>63</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>❸ Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>2500</td>
<td>22</td>
<td>0.18</td>
<td>63</td>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>❹ Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>2500</td>
<td>22</td>
<td>0.18</td>
<td>63</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>❺ Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1700</td>
<td>9</td>
<td>0.07</td>
<td>54</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>❻ Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1700</td>
<td>10</td>
<td>0.08</td>
<td>53</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>❼ Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1700</td>
<td>11</td>
<td>0.08</td>
<td>53</td>
<td>19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>❽ Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1700</td>
<td>10</td>
<td>0.08</td>
<td>54</td>
<td>28</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Values set in blue are nominal data at operating point with maximum load and 115 or 230 VAC.

Subject to change. ^1 Max. recommended back pressure before saddle area.

<table>
<thead>
<tr>
<th>Curve</th>
<th>EC axial fans</th>
<th>Part number</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>W1G172EC9501</td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>W1G172EC9101</td>
<td>0.9</td>
<td></td>
</tr>
</tbody>
</table>

### Engineering drawing

Dimensions in mm

- Fan also available with flat-type fan housing (type B). See page 105.

1. Direction of airflow: "V"
2. Cable PVC AWG20, 3x crimped splice
EC axial fans
Ø 200 mm, 2 speed levels (not programmable), 100-240 V

Material/surface
- Housing: plastic
- Impeller: plastic

Mechanical data
- Number of blades: 5
- Direction of airflow: blowing over struts ("V")
- Direction of rotation: counter-clockwise viewed toward rotor
- Degree of protection: IP 55
- Insulation class: "B"
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Motor protection: electronic
- Electrical hookup: cable for connection on motor side
- Cable exit: lateral
- Protection class: II
- Speed levels: 2 (not programmable)

Standards and approvals
- Conformity with standards: EN 60335-1; EN 60335-2-24; EN 60335-2-80; EN 60335-2-89; CE
- Approvals: EAC; VDE; UL 1004-7 + 60730; CSA C22.2 No. 77 + CAN/CSA-E60730-1

**Measuring requirements**
Air performance measured according to: ISO 5801, installation category A, in ebm-papst full nozzle without contact protection.
Intake-side sound level: L_A according to ISO 13347, L_A measured at 1 m distance from fan axis. The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked in installed condition.
### EC axial fans Ø 200 mm

#### Curve

<table>
<thead>
<tr>
<th>Operating point</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed n</th>
<th>Input power $P_{ed}$</th>
<th>Input current I</th>
<th>Sound power level $L_{WA}$</th>
<th>Back pressure (1)</th>
<th>Permanent temp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage range 200-240 VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>1600</td>
<td>12</td>
<td>0.11</td>
<td>52</td>
<td>0</td>
<td>-25÷50</td>
</tr>
<tr>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>1600</td>
<td>14</td>
<td>0.13</td>
<td>50</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1100</td>
<td>5</td>
<td>0.05</td>
<td>41</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1100</td>
<td>5</td>
<td>0.06</td>
<td>39</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1100</td>
<td>6</td>
<td>0.06</td>
<td>40</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1100</td>
<td>6</td>
<td>0.06</td>
<td>42</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Voltage range 100-240 VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>1600</td>
<td>12</td>
<td>0.11</td>
<td>52</td>
<td>0</td>
<td>-30÷+50</td>
</tr>
<tr>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>1600</td>
<td>14</td>
<td>0.13</td>
<td>50</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1100</td>
<td>5</td>
<td>0.05</td>
<td>41</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1100</td>
<td>5</td>
<td>0.06</td>
<td>39</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1100</td>
<td>6</td>
<td>0.06</td>
<td>40</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1100</td>
<td>6</td>
<td>0.06</td>
<td>42</td>
<td>17</td>
<td></td>
</tr>
</tbody>
</table>

Values set in blue are nominal data at operating point with maximum load and 230 VAC.

Subject to change. ^1 Max. recommended back pressure before saddle area.

### Engineering drawing

<table>
<thead>
<tr>
<th>Curve</th>
<th>Part number</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>W1G200EG5701</td>
<td>1.0</td>
</tr>
<tr>
<td>B</td>
<td>W1G200EG5702</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Dimensions in mm

- **Direction of airflow:** "V"
- **Cable PVC AWG20,** 3x splice

Fan also available with flat-type fan housing (type B). See page 105.
EC axial fans
Ø 200 mm, 2 speed levels (not programmable), 100-240 V

Material/surface
- Housing: plastic
- Impeller: plastic

Mechanical data
- Number of blades: 5
- Direction of airflow: blowing over struts ("V")
- Direction of rotation: counter-clockwise viewed toward rotor
- Degree of protection: IP 55
- Insulation class: "B"
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Motor protection: electronic
- Electrical hookup: cable for connection on motor side
- Cable exit: lateral
- Protection class: II
- Speed levels: 2 (not programmable)

Standards and approvals
- Conformity with standards: EN 60335-1; EN 60335-2-24; EN 60335-2-80; EN 60335-2-89; CE
- Approvals: EAC; VDE; UL 1004-7 + 60730; CSA C22.2 No. 77 + CAN/CSA-E60730-1

Measuring requirements
Air performance measured according to: ISO 5801, installation category A, in ebm-papst full nozzle without contact protection.
Intake-side sound level: LwA according to ISO 13347, LpA measured at 1 m distance from fan axis. The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked in installed condition.
### EC axial fans Ø 200 mm

<table>
<thead>
<tr>
<th>Curve</th>
<th>Operating point</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed n</th>
<th>Input power $P_{ed}$</th>
<th>Input current $I$</th>
<th>Sound power level $L_{wA}$</th>
<th>Back pressure</th>
<th>Perm. ambient temp.</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Voltage range 200-240 VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>1250</td>
<td>7</td>
<td>0.07</td>
<td>46</td>
<td>0</td>
<td>-25...+50</td>
<td>ESM1)</td>
</tr>
<tr>
<td>A</td>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>1250</td>
<td>7</td>
<td>0.07</td>
<td>44</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>1250</td>
<td>7</td>
<td>0.07</td>
<td>44</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>1250</td>
<td>8</td>
<td>0.08</td>
<td>47</td>
<td>22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>900</td>
<td>3</td>
<td>0.04</td>
<td>38</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>900</td>
<td>3</td>
<td>0.04</td>
<td>36</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>900</td>
<td>4</td>
<td>0.04</td>
<td>36</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>900</td>
<td>4</td>
<td>0.04</td>
<td>40</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Voltage range 100-240 VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-30...+50</td>
<td>ESM1)</td>
</tr>
<tr>
<td>A</td>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>1250</td>
<td>7</td>
<td>0.07</td>
<td>46</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>1250</td>
<td>7</td>
<td>0.07</td>
<td>44</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>1250</td>
<td>8</td>
<td>0.08</td>
<td>45</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>1250</td>
<td>8</td>
<td>0.08</td>
<td>49</td>
<td>22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>900</td>
<td>3</td>
<td>0.04</td>
<td>38</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>900</td>
<td>3</td>
<td>0.04</td>
<td>36</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>900</td>
<td>4</td>
<td>0.04</td>
<td>37</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>900</td>
<td>4</td>
<td>0.04</td>
<td>41</td>
<td>11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Values set in blue are nominal data at operating point with maximum load and 230 VAC.

Subject to change. **ESM1)** Max. recommended back pressure before saddle area.

### Engineering drawing

Fan also available with flat-type fan housing (type B). See page 105.

1. Direction of airflow: "V"
2. Cable PVC AWG20, 3x splice

### Part numbers for EC axial fans Ø 200 mm

<table>
<thead>
<tr>
<th>Curve</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1.0</td>
</tr>
<tr>
<td>B</td>
<td>1.0</td>
</tr>
</tbody>
</table>

### Dimensions in mm

- Direction of airflow: "V"
- Cable PVC AWG20, 3x splice

- Fan also available with flat-type fan housing (type B). See page 105.
EC axial fans
Ø 200 mm, 2 speed levels (programmable)

Material/surface
- Housing: plastic
- Impeller: plastic

Mechanical data
- Number of blades: 5
- Direction of airflow: blowing over struts ("V")
- Direction of rotation: counter-clockwise viewed toward rotor
- Degree of protection: IP 55
- Insulation class: "B"
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Motor protection: thermal overload protector (TOP) internally connected
- Electrical hookup: cable for connection on motor side
- Cable exit: lateral
- Protection class: II
- Speed levels: 2 (programmable) compatible with plug-in module CCC000-AE**-**

EMC
- Immunity to interference: according to EN 61000-6-2 (industrial environment)
- System disturbance: according to EN 61000-3-2/3
- Interference emission: according to EN 61000-6-3 (household environment)

Standards and approvals
- Conformity with standards: EN 60335-1; EN 60335-2-24; EN 60335-2-80; EN 60335-2-89; CE
- Approvals: UL 1004-3; VDE; EAC; CSA C22.2 No. 77; CCC

Measuring requirements
Air performance measured according to ISO 5801, installation category A, in ebm-papst full nozzle without contact protection.
Intake-side sound level: Lw, measured according to ISO 13347, Lw measured at 1 m distance from fan axis. The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked in installed condition.

More at www.ebmpapst.com
### EC axial fans Ø 200 mm

#### Nominal voltage 115 VAC

<table>
<thead>
<tr>
<th>Curve</th>
<th>Operating point</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed n</th>
<th>Input power $P_{ed}$</th>
<th>Input current I</th>
<th>Sound power level $L_{WA}$</th>
<th>Back pressure $(1)$</th>
<th>Perm. ambient temp</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Stage 1</td>
<td>115</td>
<td>50/60</td>
<td>2100</td>
<td>28</td>
<td>0.42</td>
<td>62</td>
<td>0</td>
<td>-30…+50</td>
<td>ESM1)</td>
</tr>
<tr>
<td></td>
<td>Stage 2</td>
<td>115</td>
<td>50/60</td>
<td>1500</td>
<td>14</td>
<td>0.22</td>
<td>54</td>
<td>0</td>
<td>-30…+50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stage 1</td>
<td>115</td>
<td>50/60</td>
<td>2100</td>
<td>31</td>
<td>0.46</td>
<td>62</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stage 2</td>
<td>115</td>
<td>50/60</td>
<td>1500</td>
<td>15</td>
<td>0.22</td>
<td>54</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stage 3</td>
<td>115</td>
<td>50/60</td>
<td>1500</td>
<td>16</td>
<td>0.25</td>
<td>53</td>
<td>22</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stage 2</td>
<td>115</td>
<td>50/60</td>
<td>1500</td>
<td>17</td>
<td>0.26</td>
<td>55</td>
<td>31</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Nominal voltage 230 VAC

<table>
<thead>
<tr>
<th>Curve</th>
<th>Operating point</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed n</th>
<th>Input power $P_{ed}$</th>
<th>Input current I</th>
<th>Sound power level $L_{WA}$</th>
<th>Back pressure $(1)$</th>
<th>Perm. ambient temp</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>2100</td>
<td>29</td>
<td>0.22</td>
<td>62</td>
<td>0</td>
<td>-30…+50</td>
<td>ESM1)</td>
</tr>
<tr>
<td></td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1500</td>
<td>14</td>
<td>0.11</td>
<td>54</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>2100</td>
<td>31</td>
<td>0.24</td>
<td>62</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1500</td>
<td>15</td>
<td>0.12</td>
<td>54</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stage 3</td>
<td>230</td>
<td>50/60</td>
<td>1500</td>
<td>15</td>
<td>0.12</td>
<td>53</td>
<td>21</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1500</td>
<td>15</td>
<td>0.12</td>
<td>55</td>
<td>29</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Values set in blue are nominal data at operating point with maximum load and 115 or 230 VAC.

Subject to change. (1)Max. recommended back pressure before saddle area.

#### EC axial fans

<table>
<thead>
<tr>
<th>Part number</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>W1G200EC9547</td>
<td>0.9</td>
</tr>
<tr>
<td>W1G200EC9145</td>
<td>0.9</td>
</tr>
</tbody>
</table>

#### Engineering drawing

- **Direction of airflow:** "V"
- **Cable:** PVC AWG20, 3x crimped splice

Fan also available with flat-type fan housing (type B). See page 105.
EC axial fans
Ø 200 mm, infinitely variable speed control

Material/surface
- Housing: plastic
- Impeller: plastic
- Plug-in module: plastic

Mechanical data
- Number of blades: 5
- Direction of airflow: blowing over struts ("V")
- Direction of rotation: counter-clockwise viewed toward rotor
- Degree of protection: IP 55
- Insulation class: "B"
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Motor protection: thermal overload protector (TOP) internally connected
- Electrical hookup: cable for connection on motor side
- Cable exit: lateral
- Protection class: II
- Speed levels: with infinitely variable control 50-100 %; \( n_{\text{max}} \) programmable with CBC000-AF08-01

EMC
- Immunity to interference: according to EN 61000-6-2 (industrial environment)
- System disturbance: according to EN 61000-3-2/3
- Interference emission: according to EN 61000-6-3 (household environment)

Standards and approvals
- Conformity with standards: EN 60335-1; EN 60335-2-24; EN 60335-2-80; EN 60335-2-89; CE
- Approvals: UL 1004-3; EAC; VDE; CSA C22.2 No. 77

---

Measuring requirements
Air performance measured according to ISO 5801, installation category A, in ebm-papst full nozzle without contact protection.
Intake-side sound level: \( L_A \) according to ISO 13347, \( L_A \) measured at 1 m distance from fan axis. The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked in installed condition.

More at www.ebmpapst.com
**EC axial fans Ø 200 mm**

<table>
<thead>
<tr>
<th>Curve</th>
<th>Operating point</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed n</th>
<th>Input power P&lt;sub&gt;ed&lt;/sub&gt;</th>
<th>Input current I</th>
<th>Sound power level L&lt;sub&gt;WA&lt;/sub&gt;</th>
<th>Back pressure (°C)</th>
<th>Perm. ambient temp</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage 230 VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>230</td>
<td>50/60</td>
<td>1300</td>
<td>8</td>
<td>0.07</td>
<td>50</td>
<td>0</td>
<td>-30...+50</td>
<td>ESM4)</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>230</td>
<td>50/60</td>
<td>1300</td>
<td>8</td>
<td>0.07</td>
<td>49</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>230</td>
<td>50/60</td>
<td>1300</td>
<td>8</td>
<td>0.07</td>
<td>48</td>
<td>18</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Values set in blue are nominal data at operating point with maximum load and 230 VAC.

Subject to change. ①Max. recommended back pressure before saddle area.

### EC axial fans

<table>
<thead>
<tr>
<th>Part number</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>W1G200EC87A2</td>
<td>1.0</td>
</tr>
<tr>
<td>W1G200EC91A4</td>
<td>1.0</td>
</tr>
</tbody>
</table>

**Engineering drawing**

Fan also available with flat-type fan housing (type B). See page 105.

- ① Direction of airflow: "V"
- ② Cable PVC AWG22, 4x splice
- ③ Cable PVC AWG22, 2x splice

**Dimensions in mm**

![Dimensions diagram](image_url)
EC axial fans
Ø 200 mm, 2 speed levels (not programmable)

Material/surface
- Housing: plastic
- Impeller: plastic

Mechanical data
- Number of blades: 5
- Direction of airflow: blowing over struts ("V")
- Direction of rotation: counter-clockwise viewed toward rotor
- Degree of protection: IP S4
- Insulation class: "B"
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Motor protection: thermal overload protector (TOP) internally connected
- Electrical hookup: cable for connection on motor side
- Cable exit: lateral
- Protection class: II
- Speed levels: 2 (not programmable)

EMC
- Immunity to interference: B according to EN 61000-6-2 (industrial environment)
- Interference emission: B according to EN 61000-6-3 (household environment)
- System disturbance: B according to EN 61000-3-2/3

Standards and approvals
- Conformity with standards: EN 60335-1; EN 60335-2-89; 3G; CE; VDE
- Approvals: VDE; CSA C22.2 Nr.77; UL 1004-3; 3G; II 3G nA IIA T4

Measuring requirements
Air performance measured according to: ISO 5801, installation category A, in ebm-papst full nozzle without contact protection.
Intake-side sound level: $L_{A}$ according to ISO 13347, $L_{A}$ measured at 1 m distance from fan axis. The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked in installed condition.

Standards and approvals:
- Conformity with standards: EN 60335-1; EN 60335-2-89; 3G; CE; VDE
- Approvals: VDE; CSA C22.2 Nr.77; UL 1004-3; 3G; II 3G nA IIA T4
### EC axial fans Ø 200 mm

#### Nominal voltage 115 VAC

<table>
<thead>
<tr>
<th>Curve</th>
<th>Operating point</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed n</th>
<th>Input power $P_{ed}$</th>
<th>Input current $I$</th>
<th>Sound power level $L_{wA}$</th>
<th>Back pressure (1)</th>
<th>Perm. ambient temp.</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Stage 1</td>
<td>115</td>
<td>50/60</td>
<td>1300</td>
<td>6.9</td>
<td>0.09</td>
<td>50</td>
<td>0</td>
<td>-30...+40</td>
<td>ESM1)</td>
</tr>
<tr>
<td>A</td>
<td>Stage 2</td>
<td>115</td>
<td>50/60</td>
<td>900</td>
<td>3.0</td>
<td>0.05</td>
<td>41</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 1</td>
<td>115</td>
<td>50/60</td>
<td>1300</td>
<td>7.9</td>
<td>0.10</td>
<td>48</td>
<td>18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 2</td>
<td>115</td>
<td>50/60</td>
<td>900</td>
<td>4.0</td>
<td>0.05</td>
<td>41</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 1</td>
<td>115</td>
<td>50/60</td>
<td>1300</td>
<td>8.0</td>
<td>0.11</td>
<td>50</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 2</td>
<td>115</td>
<td>50/60</td>
<td>900</td>
<td>4.0</td>
<td>0.05</td>
<td>41</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 2</td>
<td>115</td>
<td>50/60</td>
<td>900</td>
<td>4.0</td>
<td>0.05</td>
<td>41</td>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Nominal voltage 230 VAC

<table>
<thead>
<tr>
<th>Curve</th>
<th>Operating point</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed n</th>
<th>Input power $P_{ed}$</th>
<th>Input current $I$</th>
<th>Sound power level $L_{wA}$</th>
<th>Back pressure (1)</th>
<th>Perm. ambient temp.</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>1300</td>
<td>7.0</td>
<td>0.06</td>
<td>50</td>
<td>0</td>
<td>-30...+40</td>
<td>ESM1)</td>
</tr>
<tr>
<td>B</td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>900</td>
<td>3.4</td>
<td>0.03</td>
<td>41</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>1300</td>
<td>8.0</td>
<td>0.07</td>
<td>48</td>
<td>18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>900</td>
<td>4.0</td>
<td>0.04</td>
<td>41</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>900</td>
<td>4.1</td>
<td>0.04</td>
<td>40</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>900</td>
<td>4.0</td>
<td>0.04</td>
<td>41</td>
<td>11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Values set in blue are nominal data at operating point with maximum load and 115 or 230 VAC.

Subject to change. (1) Max. recommended back pressure before saddle area.

#### Part numbers

<table>
<thead>
<tr>
<th>Curve</th>
<th>Part number</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>W1G200EX9103</td>
<td>1.0</td>
</tr>
<tr>
<td>B</td>
<td>W1G200EX8703</td>
<td>1.0</td>
</tr>
</tbody>
</table>

#### Engineering drawing

Fan also available with flat-type fan housing (type B). See page 105.

- Direction of airflow: "V"
- Cable PVC AWG20, 3x splice

### Curve

#### EC axial fans

<table>
<thead>
<tr>
<th>Part number</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>W1G200EX9103</td>
<td>1.0</td>
</tr>
<tr>
<td>W1G200EX8703</td>
<td>1.0</td>
</tr>
</tbody>
</table>

#### Dimensions in mm

- Fan also available with flat-type fan housing (type B). See page 105.

- Direction of airflow: "V"
- Cable PVC AWG20, 3x splice
EC axial fans
Ø 200 mm, 2 speed levels (not programmable)

Material/surface
- Housing: plastic
- Impeller: plastic

Mechanical data
- Number of blades: 5
- Direction of airflow: blowing over struts ("V")
- Direction of rotation: counter-clockwise viewed toward rotor
- Degree of protection: IP 54
- Insulation class: "B"
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Motor protection: thermal overload protector (TOP) internally connected
- Electrical hookup: cable for connection on motor side
- Cable exit: lateral
- Protection class: II
- Speed levels: 2 (not programmable)

EMC
- Immunity to interference: according to EN 61000-6-2 (industrial environment)
- Interference emission: according to EN 61000-6-3 (household environment)
- System disturbance: according to EN 61000-3-2/3

Standards and approvals
- Conformity with standards: EN 60335-1; EN 60335-2-89; 3G; CE
- Approvals: VDE; CSA C22.2 Nr.77; UL 1004-3; 3G; II 3G nA IIA T4

Measuring requirements
Air performance measured according to: ISO 5801, installation category A, in ebm-papst full nozzle without contact protection.
Intake-side sound level: $L_{WA}$ according to ISO 13347, $L_{WA}$ measured at 1 m distance from fan axis. The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked in installed condition.
### EC axial fans Ø 200 mm

**Nominal voltage 115 VAC**

<table>
<thead>
<tr>
<th>Curve</th>
<th>Operating point</th>
<th>Nominal voltage</th>
<th>Frequency Hz</th>
<th>Speed n min⁻¹</th>
<th>Input power P ed W</th>
<th>Input current I A</th>
<th>Sound power level LwA dB(A)</th>
<th>Back pressure (1) Pa</th>
<th>Perm. ambient temp. °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Stage 1</td>
<td>115</td>
<td>50/60</td>
<td>2100</td>
<td>28</td>
<td>0.42</td>
<td>62</td>
<td>0</td>
<td>-30…+40 ESM1)</td>
</tr>
<tr>
<td>A</td>
<td>Stage 1</td>
<td>115</td>
<td>50/60</td>
<td>2100</td>
<td>30</td>
<td>0.45</td>
<td>62</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 1</td>
<td>115</td>
<td>50/60</td>
<td>2100</td>
<td>31</td>
<td>0.46</td>
<td>60</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 1</td>
<td>115</td>
<td>50/60</td>
<td>2100</td>
<td>31</td>
<td>0.46</td>
<td>60</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 2</td>
<td>115</td>
<td>50/60</td>
<td>1500</td>
<td>14</td>
<td>0.22</td>
<td>54</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 2</td>
<td>115</td>
<td>50/60</td>
<td>1500</td>
<td>15</td>
<td>0.22</td>
<td>54</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 2</td>
<td>115</td>
<td>50/60</td>
<td>1500</td>
<td>16</td>
<td>0.25</td>
<td>53</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 2</td>
<td>115</td>
<td>50/60</td>
<td>1500</td>
<td>17</td>
<td>0.26</td>
<td>53</td>
<td>31</td>
<td></td>
</tr>
</tbody>
</table>

**Nominal voltage 230 VAC**

<table>
<thead>
<tr>
<th>Curve</th>
<th>Operating point</th>
<th>Nominal voltage</th>
<th>Frequency Hz</th>
<th>Speed n min⁻¹</th>
<th>Input power P ed W</th>
<th>Input current I A</th>
<th>Sound power level LwA dB(A)</th>
<th>Back pressure (1) Pa</th>
<th>Perm. ambient temp. °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>2100</td>
<td>29</td>
<td>0.22</td>
<td>62</td>
<td>0</td>
<td>-30…+40 ESM1)</td>
</tr>
<tr>
<td>B</td>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>2100</td>
<td>30</td>
<td>0.23</td>
<td>61</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>2100</td>
<td>31</td>
<td>0.24</td>
<td>60</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>2100</td>
<td>31</td>
<td>0.24</td>
<td>64</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1500</td>
<td>14</td>
<td>0.11</td>
<td>54</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1500</td>
<td>15</td>
<td>0.12</td>
<td>54</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1500</td>
<td>15</td>
<td>0.12</td>
<td>53</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1500</td>
<td>15</td>
<td>0.12</td>
<td>56</td>
<td>29</td>
<td></td>
</tr>
</tbody>
</table>

Values set in blue are nominal data at operating point with maximum load and 115 or 230 VAC.

Subject to change. (1) Max. recommended back pressure before saddle area.

---

**EC axial fans**

<table>
<thead>
<tr>
<th>Part number</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>W1G200EX9501</td>
</tr>
<tr>
<td>B</td>
<td>W1G200EX9101</td>
</tr>
</tbody>
</table>

---

**Engineering drawing**

Fan also available with flat-type fan housing (type B). See page 105.

1. Direction of airflow: "V"
2. Cable PVC 3x AWG20, 3x crimped splice
DC axial fans
Ø 200 mm, infinitely variable speed control

Material/surface
- Housing: plastic
- Impeller: plastic

Mechanical data
- Number of blades: 5
- Direction of airflow: blowing over struts ("V")
- Direction of rotation: counter-clockwise viewed toward rotor
- Degree of protection: IP 55
- Insulation class: "B"
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Motor protection: thermal overload protector (TOP) internally connected
- Electrical hookup: cable for connection on motor side
- Cable exit: lateral
- Protection class: II
- Speed levels: with infinitely variable control

Standards and approvals
- Conformity with standards: EN 60335-1; EN 60335-2-24; EN 60335-2-80; EN 60335-2-89
- Approvals: UL 1004-3; VDE; EAC; CSA C22.2 No. 77

Measuring requirements
Air performance measured according to: ISO 5801, installation category A, in ebm-papst full nozzle without contact protection.
Intake-side sound level: $L_{A}$ according to ISO 13347, $L_{A}$ measured at 1 m distance from fan axis. The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked in installed condition.
### DC axial fans Ø 200 mm

<table>
<thead>
<tr>
<th>Curve</th>
<th>Nominal voltage</th>
<th>Speed n</th>
<th>Input power P</th>
<th>Input current I</th>
<th>Sound power level Lw</th>
<th>Back pressure (1)</th>
<th>Ambient temp.</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>24 VDC</td>
<td>min⁻¹</td>
<td>W</td>
<td>A</td>
<td>dB(A)</td>
<td>Pa</td>
<td>°C</td>
<td></td>
</tr>
<tr>
<td>Stage 1</td>
<td>24</td>
<td>1550</td>
<td>11</td>
<td>0.50</td>
<td>54</td>
<td>0</td>
<td>-30...+50 ESM3</td>
<td></td>
</tr>
<tr>
<td>Stage 2</td>
<td>24</td>
<td>1510</td>
<td>11</td>
<td>0.51</td>
<td>52</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 3</td>
<td>24</td>
<td>1515</td>
<td>11</td>
<td>0.51</td>
<td>55</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 4</td>
<td>24</td>
<td>2130</td>
<td>29</td>
<td>1.50</td>
<td>62</td>
<td>0</td>
<td>-30...+50 ESM3</td>
<td></td>
</tr>
<tr>
<td>Stage 5</td>
<td>24</td>
<td>2085</td>
<td>30</td>
<td>1.56</td>
<td>62</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 6</td>
<td>24</td>
<td>2050</td>
<td>31</td>
<td>1.61</td>
<td>61</td>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 7</td>
<td>24</td>
<td>2050</td>
<td>31</td>
<td>1.62</td>
<td>59</td>
<td>55</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Values set in blue are nominal data at operating point with maximum load and 24 VDC.
Subject to change. (1) Max. recommended back pressure before saddle area.

<table>
<thead>
<tr>
<th>Curve</th>
<th>Part number</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>W1G200EF4101</td>
<td>0.9</td>
</tr>
<tr>
<td>B</td>
<td>W1G200EF0101</td>
<td>0.9</td>
</tr>
</tbody>
</table>

(2) With control input 0-10 VDC / PWM

**Engineering drawing**

Fan also available with flat-type fan housing (type B). See page 105.

- Direction of airflow: "V"
- Cable PVC AWG20, 4x splice
DC axial fan
Ø 200 mm, infinitely variable speed control, MODBUS interface

Material/surface
- Housing: plastic
- Impeller: plastic

Mechanical data
- Number of blades: 5
- Direction of airflow: blowing over struts ("V")
- Direction of rotation: counter-clockwise viewed toward rotor
- Degree of protection: IP 55
- Insulation class: "B"
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Motor protection: thermal overload protector (TOP) internally connected
- Electrical hookup: cable for connection on motor side
- Cable exit: lateral
- Protection class: II
- Speed levels: with infinitely variable control via RS485 MODBUS-RTU, alternatively 3-stage (manual switching)

Standards and approvals
- Conformity with standards: EN 60335-1; EN 60335-2-24; EN 60335-2-80; EN 60335-2-89
- Approvals: UL 1004-3; EAC; CSA C22.2 No. 77

Measuring requirements
Air performance measured according to ISO 5801, installation category A, in ebm-papst full nozzle without contact protection.
Intake-side sound level: L_A according to ISO 13347; L_A measured at 1 m distance from fan axis. The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked in installed condition.

<table>
<thead>
<tr>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>400</td>
<td>600</td>
</tr>
<tr>
<td>0.05</td>
<td>0.10</td>
<td>0.15</td>
</tr>
<tr>
<td>10</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>50</td>
<td>60</td>
<td>70</td>
</tr>
</tbody>
</table>

More at www.ebmpapst.com

Accessories on Page 90
Connection diagrams and technical features on Page 108
Technical parameters and scope on Page 120

Fans and motors for refrigerated display cases - Edition 2019-07
### DC axial fan Ø 200 mm

#### Curve

<table>
<thead>
<tr>
<th>Curve</th>
<th>Nominal voltage</th>
<th>Speed n</th>
<th>Input power P</th>
<th>Input current I</th>
<th>Sound power level L_w</th>
<th>Back pressure Δp</th>
<th>Ambient temp. °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>VDC</td>
<td>min⁻¹ W</td>
<td>A</td>
<td>dB(A) Pa</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 1</td>
<td>29 2200</td>
<td>1.31 44 64 0</td>
<td>31 2220</td>
<td>44 64 20</td>
<td>33 2220</td>
<td>63 60</td>
<td>-30...+50 ESM2</td>
</tr>
<tr>
<td>Stage 2</td>
<td>24 1400</td>
<td>0.34 52 0</td>
<td>7 24 1400</td>
<td>0.37 52 8</td>
<td>8 24 1400</td>
<td>0.40 52 16</td>
<td></td>
</tr>
<tr>
<td>Stage 3</td>
<td>24 900</td>
<td>0.09 41 0</td>
<td>2 24 900</td>
<td>0.11 41 7</td>
<td>2 24 900</td>
<td>0.12 41 10</td>
<td></td>
</tr>
</tbody>
</table>

Values set in blue are nominal data at operating point with maximum load and 24 VDC.

Subject to change. (1) Max. recommended back pressure before saddle area.

### DC-Axialventilator

<table>
<thead>
<tr>
<th>Part number</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>W1G200EF6002</td>
<td>0.9</td>
</tr>
</tbody>
</table>

**Engineering drawing**

- **Dimensions in mm**
  - Direction of airflow: "V"
  - Cable PVC AWG20, 4x crimped splice

Fan also available with flat-type fan housing (type B). See page 105.
EC axial fans
Ø 230 mm, 2 speed levels (programmable)

Material/surface
- Housing: plastic
- Impeller: plastic

Mechanical data
- Number of blades: 5
- Direction of airflow: blowing over struts ("V")
- Direction of rotation: counter-clockwise viewed toward rotor
- Degree of protection: IP 55
- Insulation class: "B"
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Motor protection: thermal overload protector (TOP) internally connected
- Electrical hookup: cable for connection on motor side
- Cable exit: lateral
- Protection class: II
- Speed levels: 2 (programmable) compatible with plug-in module CCC000-AE**.**

EMC
- Immunity to interference: according to EN 61000-6-2 (industrial environment)
- Interference emission: according to EN 61000-6-3 (household environment)
- System disturbance: according to EN 61000-3-2/3

Standards and approvals
- Conformity with standards: EN 60335-1; EN 60335-2-24; EN 60335-2-80; EN 60335-2-89; CE
- Approvals: VDE; UL 1004-3; EAC; CSA C22.2 No. 77

More at www.ebmpapst.com
EC axial fans Ø 230 mm

<table>
<thead>
<tr>
<th>Curve</th>
<th>Nominal voltage 115 VAC</th>
<th>Nominal voltage 230 VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAC</td>
<td>Hz</td>
<td>min⁻¹</td>
</tr>
<tr>
<td>① Stage 1</td>
<td>115</td>
<td>50/60</td>
</tr>
<tr>
<td>② Stage 1</td>
<td>115</td>
<td>50/60</td>
</tr>
<tr>
<td>③ Stage 1</td>
<td>115</td>
<td>50/60</td>
</tr>
<tr>
<td>④ Stage 2</td>
<td>115</td>
<td>50/60</td>
</tr>
<tr>
<td>⑤ Stage 2</td>
<td>115</td>
<td>50/60</td>
</tr>
<tr>
<td>⑥ Stage 2</td>
<td>115</td>
<td>50/60</td>
</tr>
<tr>
<td>⑦ Stage 2</td>
<td>115</td>
<td>50/60</td>
</tr>
<tr>
<td>⑧ Stage 2</td>
<td>230</td>
<td>50/60</td>
</tr>
<tr>
<td>⑨ Stage 1</td>
<td>230</td>
<td>50/60</td>
</tr>
<tr>
<td>⑩ Stage 1</td>
<td>230</td>
<td>50/60</td>
</tr>
<tr>
<td>⑪ Stage 1</td>
<td>230</td>
<td>50/60</td>
</tr>
<tr>
<td>⑫ Stage 2</td>
<td>230</td>
<td>50/60</td>
</tr>
<tr>
<td>⑬ Stage 2</td>
<td>230</td>
<td>50/60</td>
</tr>
<tr>
<td>⑭ Stage 2</td>
<td>230</td>
<td>50/60</td>
</tr>
<tr>
<td>⑮ Stage 2</td>
<td>230</td>
<td>50/60</td>
</tr>
<tr>
<td>⑯ Nominal voltage 115 VAC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>⑰ Nominal voltage 230 VAC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Values set in blue are nominal data at operating point with maximum load and 115 or 230 VAC.

Subject to change. * Max. recommended back pressure before saddle area.

<table>
<thead>
<tr>
<th>Curve</th>
<th>EC axial fans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part number</td>
<td>Weight</td>
</tr>
<tr>
<td>A W1G230EB9701</td>
<td>1.0</td>
</tr>
<tr>
<td>B W1G230EB8901</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Engineering drawing

Dimensions in mm

Fan also available with flat-type fan housing (type B). See page 105.

① Direction of airflow: "V"
② Cable PVC AWG20, 3x crimped splice
EC axial fans
Ø 250 mm, 2 speed levels (programmable)

Material/surface
- Housing: plastic
- Impeller: plastic

Mechanical data
- Number of blades: 5
- Direction of airflow: blowing over struts ("V")
- Direction of rotation: counter-clockwise viewed toward rotor
- Degree of protection: IP 55
- Insulation class: "B"
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Motor protection: thermal overload protector (TOP) internally connected
- Electrical hookup: cable for connection on motor side
- Cable exit: lateral
- Protection class: II
- Speed levels: 2 (programmable) compatible with plug-in module CCC000-AE**-**

EMC
- Immunity to interference: according to EN 61000-6-2 (industrial environment)
- Interference emission: according to EN 61000-6-3 (household environment)
- System disturbance: according to EN 61000-3-2/3

Standards and approvals
- Conformity with standards: EN 60335-1; EN 60335-2-24; EN 60335-2-80; EN 60335-2-89; CE
- Approvals: VDE; UL 1004-3; EAC; CSA C22.2 No. 77 + CAN/CSA-E60730-1

Measuring requirements
Air performance measured according to ISO 5801, installation category A, in ebm-papst full nozzle without contact protection.
Intake-side sound level: $L_{W}$ according to ISO 13347, $L_{P}$ measured at 1 m distance from fan axis. The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked in installed condition.
### EC axial fans Ø 250 mm

#### Nominal voltage 115 VAC

<table>
<thead>
<tr>
<th>Stage</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed n</th>
<th>Input power $P_{ed}$</th>
<th>Input current I</th>
<th>Sound power level $L_{A}$</th>
<th>Back pressure (1)</th>
<th>Perm. ambient temp.</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>115 VAC</td>
<td>50/60</td>
<td>1720</td>
<td>29</td>
<td>0.42</td>
<td>63</td>
<td>0</td>
<td>-30...+50</td>
<td>ESM1)</td>
</tr>
<tr>
<td>2</td>
<td>115 VAC</td>
<td>50/60</td>
<td>1665</td>
<td>31</td>
<td>0.45</td>
<td>62</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>115 VAC</td>
<td>50/60</td>
<td>1625</td>
<td>32</td>
<td>0.47</td>
<td>61</td>
<td>35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>115 VAC</td>
<td>50/60</td>
<td>1590</td>
<td>33</td>
<td>0.50</td>
<td>62</td>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>115 VAC</td>
<td>50/60</td>
<td>1200</td>
<td>12</td>
<td>0.20</td>
<td>55</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>115 VAC</td>
<td>50/60</td>
<td>1190</td>
<td>14</td>
<td>0.22</td>
<td>53</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>115 VAC</td>
<td>50/60</td>
<td>1190</td>
<td>16</td>
<td>0.25</td>
<td>52</td>
<td>18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>115 VAC</td>
<td>50/60</td>
<td>1195</td>
<td>17</td>
<td>0.27</td>
<td>52</td>
<td>28</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Nominal voltage 230 VAC

<table>
<thead>
<tr>
<th>Stage</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed n</th>
<th>Input power $P_{ed}$</th>
<th>Input current I</th>
<th>Sound power level $L_{A}$</th>
<th>Back pressure (1)</th>
<th>Perm. ambient temp.</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>230 VAC</td>
<td>50/60</td>
<td>1700</td>
<td>31</td>
<td>0.25</td>
<td>64</td>
<td>0</td>
<td>-30...+50</td>
<td>ESM1)</td>
</tr>
<tr>
<td>2</td>
<td>230 VAC</td>
<td>50/60</td>
<td>1685</td>
<td>32</td>
<td>0.26</td>
<td>63</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>230 VAC</td>
<td>50/60</td>
<td>1650</td>
<td>33</td>
<td>0.27</td>
<td>62</td>
<td>35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>230 VAC</td>
<td>50/60</td>
<td>1600</td>
<td>35</td>
<td>0.28</td>
<td>63</td>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>230 VAC</td>
<td>50/60</td>
<td>1200</td>
<td>13</td>
<td>0.12</td>
<td>55</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>230 VAC</td>
<td>50/60</td>
<td>1200</td>
<td>14</td>
<td>0.13</td>
<td>53</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>230 VAC</td>
<td>50/60</td>
<td>1200</td>
<td>15</td>
<td>0.14</td>
<td>52</td>
<td>18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>230 VAC</td>
<td>50/60</td>
<td>1200</td>
<td>17</td>
<td>0.15</td>
<td>56</td>
<td>27</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Values set in blue are nominal data at operating point with maximum load and 115 or 230 VAC.

Subject to change. (1) Max. recommended back pressure before saddle area.

### Engineering drawing

Fan also available with flat-type fan housing (type B). See page 105.

- Direction of airflow: "V"
- Cable PVC AWG20, 3x crimped splice

### EC axial fans

<table>
<thead>
<tr>
<th>Part number</th>
<th>Weight</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>W1G250EB2101</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>W1G250EB1701</td>
<td>1.0</td>
<td></td>
</tr>
</tbody>
</table>

### Dimensions in mm

[Diagram of EC axial fans Ø 250 mm]
EC axial fans
Ø 250 mm, 2 speed levels (programmable)

Material/surface
- Housing: plastic
- Impeller: plastic

Mechanical data
- Number of blades: 5
- Direction of airflow: blowing over struts ("V")
- Direction of rotation: counter-clockwise viewed toward rotor
- Degree of protection: IP 55
- Insulation class: "B"
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Motor protection: thermal overload protector (TOP) internally connected
- Electrical hookup: cable for connection on motor side
- Cable exit: lateral
- Protection class: II
- Speed levels: 2 (programmable) compatible with plug-in module CCC000-AE**-**

EMC
- Immunity to interference: according to EN 61000-6-2 (industrial environment)
- Interference emission: according to EN 61000-6-3 (household environment)
- System disturbance: according to EN 61000-3-2/3

Standards and approvals
- Conformity with standards: EN 60335-1; EN 60335-2-24; EN 60335-2-80; EN 60335-2-89; CE
- Approvals: VDE; UL 1004-3; EAC; CSA C22.2 No. 77

Measuring requirements
Air performance measured according to ISO 5801, installation category A, in ebm-papst full nozzle without contact protection.
Intake-side sound level: \( L_{pA} \) according to ISO 13347, \( L_{A} \) measured at 1 m distance from fan axis. The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked in installed condition.

More at www.ebmpapst.com
### EC axial fans Ø 250 mm

#### Nominal voltage 115 VAC

<table>
<thead>
<tr>
<th>Stage</th>
<th>Operating point</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed n</th>
<th>Input power $P_{ed}$</th>
<th>Input current $I$</th>
<th>Sound power level $L_{wA}$</th>
<th>Back pressure $p_{amb}$</th>
<th>Permanent temp.</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Stage 1</td>
<td>115</td>
<td>50/60</td>
<td>1700</td>
<td>30</td>
<td>0.44</td>
<td>62</td>
<td>0</td>
<td>-30...50</td>
<td>ESM1)</td>
</tr>
<tr>
<td>2</td>
<td>Stage 1</td>
<td>115</td>
<td>50/60</td>
<td>1700</td>
<td>31</td>
<td>0.45</td>
<td>63</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Stage 1</td>
<td>115</td>
<td>50/60</td>
<td>1700</td>
<td>32</td>
<td>0.47</td>
<td>64</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 1</td>
<td>115</td>
<td>50/60</td>
<td>1700</td>
<td>32</td>
<td>0.47</td>
<td>66</td>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Stage 1</td>
<td>115</td>
<td>50/60</td>
<td>1700</td>
<td>32</td>
<td>0.47</td>
<td>66</td>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Stage 2</td>
<td>115</td>
<td>50/60</td>
<td>1200</td>
<td>14</td>
<td>0.22</td>
<td>53</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Stage 2</td>
<td>115</td>
<td>50/60</td>
<td>1200</td>
<td>15</td>
<td>0.24</td>
<td>54</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Stage 2</td>
<td>115</td>
<td>50/60</td>
<td>1200</td>
<td>16</td>
<td>0.25</td>
<td>55</td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Stage 2</td>
<td>115</td>
<td>50/60</td>
<td>1200</td>
<td>17</td>
<td>0.26</td>
<td>57</td>
<td>22</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Nominal voltage 230 VAC

<table>
<thead>
<tr>
<th>Stage</th>
<th>Operating point</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed n</th>
<th>Input power $P_{ed}$</th>
<th>Input current $I$</th>
<th>Sound power level $L_{wA}$</th>
<th>Back pressure $p_{amb}$</th>
<th>Permanent temp.</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>1700</td>
<td>31</td>
<td>0.24</td>
<td>62</td>
<td>0</td>
<td>-30...50</td>
<td>ESM1)</td>
</tr>
<tr>
<td>2</td>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>1700</td>
<td>32</td>
<td>0.24</td>
<td>63</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>1700</td>
<td>32</td>
<td>0.24</td>
<td>64</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>1700</td>
<td>32</td>
<td>0.24</td>
<td>66</td>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1200</td>
<td>14</td>
<td>0.12</td>
<td>53</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1200</td>
<td>15</td>
<td>0.13</td>
<td>54</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1200</td>
<td>16</td>
<td>0.14</td>
<td>55</td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1200</td>
<td>17</td>
<td>0.14</td>
<td>57</td>
<td>22</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Values set in blue** are nominal data at operating point with maximum load and 115 or 230 VAC.

Subject to change. *(1)* Max. recommended back pressure before saddle area.

### Engineering drawing

#### Curve

**EC axial fans**

<table>
<thead>
<tr>
<th>Part number</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>W1G250BR2101</td>
<td>1.5</td>
</tr>
<tr>
<td>W1G250BR1701</td>
<td>1.5</td>
</tr>
</tbody>
</table>

#### Dimensions in mm

1. Direction of airflow: “V”
2. Cable PVC AWG20, 3x crimped splice
EC axial fans
Ø 300 mm, 2 speed levels (programmable)

Material/surface
- Housing: plastic
- Impeller: plastic

Mechanical data
- Number of blades: 5
- Direction of airflow: blowing over struts ("V")
- Direction of rotation: counter-clockwise viewed toward rotor
- Degree of protection: IP 55
- Insulation class: "B"
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Motor protection: thermal overload protector (TOP) internally connected
- Electrical hookup: cable for connection on motor side
- Cable exit: lateral
- Protection class: II
- Speed levels: 2 (programmable) compatible with plug-in module CCC000-AE**-**

EMC
- Immunity to interference: according to EN 61000-6-2 (industrial environment)
- Interference emission: according to EN 61000-6-3 (household environment)
- System disturbance: according to EN 61000-3-2/3

Standards and approvals
- Conformity with standards: EN 60335-1; EN 60335-2-24; EN 60335-2-80; EN 60335-2-89; CE
- Approvals:
  - A: VDE, UL 1004-3; EAC; CSA C22.2 No. 77
  - B: VDE; UL 1004-3; EAC; CSA C22.2 No. 77; CCC

More at www.ebmpapst.com
### EC axial fans Ø 300 mm

#### Nominal voltage 115 VAC

<table>
<thead>
<tr>
<th>Curve</th>
<th>Operating point</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed n</th>
<th>Input power P_{ed}</th>
<th>Input current I</th>
<th>Sound power level L_{A}</th>
<th>Back pressure (1)</th>
<th>Permanent temp</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Stage 1</td>
<td>115</td>
<td>50/60</td>
<td>1300</td>
<td>28</td>
<td>0.41</td>
<td>58</td>
<td>0</td>
<td>-30…+50</td>
<td>ESM1)</td>
</tr>
<tr>
<td></td>
<td>Stage 2</td>
<td>115</td>
<td>50/60</td>
<td>900</td>
<td>12</td>
<td>0.24</td>
<td>50</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stage 3</td>
<td>115</td>
<td>50/60</td>
<td>900</td>
<td>15</td>
<td>0.26</td>
<td>49</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stage 4</td>
<td>115</td>
<td>50/60</td>
<td>900</td>
<td>16</td>
<td>0.27</td>
<td>50</td>
<td>18</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Nominal voltage 230 VAC

<table>
<thead>
<tr>
<th>Curve</th>
<th>Operating point</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed n</th>
<th>Input power P_{ed}</th>
<th>Input current I</th>
<th>Sound power level L_{A}</th>
<th>Back pressure (1)</th>
<th>Permanent temp</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>1300</td>
<td>32</td>
<td>0.25</td>
<td>58</td>
<td>0</td>
<td>-30…+50</td>
<td>ESM1)</td>
</tr>
<tr>
<td></td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>900</td>
<td>13</td>
<td>0.12</td>
<td>50</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stage 3</td>
<td>230</td>
<td>50/60</td>
<td>900</td>
<td>14</td>
<td>0.13</td>
<td>49</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stage 4</td>
<td>230</td>
<td>50/60</td>
<td>900</td>
<td>15</td>
<td>0.14</td>
<td>49</td>
<td>13</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Values set in blue are nominal data at operating point with maximum load and 115 or 230 VAC.

Subject to change. Max. recommended back pressure before saddle area.

### EC axial fans

<table>
<thead>
<tr>
<th>Curve</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>W1G300BR3001</td>
<td>1.75</td>
</tr>
<tr>
<td>W1G300BB1901</td>
<td>1.75</td>
</tr>
</tbody>
</table>

### Engineering drawing

Dimensions in mm

1. Direction of airflow: "V"
2. Cable PVC AWG20, 3x crimped splice
## Diagonal fans

<table>
<thead>
<tr>
<th>Diameter (mm)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø 200</td>
<td>62</td>
</tr>
<tr>
<td>Ø 250</td>
<td>66</td>
</tr>
</tbody>
</table>
EC diagonal fan
Ø 200 mm, 2 speed levels (not programmable), 100-240 V

Material/surface
- Support bracket: plastic
- Impeller: plastic

Mechanical data
- Number of blades: 7
- Direction of rotation: clockwise viewed toward rotor
- Degree of protection: IP 55
- Insulation class: “B”
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Motor protection: electronic
- Electrical hookup: cable for connection on motor side
- Protection class: II
- Speed levels: 2 (not programmable)

Standards and approvals
- Conformity with standards: EN 60335-1; EN 60335-2-42; EN 60335-2-80; CE
- Approvals: UL 1004-7; VDE; CSA C22.2 No. 77

Accessories
on Page 90
Connection diagrams and technical features
on Page 108
Technical parameters and scope
More at www.ebmpapst.com

Measuring requirements
Air performance measured according to: ISO 5801, installation category A, in ebm-papst full nozzle without contact protection.
Intake-side sound level: $L_A$ according to ISO 13347, $L_A$ measured at 1 m distance from fan axis. The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked in installed condition.
## Curve

<table>
<thead>
<tr>
<th>Voltage range 100–240 VAC</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed n</th>
<th>Input power P</th>
<th>Input current I</th>
<th>Sound power level L&lt;sub&gt;WA&lt;/sub&gt;</th>
<th>Back pressure (1)</th>
<th>Permanent temp.</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1</td>
<td>115</td>
<td>50</td>
<td>1400</td>
<td>9</td>
<td>0.14</td>
<td>57</td>
<td>0</td>
<td>-30…+50</td>
<td>ESM1)</td>
</tr>
<tr>
<td>Stage 1</td>
<td>115</td>
<td>50</td>
<td>1400</td>
<td>10</td>
<td>0.15</td>
<td>55</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 1</td>
<td>115</td>
<td>50</td>
<td>1400</td>
<td>11</td>
<td>0.16</td>
<td>54</td>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 1</td>
<td>115</td>
<td>50</td>
<td>1400</td>
<td>11</td>
<td>0.16</td>
<td>54</td>
<td>55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 2</td>
<td>1400</td>
<td>50</td>
<td>1200</td>
<td>6</td>
<td>0.10</td>
<td>53</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 2</td>
<td>115</td>
<td>50</td>
<td>1200</td>
<td>7</td>
<td>0.11</td>
<td>51</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 2</td>
<td>115</td>
<td>50</td>
<td>1200</td>
<td>7</td>
<td>0.11</td>
<td>50</td>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 2</td>
<td>115</td>
<td>50</td>
<td>1200</td>
<td>7</td>
<td>0.11</td>
<td>50</td>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 2</td>
<td>115</td>
<td>50</td>
<td>1200</td>
<td>7</td>
<td>0.11</td>
<td>50</td>
<td>40</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Values set in blue are nominal data at operating point with maximum load and 115 VAC.

Subject to change. (1) Max. recommended back pressure before saddle area.

### EC diagonal fan

<table>
<thead>
<tr>
<th>Curve</th>
<th>Part number</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>K1G200AA8220</td>
<td>1.1</td>
</tr>
</tbody>
</table>

### Engineering drawing

- Cable PVC AWG20, 3x splice
EC diagonal fans
Ø 200 mm, 2 speed levels (programmable)

Material/surface
- Support bracket: plastic
- Impeller: plastic

Mechanical data
- Number of blades: 7
- Direction of rotation: clockwise viewed toward rotor
- Degree of protection: IP 55
- Insulation class: “B”
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Motor protection: thermal overload protector (TOP) internally connected
- Electrical hookup: cable for connection on motor side
- Protection class: II
- Speed levels: 2 (programmable) compatible with plug-in module CCC000-AE**-**

EMC
- Immunity to interference: according to EN 61000-6-2 (industrial environment)
- Interference emission: according to EN 61000-6-3 (household environment)
- System disturbance: according to EN 61000-3-2/3

Standards and approvals
- Conformity with standards: EN 60335-1; EN 60335-2-24; EN 60335-2-80; EN 60335-2-89; CE
- Approvals:
  A UL 1004-3; VDE; EAC; CSA C22.2 No. 77
  B UL 1004-3; VDE; CCC; EAC; CSA C22.2 No. 77

Measuring requirements
Air performance measured according to ISO 5801, installation category A, in ebm-papst full nozzle without contact protection.
Intake-side sound level: $L_A$ according to ISO 13347, $L_A$ measured at 1 m distance from fan axis. The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked in installed condition.
EC diagonal fans Ø 200 mm

<table>
<thead>
<tr>
<th>Curve</th>
<th>Operating point</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed n</th>
<th>Input power P_{ed}</th>
<th>Input current I</th>
<th>Sound power level L_{WA}</th>
<th>Back pressure (1)</th>
<th>Permanent temp</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage 115 VAC</td>
<td>E</td>
<td>Stage 1</td>
<td>115</td>
<td>50/60</td>
<td>2000</td>
<td>27</td>
<td>0.38</td>
<td>69</td>
<td>0</td>
<td>-30...+50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stage 1</td>
<td>115</td>
<td>50/60</td>
<td>2000</td>
<td>29</td>
<td>0.42</td>
<td>62</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stage 1</td>
<td>115</td>
<td>50/60</td>
<td>2000</td>
<td>31</td>
<td>0.50</td>
<td>62</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>A</td>
<td>Stage 1</td>
<td>115</td>
<td>50/60</td>
<td>2000</td>
<td>30</td>
<td>0.43</td>
<td>64</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stage 2</td>
<td>115</td>
<td>50/60</td>
<td>1500</td>
<td>14</td>
<td>0.22</td>
<td>56</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Stage 2</td>
<td>115</td>
<td>50/60</td>
<td>1500</td>
<td>16</td>
<td>0.24</td>
<td>55</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Stage 2</td>
<td>115</td>
<td>50/60</td>
<td>1500</td>
<td>17</td>
<td>0.26</td>
<td>54</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Stage 2</td>
<td>115</td>
<td>50/60</td>
<td>1500</td>
<td>16</td>
<td>0.25</td>
<td>57</td>
<td>67</td>
</tr>
<tr>
<td>Nominal voltage 230 VAC</td>
<td>B</td>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>2000</td>
<td>31</td>
<td>0.24</td>
<td>63</td>
<td>0</td>
<td>-30...+50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>2000</td>
<td>33</td>
<td>0.26</td>
<td>62</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>2000</td>
<td>35</td>
<td>0.30</td>
<td>62</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Stage 1</td>
<td>230</td>
<td>50/60</td>
<td>2000</td>
<td>35</td>
<td>0.27</td>
<td>64</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1500</td>
<td>16</td>
<td>0.13</td>
<td>56</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1500</td>
<td>19</td>
<td>0.14</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1500</td>
<td>20</td>
<td>0.18</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Stage 2</td>
<td>230</td>
<td>50/60</td>
<td>1500</td>
<td>18</td>
<td>0.14</td>
<td>57</td>
</tr>
</tbody>
</table>

Values set in blue are nominal data at operating point with maximum load and 115 or 230 VAC.

Subject to change. (1) Max. recommended back pressure before saddle area.

<table>
<thead>
<tr>
<th>EC diagonal fans</th>
<th>Curve</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A K1G200AA9502</td>
<td>1.2</td>
<td></td>
</tr>
<tr>
<td>B K1G200AA7302</td>
<td>1.2</td>
<td></td>
</tr>
</tbody>
</table>

Engineering drawing

Dimensions in mm

78.5

78.5

20190715_Catalogue_Refrigerated_Display_Cases_2019_EN.indd   65

Fans and motors for refrigerated display cases - Edition 2019-07
EC diagonal fans
Ø 250 mm, 2 speed levels (programmable)

Measuring requirements
Air performance measured according to: ISO 5801, installation category A, in ebm-papst full nozzle without contact protection.
Intake-side sound level: LwA according to ISO 13347, LpA measured at 1 m distance from fan axis. The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked in installed condition.

Material/surface
- Support bracket: plastic
- Impeller: plastic
- Rotor: thick-film passivated

Mechanical data
- Number of blades: 5
- Direction of rotation: clockwise viewed toward rotor
- Degree of protection: IP 55
- Insulation class: “B”
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Motor protection: thermal overload protector (TOP) internally connected
- Electrical hookup: cable for connection on motor side
- Protection class: II
- Speed levels: 2 (programmable) compatible with plug-in module CCC000-AE**-**

Standards and approvals
- Conformity with standards: EN 60335-1; EN 60335-2-24; EN 60335-2-80; EN 60335-2-89; CE
- Approvals: UL 1004-3; VDE; EAC; CSA C22.2 No. 77

More at www.ebmpapst.com
### EC diagonal fans Ø 250 mm

#### Nominal voltage 115 VAC

<table>
<thead>
<tr>
<th>Curve</th>
<th>Operating point</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed n</th>
<th>Input power $P_{in}$</th>
<th>Input current I</th>
<th>Sound power level $L_{A}$</th>
<th>Back pressure</th>
<th>Perm. ambient temp</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Stage 1</td>
<td>115 50/60</td>
<td>1700</td>
<td>19</td>
<td>0.29</td>
<td>60</td>
<td>0</td>
<td>-30…+50</td>
<td>ESM1)</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 1</td>
<td>115 50/60</td>
<td>1700</td>
<td>23</td>
<td>0.35</td>
<td>58</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 1</td>
<td>115 50/60</td>
<td>1700</td>
<td>28</td>
<td>0.41</td>
<td>58</td>
<td>75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 1</td>
<td>115 50/60</td>
<td>1700</td>
<td>30</td>
<td>0.43</td>
<td>62</td>
<td>110</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 2</td>
<td>115 50/60</td>
<td>1200</td>
<td>9</td>
<td>0.14</td>
<td>62</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 2</td>
<td>115 50/60</td>
<td>1200</td>
<td>10</td>
<td>0.17</td>
<td>49</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 2</td>
<td>115 50/60</td>
<td>1200</td>
<td>12</td>
<td>0.19</td>
<td>50</td>
<td>38</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 2</td>
<td>115 50/60</td>
<td>1200</td>
<td>13</td>
<td>0.21</td>
<td>53</td>
<td>57</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 1</td>
<td>230 50/60</td>
<td>1700</td>
<td>18</td>
<td>0.16</td>
<td>60</td>
<td>0</td>
<td>-30…+50</td>
<td>ESM1)</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 1</td>
<td>230 50/60</td>
<td>1700</td>
<td>23</td>
<td>0.19</td>
<td>58</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 1</td>
<td>230 50/60</td>
<td>1700</td>
<td>28</td>
<td>0.23</td>
<td>58</td>
<td>75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 2</td>
<td>230 50/60</td>
<td>1200</td>
<td>9</td>
<td>0.07</td>
<td>52</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 2</td>
<td>230 50/60</td>
<td>1200</td>
<td>10</td>
<td>0.08</td>
<td>49</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 2</td>
<td>230 50/60</td>
<td>1200</td>
<td>12</td>
<td>0.09</td>
<td>50</td>
<td>39</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Stage 2</td>
<td>230 50/60</td>
<td>1200</td>
<td>13</td>
<td>0.10</td>
<td>53</td>
<td>58</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Nominal voltage 230 VAC

<table>
<thead>
<tr>
<th>Curve</th>
<th>Operating point</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed n</th>
<th>Input power $P_{in}$</th>
<th>Input current I</th>
<th>Sound power level $L_{A}$</th>
<th>Back pressure</th>
<th>Perm. ambient temp</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Stage 1</td>
<td>230 50/60</td>
<td>1700</td>
<td>18</td>
<td>0.16</td>
<td>60</td>
<td>0</td>
<td>-30…+50</td>
<td>ESM1)</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 1</td>
<td>230 50/60</td>
<td>1700</td>
<td>23</td>
<td>0.19</td>
<td>58</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 1</td>
<td>230 50/60</td>
<td>1700</td>
<td>28</td>
<td>0.23</td>
<td>58</td>
<td>75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 2</td>
<td>230 50/60</td>
<td>1200</td>
<td>9</td>
<td>0.07</td>
<td>52</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 2</td>
<td>230 50/60</td>
<td>1200</td>
<td>10</td>
<td>0.08</td>
<td>49</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 2</td>
<td>230 50/60</td>
<td>1200</td>
<td>12</td>
<td>0.09</td>
<td>50</td>
<td>39</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Stage 2</td>
<td>230 50/60</td>
<td>1200</td>
<td>13</td>
<td>0.10</td>
<td>53</td>
<td>58</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Values set in blue are nominal data at operating point with maximum load and 115 or 230 VAC.

Subject to change. Max. recommended back pressure before saddle area.

### Engineering drawing

Dimensions in mm:

- Cable PVC AWG20, 3x splice
Tangential fans

<table>
<thead>
<tr>
<th>Series</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>QLZ 06</td>
<td>70</td>
</tr>
<tr>
<td>QLN 65</td>
<td>74</td>
</tr>
<tr>
<td>QL 80</td>
<td>76</td>
</tr>
</tbody>
</table>
EC tangential fans
Series QLZ 06

Material/surface
- Fan housing: sheet steel hot-dip galvanized
- Motor housing: aluminium
- Roller: aluminium

Mechanical data
- Motor degree of protection: IP 54
- Insulation class: I.C.I.H
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Electrical hookup:
  - A: receptacles
  - B: splices
  - C: receptacles
- Cable exit: 3 x 0.5 mm²
- Protection class: I

Standards and approvals
- Approvals: CE, EAC

Measuring requirements
Air performance measured according to: ISO 5801, installation category A.
The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked in installed condition.

More at www.ebmpapst.com
### EC tangential fan Series QLZ 06

**Voltage range 220–240 VAC**

<table>
<thead>
<tr>
<th>Curve</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed n</th>
<th>Max. input power P</th>
<th>Max. input current I</th>
<th>Perm. ambient temp.</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>230 50/60</td>
<td>1800</td>
<td>8.0</td>
<td>72</td>
<td>-40...+50</td>
<td>(IQ1)</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>230 50/60</td>
<td>1550</td>
<td>6.5</td>
<td>65</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>230 50/60</td>
<td>1800</td>
<td>12.0</td>
<td>110</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Subject to change.

#### EC tangential fans

<table>
<thead>
<tr>
<th>Type</th>
<th>Part number</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>A VTS0060XSHBS</td>
<td>5566872001</td>
<td>0.8</td>
</tr>
<tr>
<td>B VTS0060XSHCZ</td>
<td>5566873010</td>
<td>1.1</td>
</tr>
<tr>
<td>C VTS0060XSHCS</td>
<td>5566874000</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Specifications apply to products with motor on right. Products with motor on left available on request.

### Engineering drawing

Dimensions in mm

![Engineering drawing](image-url)

### Dimensions

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>max. 272.0</td>
<td>195.0</td>
<td>max. 67.0</td>
<td>182.5</td>
<td>185.0</td>
<td>480</td>
<td>154</td>
</tr>
<tr>
<td>max. 317.5</td>
<td>252.5</td>
<td>max. 74.5</td>
<td>240.0</td>
<td>242.5</td>
<td>2000</td>
<td>212</td>
</tr>
<tr>
<td>max. 397.5</td>
<td>312.5</td>
<td>max. 74.5</td>
<td>300.0</td>
<td>302.5</td>
<td>480</td>
<td>272</td>
</tr>
</tbody>
</table>
EC tangential fan
Series QLZ 06

Material/surface
- Fan housing: sheet steel hot-dip galvanized
- Motor housing: aluminium
- Roller: aluminium

Mechanical data
- Motor degree of protection: IP 54
- Insulation class: I.C.I.H
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Electrical hookup: receptacles
- Cable exit: 3 x 0.5 mm²
- Protection class: I

Standards and approvals
- Approvals: CE, EAC

Measuring requirements
Air performance measured according to: ISO 5801, installation category A.
The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked in installed condition.
### EC tangential fan Series QLZ 06

<table>
<thead>
<tr>
<th>Curve</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed n</th>
<th>Max. Input power P&lt;sub&gt;ed&lt;/sub&gt;</th>
<th>Max. Input current I&lt;sub&gt;perm.&lt;/sub&gt;</th>
<th>Perm. ambient temp.</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAC</td>
<td>Hz</td>
<td>min⁻¹</td>
<td>W</td>
<td>mA</td>
<td>°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>230</td>
<td>50/60</td>
<td>1700</td>
<td>22</td>
<td>190</td>
<td>-40…+50</td>
<td></td>
</tr>
</tbody>
</table>

Voltage range 220-240 VAC

Specifications apply to products with motor on right. Products with motor on left available on request.

### Engineering drawing

Dimensions in mm

![Engineering drawing](image_url)
EC tangential fans
Series QLN 65

Material/surface
- Fan housing: sheet steel hot-dip galvanized
- Motor housing: aluminium
- Roller: aluminium

Mechanical data
- Motor degree of protection: IP 54
- Insulation class: I.C.I.H
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Electrical hookup: wires
- Cable exit: 3 x 0.5 mm²
- Protection class: I

Standards and approvals
- Approvals: CE, EAC

Measurement requirements
Air performance measured according to: ISO 5801, installation category A.
The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked in installed condition.
EC tangential fan Series QLN 65

Curve

<table>
<thead>
<tr>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed n</th>
<th>Max. input power P</th>
<th></th>
<th>Max. input current I</th>
<th>Ambient temp.</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAC</td>
<td>Hz</td>
<td>min⁻¹</td>
<td>W</td>
<td>mA</td>
<td>°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage range 220-240 VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>230</td>
<td>50/60</td>
<td>1800</td>
<td>14</td>
<td>125</td>
<td>-40…+50</td>
<td>(Q1)</td>
</tr>
<tr>
<td>B</td>
<td>230</td>
<td>50/60</td>
<td>1800</td>
<td>19</td>
<td>170</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>230</td>
<td>50/60</td>
<td>1800</td>
<td>23</td>
<td>190</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Subject to change.

Curve

<table>
<thead>
<tr>
<th>Type</th>
<th>Part number</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>VTS0065XSHCS 5566883000</td>
<td>1.15</td>
</tr>
<tr>
<td>B</td>
<td>VTS0065XSHCS 5566884010</td>
<td>1.20</td>
</tr>
<tr>
<td>C</td>
<td>VTS0065XSHCS 5566885000</td>
<td>1.30</td>
</tr>
</tbody>
</table>

Specifications apply to products with motor on right. Products with motor on left available on request.

Engineering drawing

Dimensions in mm

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
<th>f</th>
<th>g</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>max. 344</td>
<td>258.4</td>
<td>max. 74.5</td>
<td>240</td>
<td>242.5</td>
<td>1000</td>
<td>212</td>
</tr>
<tr>
<td>B</td>
<td>max. 404</td>
<td>318.4</td>
<td>max. 74.5</td>
<td>300</td>
<td>302.5</td>
<td>480</td>
<td>272</td>
</tr>
<tr>
<td>C</td>
<td>max. 464</td>
<td>378.4</td>
<td>max. 74.5</td>
<td>360</td>
<td>362.5</td>
<td>1000</td>
<td>332</td>
</tr>
</tbody>
</table>
DC tangential fans

Series QL 80

Material/surface
- Fan housing: aluminium, side panels hot-dip galvanized sheet steel
- Motor housing: aluminium
- Roller: aluminium

Mechanical data
- Motor degree of protection: IP 54
- Insulation class: I.C.I.H
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Electrical hookup: 4-pole connector
- Cable exit: 4 x 0.5 mm²
- Protection class: I

Standards and approvals
- Approvals: CE, EAC

Measuring requirements
Air performance measured according to: ISO 5801, installation category A.
The values given are only applicable under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked in installed condition.
EC tangential fan Series QL 80

### Dimensions

<table>
<thead>
<tr>
<th>Curve</th>
<th>a (max)</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
<th>f</th>
</tr>
</thead>
</table>
| A     | 635     | 547.5 | max. 75 | 500 | 520 | 150° 
| B     | 735     | 647.5 | max. 75 | 600 | 620 | 150° 
| C     | 835     | 747.5 | max. 75 | 700 | 720 | 150° 
| D     | 935     | 847.5 | max. 75 | 800 | 820 | 150° |

Subject to change.

(1) Max. relative humidity 85%, only suitable for applications with no condensation, no water exposure and no corrosion requirements.

---

**Curve**

<table>
<thead>
<tr>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed n</th>
<th>Max. input power P&lt;sub&gt;ed&lt;/sub&gt;</th>
<th>Max. input current I</th>
<th>Perm. ambient temp. t&lt;sub&gt;amb&lt;/sub&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>VDC</td>
<td>Hz</td>
<td>min⁻¹</td>
<td>W</td>
<td>mA</td>
<td>°C</td>
</tr>
<tr>
<td>Nominal voltage 24 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>A</strong></td>
<td>24</td>
<td>–</td>
<td>400 – 1400</td>
<td>22</td>
<td>1.300</td>
</tr>
<tr>
<td><strong>B</strong></td>
<td>24</td>
<td>–</td>
<td>400 – 1400</td>
<td>22</td>
<td>1.300</td>
</tr>
<tr>
<td><strong>C</strong></td>
<td>24</td>
<td>–</td>
<td>400 – 1400</td>
<td>22</td>
<td>1.300</td>
</tr>
<tr>
<td><strong>D</strong></td>
<td>24</td>
<td>–</td>
<td>400 – 1400</td>
<td>22</td>
<td>1.300</td>
</tr>
</tbody>
</table>

Specifications apply to products with motor on right. Products with motor on left available on request.

---

**Engineering drawing**

Dimensions in mm

---

**DC tangential fans**

<table>
<thead>
<tr>
<th>Type</th>
<th>Part number</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>VTS0080XUHDZ 5566891020</td>
<td>2.60</td>
</tr>
<tr>
<td>B</td>
<td>VTS0080XUHDZ 5566892020</td>
<td>2.80</td>
</tr>
<tr>
<td>C</td>
<td>VTS0080XUHDZ 5566893020</td>
<td>3.05</td>
</tr>
<tr>
<td>D</td>
<td>VTS0080XUHDZ 5566894020</td>
<td>3.30</td>
</tr>
</tbody>
</table>

Specifications apply to products with motor on right. Products with motor on left available on request.
### NiQ motors

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product information</td>
<td>80</td>
</tr>
<tr>
<td>Combination with axial blades</td>
<td>82</td>
</tr>
</tbody>
</table>
Material/surface
- Housing: plastic (FDA compliant)

Mechanical data
- Direction of rotation: counter-clockwise viewed toward rotor
- Degree of protection: IP 54
- Insulation class: “H”
- Installation position: any
- Mode: continuous operation (S1)
- Mounting: maintenance-free ball bearings

Electrical data
- Motor protection: electronic
- Electrical hookup: cable for connection on motor side (see page 93)
- Protection class: II
- Additional functions: possible on request

Standards and approvals
- Conformity with standards: DIN EN 60335-1; DIN EN 60335-2-24; DIN EN 60335-2-89; CE; UL1004-1; UL1004-7; C22.2 No.77, C22.2 No.100, C22.2 No. 0.1.
- Approvals: VDE; UL; CSA; EAC

Additional functions

**NiQ reverse on start.**
The NiQ reverse on start automatically runs in reverse for a preprogrammed time on starting. An important function for refrigeration devices, as it blows the accumulated dust out of the heat exchanger of the condenser - thus ensuring constant high cooling capacity.

**NiQ reverse on demand.**
With the NiQ reverse on demand it is possible to define the time and duration of reverse operation as required. This means that the evaporator defrost cycle can be used to remove dust from the heat exchanger of the condenser for example.

**NiQ two speeds.**
The particular feature of the NiQ two speeds is that it is supplied with two factory-programmed speed levels. This makes it possible to run the application in different day and night modes for even greater energy savings.
<table>
<thead>
<tr>
<th>Type</th>
<th>Part number</th>
<th>Voltage</th>
<th>Frequency</th>
<th>Speed</th>
<th>Max. input power</th>
<th>Perm. ambient temp.</th>
<th>Weight</th>
<th>Conn. diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>DE032BNKXX0S</td>
<td>5533201001</td>
<td>220-240</td>
<td>50/60</td>
<td>1300</td>
<td>9 -40.. +50</td>
<td>0.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5533201004</td>
<td>100-240</td>
<td>50/60</td>
<td>1550</td>
<td>9 -40.. +50</td>
<td>0.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DE032CNKXX0S</td>
<td>5533202007</td>
<td>220-240</td>
<td>50/60</td>
<td>1300</td>
<td>25 -40.. +50</td>
<td>0.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5533202011</td>
<td>100-240</td>
<td>50/60</td>
<td>1550</td>
<td>25 -40.. +50</td>
<td>0.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DE032ENKXX0S</td>
<td>5533203006</td>
<td>220-240</td>
<td>50/60</td>
<td>1300</td>
<td>30 -40.. +50</td>
<td>0.62</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5533203007</td>
<td>100-240</td>
<td>50/60</td>
<td>1550</td>
<td>30 -40.. +50</td>
<td>0.62</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Subject to change.

(1) Standard cover  (2) Cover with blind holes

---

**Engineering drawing**

**Dimensions in mm**

<table>
<thead>
<tr>
<th>A</th>
<th>B (1)</th>
<th>C (2)</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>49</td>
<td>74.0</td>
<td>79.0</td>
<td>30.5</td>
<td>43.5</td>
</tr>
<tr>
<td>49</td>
<td>74.0</td>
<td>79.0</td>
<td>30.5</td>
<td>43.5</td>
</tr>
<tr>
<td>49</td>
<td>82.0</td>
<td>87.0</td>
<td>30.5</td>
<td>43.5</td>
</tr>
<tr>
<td>49</td>
<td>-</td>
<td>87.0</td>
<td>30.5</td>
<td>43.5</td>
</tr>
<tr>
<td>54</td>
<td>91.5</td>
<td>96.5</td>
<td>38.5</td>
<td>43.5/51.5</td>
</tr>
<tr>
<td>54</td>
<td>-</td>
<td>96.5</td>
<td>38.5</td>
<td>43.5/51.5</td>
</tr>
</tbody>
</table>

---

Cover with blind holes, suitable for self-cutting screws

Standard cover, suitable for (M4) threaded insert P/N 27450.19112

Side mounting pins are available on request.

Prepared for fan housing mounting.

---

**Notes**

- **A**: 2:1
- **A-A**: 2:1
- **n 3.33 (11x) ***
- **Ø 5.7 (11x) **

---

**Subject to change.**

---

**Standard cover**: Suitable for (M4) threaded insert P/N 27450.19112

**Cover with blind holes**: Suitable for self-cutting screws.

---

**Dimensions in mm**

- **A**: 2:1
- **A-A**: 2:1
- **n 3.33 (11x) ***
- **Ø 5.7 (11x) **

---

**Side mounting pins are available on request.**

**Prepared for fan housing mounting.**
## NiQ: Combination with axial blades

*Input power and airflow*

### Table of Motor Specifications

<table>
<thead>
<tr>
<th>Motor</th>
<th>Axial blade diameter</th>
<th>Axial blade angle</th>
<th>Family of curves</th>
<th>Input power</th>
<th>Output power</th>
<th>Air flow, free air at n = 1300 rpm</th>
<th>Input power</th>
<th>Output power</th>
<th>Air flow, free air at n = 1550 rpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>NiQ 3208 at 1300 rpm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>154</td>
<td>22</td>
<td></td>
<td>A</td>
<td>2.6</td>
<td>1.7</td>
<td>165</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>154</td>
<td>28</td>
<td></td>
<td>A</td>
<td>2.9</td>
<td>1.9</td>
<td>175</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>154</td>
<td>34</td>
<td></td>
<td>A</td>
<td>3.6</td>
<td>2.3</td>
<td>215</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>172</td>
<td>22</td>
<td></td>
<td>B</td>
<td>2.9</td>
<td>1.9</td>
<td>205</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>172</td>
<td>28</td>
<td></td>
<td>B</td>
<td>4.1</td>
<td>2.7</td>
<td>265</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>372</td>
<td>34</td>
<td></td>
<td>B</td>
<td>5.4</td>
<td>3.5</td>
<td>310</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>22</td>
<td></td>
<td>C</td>
<td>4.7</td>
<td>3.1</td>
<td>335</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>28</td>
<td></td>
<td>C</td>
<td>6.0</td>
<td>3.8</td>
<td>385</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NiQ 3212 at 1300 rpm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>22</td>
<td></td>
<td>D</td>
<td>3.9</td>
<td>2.6</td>
<td>330</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>28</td>
<td></td>
<td>D</td>
<td>5.1</td>
<td>3.5</td>
<td>380</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>34</td>
<td></td>
<td>D</td>
<td>6.7</td>
<td>4.6</td>
<td>460</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>230</td>
<td>22</td>
<td></td>
<td>E</td>
<td>8.4</td>
<td>5.6</td>
<td>580</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>230</td>
<td>28</td>
<td></td>
<td>E</td>
<td>12.7</td>
<td>8.4</td>
<td>690</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>230</td>
<td>34</td>
<td></td>
<td>E</td>
<td>18.1</td>
<td>11.4</td>
<td>825</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>254</td>
<td>22</td>
<td></td>
<td>F</td>
<td>11.2</td>
<td>7.6</td>
<td>735</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NiQ 3224 at 1300 rpm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>230</td>
<td>34</td>
<td></td>
<td>G</td>
<td>16.3</td>
<td>11.4</td>
<td>850</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>254</td>
<td>22</td>
<td></td>
<td>G</td>
<td>10.8</td>
<td>7.6</td>
<td>750</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>254</td>
<td>28</td>
<td></td>
<td>G</td>
<td>18.6</td>
<td>13.5</td>
<td>970</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>254</td>
<td>34</td>
<td></td>
<td>G</td>
<td>26.2</td>
<td>18.8</td>
<td>1095</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NiQ 3208 at 1550 rpm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td></td>
<td></td>
<td>A</td>
<td>3.5</td>
<td>1.8</td>
<td>195</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td></td>
<td></td>
<td>B</td>
<td>4.0</td>
<td>2.1</td>
<td>215</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td></td>
<td></td>
<td>C</td>
<td>5.0</td>
<td>2.6</td>
<td>365</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NiQ 3212 at 1550 rpm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td></td>
<td></td>
<td>D</td>
<td>4.1</td>
<td>2.0</td>
<td>250</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td></td>
<td></td>
<td>E</td>
<td>6.0</td>
<td>3.2</td>
<td>325</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td></td>
<td></td>
<td>F</td>
<td>8.3</td>
<td>4.7</td>
<td>385</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NiQ 3224 at 1550 rpm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td></td>
<td></td>
<td>G</td>
<td>6.0</td>
<td>3.8</td>
<td>400</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td></td>
<td></td>
<td>H</td>
<td>7.7</td>
<td>5.0</td>
<td>470</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td></td>
<td></td>
<td>I</td>
<td>10.0</td>
<td>7.3</td>
<td>555</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J</td>
<td></td>
<td></td>
<td>J</td>
<td>11.0</td>
<td>9.6</td>
<td>675</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K</td>
<td></td>
<td></td>
<td>K</td>
<td>14.0</td>
<td>13.2</td>
<td>820</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td></td>
<td></td>
<td>L</td>
<td>20.9</td>
<td>14.2</td>
<td>1160</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All values determined for air flow direction "V". Power consumption and output power determined without fan housing. Air flow determined with fan housing.
NiQ: Combination with axial blades

Air performance curves determined in fan housing, at a constant speed of 1300 rpm.

Family of air performance curves at 1300 rpm

NiQ 3208 with axial blades Ø 154 mm

NiQ 3208 with axial blades Ø 172 mm

NiQ 3208 with axial blades Ø 200 mm
**NiQ: Combination with axial blades**

*Air performance curves determined in fan housing, at a constant speed of 1550 rpm.*

---

**Family of air performance curves at 1550 rpm**

<table>
<thead>
<tr>
<th>NiQ 3208 with axial blades Ø 154 mm</th>
<th>NiQ 3208 with axial blades Ø 172 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Graph A" /></td>
<td><img src="image2.png" alt="Graph B" /></td>
</tr>
</tbody>
</table>

**NiQ 3208 with axial blades Ø 200 mm**

<table>
<thead>
<tr>
<th>NiQ 3208 with axial blades Ø 200 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3.png" alt="Graph C" /></td>
</tr>
</tbody>
</table>

---

20190715_Catalogue_Refrigerted_Display_Cases_2019_EN.indd   84
18.07.2019   09:08:55
**NiQ: Combination with axial blades**

*Air performance curves determined in fan housing, at a constant speed of 1300 rpm.*

Family of air performance curves at 1300 rpm

- **NiQ 3212 with axial blades Ø 200 mm**
- **NiQ 3212 with axial blades Ø 230 mm**
- **NiQ 3212 with axial blades Ø 254 mm**

---

**NiQ motors**

**Fans and motors for refrigerated display cases - Edition 2019-07**

---

20190715_Catalogue_Refrigerated_Display_Cases_2019_EN.indd   85
18.07.2019   09:08:56
NiQ: Combination with axial blades

Air performance curves determined in fan housing, at a constant speed of 1550 rpm.

Family of air performance curves at 1550 rpm

NiQ 3212 with axial blades Ø 200 mm

NiQ 3212 with axial blades Ø 230 mm

NiQ 3212 with axial blades Ø 254 mm
NiQ: Combination with axial blades

Air performance curves determined in fan housing, at a constant speed of 1300 rpm.
NiQ: Combination with axial blades

*Air performance curves determined in fan housing, at a constant speed of 1550 rpm.*
## Accessories

for refrigerated display cases

<table>
<thead>
<tr>
<th>Item</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cables</td>
<td>92</td>
</tr>
<tr>
<td>Hand-held programmer</td>
<td>94</td>
</tr>
<tr>
<td>Plug-in module</td>
<td>95</td>
</tr>
<tr>
<td>Air-inlet grille</td>
<td>96</td>
</tr>
<tr>
<td>Guard grilles</td>
<td>98</td>
</tr>
<tr>
<td>Axial impellers</td>
<td>102</td>
</tr>
<tr>
<td>Mounting brackets</td>
<td>103</td>
</tr>
<tr>
<td>Fan housings</td>
<td>104</td>
</tr>
</tbody>
</table>
Cables
for axial and diagonal fans

Fully encapsulated ESM motor connector

<table>
<thead>
<tr>
<th>Part number</th>
<th>a (mm)</th>
<th>115/230 VAC 2-wire</th>
<th>115/230 VAC 3-wire</th>
<th>24 VDC 4-wire</th>
<th>Hose</th>
</tr>
</thead>
<tbody>
<tr>
<td>15201-4-1040</td>
<td>450</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15202-4-1040</td>
<td>1500</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15203-4-1040</td>
<td>2000</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11200-4-1040</td>
<td>450</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11201-4-1040</td>
<td>600</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11202-4-1040</td>
<td>1500</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11204-4-1040</td>
<td>2000</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10710-4-1040</td>
<td>450</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10711-4-1040</td>
<td>1500</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Subject to change
Not for W1G130-AA49-01 and W1G130-AA25-01.
Customized versions possible on request.

![Diagram of 115/230 VAC 2-wire cable](image1)

Hose, internal cable
(UL Style 2464/1061), 2 x AWG 20 (ca. 0.5 mm²)

![Diagram of 115/230 VAC 3-wire cable](image2)

Hose, internal cable
(UL Style 2464/1061), 3 x AWG 20 (ca. 0.5 mm²)

![Diagram of 24 VDC 4-wire cable](image3)

Hose, internal cable
(UL Style 2464/1061), 4 x AWG 20 (ca. 0.5 mm²)
## Standard circuit connections

<table>
<thead>
<tr>
<th>Part number</th>
<th>a (mm)</th>
<th>2-wire</th>
<th>3-wire</th>
<th>Hose</th>
</tr>
</thead>
<tbody>
<tr>
<td>27450.62327</td>
<td>480</td>
<td>X</td>
<td></td>
<td>H03VV (0.5 mm²)</td>
</tr>
<tr>
<td>27450.62329</td>
<td>1000</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27450.62330</td>
<td>1500</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27450.62331</td>
<td>480</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27450.62332</td>
<td>1000</td>
<td>X</td>
<td></td>
<td>UL2517 (AWG 20)</td>
</tr>
<tr>
<td>27450.62333</td>
<td>1500</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27450.62337</td>
<td>480</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27450.62338</td>
<td>1000</td>
<td>X</td>
<td></td>
<td>H03VV (0.5 mm²)</td>
</tr>
<tr>
<td>27450.62339</td>
<td>1500</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27450.6234</td>
<td>480</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27450.62335</td>
<td>1000</td>
<td>X</td>
<td></td>
<td>UL2517 (AWG 20)</td>
</tr>
<tr>
<td>27450.62336</td>
<td>1500</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Subject to change.
Customized versions possible on request.

2-wire

<table>
<thead>
<tr>
<th>Mains supply line (brown)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
</tr>
<tr>
<td>35.9</td>
</tr>
<tr>
<td>19.8</td>
</tr>
<tr>
<td>85±10</td>
</tr>
</tbody>
</table>

3-wire

<table>
<thead>
<tr>
<th>Mains supply line (brown)</th>
<th>Control wire (black)</th>
<th>Mains supply neutral (blue)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td></td>
<td>85±10</td>
</tr>
</tbody>
</table>
Hand-held programmer

**Hand-held programmer for products based on energy-saving motor (ESM)**

<table>
<thead>
<tr>
<th>Part number</th>
<th>Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBC000AF0801</td>
<td>Simple speed programming, battery-operated</td>
</tr>
<tr>
<td></td>
<td>User-friendly navigation menu, protective case with folding stand</td>
</tr>
</tbody>
</table>

Subject to change.
Extension for models ESM only.

**Replacement programming cable for hand-held unit**

<table>
<thead>
<tr>
<th>Part number</th>
<th>Length (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>29005-4-1040</td>
<td>1000</td>
</tr>
</tbody>
</table>

Subject to change.

Extremely simple programming of the two rotational speeds which can be set under ESM. Eliminates the need for a PC, software, power adapter and second cable. Specially for use in production or in the field. Automatic switch-off function for a longer battery life. Mini-USB connector for downloading software updates. Batteries, programming cable and operating instructions included in scope of delivery.

See Page 80 for different modes of operation.
Plug-in module

External elektronics / ESM plug-in module

<table>
<thead>
<tr>
<th>Part number</th>
<th>Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCC000AE0907</td>
<td>115 V, 50/60 Hz, control curve 1 V - 10 V =&gt; 10 % - 100 %, length control line: 1000 mm, length supply line: 450 mm</td>
</tr>
<tr>
<td>CCC000AE0806</td>
<td>230 V, 50/60 Hz, control curve 1 V - 10 V =&gt; 10 % - 100 %, length control line: 1000 mm, length supply line: 450 mm</td>
</tr>
<tr>
<td>CCC000AE0810</td>
<td>230 V, 50/60 Hz, control curve 1 V - 10 V =&gt; 10 % - 100 %, length control line: 3000 mm, length supply line: 3000 mm</td>
</tr>
</tbody>
</table>

Subject to change.
Extensions for models ESM+ only.

The plug-in module extends the ESM product range with the addition of a 0-10 V control input and can be retrofitted for the programmable ESM fans in this catalog. Compatible fans can be recognized from the "ESM+ enabled" label.
The air performance of ebm-papst fans is not the only thing measured on the state-of-the-art, in-house test stand. The acoustic behavior of the fans is also examined and the measuring results are included in the technical documentation. Please note that the measurements are taken under ideal conditions with undisturbed inflow and outflow.

If the fans are later installed in applications where limited space is available, the noise information listed in the documentation will probably not be applicable.

In order to minimize the negative impact of the installation situation, ebm-papst offers the FlowGrid air inlet guard shown here. It is mounted on the fan’s intake side and effectively reduces the noise in the fan’s overall frequency range; especially the disturbing tonal noise in the low frequency range. The result is a far lower sound pressure level and pleasant running noise.

Since the level of noise reduction is dependent on the installation circumstances, it is not possible to provide generally applicable information here.

Would you like to find out more?

If you need an installation guide or more information about the dimensions, go to:

www.ebmpapst.com/flowgrid-manual

or scan the QR code below:
Air-inlet grille FG 119

Material/surface
- PA plastic, fiberglass-reinforced

Note
- For axial and diagonal fans
- Assembled on the air intake, the fan grid reduces the noise emission dramatically and minimizes disturbing low frequency sound

Side
- Intake side

<table>
<thead>
<tr>
<th>Part number</th>
<th>Fan size</th>
<th>□ B (mm)</th>
<th>□ C (mm)</th>
<th>Ø E (mm)</th>
<th>S (mm)</th>
<th>H (mm)</th>
<th>Fan series</th>
</tr>
</thead>
<tbody>
<tr>
<td>9920070000</td>
<td>119 x 119</td>
<td>119±0.3</td>
<td>104.8</td>
<td>4.3±0.15</td>
<td>2±0.1</td>
<td>32.62±0.3</td>
<td>ACi 4400 N, ACi 4400, 4300 N</td>
</tr>
</tbody>
</table>

Subject to change.

Fans and motors for refrigerated display cases - Edition 2019-07
Guard grilles
for compact fans

Material/surface

- Galvanized or nickel-plated steel wire

Note

- Guard grilles according to DIN EN ISO 13857 (previously EN 294).
- Additional guard grilles that do not satisfy DIN EN ISO 13857 available on request.
- Our guard grilles are designed specifically to be used with ebm-papst fans. They combine the highest degree of safety with minimum effect on the operating noise. Please note that the safety-related clearances cannot be guaranteed when guard grilles made by other manufacturers are used.

### Guard grilles

<table>
<thead>
<tr>
<th>Part number</th>
<th>Type</th>
<th>Fan size</th>
<th>Fan series</th>
<th>Side</th>
</tr>
</thead>
<tbody>
<tr>
<td>9920022002</td>
<td>LZ22-2</td>
<td>80 x 80</td>
<td>8300 N</td>
<td>Intake/Outlet</td>
</tr>
<tr>
<td>9920032004</td>
<td>LZ32-4</td>
<td>92 x 92</td>
<td>3300 N</td>
<td>Intake/Outlet</td>
</tr>
<tr>
<td>9920020001</td>
<td>LZ22-N</td>
<td>92 x 92</td>
<td>4300 N</td>
<td>Intake/Outlet</td>
</tr>
<tr>
<td>9920145006</td>
<td>LZ12-14</td>
<td>92 x 92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9920023000</td>
<td>LZ23</td>
<td>92 x 92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9920023001</td>
<td>LZ23-1</td>
<td>92 x 92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9920020000</td>
<td>LZ20</td>
<td>92 x 92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9920020000</td>
<td>LZ30</td>
<td>119 x 119</td>
<td>4300 N</td>
<td>Intake/Outlet</td>
</tr>
<tr>
<td>9920030000</td>
<td>LZ30</td>
<td>119 x 119</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9920030003</td>
<td>LZ30-3</td>
<td>119 x 119</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9920030004</td>
<td>LZ30-4</td>
<td>119 x 119</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Subject to change.

### Engineering drawing

#### LZ22-2

**Dimensions in mm**

- Diameter: 185,5 ±0,5
- Height: 78 ±1
- Thickness: 2,5 ±0,3
- Depth: 4,3 ±0,2

#### LZ32-4

**Dimensions in mm**

- Diameter: 71,5
- Height: 40 ±1
- Thickness: 4,7 ±1
- Depth: 78,2 ±0,5

---

20190715_Catalogue_Refrigerated_Display_Cases_2019_EN.indd  98
18.07.2019  09:09:59
Guard grilles

for compact fans

Guard grilles

<table>
<thead>
<tr>
<th>Part number</th>
<th>Type</th>
<th>Fan size</th>
<th>Fan series</th>
<th>B (mm)</th>
<th>C (mm)</th>
<th>D (mm)</th>
<th>E (mm)</th>
<th>Mounting</th>
</tr>
</thead>
<tbody>
<tr>
<td>9920032002</td>
<td>LZ32-2</td>
<td>80 x 80</td>
<td>8300 N</td>
<td>80</td>
<td>71.5</td>
<td>7.0</td>
<td>34</td>
<td>A1</td>
</tr>
<tr>
<td>9920032003</td>
<td>LZ32-P</td>
<td>80 x 80</td>
<td>8300 N</td>
<td>80</td>
<td>71.5</td>
<td>7.0</td>
<td>34</td>
<td>A3</td>
</tr>
<tr>
<td>9920032302</td>
<td>LZ23-2</td>
<td>92 x 92</td>
<td>3300 N</td>
<td>92</td>
<td>82.5</td>
<td>6.5</td>
<td>46</td>
<td>A1</td>
</tr>
<tr>
<td>9920032303</td>
<td>LZ23-3</td>
<td>92 x 92</td>
<td>3300 N</td>
<td>92</td>
<td>82.5</td>
<td>6.5</td>
<td>46</td>
<td>A3</td>
</tr>
<tr>
<td>9920030005</td>
<td>LZ30-5</td>
<td>119 x 119</td>
<td>ACI 4400 N</td>
<td>119</td>
<td>105</td>
<td>6.5</td>
<td>50</td>
<td>A2</td>
</tr>
<tr>
<td>9920030006</td>
<td>LZ30-6</td>
<td>119 x 119</td>
<td>ACI 4400, 4300</td>
<td>119</td>
<td>105</td>
<td>6.5</td>
<td>50</td>
<td>A4</td>
</tr>
<tr>
<td>9920030001</td>
<td>LZ30-P</td>
<td>119 x 119</td>
<td>ACI 4400 N</td>
<td>119</td>
<td>105</td>
<td>6.5</td>
<td>50</td>
<td>A2</td>
</tr>
</tbody>
</table>

Subject to change.

Material/surface

- Fiberglass-reinforced plastic

Note

- Guard grilles according to DIN EN ISO 13857 (previously EN 294)

Guard grilles

<table>
<thead>
<tr>
<th>Part number</th>
<th>Type</th>
<th>Fan size</th>
<th>Fan series</th>
<th>B (mm)</th>
<th>C (mm)</th>
<th>D (mm)</th>
<th>E (mm)</th>
<th>Mounting</th>
</tr>
</thead>
<tbody>
<tr>
<td>9920032002</td>
<td>LZ32-2</td>
<td>80 x 80</td>
<td>8300 N</td>
<td>80</td>
<td>71.5</td>
<td>7.0</td>
<td>34</td>
<td>A1</td>
</tr>
<tr>
<td>9920032003</td>
<td>LZ32-P</td>
<td>80 x 80</td>
<td>8300 N</td>
<td>80</td>
<td>71.5</td>
<td>7.0</td>
<td>34</td>
<td>A3</td>
</tr>
<tr>
<td>9920032302</td>
<td>LZ23-2</td>
<td>92 x 92</td>
<td>3300 N</td>
<td>92</td>
<td>82.5</td>
<td>6.5</td>
<td>46</td>
<td>A1</td>
</tr>
<tr>
<td>9920032303</td>
<td>LZ23-3</td>
<td>92 x 92</td>
<td>3300 N</td>
<td>92</td>
<td>82.5</td>
<td>6.5</td>
<td>46</td>
<td>A3</td>
</tr>
<tr>
<td>9920030005</td>
<td>LZ30-5</td>
<td>119 x 119</td>
<td>ACI 4400 N</td>
<td>119</td>
<td>105</td>
<td>6.5</td>
<td>50</td>
<td>A2</td>
</tr>
<tr>
<td>9920030006</td>
<td>LZ30-6</td>
<td>119 x 119</td>
<td>ACI 4400, 4300</td>
<td>119</td>
<td>105</td>
<td>6.5</td>
<td>50</td>
<td>A4</td>
</tr>
<tr>
<td>9920030001</td>
<td>LZ30-P</td>
<td>119 x 119</td>
<td>ACI 4400 N</td>
<td>119</td>
<td>105</td>
<td>6.5</td>
<td>50</td>
<td>A2</td>
</tr>
</tbody>
</table>
Guard grilles
for NiQ motors

Material/surface
- Steel, galvanized and blue chromated

<table>
<thead>
<tr>
<th>Guard grilles</th>
<th>Part number</th>
<th>Size</th>
<th>Max. blade angle α at &quot;V&quot;</th>
<th>Max. blade angle α at &quot;A&quot;</th>
<th>a  (mm)</th>
<th>b  (mm)</th>
<th>c  (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>27452.70002</td>
<td>154</td>
<td>34°</td>
<td>34°</td>
<td>170.0</td>
<td>190.0</td>
<td>11.5</td>
</tr>
<tr>
<td></td>
<td>27452.70003</td>
<td>172</td>
<td>34°</td>
<td>34°</td>
<td>188.0</td>
<td>208.0</td>
<td>11.5</td>
</tr>
<tr>
<td></td>
<td>27452.70004</td>
<td>200</td>
<td>34°</td>
<td>34°</td>
<td>214.0</td>
<td>236.0</td>
<td>11.5</td>
</tr>
<tr>
<td></td>
<td>27452.70005</td>
<td>230</td>
<td>28°</td>
<td>28°</td>
<td>246.0</td>
<td>266.0</td>
<td>17.5</td>
</tr>
<tr>
<td></td>
<td>27452.70006</td>
<td>254</td>
<td>28°</td>
<td>28°</td>
<td>270.0</td>
<td>290.0</td>
<td>17.5</td>
</tr>
<tr>
<td></td>
<td>27452.70007</td>
<td>300</td>
<td>–</td>
<td>22°</td>
<td>324.0</td>
<td>344.0</td>
<td>17.5</td>
</tr>
</tbody>
</table>

Subject to change.

Basket guard grilles

<table>
<thead>
<tr>
<th>Basket guard grilles</th>
<th>Part number</th>
<th>Size</th>
<th>Max. blade angle α at &quot;V&quot;</th>
<th>Max. blade angle α at &quot;A&quot;</th>
<th>a  (mm)</th>
<th>b  (mm)</th>
<th>c  (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>27452.70001</td>
<td>172</td>
<td>34°</td>
<td>34°</td>
<td>188.0</td>
<td>208.0</td>
<td>37.5</td>
</tr>
<tr>
<td></td>
<td>27452.70002</td>
<td>200</td>
<td>34°</td>
<td>28°</td>
<td>212.0</td>
<td>236.0</td>
<td>37.5</td>
</tr>
<tr>
<td></td>
<td>27452.70003</td>
<td>230</td>
<td>28°</td>
<td>28°</td>
<td>246.0</td>
<td>266.0</td>
<td>40.0</td>
</tr>
<tr>
<td></td>
<td>27452.70004</td>
<td>254</td>
<td>28°</td>
<td>28°</td>
<td>270.0</td>
<td>290.0</td>
<td>40.0</td>
</tr>
<tr>
<td></td>
<td>27452.70005</td>
<td>300</td>
<td>–</td>
<td>22°</td>
<td>325.0</td>
<td>344.0</td>
<td>46.8</td>
</tr>
</tbody>
</table>

Subject to change.
Axial impellers for NiQ motors

<table>
<thead>
<tr>
<th>Part number for direction of airflow &quot;V&quot;</th>
<th>Part number for direction of airflow &quot;A&quot;</th>
<th>Blade angle α</th>
<th>a (mm)</th>
<th>b (mm)</th>
<th>c (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>27453.34001</td>
<td>27453.34201</td>
<td>22°</td>
<td>154.0</td>
<td>27.5</td>
<td>14.0</td>
</tr>
<tr>
<td>27453.34002</td>
<td>27453.34202</td>
<td>28°</td>
<td>154.0</td>
<td>32.0</td>
<td>16.0</td>
</tr>
<tr>
<td>27453.34003</td>
<td>27453.34203</td>
<td>34°</td>
<td>154.0</td>
<td>37.0</td>
<td>18.0</td>
</tr>
<tr>
<td>27453.34004</td>
<td>27453.34204</td>
<td>22°</td>
<td>172.0</td>
<td>31.0</td>
<td>14.5</td>
</tr>
<tr>
<td>27453.34005</td>
<td>27453.34205</td>
<td>28°</td>
<td>172.0</td>
<td>36.0</td>
<td>17.0</td>
</tr>
<tr>
<td>27453.34006</td>
<td>27453.34206</td>
<td>34°</td>
<td>172.0</td>
<td>42.0</td>
<td>21.0</td>
</tr>
<tr>
<td>27453.34007</td>
<td>27453.34207</td>
<td>22°</td>
<td>200.0</td>
<td>32.0</td>
<td>15.5</td>
</tr>
<tr>
<td>27453.34008</td>
<td>27453.34208</td>
<td>28°</td>
<td>200.0</td>
<td>37.5</td>
<td>18.0</td>
</tr>
<tr>
<td>27453.34009</td>
<td>27453.34209</td>
<td>34°</td>
<td>200.0</td>
<td>45.0</td>
<td>22.0</td>
</tr>
<tr>
<td>27453.34010</td>
<td>27453.34210</td>
<td>22°</td>
<td>230.0</td>
<td>35.0</td>
<td>17.5</td>
</tr>
<tr>
<td>27453.34011</td>
<td>27453.34211</td>
<td>28°</td>
<td>230.0</td>
<td>43.0</td>
<td>21.5</td>
</tr>
<tr>
<td>27453.34012</td>
<td>27453.34212</td>
<td>34°</td>
<td>230.0</td>
<td>50.0</td>
<td>24.0</td>
</tr>
<tr>
<td>27453.34013</td>
<td>27453.34213</td>
<td>22°</td>
<td>254.0</td>
<td>37.0</td>
<td>19.0</td>
</tr>
<tr>
<td>27453.34014</td>
<td>27453.34214</td>
<td>28°</td>
<td>254.0</td>
<td>45.0</td>
<td>23.5</td>
</tr>
<tr>
<td>27453.34015</td>
<td>27453.34215</td>
<td>34°</td>
<td>254.0</td>
<td>52.0</td>
<td>26.0</td>
</tr>
<tr>
<td>27453.34016</td>
<td>27453.34216</td>
<td>22°</td>
<td>300.0</td>
<td>43.0</td>
<td>21.5</td>
</tr>
<tr>
<td>27453.34017</td>
<td>27453.34217</td>
<td>28°</td>
<td>300.0</td>
<td>53.5</td>
<td>26.5</td>
</tr>
<tr>
<td>27453.34018</td>
<td>27453.34218</td>
<td>34°</td>
<td>300.0</td>
<td>61.0</td>
<td>30.0</td>
</tr>
</tbody>
</table>

Subject to change.
## Mounting brackets for NiQ motors

### Mounting brackets – foot measure 18 mm (multi-function design)

<table>
<thead>
<tr>
<th>Part number</th>
<th>Size</th>
<th>Version</th>
<th>a (mm)</th>
<th>b (mm)</th>
<th>c (mm)</th>
<th>d (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>27452.71002</td>
<td>172</td>
<td>1</td>
<td>56.0</td>
<td>51.0</td>
<td>78.0</td>
<td>100.0</td>
</tr>
<tr>
<td>27452.71005</td>
<td>200</td>
<td>2</td>
<td>67.0</td>
<td>51.0</td>
<td>78.0</td>
<td>100.0</td>
</tr>
<tr>
<td>27452.71003</td>
<td>230</td>
<td>1</td>
<td>74.5</td>
<td>51.0</td>
<td>78.0</td>
<td>100.0</td>
</tr>
<tr>
<td>27452.71004</td>
<td>254</td>
<td>2</td>
<td>85.5</td>
<td>51.0</td>
<td>78.0</td>
<td>100.0</td>
</tr>
<tr>
<td>27452.71001</td>
<td>300</td>
<td>3</td>
<td>112.0</td>
<td>–</td>
<td>150.0</td>
<td>172.0</td>
</tr>
</tbody>
</table>

Subject to change.

### Material/surface

- Steel, galvanized and blue chromated

### Mounting brackets – foot measure 26 mm (standard design or multi-function design)

<table>
<thead>
<tr>
<th>Part number</th>
<th>Size</th>
<th>Version</th>
<th>a (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>27452.71201</td>
<td>154</td>
<td>1</td>
<td>39.0</td>
</tr>
<tr>
<td>27452.71202</td>
<td>172</td>
<td>1</td>
<td>52.0</td>
</tr>
<tr>
<td>27452.71203</td>
<td>200</td>
<td>1</td>
<td>72.0</td>
</tr>
<tr>
<td>27452.71204</td>
<td>230</td>
<td>1</td>
<td>72.0</td>
</tr>
<tr>
<td>27452.71205</td>
<td>254</td>
<td>1</td>
<td>84.0</td>
</tr>
<tr>
<td>27452.71206</td>
<td>254</td>
<td>2</td>
<td>84.0</td>
</tr>
<tr>
<td>27452.71207</td>
<td>300</td>
<td>2</td>
<td>109.0</td>
</tr>
<tr>
<td>27452.71208</td>
<td>300</td>
<td>3</td>
<td>109.0</td>
</tr>
</tbody>
</table>

Subject to change.

---

**Fans and motors for refrigerated display cases - Edition 2019-07**
Fan housings

for NiQ motors

Fan housings, direction of airflow "V"^1

<table>
<thead>
<tr>
<th>Part number</th>
<th>Part number (plastic)^2</th>
<th>Size</th>
<th>Max. blade angle α</th>
<th>a (plastic) (mm)</th>
<th>b (plastic) (mm)</th>
<th>c (mm)</th>
<th>d (plastic) (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>27452.70501</td>
<td>27452.70802</td>
<td>154</td>
<td>34°</td>
<td>164.0 (167.5)</td>
<td>190.0 (191.0)</td>
<td>200.0</td>
<td>48.0 (46.0)</td>
</tr>
<tr>
<td>27452.70502</td>
<td>27452.70803</td>
<td>172</td>
<td>34°</td>
<td>182.0 (184.5)</td>
<td>208.0</td>
<td>223.0</td>
<td>49.0 (46.0)</td>
</tr>
<tr>
<td>27452.70503</td>
<td>27452.70804</td>
<td>200</td>
<td>34°</td>
<td>210.0 (214.5)</td>
<td>236.0</td>
<td>246.0</td>
<td>48.5 (46.5)</td>
</tr>
<tr>
<td>27452.70504</td>
<td>–</td>
<td>230</td>
<td>28°</td>
<td>242.0</td>
<td>266.0</td>
<td>276.0</td>
<td>49.0</td>
</tr>
<tr>
<td>27452.70505</td>
<td>27452.70805</td>
<td>254</td>
<td>28°</td>
<td>264.0 (269.5)</td>
<td>290.0</td>
<td>300.0</td>
<td>48.0 (50.5)</td>
</tr>
<tr>
<td>27452.70506</td>
<td>27452.70806</td>
<td>300</td>
<td>22°</td>
<td>308.0 (315.0)</td>
<td>344.0</td>
<td>356.0</td>
<td>49.0 (50.5)</td>
</tr>
</tbody>
</table>

^1 Subject to change.
^2 Block diagram. Design may differ depending on version.

Material/surface

- Sheet steel, coated in grey plastic

Fan housings, direction of airflow "A"^3

<table>
<thead>
<tr>
<th>Part number</th>
<th>Part number (plastic)^4</th>
<th>Size</th>
<th>Max. blade angle α</th>
<th>a (plastic) (mm)</th>
<th>b (mm)</th>
<th>c (plastic) (mm)</th>
<th>d (plastic) (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>27452.70701</td>
<td>–</td>
<td>154</td>
<td>34°</td>
<td>162.0</td>
<td>190.0</td>
<td>200.0</td>
<td>24.0</td>
</tr>
<tr>
<td>27452.70702</td>
<td>–</td>
<td>172</td>
<td>34°</td>
<td>180.0</td>
<td>208.0</td>
<td>223.0</td>
<td>24.0</td>
</tr>
<tr>
<td>27452.70703</td>
<td>–</td>
<td>200</td>
<td>28°</td>
<td>208.0</td>
<td>236.0</td>
<td>246.0</td>
<td>24.0</td>
</tr>
<tr>
<td>27452.70704</td>
<td>–</td>
<td>230</td>
<td>28°</td>
<td>242.0</td>
<td>266.0</td>
<td>276.0</td>
<td>25.5</td>
</tr>
<tr>
<td>27452.70705</td>
<td>27452.70807</td>
<td>254</td>
<td>28°</td>
<td>262.0 (269.0)</td>
<td>290.0</td>
<td>300.0 (302.0)</td>
<td>24.0 (44.0)</td>
</tr>
<tr>
<td>27452.70706</td>
<td>–</td>
<td>300</td>
<td>22°</td>
<td>308.0</td>
<td>344.0</td>
<td>356.0</td>
<td>29.0</td>
</tr>
</tbody>
</table>

^3 Subject to change.
^4 Block diagram. Design may differ depending on version.
Fan housing types
for axial fans

Type A: Round fan housing

Type B: Flat-type fan housing

The following axial fans are also available with flat-type fan housing (type B):

<table>
<thead>
<tr>
<th>Part number</th>
<th>Fan size</th>
<th>a (mm)</th>
<th>b (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>W1G154EG5701</td>
<td>154</td>
<td>200</td>
<td>180</td>
</tr>
<tr>
<td>W1G154EG5702</td>
<td>154</td>
<td>200</td>
<td>180</td>
</tr>
<tr>
<td>W1G154EG5705</td>
<td>154</td>
<td>200</td>
<td>180</td>
</tr>
<tr>
<td>W1G172EC8280</td>
<td>172</td>
<td>222</td>
<td>202</td>
</tr>
<tr>
<td>W1G172EC9501</td>
<td>172</td>
<td>222</td>
<td>202</td>
</tr>
<tr>
<td>W1G172EC9101</td>
<td>172</td>
<td>222</td>
<td>202</td>
</tr>
<tr>
<td>W1G200EG5701</td>
<td>200</td>
<td>250</td>
<td>230</td>
</tr>
<tr>
<td>W1G200EG5702</td>
<td>200</td>
<td>250</td>
<td>230</td>
</tr>
<tr>
<td>W1G200EG5704</td>
<td>200</td>
<td>250</td>
<td>230</td>
</tr>
<tr>
<td>W1G200EG5705</td>
<td>200</td>
<td>250</td>
<td>230</td>
</tr>
<tr>
<td>W1G200EC9547</td>
<td>200</td>
<td>250</td>
<td>230</td>
</tr>
<tr>
<td>W1G200EC9145</td>
<td>200</td>
<td>250</td>
<td>230</td>
</tr>
<tr>
<td>W1G200EC9547</td>
<td>200</td>
<td>250</td>
<td>230</td>
</tr>
<tr>
<td>W1G200EC9145</td>
<td>200</td>
<td>250</td>
<td>230</td>
</tr>
<tr>
<td>W1G200EX9103</td>
<td>200</td>
<td>250</td>
<td>230</td>
</tr>
<tr>
<td>W1G200EX8703</td>
<td>200</td>
<td>250</td>
<td>230</td>
</tr>
<tr>
<td>W1G200EX9501</td>
<td>200</td>
<td>250</td>
<td>230</td>
</tr>
<tr>
<td>W1G200EX9101</td>
<td>200</td>
<td>250</td>
<td>230</td>
</tr>
<tr>
<td>W1G200EF4101</td>
<td>200</td>
<td>250</td>
<td>230</td>
</tr>
<tr>
<td>W1G200EF5001</td>
<td>200</td>
<td>250</td>
<td>230</td>
</tr>
<tr>
<td>W1G200EF6002</td>
<td>200</td>
<td>250</td>
<td>230</td>
</tr>
<tr>
<td>W1G230EB9001</td>
<td>230</td>
<td>280</td>
<td>260</td>
</tr>
<tr>
<td>W1G230EB9901</td>
<td>230</td>
<td>280</td>
<td>260</td>
</tr>
<tr>
<td>W1G250EB2101</td>
<td>250</td>
<td>312.5</td>
<td>285</td>
</tr>
<tr>
<td>W1G250EB1701</td>
<td>250</td>
<td>312.5</td>
<td>285</td>
</tr>
</tbody>
</table>

Subject to change.
Technology

for refrigerated display cases

Connection diagrams

Technical parameters and scope

Page

108

120
Connection diagram: ESM1)

Technical features

- Speed selection max/min
- Reverse polarity protection
- Power limiter
- Motor current limitation
- Soft start
- Thermal overload protection for motor
- Speed setting input (230 V)
- Thermal overload protector (TOP) internally connected
- ESM+ expandable with plug-in module

<table>
<thead>
<tr>
<th>Wire</th>
<th>Designation</th>
<th>Colour</th>
<th>Assignment / function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>N</td>
<td>blue</td>
<td>Power supply, neutral conductor, see nameplate for voltage range</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>black</td>
<td>Power supply, phase, see nameplate for voltage range</td>
</tr>
<tr>
<td></td>
<td>SL</td>
<td>brown</td>
<td>Speed selection: switch open speed 1, switch closed speed 2</td>
</tr>
</tbody>
</table>
Connection diagram: ESM2)

### Technical features

- Speed setting input
- Speed monitoring Hall IC
- Motor current limitation
- Emergency operation
- RS485 MODBUS-RTU

- Special function automatic speed switching
- Special function automatic speed switching and reversal of rotation
- Thermal overload protection for motor
- Reverse polarity protection
- Thermal overload protector (TOP) internally connected

### Connection Table

<table>
<thead>
<tr>
<th>Wire</th>
<th>Designation</th>
<th>Colour</th>
<th>Assignment / function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+</td>
<td>red</td>
<td>Power supply, see nameplate for voltage range</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>blue</td>
<td>Power supply, see nameplate for voltage range</td>
</tr>
<tr>
<td>RSA</td>
<td>white</td>
<td></td>
<td>RS-485 interface for MODBUS RSA/switching input</td>
</tr>
<tr>
<td>RSB</td>
<td>brown</td>
<td></td>
<td>RS-485 interface for MODBUS RSB/switching input</td>
</tr>
</tbody>
</table>
### Technical features

- Tach output
- Motor current limitation
- Soft start
- Control input 0-10 VDC / PWM
- Thermal overload protection for electronics/motor
- Thermal overload protector (TOP) internally connected

### Connection Diagram: ESM3)

#### Wire 1
- UN +24 VDC: red (Power supply 24 VDC, maximum ripple 3.5 %)
- GND: blue (Reference ground)
- Tach: white (Tach output, 1 pulse per revolution, Isink max = 10 mA, open collector)
- PWM/0-10 VDC: yellow (Control input PWM or 0-10 V, RE > 100k)
Connection diagram: ESM4)

**Technical features**
- Speed setting input (230 V)
- ESM+ expandable with plug-in module
- Soft start
- Thermal overload protection for motor
- Tach output
- Output 10 VDC, max. 1.1 mA
- Thermal overload protector (TOP) internally connected
- Control input 0-10 VDC / PWM

### Wire Designation Colour Assignment / function

<table>
<thead>
<tr>
<th>Wire</th>
<th>Designation</th>
<th>Colour</th>
<th>Assignment / function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 L</td>
<td>black</td>
<td>Power supply, see nameplate for voltage range</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>blue</td>
<td>Neutral conductor</td>
<td></td>
</tr>
<tr>
<td>2 10 V</td>
<td>blue</td>
<td>Voltage output 10 V / 1.1 mA, electrically isolated, not short-circuit-proof</td>
<td></td>
</tr>
<tr>
<td>Tach</td>
<td>white</td>
<td>Tach output: Open collector, 1 pulse per revolution, electrically isolated</td>
<td></td>
</tr>
<tr>
<td>0-10 V / PWM</td>
<td>yellow</td>
<td>Control input 0-10 V or PWM, electrically isolated</td>
<td></td>
</tr>
<tr>
<td>GND</td>
<td>blue</td>
<td>GND connection for control interface</td>
<td></td>
</tr>
</tbody>
</table>
Connection diagram: ESM5)

<table>
<thead>
<tr>
<th>Wire</th>
<th>Designation</th>
<th>Colour</th>
<th>Assignment / function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>L</td>
<td>black</td>
<td>Power supply</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>black</td>
<td>Power supply</td>
</tr>
<tr>
<td></td>
<td>CONTR</td>
<td>violett</td>
<td>Speed control</td>
</tr>
<tr>
<td></td>
<td>GND</td>
<td>blue</td>
<td>Weight speed control</td>
</tr>
<tr>
<td></td>
<td>Tacho</td>
<td>white</td>
<td>Tach signal / 2</td>
</tr>
</tbody>
</table>

Technical features

- Speed control via analog voltage (5-10 VDC)
- Locked-rotor protection
Connection diagram: ESM6)

Technical features
- Speed control via PWM
- Locked-rotor protection

<table>
<thead>
<tr>
<th>Wire</th>
<th>Designation</th>
<th>Colour</th>
<th>Assignment / function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>L</td>
<td>black</td>
<td>Power supply</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>black</td>
<td>Power supply</td>
</tr>
<tr>
<td></td>
<td>CONTR</td>
<td>violett</td>
<td>Speed control</td>
</tr>
<tr>
<td></td>
<td>GND</td>
<td>blue</td>
<td>Weight speed control</td>
</tr>
<tr>
<td></td>
<td>Tacho</td>
<td>white</td>
<td>Tach signal / 2</td>
</tr>
</tbody>
</table>
Connection diagram: ESM7)

Technical features
• Locked-rotor protection

<table>
<thead>
<tr>
<th>Wire</th>
<th>Designation</th>
<th>Colour</th>
<th>Assignment / function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>L</td>
<td>black</td>
<td>Power supply</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>black</td>
<td>Power supply</td>
</tr>
</tbody>
</table>
**Connection diagram: ESM8**

### Technical features
- Locked-rotor protection
- Reverse polarity protection
- Optionally available with speed control (PWM, analog, temperature, BUS) and output signals (alarm, tach)

#### Connection diagram:

![Wire 1 Connection](connection_diagram)

##### Wire 1
- **Wire**
- **Designation**
- **Colour**
- **Assignment / function**

<table>
<thead>
<tr>
<th>Wire</th>
<th>Designation</th>
<th>Colour</th>
<th>Assignment / function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+UB</td>
<td>red</td>
<td>Power supply</td>
</tr>
<tr>
<td></td>
<td>GND</td>
<td>blue</td>
<td>Weight</td>
</tr>
</tbody>
</table>
Connection diagram: iQ1)

Usage
- Standard (constant operating speed)
- ROS (Reverse on Start)

<table>
<thead>
<tr>
<th>Wire</th>
<th>Designation</th>
<th>Colour</th>
<th>Assignment / function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>L</td>
<td>brown</td>
<td>Power supply Phase</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>blue</td>
<td>Power supply Neutral</td>
</tr>
<tr>
<td></td>
<td>SL</td>
<td>green-yellow</td>
<td>Protective earth</td>
</tr>
</tbody>
</table>
Connection diagram: iQ2)

Usage
- 2-speed operation
- ROD (Reverse on Demand)
- Speed control 0-10 VDC

<table>
<thead>
<tr>
<th>Wire</th>
<th>Designation</th>
<th>Colour</th>
<th>Assignment / function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>L</td>
<td>brown</td>
<td>Power supply Phase</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>blue</td>
<td>Power supply Neutral</td>
</tr>
<tr>
<td></td>
<td>CW</td>
<td>black</td>
<td>Control line</td>
</tr>
<tr>
<td></td>
<td>SL</td>
<td>green-yellow</td>
<td>Protective earth</td>
</tr>
</tbody>
</table>
Connection diagram: NiQ1)

### Usage
- Standard (constant operating speed)
- ROS (Reverse on Start)

### Connection Diagram

![Connection Diagram](image)

### Table: Wire Assignment

<table>
<thead>
<tr>
<th>Wire</th>
<th>Designation</th>
<th>Colour</th>
<th>Assignment / function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 L</td>
<td>brown</td>
<td>Power supply Phase</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>blue</td>
<td>Power supply Neutral</td>
<td></td>
</tr>
</tbody>
</table>
Connection diagram: NiQ2)

Usage
- 2-speed operation
- ROD (Reverse on Demand)

<table>
<thead>
<tr>
<th>Wire</th>
<th>Designation</th>
<th>Colour</th>
<th>Assignment / function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>L</td>
<td>brown</td>
<td>Power supply Phase</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>blue</td>
<td>Power supply Neutral</td>
</tr>
<tr>
<td></td>
<td>CW</td>
<td>black</td>
<td>Control line</td>
</tr>
</tbody>
</table>
Technical parameters and scope

High standards for all ebm-papst products
Here at ebm-papst, we constantly strive to further improve our products in order to be able to offer you the best possible product for your application. Careful monitoring of the market ensures that technical innovations are reflected in the improvements of our products. Based on the technical parameters listed below and the ambience you want our product to operate in, we here at ebm-papst can always work out the best solution for your specific application.

General performance parameters
Any deviations from the technical data and parameters described here are listed on the product-specific data sheet.

Degree of protection
The type of protection is specified in the product-specific data sheets.

Insulation class
The insulation class is specified in the product-specific data sheets.

Installation position
The mounting position is specified in the product-specific data sheets.

Condensate discharge holes
Information on the condensate discharge holes is provided in the product-specific data sheets.

Mode of operation
The mode of operation is specified in the product-specific data sheets.

Protection class
The protection class is specified in the product-specific data sheets.

Service life
The service life of ebm-papst automotive products depends:
– The service life of the bearing system
The service life of the insulation system mainly depends on voltage level, temperature and ambient conditions, such as humidity and condensation.
The service life of the bearing system depends mainly on the thermal load on the bearing.
The majority of our products use maintenance-free ball bearings for any mounting position possible.
The service life L10 of the ball bearings can be taken as approx. 40,000 operating hours at an ambient temperature of 40 °C, yet this estimate can vary according to the actual ambient conditions. We will gladly provide you with a lifetime calculation taking into account your specific operating conditions.

Motor protection / thermal protection
Information on motor protection and thermal protection is provided in the product-specific data sheets.

Mechanical strain / performance parameters
All ebm-papst products are subjected to comprehensive tests complying with the normative specifications. In addition to this, the tests also reflect the vast experience and expertise of ebm-papst.

Mode of operation
If high voltage or insulation testing is carried out in the application, then all connection lines from the fan must be disconnected in advance.

High voltage and insulation testing
If high voltage or insulation testing is carried out in the application, then all connection lines from the fan must be disconnected in advance.
Balancing quality
Testing the balancing quality is carried out in compliance with
– Residual imbalance according to DIN ISO 1940
– Standard balancing quality level G 6.3
Should you require a higher balancing quality level for your specific
application, please let us know and specify this when ordering your
product.

Chemo-physical strain / performance parameters
Should you have questions about chemo-physical strain, please
direct them to your ebm-papst contact.

Fields of application, industries and applications
Our products are used in various industries and applications:
The products in this catalogue have been specifically configured for
use in the rail industry!

Legal and normative directives
The products described in this catalogue are designed, developed
and produced in keeping with the standards in place for the rele-
vant product and, if known, the conditions governing the relevant
fields of application.

Standards
Information on standards is provided in the product-specific data
sheets.

EMC
Information on EMC standards is provided in the product-specific
data sheets. Complying with the EMC standards has to be esta-
blished on the final appliance, as different mounting situations can
result in changed EMC properties.

Approvals
In case you require a specific approval for your ebm-papst product
(e1, UL, etc.) please let us know.
Most of our products can be supplied with the relevant approval.
Information on existing approvals is provided in the product-speci-
fic data sheets.

Air performance measurements
All air performance measurements are carried out on suction side
and on chamber test beds conforming to the specifications as per
ISO 5801 and DIN 24163. The fans under test are installed in the
measuring chamber at free air intake and exhaust (installation
category A) and are operated at nominal voltage, with AC also at
nominal frequency, and without any additional components such
as guard grilles.
As required by the standard, the air performance curves correspond
to an air density of 1.15 kg/m³.
Technical parameters and scope

Measurement conditions for air and noise measurement

- Axial and diagonal fans in direction of rotation "V" in full nozzle and without guard grill
- Backward curved centrifugal fans, free-running and with inlet nozzle
- Forward curved single and dual inlet centrifugal fans with housing

Sound pressure level and sound level

All acoustic values are established according to ISO 13347, DIN 45635 and ISO 3744/3745 to accuracy class 2 and given in A-rated form.

When the sound pressure level ($L_{p}$) is measured, the microphone is on the intake side of the fan being tested, usually at a distance of 1 m on the fan axis.

To measure the sound power level ($L_{w}$) 10 microphones are distributed over an enveloping surface on the intake side of the fan being tested (see graphic). The sound power level measured can be roughly calculated from the sound pressure level by adding 7 dB.

Measuring configuration as per ISO 13347-3 bzw. DIN 45635-38:

- 10 measuring points
- $d \geq D$
- $h = 1.5d \ldots 4.5d$
- Measurement area $S = 6d^2 + 7d (h + 1.5d)$
Combined level of multiple same-level sound sources

Adding 2 noise sources with the same level results in a level increase of approx. 3 dB. The noise characteristics of multiple identical fans can be determined in advance based on the noise values specified in the data sheet. This is shown in the diagram opposite. Example: 8 A3G800 axial fans are on a condenser. According to the data sheet, the sound pressure level of a fan is approximately 75 dB(A). The level increase measured from the diagram is 9 dB. Thus the overall sound level of the installation can be expected to be 84 dB(A).

Combined level of two different-level sound sources

The acoustic performance of two different fans can be predetermined based on the sound levels given in the data sheet. This is shown in the diagram opposite. Example: There is an axial fan A3G800 with a sound pressure level of 75 dB(A) at the operating point and an axial fan A3G710 with 71 dB(A) in a ventilation unit. The level difference is 4 dB. The level increase can now be read in the diagram as approx. 1.5 dB. This means that the overall sound level of the unit can be expected to be 76.5 dB(A).

Distance laws

Sound power level is independent of distance to the sound source. In contrast to this, sound pressure level decreases the further away the noise source is. The adjacent diagram shows the decrease in level under far sound field conditions. Far sound field conditions apply whenever the distance between microphone and fan is big when compared to fan diameter and wavelength to be considered. For more information on far sound field, please consult the relevant literature on this complex topic. Per doubling of distance, the level in the far sound field decreases by 6 dB. In the near field of the fan, other correlations apply and the decrease in levels can be considerably smaller. The following example only applies to far sound field conditions and can vary strongly depending on the installation effects: With an axial fan A3G300, a sound pressure level of 65 dB(A) was measured at a distance of 1 m. According to the adjacent diagram, at a distance of 20 m we would get a reduction by 26 dB, i.e. a sound pressure level of 39 dB(A).
Technical parameters and scope

Aerodynamics fundamentals:

Further information can be found in our brochure “Technology - Basic principles”

Axial fan operating range:
To the right of the saddle point (right section of the air performance curve):
– Maximum efficiency
– Minimum noise

To the left of the saddle point (left section of the air performance curve):
– Stall
– Irruptive efficiency
– Noise suddenly increases

The fan’s optimal range of use is highlighted in green in the adjoining performance curve.

Effects of guard grill:
Installing a guard grill reduces the axial fan's air performance.

The pressure loss in Pa can be roughly calculated using the following equation:

\[
\Delta p_{SG} = \varepsilon_{SG} \cdot 10^{-8} \cdot \dot{V}^2 \quad \dot{V} \text{ in } [\text{m}^3/\text{h}]
\]

For the guard grill that ebm-papst used, the correction factor \(\varepsilon_{SG}\) dependent on impeller diameter \(D\) can be found in the adjoining table.

### Diameter D | Correction factor \(\varepsilon_{SG}\) | \(\%\) | dB(A)
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>400</td>
<td>90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>450</td>
<td>55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>500</td>
<td>35</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Centrifugal fan operating range:
Middle section of the air performance curve:
– Maximum efficiency
– Minimum noise

To the left and right of the middle section of the air performance curve:
– Reduced efficiency
– Increasing noise

The fan’s optimal range of use is highlighted in green in the adjoining performance curve.
Effects of installation space
Installation in a square box may cause a reduction of the air performance.

Airflow determination for inlet rings with pressure tap:
The differential pressure method compares the static pressure upstream of the inlet ring with the static pressure in the inlet ring. The airflow can be calculated from the differential pressure (between the static pressures) according to the following equation:

\[ q_v = k \cdot \sqrt{\Delta p} \]

where: \( q_v \) in [m³/h] and \( \Delta p \) in [Pa]

If the airflow is to be regulated to remain constant, the inlet pressure must be kept constant:

\[ \Delta p = q_v^2 : k^2 \]

\( k \) takes the specific properties of the inlet ring into account.

The pressure is tapped at 1 (4) point(s) on the circumference of the inlet ring. The customer connection consists of a built-in T-shaped hose fitting. The hose fitting is suitable for pneumatic hoses with an inside diameter of 4 mm.

Influence of speed \( n \) on the sound power level \( L_w \):
The sound power level for changes in speed can be approximately determined based on the adjoining diagram and the following formula:

\[ L_w_2 - L_w_1 = 50 \text{ dB} \cdot \log \left( \frac{n_2}{n_1} \right) \]

Where:
- \( L_w_1 \) = Sound power level after speed change
- \( L_w_2 \) = Sound power level before speed change
- \( n_1 \) = Changed speed
- \( n_2 \) = Initial speed

\( \Delta p \)

Water

\( D \)

Airflow determination for inlet rings with pressure tap:
The differential pressure method compares the static pressure upstream of the inlet ring with the static pressure in the inlet ring. The airflow can be calculated from the differential pressure (between the static pressures) according to the following equation:

\[ q_v = k \cdot \sqrt{\Delta p} \]

where: \( q_v \) in [m³/h] and \( \Delta p \) in [Pa]

If the airflow is to be regulated to remain constant, the inlet pressure must be kept constant:

\[ \Delta p = q_v^2 : k^2 \]

\( k \) takes the specific properties of the inlet ring into account.

The pressure is tapped at 1 (4) point(s) on the circumference of the inlet ring. The customer connection consists of a built-in T-shaped hose fitting. The hose fitting is suitable for pneumatic hoses with an inside diameter of 4 mm.

Influence of speed \( n \) on the sound power level \( L_w \):
The sound power level for changes in speed can be approximately determined based on the adjoining diagram and the following formula:

\[ L_w_2 - L_w_1 = 50 \text{ dB} \cdot \log \left( \frac{n_2}{n_1} \right) \]

Where:
- \( L_w_1 \) = Sound power level after speed change
- \( L_w_2 \) = Sound power level before speed change
- \( n_1 \) = Changed speed
- \( n_2 \) = Initial speed

\( \Delta p \)
<table>
<thead>
<tr>
<th>Agents Worldwide</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ebm-papst in Germany</td>
<td>128</td>
</tr>
<tr>
<td>ebm-papst in Europe</td>
<td>129</td>
</tr>
<tr>
<td>ebm-papst in America and Africa</td>
<td>131</td>
</tr>
<tr>
<td>ebm-papst in Asia</td>
<td>132</td>
</tr>
<tr>
<td>ebm-papst in Oceania</td>
<td>133</td>
</tr>
</tbody>
</table>
Vertreten

**Agents**

- **Berlin**
  - Dipl.-Ing. (FH) Jens Duchow
  - Händelstraße 7
  - 36343 Panketal
  - GERMANY
  - Phone: +49 30 944149-62
  - Fax: +49 30 944149-63
  - Jens.Duchow@de.ebmpapst.com

- **Bielefeld**
  - Dipl.-Ing. (FH) Wolf-Jürgen Weber
  - Niehausweg 13
  - 33739 Bielefeld
  - GERMANY
  - Phone: +49 5206 91732-31
  - Fax: +49 5206 91732-35
  - Wolf-Juergen.Weber@de.ebmpapst.com

- **Dortmund**
  - Dipl.-Ing. (FH) Hans-Joachim Pundt
  - Auf den Steinern 3
  - 59519 Möhnesee-Völlinghausen
  - GERMANY
  - Phone: +49 2925 800-407
  - Fax: +49 2925 800-408
  - Hans-Joachim.Pundt@de.ebmpapst.com

- **Frankfurt**
  - Dipl.-Ing. Christian Kleffmann
  - Dr.-Hermann-Krause-Straße 23
  - 63362 Hanau
  - GERMANY
  - Phone: +49 6181 1898-12
  - Fax: +49 6181 1898-13
  - Christian.Kleffmann@de.ebmpapst.com

- **Halle**
  - Dipl.-Ing. (TU) Michael Hanning
  - Larcheck 4
  - 06198 Salzatal / OT Lieskau
  - GERMANY
  - Phone: +49 345 55124-56
  - Fax: +49 345 55124-57
  - Michael.Hanning@de.ebmpapst.com

- **Hamburg**
  - Ingenieurbüro Breu ell GmbH
  - Ing. Dirk Kahl
  - Elektroingenieur
  - Oststraße 96
  - 22844 Norderstedt
  - GERMANY
  - Phone: +49 40 538092-19
  - Fax: +49 40 538092-84
  - Kahl@breu ell-hilgenfeldt.de

- **Heilbronn / Heidelberg**
  - Wolfgang Richter
  - Büttelsbergweg 18
  - 97980 Bad Mergentheim-Rengershausen
  - GERMANY
  - Phone: +49 7937 32200-33
  - Fax: +49 7938 81-110
  - Wolfgang.Richter@de.ebmpapst.com

- **Kassel**
  - Dipl.-Ing. (FH) Ralph Brück
  - Hoherainstraße 3 b
  - 35075 Gladenbach
  - GERMANY
  - Phone: +49 6462 4071-10
  - Fax: +49 6462 4071-11
  - Ralph.Brueck@de.ebmpapst.com

- **Koblenz**
  - Winfried Schaef er
  - Hinter der Kirch 10
  - 56767 Ursfeld
  - GERMANY
  - Phone: +49 2657 16-96
  - Fax: +49 2657 16-76
  - Winfried.Schaef er@de.ebmpapst.com

- **Munich**
  - Dipl.-Wirt.-Ing. (FH) Jens Peter
  - Landsbergerstraße 14
  - 86032 Pürgen
  - GERMANY
  - Phone: +49 8196 99877-55
  - Fax: +49 8196 99877-55
  - Jens.Peter@de.ebmpapst.com

- **Nuremberg**
  - Dipl.-Wirt.-Ing. (FH) Axel Resch
  - Dr.-August-Koch-Str. 3
  - 91639 Wolframs-Eschenbach
  - GERMANY
  - Phone: +49 9875 9783-170
  - Fax: +49 9875 9783-171
  - Axel.Resch@de.ebmpapst.com

- **Offenbach**
  - Dipl.-Ing. (FH) Ralf Braun
  - Hubeneck 21
  - 63044 Oberkirch
  - GERMANY
  - Phone: +49 7802 9822-52
  - Fax: +49 7802 9822-53
  - Ralf.Braun@de.ebmpapst.com

- **Stuttgart**
  - Dipl.-Ing. (FH) Rudi Weinmann
  - Hindenburgstraße 100/I
  - 73227 Plochingen
  - GERMANY
  - Phone: +49 7153 9289-80
  - Fax: +49 7153 9289-81
  - Rudi.Weinmann@de.ebmpapst.com

- **Ulm**
  - M.Sc. Reinhard Sommerrei ßer
  - Einsteinstraße 7a
  - 86747 Bähr / Schwaben
  - GERMANY
  - Phone: +49 8726 5899-77
  - Fax: +49 8726 81-110
  - Reinhard.Sommerreisser@de.ebmpapst.com

**Distributors**

- **Frankfurt**
  - R.E.D. Handelsgesellschaft mbH
  - Gutenbergstraße 3
  - 63110 Rodgau - Jügesheim
  - GERMANY
  - Phone: +49 6106 961-0
  - Fax: +49 6106 961-111
  - info@red-elektromechanik.de
  - www.red-elektromechanik.de

- **Hamburg**
  - Breu ell + Hilgenfeldt GmbH
  - Oststraße 96
  - 22844 Norderstedt
  - GERMANY
  - Phone: +49 40 538092-20
  - Fax: +49 40 538092-84
  - info@breu ell-hilgenfeldt.de

- **Munich**
  - A. Schweiger GmbH
  - Ohmstraße 1
  - 82054 Sauerlach
  - GERMANY
  - Phone: +49 8104 897-0
  - Fax: +49 8104 897-90
  - info@schweiger-gmbh.de
  - www.schweiger-gmbh.com

**Express Service Center** (1 to 5 pieces)

- **North**
  - Breu ell + Hilgenfeldt GmbH
  - Oststraße 96
  - 22844 Norderstedt
  - GERMANY
  - Phone: +49 40 538092-20
  - Fax: +49 40 538092-84
  - info@breu ell-hilgenfeldt.de

- **South**
  - HDS Ventilatoren Vertriebs GmbH
  - Glasswiesenstraße 1
  - 74677 Dörzbach
  - GERMANY
  - Phone: +49 7937 80355-20
  - Fax: +49 7937 80355-25
  - info@hds-gmbh.net
  - www.hds-gmbh.net

**Fans and motors for refrigerated display cases - Edition 2019-07**
Fans and motors for refrigerated display cases · Edition 2019-07

ebm-papst in Europe

Austria
- ebm-papst Motoren & Ventilatoren GmbH
  - Straubingstraße 17
  - 4030 Linz
  - AUSTRIA
- Phone: +43 732 321150-0
- Fax: +43 732 321150-20
- info@at.ebmpapst.com
- www.ebmpapst.at

Belarus
- ebm-papst Bel AgmbH
  - 4th Montazhnikov side street
  - House 6, Office 332
  - BY-220019 Minsk
- Phone: +375 17 2015216
- Fax: +375 17 2015216
- info@by.ebmpapst.com
- www.ebmpapst.by

Belgium
- ebm-papst Benelux B.V.
  - Sales office Belgium-Luxembourg
  - Romeinsestraat 6/0101
  - Research Park Haasrode
  - 3001 Heverlee-Leuven
  - BELGIUM
- Phone: +32 16 396-200
- Fax: +32 16 396-220
- info@be.ebmpapst.com
- www.ebmpapst.be

Bulgaria
- ebm-papst Romania S.R.L.
  - Str. Tamaveli No. 20
  - 500127 Brasso
  - ROMANIA
- Phone: +40 268 312805
- Fax: +40 268 331859
- dudasludovic@vnet.ro

Croatia
- ebm-papst Industries Kft.
  - Ezred u. 2.
  - 1044 Budapest
  - HUNGARY
- Phone: +36 1 8722-190
- Fax: +36 1 8722-194
- office@hu.ebmpapst.com
- www.ebmpapst.hu

Cyprus
- Helcoma
  - E. Rota and Co. OE
  - Davaki 65
  - 17672 Kallithea-Attiki
  - GREECE
- Phone: +30 210 9513-705
- Fax: +30 210 9513-490
- contact@helcoma.gr
- www.helcoma.gr

Czech Republic / Slovakia
- ebm-papst CZ s.r.o.
  - Kastanová 34a
  - 620 00 Brno
  - CZECH REPUBLIC
- Phone: +42 054 502-411
- Fax: +42 054 57 23-622
- info@ebmpapst.cz
- www.ebmpapst.cz

Denmark
- ebm-papst Denmark ApS
  - Vallensbæksvej 21
  - 2605 Brandby
  - DENMARK
- Phone: +45 43 631111
- Fax: +45 43 630505
- mail@dk.ebmpapst.com
- www.ebmpapst.dk

Estonia
- ebm-papst Oy, Eesti Filiaal
  - Kesk tee 21
  - Aaviku küla, Jüri Tehnopark
  - 75301 Rae Vald, Harjumaa
  - ESTONIA
- Phone: +372 65569-79
- www.ebmpapst.ee

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

France
- ebm-papst sarl
  - Parc d’Activités Nord
  - 2 rue Mohler – BP 62
  - 67212 Obernai Cedex
  - FRANCE
- Phone: +33 3 88 66 88 03
- info@ebmpapst.fr
- www.ebmpapst.fr

Greece
- HELCOMA
  - HELLAS IKE
  - 65, Davaki street
  - 17672 Kallithea-Attiki
  - GREECE
- Phone: +30 210 9513-705
- Fax: +30 210 9513-490
- contact@helcoma.gr
- www.helcoma.gr

Hungary
- ebm-papst Industries Kft.
  - Ezred u. 2.
  - 1044 Budapest
  - HUNGARY
- Phone: +36 1 8722-190
- Fax: +36 1 8722-194
- office@hu.ebmpapst.com

Iceland
- RJ Engineers
  - Stangarhyl 1a
  - 110 Reykjavik
  - ICELAND
- Phone: +354 567 8030
- Fax: +354 567 8035
- rj@rj.is
- www.rj.is

Ireland
- ebm-papst UK Ltd.
  - Chelmsford Business Park
  - Chelmsford Essex CM2 5EZ
  - UNITED KINGDOM
- Phone: +44 1245 468555
- Fax: +44 1245 466336
- sales@uk.ebmpapst.com
- www.ebmpapst.co.uk

Ireland
- Aüberen Limited
  - Portlaoise Business & Technology Park
  - Mountrath Road
  - Portlaoise, Co. Laois
  - IRELAND
- Phone: +353 57 8664343
- Fax: +353 57 8664346
- sales@ie.aubren.com
- www.aubren.com

Italy
- ebm-papst Srl
  - Via Cornaggia 108
  - 22076 Mozzate (Co)
  - ITALY
- Phone: +39 0331 836201
- Fax: +39 0331 821510
- info@it.ebmpapst.com
- www.ebmpapst.it
Macedonia
ebm-papst Industries Kft.
Ezred u. 2.
1044 Budapest
HUNGARY
Phone +36 1 8722-190
Fax +36 1 8722-194
office@hu.ebmpapst.com

Netherlands
ebm-papst Benelux B.V.
Polbeemd 7 - 5741 TP Beek en Donk
P.O. Box 140 - 5740 AC Beek en Donk
NETHERLANDS
Phone +31 492 502-900
Fax +31 492 502-950
verkoop@nl.ebmpapst.com
www.ebmpapst.nl

ebm-papst Heating Systems B.V.
Van Veldekkade 360
5216 KT ’s-Hertogenbosch
NETHERLANDS
Phone +31 73 648 89 00
Fax +31 73 648 89 11
info@ebmpapst-hs.nl
www.ebmpapst-hs.nl

Norway
ebm-papst AS
P.B. 173 Holmlia
1203 Oslo
NORWAY
Phone +47 22 763340
Fax +47 22 619371
mailbox@ebmpapst.no
www.ebmpapst.no

Poland
ebm-papst Polska Sp. z o.o.
ul. Annopol 4A
03236 Warszawa
POLAND
Phone +48 22 6757819
Fax +48 22 6769587
office@ebmpapst.pl
www.ebmpapst.pl

Portugal
ebm-papst (Portugal), Lda.
Centro Empresarial de Alverca
Rua de Adarse, Vale D’Ervas
Corpo D / Fração 3
2615-178 Alverca do Ribatejo
PORTUGAL
Phone +351 218 394 880
Fax +351 218 394 759
info@pt.ebmpapst.com

Romania
ebm-papst Romania S.R.L.
Str. Tanavel Nr. 20
500327 Brasov
ROMANIA
Phone +40 268 331859
Fax +40 268 332805
dudasludovic@wmt.ro

Russia
ebm-papst Rus GmbH
Olimpijskiy prospect 29A, office 418
141006 Mytischtsi, Oblast Moskau
RUSSIA
Phone +7 495 9807524
Fax +7 495 5140924
info@ebmpapst.ru
www.ebmpapst.ru

ebm-papst Ural GmbH
Posadskaja-Strasse, 23(E), 3
620102 Ekaterinburg
RUSSIA
Phone +7 343 2338000
Fax +7 343 2337788
Konstantin.Molokov@ru.ebmpapst.com
www.ebmpapst.ru

Serbia & Montenegro
ebm-papst Industries Kft.
Ezred u. 2.
1044 Budapest
HUNGARY
Phone +36 1 8722-190
Fax +36 1 8722-194
office@hu.ebmpapst.com

Spain
ebm-papst Ibérica S.L.
Avda. del Sistema Solar, 29
28830 San Fernando de Henares (Madrid)
SPAIN
Phone +34 91 6780894
Fax +34 91 6781530
ventas@ebmpapst.es
www.ebmpapst.es

Sweden
ebm-papst AB
Aggelundsvägen 2
17562 Järfalla
SWEDEN
Phone +46 10 4544400
Fax +46 8 362306
info@ebmpapst.se
www.ebmpapst.se

Switzerland
ebm-papst AG
Rütsbergstrasse 1
8156 Oberhasli
SWITZERLAND
Phone +41 44 73220-70
Fax +41 44 73220-77
verkauf@ebmpapst.ch
www.ebmpapst.ch

Turkey
Akantel Elektronik San. Tic. LTD. Sti.
Atatürk Organize Sanayi Bölgesi 10007 SK. No.6
35620 Cigli-Izmir
TURKEY
Phone +90 232 3280209
Fax +90 232 3280270
akantel@akantel.com.tr
www.ebmpapst.com.tr

Ukraine
ebm-papst Ukraine LLC
Lepse Boulevard, 4, Building 21
03067 Kiev
UKRAINE
Phone +38 044 2063091
Fax +38 044 2063091
mail@ebmpapst.ua
www.ebmpapst.ua

United Kingdom
ebm-papst UK Ltd.
Cheilmsford Business Park
Cheilmsford Essex CM2 5EZ
UNITED KINGDOM
Phone +44 1245 468555
Fax +44 1245 466336
sales@uk.ebmpapst.com
www.ebmpapst.co.uk

ebm-papst Automotive & Drives (UK) Ltd.
The Smithy
Fidlers Lane
East Ilsley, Berkshire RG20 7LG
UNITED KINGDOM
Phone +44 1635 2811-11
Fax +44 1635 2811-61
A&Dsales@uk.ebmpapst.com
www.ebmpapst-ad.com
ebm-papst in America and Africa

<table>
<thead>
<tr>
<th>Country</th>
<th>Location</th>
<th>Address</th>
<th>Phone</th>
<th>Fax</th>
<th>Email</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td></td>
<td>ebm-papst Argentina S.A.</td>
<td>+54 11 46576135</td>
<td>+54 11 46572092</td>
<td><a href="mailto:ventas@ar.ebmpapst.com">ventas@ar.ebmpapst.com</a></td>
<td><a href="http://www.ebmpapst.com.ar">www.ebmpapst.com.ar</a></td>
</tr>
<tr>
<td>Brazil</td>
<td></td>
<td>ebm-papst Motores Ventiladores Ltda.</td>
<td>+55 11 4613-8700</td>
<td>+55 11 4777-1456</td>
<td><a href="mailto:vendas@br.ebmpapst.com">vendas@br.ebmpapst.com</a></td>
<td><a href="http://www.ebmpapst.com.br">www.ebmpapst.com.br</a></td>
</tr>
<tr>
<td>Canada</td>
<td></td>
<td>ebm-papst Canada Inc.</td>
<td>+1 905 420-3533</td>
<td>+1 905 420-3772</td>
<td><a href="mailto:sales@ca.ebmpapst.com">sales@ca.ebmpapst.com</a></td>
<td><a href="http://www.ebmpapst.ca">www.ebmpapst.ca</a></td>
</tr>
<tr>
<td>Mexico</td>
<td></td>
<td>ebm Industrial S. de R.L. de C.V.</td>
<td>+52 55 3300-5144</td>
<td>+52 55 3300-5243</td>
<td><a href="mailto:sales@mx.ebmpapst.com">sales@mx.ebmpapst.com</a></td>
<td><a href="http://www.ebmpapst.com.mx">www.ebmpapst.com.mx</a></td>
</tr>
<tr>
<td>USA</td>
<td></td>
<td>ebm-papst Inc.</td>
<td>+1 860 674-1515</td>
<td>+1 860 674-8536</td>
<td><a href="mailto:sales@us.ebmpapst.com">sales@us.ebmpapst.com</a></td>
<td><a href="http://www.ebmpapst.us">www.ebmpapst.us</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Automotive &amp; Drives Business Unit</td>
<td>+1 313 406-8080</td>
<td>+1 313 406-8081</td>
<td><a href="mailto:automotive@us.ebmpapst.com">automotive@us.ebmpapst.com</a></td>
<td><a href="http://www.ebmpapst-automotive.us">www.ebmpapst-automotive.us</a></td>
</tr>
<tr>
<td>South Africa</td>
<td></td>
<td>ebm-papst South Africa (Pty) Ltd.</td>
<td>+27 11 794-3434</td>
<td>+27 11 794-5020</td>
<td><a href="mailto:info@za.ebmpapst.com">info@za.ebmpapst.com</a></td>
<td><a href="http://www.ebmpapst.co.za">www.ebmpapst.co.za</a></td>
</tr>
</tbody>
</table>
ebm-papst in Asia

Asia

China
ebm-papst Ventilator (Shanghai) Co., Ltd.
No. 418, Huajing Road
Waigaoqiao Free Trade Zone
No. 2001, Yang Gao (N) Road
200313 Shanghai
P.R. of CHINA
Phone +86 21 5046-0183
Fax +86 21 5046-1119
sales.cn@ebmpapst.com
www.ebmpapst.com.cn

Hong Kong
ebm-papst Hong Kong Ltd.
Room 17E, MG Tower
133 Ho I Bun Road, Kwun Tong
Hong Kong
P.R. of CHINA
Phone +852 2145-8678
Fax +852 2145-7678
info@hk.ebmpapst.com
www.ebmpapst.com

India
ebm-papst India Pvt. Ltd.
26/3, G.N.T. Road, Erukkencherry
Chennai-600118
INDIA
Phone +91 44 25372556
Fax +91 44 25371149
sales.in@ebmpapst.com
www.ebmpapst.in

Indonesia
ebm-papst SEA Pte. Ltd.
Representative Office - Indonesia
Graha Telkomsigma, 4th Floor, Suite 44/70
153121 Tangerang
INDONESIA
Phone +62 21 5376250-52
Fax +62 21 5383035
sales.id@ebmpapst.com
www.ebmpapst.id

Israel
Polak Bros. Import Agencies Ltd.
9 Hamefalsim Street
Kiryat Arie, Petach-Tikva 49514
ISRAEL
Phone +972 3 9100300
Fax +972 3 5796679
polak@polak.co.il
www.polak.co.il

Japan
ebm-papst Japan K.K.
Attend on Tower 13F
Shinjyokohama 2-8-12, Kohoku-ku
222-0033 Yokohama-City, Kanagawa
JAPAN
Phone +81 45 67057-51
Fax +81 45 67057-52
info@jp.ebmpapst.com
www.ebmpapst.jp

Korea
ebm-papst Korea Co. Ltd.
A-13F, Doosan The Land Tower
152, Magokseo-ro
Gangseo-gu
Seoul 07788
KOREA
Phone +82 2 366213-24
Fax +82 2 366213-26
info@kr.ebmpapst.com
www.ebmpapst.kr

Malaysia
ebm-papst SEA Pte. Ltd.
Representative Office - Malaysia
No. 16-1, Jalan Putra Mahkota 7/F
Putra Heights
Selangor Darul Ehsan
47650 Subang Jaya
MALAYSIA
Phone +60 3 5192-7688
Fax +60 3 5614-3078
sales@my.ebmpapst.com
www.ebmpapst.com

Philippines
ebm-papst SEA Pte. Ltd.
Representative Office - Philippines
Coherco Financial Tower
Trade Street Corner Investment Drive
Unit 1101 Madrigal Business Park
Ayala Alabang / Muntinlupa City
Phone: +63 02 8042747
Fax: +63 02 8042757
sales@ph.ebmpapst.com

Singapore
ebm-papst SEA Pte. Ltd.
10 Changi South Street 2
#01-01/02
Singapore 486596
SINGAPORE
Phone +65 65513787
Fax +65 68428439
sales@sg.ebmpapst.com

Taiwan
ETECO Engineering & Trading Corp.
10F-1, No. 52, Teh-Wei Str.
Tow-in District, Kaohsiung
TAINAN
Phone +886 7 557-2468
Fax +886 7 557-2788
eteco@ms22.hinet.net
www.ebmpapst.com.tw

Thailand
ebm-papst Thailand Co., Ltd.
99/9 Moo 2, Central Chaengwattana Tower
8th Floor, Room 801-802
Chaengwattana Road Bangtargad, Pakkret
11120 Nonthaburi
THAILAND
Phone +66 2 8353785-7
Fax +66 2 8353788
sales@th.ebmpapst.com

United Arab Emirates
ebm-papst Middle East FZE
PO Box 17755
Jebel Ali Free Zone / FZS1 / AP05
Dubai
UNITED ARAB EMIRATES
Phone +971 4 88608-26
Fax +971 4 88608-27
info@ae.ebmpapst.com
www.ebmpapst.ae

Vietnam
ebm-papst SEA Pte. Ltd.
Representative Office - Vietnam
Floor M, Phuong Long Building,
506 Nguyen Dinh Chieu Street,
Ward 4, District 3,
Ho Chi Minh City
VIETNAM
Phone +84 28 3929 0699
Fax +84 28 3929 0669
sales@vn.ebmpapst.com

Agents

Ventilatorenvertretung  Kompaktlüftervertretung  Motorenspezialist  Motorenvertretung

Fans and motors for refrigerated display cases · Edition 2019-07

20190715_Catalogue_Refrigerated_Display_Cases_2019_EN.indd   132
18.07.2019   09:10:58
ebm-papst in Oceania

Australia

ebm-papst A&NZ Pty Ltd.
10 Oxford Road
Laverton North, Victoria, 3026
AUSTRALIA
Phone +61 3 9360-6400
Fax +61 3 9360-6464
sales@ebmpapst.com.au
www.ebmpapst.com.au

New Zealand

ebm-papst A&NZ Pty Ltd.
61 Hugo Johnston Drive, Unit H
Penrose 1061, Auckland
NEW ZEALAND
PO Box 112278,
Penrose 1642, Auckland
Phone +64 9 525-0245
Fax +64 9 525-0246
sales@ebmpapst.com.au
www.ebmpapst.com.au