AC axial fans - HyBlade®

version 07/2010

The engineer's choice
A new, first-of-its-kind hybrid blade design makes these ebm-papst axial fans even quieter, more powerful and more durable than ever. In designing the HyBlade® fan blades, we have developed a support structure of high-strength, corrosion-resistant aluminium alloy with a jacket of a special, fibre-reinforced plastics. Compared to conventional blades, the optimal aerodynamic shape results in an enormous noise reduction while significantly increasing efficiency. And thus it offers even more advantages for use in refrigeration, heating and ventilation technology.

**Revolutionary design**

In the field of refrigeration and ventilation, axial fans are widely used, e.g. to cool heat exchangers by making air pass through them. For ages, the ebm-papst external-rotor motor has proved to be the best choice as it has a compact design, with the axial blades directly mounted onto the rotor. However, fans are not only expected to have compact dimensions. Fans are also expected to offer maximum air performance at an absolute minimum of noise.

Until now, the fan blades have been conventionally manufactured of steel or aluminium sheet. To keep up with the increasing demands on efficiency and noise behaviour, ebm-papst set its sights on the development of new blade geometries. In their research, ebm-papst engineers found themselves up against limits caused by the restrictive design potential of the monolithic sheet-metal blade with uniform plate thickness.

To break these barriers and to achieve lower noise and better efficiency, they realised that entirely new principles of design, materials and component structures were necessary. And so, ebm-papst uses their revolutionary hybrid blade design to preserve seemingly incompatible properties by means of hybrid components and structures.

**Strong connection**

In designing the HyBlade® axial fan blades, ebm-papst was the first to use a support structure of high-strength, corrosion-resistant aluminium alloy with a jacket made of a special, fibre-reinforced plastics.

Using these two materials makes for an ideal combination of their individual characteristics. The aluminium inlet receives the mechanical forces and ensures a durable connection to the rotor during operation, while the plastic encapsulating the support structure gives the blade its optimised aerodynamic shape. At the same time, the plastic jacket has a positive effect on the total weight of the fan. Two aspects add to the considerable noise reduction as compared to conventional blades: The aerodynamically optimised and profiled contour, and the simple addition of “winglets” to the ends of the blades.

In meeting the ebm-papst quality standards, extensive tests and calculations were performed to guarantee the reliability of this new technology. With HyBlade®, ebm-papst has set new standards in fan technology by minimising noise and increasing maximum efficiency.
Table of content

- New AC axial fans - HyBlade®  
- GreenTech: The Green Company
- Size 500  
- Size 560  
- Size 630  
- Size 710  
- Size 800  
- Size 910  
- Electrical connections  
- Technical parameters & scope  
- ebm-papst representatives & subsidiaries
Sustainability is at the Centre of Our Thoughts and Actions. Out of Conviction!

Eco-friendliness and sustainability have always been at the core of our thoughts and actions. For decades, we have worked according to the simple but strict creed of our co-founder Gerhard Sturm: “Each new product we develop has to be better than the last one in terms of economy and ecology.” GreenTech is the ultimate expression of our corporate philosophy.
GreenTech is pro-active development.
Even in the design phase, the materials and processes we use are optimised for the greatest possible eco-friendliness, energy balance and – wherever possible – recyclability. We continually improve the material and performance of our products, as well as the flow and noise characteristics. At the same time, we significantly reduce energy consumption. Close cooperation with universities and scientific institutes and the professorship we endow in the area of power engineering and regenerative energies allows us to profit from the latest research findings in these fields – and at the same time ensure highly qualified young academics.

GreenTech is ecofriendly production.
GreenTech also stands for maximum energy efficiency in our production processes. There, the intelligent use of industrial waste heat and groundwater cooling, photovoltaics and, of course, our own cooling and ventilation technology are of the utmost importance. Our most modern plant, for instance, consumes 91% less energy than currently specified and required. In this way, our products contribute to protecting the environment, from their origin to their recyclable packaging.

GreenTech is acknowledged and certified.
Every step in our chain of production meets the stringent standards of environmental specialists and the public. The 2008 Environmental Prize of Baden-Wuerttemberg, the Green Award 2009, the Energy Efficiency Award 2009 of the dena – to give just a few examples – testify to this. The environmental advantage gained in the performance of the products developed from our GreenTech philosophy can also be measured in the fulfilment of the most stringent energy and environmental standards. In many instances, our products are already well below the thresholds energy legislation will impose a few years from now – several times over.

Our customers profit from this every day.
The heart of GreenTech is ebm-papst EC technology. The EC technology at the core of our most efficient motors and fans allows efficiency of up to 90%, saves energy at a very high level, significantly extends service life and makes our products maintenance-free. These values pay off not only for the environment, but every cent also pays off for the user! All ebm-papst products – even those for which EC technology does not (yet) make sense from an application viewpoint – feature the greatest possible connection of economy and ecology.
AC axial fans - HyBlade®
Ø 500

- **Material:** Guard grille: Steel, phosphated and coated in black plastic
  Wall ring: Sheet steel, pre-galvanised and coated in black plastic
  Blades: Pressed-on round sheet steel plate, extrusion-coated in PP plastics
  Rotor: Coated in black

- **Number of blades:** 5
- **Direction of rotation:** Counter-clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "F"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharge holes:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Motor protection:** Design with thermal overload protector

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Blade angle</th>
<th>VAC</th>
<th>Hz</th>
<th>rpm</th>
<th>kW</th>
<th>V</th>
<th>µF/VDB</th>
<th>Pa</th>
<th>°C</th>
<th>p. 34</th>
</tr>
</thead>
<tbody>
<tr>
<td>*4D 500</td>
<td>M4D110-EF</td>
<td>0°</td>
<td>3–400</td>
<td>∆</td>
<td>50</td>
<td>1340</td>
<td>0,71</td>
<td>1,40</td>
<td>140</td>
<td>-40..+60</td>
<td>F1b/F2b</td>
</tr>
<tr>
<td>*4D 500</td>
<td>M4D110-GF</td>
<td>0°</td>
<td>3–400</td>
<td>∆</td>
<td>50</td>
<td>1390</td>
<td>0,72</td>
<td>1,41</td>
<td>140</td>
<td>-40..+65</td>
<td>F1b/F2b</td>
</tr>
<tr>
<td>*6D 500</td>
<td>M6D110-EF</td>
<td>0°</td>
<td>3–400</td>
<td>∆</td>
<td>50</td>
<td>930</td>
<td>0,27</td>
<td>0,69</td>
<td>75</td>
<td>-40..+65</td>
<td>F1b/F2b</td>
</tr>
<tr>
<td>*8D 500</td>
<td>M8D110-EF</td>
<td>0°</td>
<td>3–400</td>
<td>∆</td>
<td>50</td>
<td>800</td>
<td>0,19</td>
<td>0,40</td>
<td>55</td>
<td>-40..+65</td>
<td>F1b/F2b</td>
</tr>
</tbody>
</table>

(subject to alterations)

(1) Nominal data in operating point (C) with maximum load

### Curves

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1375</td>
<td>0,60</td>
<td>1,30</td>
<td>72</td>
</tr>
<tr>
<td>1360</td>
<td>0,66</td>
<td>1,34</td>
<td>71</td>
</tr>
<tr>
<td>1340</td>
<td>0,71</td>
<td>1,40</td>
<td>71</td>
</tr>
<tr>
<td>1135</td>
<td>0,43</td>
<td>0,71</td>
<td>68</td>
</tr>
<tr>
<td>1095</td>
<td>0,46</td>
<td>0,76</td>
<td>66</td>
</tr>
<tr>
<td>1060</td>
<td>0,48</td>
<td>0,80</td>
<td>65</td>
</tr>
<tr>
<td>1410</td>
<td>0,60</td>
<td>1,28</td>
<td>72</td>
</tr>
<tr>
<td>1400</td>
<td>0,66</td>
<td>1,34</td>
<td>71</td>
</tr>
<tr>
<td>1390</td>
<td>0,72</td>
<td>1,41</td>
<td>71</td>
</tr>
<tr>
<td>1245</td>
<td>0,48</td>
<td>0,78</td>
<td>70</td>
</tr>
<tr>
<td>1215</td>
<td>0,52</td>
<td>0,84</td>
<td>68</td>
</tr>
<tr>
<td>1180</td>
<td>0,55</td>
<td>0,95</td>
<td>68</td>
</tr>
</tbody>
</table>

---

Air performance measured as per: ISO 5801,
Installation category A,
in ebm-papst full nozzle
and without protection against accidental contact

Section-side noise levels Lw.A as per ISO 13347,
Lw,A measured at 1 m distance
to fan axis

The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 36 ff.
- Cable exit: Via terminal box
- Protection class: I (acc. to EN 61800-5-1)
- Product conforming to standard: CE
- Approvals: VDE (acc. to EN 60034)

Direction of airflow

<table>
<thead>
<tr>
<th>Direction of airflow</th>
<th>Without attachments</th>
<th>With full square nozzle</th>
<th>With guard grille for short nozzle</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;V&quot;</td>
<td>A4D 500-AJ03 -01</td>
<td>W4D 500-GJ03 -01</td>
<td>S4D 500-AJ03 -01</td>
</tr>
<tr>
<td>&quot;V&quot;</td>
<td>A4D 500-AM03 -01</td>
<td>W4D 500-GM03 -01</td>
<td>S4D 500-AM03 -01</td>
</tr>
<tr>
<td>&quot;V&quot;</td>
<td>A6D 500-AJ03 -01</td>
<td>W6D 500-GJ03 -01</td>
<td>S6D 500-AJ03 -01</td>
</tr>
<tr>
<td>&quot;V&quot;</td>
<td>A8D 500-AJ03 -01</td>
<td>W8D 500-GJ03 -01</td>
<td>S8D 500-AJ03 -01</td>
</tr>
</tbody>
</table>

Direction of airflow "A" on request

Curves

```
<table>
<thead>
<tr>
<th>n (rpm)</th>
<th>P (kW)</th>
<th>I (A)</th>
<th>Lw A (dB(A))</th>
</tr>
</thead>
<tbody>
<tr>
<td>945</td>
<td>0.23</td>
<td>0.65</td>
<td>64</td>
</tr>
<tr>
<td>935</td>
<td>0.25</td>
<td>0.66</td>
<td>62</td>
</tr>
<tr>
<td>930</td>
<td>0.27</td>
<td>0.69</td>
<td>63</td>
</tr>
<tr>
<td>850</td>
<td>0.16</td>
<td>0.29</td>
<td>62</td>
</tr>
<tr>
<td>830</td>
<td>0.17</td>
<td>0.30</td>
<td>59</td>
</tr>
<tr>
<td>800</td>
<td>0.19</td>
<td>0.40</td>
<td>59</td>
</tr>
<tr>
<td>700</td>
<td>0.13</td>
<td>0.37</td>
<td>58</td>
</tr>
<tr>
<td>695</td>
<td>0.13</td>
<td>0.38</td>
<td>55</td>
</tr>
<tr>
<td>680</td>
<td>0.15</td>
<td>0.40</td>
<td>54</td>
</tr>
<tr>
<td>610</td>
<td>0.08</td>
<td>0.16</td>
<td>55</td>
</tr>
<tr>
<td>590</td>
<td>0.08</td>
<td>0.16</td>
<td>51</td>
</tr>
<tr>
<td>560</td>
<td>0.09</td>
<td>0.18</td>
<td>50</td>
</tr>
</tbody>
</table>
```

Air performance measured as per ISO 5801.
Installation category A,
in ebm-papst full nozzle
and without protection against accidental contact.
Suction-side noise levels,
Lw A as per ISO 13347,
Lw A measured at 1 m distance to fan axis.
The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 36 ff.

Drawings S. 19
Electr. connections S. 34
AC axials fans - HyBlade®
Ø 500

- Material: Guard grille: Steel, phosphated and coated in black plastic
  Wall ring: Sheet steel, pre-galvanised and coated in black plastic
  Blades: Pressed-on round sheet steel plate, extrusion-coated in PP plastics
  Rotor: Coated in black

- Number of blades: 5
- Direction of rotation: Counter-clockwise, seen on rotor
- Type of protection: IP 54 (acc. to EN 60529)
- Insulation class: “F”
- Mounting position: Shaft horizontal or rotor on bottom; rotor on top on request
- Condensate discharge holes: Rotor-side
- Mode of operation: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings
- Motor protection: Design with thermal overload protector

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Blade angle</th>
<th>Curve</th>
<th>VAC Hz</th>
<th>rpm</th>
<th>kW</th>
<th>µF/VDB Pa</th>
<th>°C</th>
<th>p. 34</th>
</tr>
</thead>
<tbody>
<tr>
<td>*4E 500</td>
<td>M4E 110-EF</td>
<td>0°</td>
<td>1°</td>
<td>1~ 230</td>
<td>50</td>
<td>1225</td>
<td>0,60</td>
<td>2,62</td>
<td>10,0/400</td>
</tr>
<tr>
<td>*4E 500</td>
<td>M4E 110-GF</td>
<td>0°</td>
<td>1°</td>
<td>1~ 230</td>
<td>50</td>
<td>1300</td>
<td>0,68</td>
<td>3,00</td>
<td>12,0/450</td>
</tr>
<tr>
<td>*6E 500</td>
<td>M6E 110-EF</td>
<td>0°</td>
<td>1°</td>
<td>1~ 230</td>
<td>50</td>
<td>915</td>
<td>0,27</td>
<td>1,18</td>
<td>8,0/400</td>
</tr>
<tr>
<td>*8E 500</td>
<td>M8E 110-EF</td>
<td>0°</td>
<td>1°</td>
<td>1~ 230</td>
<td>50</td>
<td>665</td>
<td>0,13</td>
<td>0,59</td>
<td>3,0/400</td>
</tr>
</tbody>
</table>

subject to alterations (1) Nominal data in operating point (2) with maximum load

### Curves

- Air performance measured as per ISO 5801, Installation category A, in ebm-papst full nozzle and without protection against accidental contact
- Suction-side noise levels: LwA as per ISO 13347, LwA measured at 1 m distance to fan axis
- The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.
- With any deviation to the standard setup, the specific values have to be checked and re-viewed once installed or fitted!

For detailed information see page 36 ff.
- **Cable exit**: Via terminal box
- **Protection class**: I (acc. to EN 61800-5-1)
- **Product conforming to standard**: CE
- **Approvals**: VDE (acc. to EN 60034)

<table>
<thead>
<tr>
<th>Without attachments</th>
<th>With full square nozzle</th>
<th>With guard grille for short nozzle</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;V&quot;</td>
<td>W4E 500-GJ01-01</td>
<td>S4E 500-AJ01-01</td>
</tr>
<tr>
<td>&quot;V&quot;</td>
<td>W4E 500-GM03-01</td>
<td>S4E 500-AM03-01</td>
</tr>
<tr>
<td>&quot;V&quot;</td>
<td>W6E 500-GJ03-01</td>
<td>S6E 500-AJ03-01</td>
</tr>
<tr>
<td>&quot;V&quot;</td>
<td>W8E 500-GJ03-01</td>
<td>S8E 500-AJ03-01</td>
</tr>
</tbody>
</table>

Direction of air flow: "A" on request

### Curves

<table>
<thead>
<tr>
<th>n [rpm]</th>
<th>P [kW]</th>
<th>I [A]</th>
<th>LwA [dB(A)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>935</td>
<td>0,24</td>
<td>1,03</td>
<td>64</td>
</tr>
<tr>
<td>925</td>
<td>0,25</td>
<td>1,10</td>
<td>62</td>
</tr>
<tr>
<td>915</td>
<td>0,27</td>
<td>1,16</td>
<td>63</td>
</tr>
<tr>
<td>690</td>
<td>0,11</td>
<td>0,54</td>
<td>59</td>
</tr>
<tr>
<td>680</td>
<td>0,12</td>
<td>0,56</td>
<td>58</td>
</tr>
<tr>
<td>665</td>
<td>0,13</td>
<td>0,59</td>
<td>54</td>
</tr>
</tbody>
</table>

Air performance measured as per ISO 5801.
Installation category A, in ebm-papst full nozzle and without protection against accidental contact.
Suction-side noise levels La, measured at 1 m distance to fan axis.

The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 36 ff.
AC axial fans - HyBlade®
Ø 500 with motor M**110, drawings for direction of air flow "V"

Without attachments

<table>
<thead>
<tr>
<th>Type</th>
<th>Mass [kg]</th>
<th>g</th>
</tr>
</thead>
<tbody>
<tr>
<td>A4D 500-AJ03 -01</td>
<td>8.5</td>
<td>189.5</td>
</tr>
<tr>
<td>A4D 500-AM03 -01</td>
<td>10.5</td>
<td>209.5</td>
</tr>
<tr>
<td>A6D 500-AJ03 -01</td>
<td>8.5</td>
<td>189.5</td>
</tr>
<tr>
<td>A6D 500-AM03 -01</td>
<td>10.5</td>
<td>209.5</td>
</tr>
<tr>
<td>A4E 500-AJ01 -01</td>
<td>8.5</td>
<td>189.5</td>
</tr>
<tr>
<td>A4E 500-AM03 -01</td>
<td>10.5</td>
<td>209.5</td>
</tr>
<tr>
<td>A6E 500-AJ03 -01</td>
<td>8.5</td>
<td>189.5</td>
</tr>
<tr>
<td>A6E 500-AM03 -01</td>
<td>10.5</td>
<td>209.5</td>
</tr>
</tbody>
</table>

Internal diameter of the wall ring at least 503 mm

With full square nozzle

<table>
<thead>
<tr>
<th>Type</th>
<th>Mass [kg]</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>W4D 500-GJ03 -01</td>
<td>16.0</td>
<td>13.5</td>
</tr>
<tr>
<td>W4D 500-GM03 -01</td>
<td>18.0</td>
<td>13.5</td>
</tr>
<tr>
<td>W6D 500-GJ03 -01</td>
<td>16.0</td>
<td>13.5</td>
</tr>
<tr>
<td>W6D 500-GM03 -01</td>
<td>18.0</td>
<td>13.5</td>
</tr>
<tr>
<td>W4E 500-GJ01 -01</td>
<td>16.0</td>
<td>13.5</td>
</tr>
<tr>
<td>W4E 500-GM03 -01</td>
<td>18.0</td>
<td>13.5</td>
</tr>
<tr>
<td>W6E 500-GJ03 -01</td>
<td>16.0</td>
<td>13.5</td>
</tr>
<tr>
<td>W6E 500-GM03 -01</td>
<td>18.0</td>
<td>13.5</td>
</tr>
</tbody>
</table>

With guard grille for short nozzle

<table>
<thead>
<tr>
<th>Type</th>
<th>Mass [kg]</th>
<th>v</th>
</tr>
</thead>
<tbody>
<tr>
<td>S4D 500-AJ03 -01</td>
<td>11.8</td>
<td>64.0</td>
</tr>
<tr>
<td>S4D 500-AM03 -01</td>
<td>13.8</td>
<td>64.0</td>
</tr>
<tr>
<td>S6D 500-AJ03 -01</td>
<td>11.8</td>
<td>64.0</td>
</tr>
<tr>
<td>S6D 500-AM03 -01</td>
<td>13.8</td>
<td>64.0</td>
</tr>
<tr>
<td>S4E 500-AJ01 -01</td>
<td>11.8</td>
<td>64.0</td>
</tr>
<tr>
<td>S4E 500-AM03 -01</td>
<td>13.8</td>
<td>64.0</td>
</tr>
<tr>
<td>S5E 500-AJ03 -01</td>
<td>11.8</td>
<td>64.0</td>
</tr>
<tr>
<td>S5E 500-AM03 -01</td>
<td>13.8</td>
<td>64.0</td>
</tr>
</tbody>
</table>

Internal diameter of the wall ring at least 503 mm
AC axial fans - HyBlade®
Ø 560

- **Material:** Guard grille: Steel, phosphated and coated in black plastic
  Wall ring: Sheet steel, pre-galvanised and coated in black plastic
  Blades: Insertion part made of sheet aluminium, extrusion-coated in PP plastics
  Rotor: Encased in aluminium

- **Number of blades:** 5
- **Direction of rotation:** counter-clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** “F”
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharge holes:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Motor protection:** Design with thermal overload protector

---

**Nominal data**

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Blade angle</th>
<th>Curve</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Speed (rpm)</th>
<th>Max. power input (1)</th>
<th>Max. current draw (1)</th>
<th>Capacitor</th>
<th>Max. operative range</th>
<th>Perm. amb. temp.</th>
<th>Basic connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>*4D 560</td>
<td>M4D 110-GF</td>
<td>0°</td>
<td>B</td>
<td>3~ 400 V</td>
<td>50</td>
<td>1220</td>
<td>1,16</td>
<td>1,95</td>
<td>—</td>
<td>140</td>
<td>-40..+50</td>
<td>F1b(F2b)</td>
</tr>
<tr>
<td>*6D 560</td>
<td>M6D 110-EF</td>
<td>0°</td>
<td>B</td>
<td>3~ 400 Y</td>
<td>50</td>
<td>870</td>
<td>0,65</td>
<td>1,10</td>
<td>—</td>
<td>72</td>
<td>-40..+50</td>
<td>F1b(F2b)</td>
</tr>
<tr>
<td>*4E 560</td>
<td>M4E 110-IA</td>
<td>-5°</td>
<td>D</td>
<td>1~ 230</td>
<td>50</td>
<td>1275</td>
<td>1,09</td>
<td>4,76</td>
<td>20,0/450</td>
<td>160</td>
<td>-40..+55</td>
<td>A2b</td>
</tr>
<tr>
<td>*6E 560</td>
<td>M6E 110-EF</td>
<td>-5°</td>
<td>D</td>
<td>1~ 230</td>
<td>50</td>
<td>895</td>
<td>0,41</td>
<td>1,80</td>
<td>10,0/400</td>
<td>85</td>
<td>-40..+55</td>
<td>A2b</td>
</tr>
</tbody>
</table>

(1) Nominal data in operating point C with maximum load

---

**Curves**

Air performance measured as per ISO 5801, Installation category A, in ebm-papst full nozzle and without protection against accidental contact.

Suction-side noise levels Lw A as per ISO 13347, Lw A measured at 1 m distance to fan axis.

The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 36 ff.
- **Cable exit:** Via terminal box
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standard:** CE
- **Approvals:** VDE (acc. to EN 60034)

### Direction of air flow

<table>
<thead>
<tr>
<th>Without attachments</th>
<th>With full square nozzle</th>
<th>With guard grille for short nozzle</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;V&quot;</td>
<td>W4D 560-GM03 -01</td>
<td>S4D 560-AM03 -01</td>
</tr>
<tr>
<td>&quot;V&quot;</td>
<td>W6D 560-GJ03 -01</td>
<td>S6D 560-AJ03 -01</td>
</tr>
<tr>
<td>&quot;V&quot;</td>
<td>W4E 560-GQ01 -01</td>
<td>S4E 560-AQ01 -01</td>
</tr>
<tr>
<td>&quot;V&quot;</td>
<td>W6E 560-GK01 -01</td>
<td>S6E 560-AK01 -01</td>
</tr>
</tbody>
</table>

**Direction of air flow** "A" on request

### Curves

<table>
<thead>
<tr>
<th>$n$ [rpm]</th>
<th>$P_I$ [kW]</th>
<th>$I$ [A]</th>
<th>$L_{W_A}$ [dB(A)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1340</td>
<td>0,95</td>
<td>4,15</td>
<td>75</td>
</tr>
<tr>
<td>1315</td>
<td>1,02</td>
<td>4,44</td>
<td>73</td>
</tr>
<tr>
<td>1275</td>
<td>1,09</td>
<td>4,76</td>
<td>76</td>
</tr>
<tr>
<td>920</td>
<td>0,36</td>
<td>1,60</td>
<td>65</td>
</tr>
<tr>
<td>910</td>
<td>0,39</td>
<td>1,72</td>
<td>65</td>
</tr>
<tr>
<td>895</td>
<td>0,41</td>
<td>1,80</td>
<td>68</td>
</tr>
</tbody>
</table>

- Air performance measured as per ISO 5801.
- Installation category A.
- In ebm-papst full nozzle and without protection against accidental contact.
- Suction-side noise levels $L_{W_A}$ as per ISO 13347, $L_{W_A}$ measured at 1 m distance to fan axis.
- The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.
- With any deviation to the standard setup, the specific values have to be checked and re-viewed once installed or fitted.
- For detailed information see page 36 ff.

---

**Drawings**
- S.14

**Electr. connections**
- S.34
AC axial fans - HyBlade®
Ø 560 with motor M**110, drawings for direction of air flow ”V”

<table>
<thead>
<tr>
<th>Without attachments</th>
<th>Type</th>
<th>Mass [kg]</th>
<th>c</th>
<th>d</th>
<th>g</th>
</tr>
</thead>
<tbody>
<tr>
<td>A40 560-AM03-01</td>
<td>10,5</td>
<td>124,0</td>
<td>134,0</td>
<td>209,5</td>
<td></td>
</tr>
<tr>
<td>A60 560-AJ03-01</td>
<td>8,5</td>
<td>124,0</td>
<td>134,0</td>
<td>189,5</td>
<td></td>
</tr>
<tr>
<td>A4E 560-AQ01-01</td>
<td>12,5</td>
<td>113,0</td>
<td>115,0</td>
<td>224,5</td>
<td></td>
</tr>
<tr>
<td>A6E 560-AK01-01</td>
<td>8,5</td>
<td>113,0</td>
<td>115,0</td>
<td>189,5</td>
<td></td>
</tr>
</tbody>
</table>

Internal diameter of the wall ring at least 559 mm

<table>
<thead>
<tr>
<th>With full square nozzle</th>
<th>Type</th>
<th>Mass [kg]</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>W40 560-GM03-01</td>
<td>24,0</td>
<td>17,5</td>
<td></td>
</tr>
<tr>
<td>W60 560-GJ03-01</td>
<td>22,0</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>W4E 560-GQ01-01</td>
<td>26,0</td>
<td>32,5</td>
<td></td>
</tr>
<tr>
<td>W6E 560-GK01-01</td>
<td>22,0</td>
<td>---</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>With guard grille for short nozzle</th>
<th>Type</th>
<th>Mass [kg]</th>
<th>u</th>
<th>v</th>
</tr>
</thead>
<tbody>
<tr>
<td>S40 560-AM03-01</td>
<td>15,0</td>
<td>88,0</td>
<td>108,0</td>
<td></td>
</tr>
<tr>
<td>S60 560-AJ03-01</td>
<td>13,0</td>
<td>88,0</td>
<td>88,0</td>
<td></td>
</tr>
<tr>
<td>S4E 560-AQ01-01</td>
<td>17,0</td>
<td>77,0</td>
<td>123,0</td>
<td></td>
</tr>
<tr>
<td>S6E 560-AK01-01</td>
<td>13,0</td>
<td>77,0</td>
<td>88,0</td>
<td></td>
</tr>
</tbody>
</table>

Internal diameter of the wall ring at least 559 mm
AC axial fans - HyBlade®
Ø 630

- **Material:** Guard grille: Steel, phosphated and coated in black plastic
  Wall ring: Sheet steel, pre-galvanised and coated in black plastic
  Blades: Insertion part made of sheet aluminium, extrusion-coated in PP plastics
  Rotor: Encased in aluminium

- **Number of blades:** 5
- **Direction of rotation:** ⑥ ⑨ counter-clockwise, ⑥ ⑧ ⑨ clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "F"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharge holes:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Motor protection:** Design with thermal overload protector

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Blade angle</th>
<th>Curve</th>
<th>VAC Hz</th>
<th>rpm</th>
<th>kW</th>
<th>A</th>
<th>µF/VDB</th>
<th>Pa</th>
<th>°C</th>
<th>p. 34</th>
</tr>
</thead>
<tbody>
<tr>
<td>*4D 630</td>
<td>M4D110-IA</td>
<td>-10°</td>
<td>④ ⑥</td>
<td>3–400 Y</td>
<td>50</td>
<td>1330</td>
<td>1,25</td>
<td>1,42</td>
<td>150</td>
<td>-40..+55</td>
<td>F1b(F2b)</td>
</tr>
<tr>
<td>*4D 630</td>
<td>M4D138-LA</td>
<td>0°</td>
<td>④ ⑥</td>
<td>3–400 Y</td>
<td>50</td>
<td>1320</td>
<td>2,63</td>
<td>4,78</td>
<td>220</td>
<td>-40..+60</td>
<td>F1b(F2b)</td>
</tr>
<tr>
<td>*4D 630</td>
<td>M4D138-HF</td>
<td>-5°</td>
<td>④ ⑥</td>
<td>3–400 Y</td>
<td>50</td>
<td>1310</td>
<td>1,97</td>
<td>3,40</td>
<td>200</td>
<td>-40..+60</td>
<td>F1b(F2b)</td>
</tr>
</tbody>
</table>

subject to alterations

(1) Nominal data in operating point ③ with maximum load

### Curves

Air performance measured as per ISO 5801, Installation category A, in ebm-papst full nozzle and without protection against accidental contact.

Suction-side noise levels Lw A as per ISO 13347, Lw A measured at 1 m distance to fan axis.

The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 36 ff.
- **Cable exit:** Via terminal box
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standard:** CE
- **Approvals:** VDE (acc. to EN 60034)

### Curves

<table>
<thead>
<tr>
<th>n [rpm]</th>
<th>P [kW]</th>
<th>I [A]</th>
<th>LwA [dB(A)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1360</td>
<td>2,30</td>
<td>4,29</td>
<td>78</td>
</tr>
<tr>
<td>1345</td>
<td>2,47</td>
<td>4,56</td>
<td>77</td>
</tr>
<tr>
<td>1320</td>
<td>2,63</td>
<td>4,78</td>
<td>80</td>
</tr>
<tr>
<td>1115</td>
<td>1,62</td>
<td>2,71</td>
<td>72</td>
</tr>
<tr>
<td>1080</td>
<td>1,68</td>
<td>2,83</td>
<td>72</td>
</tr>
<tr>
<td>1050</td>
<td>1,75</td>
<td>2,95</td>
<td>74</td>
</tr>
<tr>
<td>1050</td>
<td>1,75</td>
<td>2,95</td>
<td>74</td>
</tr>
<tr>
<td>1145</td>
<td>1,68</td>
<td>2,94</td>
<td>75</td>
</tr>
<tr>
<td>1325</td>
<td>1,83</td>
<td>3,18</td>
<td>75</td>
</tr>
<tr>
<td>1310</td>
<td>1,97</td>
<td>3,40</td>
<td>78</td>
</tr>
<tr>
<td>1075</td>
<td>1,18</td>
<td>1,97</td>
<td>70</td>
</tr>
<tr>
<td>1035</td>
<td>1,24</td>
<td>2,08</td>
<td>68</td>
</tr>
<tr>
<td>1000</td>
<td>1,29</td>
<td>2,10</td>
<td>70</td>
</tr>
</tbody>
</table>

Air performance measured as per ISO 5801, Installation category A, in ebm-papst full nozzle and without protection against accidental contact.

Suction-side noise levels, LwA as per ISO 13347, LwA measured at 1 m distance to fan axis.

The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 36 ff.
AC Axial Fans - HyBlade®
Ø 630

- **Material:**
  - Guard grille: Steel, phosphated and coated in black plastic
  - Wall ring: Sheet steel, pre-galvanised and coated in black plastic
  - Blades: Pressed-on round sheet steel plate, extrusion-coated in PP plastics
  - Rotor: Coated in black

- **Number of blades:** 5

- **Direction of rotation:** counter-clockwise, seen on rotor

- **Type of protection:** IP 54 (acc. to EN 60529)

- **Insulation class:** “F”

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

- **Condensate discharge holes:** Rotor-side

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

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

- **Motor protection:** Design with thermal overload protector

---

### Nominal Data

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>*6D 630</td>
<td>M6D 110-GF</td>
<td>-5°</td>
<td>F1b</td>
<td>3–400</td>
<td>50</td>
<td>890</td>
<td>0,60</td>
<td>1,20</td>
<td>—</td>
<td>105</td>
<td>-40...+85</td>
<td></td>
</tr>
<tr>
<td>*8D 630</td>
<td>M8D 110-GF</td>
<td>-5°</td>
<td>F1b</td>
<td>3–400</td>
<td>50</td>
<td>660</td>
<td>0,33</td>
<td>0,83</td>
<td>—</td>
<td>60</td>
<td>-40...+85</td>
<td></td>
</tr>
<tr>
<td>*6E 630</td>
<td>M6E 110-GF</td>
<td>-5°</td>
<td>F2b</td>
<td>1–230</td>
<td>50</td>
<td>860</td>
<td>0,60</td>
<td>2,62</td>
<td>14,0/400</td>
<td>100</td>
<td>-40...+55</td>
<td></td>
</tr>
<tr>
<td>*8E 630</td>
<td>M8E 110-GF</td>
<td>-5°</td>
<td>F2b</td>
<td>1–230</td>
<td>50</td>
<td>670</td>
<td>0,34</td>
<td>1,72</td>
<td>7,0/450</td>
<td>60</td>
<td>-40...+85</td>
<td></td>
</tr>
</tbody>
</table>

Subject to alterations

* (1) Nominal data in operating point

(2) With maximum load

---

### Curves

- **Air Performance** measured as per ISO 5801, Installation category A, in ebm-papst full nozzle and without protection against accidental contact

- **Suction-side noise levels** LwA as per ISO 13347, LpA measured at 1 m distance to fan axis

- The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

- With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 36ff.
– Cable exit: Via terminal box
– Protection class: I (acc. to EN 61800-5-1)
– Product conforming to standard: CE
– Approvals: VDE (acc. to EN 60034)

### Air performance measured as per: ISO 5801, Installation category A, in ebm-papst full nozzle and without protection against accidental contact

Suction-side noise levels $L_{wA}$ as per ISO 13347, $L_{wA}$ measured at 1 m distance to fan axis

The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 36ff.

### Curves

<table>
<thead>
<tr>
<th>Without attachments</th>
<th>With full square nozzle</th>
<th>With guard grille for short nozzle</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;V&quot; A6D 630-AN01 -01</td>
<td>W6D 630-GN01 -01</td>
<td>S6D 630-AN01 -01</td>
</tr>
<tr>
<td>&quot;V&quot; A6D 630-AN01 -01</td>
<td>W6D 630-GN01 -01</td>
<td>S6D 630-AN01 -01</td>
</tr>
<tr>
<td>&quot;V&quot; A6E 630-AN01 -01</td>
<td>W6E 630-GN01 -01</td>
<td>S6E 630-AN01 -01</td>
</tr>
<tr>
<td>&quot;V&quot; A6E 630-AN01 -01</td>
<td>W6E 630-GN01 -01</td>
<td>S6E 630-AN01 -01</td>
</tr>
</tbody>
</table>

Direction of airflow "A" on request

![Air performance graph](image)
### AC axial fans - HyBlade®

Ø 630 with motor M**110, drawings for direction of air flow "V"

#### Without attachments

<table>
<thead>
<tr>
<th>Type</th>
<th>Mass [kg]</th>
<th>c</th>
<th>d</th>
<th>g</th>
<th>h</th>
</tr>
</thead>
<tbody>
<tr>
<td>A4D 630-AR01-001</td>
<td>14,0</td>
<td>104,0</td>
<td>98,0</td>
<td>224,5</td>
<td>627,0</td>
</tr>
<tr>
<td>ABD 630-AN01-001</td>
<td>12,5</td>
<td>118,0</td>
<td>123,0</td>
<td>209,5</td>
<td>626,0</td>
</tr>
<tr>
<td>ABD 630-AN01-001</td>
<td>12,5</td>
<td>118,0</td>
<td>123,0</td>
<td>209,5</td>
<td>626,0</td>
</tr>
<tr>
<td>A8E 630-AN01-001</td>
<td>12,5</td>
<td>118,0</td>
<td>123,0</td>
<td>209,5</td>
<td>626,0</td>
</tr>
<tr>
<td>A8E 630-AN01-001</td>
<td>12,5</td>
<td>118,0</td>
<td>123,0</td>
<td>209,5</td>
<td>626,0</td>
</tr>
</tbody>
</table>

### With full square nozzle

<table>
<thead>
<tr>
<th>Type</th>
<th>Mass [kg]</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>W4D 630-GN01-001</td>
<td>28,8</td>
<td>23,5</td>
</tr>
<tr>
<td>W6D 630-GN01-001</td>
<td>27,4</td>
<td>3,5</td>
</tr>
<tr>
<td>W8D 630-GN01-001</td>
<td>27,4</td>
<td>3,5</td>
</tr>
<tr>
<td>W6E 630-GN01-001</td>
<td>27,4</td>
<td>3,5</td>
</tr>
<tr>
<td>W8E 630-GN01-001</td>
<td>27,4</td>
<td>3,5</td>
</tr>
</tbody>
</table>

### With guard grille for short nozzle

<table>
<thead>
<tr>
<th>Type</th>
<th>Mass [kg]</th>
<th>u</th>
<th>v</th>
</tr>
</thead>
<tbody>
<tr>
<td>S4D 630-AR01-001</td>
<td>19,2</td>
<td>46,0</td>
<td>191,0</td>
</tr>
<tr>
<td>S6D 630-AN01-001</td>
<td>17,7</td>
<td>60,0</td>
<td>86,0</td>
</tr>
<tr>
<td>S8D 630-AN01-001</td>
<td>17,7</td>
<td>60,0</td>
<td>86,0</td>
</tr>
<tr>
<td>S8E 630-AN01-001</td>
<td>17,7</td>
<td>60,0</td>
<td>86,0</td>
</tr>
<tr>
<td>S8E 630-AN01-001</td>
<td>17,7</td>
<td>60,0</td>
<td>86,0</td>
</tr>
</tbody>
</table>

Internal diameter of the wall ring at least 634 mm

---

Internal diameter of the wall ring at least 634 mm
**AC axial fans - HyBlade®**

Ø 630 with motor M4D138, drawings for direction of air flow "V"

### Without attachments

<table>
<thead>
<tr>
<th>Type</th>
<th>Mass [kg]</th>
<th>c</th>
<th>d</th>
<th>g</th>
</tr>
</thead>
<tbody>
<tr>
<td>A4D 630-AD01</td>
<td>22.3</td>
<td>154.0</td>
<td>144.0</td>
<td>277.0</td>
</tr>
<tr>
<td>A4D 630-AH01</td>
<td>18.3</td>
<td>149.0</td>
<td>130.0</td>
<td>252.0</td>
</tr>
</tbody>
</table>

Internal diameter of the wall ring at least 634 mm

### With full square nozzle

<table>
<thead>
<tr>
<th>Type</th>
<th>Mass [kg]</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>W4D630-GD01</td>
<td>38.2</td>
<td>48.0</td>
</tr>
<tr>
<td>W4D630-GH01</td>
<td>34.2</td>
<td>23.0</td>
</tr>
</tbody>
</table>

### With guard grille for short nozzle

<table>
<thead>
<tr>
<th>Type</th>
<th>Mass [kg]</th>
<th>u</th>
<th>v</th>
</tr>
</thead>
<tbody>
<tr>
<td>S4D 630-AD01</td>
<td>28.5</td>
<td>87.0</td>
<td>134.0</td>
</tr>
<tr>
<td>S4D 630-AH01</td>
<td>24.5</td>
<td>82.0</td>
<td>199.0</td>
</tr>
</tbody>
</table>

Internal diameter of the wall ring at least 634 mm
**AC axial fans - HyBlade®**

Ø 710

- **Material:** Guard grille: Steel, phosphated and coated in black plastic  
  Wall ring: Sheet steel, pre-galvanised and coated in black plastic  
  Blades: Insertion part made of sheet aluminium, extrusion-coated in PP plastics  
  Rotor: Encased in aluminium

- **Number of blades:** 5

- **Direction of rotation:** ③ ⑦ ① counter-clockwise, ④ ⑥ ② clockwise, seen on rotor

- **Type of protection:** IP 54 (acc. to EN 60529)

- **Insulation class:** "F"

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

- **Condensate discharge holes:** Rotor-side

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

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

- **Motor protection:** Design with thermal overload protector

---

**Nominal data**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>*4D 710</td>
<td>M4D 138-LA</td>
<td>-10°</td>
<td></td>
<td>3~ 400  Δ</td>
<td>50</td>
<td>1350</td>
<td>2,38</td>
<td>4,50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*6D 710</td>
<td>M6D 138-HF</td>
<td>5°</td>
<td></td>
<td>3~ 400  Δ</td>
<td>50</td>
<td>1005</td>
<td>1,66</td>
<td>2,76</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*6D 710</td>
<td>M6D 110-IA</td>
<td>-5°</td>
<td></td>
<td>3~ 400  Δ</td>
<td>50</td>
<td>730</td>
<td>0,69</td>
<td>1,34</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*6E 710</td>
<td>M6E 110-IA</td>
<td>-10°</td>
<td></td>
<td>1~ 230</td>
<td>50</td>
<td>900</td>
<td>0,63</td>
<td>2,79</td>
<td>14,0/450</td>
<td>105</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

subject to alterations  
(1) Nominal data in operating point with maximum load

---

**Curves**

<table>
<thead>
<tr>
<th>n [rpm]</th>
<th>P1 [kW]</th>
<th>I [A]</th>
<th>Lw A [dB(A)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1380</td>
<td>2,00</td>
<td>3,92</td>
<td>81</td>
</tr>
<tr>
<td>1365</td>
<td>2,23</td>
<td>4,24</td>
<td>83</td>
</tr>
<tr>
<td>1350</td>
<td>2,38</td>
<td>4,50</td>
<td>86</td>
</tr>
<tr>
<td>1165</td>
<td>1,47</td>
<td>2,50</td>
<td>76</td>
</tr>
<tr>
<td>1125</td>
<td>1,59</td>
<td>2,71</td>
<td>78</td>
</tr>
<tr>
<td>1095</td>
<td>1,66</td>
<td>2,78</td>
<td>81</td>
</tr>
<tr>
<td>925</td>
<td>0,66</td>
<td>1,19</td>
<td>65</td>
</tr>
<tr>
<td>915</td>
<td>0,94</td>
<td>2,26</td>
<td>70</td>
</tr>
<tr>
<td>905</td>
<td>1,03</td>
<td>2,35</td>
<td>73</td>
</tr>
<tr>
<td>915</td>
<td>1,03</td>
<td>2,35</td>
<td>73</td>
</tr>
<tr>
<td>915</td>
<td>0,63</td>
<td>1,19</td>
<td>65</td>
</tr>
<tr>
<td>915</td>
<td>0,66</td>
<td>1,27</td>
<td>65</td>
</tr>
<tr>
<td>895</td>
<td>0,74</td>
<td>1,63</td>
<td>68</td>
</tr>
<tr>
<td>880</td>
<td>0,84</td>
<td>1,74</td>
<td>71</td>
</tr>
<tr>
<td>755</td>
<td>0,43</td>
<td>0,77</td>
<td>65</td>
</tr>
<tr>
<td>710</td>
<td>0,48</td>
<td>0,85</td>
<td>63</td>
</tr>
<tr>
<td>670</td>
<td>0,53</td>
<td>0,94</td>
<td>65</td>
</tr>
</tbody>
</table>

Air performance measured as per ISO 5801,  
Installation category A,  
in øbn-papet full nozzle  
and without protection against  
accidental contact  
Suction-side noise levels  
Lw A as per ISO 13347,  
Lw A measured at 1 m distance  
to fan axis  
The acoustic values given are only valid under the measure-  
ment conditions listed and  
may vary depending on the  
installation situation.  
With any deviation from the stan-  
dard setup, the specific values  
have to be checked and re-  
viewed once installed or fitted!

For detailed information  
see page 36 ff.
- **Cable exit**: Via terminal box
- **Protection class**: I (acc. to EN 61800-5-1)
- **Product conforming to standard**: CE
- **Approvals**: VDE (acc. to EN 60034)

Direction of airflow:
- Without attachments
- With full square nozzle
- With guard grille for short nozzle

<table>
<thead>
<tr>
<th>Direction of airflow</th>
<th>Without attachments</th>
<th>With full square nozzle</th>
<th>With guard grille for short nozzle</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;V&quot;</td>
<td>A4D 710-AF01 -01</td>
<td>W4D710-GF01 -01</td>
<td>S4D 710-AF01 -01</td>
</tr>
<tr>
<td>&quot;V&quot;</td>
<td>A6D 710-AH01 -01</td>
<td>W6D710-GH01 -01</td>
<td>S6D 710-AH01 -01</td>
</tr>
<tr>
<td>&quot;V&quot;</td>
<td>A6D 710-AQ01 -01</td>
<td>W6D710-GQ01 -01</td>
<td>S6D 710-AQ01 -01</td>
</tr>
<tr>
<td>&quot;V&quot;</td>
<td>A6E 710-AR03 -01</td>
<td>W6E710-GR03 -01</td>
<td>S6E 710-AR03 -01</td>
</tr>
</tbody>
</table>

Direction of airflow "A" on request

Curves

<table>
<thead>
<tr>
<th>n [rpm]</th>
<th>P [kW]</th>
<th>I [A]</th>
<th>LwA [dB(A)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>0,50</td>
<td>2,24</td>
<td>73</td>
</tr>
<tr>
<td>4000</td>
<td>0,56</td>
<td>2,51</td>
<td>73</td>
</tr>
<tr>
<td>6000</td>
<td>0,63</td>
<td>2,79</td>
<td>77</td>
</tr>
<tr>
<td>8000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Air performance measured as per ISO 5801,
Installation category A,
in ebm-papst full nozzle
and without protection against accidental contact.
Section-side noise levels
LwA as per ISO 13347,
LwA measured at 1 m distance to fan axis.
The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.
With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!
For detailed information see page 36 ff.
AC axial fans - HyBlade®
Ø 710 with motor M**110, drawings for direction of air flow “V”

### Without attachments

<table>
<thead>
<tr>
<th>Type</th>
<th>Mass [kg]</th>
<th>c</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>A6D 710-A001-01</td>
<td>14,0</td>
<td>118,0</td>
<td>113,0</td>
</tr>
<tr>
<td>A6E 710-AR03-01</td>
<td>14,0</td>
<td>111,0</td>
<td>96,0</td>
</tr>
</tbody>
</table>

Internal diameter of the wall ring at least 710 mm

### With full square nozzle

<table>
<thead>
<tr>
<th>Type</th>
<th>Mass [kg]</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>W6D 710-GQ01-01</td>
<td>29,8</td>
<td>25,5</td>
</tr>
<tr>
<td>W6E 710-GR03-01</td>
<td>29,8</td>
<td>25,5</td>
</tr>
</tbody>
</table>

### With guard grille for short nozzle

<table>
<thead>
<tr>
<th>Type</th>
<th>Mass [kg]</th>
<th>u</th>
</tr>
</thead>
<tbody>
<tr>
<td>S6D 710-AQ01-01</td>
<td>20,5</td>
<td>29,0</td>
</tr>
<tr>
<td>S6E 710-AR03-01</td>
<td>20,5</td>
<td>22,0</td>
</tr>
</tbody>
</table>

Internal diameter of the wall ring at least 710 mm
AC axial fans - HyBlade®

Ø 710 with motor M*D138, drawings for direction of air flow “V”

**Without attachments**

<table>
<thead>
<tr>
<th>Type</th>
<th>Mass [kg]</th>
<th>c</th>
<th>d</th>
<th>g</th>
</tr>
</thead>
<tbody>
<tr>
<td>A4D 710-AF01 -01</td>
<td>22.6</td>
<td>142.0</td>
<td>110.0</td>
<td>277.0</td>
</tr>
<tr>
<td>A6D 710-AH01 -01</td>
<td>18.8</td>
<td>148.0</td>
<td>126.0</td>
<td>252.0</td>
</tr>
</tbody>
</table>

Internal diameter of the wall ring at least 710 mm

**With full square nozzle**

<table>
<thead>
<tr>
<th>Type</th>
<th>Mass [kg]</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>W4D710-GF01 -01</td>
<td>39.9</td>
<td>17.0</td>
</tr>
<tr>
<td>W6D710-GH01 -01</td>
<td>36.7</td>
<td>---</td>
</tr>
</tbody>
</table>

**With guard grille for short nozzle**

<table>
<thead>
<tr>
<th>Type</th>
<th>Mass [kg]</th>
<th>u</th>
<th>v</th>
</tr>
</thead>
<tbody>
<tr>
<td>S4D 710-AF01 -01</td>
<td>30.5</td>
<td>31.0</td>
<td>90.0</td>
</tr>
<tr>
<td>S6D 710-AH01 -01</td>
<td>26.6</td>
<td>37.0</td>
<td>65.0</td>
</tr>
</tbody>
</table>

Internal diameter of the wall ring at least 710 mm

Cable gland Depth of screw max. 18 mm

Internal diameter of the wall ring at least 710 mm
### AC axial fans - HyBlade®

| ø 800 |

**Material:** Guard grille: Steel, phosphated and coated in black plastic  
Wall ring: Sheet steel, pre-galvanised and coated in black plastic  
Blades: Insertion part made of sheet aluminium, extrusion-coated in PP plastics  
Rotor: Encased in aluminium

**Number of blades:** 5  
**Direction of rotation:** clockwise, seen on rotor  
**Type of protection:** IP 54 (acc. to EN 60529)  
**Insulation class:** “F”  
**Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request  
**Condensate discharge holes:** Rotor-side  
**Mode of operation:** Continuous operation (S1)  
**Bearings:** Maintenance-free ball bearings  
**Motor protection:** Design with thermal overload protector

**Nominal data**

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Blade angle</th>
<th>VAC</th>
<th>Hz</th>
<th>rpm</th>
<th>kW</th>
<th>A</th>
<th>µF/VDB</th>
<th>Pa</th>
<th>°C</th>
<th>p. 34</th>
</tr>
</thead>
<tbody>
<tr>
<td>*6D 800</td>
<td>M6D 138-NA</td>
<td>+5°</td>
<td>④</td>
<td>3–400 ④</td>
<td>50</td>
<td>900</td>
<td>2,33</td>
<td>4,85</td>
<td>—</td>
<td>120</td>
<td>-40..+50</td>
</tr>
<tr>
<td>*6D 800</td>
<td>M6D 138-LA</td>
<td>0°</td>
<td>④</td>
<td>3–400 ④</td>
<td>50</td>
<td>880</td>
<td>1,94</td>
<td>3,90</td>
<td>—</td>
<td>160</td>
<td>-40..+60</td>
</tr>
<tr>
<td>*8D 800</td>
<td>M8D 138-LA</td>
<td>0°</td>
<td>④</td>
<td>3–400 ④</td>
<td>50</td>
<td>660</td>
<td>0,99</td>
<td>2,37</td>
<td>—</td>
<td>105</td>
<td>-40..+65</td>
</tr>
<tr>
<td>*2D 800</td>
<td>M2D 138-HF</td>
<td>0°</td>
<td>④</td>
<td>3–400 ④</td>
<td>50</td>
<td>435</td>
<td>0,36</td>
<td>1,12</td>
<td>—</td>
<td>40</td>
<td>-40..+65</td>
</tr>
</tbody>
</table>

Subject to alterations  
(1) Nominal data in operating point  
C) with maximum load

**Curves**

Air performance measured as per ISO 5801,  
Installation category A,  
in ebm-papst full nozzle and without protection against accidental contact  
Section-side noise levels  
LwA, as per ISO 13347,  
LwA measured at 1 m in distance to fan axis  
The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.  
With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 36ff.
- **Cable exit:** Via terminal box
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standard:** CE
- **Approvals:** VDE (acc. to EN 60034)

### Direction of air flow

<table>
<thead>
<tr>
<th>Without attachments</th>
<th>With full square nozzle</th>
<th>With guard grille for full nozzle</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;V&quot;</td>
<td>A6D 800-AU01 -01</td>
<td>S6D 800-CU01 -01</td>
</tr>
<tr>
<td>&quot;V&quot;</td>
<td>A6D 800-A001 -01</td>
<td>S6D 800-CD01 -01</td>
</tr>
<tr>
<td>&quot;V&quot;</td>
<td>A8D 800-A001 -01</td>
<td>S8D 800-CD01 -01</td>
</tr>
<tr>
<td>&quot;V&quot;</td>
<td>AZD 800-A603 -01</td>
<td>SZD 800-C603 -01</td>
</tr>
</tbody>
</table>

**Direction of air flow "A" on request**

### Curves

<table>
<thead>
<tr>
<th>n [rpm]</th>
<th>P [kW]</th>
<th>I [A]</th>
<th>LwA [dB(A)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>665</td>
<td>0,77</td>
<td>2,10</td>
<td>65</td>
</tr>
<tr>
<td>675</td>
<td>0,85</td>
<td>2,20</td>
<td>66</td>
</tr>
<tr>
<td>660</td>
<td>0,99</td>
<td>2,37</td>
<td>74</td>
</tr>
<tr>
<td>555</td>
<td>0,51</td>
<td>1,07</td>
<td>60</td>
</tr>
<tr>
<td>530</td>
<td>0,53</td>
<td>1,12</td>
<td>60</td>
</tr>
<tr>
<td>485</td>
<td>0,58</td>
<td>1,21</td>
<td>66</td>
</tr>
<tr>
<td>450</td>
<td>0,32</td>
<td>1,09</td>
<td>55</td>
</tr>
<tr>
<td>445</td>
<td>0,34</td>
<td>1,10</td>
<td>55</td>
</tr>
<tr>
<td>435</td>
<td>0,36</td>
<td>1,12</td>
<td>59</td>
</tr>
<tr>
<td>365</td>
<td>0,18</td>
<td>0,43</td>
<td>51</td>
</tr>
<tr>
<td>355</td>
<td>0,19</td>
<td>0,45</td>
<td>49</td>
</tr>
<tr>
<td>340</td>
<td>0,20</td>
<td>0,47</td>
<td>52</td>
</tr>
</tbody>
</table>

Air performance measured as per ISO 5801, installation category A, in ebm-papst full nozzle and without protection against accidental contact.

Suction-side noise levels LwA as per ISO 13347, LpA measured at 1 m distance to fan axis.

The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 36ff.
AC axial fans - HyBlade®
Ø 800 with motor M*D138, drawings for direction of air flow "V"

<table>
<thead>
<tr>
<th>Type</th>
<th>Mass [kg]</th>
<th>c</th>
<th>d</th>
<th>g</th>
</tr>
</thead>
<tbody>
<tr>
<td>A6D 800-AU01 -001</td>
<td>26.5</td>
<td>172.0</td>
<td>171.0</td>
<td>297.0</td>
</tr>
<tr>
<td>A6D 800-AD01 -001</td>
<td>23.0</td>
<td>159.0</td>
<td>149.0</td>
<td>277.0</td>
</tr>
<tr>
<td>A8D 800-AD01 -001</td>
<td>23.0</td>
<td>159.0</td>
<td>149.0</td>
<td>277.0</td>
</tr>
<tr>
<td>AZD 800-AG03 -001</td>
<td>19.0</td>
<td>159.0</td>
<td>149.0</td>
<td>252.0</td>
</tr>
</tbody>
</table>

Internal diameter of the wall ring at least 795 mm

---

With full square nozzle

<table>
<thead>
<tr>
<th>Type</th>
<th>Mass [kg]</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>W6D 800-GU01 -001</td>
<td>46.6</td>
<td>36.0</td>
</tr>
<tr>
<td>W6D 800-GD01 -001</td>
<td>44.2</td>
<td>---</td>
</tr>
<tr>
<td>W6D 800-GD01 -001</td>
<td>44.2</td>
<td>---</td>
</tr>
<tr>
<td>WZD 800-GS03 -001</td>
<td>40.2</td>
<td>---</td>
</tr>
</tbody>
</table>

---

With guard grille for full nozzle

<table>
<thead>
<tr>
<th>Type</th>
<th>Mass [kg]</th>
<th>s</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>S6D 800-CU01 -001</td>
<td>33.3</td>
<td>162.0</td>
<td>211.0</td>
</tr>
<tr>
<td>S6D 800-CD01 -001</td>
<td>30.1</td>
<td>127.0</td>
<td>169.0</td>
</tr>
<tr>
<td>S8D 800-CD01 -001</td>
<td>30.1</td>
<td>127.0</td>
<td>169.0</td>
</tr>
<tr>
<td>SZD 800-CG03 -001</td>
<td>26.2</td>
<td>127.0</td>
<td>144.0</td>
</tr>
</tbody>
</table>

Internal diameter of the wall ring at least 795 mm

---

Cable gland
Depth of screw max. 18 mm

---

Internal diameter of the wallring at least 795 mm
AC axial fans - HyBlade®
Ø 910

- Material: Guard grille: Steel, phosphated and coated in black plastic
  Wall ring: Sheet steel, pre-galvanised and coated in black plastic
  Blades: Insertion part made of sheet aluminium, extrusion-coated in PP plastics
  Rotor: Encased in aluminium
- Number of blades: 5
- Direction of rotation: clockwise, seen on rotor
- Type of protection: IP 54 (acc. to EN 60529)
- Insulation class: "F"
- Mounting position: Shaft horizontal or rotor on bottom; rotor on top on request
- Condensate discharge holes: Rotor-side
- Mode of operation: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings
- Motor protection: Design with thermal overload protector

### Nominal data

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>*6D 910</td>
<td>M6D 138-NA</td>
<td>0°</td>
<td>3-400</td>
<td>50</td>
<td>885</td>
<td>2.48</td>
<td>5.15</td>
<td>—</td>
<td>150</td>
<td>—</td>
<td>—</td>
<td>40..+50</td>
</tr>
<tr>
<td>*8D 910</td>
<td>M8D 138-LA</td>
<td>0°</td>
<td>3-400</td>
<td>50</td>
<td>650</td>
<td>1.15</td>
<td>2.78</td>
<td>—</td>
<td>90</td>
<td>—</td>
<td>—</td>
<td>40..+65</td>
</tr>
<tr>
<td>*ZD 910</td>
<td>MZD 138-HF</td>
<td>0°</td>
<td>3-400</td>
<td>50</td>
<td>475</td>
<td>0.64</td>
<td>1.36</td>
<td>—</td>
<td>47</td>
<td>—</td>
<td>—</td>
<td>40..+65</td>
</tr>
</tbody>
</table>

subject to alterations

(1) Nominal data in operating point (2) with maximum load

### Curves

<table>
<thead>
<tr>
<th>n [rpm]</th>
<th>P_1 [kW]</th>
<th>I [A]</th>
<th>LwA [dB(A)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>915</td>
<td>2.05</td>
<td>4.67</td>
<td>75</td>
</tr>
<tr>
<td>900</td>
<td>2.26</td>
<td>4.88</td>
<td>75</td>
</tr>
<tr>
<td>885</td>
<td>2.48</td>
<td>5.15</td>
<td>77</td>
</tr>
<tr>
<td>750</td>
<td>1.41</td>
<td>2.67</td>
<td>70</td>
</tr>
<tr>
<td>715</td>
<td>1.49</td>
<td>2.82</td>
<td>69</td>
</tr>
<tr>
<td>685</td>
<td>1.57</td>
<td>2.90</td>
<td>71</td>
</tr>
<tr>
<td>675</td>
<td>0.95</td>
<td>2.57</td>
<td>68</td>
</tr>
<tr>
<td>665</td>
<td>1.05</td>
<td>2.67</td>
<td>67</td>
</tr>
<tr>
<td>650</td>
<td>1.15</td>
<td>2.78</td>
<td>70</td>
</tr>
<tr>
<td>530</td>
<td>0.59</td>
<td>1.24</td>
<td>61</td>
</tr>
<tr>
<td>500</td>
<td>0.62</td>
<td>1.31</td>
<td>59</td>
</tr>
<tr>
<td>475</td>
<td>0.64</td>
<td>1.36</td>
<td>63</td>
</tr>
</tbody>
</table>

Air performance measured as per ISO 5801,
Installation category A,
in-ebm-papst full nozzle
and without protection against accidental contact
Suction-side noise levels
LwA as per ISO 13347,
LwA measured at 1 m in distance
to fan axis
The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.
With any deviation from the standard setup, the specific values have to be checked and reviewed once installed or fitted!
For detailed information see page 36 ff.
- **Cable exit**: Via terminal box
- **Protection class**: I (acc. to EN 61800-5-1)
- **Product conforming to standard**: CE
- **Approvals**: VDE (acc. to EN 60034)

### Curves

<table>
<thead>
<tr>
<th>Direction of air flow</th>
<th>Without attachments</th>
<th>With full square nozzle</th>
<th>With guard grille for full nozzle</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;V&quot;</td>
<td>A6D 910-A601 -01</td>
<td>W6D 910-GA01 -01</td>
<td>S6D 910-CA01 -01</td>
</tr>
<tr>
<td>&quot;V&quot;</td>
<td>A8D 910-A803 -01</td>
<td>W8D 910-GD03 -01</td>
<td>S8D 910-CD03 -01</td>
</tr>
<tr>
<td>&quot;V&quot;</td>
<td>AZD 910-AZ03 -01</td>
<td>WZD 910-GG03 -01</td>
<td>SZD 910-CG03 -01</td>
</tr>
</tbody>
</table>

**Direction of air flow "A" on request**

### Air performance measured as per ISO 5801
- Installation category A
- ebm-papst full nozzle and without protection against accidental contact

### Suction-side noise levels
- $L_{wA}$ as per ISO 13347
- $L_{wA}$ measured at 1 m distance to fan axis

The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

With any deviation from the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 36 ff.
AC axial fans - HyBlade®
Ø 910 with motor M*D 138, drawings for direction of air flow "V"

**Without attachments**

<table>
<thead>
<tr>
<th>Type</th>
<th>Mass [kg]</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>A6D 910-0A01</td>
<td>26.9</td>
<td>297.0</td>
</tr>
<tr>
<td>B8D 910-0A03</td>
<td>23.7</td>
<td>277.0</td>
</tr>
<tr>
<td>AZD 910-0A03</td>
<td>19.6</td>
<td>252.0</td>
</tr>
</tbody>
</table>

Internal diameter of the wall ring at least 913 mm

**With full square nozzle**

<table>
<thead>
<tr>
<th>Type</th>
<th>Mass [kg]</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>W6D 910-GA01</td>
<td>31.6</td>
<td>199.0</td>
</tr>
<tr>
<td>W6D 910-GD03</td>
<td>48.4</td>
<td>---</td>
</tr>
<tr>
<td>WZD 910-GG03</td>
<td>44.5</td>
<td>---</td>
</tr>
</tbody>
</table>

**With guard grille for full nozzle**

<table>
<thead>
<tr>
<th>Type</th>
<th>Mass [kg]</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>S6D 910-CA01</td>
<td>34.9</td>
<td>209.0</td>
</tr>
<tr>
<td>S8D 910-CD03</td>
<td>31.6</td>
<td>189.0</td>
</tr>
<tr>
<td>SZD 910-CG03</td>
<td>27.8</td>
<td>164.0</td>
</tr>
</tbody>
</table>

Internal diameter of the wall ring at least 913 mm

---

Cable gland

Depth of screw max. 18 mm

View X

Internal diameter of the wall ring at least 913 mm
Electrical connections AC

**Fans (1~ 230 VAC power line)**

- **A2b) Single-phase capacitor motor**
  - with connection for external TOP
  - U₁ = blue
  - U₂ = black
  - Z = brown
  - = green/yellow

**Fans, 2 speeds via Δ/Y-switch (3~ 400 VAC power line)**

- **F1b) Delta connection (high speed)**
  - with TOP
  - U₁ = black
  - U₂ = green
  - V₁ = blue
  - V₂ = white
  - W₁ = brown
  - W₂ = yellow
  - = green/yellow

- **F2b) Star connection (low speed)**
  - with TOP
  - U₁ = black
  - U₂ = green
  - V₁ = blue
  - V₂ = white
  - W₁ = brown
  - W₂ = yellow
  - = green/yellow

Direction of rotation is reversed by swapping two line phases.
Technical parameters & 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.

Type 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.

Mounting 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 products depends on two major factors:

– The service life of the insulation system
– 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. As an option, sleeve bearings can be used, which is indicated on the product-specific data sheet wherever applicable.

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.

Depending on motor type and field of application, the following protective features are realised:

– Thermal overload protection (TOP), either in-circuit or external
– PTC with electronic diagnostics
– Impedance protection
– Thermal overload protection (TOP) with electronic diagnostics
– Current limitation via electronics

If an external TOP is connected, the customer has to make sure to connect a conventional trigger device for switching it off.

Products without fitted TOP and without protection against improper use, a motor protection complying with the valid standards has to be installed.
Legal and normative directives
The products described in this catalogue are designed, developed and produced in keeping with the standards in place for the relevant 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 established on the final appliance, as different mounting situations can result in changed EMC properties.

Leakage current
Information on the leakage current is provided in the product-specific data sheets. Measuring is according to IEC 60990.

Approvals
In case you require a specific approval for your ebm-papst product (VDE, UL, GOST, CCC, CSA, 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-specific 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 1.2 kg/m³.

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.

Vibration test
Vibration tests are carried out in compliance with
- Vibration test in operation according to DIN IEC 68, parts 2-6
- Vibration test at standstill according to DIN IEC 68, parts 2-6

Shock load
Shock load tests are carried out in compliance with
- Shock load according to DIN IEC 68, parts 2-27

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:
Ventilation, air-conditioning and refrigeration technology, clean room technology, automotive and rail technology, medical and laboratory technology, electronics, computer and office technology, telecommunications, household appliances, heating, machines and plants, drive engineering.
Our products are not designed for use in the aviation and aerospace industry!

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.

Vibration test
Vibration tests are carried out in compliance with
- Vibration test in operation according to DIN IEC 68, parts 2-6
- Vibration test at standstill according to DIN IEC 68, parts 2-6

Shock load
Shock load tests are carried out in compliance with
- Shock load according to DIN IEC 68, parts 2-27

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:
Ventilation, air-conditioning and refrigeration technology, clean room technology, automotive and rail technology, medical and laboratory technology, electronics, computer and office technology, telecommunications, household appliances, heating, machines and plants, drive engineering.
Our products are not designed for use in the aviation and aerospace industry!
Measurement conditions for air and noise measurement

ebm-papst products are measured under the following conditions:

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

Noise measurements

All noise measurements are carried out in low-reflective test rooms with reverberant floor. Thus the ebm-papst acoustic test chambers meet the requirements of precision class 1 according to DIN EN ISO 3745. For noise measurement, the fans being tested are placed in a reverberant wall and operated at nominal voltage (for AC, also at nominal frequency) without additional attachments such as the guard grille.

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 level (L_w), 10 microphones are distributed over an enveloping surface on the intake side of the fan being tested (see graphic). The sound level measured can be roughly calculated from the sound pressure level by adding 7 dB.

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

- 10 measuring points
- \( d \geq D \)
- \( h = 1,5d \ldots 4,5d \)
- Measurement area \( S = 6d^2 + 7d(h + 1,5d) \)
Adding multiple noise sources with the same level
Adding 2 noise sources with the same volume 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).

Adding two noise sources with different levels
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).
ebm-papst representatives & subsidiaries

Germany

ebm-papst
Mulfingen GmbH & Co. KG
Bachmühle 2
D-74673 Mulfingen
Phone +49 7938 81-0
Fax +49 7938 81-110
info1@de.ebmpapst.com
www.ebmpapst.com

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

Koblenz
Winfried Schaefer
Hinter der Kirch 10
D-56767 Uersfeld
Phone +49 2657 16-96
Fax +49 2657 16-76
Winfried.Schaefer@de.ebmpapst.com

Munich
Dipl.-Wirt.-Ing. (FH) Jens Peter
Uhlandstraße 6
D-74427 Fichtenberg
Phone +49 7971 260-180
Fax +49 7971 260-221
Jens.Peter@de.ebmpapst.com

Nuremberg
Friedrich Klein
Adlerstraße 49/1
D-73540 Heubach
Phone +49 7173 4983
Fax +49 7173 8053
Friedrich.Klein@de.ebmpapst.com

Offenburg
Dipl.-Ing. (FH) Ralf Braun
Hubenbeck 21
D-77704 Überkirch
Phone +49 7802 9822-52
Fax +49 7802 9822-53
Ralf.Braun@de.ebmpapst.com

Stuttgart
Dipl.-Ing. (FH) Rudi Weinmann
Hindenburgstraße 100/1
D-70430 Plochingen
Phone +49 7153 9289-80
Fax +49 7153 9289-81
Rudi.Weinmann@de.ebmpapst.com

Ulm
Dipl.-Wirt.-Ing. (FH) Axel Resch
Bachmühle 2
D-74673 Mulfingen
Phone +49 7938 81-7092
Fax +49 7938 81-110
Axel.Resch@de.ebmpapst.com

Distributors

Frankfurt
R.E.D. Handelsgesellschaft mbH
Gutenbergrstraße 3
D-63110 Rodgau - Jügesheim
Phone +49 6106 841-0
Fax +49 6106 841-111
info@red-elektromechanik.de
www.red-elektromechanik.de

Hamburg
Breuell + Hilgenfeldt GmbH
Grützmühlenweg 40
D-22339 Hamburg
Phone +49 40 538092-20
Fax +49 40 538092-84
info@breuell-hilgenfeldt.de

Munich
A. Schweiger GmbH
Ohmstraße 1
D-82054 Sauerlach
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
Breuell + Hilgenfeldt GmbH
Grützmühlenweg 40
D-22339 Hamburg
Phone +49 40 538092-20
Fax +49 40 538092-84
ebmpapst@breuell-hilgenfeldt.de

South
HDS Ventilatoren Vertriebs GmbH
Glaswiesenstraße 1
D-74677 Dörzbach
Phone +49 7938 813520
Fax +49 7938 803525
info@hds-gmbh.net

Agencies

Berlin
Dipl.-Ing. (TH) Jens Duchow
Händelstraße 7
D-16341 Panketal
Phone +49 30 944149-62
Fax +49 30 944149-63
Jens.Duchow@de.ebmpapst.com

Bielefeld
Dipl.-Ing. (FH) Wolf-Jürgen Weber
Niehausweg 13
D-33739 Bielefeld
Phone +49 5206 91324-31
Fax +49 5206 91324-35
Wolf-Juergen.Weber@de.ebmpapst.com

Dortmund
Dipl.-Ing. (FH) Hans-Joachim Pundt
Auf den Steinen 3
D-59019 Münster-Völlinghausen
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
D-63452 Hanau
Phone +49 6181 1898-12
Fax +49 6181 1898-13
Christian.Kleffmann@de.ebmpapst.com

Halle
Dipl.-Ing. (TU) Michael Hanning
Lerchenweg 4
D-06120 Lestkau
Phone +49 345 55124-56
Fax +49 345 55124-57
Michael.Hanning@de.ebmpapst.com

Hamburg
Ingenieurbüro Breuell GmbH
Ing. Dirk Kahl
Elektroingenieur
Grützmühlenweg 40
D-22339 Hamburg
Phone +49 40 538092-19
Fax +49 40 538092-84
Dirk.Kahl@de.ebmpapst.com

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

Koblenz
Winfried Schaefer
Hinter der Kirch 10
D-56767 Uersfeld
Phone +49 2657 16-96
Fax +49 2657 16-76
Winfried.Schaefer@de.ebmpapst.com

Munich
Dipl.-Wirt.-Ing. (FH) Jens Peter
Uhlandstraße 6
D-74427 Fichtenberg
Phone +49 7971 260-180
Fax +49 7971 260-221
Jens.Peter@de.ebmpapst.com

Nuremberg
Friedrich Klein
Adlerstraße 49/1
D-73540 Heubach
Phone +49 7173 4983
Fax +49 7173 8053
Friedrich.Klein@de.ebmpapst.com

Offenburg
Dipl.-Ing. (FH) Ralf Braun
Hubenbeck 21
D-77704 Überkirch
Phone +49 7802 9822-52
Fax +49 7802 9822-53
Ralf.Braun@de.ebmpapst.com

Stuttgart
Dipl.-Ing. (FH) Rudi Weinmann
Hindenburgstraße 100/1
D-70430 Plochingen
Phone +49 7153 9289-80
Fax +49 7153 9289-81
Rudi.Weinmann@de.ebmpapst.com

Ulm
Dipl.-Wirt.-Ing. (FH) Axel Resch
Bachmühle 2
D-74673 Mulfingen
Phone +49 7938 81-7092
Fax +49 7938 81-110
Axel.Resch@de.ebmpapst.com

North
Breuell + Hilgenfeldt GmbH
Grützmühlenweg 40
D-22339 Hamburg
Phone +49 40 538092-20
Fax +49 40 538092-84
ebmpapst@breuell-hilgenfeldt.de

South
HDS Ventilatoren Vertriebs GmbH
Glaswiesenstraße 1
D-74677 Dörzbach
Phone +49 7938 813520
Fax +49 7938 803525
info@hds-gmbh.net
ebm-papst representatives & subsidiaries

Netherlands
ebm-papst Benelux B.V.
Engelseweg 127
NL-5705 AC Helmond
Phone +31 492 502-900
Fax +31 492 502-950
verkoop@nl.ebmpapst.com
www.ebmpapst.nl

Norway
ebm-papst AS
P.B. 173 Holmilna
N-1203 Oslo
Phone +47 22 763340
Fax +47 22 619173
mailbox@ebmpapst.no
www.ebmpapst.no

Poland
ebm-papst Polska Sp. z o.o.
ul. Annopol 4A
PL-03236 Warszawa
Phone +48 22 6769667
office@ebmpapst.pl
www.ebmpapst.pl

Portugal
ebm-papst (Portugal), Lda.
Av. Marechal Gomes da Costa, 35 e
Rua Conselheiro Emidio Navarro
P-1800-255 Lisboa
Phone +351 218 394-880
Fax +351 218 394-759
info@pt.ebmpapst.com
www.ebmpapst.pt

Romania
ebm-papst Romania S.R.L.
Str. Timișoarei Nr. 20
RO-500327 Brașov
Phone +40 268 312-805
Fax +40 268 312-805
dudasludovic@hnet.ro

Russia
ebm-papst Ural GmbH
Posadskaja-Strasse, 23B, 3
RU-620102 Ekaterinburg
Phone +7 343 2338000
Fax +7 343 2337788
Konstantin.Molokov@ru.ebmpapst.com
www.ebmpapst.ur.ru

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

Turkey
Atatürk Organize Sanayi
Bölgesi 10007 SK. No.:6
TR-35620 Cigli-Izmir
Phone +90 232 3282090
Fax +93 232 3282070
akantel@akantel.com.tr
www.ebmpapst.com.tr

Ukraine
ebm-papst Ukraine LLC
Lepse Boulevard, 4, Building 47
UA-03067 Kiev
Phone +38 044 2063091
Fax +38 044 2063091
mail@ebmpapst.ua
www.ebmpapst.ua

United Kingdom
ebm-papst UK Ltd.
Chelmsford Business Park
GB-Chelmsford Essex CM2 5EZ
Phone +44 1625 2811-11
Fax +44 1625 2811-81
A&Disales@uk.ebmpapst.com
www.ebmpapst-uk.com
America

Argentina
- ebm-papst de Argentina S.A.
  - Hernandarias 148, Lomas del Mirador
  - Pcia. de Buenos Aires (1752)
  - Phone +54 11 46576135
  - Fax +54 11 46572092
  - ventas@ar.ebmpapst.com
  - www.ebmpapst.com.ar

Brasil
- ebm-papst Motores Ventiladores Ltda.
  - Av. José Gorgi, 301, Galpões B6+B7
  - Condoinio Logical Center
  - BR-06707-100 Cotia - São Paulo
  - Phone +55 11 4613-8700
  - Fax +55 11 3164-8924
  - vendas@br.ebmpapst.com
  - www.ebmpapst.com.br

Canada
- ebm-papst Canada Inc.
  - 1800 Ironstone Manor, Unit 2
  - CDN-Pickering, Ontario, L1W3J9
  - Phone +1 905 420-3533
  - Fax +1 905 420-3772
  - sales@ca.ebmpapst.com
  - www.ebmpapst.com.br

Mexico
- ebm Industrial S.de R.L. de C.V.
  - Paseo de Tamarindos 400-A-5º Piso
  - Col. Bosques de las Lomas
  - MEX-Mexico 05120, D.F.
  - Phone +52 55 3300-5144
  - Fax +52 55 3300-5243
  - sales@mx.ebmpapst.com
  - www.ebmpapst.com.mx

USA
- ebm-papst Inc.
  - P.O. Box 4009
  - 100 Hyde Road
  - USA-Farmington, CT 06034
  - Phone +1 860 674-1515
  - Fax +1 860 674-8536
  - sales@us.ebmpapst.com
  - www.ebmpapst.com

- ebm-papst Automotive & Drives, Inc.
  - 3200 Greenfield, Suite 255
  - USA-Dearborn, MI 48120
  - Phone +1 313 406-8080
  - Fax +1 313 406-8081
  - automotive@us.ebmpapst.com
  - www.ebmpapst-automotive.us

Africa

South Africa
- ebm-papst South Africa (Pty) Ltd.
  - P.O. Box 3124
  - 1119 Yacht Avenue
  - ZA-2040 Honeydew
  - Phone +27 11 794-3434
  - Fax +27 11 794-5020
  - info@za.ebmpapst.com
  - www.ebmpapst.co.za