Fans and gear motors for solid fuel heating systems
Quiet and reliable output in compact design
version 2014-05
Traditionally, heating engineering has been focus of the ebm-papst performance spectrum. For decades, our innovative motor and fan technology has contributed to making modern heating engineering more powerful, economical and environmentally friendly. Because we have been part of the ever-expanding solid fuel heater market for more than 15 years, we can not only rely on special fans for wood pellet heaters and wood chip ovens, but can also integrate exceptional application skills and knowledge.

With fan technology specially developed for the requirements of wood pellet heaters and wood chip ovens, our goal is to provide the required air flow for all systems – whether their heating capacity is 5 kW or 200 kW, and for every conceivable operating state – and to do so quietly and economically. Even today, we offer a range of fan products tailored to the widely varying oven sizes in tried-and-tested AC & EC technology: fans for both intake and exhaust air.

We gladly take advantage of opportunities to integrate our application skills and knowledge, as well as our experience in high-temperature applications, into the development of new devices and systems at an early stage. One of the ways we help is to make our measurement laboratory available to our customers so that they can optimize specific application designs in the ovens. This guarantees the best possible fulfillment of the stringent requirements for temperature stability and noise with fan technology that is perfectly suited to the application.

**High performance in a small space**

The tight space of the ovens is another challenge we constantly strive to master. Every application should embody the ideal combination of size, output and cost-effectiveness. Our highly compact fan motors, with their external rotor design, offer the best possible conditions. The design differs from that of conventional electric motors – the stator is inside, the rotor outside. Thus the external rotor-motor and the fan form a unit that is not only compact and space-saving, but also durable and robust.
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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 co-operation 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 eco-friendly 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.
This supports our position as Germany’s most sustainable company 2013, as does the DEKRA Award 2012 we received in the category “Umwelt – Herausforderung Energiewende / Environment – Challenge: Transition to more sustainable energy systems”, to name only a few of a large number of examples. The environmental advantage gained in the performance of the products developed from our GreenTech philosophy can also be measured in the fulfillment 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 future-oriented EC technology from ebm-papst. 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 GreenTech EC technology does not (yet) make sense from an application viewpoint – feature the greatest possible connection of economy and ecology.
The entire product range from a single source

**Fans for intake air**
Used as primary or secondary intake air fans, ebm-papst AC & EC centrifugal blowers shine with their quiet and economical performance. The blowers can be equipped with an optional tach output for exact control according to the operating mode.

Of course, ebm-papst products always designed for an uncompromising level of stability and durability. For example, the scroll housing of the ebm-papst centrifugal blower is made of robust die-cast aluminium, and the impeller is made of hot-galvanized sheet steel.

**Fans for ambient air**
Fans for air circulation are sometimes employed in pellet stoves to ensure uniform distribution of the heated air throughout the room. Use is made of tangential blowers or forward-curved blowers for this purpose.

**Fans for exhaust air**
Exhaust air is carried away by ebm-papst induced draft blowers: single inlet AC centrifugal fans. With our extensive experience in high-temperature bearing technology and the aerodynamic skills and knowledge gained from being the market leader, we can meet the most stringent demands of this application area for service life, noise and cost-effectiveness.

The type of construction itself guarantees exceptional cooling performance – which is improved even further by the flow-optimized cooling blades that provide additional motor cooling. The impellers of our centrifugal fans are made of corrosion-resistant stainless steel.

**Gear motors**
A worm conveyor moves the pellets into the combustion chamber of the stove. Precise metering of the pellets is crucial to obtain the required heat output. This is achieved by using special gear motors from ebm-papst.
Solid fuel heater manufacturers can count on ebm-papst for complete solutions from a single source. Our product range for wood pellet heaters and wood chip ovens includes intake air fans and customized exhaust air fans for exhaust gas discharge.

Example for a central heating unit:
EC/AC centrifugal blowers (intake air)
EC centrifugal blowers (intake air)
for solid fuel heating systems, single inlet, Ø 108

- **Material:** Housing: Die-cast aluminium
  Impeller: Hot-dip galvanised sheet steel
  Rotor: Galvanised
  Electronics enclosure: Die-cast aluminium
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 44
- **Insulation class:** “B”
- **Mounting position:** Any
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

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### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>rpm</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
<th>kg</th>
<th>p. 95</th>
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<td>G3G 108-BB01</td>
<td>M3G 055-BD</td>
<td>1~230</td>
<td>50/60</td>
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subject to alterations

(1) Nominal data in operating point with maximum load and 230 VAC

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### Curves:

Air performance measured as per: ISO 5801, Installation category A, with ebm-papst scroll housing 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 100 ff.
- **Technical features:**
  - Tach output
  - Control input 0-10 VDC / PWM
  - Locked-rotor protection
  - Output 10 VDC max. 1.1 mA
- **EMC:** Interference emission acc. EN 61000-6-3
  - Interference immunity acc. EN 61000-6-1
  - Harmonics acc. EN 61000-3-2/3
- **Touch current:** < 3.5 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Cable exit:** Variable
- **Protection class:** I
- **Product conforming to standards:** EN 60335-1, CE
- **Approvals:** CCC, GOST; VDE, UL, CSA are applied for

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Electrical connection p. 95
**EC centrifugal blowers (intake air)**

for solid fuel heating systems, single inlet, Ø 120

- **Material**: Housing: Die-cast aluminium  
  Impeller: Hot-dip galvanised sheet steel  
  Rotor: Galvanised  
  Electronics enclosure: Die-cast aluminium

- **Direction of rotation**: Clockwise, seen on rotor
- **Type of protection**: IP 44
- **Insulation class**: “B”
- **Mounting position**: Any
- **Condensate discharges**: None
- **Mode of operation**: Continuous operation (S1)
- **Bearings**: Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
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<th>W</th>
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<td>G3G 120-BB03</td>
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<td>-25..+60</td>
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 Subject to alterations

(1) Nominal data in operating point with maximum load and 230 VAC

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**Curves:**

Air performance measured as per: ISO 5801, Installation category A, with ebm-papst scroll housing without protection against accidental contact. Suction-side noise levels: $L_{wA}$ as per ISO 13347, $L_{pA}$ 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 100 ff.
- **Technical features:**
  - Tach output
  - Control input 0-10 VDC / PWM
  - Output 10 VDC max. 1,1 mA

- **EMC:** Interference emission acc. EN 61000-6-3
  - Interference immunity acc. EN 61000-6-1
  - Harmonics acc. EN 61000-3-2/3

- **Touch current:** < 3,5 mA acc. to IEC 60990 (test circuit, illustration 4)

- **Cable exit:** Variable

- **Protection class:** I

- **Product conforming to standards:** EN 60335-1, CE

- **Approvals:** GOST; VDE, UL, CSA, CCC are applied for

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**Electrical connection details:**

- Dimensions:
  - Diameter: Ø132
  - Height: 82

- Screw size: M4

- Diagrams showing the electrical connections for the component are depicted on the next page.
EC centrifugal blowers (intake air)
for solid fuel heating systems, single inlet, Ø 140

- Material: Housing: Die-cast aluminium
  Impeller: Hot-dip galvanised sheet steel
  Rotor: Galvanised
  Electronics enclosure: Die-cast aluminium

- Direction of rotation: Clockwise, seen on rotor

- Type of protection: IP 44

- Insulation class: “B”

- Mounting position: Any

- Condensate discharges: None

- Mode of operation: Continuous operation (S1)

- Bearings: Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>rpm</th>
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<th>A</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
<th>kg</th>
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<td>G3G 140-AV03</td>
<td>M3G 055-CF</td>
<td>1–230</td>
<td>50/60</td>
<td>425</td>
<td>1800</td>
<td>66</td>
<td>0,50</td>
<td>63</td>
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<td>2,6</td>
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subject to alterations  
(1) Nominal data in operating point with maximum load and 230 VAC

### Curves:

Air performance measured as per ISO 5801, Installation category A, with ebm-papst scroll housing 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 100 ff.
- **Technical features:**
  - Tach output
  - Control input 0-10 VDC / PWM
  - Output 10 VDC max. 1.1 mA
  - Locked-rotor protection
- **EMC:** Interference emission acc. EN 61000-6-3
  - Interference immunity acc. EN 61000-6-1
  - Harmonics acc. EN 61000-3-2/3
- **Touch current:** < 3.5 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Cable exit:** Variable
- **Protection class:** I
- **Product conforming to standards:** EN 60335-1, CE
- **Approvals:** CCC, GOST; VDE, UL, CSA are applied for
EC centrifugal blowers (intake air)
for solid fuel heating systems, single inlet, Ø 160

- Material:
  - Housing: Die-cast aluminium
  - Impeller: Galvanised sheet steel
  - Rotor: Coated in black
  - Electronics enclosure: Die-cast aluminium

- Direction of rotation: Clockwise, seen on rotor

- Type of protection: IP 44

- Insulation class: “B”

- Mounting position:
  - Shaft horizontal or rotor on top, rotor on bottom on request
  - Condensate discharges: None

- Mode of operation: Continuous operation (S1)

- Bearings: Maintenance-free ball bearings

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**Nominal data**

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>rpm</th>
<th>W</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
<th>kg</th>
<th>p. 95</th>
</tr>
</thead>
<tbody>
<tr>
<td>G3G 160-AC50</td>
<td>M3G 074-CF</td>
<td>1–200–277</td>
<td>50/60</td>
<td>630</td>
<td>2150</td>
<td>170</td>
<td>1,25</td>
<td>72</td>
<td>0</td>
<td>-25..+60</td>
<td>3,5</td>
</tr>
</tbody>
</table>
- **Technical features:**
  - Output 10 VDC max. 1,1 mA
  - PFC (passive)
  - Control input 0-10 VDC / PWM
  - Tach output
  - Over-temperature protected electronics / motor
- **EMC:**
  - Interference emission acc. EN 61000-6-3
  - Interference immunity acc. EN 61000-6-1
  - Harmonics acc. EN 61000-3-2/3
- **Touch current:** < 3,5 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Cable exit:** Variable
- **Protection class:** I
- **Product conforming to standards:** EN 60335-1, EN 61800-5-1, EN 60950-1, CE
- **Approvals:** UL, CSA, CCC; GOST is applied for
AC centrifugal blowers (intake air)
for solid fuel heating systems, single inlet, Ø 108

- Material: Housing: Die-cast aluminium
  Impeller: Galvanised sheet steel
  Rotor: Partially cast in aluminium
- Direction of rotation: Clockwise, seen on rotor
- Type of protection: IP 44
- Insulation class: “B”
- Mounting position: Any
- Condensate discharges: None
- Mode of operation: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings

## Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>rpm</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
<th>kg</th>
<th>p.</th>
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<td>G2E 108-AG63 -01</td>
<td>M2E 052-BF</td>
<td>230</td>
<td>50</td>
<td>160</td>
<td>1850</td>
<td>30</td>
<td>0,14</td>
<td>1,0/400</td>
<td>56</td>
<td>0</td>
<td>-25..+85</td>
<td>1,3</td>
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</table>

subject to alterations

Air performance measured as per: ISO 5801, Installation category A, with ebm-papst scroll housing 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 100 ff.
- **Motor protection:** TOP wired internally
- **Touch current:** < 0.75 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Cable exit:** Variable
- **Protection class:** I
- **Product conforming to standards:** EN 60335-1, CE
- **Approvals:** CCC
AC centrifugal blowers (intake air)
for solid fuel heating systems, single inlet, Ø 120

- Material: Housing: Die-cast aluminium
  Impeller: Galvanised sheet steel
  Rotor: Partially cast in aluminium
- Direction of rotation: Clockwise, seen on rotor
- Type of protection: IP 44
- Insulation class: “B”
- Mounting position: Any
- Condensate discharges: None
- Mode of operation: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>rpm</th>
<th>W</th>
<th>A</th>
<th>pF/VDB</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
<th>kg</th>
<th>p. 98</th>
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<tbody>
<tr>
<td>G2E 120-AR77-01</td>
<td>M2E 068-BF</td>
<td>230</td>
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<td>255</td>
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<td>0</td>
<td>-25..+55</td>
<td>1,8</td>
<td>A1)</td>
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Air performance measured as per: ISO 5801, Installation category A, with ebm-papst scroll housing without protection against accidental contact. Suction-side noise levels: $L_{W}$ as per ISO 13347, $L_{A}$ 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 100 ff.
- Motor protection: TOP wired internally
- Touch current: < 0,75 mA acc. to IEC 60990 (test circuit, illustration 4)
- Optional: Speed monitoring via Hall IC
- Cable exit: Variable
- Protection class: I
- Product conforming to standards: EN 60335-1, CE
- Approvals: CCC; GOST is applied for
AC centrifugal blowers (intake air)
for solid fuel heating systems, single inlet, \( \varnothing \) 140

- **Material:** Housing: Die-cast aluminium
  Impeller: Galvanised sheet steel
  Rotor: Partially cast in aluminium
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 44
- **Insulation class:** “B”
- **Mounting position:** Any
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>( \text{m}^3/\text{h} )</th>
<th>rpm</th>
<th>W</th>
<th>A</th>
<th>( \mu \text{F/VDB} )</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
<th>kg</th>
<th>p. 98</th>
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<tr>
<td>G2E 140-AL40 -01</td>
<td>M2E 068-CF</td>
<td>1–230</td>
<td>50</td>
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<td>3.0</td>
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subject to alterations

### Curves:

- **n rpm**
- **\( P_{\text{ed}} \) W**
- **I A**
- **\( L_{\text{wA}} \) dB(A)**

- 2100
- 111
- 0.48
- 62

- 2350
- 98
- 0.43
- 62

Air performance measured as per: ISO 5801, Installation category A, with ebm-papst scroll housing without protection against accidental contact. Suction-side noise levels: \( L_{\text{wA}} \) as per ISO 13347, \( L_{\text{pA}} \) 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 100 ff.
- **Motor protection:** TOP wired internally
- **Touch current:** < 0.75 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Optional:** Speed monitoring via Hall IC
- **Cable exit:** Variable
- **Protection class:** I
- **Product conforming to standards:** EN 60335-1, CE
- **Approvals:** CCC; GOST is applied for
### AC centrifugal blowers (intake air)

for solid fuel heating systems, single inlet, Ø 160

- **Material:** Housing: Die-cast aluminium  
  Impeller: Galvanised sheet steel  
  Rotor: Partially cast in aluminium
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 44
- **Insulation class:** “B”
- **Mounting position:** Any
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

## Nominal Data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
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<th>A</th>
<th>μF/VDB</th>
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<th>Pa</th>
<th>°C</th>
<th>kg</th>
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<tr>
<td>G2E 160-AY50</td>
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<td>50</td>
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<td>4,2</td>
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subject to alterations

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**Curves:**

- **n (rpm)**
- **Pₑₑ (W)**
- **I (A)**
- **Lₑₑ dB(A)**

<table>
<thead>
<tr>
<th>n (rpm)</th>
<th>Pₑₑ (W)</th>
<th>I (A)</th>
<th>Lₑₑ dB(A)</th>
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<tbody>
<tr>
<td>2280</td>
<td>270</td>
<td>1,18</td>
<td>72</td>
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<td>2480</td>
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<td>0,98</td>
<td>70</td>
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<td>2620</td>
<td>192</td>
<td>0,83</td>
<td>68</td>
</tr>
<tr>
<td>2750</td>
<td>152</td>
<td>0,66</td>
<td>67</td>
</tr>
</tbody>
</table>

Air performance measured as per ISO 5801. Installation category A, with ebm-papst scroll housing without protection against accidental contact. Suction-side noise levels: L₁ₐ 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 100 ff.
- **Motor protection**: TOP wired internally
- **Touch current**: < 0.75 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Optional**: Speed monitoring via Hall IC
- **Cable exit**: Variable
- **Protection class**: I
- **Product conforming to standards**: EN 60335-1, CE
- **Approvals**: CCC is applied for
EC centrifugal blowers (ambient air)
for solid fuel heating systems, dual inlet, Ø 120

- **Material:** Housing: Galvanised sheet steel
  Impeller: Galvanised sheet steel
  Rotor: Uncoated
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54
- **Insulation class:** “B”
- **Mounting position:** Any
- **Condensate discharges:** None (open rotor)
- **Mode of operation:** Continuous operation (S1)
- **Design:** Motor anti-vibration mounted on both sides
- **Bearings:** Maintenance-free ball bearings

---

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>rpm</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
<th>kg</th>
<th>p.</th>
</tr>
</thead>
<tbody>
<tr>
<td>D3G 120-AA03</td>
<td>M3G 055-BI</td>
<td>1–230</td>
<td>1~230</td>
<td>50/60</td>
<td>505</td>
<td>1950</td>
<td>83</td>
<td>0,74</td>
<td>58</td>
<td>0</td>
<td>-25..+40</td>
<td>2,2</td>
</tr>
</tbody>
</table>

Subject to alterations

(1) Nominal data in operating point with maximum load and 230 VAC

---

### Curves:

- **n rpm:** 1950, 2465, 2870, 3245
- **Pₑₑₑ W:** 83, 82, 81, 66
- **I A:** 0.74, 0.70, 0.69, 0.57
- **Lₚₚₚ dB(A):** 58, 57, 59, 60

Air performance measured as per ISO 5801, Installation category A, with ebm-papst scroll housing without protection against accidental contact. Suction-side noise levels: Lₚₚₚ 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 100 ff.
- **Technical features:**
  - Control input 0-10 VDC / PWM
  - Output 10 VDC max. 1,1 mA
  - Over-temperature protected electronics / motor
  - Tach output
  - Locked-rotor protection
  - Line undervoltage detection
  - Soft start
- **Touch current:** < 3.5 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Cable exit:** Variable
- **Protection class:** I
- **Product conforming to standards:** EN 60335-1, CE
DC centrifugal blowers (ambient air)
for solid fuel heating systems, dual inlet, Ø 120

- Material: Housing: Galvanised sheet steel
  Impeller: Galvanised sheet steel
  Rotor: Coated in black
- Direction of rotation: Clockwise, seen on rotor
- Type of protection: IP 22, depending on installation and position
- Insulation class: "B"
- Mounting position: Any
- Condensate discharges: Rotor-side
- Mode of operation: Continuous operation (S1)
- Design: Motor anti-vibration mounted on both sides
- Bearings: Maintenance-free ball bearings

**Nominal data**

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VDC</th>
<th>VDC</th>
<th>m³/h</th>
<th>rpm</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
<th>kg</th>
<th>p.</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1G 120-AA27-01</td>
<td>M1G 055-CF</td>
<td>24</td>
<td>16-28</td>
<td>500</td>
<td>1830</td>
<td>61</td>
<td>3.00</td>
<td>56</td>
<td>0</td>
<td>-25..+45</td>
<td>2.2</td>
<td>J5</td>
</tr>
</tbody>
</table>

subject to alterations

**Curves:**

Air performance measured as per: ISO 5801, Installation category A, with ebm-papst scroll housing without protection against accidental contact. Suction-side noise levels: $L_{wa}$ as per ISO 13347, $L_{pa}$ 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 100 ff.
- **Technical features:**
  - Tach output
  - Control input 0-10 VDC / PWM
  - Motor current limitation
  - Soft start
  - Reverse polarity and locked-rotor protection
  - Line undervoltage detection
- **Cable exit:** Variable
- **Protection class:** I
- **Product conforming to standards:** EN 60335-1
AC centrifugal blowers (ambient air)
for solid fuel heating systems, dual inlet, Ø 120

- **Material:** Housing: Galvanised sheet steel
  Impeller: Galvanised sheet steel
  Rotor: Uncoated
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 44, depending on installation and position
- **Insulation class:** “F”
- **Mounting position:** Any
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Design:** Motor anti-vibration mounted on both sides
- **Bearings:** Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>rpm</th>
<th>W</th>
<th>A</th>
<th>pF/VDB</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
<th>kg</th>
<th>p. 98</th>
</tr>
</thead>
<tbody>
<tr>
<td>D2E 120-AA01-04</td>
<td>M2E 068-BF</td>
<td>230</td>
<td>50</td>
<td>375</td>
<td>1400</td>
<td>85</td>
<td>0,38</td>
<td>2,0/400</td>
<td>50</td>
<td>0</td>
<td>-25..+70</td>
<td>2,4</td>
<td>A1)</td>
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</table>

subject to alterations

### Curves:

Air performance measured as per ISO 5801, Installation category A, with ebm-papst scroll housing 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 100 ff.
- **Motor protection**: TOP wired internally
- **Touch current**: < 0.75 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Cable exit**: Variable
- **Protection class**: I (if customer has provided connection for protective earth)
- **Product conforming to standards**: EN 60335-1, CE
Tangential blowers (ambient air)

QLZ 06

- Impeller diameter: 60 mm
- Mounting position: horizontal or vertical with motor on bottom
- Permissible ambient temperature: 0 - 60 °C (up to 100°C on request)
- Insulation class: "H"

**Nominal data**

<table>
<thead>
<tr>
<th>Motor right*</th>
<th>Motor left</th>
<th>Voltage (VAC)</th>
<th>Frequency (Hz)</th>
<th>Air Flow (m³/h)</th>
<th>Max. Pressure Increase (Pa)</th>
<th>Input Power (W)</th>
<th>Current Draw (mA)</th>
<th>Speed/rpm</th>
<th>Mass (kg)</th>
<th>Curve</th>
<th>Dimensions (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>QLZ06/2400-3030</td>
<td>QLZ06/0024-3030</td>
<td>230</td>
<td>50</td>
<td>170</td>
<td>63</td>
<td>34</td>
<td>290</td>
<td>1700</td>
<td>1.40</td>
<td>A)</td>
<td>B) 324 62 243 253 212 93</td>
</tr>
<tr>
<td>QLZ06/3000-3038</td>
<td>QLZ06/0030-3038</td>
<td>230</td>
<td>50</td>
<td>230</td>
<td>60</td>
<td>45</td>
<td>350</td>
<td>1600</td>
<td>1.70</td>
<td>B)</td>
<td>395 72 303 313 272 123</td>
</tr>
</tbody>
</table>

* Corresponding to dimensional drawing; technical data are valid at free air flow and rated voltage.

**Curves:**

- qV vs. m³/h
- pfs vs. Pa

**Drawings:**

- Electr. connection
- Flat connector 6.3 x 0.8
- Dimensions (mm): a 56 3 x ø 2.4
Impeller diameter: 65 mm
Mounting position: horizontal or vertical with motor on bottom
Permissible ambient temperature: 0 - 60 °C (-40°C up to +100°C on request)
Insulation class: "H"

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>Dimensions (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor right*</td>
<td>Motor left</td>
</tr>
<tr>
<td>QLN65/2400-3030</td>
<td>QLN65/0024-3030</td>
</tr>
<tr>
<td>QLN65/3000-3038</td>
<td>QLN65/0030-3038</td>
</tr>
<tr>
<td>QLN65/3600-3038</td>
<td>QLN65/0036-3038</td>
</tr>
</tbody>
</table>

subject to alterations  * Corresponding to dimensional drawing. Technical data are valid at free air flow and rated voltage.

Curves:

Drawings:

Electr. connection p. 98
Tangential blowers (ambient air)
QLZ 06 with EC motor

- **Electronics:** integrated
- **Blower speed:** variable via PWM signal (interface 11, standard), optionally via 0-10 V analogue voltage signal (interface 26, on request)
- **Impeller diameter:** 60 mm
- **Mounting position:** horizontal or vertical with motor on bottom
- **Permissible ambient temperature:** 0 - 60 °C
- **Insulation class:** "F"
- **Type of protection:** IP 20

### Nominal data

<table>
<thead>
<tr>
<th>Model</th>
<th>Motor left</th>
<th>VDC</th>
<th>25 m³/h</th>
<th>50 m³/h</th>
<th>75 m³/h</th>
<th>100 m³/h</th>
<th>125 m³/h</th>
<th>150 m³/h</th>
<th>175 m³/h</th>
<th>200 m³/h</th>
<th>225 m³/h</th>
<th>250 m³/h</th>
</tr>
</thead>
<tbody>
<tr>
<td>QLZ06/2400-2212</td>
<td>QLZ06/0024-2212</td>
<td>24</td>
<td>220</td>
<td>80</td>
<td>17</td>
<td>1800</td>
<td>0,80</td>
<td>11)</td>
<td>327</td>
<td>64,5</td>
<td>243</td>
<td>253</td>
</tr>
<tr>
<td>QLZ06/3000-2212</td>
<td>QLZ06/0030-2212</td>
<td>24</td>
<td>280</td>
<td>80</td>
<td>19</td>
<td>1850</td>
<td>0,85</td>
<td>11)</td>
<td>387</td>
<td>64,5</td>
<td>303</td>
<td>313</td>
</tr>
</tbody>
</table>

subject to alterations * Corresponding to dimensional drawing; Technical data are valid at free air flow and rated voltage

### Curves:

![Curves](image)

### Drawings:

![Drawings](image)

- **Power supply +**
- **Hall sensor OUT**
- **GND**
- **PWM Input**
- **Power supply - (GND)**

Suitable for connector Molex Mini-Fit, Jr. (not part of delivery)
Connector: order number 39-01-4050
Female terminal: for example 39-00-0059
Tangential blowers (ambient air)
QLN 65 with EC Motor

- **Electronics:** integrated
- **Blower speed:** variable via PWM signal (interface 11, standard), optionally via 0-10 V analogue voltage signal (interface 26, on request)
- **Impeller diameter:** 65 mm
- **Mounting position:** horizontal or vertical with motor on bottom
- **Permissible ambient temperature:** 0 - 60 °C
- **Insulation class:** "F"
- **Type of protection:** IP 20

### Nominal data

<table>
<thead>
<tr>
<th>Motor right*</th>
<th>Motor left</th>
<th>VDC (V)</th>
<th>Air flow (m³/h)</th>
<th>Max. pressure increase (Pa)</th>
<th>Input power (W)</th>
<th>Speed (rpm)</th>
<th>Mass (kg)</th>
<th>Electr. connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>QLN65/2400-2212</td>
<td>QLN65/0024-2212</td>
<td>24</td>
<td>260</td>
<td>60</td>
<td>15</td>
<td>1600</td>
<td>0.85</td>
<td>11)</td>
</tr>
<tr>
<td>QLN65/3000-2212</td>
<td>QLN65/0030-2212</td>
<td>24</td>
<td>320</td>
<td>60</td>
<td>18</td>
<td>1600</td>
<td>0.90</td>
<td>11)</td>
</tr>
<tr>
<td>QLN65/3600-2212</td>
<td>QLN65/0036-2212</td>
<td>24</td>
<td>360</td>
<td>60</td>
<td>19</td>
<td>1600</td>
<td>0.95</td>
<td>11)</td>
</tr>
</tbody>
</table>

subject to alterations  
* Corresponding to dimensional drawing; Technical data are valid at free air flow and rated voltage

### Dimensions (mm)

<table>
<thead>
<tr>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>329</td>
<td>64.5</td>
<td>242</td>
<td>139</td>
<td>214</td>
<td>106</td>
</tr>
<tr>
<td>389</td>
<td>64.5</td>
<td>302</td>
<td>139</td>
<td>274</td>
<td>136</td>
</tr>
<tr>
<td>449</td>
<td>64.5</td>
<td>362</td>
<td>139</td>
<td>334</td>
<td>166</td>
</tr>
</tbody>
</table>

### Curves:

#### Drawings:

- Power supply +
- Hall sensor OUT
- GND
- PWM Input
- Power supply - (GND)

Suitable for connector Molex Mini-Fit, Jr. (not part of delivery)
Connector: order number 39-01-4050
Female terminal: for example 39-00-0059
EC/AC centrifugal fans (exhaust air)
EC centrifugal fans (exhaust air)
for solid fuel heating systems, single inlet, Ø 140

- Material: Impeller: Corrosion resistant sheet steel
- Direction of rotation: Clockwise, seen on impeller
- Type of protection: IP 44
- Insulation class: “B”
- Mounting position: Any
- Condensate discharges: None (open rotor)
- Mode of operation: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings
- Max. exhaust gas temperature: Continuous operation 250°C

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Air flow</th>
<th>Speed/rpm</th>
<th>Max. input power</th>
<th>Max. current draw</th>
<th>Sound pressure level</th>
<th>Perm. amb. temp.</th>
<th>Mass</th>
<th>Electric connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 140-AG03 -**</td>
<td>M3G 055-Al</td>
<td>1–200-240</td>
<td>50/60</td>
<td>220</td>
<td>2650</td>
<td>18</td>
<td>0,15</td>
<td>-25..+60</td>
<td>1,3</td>
<td></td>
<td>H4), C)</td>
</tr>
</tbody>
</table>

subject to alterations

---

Curves:

<table>
<thead>
<tr>
<th>n (rpm)</th>
<th>P_{in} (W)</th>
<th>I (A)</th>
<th>L_{PA} (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2650</td>
<td>18</td>
<td>0,15</td>
<td>---</td>
</tr>
<tr>
<td>2635</td>
<td>18</td>
<td>0,15</td>
<td>---</td>
</tr>
<tr>
<td>2660</td>
<td>18</td>
<td>0,14</td>
<td>---</td>
</tr>
<tr>
<td>2690</td>
<td>16</td>
<td>0,13</td>
<td>---</td>
</tr>
</tbody>
</table>

Air performance measured as per: ISO 5801, Installation category A, with measuring device without protection against accidental contact. Suction side noise levels: L_{PA}, as per ISO 13347, L_{PA} 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 100 ff.
- **Technical features:** See electrical connections p. 96
- **EMC:** Interference emission acc. EN 61000-6-3
  Interference immunity acc. EN 61000-6-2
  Harmonics acc. EN 61000-3-2/3
- **Touch current:** < 3.5 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Cable exit:** Variable
- **Protection class:** I (if customer has provided connection for protective earth)
- **Product conforming to standards:** EN 60335-1, CE
- **Approvals:** VDE, UL, CSA, CCC, GOST are applied for
- **Optional:** Additional shaft seal made from ceramic (see p. 94)

### Selection

<table>
<thead>
<tr>
<th>Type</th>
<th>Cable design</th>
<th>Plug design</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 140-AG03 -**</td>
<td>R3G 140-AG03 -01</td>
<td>R3G 140-AG03 -05</td>
<td>140</td>
<td>42</td>
<td>53.5</td>
<td>87</td>
<td>116</td>
</tr>
</tbody>
</table>

### Dimensions

- **Connection:**
  1 = N (blue)
  2 = PE (green/yellow)
  3 = L (black)
  4 = 0-10V/PWM (yellow)
  5 = GND (blue)
  6 = Tacho (white)

---

**Scroll dimension** p. 92
**Electrical connection** p. 96, 99
EC centrifugal fans (exhaust air)
for solid fuel heating systems, single inlet, Ø 150

- **Material:** Impeller: Corrosion resistant sheet steel
- **Direction of rotation:** Clockwise, seen on impeller
- **Type of protection:** IP 54
- **Insulation class:** “B”
- **Mounting position:** Any
- **Condensate discharges:** None (open rotor)
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Max. exhaust gas temperature:** Continuous operation 250°C

---

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>rpm</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>°C</th>
<th>kg</th>
<th>p. 96, 99</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 150-AA03</td>
<td>M3G 055-Al</td>
<td>1–200-240</td>
<td>50/60</td>
<td>145</td>
<td>2530</td>
<td>16</td>
<td>0,17</td>
<td>---</td>
<td>-25...+60</td>
<td>1,25</td>
<td>H4, C</td>
</tr>
<tr>
<td>R3G 150-AC01</td>
<td>M3G 055-BD</td>
<td>1–200-240</td>
<td>50/60</td>
<td>275</td>
<td>2770</td>
<td>30</td>
<td>0,30</td>
<td>---</td>
<td>-25...+60</td>
<td>1,45</td>
<td>H4, C</td>
</tr>
</tbody>
</table>

Subject to alterations

---

### Curves:

Air performance measured as per ISO 5801. Installation category A, without scroll housing, 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 100 ff.

---

### Subject to alterations
- **Technical features:** See electrical connections p. 96
- **EMC:** Interference emission acc. EN 61000-6-3
  Interference immunity acc. EN 61000-6-2
  Harmonics acc. EN 61000-3-2/3
- **Touch current:** < 3.5 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Cable exit:** Variable
- **Protection class:** I (if customer has provided connection for protective earth)
- **Product conforming to standards:** EN 60335-1, CE
- **Approvals:** VDE, UL, CSA, CCC, GOST are applied for
- **Optional:** Additional shaft seal made from ceramic (see p. 94)

<table>
<thead>
<tr>
<th>Selection</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Cable design</td>
</tr>
<tr>
<td>R3G 150-AA03 -**</td>
<td>R3G 150-AA03 -01</td>
</tr>
<tr>
<td>R3G 150-AC01 -**</td>
<td>R3G 150-AC01 -01</td>
</tr>
</tbody>
</table>

**Connection:**
1 = N (blue)
2 = PE (green/yellow)
3 = L (black)
4 = 0-10V/PWM (yellow)
5 = GND (blue)
6 = Tacho (white)
**DC centrifugal fans (exhaust air)**

for solid fuel heating systems, single inlet, Ø 150

- **Material:** Impeller: Corrosion resistant sheet steel
- **Direction of rotation:** Clockwise, seen on impeller
- **Type of protection:** IP 20
- **Insulation class:** “B”
- **Mounting position:** Any
- **Condensate discharge:** None (open rotor)
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Max. exhaust gas temperature:** Continuous operation 250°C

---

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Curve</th>
<th>Nominal voltage</th>
<th>Nominal voltage range</th>
<th>Air flow</th>
<th>Speed</th>
<th>Max. input power</th>
<th>Max. current draw</th>
<th>Sound pressure level</th>
<th>Min. back pressure</th>
<th>Perm. amb. temp.</th>
<th>Mass</th>
<th>Electric connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1G 150-6A63 -**</td>
<td>M1G 055-6D</td>
<td>①</td>
<td>24</td>
<td>16-28</td>
<td>290</td>
<td>3040</td>
<td>30</td>
<td>1,40</td>
<td>66</td>
<td>0</td>
<td>-25..+50</td>
<td>1,3</td>
<td>J6</td>
</tr>
<tr>
<td>①</td>
<td>24</td>
<td>16-28</td>
<td>180</td>
<td>3110</td>
<td>28</td>
<td>1,31</td>
<td>67</td>
<td>0</td>
<td>-25..+50</td>
<td>1,3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

subject to alterations

① measured without scroll housing
② measured with scroll housing

---

### Curves:

Air performance measured as per ISO 5801, Installation category A, 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 100 ff.
- **Technical features:**
  - Control input 0-10 VDC / PWM
  - Motor current limitation
  - Soft start
  - **Tach output**
  - Reverse polarity and locked-rotor protection
  - Line undervoltage detection

- **Cable exit:** Variable
- **Protection class:** I
- **Product conforming to standards:** EN 60335-1
- **Optional:** Additional shaft seal made from ceramic (see p. 94)

### Selection and Dimensions

<table>
<thead>
<tr>
<th>Type</th>
<th>Cable design</th>
<th>Plug design</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1G 150-AA63 -**</td>
<td>R1G 150-AA63 -01</td>
<td>R1G 150-AA63 -05</td>
<td>148</td>
<td>42</td>
<td>53,5</td>
<td>108</td>
<td>119</td>
</tr>
</tbody>
</table>

**Dimensions**

**Anschluss:**
1 = GND (blue)
2 = unlined
3 = UN +24 VDC (red)
4 = Tach (white)
5 = unlined
6 = 0-10 VDC (yellow)
EC centrifugal fans (exhaust air)
for solid fuel heating systems, single inlet, Ø 160

- Material: Impeller: Corrosion resistant sheet steel
- Direction of rotation: Clockwise, seen on impeller
- Type of protection: IP 54
- Insulation class: “B”
- Mounting position: Any
- Condensate discharges: None (open rotor)
- Mode of operation: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings
- Max. exhaust gas temperature: Continuous operation 250°C

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>rpm</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>°C</th>
<th>kg</th>
<th>p. 96, 99</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 160-AE01</td>
<td>M3G 055-BD</td>
<td>1~200-240</td>
<td>50/60</td>
<td>305</td>
<td>2600</td>
<td>40</td>
<td>0,33</td>
<td>66</td>
<td>-25..+60</td>
<td>1,55</td>
<td>H4), C)</td>
</tr>
</tbody>
</table>

subject to alterations

### Curves:

Air performance measured as per ISO 5801, Installation category A, with scroll housing 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 100 ff.
- **Technical features:** See electrical connections p. 96
- **EMC:** Interference emission acc. EN 61000-6-3
  - Interference immunity acc. EN 61000-6-2
  - Harmonics acc. EN 61000-3-2/3
- **Touch current:** < 3.5 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Cable exit:** Variable
- **Protection class:** I (if customer has provided connection for protective earth)
- **Product conforming to standards:** EN 60335-1, CE
- **Approvals:** VDE, UL, CSA, CCC, GOST are applied for
- **Optional:** Additional shaft seal made from ceramic (see p. 94)

### Table: Selection and Dimensions

<table>
<thead>
<tr>
<th>Type</th>
<th>Cable design</th>
<th>Plug design</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 160-AE01 -**</td>
<td>R3G 160-AE01 -01</td>
<td>R3G 160-AE01 -05</td>
<td>160</td>
<td>44</td>
<td>49,5</td>
<td>108</td>
<td>119</td>
</tr>
</tbody>
</table>

### Connection:

1 = N (blue)
2 = PE (green/yellow)
3 = L (black)
4 = 0-10V/PWM (yellow)
5 = GND (blue)
6 = Tacho (white)
EC centrifugal fans (exhaust air)  
for solid fuel heating systems, single inlet, Ø 180

- Material: Impeller: Corrosion resistant sheet steel  
- Direction of rotation: Clockwise, seen on impeller  
- Type of protection: IP 54  
- Insulation class: “B”  
- Mounting position: Any  
- Condensate discharges: None (open rotor)  
- Mode of operation: Continuous operation (S1)  
- Bearings: Maintenance-free ball bearings  
- Max. exhaust gas temperature: Continuous operation 250°C

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Curve</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Air flow m³/h</th>
<th>Speed rpm</th>
<th>Max. input power W</th>
<th>Max. current draw A</th>
<th>Sound pressure level dB(A)</th>
<th>Perm. amb. temp. °C</th>
<th>Mass kg</th>
<th>Electric connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 180-AH01</td>
<td>M3G 055-BD</td>
<td>1−200−240</td>
<td>50/60</td>
<td>295</td>
<td>2150</td>
<td>25</td>
<td>0,28</td>
<td>---</td>
<td>−25..+50</td>
<td>1,65</td>
<td></td>
<td>H4), C)</td>
</tr>
<tr>
<td>R3G 180-AJ11</td>
<td>M3G 055-CF</td>
<td>1−200−240</td>
<td>50/60</td>
<td>440</td>
<td>2660</td>
<td>60</td>
<td>0,55</td>
<td>---</td>
<td>−25..+50</td>
<td>1,90</td>
<td></td>
<td>subject to alterations</td>
</tr>
</tbody>
</table>

Subject to alterations

### Curves:

<table>
<thead>
<tr>
<th>n rpm</th>
<th>P_{ae} W</th>
<th>I A</th>
<th>L_{Pa} dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2150</td>
<td>25</td>
<td>0,28</td>
<td>---</td>
</tr>
<tr>
<td>2150</td>
<td>25</td>
<td>0,28</td>
<td>---</td>
</tr>
<tr>
<td>2220</td>
<td>23</td>
<td>0,26</td>
<td>---</td>
</tr>
<tr>
<td>2285</td>
<td>20</td>
<td>0,24</td>
<td>---</td>
</tr>
<tr>
<td>2660</td>
<td>60</td>
<td>0,55</td>
<td>---</td>
</tr>
<tr>
<td>2635</td>
<td>60</td>
<td>0,52</td>
<td>---</td>
</tr>
<tr>
<td>2685</td>
<td>59</td>
<td>0,50</td>
<td>---</td>
</tr>
<tr>
<td>2730</td>
<td>56</td>
<td>0,49</td>
<td>---</td>
</tr>
</tbody>
</table>

Air performance measured as per: ISO 5801, Installation category A, with measuring device without protection against accidental contact. Suction side noise levels: L_{wa}, as per ISO 13347, L_{Pa}, 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 100 ff.
**Technical features:** See electrical connections p. 96

**EMC:**
- Interference emission acc. EN 61000-6-3
- Interference immunity acc. EN 61000-6-2
- Harmonics acc. EN 61000-3-2/3

**Touch current:** < 3.5 mA acc. to IEC 60990 (test circuit, illustration 4)

**Cable exit:** Variable

**Protection class:** I (if customer has provided connection for protective earth)

**Product conforming to standards:** EN 60335-1, CE

**Approvals:** VDE, UL, CSA, CCC, GOST are applied for

**Optional:** Additional shaft seal made from ceramic (see p. 94)

---

### Selection

<table>
<thead>
<tr>
<th>Type</th>
<th>Cable design</th>
<th>Plug design</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 180-AH01 -**</td>
<td>R3G 180-AH01 -01</td>
<td>R3G 180-AH01 -05</td>
<td>a 180 b 26 c 44,5 d 108 e 119</td>
</tr>
<tr>
<td>R3G 180-AJ11 -**</td>
<td>R3G 180-AJ11 -01</td>
<td>R3G 180-AJ11 -05</td>
<td>a 180 b 45 c 54,5 d 108 e 119</td>
</tr>
</tbody>
</table>

---

### Dimensions

Connection:
1 = N (blue)
2 = PE (green/yellow)
3 = L (black)
4 = 0-10V/PWM (yellow)
5 = GND (blue)
6 = Tacho (white)
EC centrifugal fans (exhaust air)
for solid fuel heating systems, single inlet, Ø 210

- **Material**: Impeller: Corrosion resistant sheet steel
- **Direction of rotation**: Clockwise, seen on impeller
- **Type of protection**: IP 54
- **Insulation class**: “B”
- **Mounting position**: Any
- **Condensate discharges**: None (open rotor)
- **Mode of operation**: Continuous operation (S1)
- **Bearings**: Maintenance-free ball bearings

**Max. exhaust gas temperature**: Continuous operation 250°C

---

**Nominal data**

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>rpm</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>°C</th>
<th>kg</th>
<th>p. 95, 99</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 210-AA73 **</td>
<td>M3G 074-CF</td>
<td>1~200-240</td>
<td>50/60</td>
<td>495</td>
<td>3200</td>
<td>170</td>
<td>1,35</td>
<td>---</td>
<td>-25..+40</td>
<td>4,5</td>
<td>H1), C)</td>
</tr>
</tbody>
</table>

**subject to alterations**

---

**Curves:**

Air performance measured as per ISO 5801. Installation category A, with scroll housing 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 from the standard setup, the specific values have to be checked and reviewed once installed or fitted. For detailed information see page 100 ff. 

subject to alterations
- **Technical features:**
  - Output 10 VDC max. 1.1 mA
  - Tach output
  - Control input 0-10 VDC / PWM
  - Over-temperature protected electronics / motor
- **EMC:**
  - Interference emission acc. EN 61000-6-3
  - Interference immunity acc. EN 61000-6-2
  - Harmonics acc. EN 61000-3-2/3
- **Touch current:** < 3.5 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Cable exit:** Variable
- **Protection class:** I (if customer has provided connection for protective earth)
- **Product conforming to standards:** EN 60335-1, EN 61800-5-1, EN 60950-1, CE
- **Approvals:** UL, CSA, CCC, GOST are applied for
- **Optional:** Additional shaft seal made from ceramic (see p. 94)

### Selection

<table>
<thead>
<tr>
<th>Type</th>
<th>Cable design</th>
<th>Plug design</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 210-AA73 -**</td>
<td>R3G 210-AA73 -01</td>
<td>R3G 210-AA73 -05</td>
</tr>
</tbody>
</table>

### Connection:
1. N (blue)
2. PE (green/yellow)
3. L (black)
4. 0-10V/PWM (yellow)
5. GND (blue)
6. Tacho (white)
AC centrifugal fans (exhaust air)
for solid fuel heating systems, single inlet, Ø 152

- **Material:** Impeller: Corrosion resistant stainless steel
- **Direction of rotation:** Clockwise, seen on impeller
- **Type of protection:** IP 00
- **Insulation class:** “H”
- **Mounting position:** Shaft position horizontal or shaft position vertical (motor on top)
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Sleeve bearings / ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Curve</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Air flow</th>
<th>Speed/rpm</th>
<th>Max. max. power</th>
<th>Max. current draw</th>
<th>Sound pressure level</th>
<th>Perm. amb. temp.</th>
<th>Mass</th>
<th>kg</th>
<th>p. 98</th>
</tr>
</thead>
<tbody>
<tr>
<td>RR 152 - 3030 LH</td>
<td>EM 3030</td>
<td>① 230</td>
<td>50</td>
<td>235</td>
<td>2575</td>
<td>44</td>
<td>0,37</td>
<td>61</td>
<td>-25...+85</td>
<td>1,00</td>
<td></td>
<td></td>
<td>B)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>② 230</td>
<td>50</td>
<td>150</td>
<td>2600</td>
<td>44</td>
<td>0,37</td>
<td>62</td>
<td>-25...+85</td>
<td>1,00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

subject to alterations

Measured without ebm-papst scroll housing

Curves:

Air performance measured as per ISO 5801, Installation category A, 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 from the standard setup, the specific values have to be checked and reviewed once installed or fitted! For detailed information see page 100 ff.

---

n rpm | P_{pe} W | I A | L_{pA} dB(A)
① 2540 | 45 | --- | ---
② 2620 | 42 | --- | ---
③ 2640 | 42 | --- | ---
④ 2730 | 39 | --- | ---
- **Electrical connection**: via flat pin
- **Optional**: Hall IC connection, motor protection hood
- **Protection class**: I
- **Product conforming to standards**: EN 60335-1
- **Approvals**: VDE-compliant design, optionally
  UL-compliant design possible
AC centrifugal fans (exhaust air)
for solid fuel heating systems, single inlet, Ø 140

- **Material**: Impeller: Corrosion resistant sheet steel
- **Direction of rotation**: Clockwise, seen on impeller
- **Type of protection**: IP 44, depending on installation and position
- **Insulation class**: ”F”
- **Mounting position**: Any
- **Condensate discharges**: None
- **Mode of operation**: Continuous operation (S1)
- **Bearings**: Maintenance-free ball bearings
- **Max. exhaust gas temperature**: Continuous operation 250°C

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Nominal voltage VAC</th>
<th>Frequency Hz</th>
<th>Air flow m³/h</th>
<th>Speed rpm</th>
<th>Max. input power W</th>
<th>Max. current draw A</th>
<th>Capacitor μF/VDB</th>
<th>Sound pressure level dB(A)</th>
<th>Perm. amb. temp °C</th>
<th>Mass kg</th>
<th>Electric connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2E 140-CD76</td>
<td>M2E 068-BF</td>
<td>230 50 215</td>
<td>2650 28</td>
<td>0,14 0,68/400</td>
<td>---</td>
<td>-25...+60 1,6</td>
<td>A1), D)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

subject to alterations

### Curves:

Air performance measured as per ISO 5801, Installation category A, without scroll housing 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 100 ff.
- **Motor protection:** TOP wired internally
- **Touch current:** < 0.75 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Standard:** Speed monitoring via Hall IC
- **Optional:** also possible, without protection hood
- **Cable exit:** Variable
- **Protection class:** I (if customer has provided connection for protective earth)
- **Product conforming to standards:** EN 60335-1, CE
- **Approvals:** UL, CSA, CCC, GOST are applied for
- **Optional:** Additional shaft seal made from ceramic (see p. 94)

### Selection

<table>
<thead>
<tr>
<th>Type</th>
<th>Cable design</th>
<th>Plug design</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2E 140-CD76-**</td>
<td>R2E 140-CD76-01</td>
<td>R2E 140-CD76-05</td>
<td>140</td>
<td>42</td>
<td>53,5</td>
<td>87</td>
<td>116</td>
</tr>
</tbody>
</table>

### Connection:
1 = L (blue)
2 = PE (green/yellow)
3 = N (black)
4 = GND (black)
5 = OUT (white)
6 = VCC (red)

### Dimensions

- **Scroll dimension**
  - Refer p. 92
- **Electrical connection**
  - Refer p. 98, 99
AC centrifugal fans (exhaust air)
for solid fuel heating systems, single inlet, Ø 150

- Material: Impeller: Corrosion resistant sheet steel
- Direction of rotation: Clockwise, seen on impeller
- Type of protection: IP 44, depending on installation and position
- Insulation class: “F”
- Mounting position: Any
- Condensate discharges: None
- Mode of operation: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings
- Max. exhaust gas temperature: Continuous operation 250°C

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Curve</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Air flow</th>
<th>Speed/rpm</th>
<th>Max. input power</th>
<th>Max. current draw</th>
<th>Capacitor</th>
<th>Sound pressure level</th>
<th>Perm. amb. temp.</th>
<th>Mass</th>
<th>Electric connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2E 150-A91 -**</td>
<td>M2E 068-BF</td>
<td>1</td>
<td>230</td>
<td>50</td>
<td>200</td>
<td>2400</td>
<td>32</td>
<td>0,15</td>
<td>1,0/400</td>
<td>---</td>
<td>-25...+55</td>
<td>1,7</td>
<td>A1), D)</td>
</tr>
<tr>
<td>R2E 150-AN91 -**</td>
<td></td>
<td>1</td>
<td>230</td>
<td>50</td>
<td>200</td>
<td>2400</td>
<td>32</td>
<td>0,15</td>
<td>1,0/400</td>
<td>---</td>
<td>-25...+75</td>
<td>1,7</td>
<td></td>
</tr>
</tbody>
</table>

*subject to alterations*

### Curves:

Air performance measured as per ISO 5801, Installation category A, without scroll housing 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 100 ff.
Motor protection: TOP wired internally
Touch current: < 0.75 mA acc. to IEC 60990 (test circuit, illustration 4)
Standard: Speed monitoring via Hall IC
Cable exit: Variable
Protection class: I (if customer has provided connection for protective earth)
Product conforming to standards: EN 60335-1, CE
Approvals: UL, CSA, CCC, GOST are applied for
Optional: Additional shaft seal made from ceramic (see p. 94)
AC centrifugal fans (exhaust air)
for solid fuel heating systems, single inlet, Ø 150

- Material: Impeller: Corrosion resistant sheet steel
- Direction of rotation: Clockwise, seen on impeller
- Type of protection: IP 44, depending on installation and position
- Insulation class: “F”
- Mounting position: Any
- Condensate discharges: None
- Mode of operation: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings
- Max. exhaust gas temperature: Continuous operation 250°C

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Curves</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Air flow</th>
<th>Speed/rpm</th>
<th>Max. input power</th>
<th>Max. current draw</th>
<th>Capacitor</th>
<th>Sound pressure level</th>
<th>Perm. amb. temp.</th>
<th>Mass</th>
<th>Electric connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2E 150-AP82</td>
<td>M2E 068-CF</td>
<td>☀</td>
<td>230 VAC</td>
<td>50 Hz</td>
<td>220 m³/h</td>
<td>2750 rpm</td>
<td>44 W</td>
<td>0,27 A</td>
<td>1,0/400</td>
<td>---</td>
<td>-25...+40°C</td>
<td>1,8</td>
<td>A1), D)</td>
</tr>
<tr>
<td>R2E 150-AK82</td>
<td></td>
<td>☀</td>
<td>230 VAC</td>
<td>50 Hz</td>
<td>220 m³/h</td>
<td>2750 rpm</td>
<td>44 W</td>
<td>0,27 A</td>
<td>1,0/400</td>
<td>---</td>
<td>-25...+70°C</td>
<td>2,0</td>
<td></td>
</tr>
</tbody>
</table>

subject to alterations

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Air performance measured as per ISO 5801, Installation category A, without scroll housing 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 100 ff.
- **Motor protection:** TOP wired internally
- **Touch current:** < 0.75 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Standard:** Speed monitoring via Hall IC
- **Cable exit:** Variable
- **Protection class:** I (if customer has provided connection for protective earth)
- **Product conforming to standards:** EN 60335-1, CE
- **Approvals:** UL, CSA, CCC, GOST are applied for
- **Optional:** Additional shaft seal made from ceramic (see p. 94)

### Selection

<table>
<thead>
<tr>
<th>Type</th>
<th>without motor protection hood</th>
<th>Cable design</th>
<th>Plug design</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2E 150-AP82 -**</td>
<td>---</td>
<td>R2E 150-AP82 -01</td>
<td>R2E 150-AP82 -05</td>
<td>148</td>
<td>42</td>
<td>53,5</td>
<td>108</td>
<td>119</td>
</tr>
<tr>
<td>R2E 150-AK82 -**</td>
<td>R2E 150-AK82 -01</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

### Dimensions

Connection:
1. L (blue)
2. PE (green/yellow)
3. N (black)
4. GND (black)
5. OUT (white)
6. VCC (red)
AC centrifugal fans (exhaust air)
for solid fuel heating systems, special designs, Ø 150/160

- **Material:** Impeller: sheet steel
- **Direction of rotation:** Clockwise, seen on impeller
- **Type of protection:** IP 44
- **Insulation class:** “F”
- **Mounting position:** Any
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Max. exhaust gas temperature:** Continuous operation 250°C

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>Motor</th>
<th>Curve</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Air flow</th>
<th>Speed rpm</th>
<th>Max. input power</th>
<th>Max. current draw</th>
<th>Capacitor</th>
<th>Sound pressure level</th>
<th>Zul. Umgeb.temp.(1)</th>
<th>Mass</th>
<th>p.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>R2E 160-BG34 -**</td>
<td>M2E 068-DF</td>
<td>230 50 285</td>
<td>2730</td>
<td>0,28</td>
<td>1,5/400</td>
<td>64</td>
<td>-25...+90</td>
<td>3,8</td>
<td>A1, D)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>R2E 150-AL06 -**</td>
<td>M2E 074-DF</td>
<td>230 50 460</td>
<td>2720</td>
<td>0,50</td>
<td>3,0/400</td>
<td>67</td>
<td>-25...+85</td>
<td>4,0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

subject to alterations

Air performance measured as per ISO 5801. Installation category A, with scroll housing 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 100 ff.
- **Motor protection:** TOP wired internally
- **Touch current:** < 0.75 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Standard:** Speed monitoring via Hall IC
- **Cable exit:** Variable
- **Protection class:** I
- **Product conforming to standards:** EN 60335-1, CE
- **Approvals:** UL, CSA, CCC, GOST are applied for
- **Optional:** Additional shaft seal made from ceramic (see p. 94)

<table>
<thead>
<tr>
<th>Type</th>
<th>Selection</th>
<th>Dimensions</th>
<th>a</th>
<th>b</th>
<th>d</th>
<th>e</th>
<th>f</th>
<th>g</th>
<th>h</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2E 160-BG34 -**</td>
<td>R2E 160-BG34 -01</td>
<td>R2E 160-BG34 -05</td>
<td>50</td>
<td>40</td>
<td>160</td>
<td>103</td>
<td>83</td>
<td>132</td>
<td>109</td>
</tr>
<tr>
<td>R2E 150-AL06 -**</td>
<td>R2E 150-AL06 -01</td>
<td>R2E 150-AL06 -05</td>
<td>84</td>
<td>74</td>
<td>150</td>
<td>135</td>
<td>110</td>
<td>144</td>
<td>146</td>
</tr>
</tbody>
</table>
AC centrifugal fans (exhaust air)
for solid fuel heating systems, single inlet, Ø 160

- **Material:** Impeller: Corrosion resistant sheet steel
- **Direction of rotation:** Clockwise, seen on impeller
- **Type of protection:** IP 44
- **Insulation class:** "F"
- **Mounting position:** Any
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Max. exhaust gas temperature:** Continuous operation 250°C

---

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>rpm</th>
<th>W</th>
<th>A</th>
<th>μF/VDB</th>
<th>dB(A)</th>
<th>°C</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2E 160-BL32</td>
<td>M2E 068-CF</td>
<td>230</td>
<td>50</td>
<td>310</td>
<td>2700</td>
<td>---</td>
<td>---</td>
<td>1,0/400</td>
<td>---</td>
<td>-25..+45</td>
<td>1,8</td>
</tr>
</tbody>
</table>

(subject to alterations)

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### Curves:

Curves subject to alterations

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Air performance measured as per ISO 5801, Installation category A, without scroll housing 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 100 ff.
- **Motor protection:** TOP wired internally
- **Touch current:** < 0.75 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Standard:** Speed monitoring via Hall IC
- **Optional:** also possible, without protection hood
- **Cable exit:** Variable
- **Protection class:** I
- **Product conforming to standards:** EN 60335-1, CE
- **Approvals:** UL, CSA, CCC, GOST are applied for
- **Optional:** Additional shaft seal made from ceramic (see p. 94)

### Selection

<table>
<thead>
<tr>
<th>Type</th>
<th>Cable design</th>
<th>Plug design</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2E 160-BL32</td>
<td>R2E 160-BL32 -01</td>
<td>R2E 160-BL32 -05</td>
<td>a = 160, b = 40, c = 49.5, d = 108, e = 119</td>
</tr>
</tbody>
</table>

### Dimensions

- Connection:
  1 = L (blue)
  2 = PE (green/yellow)
  3 = N (black)
  4 = GND (black)
  5 = OUT (white)
  6 = VCC (red)
AC centrifugal fans (exhaust air)
for solid fuel heating systems, single inlet, Ø 180

- **Material:** Impeller: Corrosion resistant sheet steel
- **Direction of rotation:** Clockwise, seen on impeller
- **Type of protection:** IP 44, depending on installation and position
- **Insulation class:** “F”
- **Mounting position:** Any
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Max. exhaust gas temperature:** Continuous operation 250°C

---

**Nominal data**

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Curve</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Air flow</th>
<th>Speed/rpm</th>
<th>Max. input power</th>
<th>Max. current draw</th>
<th>Capacity</th>
<th>Sound pressure level</th>
<th>Perm. amb. temp.</th>
<th>Mass</th>
<th>Electric connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2E 180-CT91</td>
<td>A1), D)</td>
<td>255</td>
<td>1850</td>
<td>38</td>
<td>0,18</td>
<td>1,0/400</td>
<td>---</td>
<td>-25...+60</td>
<td>1,7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R2E 180-CF91</td>
<td>A1), D)</td>
<td>255</td>
<td>1850</td>
<td>38</td>
<td>0,18</td>
<td>1,0/400</td>
<td>---</td>
<td>-25...+65</td>
<td>1,9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Curves:**

Air performance measured as per ISO 5801, Installation category A, without scroll housing 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 100 ff.
- **Motor protection:** TOP wired internally
- **Touch current:** < 0.75 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Standard:** Speed monitoring via Hall IC
- **Cable exit:** Variable
- **Protection class:** I
- **Product conforming to standards:** EN 60335-1, CE
- **Approvals:** UL, CSA, CCC, GOST are applied for
- **Optional:** Additional shaft seal made from ceramic (see p. 94)

### Selection

<table>
<thead>
<tr>
<th>Type</th>
<th>without motor protection hood</th>
<th>Cable design</th>
<th>Plug design</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2E 180-CT91</td>
<td>-**</td>
<td>R2E 180-CT91</td>
<td>R2E 180-CT91</td>
<td>180</td>
<td>26</td>
<td>44.5</td>
<td>108</td>
<td>119</td>
</tr>
<tr>
<td>R2E 180-CF91</td>
<td>-**</td>
<td>R2E 180-CF91</td>
<td>R2E 180-CF91</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

### Dimensions

- Connection:
  1. L (blue)
  2. PE (green/yellow)
  3. N (black)
  4. GND (black)
  5. OUT (white)
  6. VCC (red)
AC centrifugal fans (exhaust air)
for solid fuel heating systems, single inlet, Ø 180

- **Material:** Impeller: Corrosion resistant sheet steel
- **Direction of rotation:** Clockwise, seen on impeller
- **Type of protection:** IP 44, depending on installation and position
- **Insulation class:** "F"
- **Mounting position:** Any
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Max. exhaust gas temperature:** Continuous operation 250°C

---

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Curve</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Air flow</th>
<th>Speed/rpm</th>
<th>Max. input power</th>
<th>Max. current draw</th>
<th>Capacitor</th>
<th>Sound pressure level</th>
<th>Perm. amb. temp.</th>
<th>Mass</th>
<th>Electric correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2E 180-CV82</td>
<td>M2E 068-CF</td>
<td>①</td>
<td>230</td>
<td>50</td>
<td>420</td>
<td>2500</td>
<td>75</td>
<td>0,34</td>
<td>2,0/400</td>
<td>---</td>
<td>-25..+45</td>
<td>1,7</td>
<td>A1), D)</td>
</tr>
<tr>
<td>R2E 180-CG82</td>
<td></td>
<td>②</td>
<td>230</td>
<td>50</td>
<td>420</td>
<td>2500</td>
<td>75</td>
<td>0,34</td>
<td>2,0/400</td>
<td>---</td>
<td>-25..+60</td>
<td>2,3</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Subject to alterations.

---

### Curves:

Air performance measured as per ISO 5801, Installation category A, without scroll housing, 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 100 ff.
- **Motor protection:** TOP wired internally
- **Touch current:** < 0.75 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Standard:** Speed monitoring via Hall IC
- **Cable exit:** Variable
- **Protection class:** I
- **Product conforming to standards:** EN 60335-1, CE
- **Approvals:** UL, CSA, CCC, GOST are applied for
- **Optional:** Additional shaft seal made from ceramic (see p. 94)

### Selection

<table>
<thead>
<tr>
<th>Type</th>
<th>without motor protection hood</th>
<th>Cable design</th>
<th>Plug design</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2E 180-CV82 -**</td>
<td>---</td>
<td>R2E 180-CV82 -01</td>
<td>R2E 180-CV82 -05</td>
<td>180</td>
<td>45</td>
<td>54.5</td>
<td>108</td>
<td>119</td>
</tr>
<tr>
<td>R2E 180-CG82 -** R2E 180-CG82 -01</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

### Dimensions

- **Connection:**
  1. L (blue)
  2. PE (green/yellow)
  3. N (black)
  4. GND (black)
  5. OUT (white)
  6. VCC (red)

- **Motor protection**:
  - TOP wired internally
- **Touch current**:
  - < 0.75 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Standard**:
  - Speed monitoring via Hall IC
- **Cable exit**:
  - Variable
- **Protection class**:
  - I
- **Product conforming to standards**:
  - EN 60335-1, CE
- **Approvals**:
  - UL, CSA, CCC, GOST are applied for
- **Optional**:
  - Additional shaft seal made from ceramic (see p. 94)
AC centrifugal fans (exhaust air)
for solid fuel heating systems, single inlet, Ø 210

- **Material:** Impeller: Corrosion resistant sheet steel
- **Direction of rotation:** Clockwise, seen on impeller
- **Type of protection:** IP 44
- **Insulation class:** "F"
- **Mounting position:** Any
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Max. exhaust gas temperature:** Continuous operation 250°C

---

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>rpm</th>
<th>W</th>
<th>A</th>
<th>µF/VDB</th>
<th>dB(A)</th>
<th>°C</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2E 210-AA34</td>
<td>M2E 068-0F</td>
<td>230</td>
<td>50</td>
<td>520</td>
<td>2500</td>
<td>110</td>
<td>0,49</td>
<td>2,0/450</td>
<td>---</td>
<td>-25..+90</td>
<td>2,9</td>
</tr>
<tr>
<td>R2E 210-AB34</td>
<td></td>
<td>230</td>
<td>50</td>
<td>600</td>
<td>2400</td>
<td>125</td>
<td>0,56</td>
<td>2,5/400</td>
<td>---</td>
<td>-25..+70</td>
<td>3,1</td>
</tr>
</tbody>
</table>

(subject to alterations)

---

### Curves:

Air performance measured as per ISO 5801, Installation category A, without scroll housing 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 100 ff.
- **Motor protection:** TOP wired internally
- **Touch current:** < 0.75 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Standard:** Speed monitoring via Hall IC
- **Cable exit:** Variable
- **Protection class:** I
- **Product conforming to standards:** EN 60335-1, CE
- **Approvals:** UL, CSA, CCC, GOST are applied for
- **Optional:** Additional shaft seal made from ceramic (see p. 94)
AC centrifugal fans (exhaust air)
for solid fuel heating systems, single inlet, Ø 250

- Material: Impeller: Corrosion resistant sheet steel
- Direction of rotation: Clockwise, seen on impeller
- Type of protection: IP 44, depending on installation and position
- Insulation class: "F"
- Mounting position: Any
- Condensate discharges: None
- Mode of operation: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings
- Max. exhaust gas temperature: Continuous operation 250°C

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Curve</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Air flow</th>
<th>Speed rpm</th>
<th>Max. input power</th>
<th>Max. current draw</th>
<th>Capacitor</th>
<th>Sound pressure level</th>
<th>Perm. amb. temp.</th>
<th>Mass</th>
<th>Electric connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2E 250-BE03 -**</td>
<td>M2E 074-EI</td>
<td>○</td>
<td>230 VAC</td>
<td>50 Hz</td>
<td>1010 m³/h</td>
<td>2500 rpm</td>
<td>260 W</td>
<td>1,15 A</td>
<td>7,0/400 µF</td>
<td>dB(A) ---</td>
<td>-25..+50 °C</td>
<td>8,1</td>
<td>A1), D)</td>
</tr>
</tbody>
</table>

subject to alterations

Curves:

Air performance measured as per ISO 5801, Installation category A, without scroll housing without protection against accidental contact. Sound-side noise levels LwA, as per ISO 13347, Lpa measured at 1m 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 100 ff.
- **Motor protection:** TOP wired internally
- **Touch current:** < 0.75 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Standard:** Speed monitoring via Hall IC
- **Cable exit:** Variable
- **Protection class:** I (if customer has provided connection for protective earth)
- **Product conforming to standards:** EN 60335-1, CE
- **Approvals:** UL, CSA, CCC, GOST are applied for
- **Optional:** Additional shaft seal made from ceramic (see p. 94)

---

**Selection**

<table>
<thead>
<tr>
<th>Type</th>
<th>with motor protection hood</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2E 250-BE03 -**</td>
<td>R2E 250-BE03 -10</td>
</tr>
</tbody>
</table>

---

**Connection:**

1 = Hall-IC (black)
2 = Hall-IC (white)
3 = Hall-IC (red)
4 = black + capacitor
5 = green/yellow
6 = blue
EC/AC centrifugal blowers (exhaust air)
EC centrifugal blowers (exhaust air)
for solid fuel heating systems, single inlet, Ø 150

- **Material:** Impeller: Corrosion resistant sheet steel
  Housing: Hot-dip aluminised sheet steel
- **Direction of rotation:** Clockwise, seen on impeller
- **Type of protection:** IP 54
- **Insulation class:** “B”
- **Mounting position:** Any
- **Condensate discharges:** None, open rotor
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Max. exhaust gas temperature:** Continuous operation 250°C

---

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>rpm</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>°C</th>
<th>kg</th>
<th>p. 96, 99</th>
</tr>
</thead>
<tbody>
<tr>
<td>G3G 150-DA03</td>
<td>M3G 055-Al</td>
<td>1–200–240</td>
<td>50/60</td>
<td>149</td>
<td>2535</td>
<td>16</td>
<td>0,17</td>
<td>66</td>
<td>-25..+60</td>
<td>2,0</td>
<td>H4, C)</td>
</tr>
</tbody>
</table>

subject to alterations

---

### Curves:

Air performance measured as per: ISO 5801, Installation category A, with ebm-papst scroll housing 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 100 ff.
- **Technical features:** See electrical connections p. 96
- **EMC:** Interference emission acc. EN 61000-6-3
  Interference immunity acc. EN 61000-6-2
  Harmonics acc. EN 61000-3-2/3
- **Touch current:** < 3.5 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Cable exit:** Variable
- **Protection class:** I (if customer has provided connection for protective earth)
- **Product conforming to standards:** EN 60335-1, CE
- **Approvals:** VDE, UL, CSA, CCC, GOST are applied for
- **Optional:** Additional shaft seal made from ceramic (see p. 94)

### Connection Z:
1. **N** (blue)
2. **PE** (green/yellow)
3. **L** (black)
4. 0-10V/PWM (yellow)
5. **GND** (blue)
6. **Tacho** (white)
EC centrifugal blowers (exhaust air)
for solid fuel heating systems, single inlet, Ø 180

- **Material:** Impeller: Corrosion resistant sheet steel
  Housing: Hot-dip aluminised sheet steel
- **Direction of rotation:** Clockwise, seen on impeller
- **Type of protection:** IP 54
- **Insulation class:** "B"
- **Mounting position:** Any
- **Condensate discharges:** None, open rotor
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Max. exhaust gas temperature:** Continuous operation 250°C

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>rpm</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
<th>°C</th>
<th>kg</th>
<th>p. 96, 99</th>
</tr>
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<tbody>
<tr>
<td>G3G 180-FJ11</td>
<td>M3G 055-CF</td>
<td>1−200−240</td>
<td>50/60</td>
<td>340</td>
<td>2690</td>
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</tbody>
</table>

*subject to alterations*

### Curves:

Air performance measured as per: ISO 5801, Installation category A, with ebm-papst scroll housing 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 100 ff.
- **Technical features:** See electrical connections p. 96
- **EMC:** Interference emission acc. EN 61000-6-3
  Interference immunity acc. EN 61000-6-2
  Harmonics acc. EN 61000-3-2/3
- **Touch current:** < 3.5 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Cable exit:** Variable
- **Protection class:** I (if customer has provided connection for protective earth)
- **Product conforming to standards:** EN 60335-1, CE
- **Approvals:** VDE, UL, CSA, CCC, GOST are applied for
- **Optional:** Additional shaft seal made from ceramic (see p. 94)

### Selection

<table>
<thead>
<tr>
<th>Type</th>
<th>Cable design</th>
<th>Plug design</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>G3G 180-FJ11 -**</td>
<td>G3G 180-FJ11 -01</td>
<td>G3G 180-FJ11 -05</td>
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<tr>
<td>G3G 180-GJ11 -**</td>
<td>G3G 180-GJ11 -01</td>
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### Dimensions

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<td>6</td>
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<td>115.3</td>
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<tr>
<td>7</td>
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<td>150</td>
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</tr>
<tr>
<td>12</td>
<td>150</td>
<td>115.3</td>
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### Connection Z:

1. **N** (blue)
2. **PE** (green/yellow)
3. **L** (black)
4. **0-10V/PWM** (yellow)
5. **GND** (blue)
6. **Tacho** (white)
AC centrifugal blowers (exhaust air)
for solid fuel heating systems, single inlet, Ø 150

- **Material:** Impeller: Corrosion resistant sheet steel
  Housing: Hot-dip aluminised sheet steel
- **Direction of rotation:** Clockwise, seen on impeller
- **Type of protection:** IP 44
- **Insulation class:** “F”
- **Mounting position:** Any
- **Condensate discharges:** None, open rotor
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Max. exhaust gas temperature:** Continuous operation 250°C

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>rpm</th>
<th>W</th>
<th>A</th>
<th>μF/VDB</th>
<th>dB(A)</th>
<th>°C</th>
<th>kg</th>
<th>p. 98, 99</th>
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</thead>
<tbody>
<tr>
<td>G2E 150-DN91</td>
<td>M2E 068-BF</td>
<td>230</td>
<td>50</td>
<td>145</td>
<td>2480</td>
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<td>1.0/400</td>
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<td>-25..+50</td>
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<td>A1), D)</td>
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<tr>
<td>G2E 150-DN91</td>
<td>M2E 068-BF</td>
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<td>2480</td>
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<td>---</td>
<td>-25..+70</td>
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<td>A1), D)</td>
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</table>

subject to alterations

### Curves:

Air performance measured as per: ISO 5801, Installation category A, with ebm-papst scroll housing 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 100 ff.
- **Motor protection**: TOP wired internally
- **Touch current**: < 0.75 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Standard**: Speed monitoring via Hall IC
- **Protection class**: I
- **Product conforming to standards**: EN 60335-1, CE
- **Approvals**: UL, CSA, CCC, GOST are applied for
- **Optional**: Additional shaft seal made from ceramic (see p. 94)

### Selection

<table>
<thead>
<tr>
<th>Type</th>
<th>Cable design</th>
<th>Plug design</th>
<th>Cable design without protection hood</th>
</tr>
</thead>
<tbody>
<tr>
<td>G2E 150-DN91</td>
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<td>G2E 150-DN91</td>
<td>-01</td>
<td>G2E 150-DN91 -01</td>
<td>G2E 150-DN91 -01</td>
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</tbody>
</table>

### Connection Z:

1. **1** = L (blue)
2. **2** = PE (green/yellow)
3. **3** = N (black)
4. **4** = GND (black)
5. **5** = OUT (white)
6. **6** = VCC (red)
AC centrifugal blowers (exhaust air)
for solid fuel heating systems, single inlet, Ø 152

- **Material:** Impeller: Corrosion resistant sheet steel
  Housing: Hot-dip aluminised sheet steel
- **Direction of rotation:** Clockwise, seen on impeller
- **Type of protection:** IP 00
- **Insulation class:** “H”
- **Mounting position:** Any, except motor overhead
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Ball bearings / sleeve bearings
- **Max. exhaust gas temperature:** Continuous operation 250°C

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Curve</th>
<th>Nominal voltage VAC</th>
<th>Frequency Hz</th>
<th>Air flow m³/h</th>
<th>Speed / rpm</th>
<th>Max. input power W</th>
<th>Max. current draw A</th>
<th>Sound pressure level dB(A)</th>
<th>Perm. amb. temp. °C</th>
<th>Mass kg</th>
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</thead>
<tbody>
<tr>
<td>G2E 152 / 0020-3030</td>
<td>①</td>
<td>230</td>
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<td>180</td>
<td>2600</td>
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<td>0,38</td>
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<td>-25...+70</td>
<td>2,3</td>
<td>B)</td>
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</tbody>
</table>

subject to alterations

**Curves:**

Air performance measured as per: ISO 5801, Installation category A, with ebm-papst scroll housing 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 100 ff.
Motor protection: TOP wired internally

Standard: Speed monitoring via Hall IC

Protection class: I

Product conforming to standards: EN 60335-1, CE

Approvals: CCC, GOST are applied for; UL, CSA on request

Optional: Additional shaft seal made from ceramic (see p. 94)
AC centrifugal blowers (exhaust air)
for solid fuel heating systems, single inlet, Ø 180

- **Material**: Impeller: Corrosion resistant sheet steel
  Housing: Hot-dip aluminised sheet steel
- **Direction of rotation**: Clockwise, seen on impeller
- **Type of protection**: IP 44
- **Insulation class**: “F”
- **Mounting position**: Any
- **Condensate discharges**: None, open rotor
- **Mode of operation**: Continuous operation (S1)
- **Bearings**: Maintenance-free ball bearings
- **Max. exhaust gas temperature**: Continuous operation 250°C

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>rpm</th>
<th>W</th>
<th>A</th>
<th>μF/VDB</th>
<th>dB(A)</th>
<th>°C</th>
<th>kg</th>
<th>p. 98, 99</th>
</tr>
</thead>
<tbody>
<tr>
<td>G2E 180-CV82</td>
<td>M2E 068-CF</td>
<td>230</td>
<td>50</td>
<td>340</td>
<td>2600</td>
<td>65</td>
<td>0,30</td>
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<td>73</td>
<td>-25..+60</td>
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<td>A1), D)</td>
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<tr>
<td>G2E 180-GV82</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>subject to alterations</td>
</tr>
</tbody>
</table>

Curves: n rpm Pₑₚ W I A Lₑₐ dB(A)

- 2600 65 0.30 73
- 2645 60 0.26 70
- 2700 55 0.24 64
- 2765 48 0.21 62

Air performance measured as per ISO 5801, installation category A, with ebm-papst scroll housing without protection against accidental contact. Suction-side noise levels: LwA as per ISO 13347, 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 100 ff.
- **Motor protection**: TOP wired internally
- **Touch current**: < 0.75 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Standard**: Speed monitoring via Hall IC
- **Protection class**: I
- **Product conforming to standards**: EN 60335-1, CE
- **Approvals**: UL, CSA, CCC, GOST are applied for
- **Optional**: Additional shaft seal made from ceramic (see p. 94)

### Selection

<table>
<thead>
<tr>
<th>Type</th>
<th>Cable design</th>
<th>Plug design</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>G2E 180-CV82 -**</td>
<td>G2E 180-CV82 -01</td>
<td>G2E 180-CV82 -05</td>
<td>186</td>
</tr>
<tr>
<td>G2E 180-GV82 -**</td>
<td>G2E 180-GV82 -01</td>
<td>G2E 180-GV82 -05</td>
<td>223</td>
</tr>
</tbody>
</table>

* Cable design also possible without protection hood

### Dimensions

**Connection Z:**
- 1 = L (blue)
- 2 = PE (green/yellow)
- 3 = N (black)
- 4 = GND (black)
- 5 = OUT (white)
- 6 = VCC (red)
- **Spur gear unit:** Die-cast zinc housing
- **Max. permitted radial load:** 300 N
- **Max. permitted axial load:** 50 N
- **Expected service life:** 5000 h (Lifetime lubrication)
- **Input stage:** Noise optimized
- **Gearbox output shaft:** Needle bearings
- **Mode of operation:** Continuous operation S1 till to 50 °C ambient air temperature

### Shaded-pole motor EM 30
with Flatline 78

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>V</th>
<th>Hz</th>
<th>i/No. of stages</th>
<th>Max (Nm)</th>
<th>nNa (rpm)</th>
<th>PNa (W)</th>
<th>I (A)</th>
<th>m (kg)</th>
<th>L (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>78.5.3030.F40</td>
<td>EM3030</td>
<td>230</td>
<td>50</td>
<td>408,4/5</td>
<td>7,4</td>
<td>6,37</td>
<td>4,9</td>
<td>0,46</td>
<td>1,1</td>
<td>87</td>
</tr>
<tr>
<td>78.5.3030.F41</td>
<td>EM3030</td>
<td>230</td>
<td>50</td>
<td>737,4/5</td>
<td>12,5</td>
<td>3,53</td>
<td>4,6</td>
<td>0,46</td>
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<td>87</td>
</tr>
<tr>
<td>78.5.3020.F42</td>
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</tr>
</tbody>
</table>

Subject to alterations

![Flat connector 6,3 x 0,8 according to DIN 46343](image)

Customer terminal depends on design

![Motor centre](image)

84
### Capacitor motor KM 40

**with Compactline 92**

- Spur gear unit: Die-cast zinc housing
- Max. permitted radial load: 150 N
- Max. permitted axial load: 50 N
- Expected service life: 5000 h (Lifetime lubrication)
- Input stage: Noise optimized
- Gearbox output shaft: Slide/needle bearings
- Mode of operation: Continuous operation S1 till to 50 °C ambient air temperature

#### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>V</th>
<th>Hz</th>
<th>i/No. of stages</th>
<th>Mm (Nm)</th>
<th>nm (rpm)</th>
<th>Pm (W)</th>
<th>I (A)</th>
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<td>92.3.4030.2.C11</td>
<td>KM4030-2</td>
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<td>274,6/3</td>
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<tr>
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<td>0.20</td>
<td>1.5/400</td>
<td>1.6</td>
<td>133</td>
</tr>
</tbody>
</table>

Subject to alterations

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**Brass lead tips**

- AWG 20
- Brown
- Blue
- Black

**Motor centre**

- ø10±0.1
- ø17.5±0.5
- 9.5±0.5
- 8.9±0.5
- 9.5
- ø5.4±0.5
- 15±1
- ±20
- 250±20
- 17.3+1
- L±2
- 15x1
- 1.7
- 20±0.5
- 25±0.5

---
### Capacitor motor KM 40

with Flatline 85

- Spur gear unit: Die-cast zinc housing
- Max. permitted radial load: 150 N
- Max. permitted axial load: 50 N
- Expected service life: 5000 h (Lifetime lubrication)
- Input stage: Noise optimized
- Gearbox output shaft: Needle bearings on both sides
- Mode of operation: Continuous operation S1 till to 50 °C ambient air temperature

#### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>Reduction</th>
<th>Drive torque</th>
<th>Output speed</th>
<th>Drive torque</th>
<th>Output power</th>
<th>Nominal current</th>
<th>Capacitor</th>
<th>Mass</th>
<th>Length</th>
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<tr>
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<td>5,0/400</td>
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Subject to alterations

---

Alternative shaft leaving on motor-side on request order adding: W03

---

**Capacitor motor KM 40**

- Spur gear unit: Die-cast zinc housing
- Max. permitted radial load: 150 N
- Max. permitted axial load: 50 N
- Expected service life: 5000 h (Lifetime lubrication)
- Input stage: Noise optimized
- Gearbox output shaft: Needle bearings on both sides
- Mode of operation: Continuous operation S1 till to 50 °C ambient air temperature

#### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
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<th>Frequency</th>
<th>Reduction</th>
<th>Drive torque</th>
<th>Output speed</th>
<th>Drive torque</th>
<th>Output power</th>
<th>Nominal current</th>
<th>Capacitor</th>
<th>Mass</th>
<th>Length</th>
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<td>454,0/4</td>
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<td>687,0/4</td>
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<td>4,00</td>
<td>13</td>
<td>0,38</td>
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<tr>
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<td>KM4030-2</td>
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<td>1028,7/4</td>
<td>30,0</td>
<td>2,67</td>
<td>8,4</td>
<td>0,38</td>
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Subject to alterations
EC motor VDC 3-49-15
with Flatline 85

- Spur gear unit: Die-cast zinc housing
- Max. permitted radial load: 150 N
- Max. permitted axial load: 50 N
- Expected service life: 5000 h (Lifetime lubrication)
- Input stage: Noise optimized
- Gearbox output shaft: Needle bearings on both sides
- Mode of operation: Continuous operation S1 till to 50 °C ambient air temperature

<table>
<thead>
<tr>
<th>Type</th>
<th>Nominal data</th>
<th>V</th>
<th>i/No. of stages</th>
<th>Mab (Nm)</th>
<th>nba (rpm)</th>
<th>Pab (W)</th>
<th>I (A)</th>
<th>m (kg)</th>
<th>L (mm)</th>
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<tbody>
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<td>1,4</td>
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Subject to alterations

Alternative shaft leaving on motor-side on request order adding: W03
- Spur gear unit: Die-cast zinc housing
- Max. permitted radial load: 150 N
- Max. permitted axial load: 50 N
- Expected service life: 5000 h (Lifetime lubrication)
- Input stage: Noise optimized
- Gearbox output shaft: Needle bearings on both sides
- Mode of operation: Continuous operation S1 till to 50 °C ambient air temperature

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>V</th>
<th>i/No. of stages</th>
<th>Mab (Nm)</th>
<th>nab (rpm)</th>
<th>Pab (W)</th>
<th>I (A)</th>
<th>m (kg)</th>
<th>L (mm)</th>
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</thead>
<tbody>
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Subject to alterations
EC motor VDC 3-54-14
with Compactline 90

- Spur gear unit: Die-cast zinc housing
- Max. permitted radial load: 120 N
- Max. permitted axial load: 40 N
- Expected service life: 5000 h (Lifetime lubrication)
- Input stage: Noise optimized
- Gearbox output shaft: Slide/needle bearings
- Mode of operation: Continuous operation S1 till to 50 °C ambient air temperature

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>V</th>
<th>i/No. of stages</th>
<th>Mab (Nm)</th>
<th>nab (rpm)</th>
<th>Pab (W)</th>
<th>I (A)</th>
<th>m (kg)</th>
<th>L (mm)</th>
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Subject to alterations
EC motor BG 4310
with Compactline 92

- Spur gear unit: Die-cast zinc housing
- Type of protection: IP 20
- Max. permitted radial load: 150 N
- Max. permitted axial load: 50 N
- Expected service life: 5000 h (Lifetime lubrication)
- Input stage: Noise optimized
- Gearbox output shaft: Needle bearings on both sides
- Mode of operation: Continuous operation S1 till to 50 °C ambient air temperature
- Technical features:
  Control input 0-10 V (optional PWM)
  cw (optional reverse on start)
  Tach output optional

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>V</th>
<th>Hz</th>
<th>i/No. of stages</th>
<th>Mna (Nm)</th>
<th>nna (rpm)</th>
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Subject to alterations
EC motor BG 4310
with Flatline 85

- Spur gear unit: Die-cast zinc housing
- Type of protection: IP 20
- Max. permitted radial load: 150 N
- Max. permitted axial load: 50 N
- Expected service life: 5000 h (Lifetime lubrication)
- Input stage: Noise optimized
- Gearbox output shaft: Needle bearings on both sides
- Mode of operation: Continuous operation S1 till to 50 °C ambient air temperature
- Technical features:
  - Control input 0-10 V (optional PWM)
  - cw (optional reverse on start)
  - Tach output optional

## Nominal data

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<thead>
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<th>Type</th>
<th>Motor</th>
<th>Nominal voltage</th>
<th>Frequency</th>
<th>i/No. of stages</th>
<th>Mna (Nm)</th>
<th>nna (rpm)</th>
<th>Pna (W)</th>
<th>I (A)</th>
<th>m (kg)</th>
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Subject to alterations
Scroll dimensions for AC / EC centrifugal fans (recommended by ebm-papst)

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<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>M</th>
<th>N</th>
<th>P</th>
<th>R</th>
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<td>116</td>
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<td>97</td>
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<td>82</td>
<td>80</td>
<td>86</td>
<td>93</td>
<td>9</td>
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<tr>
<td>Ø 150/152</td>
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<td>124</td>
<td>119</td>
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<td>109</td>
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<td>99</td>
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<tr>
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<td>132</td>
<td>127</td>
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subject to alterations
### Distance between impeller and scroll housing/inlet nozzle (recommended by ebm-papst)

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<th>Y</th>
<th>Z</th>
<th>R</th>
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<td>8-11</td>
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<tr>
<td>Ø 160</td>
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<tr>
<td>Ø 180</td>
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<td>8-11</td>
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</tbody>
</table>

*subject to alterations*
ebm-papst also offers an additional shaft seal for its exhaust gas blowers. This was developed specifically for this application, intended for installation in passive and low-energy houses with regulated ventilation in apartments, for example. The sealing system is made from high temperature-resistance ceramic and ensures low leakage over the long term. The final suitability of the system must be qualified and approved in the end device.

**Additional shaft seal**

**Shaft seal made from ceramic**

**Electrical connection EC (11)**

**Tangential blowers**

In order to calculate a valid, stable speed signal a multiple of 4 changes of the hall signal have to be measured. The mean value of the measured time has to be used to calculate the speed.

<table>
<thead>
<tr>
<th>1</th>
<th>+18...38 VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hall signal</td>
</tr>
<tr>
<td></td>
<td>2 pulses per revolution</td>
</tr>
<tr>
<td></td>
<td>Imax. &quot;High&quot;: 5 mA</td>
</tr>
<tr>
<td></td>
<td>Imax. &quot;Low&quot;: -2.0 mA</td>
</tr>
</tbody>
</table>

| 2 | N.C. |

| 3 | N.C. |

| 4 | PWM 1-6 kHz |

| 5 | * Depends on application |

**Customer circuit**

**Connection**

**Fan**

**Hall sensor with open collector output**

**+12 VDC**

**+12 VDC**

**+12 VDC**

**+12 VDC**

**+12 VDC**
Technical features:
- PFC (passive)
- Output 10 VDC max. 1.1 mA
- Tach output
- Control input 0-10 VDC / PWM
- Over-temperature protected electronics / motor

Notes on various control possibilities and their applications

<table>
<thead>
<tr>
<th>Line</th>
<th>Connection</th>
<th>Colour</th>
<th>Assignment / function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>L</td>
<td>brown</td>
<td>Mains 50/60 Hz, phase</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>blue</td>
<td>Mains 50/60 Hz, neutral</td>
</tr>
<tr>
<td></td>
<td>PE</td>
<td>green/yel.</td>
<td>Protective earth</td>
</tr>
</tbody>
</table>

Line 2

<table>
<thead>
<tr>
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<th>Colour</th>
<th>Assignment / function</th>
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<tbody>
<tr>
<td>2</td>
<td>+10 V</td>
<td>red</td>
<td>Voltage output +10 V max. 1.1 mA</td>
</tr>
<tr>
<td></td>
<td>0-10 V / PWM</td>
<td>yellow</td>
<td>Control input (Impedance 100 kΩ)</td>
</tr>
<tr>
<td></td>
<td>GND</td>
<td>blue</td>
<td>GND</td>
</tr>
<tr>
<td></td>
<td>Tacho</td>
<td>white</td>
<td>Tach output: 1 pulse per revolution</td>
</tr>
</tbody>
</table>
Technical features:
• Control input 0-10 VDC / PWM
• Output 10 VDC max. 1,1 mA
• Tach output
• Line undervoltage detection
• Locked-rotor protection
• Soft start
• Over-temperature protected electronics / motor

<table>
<thead>
<tr>
<th>Line</th>
<th>Connection</th>
<th>Colour</th>
<th>Assignment / function</th>
</tr>
</thead>
<tbody>
<tr>
<td>CON10</td>
<td>L</td>
<td>black</td>
<td>Power supply 230 VAC, 50 - 60 Hz, see type plate for voltage range</td>
</tr>
<tr>
<td>CON11</td>
<td>N</td>
<td>blue</td>
<td>Neutral conductor</td>
</tr>
<tr>
<td>CON12</td>
<td>PE</td>
<td>green/yellow</td>
<td>Protective earth</td>
</tr>
<tr>
<td>1</td>
<td>GND</td>
<td>blue</td>
<td>GND-Connection for control interface</td>
</tr>
<tr>
<td>2</td>
<td>0-10V / PWM</td>
<td>yellow</td>
<td>Control input 0-10V or PWM, electrically isolated</td>
</tr>
<tr>
<td>3</td>
<td>10V max. 1.1 mA</td>
<td>red</td>
<td>Voltage output 10V / 1.1 mA, electrically isolated, not short-circuit-proof</td>
</tr>
<tr>
<td>4</td>
<td>Tacho</td>
<td>white</td>
<td>Tach output: Open Collector; 1 pulse per revolution, electrically isolated</td>
</tr>
</tbody>
</table>
**Technical features:**
- Control input 0-10 VDC / PWM
- Tach output
- Motor current limitation
- Reverse polarity and locked-rotor protection
- Soft start

### Customer circuit

**Full speed**

- Speed setting
- Speed setting with potentiometer
- Setting of values with temperature controller

**Fan / Motor**

- Connection
- Fan / Motor

### Line | Connection | Colour | Assignment / function
--- | --- | --- | ---
1 | UN +24/48VDC | red | Power supply 24/48 VDC, maximum ripple ± 3.5 %
2 | PWM/LIN | yellow | Control input Re >100 K
3 | Tach | white | Tach output, 3 pulses per revolution, Isink max. = 10 mA
4 | GND | blue | Reference ground
**Electrical connections AC**

A1) / B)

**A1) Single-phase capacitor motor**
with TOP wired internally

**B) Shaded pole motor**
with TOP wired internally
C) Speed monitoring with EC fans

Fan connections:
- white (OUT): Speed signal
- blue (IN): Ground connection

Specification from ebm-papst:
- $I_{\text{sink max}} = 10 \text{ mA}$ (by transistor in OK1)
- $V_{\text{CC max}} = 40 \text{ V}$ (external supply to be provided by customer)
- Pull up resistor = Pay attention to power loss of the resistors in dimensioning!

D) Speed monitoring with AC fans

Fan connections:
- red (IN): DC-Voltage
- white (OUT): Speed signal
- black (IN): Ground connection

Specification from ebm-papst:
- $V_{\text{CC}} = 5 \text{ VDC}$ (external supply to be provided by customer)
- Pull up resistor = 4,5 kΩ
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.

**Information on ErP directive for hot air blowers**

With implementation of the ErP directive, more stringent efficiency requirements apply in two stages as of 2013 and 2015 for fans in the power range between 125 W and 500 kW. The corresponding minimum efficiency values for the different types of fan are stipulated by the EU. ebm-papst GreenTech EC fans already surpass the minimum values required by law. Users can recognise fans complying with the directive from the CE marking for example. Exceptions not subject to the directive include fans for conveying hot media at temperatures in excess of 100°C.

**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. 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.

**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!

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.
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 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 respectively DIN 45635-38:

- 10 measuring points
- $d \geq D$
- $h = 1.5d ... 4.5d$
- 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).
<table>
<thead>
<tr>
<th>City</th>
<th>Contact Person</th>
<th>Address</th>
<th>Phone</th>
<th>Fax</th>
<th>Email</th>
</tr>
</thead>
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