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

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

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

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

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

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

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

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

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

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

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

Technical information
### Centrifugal fans for AC operation

#### Overview of air performance

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Series</th>
<th>Air flow</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>121 x 37</td>
<td>RL 90</td>
<td>40...42</td>
<td>234</td>
</tr>
<tr>
<td>135 x 38</td>
<td>RG 90</td>
<td>47...54</td>
<td>235</td>
</tr>
<tr>
<td>180 x 40</td>
<td>RG 125</td>
<td>86...94</td>
<td>236</td>
</tr>
<tr>
<td>220 x 56</td>
<td>RG 160</td>
<td>202...223</td>
<td>237</td>
</tr>
<tr>
<td>Ø 138 x 40</td>
<td>RER 125</td>
<td>104...115</td>
<td>238</td>
</tr>
<tr>
<td>Ø 176 x 54</td>
<td>RER 160</td>
<td>234...274</td>
<td>239</td>
</tr>
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</table>

Subject to change

#### Overview of technically feasible designs

<table>
<thead>
<tr>
<th>Centrifugal fans</th>
<th>OPTIONAL</th>
<th>P.</th>
</tr>
</thead>
<tbody>
<tr>
<td>121 x 37 RL 90</td>
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<td>234</td>
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<tr>
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<td>180 x 40 RG 125</td>
<td>yes</td>
<td>236</td>
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<tr>
<td>220 x 56 RG 160</td>
<td>yes</td>
<td>237</td>
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<tr>
<td>Ø 138 x 40 RER 125</td>
<td>yes</td>
<td>238</td>
</tr>
<tr>
<td>Ø 176 x 54 RER 160</td>
<td>yes</td>
<td>239</td>
</tr>
</tbody>
</table>

Subject to change

- available
- not yet available
- Sleeve bearings
- Ball bearings
Air performance measured according to:
ISO 5801.
Installation category A, without contact protection.

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

The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions, described measurement set-up and may vary depending on the installation situation.

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

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

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

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

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

**Highlights:**
Forward-curved impeller

**Weight:**
680 g

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

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**Series RL 90**

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VAC</th>
<th>Hz</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours at 40 °C</th>
<th>Hours at T(_{max})</th>
<th>Curve</th>
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</thead>
<tbody>
<tr>
<td>RL 90-18/50</td>
<td>40</td>
<td>23.5</td>
<td>230</td>
<td>50</td>
<td>5.6</td>
<td>20.0</td>
<td>2 450</td>
<td>-10...+50</td>
<td>37 500 / 30 000</td>
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</tr>
<tr>
<td>RL 90-18/56</td>
<td>40</td>
<td>23.5</td>
<td>230</td>
<td>50</td>
<td>5.6</td>
<td>20.0</td>
<td>2 450</td>
<td>-30...+70</td>
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<td>RL 90-18/00</td>
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<td>24.7</td>
<td>115</td>
<td>60</td>
<td>6.0</td>
<td>19.5</td>
<td>2 550</td>
<td>-10...+60</td>
<td>37 500 / 25 000</td>
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<tr>
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<td>24.7</td>
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<td>60</td>
<td>6.0</td>
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Subject to change

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**Fan type**

<table>
<thead>
<tr>
<th>Type</th>
<th>Connection wires</th>
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<tbody>
<tr>
<td>RL 90-18/50</td>
<td>AWG 18, TR 32</td>
</tr>
<tr>
<td>RL 90-18/56</td>
<td>AWG 18, TR 32</td>
</tr>
<tr>
<td>RL 90-18/00</td>
<td>AWG 22</td>
</tr>
<tr>
<td>RL 90-18/06</td>
<td>AWG 22</td>
</tr>
</tbody>
</table>

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**Nominal voltage**

AC centrifugal fans

**Frequency**

Sintec sleeve bearings
Ball bearings

**Power consumption**

**Nominal speed**

**Temperature range**

Service life \( L_{10} \)

**Connection wires**

- AWG 18, TR 32
- AWG 22

---

\(^1\) Fiberglass-reinforced plastic
Max. 54 m³/h

AC centrifugal fans

- Material: Scroll housing: GRP\(^{1}\) (PBT)
  Impeller: GRP\(^{1}\) (PA)
  Housing base: Sheet steel
- Direction of air flow: Centrifugal: discharge through window in housing
- Direction of rotation: Clockwise looked towards rotor
- Connection: To 2 single wires AWG 22.
- Highlights: Forward-curved impeller
- Weight: 560 g

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

Series RG 90

<table>
<thead>
<tr>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VAC</th>
<th>Hz</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
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<tbody>
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<td>54</td>
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<td>230</td>
<td>50</td>
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<td>22.0</td>
<td>2 200</td>
<td>-30...+60</td>
<td>35 000 / 22 500</td>
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<tr>
<td>RG 90-18/56</td>
<td>54</td>
<td>32</td>
<td>230</td>
<td>50</td>
<td>5.8</td>
<td>22.0</td>
<td>2 200</td>
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<td>35 000 / 22 500</td>
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<td>60</td>
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<td>22.0</td>
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<td>35 000 / 20 000</td>
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</table>

Subject to change

Air performance measured according to ISO 5801. Installation category A, without contact protection.
Noise: Total sound power level \(L_{WA}\) ISO 10300 measured on a hemisphere with a radius of 2 m.
Sound pressure level \(L_{PA}\) measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see http://www.ebmpapst.com/general conditions

1) Fiberglass-reinforced plastic.
Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level $L_{WA}$ ISO 10300 measured on a hemisphere with a radius of 2 m.
Sound pressure level $L_{pA}$ measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation.
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For detailed information see http://www.ebmpapst.com/general conditions

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

Subject to change

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

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

Direction of rotation:
Clockwise, looking towards rotor

Connection:
To 2 single wires AWG 22.

Highlights:
Backward-curved impeller

Weight:
850 g

1) Fiberglass-reinforced plastic
AC centrifugal fans

☐ 220 x 56 mm

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

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

- Direction of rotation: Counterclockwise, looking towards rotor

- Connection: To 2 single wires AWG 18.

- Highlights: Backward-curved impeller

- Weight: 1.7 kg

Series RG 160

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>Type</th>
<th>m³/h</th>
<th>cfm</th>
<th>VAC</th>
<th>Hz</th>
<th>Bel(A)</th>
<th>Watts</th>
<th>rpm</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Air flow</td>
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<tr>
<td>Sound power level</td>
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<tr>
<td>Ball bearings</td>
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<tr>
<td>Power consumption</td>
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</tr>
</tbody>
</table>

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

Subject to change

1) Fiberglass-reinforced plastic

Air performance measured according to ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level LWA ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level LpA measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see http://www.ebmpapst.com/general conditions

Finger guards from p. 242
### AC centrifugal fans

Ø 138 x 40 mm

- **Material:** Scroll housing: GRP\(^1\) (PBT)
  Impeller: GRP\(^1\) (PA)
  with sheet steel reinforced
- **Direction of air flow:** centrifugal
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** To 2 single wires AWG 22.
- **Highlights:** Backward-curved impeller
- **Weight:** 500 g

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

### Series RER 125

<table>
<thead>
<tr>
<th>Type</th>
<th>Type</th>
<th>Mm 3/h</th>
<th>Cm 3/h</th>
<th>VAC</th>
<th>Hz</th>
<th>Bel(A) Watts</th>
<th>Rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RER 125-19/56</td>
<td>104</td>
<td>61</td>
<td>230</td>
<td>50</td>
<td>6.2</td>
<td>19.0</td>
<td>2 600</td>
<td>-30, +60</td>
<td>37 500 / 22 500</td>
<td></td>
</tr>
<tr>
<td>RER 125-19/06</td>
<td>115</td>
<td>68</td>
<td>115</td>
<td>60</td>
<td>6.5</td>
<td>18.0</td>
<td>2 850</td>
<td>-30, +70</td>
<td>40 000 / 20 000</td>
<td></td>
</tr>
</tbody>
</table>

Subject to change

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

**Centrifugal fan mounted on a base plate**
- 220 x 220 mm.
- Cover plate 220 x 220 mm with an air inlet of Ø 86 mm, concentric to the impeller.

- **Nominal data**
  - **Nominal voltage**
  - **Frequency**
  - **Sound power level**
  - **Power consumption**
  - **Nominal speed**
  - **Temperature range**
  - **Service life L₁₀**
  - **at 40 °C**
  - Max. 115 m³/h

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

- **Centrifugal fan mounted on a base plate**
- 220 x 220 mm.
- Cover plate 220 x 220 mm with an air inlet of Ø 86 mm, concentric to the impeller.

**Nominal data**

<table>
<thead>
<tr>
<th>Type</th>
<th>Mm 3/h</th>
<th>Cm 3/h</th>
<th>VAC</th>
<th>Hz</th>
<th>Bel(A) Watts</th>
<th>Rpm⁻¹</th>
<th>°C</th>
<th>Hours</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RER 125-19/56</td>
<td>104</td>
<td>61</td>
<td>230</td>
<td>50</td>
<td>6.2</td>
<td>19.0</td>
<td>2 600</td>
<td>-30, +60</td>
<td>37 500 / 22 500</td>
</tr>
<tr>
<td>RER 125-19/06</td>
<td>115</td>
<td>68</td>
<td>115</td>
<td>60</td>
<td>6.5</td>
<td>18.0</td>
<td>2 850</td>
<td>-30, +70</td>
<td>40 000 / 20 000</td>
</tr>
</tbody>
</table>

Subject to change

1) Fiberglass-reinforced plastic.

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**Finger guards** from p. 242
**Inlet rings** from p. 252
### AC centrifugal fans

**Ø 176 x 54 mm**

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

\(^1\) Fiberglass-reinforced plastic

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**Series RER 160**

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

Subject to change

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

- Centrifugal fan mounted on a base plate 260 x 260 mm.
- Cover plate 260 x 260 mm with an air inlet of Ø 100 mm, concentric to the impeller.

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Air performance measured according to ISO 5801.
Installation category A, with ebm-papst inlet ring without contact protection.
Noise: Total sound power level LWA ISO 10360-2 measured on a hemisphere with a distance of 2 m.
Sound pressure level LpA measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see [http://www.ebmpapst.com/general conditions](http://www.ebmpapst.com/general conditions)