Tangential-, radial-, axial blowers
Hot air blowers
Pumps
General information
– Company profile: ebm-papst
– Our keys to success
– Technical introduction
– Type code, glossary

Tangential blowers
– With AC motor
– Double housing version
– Humidity protected
– With EC motor
– Double housing with EC motor

Radial blowers AC
– Motor directly mounted
– High temperature version
– For extractor hoods

Radial blowers EC
– With internal-rotor motor
– With external-rotor motor
– Interfaces
– Additional electronics

Hot air blowers
– RRL series
– R2A series
– R2K series
– R2E, R2D series

Axial blowers
– NoFrost AC design
– NoFrost EC design
– AC motor with impeller Ø 80 - 175 mm

Pumps
– Submersible circulation pumps
– Dosing pumps

Customized products

Addresses
The entire scope of air and drive technology: this is the world of ebm-papst. Originating from the companies ebm, PAPST and mvl, all three rich in tradition, ebm-papst has at its disposal a unique range of products that makes us world market leader. We unite the fortes of three remarkable companies – each of them having worked hard to succeed in attaining a leading position in the most diverse fields and segments. More than 9,700 members of staff in Germany and throughout the world develop, produce and distribute our motors and fans. Striving for perfect solutions in applications in the different industries is what determines our daily work. Those who know us know the high standards we apply to our work and our creed: to be as close to our customers as possible and to be simply the best in terms of innovation and reliability.
For years, ebm, PAPST und mvl have been working together hand in hand. For the benefit of our customers, we use the synergy effect generated by our co-operation and the product ranges that complement each other so well. And now, in 2003, we move even closer and document this closeness in a joint public appearance and a joint name: ebm-papst.

We remain the same—only better!!
Though our outward appearance may have changed, our “inner” values remain the same. We still want you to enjoy being close to your established contacts, making their commitment and know-how help you succeed in your specific task. And, of course, we also want you to enjoy the same quality and selection of ebm, PAPST and mvl products:

- ebm products are now available from ebm-papst Mulfingen
- PAPST products are now available from ebm-papst St. Georgen
- mvl are now available from ebm-papst Landshut.

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

Producing and safeguarding high-quality products and services
This is our promise that knows no boundaries. Whether we manufacture in our national headquarters or in one of our 17 international production facilities – we insist on the same high level of quality! No cheap compromises when it comes to quality control! And this across all levels of production and throughout all processes: consulting customers, development, material selection through to picking certified, choice sup-pliers and on to the production of parts and final delivery. On top of this, our products have to pass the most rigorous test procedures under all realistic operating conditions: continuous stress test, salt spray test, vibration test, or in the room for precision noise measuring, just to mention a few. And the product gets clearance for serial production only after all the desired characteristics have been determined to be just right.

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

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

All our efforts are documented in a comprehensive quality management system, both for products and services. Being certified as complying with the tough requirements of the international standards DIN EN ISO 9001:2000, ISO/TS 16949-2 and of standard DIN EN ISO 14001 is just one seal of approval we have got for our incessant strife to provide only the best quality products and services.
Our keys to success

Our innovations and technologies keep on turning into new industrial standards. This competitive capability can only be maintained by seeing ventilation as a whole: the interrelationship between and the system of motor engineering, aerodynamics, and electronics. These are our three core competences, imminently connected and linked in each of our products. And so we handle air intelligently and quietly and continue to set new standards in drive technology. Our system solutions already form the main part of our product range. And they will be the main key to our success.

Motor engineering, aero-dynamics, electronics

Our drive is well known and famous with specialists: our external-rotor motor, which has made us world market leader, quietly, yet powerfully. Being versatile as to integration, it is ideally suited to the most diverse applications. Based on this principle, we here at ebm-papst have developed the widest range of fans and motor types in the world. And for hot or aggressive blower mediums, the internal-rotor motor is the perfect complement.

Also, in drive technology, certain applications simply require the internal-rotor motor principle, and they are then realised with our motors specifically developed for such cases. Take, for instance, the steering support motor in the automotive field developed as innovation in active steering.

When it comes to airflow: this can be engineered, too. Be it axial or centrifugal fans, centrifugal blowers, compact fans or tangential blowers: we always design fan blades, impeller blades and ducted housings with the specific application in mind. We strive to minimise noise and to optimise efficiency. This is the challenge that we have taken up and which we meet working away powerfully and quietly.

Finally, intelligence will become the decisive factor on all markets in future. After all, only in connection with electronics can drive and airflow - as system solution - have an optimal effect in a product or application. Interfaces are avoided, and thus potential faults and failures.

Setting standards with EC technology

Wherever intelligent air handling is required, where energy consumption needs to be reduced and performance has to be maximised, there our EC motors are your reliable answer. They do not waste financial or natural resources. But they boost high efficiency, continuous controllability via analogue or digital inputs, long and maintenance-free service life and robustness.
Without any problems, the ebm-papst EC technology allows you to realise networked, bus-linked appliances, to integrate simple or complex controls at low cost and to also realise time and again new and customised and complete solutions. Here, ebm-papst excels as competent development partner, with our experience of more than 25 years and our excellent know-how in R & D and production also being well documented in a few hundred national and international patents. And there is also our ability to listen intently, to pay good attention to our customers and their demands – in order to come up with new and pioneering ideas, such as:

- EC fan units for clean room technology, where the fan is supplied as fan filter unit. As the electronics are integrated and the unit is wired up completely and ready to plug in, there is no need for our customers to waste time and money on laborious wiring work.
- Sensitive EC sensor fans for the automotive industry providing optimal selection of the air-conditioning unit in the car and, combined with booster blowers, individual air-conditioning of each and every passenger seat.
- EC gas blowers with commutation and control electronics including a processor. They are developed in such a way as to make the blower pre-mix the required amount of air with the gas. Aero-dynamics with these blowers are adjusted in such a way as to make these blowers ideal for use in very limited space at high back pressure.
Technical introduction

The introductory pages preceding the various product groups and the product pages contain specific instructions for and technical information on the relevant products. The following general information applies to the entire range of products.

**Electromagnetic compatibility (EMC):**

EBM-PAPST products are components supplied to other industrial and trade companies with expert knowledge of electromagnetic compatibility.

EBM-PAPST products are therefore not subject to the Law on Electromagnetic Compatibility of Equipment. Compliance with the EMC Directive must be assessed on the final product since different EMC properties may be created when products interact with other components.

EBM-PAPST AC motors meet the requirements of Low Voltage Directive and EMC Directive. Statutory limit values are being kept.

EBM-PAPST motors are not safety-relevant components requiring an EMC test by an independent institute. EBM-PAPST, therefore, does not issue EMC test protocols.

For squirrel-cage induction motors and their connection to mains voltages the "GUIDELINES IN THE APPLICATION OF COUNCIL DIRECTIVE 89/336/EEC OF 3 MAY 1989 ON THE APPROXIMATION OF THE LAWS OF THE MEMBER STATES RELATING TO EMC" apply.

Section 5.4, p.21ff states that compliance with the EMC regulations is generally assumed for induction motors (e.g. shaded pole motors and capacitor motors).

**DQS certificate:**

The high quality standards in R & D, production and sales are monitored by a quality management system that complies with the tough requirements of DIN EN ISO 9001. EBM-PAPST Landshut has been certified by DQS since 1991.

**Product liability:**

EBM-PAPST motors and blowers are components the function of which is determined in the customer's unit. EBM-PAPST offers a warranty for the function of its products according to EN 60335-1, EN 50178 and EN 60950, provided that the EBM-PAPST products are used correctly and that, during the development of the customer's product, EBM-PAPST made sure of this and issued a confirmation in writing as to this effect.

Only after the product has passed product-specific and application-specific tests agreed on between EBM-PAPST and the customer, can subsequent liability be assumed; this will be done exclusively in accordance with relevant statutory regulations.

**Important Information:** Fans and motors may only be used after installation and may not be put into operation before being properly installed. Installation has to be effected by trained, briefed and qualified staff.

The information and images in this catalogue are non-binding. We reserve the right to modify our products (deviation from images and technical data provided herein) without prior notice in writing.

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Ebmpapst
Glossary

<table>
<thead>
<tr>
<th>symbol</th>
<th>term</th>
<th>unit</th>
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<tr>
<td>V</td>
<td>air flow</td>
<td>m³/h, l/sec</td>
</tr>
<tr>
<td>ΔP₁ₐ₂</td>
<td>pressure difference at free air flow</td>
<td>Pa (Pascal)</td>
</tr>
<tr>
<td>ΔP₂ₚ</td>
<td>static pressure difference</td>
<td>Pa</td>
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<td></td>
<td>former units</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>1 mbar ≥ 100 Pa</td>
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<tr>
<td>n</td>
<td>speed</td>
<td>min⁻¹, 1/min</td>
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<td></td>
<td>formerly</td>
<td>U/min, Upm</td>
</tr>
<tr>
<td>U</td>
<td>voltage</td>
<td>V (Volt)</td>
</tr>
<tr>
<td>f</td>
<td>frequency</td>
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<td>P₁</td>
<td>power input</td>
<td>W (Watt)</td>
</tr>
<tr>
<td>P₂</td>
<td>power output</td>
<td>W (Watt)</td>
</tr>
<tr>
<td>Iₙ</td>
<td>nominal current draw</td>
<td>mA (Milliamper)</td>
</tr>
<tr>
<td>M</td>
<td>torque</td>
<td>Ncm, Nm, mNm</td>
</tr>
<tr>
<td></td>
<td>former unit</td>
<td>1 kpm ≥ 10 Nm</td>
</tr>
</tbody>
</table>

Structure of type code

QLZ 06/2400 A17 -30 25 LH-124 aeh
EM 30 25 LH-124 aeh

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

1 Blower design/series
   QLx = tangential blower
   RLx = radial blower AC
   ...x = blower series
   RG = radial blower EC
   AL = axial blower
   RR = hot air blower

2 Diameter of impeller cm/mm

3 Width of impeller, side of motor mounting
   XX00 = motor right
   00XX = motor left
   XX = width of impeller cm/mm

4 Code for mechanical design of the blower

5 Type of motor
   EM = shaded pole motor
   KM = capacitor motor
   BG = DC motor

6 Motor series
   z.B. 20, 21, 22, 25, 30, 36, 43

7 Stack size mm
   L = longlife bearing bracket
   LH = high temperature version
   LN = low temperature version
   B = brake

8 Code for mechanical design of the motor

9 Code for electrical design of the motor
## Tangential blowers

<table>
<thead>
<tr>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tangential blowers QL 3, QL 4, QLK 45, QLZ 06, QLN 65</td>
<td>12</td>
</tr>
<tr>
<td>Tangential blowers with double housing</td>
<td>17</td>
</tr>
<tr>
<td>Tangential blowers humidity protected</td>
<td>21</td>
</tr>
<tr>
<td>Tangential blowers with EC motor</td>
<td>22</td>
</tr>
<tr>
<td>Tangential blowers double housing with EC motor</td>
<td>27</td>
</tr>
</tbody>
</table>
Tangential blowers series QL 3, QL 4, QLK 45, QLZ 06, QLN 65

The small ratio of the impeller diameter (30 to 65 mm) to the impeller length in most cases allow a flat and stretched design. The large cross section on the suction and pressure side makes for high air delivery at low flow rates. The air being thrown a long distance and low noise level are additional features of tangential blowers.
Vortex stream through tangential blower

Mounting conditions for QL 4 series
- Air sucked in from top, covered backside
- Air sucked in from the back, covered topside
- Air sucked in from top and back

Mounting conditions on pressure side QL 3, QLK, QLZ, QLN
- Functional
- Non-functional

Separation of suction and pressure area
- Functional
- Non-functional

Addresses
Tangential blowers

QL 3

- impeller diameter 30 mm
- mounting position horizontal or vertical with motor at the bottom
- permissible ambient temperature 0 - 60˚C
- insulation class B, class F or H on request

ebm-papst · Landshut

Nominal data

<table>
<thead>
<tr>
<th>motor right*</th>
<th>motor left</th>
<th>V</th>
<th>Hz</th>
<th>m³/h</th>
<th>Pa</th>
<th>W</th>
<th>mA</th>
<th>min⁻¹</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>QL3/1500-2112</td>
<td>QL3/0015-2112</td>
<td>230</td>
<td>50</td>
<td>35</td>
<td>12,3</td>
<td>8</td>
<td>77</td>
<td>2550</td>
<td>0,36</td>
</tr>
<tr>
<td>QL3/2000-2112</td>
<td>QL3/0020-2112</td>
<td>230</td>
<td>50</td>
<td>51</td>
<td>12,6</td>
<td>8</td>
<td>79</td>
<td>2400</td>
<td>0,40</td>
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<tr>
<td>QL3/2500-2118</td>
<td>QL3/0025-2118</td>
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<td>67</td>
<td>12,2</td>
<td>10</td>
<td>82</td>
<td>2600</td>
<td>0,56</td>
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<td>12,7</td>
<td>10</td>
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<tr>
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<td>12,3</td>
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<td>77</td>
<td>2600</td>
<td>0,68</td>
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</tbody>
</table>

Characteristic curves

* Corresponding to dimensional drawing; Technical data valid at free air flow and rated voltage; bold print = standard type; subject to alterations

Dimensions mm

<table>
<thead>
<tr>
<th>Motor Type</th>
<th>L (mm)</th>
<th>P (mm)</th>
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<tr>
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<td>QL3/1500-2112</td>
<td>148,0</td>
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<tr>
<td>QL3/2000-2112</td>
<td>198,0</td>
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<tr>
<td>QL3/2500-2118</td>
<td>248,0</td>
<td>18</td>
</tr>
<tr>
<td>QL3/3000-2118</td>
<td>302,6</td>
<td>18</td>
</tr>
<tr>
<td>QL3/3500-2124</td>
<td>352,6</td>
<td>24</td>
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</tbody>
</table>

Motor right* indicates the direction of rotation for the specified motor type.

Connector 6.3 x 0.8

Diagram showing dimensions and connector details.
Tangential blowers

QL 4

- impeller diameter 40 mm
- airflow direction of 180° possible
- mounting position horizontal or vertical with motor at the bottom
- permissible ambient temperature 0 - 60°C
- insulation class B, class F or H on request

**Nominal data**

<table>
<thead>
<tr>
<th>Motor right*</th>
<th>Motor left</th>
</tr>
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<tbody>
<tr>
<td>QL4/0500-2112</td>
<td>QL4/0005-2112</td>
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<tr>
<td>QL4/0500-2112</td>
<td>QL4/0010-2112</td>
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<tr>
<td>QL4/1500-2112</td>
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<td>QL4/2000-2118</td>
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<tr>
<td>QL4/2500-2118</td>
<td>QL4/0025-2118</td>
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<tr>
<td>QL4/3000-2124</td>
<td>QL4/0030-2124</td>
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<table>
<thead>
<tr>
<th>Characteristic curve</th>
<th>V</th>
<th>Hz</th>
<th>m³/h</th>
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<th>W</th>
<th>mA</th>
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<td>18</td>
<td>13</td>
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<td>Power input</td>
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<tr>
<td>Rated current</td>
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<td>15</td>
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<td>15</td>
<td>20</td>
<td>170</td>
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<tr>
<td>Dimensions mm</td>
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* Corresponding to dimensional drawing; Technical data valid at free air flow and rated voltage; bold print = standard type; subject to alterations.

**Characteristic curves**

- Motor right:
  - QL4/0500-2112
  - QL4/1500-2112
  - QL4/2000-2118
  - QL4/2500-2118
  - QL4/3000-2124

- Motor left:
  - QL4/0005-2112
  - QL4/0010-2112
  - QL4/0015-2112
  - QL4/0020-2118
  - QL4/0025-2118

**General information**

Tangential blowers
Radial blowers AC
Radial blowers EC
Axial blowers
Hot air blowers
Pumps
Addresses
Tangential blowers
QLK 45

- impeller diameter 45 mm
- horizontal or vertical mounting position with motor at the bottom
- permissible ambient temperature 0 - 60°C
- insulation class B, class F or H on request

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**Nominal data**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>QLK45/0600-2513</td>
<td>QLK45/0006-2513</td>
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<td>QLK45/0018-2518</td>
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**Characteristic curves**

<table>
<thead>
<tr>
<th>V</th>
<th>Hz</th>
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<th>Pa</th>
<th>W</th>
<th>mA</th>
<th>min⁻¹</th>
<th>kg</th>
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<td>1,40</td>
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</table>

*) Corresponding to dimensional drawing; Technical data valid at free air flow and rated voltage; bold print = standard type; subject to alterations
**Tangential blowers**

QLZ 06

- impeller diameter 60 mm
- horizontal or vertical mounting position with motor at the bottom
- permissible ambient temperature 0 - 60°C
- insulation class B, class F or H on request

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### Nominal data

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>Characteristic curve</th>
<th>rated voltage</th>
<th>frequency</th>
<th>air flow</th>
<th>max. pressure increase</th>
<th>power input</th>
<th>speed</th>
<th>mass</th>
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<td>V</td>
<td>Hz</td>
<td>m³/h</td>
<td>Pa</td>
<td>W</td>
<td>mA</td>
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<td>160</td>
<td>2500</td>
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</table>

---

Characteristic curves

---

* Corresponding to dimensional drawing. Technical data valid at free air flow and rated voltage; bold print = standard type; subject to alterations.
Tangential blowers
QLN 65

- impeller diameter 65 mm
- horizontal or vertical mounting position with motor at the bottom
- permissible ambient temperature 0 - 60°C
- insulation class B, class F or H on request

**Nominal data**

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>Characteristic curve</th>
<th>Rated voltage</th>
<th>Frequency</th>
<th>Air flow</th>
<th>Max. pressure increase</th>
<th>Power input</th>
<th>Rated current</th>
<th>Speed</th>
<th>Mass</th>
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<tbody>
<tr>
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<td>V</td>
<td>Hz</td>
<td>m³/h</td>
<td>Pa</td>
<td>W</td>
<td>mA</td>
<td>min⁻¹</td>
<td>kg</td>
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**Dimensions mm**

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<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
<th>f</th>
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<td>73</td>
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<td>136</td>
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</table>

*) Corresponding to dimensional drawing. Technical data valid at free air flow and rated voltage; bold print = standard type; subject to alterations

**Characteristic curves**

- Connector 6,3 x 0,8
- Motor 64 x Ø 2,4
Tangential blowers
QL 4 with double housing

- impeller diameter 40 mm
- airflow direction of 180˚ possible
- horizontal mounting position
- permissible ambient temperature 0 - 60˚C
- insulation class B, class F or H on request

Tangential blowers
QL 4 with double housing

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Characteristic curve</th>
<th>Rated Voltage (V)</th>
<th>Frequency (Hz)</th>
<th>Airflow (m³/h)</th>
<th>Max. Pressure Increase (Pa)</th>
<th>Power Input (W)</th>
<th>Rated Current (mA)</th>
<th>Speed (min⁻¹)</th>
<th>Mass (kg)</th>
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Technical data valid at free air flow and rated voltage; bold print = standard type; subject to alterations.

Characteristic curves

- 4x Ø4.5
- A
- B
- C
- connector 6.3 x 0.8
- 24x Ø2.4
- 20
- 20
- 10
- 10
- 20
- 20
- 20
- 31
- 31
- A-B
- 43
- 26.5
- 50
- 39.5
- 60
- 43
- 26.5
- 50
- 39.5
- 60
- 43
- 26.5
- 50
- 39.5
- 60
- 43
- 26.5
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- 39.5
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- 26.5
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- 39.5
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- 43
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- 39.5
- 60
- 43
- 26.5
- 50
- 39.5
- 60
- 43
- 26.5
- 50
Page 18

Tangential blowers
QLK 45 with double housing

- impeller diameter 45 mm
- horizontal mounting position
- permissible ambient temperature 0 - 60°C
- insulation class B, class F or H on request

ebm-papst · Landshut

Nominal data

<table>
<thead>
<tr>
<th>type</th>
<th>characteristic curve</th>
<th>rated voltage</th>
<th>frequency</th>
<th>air flow</th>
<th>max. pressure increase</th>
<th>power input</th>
<th>rated current</th>
<th>speed</th>
<th>mass</th>
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</thead>
<tbody>
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Technical data valid at free air flow and rated voltage; bold print = standard type; subject to alterations

Characteristic curves

Dimensions mm

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<th>a</th>
<th>b</th>
<th>c</th>
<th>g</th>
<th>h</th>
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</table>

connector 6,3 x 0,8

Technical data valid at free air flow and rated voltage; bold print = standard type; subject to alterations.
Tangential blowers
QLZ 06 with double housing

- impeller diameter 60 mm
- horizontal mounting position
- permissible ambient temperature 0 - 60˚C
- insulation class B, class F or H on request

Ebm-papst · Landshut

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>Characteristic curve</th>
<th>Rated voltage</th>
<th>Frequency</th>
<th>Air flow</th>
<th>Max. pressure increase</th>
<th>Power input</th>
<th>Rated current</th>
<th>Speed</th>
<th>Mass</th>
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</thead>
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<td>1500</td>
<td>2,75</td>
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</tbody>
</table>

Technical data valid at free air flow and rated voltage; bold print = standard type; subject to alterations.

Characteristic curves

Dimensions mm

Technical information

Ebm-papst · Landshut
Tangential blowers
QLN 65 with double housing

- impeller diameter 65 mm
- horizontal mounting position
- permissible ambient temperature 0 - 60˚C
- insulation class B, class F or H on request

---

**Nominal data**

<table>
<thead>
<tr>
<th>type</th>
<th>frequency (Hz)</th>
<th>air flow (m³/h)</th>
<th>max. pressure increase (Pa)</th>
<th>power input (W)</th>
<th>rated current (mA)</th>
<th>speed (min⁻¹)</th>
<th>mass (kg)</th>
<th>Dimensions mm</th>
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Technical data valid at free air flow and rated voltage; bold print = standard type; subject to alterations

---

**Characteristic curves**

---

**Dimensions mm**

<table>
<thead>
<tr>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>g</th>
<th>h</th>
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<td>139</td>
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<td>-</td>
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<tr>
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<td>478</td>
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<td>600</td>
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<td>302</td>
<td>319</td>
<td>706</td>
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</table>

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**Diagram**

- Connector 6.3 x 0.8
- Dimensions and tolerances
**Tangential blowers**

with humidity protected bobbin

Special design for refrigeration.
- shaded pole motor, humidity protected with plastic-encapsulated coil
- electrical connection with leads or Rast-5 plug
- permissible ambient temperature -40 °C – +60 °C

---

**Nominal data**

<table>
<thead>
<tr>
<th>Motor right*</th>
<th>Motor left</th>
<th>Rated Voltage</th>
<th>Frequency</th>
<th>Air Flow</th>
<th>Pressure Increase</th>
<th>Power Input</th>
<th>Speed</th>
<th>Electrical Connection</th>
<th>Mass</th>
<th>Dimensions (mm)</th>
</tr>
</thead>
<tbody>
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<td>QL4/0010-2118</td>
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<td>50 Hz</td>
<td>40 m³/h</td>
<td>13 Pa</td>
<td>10 W</td>
<td>2500 min⁻¹</td>
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<td>QL4/0015-2118</td>
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<td>2350 min⁻¹</td>
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<td>10 W</td>
<td>2150 min⁻¹</td>
<td>Ø</td>
<td>0.65</td>
<td>57</td>
</tr>
<tr>
<td>QL4/2500-2118</td>
<td>QL4/0025-2118</td>
<td>230 V</td>
<td>50 Hz</td>
<td>85 m³/h</td>
<td>12 Pa</td>
<td>10 W</td>
<td>1900 min⁻¹</td>
<td>Ø</td>
<td>0.7</td>
<td>57</td>
</tr>
<tr>
<td>QL4/3000-2118</td>
<td>QL4/0030-2118</td>
<td>230 V</td>
<td>50 Hz</td>
<td>90 m³/h</td>
<td>12 Pa</td>
<td>10 W</td>
<td>1700 min⁻¹</td>
<td>Ø</td>
<td>0.75</td>
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<td>QLK45/0700-2513</td>
<td>QLK45/0007-2513</td>
<td>230 V</td>
<td>50 Hz</td>
<td>36 m³/h</td>
<td>15 Pa</td>
<td>15 W</td>
<td>2650 min⁻¹</td>
<td>Ø</td>
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<td>QLK45/0012-2513</td>
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<td>82 m³/h</td>
<td>15 Pa</td>
<td>15 W</td>
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<td>Ø</td>
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<td>QLK45/0018-2524</td>
<td>230 V</td>
<td>50 Hz</td>
<td>120 m³/h</td>
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<td>25 W</td>
<td>2300 min⁻¹</td>
<td>Ø Ø</td>
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<td>QLK45/2400-2524</td>
<td>QLK45/0024-2524</td>
<td>230 V</td>
<td>50 Hz</td>
<td>140 m³/h</td>
<td>27 Pa</td>
<td>25 W</td>
<td>2100 min⁻¹</td>
<td>Ø Ø</td>
<td>1.15</td>
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<td>QLK45/3000-2524</td>
<td>QLK45/0030-2524</td>
<td>230 V</td>
<td>50 Hz</td>
<td>160 m³/h</td>
<td>27 Pa</td>
<td>25 W</td>
<td>1600 min⁻¹</td>
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<td>50 Hz</td>
<td>175 m³/h</td>
<td>27 Pa</td>
<td>25 W</td>
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<tr>
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<td>QLZ06/0012-2524</td>
<td>230 V</td>
<td>50 Hz</td>
<td>115 m³/h</td>
<td>24 Pa</td>
<td>24 W</td>
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<td>QLZ06/1800-2524</td>
<td>QLZ06/0018-2524</td>
<td>230 V</td>
<td>50 Hz</td>
<td>130 m³/h</td>
<td>24 Pa</td>
<td>24 W</td>
<td>1600 min⁻¹</td>
<td>Ø Ø</td>
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<td>QLZ06/2400-2524</td>
<td>QLZ06/0024-2524</td>
<td>230 V</td>
<td>50 Hz</td>
<td>145 m³/h</td>
<td>24 Pa</td>
<td>24 W</td>
<td>1100 min⁻¹</td>
<td>Ø Ø</td>
<td>1.2</td>
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</tr>
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<td>QL65/1200-2524</td>
<td>QL65/0012-2524</td>
<td>230 V</td>
<td>50 Hz</td>
<td>130 m³/h</td>
<td>24 Pa</td>
<td>24 W</td>
<td>2000 min⁻¹</td>
<td>Ø Ø</td>
<td>1.05</td>
<td>54</td>
</tr>
<tr>
<td>QL65/1800-2524</td>
<td>QL65/0018-2524</td>
<td>230 V</td>
<td>50 Hz</td>
<td>140 m³/h</td>
<td>24 Pa</td>
<td>24 W</td>
<td>1200 min⁻¹</td>
<td>Ø Ø</td>
<td>1.2</td>
<td>54</td>
</tr>
</tbody>
</table>

* Corresponding to dimensional drawing; subject to alterations

---

For blower dimensions, see basic AC types

---

*Corresponding to dimensional drawing; subject to alterations*
Tangential blowers with electronically commutated EC-motors.
- integrated electronics
- blower speed variable via PMW (pulse width modulation) signal, optionally speed adjustment via 0 - 10 V analogous voltage signal
- impeller diameter 40 mm
- airflow direction of 180° possible
- mounting position horizontal or vertical with motor at the bottom
- protection class IP20, insulation class F
- permissible ambient temperature 0 – 60 °C

ebm-papst · Landshut

<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>QL4/1000-2212</td>
<td>QL4/0010-2212</td>
</tr>
<tr>
<td>QL4/1500-2212</td>
<td>QL4/0015-2212</td>
</tr>
<tr>
<td>QL4/2000-2212</td>
<td>QL4/0020-2212</td>
</tr>
<tr>
<td>QL4/2500-2212</td>
<td>QL4/0025-2212</td>
</tr>
<tr>
<td>QL4/3000-2212</td>
<td>QL4/0030-2212</td>
</tr>
</tbody>
</table>

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

Characteristic curves

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 with electronically commutated EC-motors.
- integrated electronics
- blower speed variable via PMW (pulse width modulation) signal, optionally speed adjustment via 0 - 10 V analogous voltage signal
- impeller diameter 45 mm
- horizontal or vertical mounting position with motor at the bottom
- protection class IP20, insulation class F
- permissible ambient temperature 0 – 60 °C

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---

### Nominal data

<table>
<thead>
<tr>
<th>Motor Right*</th>
<th>Motor Left</th>
<th>Rated Voltage</th>
<th>Air Flow</th>
<th>Max. Pressure Increase</th>
<th>Power Input</th>
<th>Speed</th>
<th>Mass</th>
<th>Dimensions mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>QLK 45/1200-2212</td>
<td>QLK 45/0012-2212</td>
<td>24</td>
<td>80</td>
<td>50</td>
<td>7</td>
<td>2250</td>
<td>0.65</td>
<td>a 215, b 70, c 122, d 94, e 39</td>
</tr>
<tr>
<td>QLK 45/1800-2212</td>
<td>QLK 45/0018-2212</td>
<td>24</td>
<td>110</td>
<td>55</td>
<td>8</td>
<td>2050</td>
<td>0.7</td>
<td>a 275, b 70, c 182, d 154, e 69</td>
</tr>
<tr>
<td>QLK 45/2400-2212</td>
<td>QLK 45/0024-2212</td>
<td>24</td>
<td>160</td>
<td>60</td>
<td>10</td>
<td>2050</td>
<td>0.75</td>
<td>a 335, b 70, c 242, d 212, e 98</td>
</tr>
<tr>
<td>QLK 45/3000-2212</td>
<td>QLK 45/0030-2212</td>
<td>24</td>
<td>190</td>
<td>60</td>
<td>11</td>
<td>1900</td>
<td>0.8</td>
<td>a 395, b 70, c 302, d 272, e 128</td>
</tr>
</tbody>
</table>

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

### Characteristic curves

- 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

---

ebmpapst
Tangential blowers with electronically commutated EC-motors.

- Integrated electronics
- Blower speed variable via PMW (pulse width modulation) signal, optionally speed adjustment via 0 - 10 V analoguous voltage signal
- Impeller diameter 60 mm
- Horizontal or vertical mounting position with motor at the bottom
- Protection class IP20, insulation class F
- Permissible ambient temperature 0 – 60 °C

**Tangential blowers**

**QLZ 06 with EC motor**

---

**Nominal data**

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>VDC</th>
<th>air flow</th>
<th>max. pressure increase</th>
<th>power input</th>
<th>speed</th>
<th>mass</th>
<th>Dimensions mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>motor right*</td>
<td>24</td>
<td>120</td>
<td>75</td>
<td>10</td>
<td>2100</td>
<td>0,7</td>
<td>a 206,5, b 64,5, c 125, d 135, e 94, f –</td>
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<tr>
<td>QLZ06/1200-2212</td>
<td>24</td>
<td>180</td>
<td>80</td>
<td>15</td>
<td>2050</td>
<td>0,75</td>
<td>267 64,5 185 195 154 64</td>
</tr>
<tr>
<td>QLZ06/1800-2212</td>
<td>24</td>
<td>220</td>
<td>80</td>
<td>17</td>
<td>1800</td>
<td>0,8</td>
<td>327 64,5 243 253 212 93</td>
</tr>
<tr>
<td>motor left</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QLZ06/0012-2212</td>
<td>24</td>
<td>120</td>
<td>75</td>
<td>10</td>
<td>2100</td>
<td>0,7</td>
<td></td>
</tr>
<tr>
<td>QLZ06/0018-2212</td>
<td>24</td>
<td>180</td>
<td>80</td>
<td>15</td>
<td>2050</td>
<td>0,75</td>
<td></td>
</tr>
<tr>
<td>QLZ06/0024-2212</td>
<td>24</td>
<td>220</td>
<td>80</td>
<td>17</td>
<td>1800</td>
<td>0,8</td>
<td></td>
</tr>
</tbody>
</table>

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

---

**Characteristic curves**

**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

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**ebm-papst · Landshut**

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**ebmpapst**
Tangential blowers
QLN 65 with EC motor

Tangential blowers with electronically commutated EC-motors.
- integrated electronics
- blower speed variable via PMW (pulse width modulation) signal,
  optionally speed adjustment via 0 - 10 V analogous voltage signal
- impeller diameter 65 mm
- horizontal or vertical mounting position with motor at the bottom
- protection class IP20, insulation class F
- permissible ambient temperature 0 – 60 °C

Nominal data

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>Rated voltage</th>
<th>Air flow</th>
<th>Max. pressure increase</th>
<th>Power input</th>
<th>Speed</th>
<th>Mass</th>
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</thead>
<tbody>
<tr>
<td>motor right*</td>
<td>VDC m³/h Pa W min⁻¹ kg</td>
<td>QLN65/1200-2212</td>
<td>24 160 110 14 2200 0,75</td>
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<td></td>
<td></td>
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<tr>
<td>motor left</td>
<td></td>
<td>QLN65/1800-2212</td>
<td>24 210 85 16 1850 0,8</td>
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</table>

Dimensions mm

<table>
<thead>
<tr>
<th>Dimensions mm</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>QLN65/1200-2212</td>
<td>209</td>
<td>64,5</td>
<td>122</td>
<td>139</td>
<td>94</td>
<td>–</td>
</tr>
<tr>
<td>QLN65/1800-2212</td>
<td>269</td>
<td>64,5</td>
<td>182</td>
<td>199</td>
<td>154</td>
<td>69</td>
</tr>
</tbody>
</table>

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

Characteristic curves

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 with EC motor
QG 030

- DC blower with electronically commutated external rotor motor. Fully integrated commutation electronics. With electronic protection against reverse polarity, blocking and overloading by PTC-resistor; partially impedance protected.
- motor with ball bearing system. Blower wheel mounting plate with sleeve bearings.
- fan propeller and air duct housing of aluminium. Plastic housing ends.
- rotational direction CW looking at rotor. Air exhaust through housing port.
- electrical connection via 2 leads. Stripped and tinned ends.

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Rated voltage</th>
<th>Voltage range</th>
<th>Air flow</th>
<th>Noise level</th>
<th>Power input</th>
<th>Max. Ambient Temp.</th>
<th>Service life</th>
<th>Mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>QG 030-148/12</td>
<td>12</td>
<td>8...14</td>
<td>75</td>
<td>6,2</td>
<td>30 000 / 10 000</td>
<td>0,23</td>
<td>201</td>
<td>148</td>
</tr>
<tr>
<td>QG 030-198/12</td>
<td>12</td>
<td>8...14</td>
<td>100</td>
<td>8,0</td>
<td>30 000 / 10 000</td>
<td>0,29</td>
<td>258</td>
<td>198</td>
</tr>
<tr>
<td>QG 030-303/12</td>
<td>12</td>
<td>8...14</td>
<td>140</td>
<td>8,7</td>
<td>30 000 / 10 000</td>
<td>0,38</td>
<td>363</td>
<td>303</td>
</tr>
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<td>QG 030-353/12</td>
<td>12</td>
<td>8...14</td>
<td>155</td>
<td>9,6</td>
<td>30 000 / 10 000</td>
<td>0,41</td>
<td>413</td>
<td>353</td>
</tr>
<tr>
<td>QG 030-148/14</td>
<td>24</td>
<td>16...28</td>
<td>75</td>
<td>6,2</td>
<td>30 000 / 10 000</td>
<td>0,23</td>
<td>201</td>
<td>148</td>
</tr>
<tr>
<td>QG 030-198/14</td>
<td>24</td>
<td>16...28</td>
<td>100</td>
<td>8,0</td>
<td>30 000 / 10 000</td>
<td>0,29</td>
<td>258</td>
<td>198</td>
</tr>
<tr>
<td>QG 030-303/14</td>
<td>24</td>
<td>16...28</td>
<td>140</td>
<td>8,7</td>
<td>30 000 / 10 000</td>
<td>0,38</td>
<td>363</td>
<td>303</td>
</tr>
<tr>
<td>QG 030-353/14</td>
<td>24</td>
<td>16...28</td>
<td>155</td>
<td>9,6</td>
<td>30 000 / 10 000</td>
<td>0,41</td>
<td>413</td>
<td>353</td>
</tr>
</tbody>
</table>

Manufacturer:
ebm-papst · St. Georgen

Characteristic curves

Present ebm designation:
QG 030-148/12 ➔ QG 030-148/12
QG 030-198/12 ➔ QG 030-198/12
QG 030-303/12 ➔ QG 030-303/12
QG 030-353/12 ➔ QG 030-353/12
QG 030-148/14 ➔ QG 030-148/14
QG 030-198/14 ➔ QG 030-198/14
QG 030-303/14 ➔ QG 030-303/14
QG 030-353/14 ➔ QG 030-353/14

Dimensions mm

*) Data for service life are valid at horizontal mounting position: subject to alterations

Pocket for square nut M3, flat, DIN562 (6x)
Tangential blowers with electronically commutated EC-motors.
- integrated electronics
- speed setting via 0 - 10 V analogue voltage signal
- speed-adjustable (version) via PWM signal available upon request
- impeller diameter 40 mm
- airflow direction of 180° possible
- mounting position horizontal or vertical
- protection class IP20, insulation class F
- permissible ambient temperature 0 – 60 °C

### Nominal data

<table>
<thead>
<tr>
<th>type</th>
<th>VDC</th>
<th>air flow</th>
<th>max. pressure increase</th>
<th>power input</th>
<th>speed</th>
<th>mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>QL4/2525-2212</td>
<td>24</td>
<td>194</td>
<td>12</td>
<td>7</td>
<td>2550</td>
<td>1,3</td>
</tr>
<tr>
<td>QL4/3030-2212</td>
<td>24</td>
<td>234</td>
<td>15</td>
<td>8</td>
<td>2200</td>
<td>1,4</td>
</tr>
</tbody>
</table>

subject to alterations

### Characteristic curves

- Power supply: 24 DC (10V...26,8V)
- Hall sensor out: 2 pulses per rotation
- Input: control voltage 0...10V input switched to GND: fan off

### Additional information

- Suitable for connector housing Mini-Fit, Jr. (Fa. Molex)
- Order number 39-01-4050

---

**Note:** The table and diagrams provide detailed specifications and characteristic curves for the QL 4 double housing with EC motor, including airflow, pressure increase, power input, and dimensions.
Tangential blowers
QLK 45 double housing with EC motor

Tangential blowers with electronically commutated EC-motors.
- integrated electronics
- speed setting via 0 - 10 V analogue voltage signal
  speed-adjustable (version) via PWM signal available upon request
- impeller diameter 45 mm
- horizontal or vertical mounting position
- protection class IP20, insulation class F
- permissible ambient temperature 0 – 60 °C

Nominal data

<table>
<thead>
<tr>
<th>type</th>
<th>VDC (V)</th>
<th>air flow (m³/h)</th>
<th>max. pressure increase (Pa)</th>
<th>power input (W)</th>
<th>speed (min⁻¹)</th>
<th>mass (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>QLK45/2424-2212*</td>
<td>24</td>
<td>230</td>
<td>37</td>
<td>8</td>
<td>1650</td>
<td>2.4</td>
</tr>
<tr>
<td>QLK45/3030-2212</td>
<td>24</td>
<td>265</td>
<td>34</td>
<td>10</td>
<td>1500</td>
<td>2.6</td>
</tr>
</tbody>
</table>

* Corresponding to dimensional drawing; subject to alterations

Power supply: 24 DC (10V…26.8V)
Hall sensor output: 2 pulses per rotation
Input: control voltage: 0…10V
  input switched to GND: fan off
  input open: fan off

Air outlet II
max. 618
620±0,2
max. 88
242±1

Power supply +
Hall Sensor OUT
GND
PWM Input
Power Supply - (GND)
suitable for connector housing Mini-Fit, Jr. (Fa. Molex)
order number 39-01-4050

X

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Tangential blowers with electronically commutated EC-motors.
- integrated electronics
- speed setting via 0 - 10 V analogue voltage signal
  speed-adjustable (version) via PWM signal available upon request
- impeller diameter 65 mm
- horizontal or vertical mounting position
- protection class IP20, insulation class F
- permissible ambient temperature 0 – 60 °C

**Nominal data**

<table>
<thead>
<tr>
<th>type</th>
<th>V</th>
<th>m³/h</th>
<th>Pa</th>
<th>W</th>
<th>min⁻¹</th>
<th>kg</th>
<th>mm</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>QLN65/2424-2212</td>
<td>24</td>
<td>360</td>
<td>42</td>
<td>19</td>
<td>1250</td>
<td>1,5</td>
<td>608±0,2</td>
<td>593±0,2</td>
</tr>
</tbody>
</table>

subject to alterations

**Characteristic curves**

- Power supply +
- Half Sensor OUT
- GND
- PWM Input
- Power supply - (GND)

suitable for connector housing Mini-Fit, Jr. (Fa. Molex)
order number 39-01-4050
## Radial blowers with AC motor

<table>
<thead>
<tr>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radial blowers, motor directly mounted   RL, RLF, RLD, RLA, RLE, RLS</td>
<td>33</td>
</tr>
<tr>
<td>Radial blowers with double housing</td>
<td>37</td>
</tr>
<tr>
<td>Radial blowers, motor decoupled mounted, high temperature version</td>
<td>39</td>
</tr>
<tr>
<td>Radial blowers D2E.. with external-rotor motor for extractor hoods</td>
<td>47</td>
</tr>
</tbody>
</table>
Radial blowers RL with forward curved impellers (drum impellers) feature high specific ratings at high maximum pressure, stable pressure/air flow characteristic curves, good efficiency and low noise levels. Both single and dual inlet versions are available, as are blowers with double housing. The motors are mounted outside the air current on the blower housing itself.

For increased requirements in terms of temperature resistance, e.g. for use as flue gas blowers in gas heating appliances, the motors are thermally and acoustically decoupled from the blower unit using silicon elements. A cooling vane on the motor shaft between the blower housing and the motor also reduces the temperatures transferred to the bearing system through the shaft. In conjunction with bearing systems suitable for high temperatures and a coil structure that complies with insulation class H, this means that all specific requirements for medium temperatures of between 180°C and 250°C can be met according to the design.

As a result of the elastic motor mounting, the mass of the motor must be supported depending on its mounting position. Therefore, it is essential that details of the mounting position are given.

Intake nozzles, guard grilles, pressure sensors, tachometers and other accessories can be supplied to adjust the units to suit specific requirements in heating systems.
Radial blowers with AC internal-rotor motor
RL 59

- mounting position: shaft horizontal
- insulation class B
- permissible ambient temperature 0 – 60 °C
- housing: plastic PA6 GF
- impeller: forward curved, plastic PA6 GF

Nominal data

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>characteristic curve</th>
<th>rated voltage (V)</th>
<th>frequency (Hz)</th>
<th>air flow (m³/h)</th>
<th>max. pressure increase (Pa)</th>
<th>power input (W)</th>
<th>rated current (mA)</th>
<th>speed (min⁻¹)</th>
<th>mass (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>motor right</td>
<td>motor left</td>
<td>230</td>
<td>50</td>
<td>20</td>
<td>63</td>
<td>6</td>
<td>40</td>
<td>2400</td>
<td>0,30</td>
</tr>
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</table>

*) Corresponding to dimensional drawing; Technical data valid at free air flow and rated voltage; bold print = standard type; subject to alterations

Characteristics curves

connector 2,8 x 0,5

A0003471

Connector 2,8 x 0,5
Radial blowers with AC internal-rotor motor
RLF 67

- mounting position: shaft horizontal
- insulation class B
- permissible ambient temperature 0 – 60 °C
- housing: galvanized sheet steel
- impeller: forward curved, aluminium (galvanized sheet steel)

Radial blowers with AC internal-rotor motor
RLF 67

 ebm-papst · Landshut

**Nominal data**

<table>
<thead>
<tr>
<th></th>
<th>motor right*</th>
<th>motor left</th>
</tr>
</thead>
<tbody>
<tr>
<td>RLF67/3800-3015L</td>
<td>RLF67/0038-3015L</td>
<td>230 Hz 50 m³/h 40 Pa 73 W 12 mA 90 min⁻¹ 0.7 kg 104 a 49 b 38 c 70 d</td>
</tr>
<tr>
<td>RLF67/7600Z-3025L</td>
<td>RLF67/0076Z-3025L</td>
<td>230 Hz 50 m³/h 125 Pa 115 W 27 mA 220 min⁻¹ 1.2 kg 164 a 92 b 76 c 113 d</td>
</tr>
</tbody>
</table>

*) Corresponding to dimensional drawing; Technical data valid at free air flow and rated voltage; bold print = standard type; subject to alterations

**Characteristic curves**

Characteristic curves

Characteristics curve

connector 6,3 x 0,8
Radial blowers with AC internal-rotor motor
RLD 76 (85)

- mounting position: shaft horizontal
- insulation class B
- permissible ambient temperature 0 – 60 °C
- housing: FAL sheet steel
- impeller: forward curved, aluminium (FAL sheet steel)

**Nominal data**

<table>
<thead>
<tr>
<th>Motor</th>
<th>Voltage</th>
<th>Frequency</th>
<th>Air Flow</th>
<th>Max. Pressure Increase</th>
<th>Power Input</th>
<th>Rated Current</th>
<th>Speed</th>
<th>Mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>RLD85/4200-3020L</td>
<td>230</td>
<td>50</td>
<td>95</td>
<td>185</td>
<td>30</td>
<td>250</td>
<td>1500</td>
<td>1,1</td>
</tr>
<tr>
<td>RLD76/8600Z-3030L</td>
<td>230</td>
<td>50</td>
<td>210</td>
<td>165</td>
<td>58</td>
<td>530</td>
<td>2150</td>
<td>1,5</td>
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<tr>
<td>RLD85/8600Z-3038L</td>
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<td>250</td>
<td>82</td>
<td>720</td>
<td>2250</td>
<td>1,9</td>
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</table>

**Dimensions mm**

<table>
<thead>
<tr>
<th>Motor</th>
<th>a</th>
<th>b</th>
<th>c</th>
</tr>
</thead>
<tbody>
<tr>
<td>RLD85/4200-3020L</td>
<td>123</td>
<td>62</td>
<td>42</td>
</tr>
<tr>
<td>RLD76/8600Z-3030L</td>
<td>185</td>
<td>108</td>
<td>86</td>
</tr>
<tr>
<td>RLD85/8600Z-3038L</td>
<td>193</td>
<td>108</td>
<td>86</td>
</tr>
</tbody>
</table>

*) Corresponding to dimensional drawing; Technical data valid at free air flow with inlet ring; bold print = standard type; subject to alterations

**Characteristic curves**

- ![Characteristic curves diagram](image)
Radial blowers with AC internal-rotor motor
RLA 97 (108)

- mounting position: shaft horizontal
- insulation class B
- permissible ambient temperature 0 – 60 °C
- housing: FAL sheet steel
- impeller: forward curved, FAL sheet steel (aluminium)

Nominal data

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>Characteristic curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>motor right*</td>
<td>motor left</td>
</tr>
<tr>
<td>V</td>
<td>Hz</td>
</tr>
<tr>
<td>RLA97/4200-3030L</td>
<td>230</td>
</tr>
<tr>
<td>RLA97/8600Z-3045L</td>
<td>230</td>
</tr>
</tbody>
</table>

*) Corresponding to dimensional drawing; Technical data valid at free air flow with inlet ring; bold print = standard type; subject to alterations

Characteristic curves

- Connector 6.3 x 0.8
- Dimensions mm:
  - a
  - b
  - c

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Radial blowers AC with double housing
RLF 67, RLD 85, RLA 97

- mounting position: RLF, RLD shaft horizontal
  RLA all positions available
- insulation class B
- permissible ambient temperature 0 – 60 °C
- housing: FAL sheet steel
- impeller: forward curved, aluminium

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<table>
<thead>
<tr>
<th>Nominal data</th>
<th>Characteristic curve</th>
<th>Rated voltage</th>
<th>Frequency</th>
<th>Air flow</th>
<th>Max. pressure increase</th>
<th>Power input</th>
<th>Rated current</th>
<th>Speed</th>
<th>Mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>V</td>
<td>Hz</td>
<td>m³/h</td>
<td>Pa</td>
<td>W</td>
<td>mA</td>
<td>min⁻¹</td>
<td>kg</td>
<td></td>
</tr>
<tr>
<td>RLF67/7676Z-3030L</td>
<td>230</td>
<td>50</td>
<td>230</td>
<td>106</td>
<td>38</td>
<td>330</td>
<td>2400</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>RLD85/8686Z-3045L</td>
<td>230</td>
<td>50</td>
<td>380</td>
<td>240</td>
<td>95</td>
<td>910</td>
<td>1800</td>
<td>2.4</td>
<td></td>
</tr>
<tr>
<td>RLD85/8686Z-4020/2</td>
<td>230</td>
<td>50</td>
<td>512</td>
<td>254</td>
<td>120</td>
<td>503</td>
<td>2550</td>
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<tr>
<td>RLA97/120120Z-4340/2</td>
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<td>200</td>
<td>950</td>
<td>2300</td>
<td>3.9</td>
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</tbody>
</table>

Technical data valid at free air flow and rated voltage; bold print = standard type; subject to alterations

Characteristic curves

ebmpapst
Radial blowers with AC internal-rotor motor
RLS 170

- mounting position: shaft horizontal
- insulation class H
- permissible ambient temperature 90 °C
- housing: plastic PA6 GF
- impeller: backward curved, plastic PA6 GF

**Nominal data**

<table>
<thead>
<tr>
<th>type</th>
<th>V</th>
<th>Hz</th>
<th>m³/h</th>
<th>Pa</th>
<th>W</th>
<th>mA</th>
<th>min⁻¹</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>RLS170/0013-3030LH</td>
<td>230</td>
<td>50</td>
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</tbody>
</table>

Technical data valid at free air flow and rated voltage; subject to alterations

**Characteristic curves**

- Connector 6.3 x 0.8
- View X
- 4 x Ø3.6x5.5
Radial blowers high temperature version
RLD 85...LH

- insulation class H
- max. ambient air stream temperature 180 °C (250 °C with FAL impeller)
- housing: FAL sheet steel
- impeller: forward curved, aluminium (FAL sheet steel)
- motor mounting decoupled by silicon elements
- mounting position must be specified for corresponding support elements

**Nominal data**

<table>
<thead>
<tr>
<th>motor right*</th>
<th>motor left</th>
</tr>
</thead>
<tbody>
<tr>
<td>RLD 85/2700-3020LH</td>
<td>RLD 85/0027-3020LH</td>
</tr>
<tr>
<td>RLD 85/3400-3025LH</td>
<td>RLD 85/0034-3025LH</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Characteristic curve</th>
<th>rated voltage</th>
<th>frequency</th>
<th>air flow</th>
<th>max. pressure increase</th>
<th>power input</th>
<th>rated current</th>
<th>speed</th>
<th>mass</th>
<th>Dimensions mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>V</td>
<td>Hz</td>
<td>m³/h</td>
<td>Pa</td>
<td>W</td>
<td>mA</td>
<td>min⁻¹</td>
<td>kg</td>
<td>a</td>
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<td>113 45 27</td>
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<td>50</td>
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<td>28</td>
<td>245</td>
<td>2300</td>
<td>1,1</td>
<td></td>
</tr>
<tr>
<td>129 54 34</td>
<td>230</td>
<td>50</td>
<td>108</td>
<td>180</td>
<td>39</td>
<td>350</td>
<td>2550</td>
<td>1,3</td>
<td></td>
</tr>
</tbody>
</table>

*) Corresponding to dimensional drawing; Technical data valid at free air flow without inlet ring; bold print = standard type; subject to alterations

**Characteristic curves**

- Connector: 6.3 x 0.8
- Dimensions: 78 x 131.5
- Mass: 113 kg
- Speed: 2300 min⁻¹
- Rated current: 245 mA
- Rated voltage: 230 V

**Addresses**

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Radial blowers AC
- Tangential blowers
- Hot air blowers
- Axial blowers
- Pumps

39
Radial blowers high temperature version
RLA 97 (108)...LH

- insulation class H
- max. ambient air stream temperature 250 °C
- housing: FAL sheet steel
- impeller: forward curved, FAL sheet steel
- motor mounting decoupled by silicon elements
- mounting position must be specified for corresponding support elements

Nominal data

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>Characteristic curve</th>
<th>Rated voltage</th>
<th>Frequency</th>
<th>Air flow</th>
<th>Max. pressure increase</th>
<th>Rated current</th>
<th>Speed</th>
<th>Mass</th>
<th>Dimensions mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>motor right*</td>
<td></td>
<td>V</td>
<td>Hz</td>
<td>m³/h</td>
<td>Pa</td>
<td>W</td>
<td>mA</td>
<td>min⁻¹</td>
<td>kg</td>
</tr>
<tr>
<td>RLA97/4200-3030LH</td>
<td>RLA97/0042-3030LH</td>
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<td>50</td>
<td>130</td>
<td>220</td>
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<td>390</td>
<td>2000</td>
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</tr>
<tr>
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<td>RLA108/0034-3030LH</td>
<td>230</td>
<td>50</td>
<td>135</td>
<td>280</td>
<td>58</td>
<td>490</td>
<td>1925</td>
<td>1,6</td>
</tr>
<tr>
<td>RLA108/4200-3030LH</td>
<td>RLA108/0042-3030LH</td>
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<td>50</td>
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<td>290</td>
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<td>1870</td>
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</table>

Motor left

<table>
<thead>
<tr>
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<th>Characteristic curve</th>
<th>Rated voltage</th>
<th>Frequency</th>
<th>Air flow</th>
<th>Max. pressure increase</th>
<th>Rated current</th>
<th>Speed</th>
<th>Mass</th>
<th>Dimensions mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>RLA97/0042-3030LH</td>
<td>RLA97/0042-3030LH</td>
<td>230</td>
<td>50</td>
<td>130</td>
<td>220</td>
<td>41</td>
<td>390</td>
<td>2000</td>
<td>1,6</td>
</tr>
<tr>
<td>RLA108/0034-3030LH</td>
<td>RLA108/0034-3030LH</td>
<td>230</td>
<td>50</td>
<td>135</td>
<td>280</td>
<td>58</td>
<td>490</td>
<td>1925</td>
<td>1,6</td>
</tr>
<tr>
<td>RLA108/0042-3030LH</td>
<td>RLA108/0042-3030LH</td>
<td>230</td>
<td>50</td>
<td>140</td>
<td>290</td>
<td>64</td>
<td>520</td>
<td>1870</td>
<td>1,6</td>
</tr>
</tbody>
</table>

*) Corresponding to dimensional drawing. Technical data valid at free air flow without inlet ring; bold print = standard type; subject to alterations

Characteristic curves

connector 6,3 x 0,8

Dimensions mm:
- Connector 6,3 x 0,8
- Diameter 118 mm
- 3 x Ø 3,2 mm
- Angle 40°
Radial blowers high temperature version
RLE 108 (120)…LH

- insulation class H
- max. ambient air stream temperature 250 °C
- housing: FAL sheet steel
- impeller: forward curved, FAL sheet steel
- motor mounting decoupled by silicon elements
- mounting position must be specified for corresponding support elements

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<table>
<thead>
<tr>
<th>Nominal data</th>
<th>Characteristic curve</th>
<th>Dimensions mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>motor right*</td>
<td>rated voltage</td>
<td>freq.</td>
</tr>
<tr>
<td>motor left</td>
<td>V</td>
<td>Hz</td>
</tr>
<tr>
<td>RLE108/3400-3030LH</td>
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<td>50</td>
</tr>
<tr>
<td>RLE120/3400-3030LH</td>
<td>230</td>
<td>50</td>
</tr>
</tbody>
</table>

*) Corresponding to dimensional drawing; Technical data valid at free air flow with inlet ring; bold print = standard type; subject to alterations

Characteristic curves

- Connector 6,3 x 0,8
- Dimensions mm
- Motor right
- Motor left
- Nominal data
- Characteristic curve
-Rated voltage
- Frequency
- Air flow
- Max. pressure increase
- Power input
- Rated current
- Speed
- Mass
- a
- b
- c
Radial blowers high temperature version
RLB 130…LH

- insulation class H
- max. ambient air stream temperature 180 °C
- housing: FAL sheet steel
- impeller: forward curved, aluminium
- motor mounting decoupled by silicon elements
- mounting position must be specified for corresponding support elements

**Nominal data**

<table>
<thead>
<tr>
<th>type</th>
<th>V</th>
<th>Hz</th>
<th>m³/h</th>
<th>Pa</th>
<th>W</th>
<th>mA</th>
<th>min⁻¹</th>
<th>kg</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>RLB130/3400-3038LH</td>
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<td>140</td>
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<td>2,0</td>
<td>145</td>
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<td>34</td>
<td>-</td>
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</table>

Technical data valid at free air flow with inlet ring; bold print = standard type; subject to alterations

**Characteristic curves**

![Characteristic curves diagram]
Radial blowers high temperature version
RLG 97 (108)...LH

- insulation class H
- max. ambient air stream temperature 250 °C
- housing: FAL sheet steel
- impeller: forward curved, FAL sheet steel
- motor mounting decoupled by silicon elements
- mounting position must be specified for corresponding support elements

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**Nominal data**

<table>
<thead>
<tr>
<th>Motor</th>
<th>Rated Voltage</th>
<th>Frequency</th>
<th>Air Flow</th>
<th>Max. Pressure Increase</th>
<th>Power Input</th>
<th>Rated Current</th>
<th>Speed</th>
<th>Mass</th>
<th>Dimensions mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>RLG97/4200-3025LH</td>
<td>230</td>
<td>50</td>
<td>115</td>
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<td>360</td>
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<td>132</td>
</tr>
<tr>
<td>RLG108/4200-3030LH</td>
<td>230</td>
<td>50</td>
<td>145</td>
<td>300</td>
<td>60</td>
<td>520</td>
<td>2400</td>
<td>1,6</td>
<td>138</td>
</tr>
</tbody>
</table>

* Corresponding to dimensional drawing; Technical data valid at free air flow without inlet ring; bold print = standard type; subject to alterations

**Characteristic curves**

- Connector 6.3 x 0.8
- 180°
- 0.118
Radial blowers high temperature version
RLH 108 (120)…LH

- insulation class H
- max. ambient air stream temperature 250 °C
- housing: FAL sheet steel
- impeller: forward curved, FAL sheet steel
- motor mounting decoupled by silicon elements
- mounting position must be specified for corresponding support elements

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### Nominal data

<table>
<thead>
<tr>
<th>Motor Type</th>
<th>Motor Data</th>
<th>Characteristic Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>RLH 108/4200-3030LH</td>
<td>RLH 108/0042-3030LH</td>
<td>V 230 Hz 50 m³/h 135 Pa 315 W 58 mA 1850 min⁻¹ 1,7 kg a 143 kg c 42</td>
</tr>
<tr>
<td>RLH 120/3800-3038LH</td>
<td>RLH 120/0038-3038LH</td>
<td>V 230 Hz 50 m³/h 170 Pa 420 W 92 mA 2100 min⁻¹ 2,0 kg a 155 kg c 38</td>
</tr>
</tbody>
</table>

*) Corresponding to dimensional drawing. Technical data valid at free air flow with inlet ring; bold print = standard type; subject to alterations

### Characteristic curves

- [Graph 1](#)
- [Graph 2](#)
Radial blowers high temperature version
RLK 108…LH

- housing: die-cast aluminium
- insulation class H
- max. ambient air stream temperature 250 °C
- impeller: forward curved, FAL sheet steel
- motor mounting decoupled by silicon elements
- mounting position must be specified for corresponding support elements

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### Nominal data

<table>
<thead>
<tr>
<th>type</th>
<th>rated voltage</th>
<th>frequency</th>
<th>air flow</th>
<th>max. pressure increase</th>
<th>power input</th>
<th>rated current</th>
<th>speed</th>
<th>mass</th>
<th>Dimensions mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>RLK108/0042-3030LH</td>
<td>230</td>
<td>50</td>
<td>142</td>
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</tbody>
</table>

Technical data valid at free air flow and rated voltage; bold print = standard type; subject to alterations

### Characteristic curves

- [Graph 1](#)
- [Graph 2](#)
The signal transmitter SG2 is an impulse transmitter suitable to be connected to EM30 and KM motors. 12 square impulses per rotation of the motor shaft are formed by means of a 24-pole, plastic-bonded ferrite magnet ring, in connection with a Hall-IC. A secondary electronic system can be applied to use this signal as speed recognition, speed control.

In a simple case, a supply voltage of 4.5 - 24 Volts as well as a pull-up resistor of e.g. 2.7 kΩ and 0.25W is necessary to obtain a digital signal of equal amplitude at the output.

Features of the signal transmitter are high operating reliability, small Dimensions, no limitation to build-in position and no operating noise.

**Impulse transmitter SG 2**

The signal transmitter SG2 is an impulse transmitter suitable to be connected to EM30 and KM motors. 12 square impulses per rotation of the motor shaft are formed by means of a 24-pole, plastic-bonded ferrite magnet ring, in connection with a Hall-IC. A secondary electronic system can be applied to use this signal as speed recognition, speed control.

In a simple case, a supply voltage of 4.5 - 24 Volts as well as a pull-up resistor of e.g. 2.7 kΩ and 0.25W is necessary to obtain a digital signal of equal amplitude at the output.

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**Impulse transmitter SG 2**

The signal transmitter SG2 is an impulse transmitter suitable to be connected to EM30 and KM motors. 12 square impulses per rotation of the motor shaft are formed by means of a 24-pole, plastic-bonded ferrite magnet ring, in connection with a Hall-IC. A secondary electronic system can be applied to use this signal as speed recognition, speed control.

In a simple case, a supply voltage of 4.5 - 24 Volts as well as a pull-up resistor of e.g. 2.7 kΩ and 0.25W is necessary to obtain a digital signal of equal amplitude at the output.

Features of the signal transmitter are high operating reliability, small Dimensions, no limitation to build-in position and no operating noise.

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Features of the signal transmitter are high operating reliability, small Dimensions, no limitation to build-in position and no operating noise.
Radial blowers are dual inlet, with AC external-rotor motor made by ebm-papst Mulfingen. They are available in special range hood design. The blowers listed on the following pages are mainly used in so-called wall and island chimneys as well as in built-in hoods fitted with a blower module.

The blower range is extremely low in noise, even with high air performance. Another great advantage lies in the fact that this blower range is very easy to install. The dual inlet blower can be mounted in the customer’s appliance in no time at all. Exhaust air pipes and bushing nozzles can be fitted without any problems.

The capacitor is part of the integrated terminal box for blower sizes Ø140 to Ø160 mm. The blower is also completely wired up and ready to be line-operated via a plug. The standard design comes in 4 speed steps, thus covering a wide range of possible applications.

Ebm-papst Mulfingen also offer an extensive range of products, i.e. adapted fans and blowers, for other designs and types, e.g. flat screen hoods, intermediate or substructure hood. Please contact us for more information.
Radial blowers dual inlet
D2E 140 with AC external-rotor motor

- **Material:**
  - Housing: PP plastic, black
  - Impeller: PP plastic, white
  - Rotor: Partially cast in aluminium
  - Terminal box: PP plastic, black

- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 44
- **Insulation class:** "F"
- **Mounting position:** Any
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Design:** 4-step blower with integrated terminal box, standard external-rotor motor anti-vibration mounted on one side

**Nominal data**

<table>
<thead>
<tr>
<th>type</th>
<th>motor</th>
<th>voltage</th>
<th>frequency</th>
<th>air flow</th>
<th>speed</th>
<th>power input</th>
<th>rated current</th>
<th>capacitor</th>
<th>noise level</th>
<th>back pressure</th>
<th>ambient temp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>D2E 140</td>
<td>M2E 068-CF</td>
<td>1~230</td>
<td>50</td>
<td>470</td>
<td>1150</td>
<td>130</td>
<td>0,58</td>
<td>2,0/400</td>
<td>58</td>
<td>0</td>
<td>-25 to +50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1~230</td>
<td>60</td>
<td>430</td>
<td>1050</td>
<td>130</td>
<td>0,58</td>
<td>2,0/400</td>
<td>56</td>
<td>0</td>
<td>-25 to +40</td>
</tr>
</tbody>
</table>

**Characteristic curves**

<table>
<thead>
<tr>
<th>Step</th>
<th>n [min⁻¹]</th>
<th>Pₚ [W]</th>
<th>I [A]</th>
<th>Lₚₘₐₓ [dBA]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>690</td>
<td>56</td>
<td>0,26</td>
<td>36</td>
</tr>
<tr>
<td>2</td>
<td>1015</td>
<td>55</td>
<td>0,25</td>
<td>38</td>
</tr>
<tr>
<td>3</td>
<td>1385</td>
<td>93</td>
<td>0,41</td>
<td>52</td>
</tr>
<tr>
<td>4</td>
<td>2020</td>
<td>80</td>
<td>0,36</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>2235</td>
<td>100</td>
<td>0,43</td>
<td>59</td>
</tr>
</tbody>
</table>

Subject to alterations
- **Bearings**: Maintenance-free ball bearings
- **Motor protection**: Top wired internally
- **Connection leads**: Via plug
- **Protection class**: I
- **Capacitor**: FPU (P2) integrated in terminal box completely wired up and ready for plug-in
- **Product conforming to standards**: EN 60335-2-31, CE
- **Approvals**: VDE

**Connection diagram**

Switch has to break contact when turned.

**Fields**

- 1 = step 1 (min.) white
- 2 = step 2 red
- 3 = step 3 grey
- 4 = step 4 (max.) black
- 5 = N blue
- 6 = Ground green/yellow

**Centrifugal blower with flange**

<table>
<thead>
<tr>
<th>Model</th>
<th>Mass (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>D2E 140-HR97-07</td>
<td>2.3</td>
</tr>
</tbody>
</table>

**Radial blowers AC**

- Hot air blowers
- Axial blowers
- Pumps

**General information**

- Tangential blowers
- Radial blowers EC

**Addresses**

- Mass of centrifugal blower
- D2E 140-HR97-07
Radial blowers dual inlet
D2E 146 with AC external-rotor motor

- Material:
  - Housing: PP plastic, black
  - Impeller: PP plastic, red-brown
  - Rotor: Partially cast in aluminium
  - Terminal box: PP plastic, black

- Direction of rotation: Clockwise, seen on rotor
- Type of protection: IP 44
- Insulation class: "F"
- Mounting position: Any
- Condensate discharges: None
- Mode of operation: Continuous operation (S1)
- Design: 4-step blower with integrated terminal box, standard external-rotor motor anti-vibration mounted via support plate

**Nominal data**

<table>
<thead>
<tr>
<th>type</th>
<th>motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>min⁻¹</th>
<th>W</th>
<th>A</th>
<th>µF/VDB</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>D2E 146</td>
<td>M2E068-CA</td>
<td>1~ 230</td>
<td>50</td>
<td>520</td>
<td>1350</td>
<td>120</td>
<td>0,53</td>
<td>3,0/400</td>
<td>51</td>
<td>50</td>
<td>-25 to +55</td>
</tr>
<tr>
<td>D2E 146</td>
<td>M2E068-CF</td>
<td>1~ 230</td>
<td>60</td>
<td>375</td>
<td>1400</td>
<td>125</td>
<td>0,55</td>
<td>3,0/400</td>
<td>53</td>
<td>100</td>
<td>-25 to +40</td>
</tr>
</tbody>
</table>

subject to alterations

**Characteristic curves**

<table>
<thead>
<tr>
<th>n [min⁻¹]</th>
<th>Pₙ [W]</th>
<th>I [A]</th>
<th>Lₚ₄₁ [dBA]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>660</td>
<td>48</td>
<td>0,27</td>
</tr>
<tr>
<td>Step 1</td>
<td>960</td>
<td>46</td>
<td>0,26</td>
</tr>
<tr>
<td>Step 2</td>
<td>925</td>
<td>58</td>
<td>0,31</td>
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<tr>
<td>Step 2</td>
<td>1355</td>
<td>55</td>
<td>0,30</td>
</tr>
<tr>
<td>Step 3</td>
<td>1210</td>
<td>72</td>
<td>0,36</td>
</tr>
<tr>
<td>Step 3</td>
<td>1740</td>
<td>66</td>
<td>0,35</td>
</tr>
<tr>
<td>Step 4</td>
<td>1635</td>
<td>113</td>
<td>0,49</td>
</tr>
<tr>
<td>Step 4</td>
<td>2115</td>
<td>104</td>
<td>0,45</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>n [min⁻¹]</th>
<th>Pₙ [W]</th>
<th>I [A]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 4</td>
<td>2115</td>
<td>104</td>
</tr>
</tbody>
</table>

Subject to alterations.

---

Radial blowers dual inlet
D2E 146 with AC external-rotor motor

- Material:
  - Housing: PP plastic, black
  - Impeller: PP plastic, red-brown
  - Rotor: Partially cast in aluminium
  - Terminal box: PP plastic, black

- Direction of rotation: Clockwise, seen on rotor
- Type of protection: IP 44
- Insulation class: "F"
- Mounting position: Any
- Condensate discharges: None
- Mode of operation: Continuous operation (S1)
- Design: 4-step blower with integrated terminal box, standard external-rotor motor anti-vibration mounted via support plate

**Nominal data**

<table>
<thead>
<tr>
<th>type</th>
<th>motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>min⁻¹</th>
<th>W</th>
<th>A</th>
<th>µF/VDB</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>D2E 146</td>
<td>M2E068-CA</td>
<td>1~ 230</td>
<td>50</td>
<td>520</td>
<td>1350</td>
<td>120</td>
<td>0,53</td>
<td>3,0/400</td>
<td>51</td>
<td>50</td>
<td>-25 to +55</td>
</tr>
<tr>
<td>D2E 146</td>
<td>M2E068-CF</td>
<td>1~ 230</td>
<td>60</td>
<td>375</td>
<td>1400</td>
<td>125</td>
<td>0,55</td>
<td>3,0/400</td>
<td>53</td>
<td>100</td>
<td>-25 to +40</td>
</tr>
</tbody>
</table>

subject to alterations

**Characteristic curves**

<table>
<thead>
<tr>
<th>n [min⁻¹]</th>
<th>Pₙ [W]</th>
<th>I [A]</th>
<th>Lₚ₄₁ [dBA]</th>
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<tbody>
<tr>
<td>Step 1</td>
<td>660</td>
<td>48</td>
<td>0,27</td>
</tr>
<tr>
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<td>0,26</td>
</tr>
<tr>
<td>Step 2</td>
<td>925</td>
<td>58</td>
<td>0,31</td>
</tr>
<tr>
<td>Step 2</td>
<td>1355</td>
<td>55</td>
<td>0,30</td>
</tr>
<tr>
<td>Step 3</td>
<td>1210</td>
<td>72</td>
<td>0,36</td>
</tr>
<tr>
<td>Step 3</td>
<td>1740</td>
<td>66</td>
<td>0,35</td>
</tr>
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<tr>
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<td>104</td>
<td>0,45</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>n [min⁻¹]</th>
<th>Pₙ [W]</th>
<th>I [A]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 4</td>
<td>2115</td>
<td>104</td>
</tr>
</tbody>
</table>

Subject to alterations.

---
- **Bearings**: Maintenance-free ball bearings
- **Motor protection**: Top wired internally
- **Connection leads**: Via plug
- **Protection class**: I
- **Capacitor**: FPU (P2) integrated in terminal box completely wired up and ready for plug-in
- **Product conforming to standards**: EN 60335-2-31, CE
- **Approvals**: VDE

---

### Centrifugal blower with flange

<table>
<thead>
<tr>
<th>Model</th>
<th>Mass (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>D2E 146-KA45 -01</td>
<td>2.5</td>
</tr>
<tr>
<td>D2E 146-KB27 -01</td>
<td>2.7</td>
</tr>
</tbody>
</table>

---

**Detail X**

Coded plug system AMP Universal-Mate-N-Lok

Connector shell: AMP 926 682-3

6 x pin connector: AMP 926 688-1

1 = step 1 (min.) white
2 = step 2 red
3 = step 3 grey
4 = step 4 (max.) black
5 = N blue
6 = Ground green/yellow

---

**Connection diagram**

Switch has to break contact when turned.

---

4 x sheet nut for thread EN ISO 1478-ST4.8
(min. screw length 14.5mm plus thickness of mounting material)
Radial blowers dual inlet
D2E 146 with AC external-rotor motor

- **Material:** Housing: PP plastic, black
  Impeller: PP plastic, white
  Rotor: Partially cast in aluminium
  Terminal box: PP plastic, black

- **Direction of rotation:** Counter-clockwise, seen on plug
- **Type of protection:** IP 20
- **Insulation class:** “F”
- **Mounting position:** Any
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Design:** 4-step blower with integrated terminal box, EW motor

---

### Nominal data

<table>
<thead>
<tr>
<th>type</th>
<th>motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>min⁻¹</th>
<th>W</th>
<th>A</th>
<th>µF/VDB</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>D2E 146</td>
<td>M2E 068-CF</td>
<td>1~230</td>
<td>50</td>
<td>630</td>
<td>1100</td>
<td>0,66</td>
<td>4,0/400</td>
<td>51</td>
<td>0</td>
<td>-25 to +50</td>
<td></td>
</tr>
<tr>
<td>D2E 146</td>
<td>M2E 068-DF</td>
<td>1~230</td>
<td>60</td>
<td>415</td>
<td>1600</td>
<td>0,71</td>
<td>4,0/400</td>
<td>55</td>
<td>150</td>
<td>-25 to +45</td>
<td></td>
</tr>
</tbody>
</table>

**Subject to alterations**

### Characteristic curves

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>680</td>
<td>69</td>
<td>0,38</td>
<td>31</td>
</tr>
<tr>
<td>Step 2</td>
<td>890</td>
<td>81</td>
<td>0,42</td>
<td>37</td>
</tr>
<tr>
<td>Step 3</td>
<td>1315</td>
<td>77</td>
<td>0,42</td>
<td>43</td>
</tr>
<tr>
<td>Step 4</td>
<td>1490</td>
<td>143</td>
<td>0,62</td>
<td>51</td>
</tr>
<tr>
<td>Step 5</td>
<td>2005</td>
<td>133</td>
<td>0,59</td>
<td>55</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
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<td>94</td>
<td>0,47</td>
<td>30</td>
</tr>
<tr>
<td>Step 2</td>
<td>910</td>
<td>106</td>
<td>0,52</td>
<td>38</td>
</tr>
<tr>
<td>Step 3</td>
<td>1210</td>
<td>125</td>
<td>0,60</td>
<td>45</td>
</tr>
<tr>
<td>Step 4</td>
<td>1790</td>
<td>185</td>
<td>0,81</td>
<td>56</td>
</tr>
<tr>
<td>Step 5</td>
<td>2290</td>
<td>164</td>
<td>0,72</td>
<td>59</td>
</tr>
</tbody>
</table>

---

52
- **Bearings:** Maintenance-free ball bearings
- **Motor protection:** Top wired internally
- **Connection leads:** Via plug
- **Protection class:** I
- **Capacitor:** FPU (P2) integrated in terminal box completely wired up and ready for plug-in
- **Product conforming to standards:** EN 60335-2-31, CE
- **Approvals:** VDE, GOST; D2E 146-HR93 -03 CCC too

**General information**
- Tangential blowers
- Radial blowers AC
- Radial blowers EC
- Hot air blowers
- Axial blowers
- Pumps

**Centrifugal blower with flange**

<table>
<thead>
<tr>
<th>Centrifugal blower with flange</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>D2E 146-HR93 -03</td>
<td>3.0</td>
</tr>
<tr>
<td>D2E 146-HS97 -03</td>
<td>3.5</td>
</tr>
</tbody>
</table>

**Detail X**

- Coded plug system AMP Universal-Mate-N-Lok
- Connector shell: AMP 926 682-3
- 6 x pin connector: AMP 926 886-1

| 1 = step 1 (min.) white       | 2 = step 2 red                   | 3 = step 3 grey                  |
| 4 = step 4 (max.) black       | 5 = N blue                        | 6 = Ground green/yellow           |

**Connection diagram**

Switch has to break contact when turned.

- 4 x sheet nut for thread EN ISO 1478-ST4.8 (min. screw length 14.5 mm plus thickness of mounting material)
Radial blowers dual inlet
D2E 146 with AC external-rotor motor

- **Material:**
  - Housing: PP plastic, black
  - Impeller: Galvanised sheet steel
  - Rotor: Partially cast in aluminium
  - Terminal box: PP plastic, black

- **Direction of rotation:** Counter-clockwise, seen on plug
- **Type of protection:** IP 20
- **Insulation class:** "F"
- **Mounting position:** Any
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Design:** 4-step blower with integrated terminal box, EW motor

**Nominal data**

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>min⁻¹</th>
<th>W</th>
<th>A</th>
<th>µF/VDB</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>D2E 146</td>
<td>M2E 068-EC</td>
<td>1~ 230</td>
<td>50</td>
<td>1060</td>
<td>1850</td>
<td>355</td>
<td>1,55</td>
<td>8,0/450</td>
<td>66</td>
<td>0</td>
<td>-25 to 55</td>
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<tr>
<td></td>
<td></td>
<td>1~ 230</td>
<td>60</td>
<td>875</td>
<td>2100</td>
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<td>1,75</td>
<td>8,0/450</td>
<td>63</td>
<td>200</td>
<td>-25 to 50</td>
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</table>

**Characteristic curves**

<table>
<thead>
<tr>
<th>n [min⁻¹]</th>
<th>Pᵢ [W]</th>
<th>I [A]</th>
<th>Lp, [dBA]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>1000</td>
<td>0,88</td>
<td>45</td>
</tr>
<tr>
<td>Step 1</td>
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<tr>
<td>Step 2</td>
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<td>57</td>
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<tr>
<td>Step 3</td>
<td>1770</td>
<td>1,20</td>
<td>61</td>
</tr>
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<td>Step 3</td>
<td>2230</td>
<td>1,04</td>
<td>62</td>
</tr>
<tr>
<td>Step 4</td>
<td>2075</td>
<td>1,42</td>
<td>66</td>
</tr>
<tr>
<td>Step 4</td>
<td>2430</td>
<td>1,17</td>
<td>61</td>
</tr>
</tbody>
</table>

subject to alterations
- **Bearings:** Maintenance-free ball bearings
- **Motor protection:** Top wired internally
- **Connection leads:** Via plug
- **Protection class:** I
- **Capacitor:** FPU (P2) integrated in terminal box completely wired up and ready for plug-in
- **Product conforming to standards:** EN 60335-2-31, CE
- **Approvals:** VDE

---

### Centrifugal blower with flange

<table>
<thead>
<tr>
<th>Code</th>
<th>Mass in kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>DZE 146-HT67-02</td>
<td>3.6</td>
</tr>
</tbody>
</table>

---

**View X**
- Coded plug system AMP Universal-Mate-N-Lok
- Connector shell AMP 926 682-3
- 6 x plug pin AMP 926 886-1

1 = Step 1 (min.) white
2 = Step 2 red
3 = Step 3 grey
4 = Step 4 (max.) black
5 = N blue
6 = Ground wire green/yellow

---

**Connection diagram**
- When changing speeds, the switch must break the circuit.
Radial blowers dual inlet
D2E 160 with AC external-rotor motor

- **Material:** Housing: PP plastic, black
  Impeller: Galvanised sheet steel
  Rotor: Partially cast in aluminium
  Terminal box: PP plastic, black

- **Direction of rotation:** Clockwise, seen on rotor

- **Type of protection:** IP 44

- **Insulation class:** "F"

- **Mounting position:** Any

- **Condensate discharges:** None

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

- **Design:** 4-step blower with integrated terminal box, standard external-rotor motor anti-vibration mounted on on side

**Nominal data**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>D2E 160</td>
<td>M2E 068-BF</td>
<td>1–230</td>
<td>50</td>
<td>400</td>
<td>1170</td>
<td>110</td>
<td>0.49</td>
<td>2.5/400</td>
<td>53</td>
<td>100</td>
<td>-25 to 45</td>
</tr>
<tr>
<td>D2E 160</td>
<td>M2E 068-CF</td>
<td>1–230</td>
<td>50</td>
<td>550</td>
<td>1400</td>
<td>180</td>
<td>0.80</td>
<td>4.0/400</td>
<td>59</td>
<td>150</td>
<td>-25 to 40</td>
</tr>
</tbody>
</table>

Subject to alterations

**Characteristic curves**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>555</td>
<td>50</td>
<td>0.26</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>635</td>
<td>49</td>
<td>0.25</td>
<td>36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>765</td>
<td>64</td>
<td>0.31</td>
<td>38</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1135</td>
<td>61</td>
<td>0.30</td>
<td>44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>910</td>
<td>74</td>
<td>0.35</td>
<td>43</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>1345</td>
<td>71</td>
<td>0.34</td>
<td>48</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>1210</td>
<td>108</td>
<td>0.47</td>
<td>51</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>1735</td>
<td>102</td>
<td>0.44</td>
<td>55</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Subject to alterations**
- **Bearings**: Maintenance-free ball bearings
- **Motor protection**: Top wired internally
- **Connection leads**: Via plug
- **Protection class**: I
- **Capacitor**: FPU (P2) integrated in terminal box completely wired up and ready for plug-in
- **Product conforming to standards**: EN 60335-2-31, CE
- **Approvals**: CCC, GOST

### Centrifugal blowers with flange

<table>
<thead>
<tr>
<th>Model</th>
<th>Mass kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>D2E 160-FI01 -01</td>
<td>2.5</td>
</tr>
<tr>
<td>D2E 160-FK11 -02</td>
<td>3.0</td>
</tr>
</tbody>
</table>

**Connection diagram**

When changing speeds, the switch must break the circuit.

**View X**

coded plug system AMP Universal-Mate-N-Lok
connector shell AMP 926 682-3
6 x plug pin AMP 926 886-1

1 = Step 1 (min.) white
2 = Step 2 red
3 = Step 3 grey
4 = Step 4 (max.) black
5 = N blue
6 = Ground wire green/yellow

5 x sheet metal nut for thread
EN ISO 1478-ST4.8
(min. screw length 14.5 mm plus thickness of mounting material)
Radial blowers dual inlet
D2E 160 with AC external-rotor motor

- **Material:** Housing: PP plastic, black
  Impeller: Galvanised sheet steel
  Rotor: Partially cast in aluminium
  Terminal box: PP plastic, black
- **Direction of rotation:** Counter-clockwise, seen on plug
- **Type of protection:** IP 20
- **Insulation class:** "F"
- **Mounting position:** Any
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Design:** 4-step blower with integrated terminal box, EW motor

**Nominal data**

<table>
<thead>
<tr>
<th>type</th>
<th>motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>min⁻¹</th>
<th>W</th>
<th>A</th>
<th>µF</th>
<th>dB(A)</th>
<th>Pa</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>D2E 160</td>
<td>M2E068-EC</td>
<td>1~230</td>
<td>50</td>
<td>1070</td>
<td>1400</td>
<td>340</td>
<td>1,49</td>
<td>10,0/400</td>
<td>58</td>
<td>100</td>
<td>-25...+45</td>
</tr>
</tbody>
</table>
| D2E 160  | M2E074-HA    | 1~230 | 50 | 1495 | 1800  | 500| 2,19| 12,0/400| 67  | 100 | -25 to 40  

(subject to alterations)

### Characteristic curves

**Characteristic curves**

- **n [min⁻¹]**: 1400, 1650, 1985, 2280, 1035, 1260, 1610, 2115, 730, 900, 1170, 1665, 455, 565, 730, 1055
- **P₁ [W]**: 340, 337, 329, 312, 211, 208, 199, 179, 160, 158, 154, 143, 129, 128, 126, 122
- **I [A]**: 1,49, 1,47, 1,45, 1,39, 1,12, 1,12, 1,11, 1,09, 0,92, 0,92, 0,91, 0,90, 0,78, 0,78, 0,77, 0,77
- **Lₚ₊ [dB(A)]**: 58, 58, 59, 47, 48, 53, ---, 37, 38, 44, ---, 23, 35, 24, 30, ---

(subject to alterations)

**Characteristic curves**

- **n [min⁻¹]**: 1800, 2045, 2320, 2570, 1205, 1510, 1865, 2330, 925, 1085, 1395, 1950, 680, 805, 960, 1185
- **P₁ [W]**: 500, 461, 405, 334, 403, 380, 339, 270, 330, 323, 309, 262, 281, 276, 272, 265
- **I [A]**: 2,19, 2,03, 1,82, 1,58, 1,80, 1,72, 1,58, 1,36, 1,50, 1,47, 1,43, 1,28, 1,29, 1,27, 1,22
- **Lₚ₊ [dB(A)]**: 67, 66, 65, 65, 56, 56, 59, 63, 47, 47, 47, 49, 58, 35, 36, 37, 42
- **Bearings**: Maintenance-free ball bearings
- **Motor protection**: TOP wired internally
- **Connection leads**: Via plug
- **Protection class**: I
- **Capacitor**: FPU (P2) integrated in terminal box completely wired up and ready for plug-in
- **Product conforming to standards**: EN 60335-2-31, CE
- **Approvals**: VDE, UL is applied for

---

### Centrifugal blower with flange

<table>
<thead>
<tr>
<th>Model</th>
<th>Mass (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>D2E 160-GM93 -01</td>
<td>4.0</td>
</tr>
<tr>
<td>D2E 160-GL07 -01</td>
<td>5.5</td>
</tr>
</tbody>
</table>

---

**View X**
- Coded plug system AMP Universal-Mate-N-Lok
- Connector shell AMP 926 682-3
- 6 x plug pin AMP 928 886-1

**Connection diagram**

- When changing speeds, the switch must break the circuit.
- Speed increase
- 4 x sheet metal nut for thread
  - EN ISO 1478-ST4.8
  - (min. screw length 14.5 mm plus thickness of mounting material)
## Radial blowers with EC motor

<table>
<thead>
<tr>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>with internal-rotor motor, HRG, NRG..., RG..., RLS..., RLB...</td>
<td>64</td>
</tr>
<tr>
<td>with external-rotor motor, G1G..., G3G...</td>
<td>76</td>
</tr>
<tr>
<td>Interfaces, additional electronics</td>
<td>85, 75</td>
</tr>
</tbody>
</table>
Radial blowers with EC motor

Controllable blowers with steep pressure/air flow characteristics curves and high maximum pressure are required to provide optimal fuel/air mixture and volume for modern gas or oil-fired heating boilers that operate in modulating mode, and also for gas technology in every operating status and external condition.

ebm-papst has played a decisive part in the development of EC blowers suited to this purpose and can, today, offer the most extensive range of blowers for this field of application. The special features of these blowers can, however, also be used in a wide range of other applications.

Housing:
NRG, RG and G1G/G3G: Die-cast aluminium
RLB120: Galvanised sheet steel
HRG 134, RLS170: Plastic PA6 GF

The air tightness required for gas pre-mixing is achieved by sealing the two casing shells and the passage hole of the drive shaft. When using blowers for such applications, special criteria, testing and approvals have to be asserted with the customer. Safety tests (gas tightness etc.) for the complete system have to be carried out by the customer and are his responsibility.

Blower impellers:
HRG, NRG, RG, G1G126/144:
Material: Plastic, anti-static, resistant to pentane, surface resistance <10⁹, dynamically fine-balanced.
RLB120: galvanised sheet steel
RLS170: plastic PA6 GF
G1G170, G3G200, G3G250: sheet aluminium

Drive unit:
Brushless DC-motors with integrated electronics.
Series RG, RLB, RLS: internal-rotor design
Insulation class F (EN60335-1)
Series G1G/G3G: external-rotor design
Insulation class F (EN60335-1)
The motor is anti-vibration mounted to minimise structure-borne noise.

Protection type:
IP20 with cover depending on mounting position

Protection class:
The motors comply with the requirements for protection class III. At rated voltages of over 42 V, therefore, a potential separation is provided for between the voltage supply to the motor and the interface to the control module and, commensurate with the requirements on greater insulation, creepage distances and clearances of 8mm are also provided for. Protection class III then only applies to the signal plug.
The blower complies with protection class I.

Bearings:
Maintenance-free ball bearings covered on both sides. Calculated service life expectation L₁₀ 40,000 hours of operation at an ambient temperature of 40°C, horizontal mounting position and typical operating conditions.
Closed-/Open-loop speed control:
The blower speed can be adjusted over a wide range using a PWM (pulse width modulation) signal. The PWM signal is a rectangular signal, preferably with constant frequency and variable pulse width. It is activated by an open collector drive and a pull-up resistor.
Blowers G1G170, G3G200, G3G250 are also available with 0-10V control input.
An additional electronic system is available as an option, to convert an analog voltage signal of 0 – 10 V into the required PWM signal. In addition, there is another electronic system which allows to activate two speeds, preset with potentiometers, via a control input.
(see page 75)

Interference suppression/EMC:
EMC according to EN 55011

Mounting positions:
Mounting positions 1 – 4 are possible. If the motor is installed on anti-vibration mounts, the motor mass is given additional support by an elastic element. Details of the mounting position must therefore be provided. Consultation is indispensible for installation positions 5 and 6.

Pressure relief:
Apertures for pressure relief on request.

Commutation electronics:
Motor electronics integrated in the blower unit, with start-up current limit and reverse battery protection using plug coding, locked-rotor protection and overload protection optional. See separate drawings for details of interface requirements. Adaption to the boiler control is required in specific cases.

Speed recognition:
Hall IC signal output (2 pulses per revolution).
G1G170, G3G200, G3G250:
3 Impulse je Umdrehung
G3G250-MW: 5 Impulse je Umdrehung
The derivative feedback is galvanically decoupled with motors on mains voltage operation.
Radial blowers with EC internal-rotor motor

HRG 134 - 230 VAC

Material:
- housing: plastic
- impeller: anti-static plastic
- motor protection cap: plastic

Interface:
- interfaces see page 85, no. 2
- special interfaces upon request

Material:
- housing: plastic
- impeller: anti-static plastic
- motor protection cap: plastic

Interface:
- interfaces see page 85, no. 2
- special interfaces upon request

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>Characteristic curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>V</td>
</tr>
<tr>
<td>HRG134</td>
<td>230 AC</td>
</tr>
</tbody>
</table>

**Characteristic curves**

connector Mini-Fit, Jr. Nr. 39-30-3056
suitable for connector housing Molex Mini-Fit, Jr part no 39-01-4050 and 39-01-4051

connector housing Nr. 3642 03 K01, Fa. Lumberg
suitable for adapting connector: Nr. 3611 03 K01, Fa. Lumberg
Radial blowers with EC internal-rotor motor
NRG 118 - 24 VDC

Material:
- housing: aluminium
- impeller: anti-static plastic
- motor protection cap: plastic

Interface:
- interfaces see page 85, no. 1
- standard interface 24 VDC
- special interfaces upon request

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<table>
<thead>
<tr>
<th>Nominal data</th>
<th>Characteristic curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>rated voltage</td>
</tr>
<tr>
<td>NRG118</td>
<td>24 DC</td>
</tr>
</tbody>
</table>

Nominal data (continued):

Material:
- housing: aluminium
- impeller: anti-static plastic
- motor protection cap: plastic

Interface:
- interfaces see page 85, no. 1
- standard interface 24 VDC
- special interfaces upon request

Characteristic curves

- suitable for connector housing Molex Mini-Fit, Jr part no. 39-01-4050 and 39-01-4051
Radial blowers with EC internal-rotor motor
NRG 118 - 230 VAC

Material:
- housing: aluminium
- impeller: anti-static plastic
- motor protection cap: plastic

Interface:
- interfaces see page 85, no. 2
- standard interface 230 VAC
- special interfaces upon request

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### Nominal data

<table>
<thead>
<tr>
<th>type</th>
<th>V</th>
<th>Hz</th>
<th>m³/h</th>
<th>Pa</th>
<th>W</th>
<th>min⁻¹</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRG 118</td>
<td>230 AC 50/60</td>
<td>90</td>
<td>2350</td>
<td>56</td>
<td>8150</td>
<td>0,9</td>
<td></td>
</tr>
</tbody>
</table>

Bold print = standard type; subject to alterations

### Characteristic curves

- Characteristic curve
- Rated voltage
- Frequency
- Max. air flow
- Max. pressure increase
- Max. power input
- Max. speed
- Electrical connection
- Mass

<table>
<thead>
<tr>
<th>V</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
<th>90 (m³/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1000</td>
<td>1500</td>
<td>2000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Suitable for connector housing Molex Mini-Fit, Jr part no. 39-01-4050 and 39-01-4051
- Suitable for mating plug no. 3611 03 K01, Fa. Lumberg
Radial blowers with EC internal-rotor motor
NRG 137 - 230 VAC

Material:
- housing: aluminium
- impeller: anti-static plastic
- motor protection cap: plastic

Interface:
- interfaces see page 85, no. 2
- special interfaces upon request

Nominal data

<table>
<thead>
<tr>
<th>type</th>
<th>characteristic curve</th>
<th>V</th>
<th>Hz</th>
<th>m³/h</th>
<th>Pa</th>
<th>W</th>
<th>min⁻¹</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRG137</td>
<td></td>
<td>230 AC</td>
<td>59/60Hz</td>
<td>230</td>
<td>3500</td>
<td>190</td>
<td>9000</td>
<td>1,9</td>
</tr>
</tbody>
</table>

Bold print = standard type; subject to alterations

Characteristic curves

suitable for connector housing
Molex Mini-Fit, Jr
part no. 39-01-4050 and 39-01-4051

connector housing AMP Universal MATE-N-LOK
1-350943, 3-pole header suitable for AMP Universal
MATE-N-LOK connector housing 350766-4 and 3x
female terminal: 926862-1 (or 926893-1)
Radial blowers with EC internal-rotor motor
NRG 137 with integrated venturi - 230 VAC

Material:
- housing: aluminium
- venturi element: plastic
- impeller: anti-static plastic
- motor protection cap: plastic

Interface:
- interfaces see page 85, no. 2
- special interfaces upon request

Material:
- housing: aluminium
- venturi element: plastic
- impeller: anti-static plastic
- motor protection cap: plastic

Interface:
- interfaces see page 85, no. 2
- special interfaces upon request

Nominal data

<table>
<thead>
<tr>
<th>type</th>
<th>Characteristic curve</th>
<th>rated voltage</th>
<th>frequency</th>
<th>max. air flow</th>
<th>max. pressure increase</th>
<th>max. power input</th>
<th>max. speed</th>
<th>electrical connection</th>
<th>mass</th>
<th>Heat performance up to (turn down ratio of 1:6 possible) with min. ( \Delta P ) venturi</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRG137 - Venturi 1</td>
<td></td>
<td>230 AC 50/60</td>
<td>180</td>
<td>3500</td>
<td>230</td>
<td>9000</td>
<td>2,4</td>
<td>110</td>
<td></td>
<td>2,4</td>
</tr>
<tr>
<td>NRG137 - Venturi 2</td>
<td></td>
<td>230 AC 50/60</td>
<td>230</td>
<td>3500</td>
<td>245</td>
<td>9000</td>
<td>2,4</td>
<td>150</td>
<td></td>
<td>2,4</td>
</tr>
</tbody>
</table>

Characteristic curves

Heat performance
up to (turn down ratio of 1:6 possible) with min. \( \Delta P \) venturi

connector Mini-Fit, Jr. Nr. 39-30-3056 (Molex)
suitable for connector housing Mini-Fit, Jr (Molex)
part no 39-01-4050 and 39-01-4051

connector housing AMP Universal MATE-N-LOK
1-350943, 3-pole header suitable for AMP Universal
MATE-N-LOK connector housing 350766-4 and 3x
female terminal: 926882-1 (or 926893-1)
Radial blowers with EC internal-rotor motor
RG 130

- die-cast aluminium housing
- brushless EC motor
- ball bearings
- motor anti-vibration mounted
- mounting position must be specified for corresponding support elements
- interfaces see page 85, no. 1/2

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>Characteristic curve</th>
<th>Dimensions mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>V</td>
<td>Hz</td>
</tr>
<tr>
<td>RG130/0800-3612</td>
<td>24 DC</td>
<td>-</td>
</tr>
<tr>
<td>RG130/0800-3612</td>
<td>230 AC</td>
<td>50</td>
</tr>
</tbody>
</table>

Bold print = standard type; subject to alterations

Characteristic curves

view X
Standard flange

view X
Honeywell flange
on request

suitable for connector Molex Mini-Fit, Jr

suitable for connector RAST-5
Radial blowers with EC internal-rotor motor

RG 128

- die-cast aluminium housing
- brushless EC motor
- ball bearings
- motor anti-vibration mounted
- mounting position must be specified for corresponding support elements
- interfaces see page 85, no. 1/2

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### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Rated Voltage</th>
<th>Frequency</th>
<th>Max. Air Flow</th>
<th>Max. Pressure Increase</th>
<th>Max. Power Input</th>
<th>Max. Speed</th>
<th>Electrical Connection</th>
<th>Mass</th>
<th>Dimensions mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG128/1300-3612</td>
<td>230 AC 50/60</td>
<td>134</td>
<td>2000</td>
<td>67</td>
<td>7400</td>
<td>1,4</td>
<td>116</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RG128/1300-3612</td>
<td>24 DC</td>
<td>-</td>
<td>132</td>
<td>61</td>
<td>6900</td>
<td>1,4</td>
<td>116</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RG128/1300-3612*</td>
<td>24 DC</td>
<td>-</td>
<td>109</td>
<td>32</td>
<td>5650</td>
<td>1,4</td>
<td>105</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*without cooling blade; bold print = standard type; subject to alterations

---

### Characteristic curves

[Graphs showing characteristic curves]

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Max. Air Flow</th>
<th>Max. Pressure Increase</th>
<th>Max. Power Input</th>
<th>Max. Speed</th>
<th>Electrical Connection</th>
<th>Mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>4000</td>
<td>740</td>
<td>1,4</td>
<td>116</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>6000</td>
<td>940</td>
<td>1,4</td>
<td>116</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>7000</td>
<td>1040</td>
<td>1,4</td>
<td>116</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[Legend for graphs: V, Hz, m³/h, Pa, W, min⁻¹, kg]

---

[Diagram showing dimensions and connections]

- Standard flange
- Honeywell flange on request
- Suitable for connector Molex Mini-Fit, Jr
- Suitable for connector RAST-5
Radial blowers with EC internal-rotor motor
RG 148

- die-cast aluminium housing
- brushless EC motor
- ball bearings
- motor anti-vibration mounted
- mounting position must be specified for corresponding support elements
- interfaces see page 85, no. 1/2

ebm-papst · Landshut

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>DC Voltage</th>
<th>Frequency</th>
<th>Max. Air Flow</th>
<th>Max. Pressure Increase</th>
<th>Max. Power Input</th>
<th>Max. Speed</th>
<th>Electrical Connection</th>
<th>Mass</th>
<th>Dimensions mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG148/1200-3612</td>
<td>24 DC</td>
<td>-</td>
<td>130</td>
<td>1600</td>
<td>50</td>
<td>6000</td>
<td>1,6</td>
<td>108</td>
<td></td>
</tr>
<tr>
<td>RG148/1200-3612</td>
<td>230 AC</td>
<td>50</td>
<td>150</td>
<td>2000</td>
<td>80</td>
<td>6600</td>
<td>1,6</td>
<td>121</td>
<td></td>
</tr>
<tr>
<td>RG148/1200-3633</td>
<td>230 AC</td>
<td>50</td>
<td>190</td>
<td>3200</td>
<td>135</td>
<td>8500</td>
<td>1,9</td>
<td>145</td>
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</tbody>
</table>

Bold print = standard type; subject to alterations

### Characteristic curves

<table>
<thead>
<tr>
<th>Frequency (Hz)</th>
<th>Max. Air Flow (m³/h)</th>
<th>Max. Pressure Increase (Pa)</th>
<th>Max. Power Input (W)</th>
<th>Max. Speed (min⁻¹)</th>
<th>Electrical Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>3000</td>
<td>100</td>
<td>50</td>
<td>80</td>
<td>6000</td>
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<tr>
<td>60</td>
<td>6000</td>
<td>200</td>
<td>80</td>
<td>135</td>
<td>8500</td>
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<tr>
<td>90</td>
<td>9000</td>
<td>300</td>
<td>135</td>
<td>190</td>
<td>8500</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Voltage (V)</th>
<th>Max. Air Flow (m³/h)</th>
<th>Max. Pressure Increase (Pa)</th>
<th>Max. Power Input (W)</th>
<th>Max. Speed (min⁻¹)</th>
<th>Electrical Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>230 AC</td>
<td>2300</td>
<td>200</td>
<td>80</td>
<td>135</td>
<td>8500</td>
</tr>
<tr>
<td>230 AC</td>
<td>3200</td>
<td>400</td>
<td>190</td>
<td>320</td>
<td>8500</td>
</tr>
</tbody>
</table>

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

Suitable for connector:
- AMP MT-Edge
- Molex Mini-Fit, Jr.
- AMP Universal MATE-N-LOK

3xM6x6,5
3xM4x7,5
8xM5x8

3xM6x7,5
3xM4x6,5
6xM6x7,5
8xM5x8

View X
Standard flange

View X
Honeywell flange on request

View X

230V AC
Radial blowers with EC internal-rotor motor

RG 175

- die-cast aluminium housing
- brushless EC motor
- ball bearings
- motor anti-vibration mounted
- mounting position must be specified for corresponding support elements
- interfaces see page 85, no. 2

### Nominal data

<table>
<thead>
<tr>
<th>type</th>
<th>V</th>
<th>Hz</th>
<th>m³/h</th>
<th>Pa</th>
<th>Pa</th>
<th>W</th>
<th>min⁻¹</th>
<th>mass</th>
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</thead>
<tbody>
<tr>
<td>RG175/2000-3633</td>
<td>230 AC</td>
<td>50</td>
<td>216</td>
<td>2000</td>
<td>4200</td>
<td>240</td>
<td>8400</td>
<td>3.3</td>
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</table>

subject to alterations

### Characteristic curves

![Characteristic curves graph](image)

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

suitable for connector
Molex Mini-Fit, Jr.

suitable for connector
AMP Universal MATE-N-LOK
Radial blowers with EC internal-rotor motor
RLS 170

- plastic housing
- brushless EC motor
- ball bearings
- motor anti-vibration mounted
- mounting position must be specified for corresponding support elements
- interfaces see page 85, no. 2

ebm-papst · Landshut

**Nominal data**

<table>
<thead>
<tr>
<th>type</th>
<th>rated voltage</th>
<th>frequency</th>
<th>max. air flow</th>
<th>max. pressure increase</th>
<th>max. power input</th>
<th>max. speed</th>
<th>electrical connection</th>
<th>mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>RLS170/0013-3633</td>
<td>230 AC</td>
<td>50</td>
<td>200</td>
<td>1600</td>
<td>105</td>
<td>5500</td>
<td></td>
<td>1,6</td>
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</tbody>
</table>

(subject to alterations)

**Characteristic curves**

- **Frequency vs. Air Flow**: A graph showing the relationship between frequency and air flow.
- **Pressure Increase vs. Speed**: A graph showing the relationship between pressure increase and speed.

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

suitable for connector
Molex Mini-Fit, Jr.

suitable for connector
AMP Universal MATE-N-LOK

230V AC
Radial blowers with EC internal-rotor motor

RLB 120

- galvanized sheet steel housing
- brushless EC motor
- ball bearings
- motor anti-vibration mounted
- mounting position must be specified for corresponding support elements
- interfaces see page 85, no. 2

### Nominal data

<table>
<thead>
<tr>
<th>type</th>
<th>V</th>
<th>Hz</th>
<th>m³/h</th>
<th>Pa</th>
<th>Pa</th>
<th>W</th>
<th>min⁻¹</th>
<th>kg</th>
<th>Dimensions mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>RLB120/0034-3633</td>
<td>230</td>
<td>50</td>
<td>240</td>
<td>500</td>
<td>1350</td>
<td>120</td>
<td>5400</td>
<td>2,1</td>
<td>34</td>
</tr>
</tbody>
</table>

subject to alterations

### Characteristic curves

Nominal operation (230 V, 100% PWM) permissible only as of minimal back pressure of 500Pa.

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

suitable for connector
AMP MT-Edge

suitable for connector
Molex Mini-Fit, Jr.

suitable for connector
AMP Universal MATE-N-LOK

230V AC
Additional electronics for EC motor BG20.., BG36..
only for blowers listed on pages 64 to 74

Speed variation for EC motors BG20 and BG36 is usually realized via digital PWM-signal. Two additional electronics are available:
1. To convert an analog voltage signal of 0-10 V into the required PWM signal
2. To activate two speeds, preset with potentiometers, via control input

**Additional electronics with analog input 0-10 VDC**

**Additional electronics for 2-speed operation**
Radial blowers with EC external-rotor motor

G1G126 – 24 VDC

**material**
- housing: aluminium
- impeller: plastic PA 6
- cover: plastic PP30TV

**interface**
- see page 86, interface no. 3

**premix**
- If gas needs to be premixed in the blower, then a special blower will have to be used. For further details, please contact us.

**Nominal data**

<table>
<thead>
<tr>
<th>type</th>
<th>characteristic curve</th>
<th>voltage</th>
<th>voltage range</th>
<th>air volume</th>
<th>power input</th>
<th>speed</th>
<th>current draw</th>
<th>perm. temp. of medium</th>
<th>perm. amb. motor temp.</th>
<th>mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1G 126-AC13 -50 (Standard flange)</td>
<td>24 VDC</td>
<td>16-28</td>
<td>115</td>
<td>50</td>
<td>4450</td>
<td>2.35</td>
<td>80</td>
<td>70</td>
<td>1.4</td>
<td></td>
</tr>
<tr>
<td>G1G 126-AC13 -51 (Honeywell flange)</td>
<td>24 VDC</td>
<td>16-28</td>
<td>110</td>
<td>50</td>
<td>4450</td>
<td>2.35</td>
<td>80</td>
<td>70</td>
<td>1.4</td>
<td></td>
</tr>
</tbody>
</table>

(subject to alterations)

**Characteristic curves**

- view X
- view Y

**Control**
- 5-pole header
- mating connector
- (not part of delivery):
  - Molex no. 39-01-4050
  - female terminal:
  - Molex no. 39-00-0059
Radial blowers with EC external-rotor motor
G1G126 – 115/230 VAC

material
- housing: aluminium
- impeller: plastic PA 6
- cover: plastic PP30TV

interface
- see page 86, interface no. 4

premix
- If gas needs to be premixed in the blower, then a special blower will have to be used. For further details, please contact us.

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<table>
<thead>
<tr>
<th>Nominal data</th>
<th>Characteristic curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>voltage</td>
</tr>
<tr>
<td>G1G 126-AA45-71 (Standard flange)</td>
<td>115</td>
</tr>
<tr>
<td>G1G 126-AA49-71 (Standard flange)</td>
<td>230</td>
</tr>
<tr>
<td>G1G 126-AA45-74 (Honeywell flange)</td>
<td>115</td>
</tr>
<tr>
<td>G1G 126-AA49-74 (Honeywell flange)</td>
<td>230</td>
</tr>
</tbody>
</table>

subject to alterations

---

enlarged

section A-A

view X
Standard flange

mains connection
control

center of flange

view Y

mains connection
3-pole header
matting connector
(not part of delivery):
tyco no. 350 766-1
female terminal:
tyco no. 926 884-1

control
5-pole header
matting connector
(not part of delivery):
Molex no. 39-01-4050
female terminal:
Molex no. 39-00-0059
Radial blowers with EC external-rotor motor

G1G144 – 24 VDC

**material**
- housing: aluminium
- impeller: plastic PA 6
- cover: plastic PP30TV

**interface**
- see page 86, interface no. 3

**premix**
- If gas needs to be premixed in the blower, then a special blower will have to be used. For further details, please contact us.

---

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Voltage</th>
<th>Voltage range</th>
<th>Air volume</th>
<th>Power input</th>
<th>Speed</th>
<th>Current draw</th>
<th>Perm. temp. of medium</th>
<th>Perm. amb. motor temp</th>
<th>Mass</th>
<th>Dimensions mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1G 144 -AE13 -50</td>
<td>24 VDC</td>
<td>16-28 m³/h</td>
<td>175 W</td>
<td>4300 W</td>
<td>2.50 A</td>
<td>80 °C</td>
<td>70 °C</td>
<td>1.5 kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G1G 144 -AE13 -70(2)</td>
<td>24 VDC</td>
<td>16-28 m³/h</td>
<td>175 W</td>
<td>4300 W</td>
<td>2.50 A</td>
<td>80 °C</td>
<td>70 °C</td>
<td>1.5 kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(1) with shortterm operation < 10 h, permanent temperature 50 °C; (2) de-couplet design; subject to alterations

---

**Characteristic curves**

---

**section A-A**
- pressure tapping connection closed (drilled on request)
- enlarged

**section B-B**
- enlarged

---

**Control**
- 5-pole header
- mating connector (not part of delivery): Molex no. 39-01-4050
- female terminal: Molex no. 39-00-0059

---

**view X**
- 3x120°
- 3.6x11°

---

**view Y**
- (+) tach output
- NC
- PWM
- (-)

---

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Radial blowers with EC external-rotor motor
G1G144 – 115/230 VAC

material
– housing: aluminium
– impeller: plastic PA 6
– cover: plastic PP30TV

interface
– see page 86, interface no. 4

premix
– If gas needs to be premixed in the blower, then a special blower will have to be used. For further details, please contact us.

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<table>
<thead>
<tr>
<th>Nominal data</th>
<th>characteristic curve</th>
<th>dimensions mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>voltage</td>
<td>Hz</td>
</tr>
<tr>
<td>G1G 144 -AF45 -01</td>
<td>115</td>
<td>50/60</td>
</tr>
<tr>
<td>G1G 144 -AF49 -01</td>
<td>230</td>
<td>50/60</td>
</tr>
<tr>
<td>G1G 144 -AF49 -70(2)</td>
<td>230</td>
<td>50/60</td>
</tr>
<tr>
<td>G1G 144 -AF25 -01</td>
<td>230</td>
<td>50/60</td>
</tr>
</tbody>
</table>

(1) with shortterm < 10 h, permanent temperature 50 °C; (2) de-couplet design; subject to alterations

section A-A

pressure tapping
connection closed
(drilled on request)

section B-B

enlarged

dsideplates of housing
sealed with rubber loop
(NBR pentane-resistant)

centre of flange

Characteristic curves

mains connection
3-pole header
mating connector
(not part of delivery):
tyco no. 350 766-1
female terminal:
tyco no. 928 984-1

control
5-pole header
mating connector
(not part of delivery):
Molex no. 39-01-4050
female terminal:
Molex no. 39-00-009
Radial blowers with EC external-rotor motor
G1G170 – 115/230 VAC

material
– housing: aluminium
– impeller: sheet aluminium
– cover: plastic PPTD20

interface
– see page 87, interface no. 5

premix
– If gas needs to be premixed in the blower, then a special blower will have to be used.
For further details, please contact us.

approvals
– UL and CSA, VDE

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---

### Nominal data

<table>
<thead>
<tr>
<th>type</th>
<th>characteristic curve</th>
<th>voltage</th>
<th>frequency</th>
<th>air volume</th>
<th>back pressure min.</th>
<th>power input</th>
<th>speed</th>
<th>current draw</th>
<th>perm. temp. of medium</th>
<th>perm. amb. motor temp.</th>
<th>mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1G 170 -AB05 -20</td>
<td></td>
<td>115</td>
<td>50/60</td>
<td>645</td>
<td>0</td>
<td>345</td>
<td>5730</td>
<td>4.0</td>
<td>80</td>
<td>55</td>
<td>4.8</td>
</tr>
<tr>
<td>G1G 170 -AB53 -01</td>
<td></td>
<td>230</td>
<td>50/60</td>
<td>645</td>
<td>0</td>
<td>360</td>
<td>5830</td>
<td>2.2</td>
<td>80</td>
<td>55</td>
<td>4.8</td>
</tr>
<tr>
<td>G1G 170 -AB53 -03(^{1})</td>
<td></td>
<td>230</td>
<td>50/60</td>
<td>645</td>
<td>0</td>
<td>360</td>
<td>5830</td>
<td>2.2</td>
<td>80</td>
<td>55</td>
<td>4.8</td>
</tr>
<tr>
<td>G1G 170 -AB31 -51</td>
<td></td>
<td>230</td>
<td>50/60</td>
<td>380</td>
<td>2000</td>
<td>410</td>
<td>6530</td>
<td>1.8</td>
<td>80</td>
<td>55</td>
<td>4.8</td>
</tr>
<tr>
<td>G1G 170 -AB31 -53(^{1})</td>
<td></td>
<td>230</td>
<td>50/60</td>
<td>380</td>
<td>2000</td>
<td>410</td>
<td>6530</td>
<td>1.8</td>
<td>80</td>
<td>55</td>
<td>4.8</td>
</tr>
</tbody>
</table>

\(^{1}\) L&S interface, subject to alterations

---

### Characteristic curves

- **Characteristic curves**
- **Nominal data**
- **View X**
- **View Y**
- **View Z**
- **Detail Z**
- **Pressure tapping connection possible**
- **Mains connection**
- **3-pole header**
- **Mating connector**
- **5-pole header**
- **Connection possible**
- **Slot for O-ring fixing**
- **Control**
- **Mating connector**
- **Molex no. 39-01-4050**
- **Female terminal:**
  - Molex no. 39-00-0059
- **N.C.**
- **PWM**
- **L+PE**

---

*mains connection*
3-pole header
mating connector
(not part of delivery):
  - Tyco no. 350 766-1
  - Female terminal:
    - Tyco no. 926 884-1
control
5-pole header
mating connector
(not part of delivery):
  - Molex no. 39-01-4050
  - Female terminal:
    - Molex no. 39-00-0059
Radial blowers with EC external-rotor motor
G1G170 – 115/230 VAC with linear input (0-10 VDC)

material
- housing: aluminium
- impeller: sheet aluminium
- cover: plastic PP30TV

interface
- see page 87, interface no. 6

premix
- If gas needs to be premixed in the blower, then a special blower will have to be used. For further details, please contact us.

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### Nominal data

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>G1G 170-AB05-81</td>
<td></td>
<td>115</td>
<td>50/60</td>
<td>645</td>
<td>0</td>
<td>345</td>
<td>5730</td>
<td>4.0</td>
<td>80</td>
<td>55</td>
<td>4.8</td>
</tr>
<tr>
<td>G1G 170-AB53-80</td>
<td></td>
<td>230</td>
<td>50/60</td>
<td>645</td>
<td>0</td>
<td>360</td>
<td>5830</td>
<td>2.2</td>
<td>80</td>
<td>55</td>
<td>4.8</td>
</tr>
</tbody>
</table>

subject to alterations

---

### General information

**Tangential blowers**

**Radial blowers with EC external-rotor motor**

**G1G170** – 115/230 VAC with linear input (0-10 VDC)

**Material**
- Housing: aluminium
- Impeller: sheet aluminium
- Cover: plastic PP30TV

**Interface**
- See page 87, interface no. 6

**Premix**
- If gas needs to be premixed in the blower, then a special blower will have to be used. For further details, please contact us.

**EBM-PAPST · MULFINGEN**

---

### Nominal data

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>G1G 170-AB05-81</td>
<td></td>
<td>115</td>
<td>50/60</td>
<td>645</td>
<td>0</td>
<td>345</td>
<td>5730</td>
<td>4.0</td>
<td>80</td>
<td>55</td>
<td>4.8</td>
</tr>
<tr>
<td>G1G 170-AB53-80</td>
<td></td>
<td>230</td>
<td>50/60</td>
<td>645</td>
<td>0</td>
<td>360</td>
<td>5830</td>
<td>2.2</td>
<td>80</td>
<td>55</td>
<td>4.8</td>
</tr>
</tbody>
</table>

---

### Diagram

- View X
  - Cover for motor and electronics
- View Y
  - Pressure tapping connection possible
  - 3-pole header
  - 5-pole header
- Detail Z
  - Expanded view
  - Slot for O-ring fixing

---

### Additional Information

- Pressure tapping connection possible
- 3-pole header
- 5-pole header
- Control connection
  - 5-pole header
  - (not part of delivery): Molex no. 39-01-4050
  - Female terminal: Molex no. 39-00-0059
  - 10V output, max. 10mA
  - Tach output
  - Linear control input
  - PWM (-)

---

**EBM-PAPST · MULFINGEN**
Radial blowers with EC external-rotor motor

G3G200 – 115/230 VAC

**material**
- housing: aluminium
- impeller: sheet aluminium
- cover: plastic PPTD20

**interface**
- see page 88, interface no. 7

**premix**
- If gas needs to be premixed in the blower, then a special blower will have to be used. For further details, please contact us.

---

### Nominal data

<table>
<thead>
<tr>
<th>type</th>
<th>characteristic curve</th>
<th>voltage range</th>
<th>frequency</th>
<th>air volume</th>
<th>max. power input*</th>
<th>speed*</th>
<th>max. current draw*</th>
<th>perm. temp. of medium</th>
<th>perm. amb. motor temp.</th>
<th>mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>G3G 200 - GN26-01 (intake variant A)</td>
<td></td>
<td>100-130 VAC 50/60 Hz</td>
<td>1000 m³/h</td>
<td>800 W</td>
<td>5700</td>
<td>10,5</td>
<td>60</td>
<td>60</td>
<td>10,2</td>
<td></td>
</tr>
<tr>
<td>G3G 200 - GN18-01 (intake variant A)</td>
<td></td>
<td>208-240 VAC 50/60 Hz</td>
<td>1000 m³/h</td>
<td>750 W</td>
<td>5700</td>
<td>3,6</td>
<td>60</td>
<td>60</td>
<td>10,2</td>
<td></td>
</tr>
<tr>
<td>G3G 200 - GN20-01 (intake variant A)</td>
<td></td>
<td>208-240 VAC 50/60 Hz</td>
<td>1100 m³/h</td>
<td>890 W</td>
<td>6100</td>
<td>4,3</td>
<td>60</td>
<td>60</td>
<td>10,2</td>
<td></td>
</tr>
<tr>
<td>G3G 200 - GN26-20 (intake variant B)</td>
<td></td>
<td>100-130 VAC 50/60 Hz</td>
<td>1000 m³/h</td>
<td>800 W</td>
<td>5700</td>
<td>10,5</td>
<td>60</td>
<td>60</td>
<td>10,2</td>
<td></td>
</tr>
<tr>
<td>G3G 200 - GN18-20 (intake variant B)</td>
<td></td>
<td>208-240 VAC 50/60 Hz</td>
<td>1000 m³/h</td>
<td>750 W</td>
<td>5700</td>
<td>3,6</td>
<td>60</td>
<td>60</td>
<td>10,2</td>
<td></td>
</tr>
</tbody>
</table>

(subject to alterations; *nominal data in duty point at maximum load and 100 respectively 208 VAC)

---

**Characteristic curves**

- View Y
  - mains connection
  - 3-pole header
  - mating connector
  - (not part of delivery): tyco no. 350 786-1
  - female terminal: tyco no. 926 884-1

- control
  - 5-pole header
  - mating connector
  - (not part of delivery): Molex no. 39-01-4050
  - female terminal: Molex no. 39-00-0059

---

---

---
Radial blowers with EC external-rotor motor
G3G250 –115/230 VAC

material
- housing: aluminium
- impeller: sheet aluminium
- cover: plastic PPTD20

interface
- see page 88, interface no. 7

premix
- If gas needs to be premixed in the blower, then a special blower will have to be used.
  For further details, please contact us.

approvals
- 115 VAC: UL

pm
- If gas needs to be premixed in the blower, then a special blower will have to be used.
  For further details, please contact us.

approvals
- 115 VAC: UL

Prepapst · Mulfingen

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>characteristic curve</th>
<th>voltage range</th>
<th>frequency</th>
<th>air volume</th>
<th>max. power input</th>
<th>max. current draw</th>
<th>perm. temp. of medium</th>
<th>perm. amb. motor temp.</th>
<th>mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>VDC Hz m³/h W min⁻¹ A °C °C kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G3G250 –GN39 –01</td>
<td>100-130 50/60 1650 1200 4800 13,0 60 60 12,8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G3G250 –GN44 –01</td>
<td>208-240 50/60 1500 860 4500 4,8 60 60 12,8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G3G250 –GN17 –01</td>
<td>208-240 50/60 1650 1150 4800 5,7 60 60 12,8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

subject to alterations; *nominal data in duty point at maximum load and 100 respectively 208 VAC

view X

sideplates of housing
sealed with rubber loop
(NBR pentane-resistant)

view Y

mains connection
3-pole header
mating connector (not part of delivery):
tyco no. 350 766-1
female terminal:
tyco no. 926 884-1

tach output
0-10 VDC
PWM

control
5-pole header
mating connector (not part of delivery):
Molex no. 39-01-4050
female terminal:
Molex no. 39-00-0059

enlarged
Radial blowers with EC external-rotor motor
G3G250 – 400 VAC

**material**
- housing: die-cast aluminium
- impeller: sheet aluminium
- rotor: coated in black
- electronics enclosure: die-cast aluminium

**interface**
- see page 89, interface no. 8

**premix**
- If gas needs to be premixed in the blower, then a special blower will have to be used. For further details, please contact us.

**approvals**
- VDE, UL, CSA, GOST are applied for

**ebm-papst · Mulfingen**

---

**Nominal data**

<table>
<thead>
<tr>
<th>Characteristic curve</th>
<th>Voltage range</th>
<th>Frequency</th>
<th>Air volume</th>
<th>Max. power input</th>
<th>Max. current draw</th>
<th>Perm. temp. of medium</th>
<th>Perm. amb. motor temp.</th>
<th>Mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>G3G 250-MW50-01</td>
<td>3–380-480 VAC</td>
<td>50/60 Hz</td>
<td>2200 m³/h</td>
<td>2,5 kW</td>
<td>6400 min⁻¹</td>
<td>4,0 °C</td>
<td>50 °C</td>
<td>22,3 kg</td>
</tr>
</tbody>
</table>

Subject to alterations; Nominal data established at 400 VAC

---

**Characteristic curves**

**view X**
- Sideplates of housing sealed with rubber loop (NBR pentane-resistant)

**detail Z**
- Cable gland

---

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Interfaces
for blowers with EC internal-rotor motor BG3612/3633

**standard interface 1**

24 VDC control

![Diagram of standard interface 1](image)

**standard interface 2**

230 VAC, 50/60 Hz  120 VAC, 50/60 Hz control

![Diagram of standard interface 2](image)

---

**General information**

- Tangential blowers
- Radial blowers AC
- Radial blowers EC
- Hot Air blowers
- Axial blowers
- Pumps
- Addresses
Interfaces for blowers with EC external-rotor motor

**Standard Interface 3**  
24 VDC

- Maximum ripple ±3.5%  
- UB +16 - 45VDC
- Without polarity protection

**Standard Interface 4**  
115/230 VAC

- Maximum ripple ±3.5%  
- UB +16 - 45VDC / 15mA
- Nominal voltage

---

**Customer Circuit Interface**

customer circuit  
interface  
ebm-papst circuit
**Interfaces for blowers with EC external-rotor motor**

### Standard Interface 5

115/230 VAC (* applies alternatively for L&S with different part number)

- **Open PWM and control input**: -> max. speed
- **Nominal voltage**: 115/230 VAC
- **EMV-Filter**:
  - **Maximum ripple**: ±3.5%
  - **UB**: +16 - 40 VDC / 15 mA
- **Counter**, **Controller**, **Alarm**, and **Speed Display**
- **PWM**: 2 - 6 kHz
- **GND**:

### Standard Interface 6

115/230 VAC

- **Open PWM and control input**: -> max. speed
- **Nominal voltage**: 115/230 VAC
- **EMV-Filter**:
  - **Maximum ripple**: ±3.5%
  - **UB**: +16 - 40 VDC / 15 mA
- **Counter**, **Controller**, **Alarm**, and **Speed Display**
- **PWM**: 1 - 6 kHz
- **GND**:

---

**General information**

**Tangential blowers**

**Radial blowers AC**

**Radial blowers EC**

**Hot Air blowers**

**Axial blowers**

**Pumps**

**Addresses**

---

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Interfaces for blowers with EC external-rotor motor

**standard interface 7**

---

**115/230 VAC**

<table>
<thead>
<tr>
<th>full speed</th>
<th>adjustable speed</th>
<th>adjustable speed via PWM control input</th>
</tr>
</thead>
<tbody>
<tr>
<td>PWM</td>
<td>0-10V</td>
<td>PWM high = fan on</td>
</tr>
<tr>
<td>0-10V</td>
<td></td>
<td>PWM low = fan off</td>
</tr>
</tbody>
</table>

with open control inputs

> 1.6V → Start
< 1.0V → Stop

**full speed**

PWM high = fan on
PWM low = fan off
Start up → PWM > 10%
min. operation → PWM > 7%
Stop → PWM < 5%

Rs = 12K (Gasmodul)
Rs = 1K (L & S)
Rs max. = 13K

**speed monitor**

PWM high = fan on
PWM low = fan off
Start up → PWM > 10%
min. operation → PWM > 7%
Stop → PWM < 5%

---

---

**customer circuit**

---

---

**interface**

---

---

**ebm-papst circuit**
Interfaces for blowers with EC external-rotor motor

standard interface 8

400 VAC

full speed

PWM high = fan on
PWM low = fan off
Start up          -> PWM > 10%
min. operation -> PWM > 7%
Stop               -> PWM < 5%

adjustable speed

via PWM control input with open collector

Rs = 12K (Gasmodul)
Rs = 1K (L & S)
Rsmax. = 13K

adjustable speed

via PWM control input with open collector

Rs = 12K (Gasmodul)
Rs = 1K (L & S)
Rsmax. = 13K

customer circuit

interface

ebm-papst circuit

EC motor (size 112, three-phase mains—powered)

<table>
<thead>
<tr>
<th>Connector</th>
<th>Connection</th>
<th>Assignment / function</th>
</tr>
</thead>
<tbody>
<tr>
<td>KL1</td>
<td>L1</td>
<td>Mains; L1</td>
</tr>
<tr>
<td></td>
<td>L2</td>
<td>Mains; L2</td>
</tr>
<tr>
<td></td>
<td>L3</td>
<td>Mains; L3</td>
</tr>
<tr>
<td></td>
<td>PE</td>
<td>Protective earth</td>
</tr>
<tr>
<td>KL2</td>
<td>NO</td>
<td>Alarm relay, make for failure</td>
</tr>
<tr>
<td></td>
<td>COM</td>
<td>Alarm relay, COMMON (2A, 250 VAC, AC1)</td>
</tr>
<tr>
<td></td>
<td>NC</td>
<td>Alarm relay, break for failure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Connector</th>
<th>Connection</th>
<th>Assignment / function</th>
</tr>
</thead>
<tbody>
<tr>
<td>KL3</td>
<td>PWM</td>
<td>PWM set value; specified set value PWM; 16–45 V high level, 1–10 KHz</td>
</tr>
<tr>
<td></td>
<td>GND</td>
<td>GND</td>
</tr>
<tr>
<td></td>
<td>PE</td>
<td>GND</td>
</tr>
<tr>
<td></td>
<td>+10 V</td>
<td>Analogue set value input, 0–10 V (impedance 100 kΩ), only to be used as alternative to terminal PWM</td>
</tr>
<tr>
<td></td>
<td>+20 V</td>
<td>Supply for external sensor; 20 VDC (+/− 20%) max. 50 mA</td>
</tr>
<tr>
<td></td>
<td>+10 V</td>
<td>Supply for external potentiometer; 10 VDC (+/− 10%) max. 10 mA</td>
</tr>
<tr>
<td></td>
<td>Tach</td>
<td>Speed monitor output; 12 VDC (+/− 10%) max. 10 mA; impedance 1 kΩ; 5 pulses/rotation</td>
</tr>
</tbody>
</table>
### Hot air blowers

<table>
<thead>
<tr>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RRL series</strong> EM30 motor, impeller diameter 120 to 160 mm</td>
<td>93</td>
</tr>
<tr>
<td><strong>R2A series</strong> EM42 motor, impeller diameter 152 mm</td>
<td>95</td>
</tr>
<tr>
<td><strong>R2K series</strong> EM42 motor „unit bearing“, ball bearings, impeller diameter 152 mm</td>
<td>96</td>
</tr>
<tr>
<td><strong>RR series</strong> EM30 motor, with bayonet-type mounting bracket</td>
<td>96</td>
</tr>
<tr>
<td><strong>R2E, R2D series</strong>, with external-rotor motor</td>
<td>97</td>
</tr>
</tbody>
</table>
Hot air blowers

Hot air circulation blowers are designed for the special requirements in circulating hot air, e.g. in ovens, climate cabinets, sterilisation units, meal and dish warmers and similar appliances.

The basic design comprises a shaded pole motor mounted outside the hot area using special mounting plates and a radial impeller made of FAL sheet steel, stainless steel or die-cast aluminium, which operates within the high temperature zone.

Equipment for generating hot air is not supplied by ebm-papst and may, e.g., take the form of a ring heater mounted around the hot air impeller.

Depending on the type or requirements, sintered sleeve bearings with high temperature-resistant lubricant or ball bearings may be used.

The maximum permissible bearing temperature is 120°C.

Versions with sleeve bearings may only be used with a horizontal shaft, but any shaft position is possible if ball bearings are used.

The winding complies with insulation class H (EN60335).

Depending on the measures taken for thermal insulation between motor and impeller and the impeller material, circulation temperatures of up to approx. 250°C, temporarily even up to 500°C (e.g. for pyrolytic self-cleaning processes in ovens) can be managed.

The standard types described below are only a selection taken from the wide range of possibilities. The circulation capacities they can achieve depend to a large extent, on the mounting situations, i.e. the specified values for air flow, pressure and speed are only general benchmark figures in typical mounting conditions. For serial use, motor rating, mounting, shaft length and impeller can be adjusted to suit specific requirements.
Hot air blowers
RRL 120, RRL 140

- sintered sleeve bearings with additional lubricant depot for bearing temperature up to max. 120 °C
- mounting position: horizontal shaft
- insulation class H (EN 60335)
- impeller: FAL sheet steel

**Nominal data**

<table>
<thead>
<tr>
<th>Type</th>
<th>Rated Voltage V</th>
<th>Frequency Hz</th>
<th>Air Flow m³/h</th>
<th>Max. Pressure Increase Pa</th>
<th>Power Input W</th>
<th>Speed min⁻¹</th>
<th>Mass kg</th>
<th>Diameter Ø mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRL120-3020LH</td>
<td>230</td>
<td>50</td>
<td>100</td>
<td>100</td>
<td>29</td>
<td>2000</td>
<td>0,75</td>
<td>100</td>
</tr>
<tr>
<td>RRL140-3020LH</td>
<td>230</td>
<td>50</td>
<td>170</td>
<td>140</td>
<td>38</td>
<td>1700</td>
<td>0,8</td>
<td>120</td>
</tr>
</tbody>
</table>

**Dimensions mm**

<table>
<thead>
<tr>
<th>Type</th>
<th>L1</th>
<th>L2</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRL120-3020LH</td>
<td>13</td>
<td>62</td>
</tr>
<tr>
<td>RRL140-3020LH</td>
<td>12</td>
<td>60</td>
</tr>
</tbody>
</table>

Technical data valid for typical applications; bold print = standard type; subject to alterations

**RRL 120**

- 7xØ 4,3
- 15°
- 120°
- Ø 100
- 0,120
- Connector 6,3 x 0,8

**RRL 140**

- 7xØ 4,3
- 15°
- 120°
- Ø 100
- 0,140
- 0,154
Hot air blowers
RRL 152, RRL 160

- bearing: RRL 152 ball bearings
  RRL 160 sintered sleeve bearings with additional lubricant depot
- mounting position: RRL 152 all mounting positions possible
  RRL 160 horizontal shaft
- impeller: RRL 152 FAL sheet steel
  RRL 160 galvanized sheet steel
- insulation class: H (EN 60335)

**Nominal data**

<table>
<thead>
<tr>
<th>type</th>
<th>rated voltage</th>
<th>frequency</th>
<th>air flow</th>
<th>max. pressure increase</th>
<th>power input</th>
<th>speed</th>
<th>mass</th>
<th>Dimensions mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>V</td>
<td>Hz</td>
<td>m³/h</td>
<td>Pa</td>
<td>W</td>
<td>min⁻¹</td>
<td>kg</td>
<td>L1</td>
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<tr>
<td>RRL152-3030LH</td>
<td>230</td>
<td>50</td>
<td>200</td>
<td>150</td>
<td>45</td>
<td>2200</td>
<td>1</td>
<td>120</td>
</tr>
<tr>
<td>RRL160-3038LH</td>
<td>230</td>
<td>50</td>
<td>210</td>
<td>200</td>
<td>37</td>
<td>1600</td>
<td>1,4</td>
<td>120</td>
</tr>
</tbody>
</table>

Technical data valid for typical applications; bold print = standard type; subject to alterations

**view without impeller**

RRL 152

- connector 6,3 x 0,8

RRL 160

- connector 6,3 x 0,8
Hot air blowers
R2A150AC, R2A150AA

- bearing: sintered sleeve bearings with additional lubricant depot
- mounting position: horizontal shaft
- impeller: R2A150AC stainless steel
  R2A150AA die-cast aluminium
- insulation class: H (EN 60335)

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Rated Voltage</th>
<th>Frequency</th>
<th>Air Flow</th>
<th>Max. Pressure Increase</th>
<th>Power Input</th>
<th>Speed</th>
<th>Mass</th>
<th>Recommended Air Intake</th>
<th>Dimensions mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2A150-AC</td>
<td>230</td>
<td>50</td>
<td>170</td>
<td>140</td>
<td>32</td>
<td>1800</td>
<td>1</td>
<td>120</td>
<td>21 98</td>
</tr>
<tr>
<td>R2A150-AA</td>
<td>230</td>
<td>50</td>
<td>190</td>
<td>180</td>
<td>30</td>
<td>2000</td>
<td>1.1</td>
<td>120</td>
<td>18.4 102.5</td>
</tr>
</tbody>
</table>

Technical data valid for typical applications; bold print = standard type; subject to alterations

R2A150AC

3xØ 4.6

120°

0.152

view without impeller

connector 6,3 x 0.8

R2A150AA

3xØ 4.6

120°

0.152

view without impeller

connector 6,3 x 0.8
# Hot air blowers

**R2K, RR**

- **bearing:** R2K150 ball bearings „unit bearing“, integrated in rotor  
  RR 152 sintered sleeve bearings with additional lubricant depot
- **mounting position:** R2K150 all mounting positions possible  
  RR 152 horizontal shaft
- **impeller:** R2K150 stainless steel  
  RR 152 FAL sheet steel
- **mounting bracket:** R2K150 three armed with triangular plate  
  RR 152 bayonet type
- **insulation class:** H (EN 60335)

## Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Rated Voltage</th>
<th>Frequency</th>
<th>Air Flow</th>
<th>Max. Pressure Increase</th>
<th>Power Input</th>
<th>Speed</th>
<th>Mass</th>
<th>Dimensions mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>V</td>
<td>Hz</td>
<td>m³/h</td>
<td>Pa</td>
<td>W</td>
<td>min⁻¹</td>
<td>kg</td>
<td>L1</td>
</tr>
<tr>
<td>R2K150-AC</td>
<td>230</td>
<td>50</td>
<td>200</td>
<td>155</td>
<td>32</td>
<td>2000</td>
<td>1</td>
<td>120</td>
</tr>
<tr>
<td>RR152-3025LH</td>
<td>230</td>
<td>50</td>
<td>190</td>
<td>150</td>
<td>37</td>
<td>2000</td>
<td>0,85</td>
<td>120</td>
</tr>
</tbody>
</table>

Technical data valid for typical applications; bold print = standard type; subject to alterations

## Dimensions

### R2K150

- Connector: 6,3 x 0,8

### RR152

- View without impeller
- Connector: 6,3 x 0,8
Hot air blowers
R2E 180, R2D 225

- material: impeller of stainless steel
- bearings: maintenance-free ball bearings
- direction of rotation: R2E 180 -AH: counter-clockwise, seen on impeller
  R2D 225 -AG: clockwise, seen on impeller
- connection leads: terminal strip

ebm-papst · Mulfingen

Nominal data

<table>
<thead>
<tr>
<th>type</th>
<th>motor</th>
<th>V</th>
<th>Hz</th>
<th>m³/h</th>
<th>A</th>
<th>W</th>
<th>min⁻¹</th>
<th>kg</th>
<th>µF/VDB</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2E 180 -AH05-06</td>
<td>M2E068-DF</td>
<td>230</td>
<td>50</td>
<td>480</td>
<td>0,51</td>
<td>115</td>
<td>2600</td>
<td>3,1</td>
<td>3,0/400</td>
</tr>
<tr>
<td>R2D 225 -AG02-10*)</td>
<td>M2D068-EC</td>
<td>230/400</td>
<td>50</td>
<td>1265</td>
<td>0,29</td>
<td>165</td>
<td>2700</td>
<td>4,0</td>
<td>-</td>
</tr>
</tbody>
</table>

*) current draw established at 400 V AC, subject to alterations

Characteristic curves

R2E 180

R2D 225
# Axial blowers

| NoFrost AC design | 100 |
| NoFrost EC design | 101 |
| AC-Motor with impeller Ø 80 - 175 mm | 102 |
Axial blowers AC, NoFrost design
EM2513LN

Circulation blowers are required in chest and upright freezers with automatic defrost function ("NoFrost" technology) as well as in chiller compartments in refrigerators. In these appliances, blowers must meet special requirements:

- Low power input for placing the appliance in low energy efficiency classes
- Long service life as a result of the long periods which they are switched on
- Resistance of the winding, bearing systems and the electronics in temperatures of as low as -40° C and relative humidity values of up to 95%
- Low noise to comply with maximum demands as to comfort.

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- Low noise to comply with maximum demands as to comfort.

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>rated voltage</th>
<th>rated frequency</th>
<th>power input (230V)</th>
<th>speed</th>
<th>Dimensions mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>V</td>
<td>Hz</td>
<td>W</td>
<td>mA</td>
<td>min⁻¹</td>
</tr>
<tr>
<td>EM2513LN</td>
<td>220-240</td>
<td>50</td>
<td>4,2</td>
<td>37</td>
<td>2650</td>
</tr>
<tr>
<td>EM2513LN</td>
<td>220-240</td>
<td>50</td>
<td>4,5</td>
<td>38</td>
<td>2600</td>
</tr>
<tr>
<td>EM2513LN</td>
<td>220-240</td>
<td>50</td>
<td>4,8</td>
<td>40</td>
<td>2400</td>
</tr>
</tbody>
</table>

subject to alterations
Axial blowers EC, NoFrost design
BG2012

- Brushless DC motor with integrated humidity protected PCB electronics for direct connection to mains
- Plastic housing for motor and electronics

**Nominal data**

<table>
<thead>
<tr>
<th>type</th>
<th>rated voltage</th>
<th>rated frequency</th>
<th>power input</th>
<th>rated current</th>
<th>speed</th>
<th>Dimensions mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>BG2012</td>
<td>230 VAC</td>
<td>50</td>
<td>1,9</td>
<td>70</td>
<td>2100</td>
<td>ØD 100, B 26,5, L1 30, x 13,2</td>
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</tbody>
</table>

(subject to alterations)

**Dimensions mm**

<table>
<thead>
<tr>
<th>type</th>
<th>ØD</th>
<th>B</th>
<th>L1</th>
<th>x</th>
</tr>
</thead>
<tbody>
<tr>
<td>BG2012</td>
<td>100</td>
<td>26.5</td>
<td>30</td>
<td>13.2</td>
</tr>
</tbody>
</table>

**General information**

- Tangential blowers
- Radial blowers AC
- Radial blowers EC
- Hot air blowers
- Axial blowers
- Pumps

**Addresses**
Shaded pole motors of the EM21, EM25 and EM30 series can be combined with axial plastic impellers. For standard applications, this makes for low cost, powerful solutions. The suitable motor/impeller combination depends on the technical requirements and must be determined in each case.

For better efficiency, the preferred direction of air flow should be blowing over motor.

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>dimension drawing</th>
<th>Ø diameter</th>
<th>Ø d (shaft)</th>
<th>material</th>
<th>air flow</th>
<th>max. pressure increase</th>
<th>reference speed</th>
<th>recommended motors</th>
</tr>
</thead>
<tbody>
<tr>
<td>d D d Pa m³/h*)</td>
<td>Ø d (shaft)</td>
<td>Ø d</td>
<td>material</td>
<td>air flow</td>
<td>max. pressure increase</td>
<td>reference speed</td>
<td>recommended motors</td>
<td></td>
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<tr>
<td>1</td>
<td>80</td>
<td>3,0/3,17</td>
<td>ABS</td>
<td>46</td>
<td>22</td>
<td>2000</td>
<td>EM21, EM25</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>90</td>
<td>3,0/3,17</td>
<td>ABS</td>
<td>54</td>
<td>24</td>
<td>2000</td>
<td>EM21, EM25</td>
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<tr>
<td>3</td>
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<td>3,0/3,17</td>
<td>ABS</td>
<td>72</td>
<td>34</td>
<td>2000</td>
<td>EM25</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>108</td>
<td>4,0/4,5</td>
<td>PA 6 GV</td>
<td>105</td>
<td>28</td>
<td>2000</td>
<td>EM25</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>153</td>
<td>4,0/4,5/6,0</td>
<td>PA 6.6 GV</td>
<td>235</td>
<td>70</td>
<td>2000</td>
<td>EM25, EM30</td>
<td></td>
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<tr>
<td>6</td>
<td>175</td>
<td>4,5</td>
<td>PA 6.6 GV</td>
<td>255</td>
<td>82</td>
<td>2000</td>
<td>EM25, EM30</td>
<td></td>
</tr>
</tbody>
</table>

*) measuring conditions see drawing, real performance depends on motor power (speed under load) and mounting situation; subject to alterations
Pumps

Submersible circulation pumps with shaded pole motor   P4, P5, P7  104
Submersible circulation pumps with capacitor motor   P30, P2E..  108
Dosing pumps   P51  110
Submersible circulation pumps
P5

Submersible circulation pumps P5 are drain pumps for the conveyance of low-viscosity liquids (water, condensate, alkalines etc.). Typical applications are, e.g. in condense dryers, condensing boilers, air-conditioning units and tapping systems.

Motor: Shaded pole motor EM25.
Motor above the pump housing.
Special versions with longer pump shaft, other mounting plates etc. on request.

Nominal data

<table>
<thead>
<tr>
<th>type</th>
<th>rated voltage</th>
<th>Hz</th>
<th>W</th>
<th>mA</th>
<th>l/min</th>
<th>mode of operation</th>
<th>insulation class</th>
<th>mass</th>
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<tbody>
<tr>
<td>P4-2524</td>
<td>230</td>
<td>50</td>
<td>27</td>
<td>220</td>
<td>1,2</td>
<td>S1</td>
<td>B</td>
<td>0,7</td>
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</tbody>
</table>

**Characteristic curves**

Flat pin matching push-on contact 6,3-... DIN 46247

<table>
<thead>
<tr>
<th>V</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>[l/min]</th>
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</thead>
<tbody>
<tr>
<td>0</td>
<td>200</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>150</td>
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<td>100</td>
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<tr>
<td>150</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Submersible circulation pumps P5 are drain pumps for the conveyance of low-viscosity liquids (water, condensate, alkalines etc.). Typical applications are, e.g. in condense dryers, condensing boilers, air-conditioning units and tapping systems.

Motor: Shaded pole motor EM25. Motor above the pump housing. Special versions with longer pump shaft, other mounting plates etc. on request.

### Nominal data

<table>
<thead>
<tr>
<th>type</th>
<th>V</th>
<th>Hz</th>
<th>W</th>
<th>mA</th>
<th>l/min</th>
<th>S1</th>
<th>B</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>P5-2524</td>
<td>230</td>
<td>50</td>
<td>24</td>
<td>200</td>
<td>2,0</td>
<td></td>
<td></td>
<td>0,7</td>
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</tbody>
</table>

*bold print = standard type; subject to alterations*

### Characteristic curves
Submersible circulation pumps P5 are drain pumps for the conveyance of low-viscosity liquids (water, condensate, alkalines etc.). Typical applications are, e.g. in condense dryers, condensing boilers, air-conditioning units and tapping systems.

Motor: Shaded pole motor EM30.
Motore above the pump housing.
Special versions with longer pump shaft, other mounting plates etc. on request.

**Nominal data**

<table>
<thead>
<tr>
<th>type</th>
<th>V</th>
<th>Hz</th>
<th>W</th>
<th>mA</th>
<th>l/min</th>
<th>mode of operation</th>
<th>insulation class</th>
<th>mass</th>
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<tbody>
<tr>
<td>P5-3020</td>
<td>230</td>
<td>50</td>
<td>22</td>
<td>190</td>
<td>3,5</td>
<td>S1</td>
<td>B</td>
<td>0,7</td>
</tr>
</tbody>
</table>

**Bold print = standard type; subject to alterations**

**Characteristic curves**

- Connector 6,3 x 0,8
Submersible circulation pumps P7 are drain pumps for the conveyance of low-viscosity liquids (water, condensate, alkalines etc.). Typical applications are, e.g. in condense dryers, condensing boilers, air-conditioning units.

Motor: Shaded pole motors EM2524.
Plastic-encapsulated coil.
Connection Rast-5, 6.3 x 0.8 mm.
May be mounted directly in the condensate container.

### Nominal data

<table>
<thead>
<tr>
<th>type</th>
<th>V</th>
<th>Hz</th>
<th>W</th>
<th>mA</th>
<th>l/min</th>
<th>mode of operation</th>
<th>insulation class</th>
<th>mass</th>
<th>mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>P7-2524</td>
<td>230</td>
<td>50</td>
<td>25</td>
<td>210</td>
<td>3,2</td>
<td>S2</td>
<td>F</td>
<td>0,65</td>
<td></td>
</tr>
</tbody>
</table>

*bold print = standard type; subject to alterations*

### Characteristic curves

[Graph showing characteristic curves]
Submersible circulation pumps
P30

- immersion pump for low-viscosity liquids
- motor: capacitor motor KM43
- housing and impeller: ABS GV
- shaft: stainless steel 1.4305

ebm-papst · Landshut

### Nominal data

<table>
<thead>
<tr>
<th>type</th>
<th>rated voltage</th>
<th>frequency</th>
<th>power input</th>
<th>rated current</th>
<th>capacitor (μF)</th>
<th>flow rate (l/min)</th>
<th>mode of operation</th>
<th>insulation class</th>
<th>mass</th>
<th>Dimensions mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>P30-4330</td>
<td>230 V</td>
<td>50 Hz</td>
<td>48 W</td>
<td>210 mA</td>
<td>1,5</td>
<td>12,5</td>
<td>S1</td>
<td>F</td>
<td>2,0</td>
<td>30 87 600</td>
</tr>
</tbody>
</table>

*) not supplied by ebm-papst; bold print = standard type; subject to alterations

### Characteristic curves

- Pressure connection
- Depth of immersion max. 190 mm
Submersible circulation pumps
P2E 070 – with stirring propeller

- for circulation or pumping of water or similar liquids
- pump housing, pump impeller, crosshead connecting and covers made of fibre-glass reinforced plastic, stirring propeller made of PE
- top mounted external-rotor motor, vacuum-encapsulated stator, varnished in black, protected against accidental contact underneath plastic cover and with shaft of stainless steel
- all screws in stainless steel
- capacitor integrated in plastic terminal box and wired up ready for plug-in
- mounting position: vertical
- insulation class B
- type of protection: IP44 when installed (final evaluation to be carried out in customer application)

**Nominal data**

<table>
<thead>
<tr>
<th>type</th>
<th>V</th>
<th>Hz</th>
<th>W</th>
<th>mA</th>
<th>l/min</th>
<th>min⁻¹</th>
<th>µF/VDB</th>
<th>m</th>
<th>°C</th>
<th>kg</th>
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</thead>
<tbody>
<tr>
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<td>66</td>
<td>290</td>
<td>11,1</td>
<td>2300</td>
<td>1,5/400</td>
<td>6,20</td>
<td>40</td>
<td>1,6</td>
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<td></td>
<td>230</td>
<td>60</td>
<td>83</td>
<td>370</td>
<td>11,6</td>
<td>2370</td>
<td>1,5/400</td>
<td>7,30</td>
<td>40</td>
<td>1,6</td>
</tr>
</tbody>
</table>

All values in standard type subject to alterations.

Characteristic curves

- 50 Hz
- 60 Hz

**General information**

- bearings: maintenance-free ball bearings
- connection leads: H0VV-F3G leads 0.75 in black, 600 mm
- approvals: CE, UL and CSA on request
- temp. of pumping medium 0 - 40 °C

**Component description**

- brass lead tips
- max. immersion depth
- pressure connection
Dosing pumps

P51

Dosing pump suitable for the media-separated fine dosing of highly viscous fluids, e.g. liquid detergents and fabric softeners, oil, paints and varnishes, disinfectants, chemicals.
Tube: silicon

<table>
<thead>
<tr>
<th>Nominal data</th>
<th>rated voltage</th>
<th>frequency</th>
<th>power input</th>
<th>rated/current</th>
<th>flow rate</th>
<th>max. pressure</th>
<th>mode of operation</th>
<th>service life</th>
<th>insulation class</th>
<th>mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P51-2518/Gtp22</td>
<td>230</td>
<td>50</td>
<td>18</td>
<td>260</td>
<td>60</td>
<td>2,0</td>
<td>S2</td>
<td>500</td>
<td>B</td>
<td>0,7</td>
</tr>
</tbody>
</table>

bold print = standard type; subject to alterations

connector 6,3 x 0,8
Customized products

For small to medium-scale serial production, motor and fan components can be modified to create a product tailored to a particular application. With motors, there is the option of different inductions, insulating systems, bearing systems, shaft dimensions, mounting configurations. Additional components like speedometer, brake, cooling blade can be added. Blowers can be adapted to special requirements on their scroll or impeller by applying special materials, balancing, coating, elastic motor suspension. Special components can be added on inlet or outlet side in order to meet the requirement of the individual application.

With relevant demand, we gladly develop new products and complete solutions for your specific problems. Please contact us for further details.
ebm-papst representatives and subsidiaries

**Germany**

**ebm-papst**  
Mulfingen GmbH & Co. KG  
Bachmühle 2  
D-74673 Mulfingen  
Phone +49 (0) 79 38 / 81-0  
Fax +49 (0) 79 38 / 81-110  
info1@de.ebmpapst.com  
www.ebmpapst.com

**ebm-papst**  
St. Georgen GmbH & Co. KG  
Hermann-Papst-Straße 1  
D-78112 St. Georgen  
Phone +49 (0) 77 24 / 81-0  
Fax +49 (0) 77 24 / 81-13 09  
info2@de.ebmpapst.com  
www.ebmpapst.com

**ebm-papst**  
Landshut GmbH  
Hofmark-Alch-Straße 25  
D-84030 Landshut  
Phone +49 (0) 8 71 / 707-0  
Fax +49 (0) 8 71 / 707-465  
info3@de.ebmpapst.com  
www.ebmpapst.com

### Agencies

**Berlin**  
Dipl.-Ing. (FH) Jens Duchow  
Händelstraße 7  
D-16341 Panketal  
Phone +49 (0) 30 / 94 41 49 62  
Fax +49 (0) 30 / 94 41 49 63  
Jens.Duchow@de.ebmpapst.com  
Wolf-Jürgen.Weber@de.ebmpapst.com

**Bielefeld**  
Dipl.-Ing. (FH) Wolf-Jürgen Weber  
Niehausweg 13  
D-33739 Bielefeld  
Phone +49 (0) 52 06 / 9 17 32 31  
Fax +49 (0) 52 06 / 9 17 32 35  
info2@de.ebmpapst.com

**Dortmund**  
Dipl.-Ing. (FH) Hans-Joachim Pundt  
Auf den Steiner 3  
D-59519 Münster-Völlinghausen  
Phone +49 (0) 20 28 25 / 80 04 07  
Fax +49 (0) 20 28 25 / 80 04 08  
Hans-Joachim.Pundt@de.ebmpapst.com

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

**Kassel**  
Dipl.-Ing. (FH) Ralph Brück  
Hoherrainstraße 38  
D-35075 Gladenbach  
Phone +49 (0) 64 62 / 40 71 10  
Fax +49 (0) 64 62 / 40 71 11  
Ralph.Brueck@de.ebmpapst.com

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

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

**Nürnberg**  
Friedrich Klein  
Adlerstraße 49/1  
D-73540 Heubach  
Phone +49 (0) 71 73 / 49 83  
Fax +49 (0) 71 73 / 49 83  
Friedrich.Klein@de.ebmpapst.com

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

**Stuttgart**  
Dipl.-Ing. (FH) Rudi Weinmann  
Hindenburgstraße 100/1  
D-73209 Plochingen  
Phone +49 (0) 71 53 / 92 89 80  
Fax +49 (0) 71 53 / 92 89 81  
Rudi.Weinmann@de.ebmpapst.com

**Ulm**  
Günter Wilhelm  
Allgäuer Straße 7  
D-89269 Vöhringen  
Phone +49 (0) 73 06 / 92 46 08  
Fax +49 (0) 73 06 / 92 46 48  
Guenther.Wilhelm@de.ebmpapst.com

### Distributors

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

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

**Munich**  
A. Schweiger GmbH  
Ottnstraße 1  
D-81654 Sauerlach  
Phone +49 (0) 88 49 / 87 45 12  
Fax +49 (0) 88 49 / 87 45 12  
info@schweiger-gmbh.de  
www.schweiger-gmbh.com

**North**  
Breuell + Hilgenfeldt GmbH  
Grützmühlenweg 40  
D-22339 Hamburg  
Phone +49 (0) 40 / 53 80 92 20  
Fax +49 (0) 40 / 53 80 92 84  
ebm-papst@breuell-hilgenfeldt.de

**South**  
HDS Ventilatoren Vertriebs GmbH  
Glaswiesenstraße 1  
D-74677 Dörzbach  
Phone +49 (0) 79 37 / 80 29 68  
Fax +49 (0) 79 37 / 80 25 78  
info@hds-gmbh.net
Europe

Austria
ebm-papst Motoren & Ventilatoren GmbH
Westbahnhalle 5
A-4490 St. Florian
Phone +43 / 72 24 / 66 01 10
Fax +43 / 72 24 / 66 01 120
info(at.ebmpapst.com)
www.ebmpapst.at

Belarus
ebm-papst Bel Agmbh
Prospekt Nesavisimosti 11/2 Office 325, 512
BY-220050 Minsk
Phone +375 / 17 / 209 95 61
Fax +375 / 17 / 209 95 61
info@by.ebmpapst.com
www.ebmpapst.by

Belgium
VIBO Benelux B.V.
Sales office Belgium-Luxemburg
Romeinsestraat 6/0101
Research Park Haasrode
B-3001 Heverlee-Leuven
Phone +32 / 16 / 39 62 00
Fax +32 / 16 / 39 62 20
info@vibobenelux.com
www.vibobenelux.com

Bulgaria
ebm-papst Romania S.R.L.
Str. Timavei Nr. 20
RO-500327 Brasev
Phone +40 / 268 / 312 805
Fax +40 / 268 / 312 805
dudasludovic@xnet.ro

Croatia
ebm-papst Industries Kft.
Ezred u. 2.
H-1044 Budapest
Phone +36 / 1 / 87 22 190
Fax +36 / 1 / 87 22 194
office@hu.ebmpapst.com
www.ebmpapst.hu

 Cyprus
 MATERO LTD
 37, St. Kyriakides Avenue
 P.O. Box 51744
 CY-3080 Limassol
 Phone +357 / 25 / 87 00 30
 Fax +357 / 25 / 38 13 66
 matero@cytanet.com.cy
 www.matero.com.cy

 Czech Republic / Slovakia
ebm-papst CZ s.r.o.
 Krátká 379
 CZ-66461 Rajhradice u Brna
 Phone +420 / 547 / 232 617
 Fax +420 / 547 / 232 622
 info@ebmpapst.cz
 www.ebmpapst.cz

 Denmark
 Jenk A/S
 Vallenbaekvej 21
 DK-2605 Brandby
 Phone +45 / 43 / 63 11 11
 Fax +45 / 43 / 63 05 05
 jenkj@jenk.dk
 www.jenk.dk

 Estonia
ebm-papst Oy Eesti Filiaal
 Kudaka tee 3
 EST-10621 Tallinn
 Phone +372 / 65 56 / 978
 Fax +372 / 65 56 / 979
 www.ebmpapst.ee

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

 France
ebm-papst SARL
 21 Nord - rue A. Mohler
 BP 62
 F-67212 Obernai-Cedex
 Phone +33 / 820 326 266
 Fax +33 / 3 / 88 67 38 83
 info@ebmpapst.fr
 www.ebmpapst.fr

 Greece
 Helcoma
 Th. Rotas & Co OE
 Davaki 65
 GR-17672 Kallithea-Attiki
 Phone +30 / 210 / 951 37 05
 Fax +30 / 210 / 951 34 90
 contact@helcoma.gr
 www.helcoma.gr

 Hungary
ebm-papst Industries Kft.
 Ezred u. 2.
 H-1044 Budapest
 Phone +36 / 1 / 87 22 190
 Fax +36 / 1 / 87 22 194
 office@hu.ebmpapst.com
 www.ebmpapst.hu

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

 Ireland
ebm-papst Limited
 Portlaoise Business & Technology Park
 Mountrath Road
 IRL-Portlaoise, Co. Laois
 Phone +353 / 57 86 / 643 43
 Fax +353 / 57 86 / 643 46
 sales@ie.ebmpapst.com
 www.ebmpapst.ie

 Italy
ebm-papst Srl
 Via Corraggia 108
 I-22076 Mazzate (Co)
 Phone +39 / 03 31 / 83 62 01
 Fax +39 / 03 31 / 82 15 10
 info@it.ebmpapst.com
 www.ebmpapst.it

 Macedonia
ebm-papst Industries Kft.
 Ezred u. 2.
 H-1044 Budapest
 Phone +36 / 1 / 87 22 190
 Fax +36 / 1 / 87 22 194
 office@hu.ebmpapst.com
 www.ebmpapst.hu
ebm-papst representatives and subsidiaries

**Netherlands**
VIBO Benelux B.V.
Engelsweg 127
Postbus 230
NL-5705 AC Helmond
Phone +31 / 492 / 50 29 00
Fax +31 / 492 / 50 29 50
verkoop@vibobenelux.com
www.vibobenelux.com

**Norway**
ebm-papst AS
P.B. 173 Holmila
N-1203 Oslo
Phone +47 / 22 / 76 33 40
Fax +47 / 22 / 676 95 87
mailbox@ebmpapst.no
www.ebmpapst.no

**Poland**
ebm-papst Polska Sp. z o.o.
ul. Annopol 4A
PL-02326 Warszawa
Phone +48 / 22 / 675 33 40
Fax +48 / 22 / 676 95 87
office@ebmpapst.pl
www.ebmpapst.pl

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

**Romania**
ebm-papst Romania S.R.L.
Str. Tirnavei Nr. 20
RO-500327 Brasov
Phone +40 / 268 / 312 805
Fax +40 / 268 / 312 805
dudasludovic@xnet.ro

**Russia**
ebm-papst Ural GmbH
Posadskaja-Strasse, 23(E), 3
RU-620102 Ekaterinburg
Phone +7 / 343 / 233 80 00
Fax +7 / 343 / 233 77 88
Konstantin.Molokov@ru.ebmpapst.com
www.ebmpapst.ur.ru

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

**Turkey**
Akantel Elektronik San. Tic. LTD. Sti.
Atatürk Organize Sanayi Bölgesi 10007 SK. No.6
TR-35620 Cigli-Izmir
Phone +90 / 232 / 328 20 90
Fax +90 / 232 / 328 02 70
akantel@akantel.com.tr
www.ebmpapst.com.tr

**Ukraine**
ebm-papst Ukraine LLC
Lepse Boulevard 4, Building 47
UA-03067 Kiew
Phone +38 / 044 / 206 30 91
Fax +38 / 044 / 206 30 91
mail@ebmpapst.ua
www.ebmpapst.ua

**United Kingdom**
ebm-papst UK Ltd.
Chelmsford Business Park
GB-Chelmsford Essex CM2 5EZ
Phone +44 / 12 45 / 46 85 55
Fax +44 / 12 45 / 46 63 36
sales@uk.ebmpapst.com
www.ebmpapst.co.uk

**Switzerland**
ebm-papst Automotive & Drives (UK) Ltd.
The Smithy
Fidlers Lane, East Ilsley
GB-Berkshire RG20 7LG
Phone +44 / 87 07 / 66 51 70
Fax +44 / 87 07 / 66 51 80
A&Dsales@uk.ebmpapst.com
www.ebmpapst-ad.com
America

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

Brasil
- ebm-papst Motores Ventiladores Ltda.
  Av. José Giorgi, 301 Galpões B6+B7
  Condomínio Logical Center
  BR-06707-100 Cotia - São Paulo
  Phone +55 / 11 31 64 89 00
  Fax +55 / 11 47 77 14 56
  vendas@br.ebmpapst.com
  www.ebmpapst.com.br

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

Mexico
- ebm Industrial S.de R.L. de C.V.
  Paseo de Tamarindos 400-A-5º Piso
  Col. Bosques de las Lomas
  MEX-México 05120, D.F.
  Phone +52 / 55 / 33 00 51 44
  Fax +52 / 55 / 33 00 52 43
  sales@mx.ebmpapst.com
  www.ebmpapst.com.mx

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

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

Africa

South Africa
- ebm-papst South Africa (Pty) Ltd.
  P.O. Box 3124
  1119 Yacht Avenue
  ZA-2040 Honeydew
  Phone +27 / 11 / 794 34 34
  Fax +27 / 11 / 794 50 20
  info@za.ebmpapst.com
  www.ebmpapst.co.za
ebm-papst representatives and subsidiaries

Asia

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

Hong Kong
ebm-papst Ventilator (Shanghai) Co., Ltd.
Hong Kong Representative Office
Unit Nos. 13-15, 9/F, Technology Park
18 On Lai Street, Siu Lek Yuen, Sha Tin,
N.T. Hong Kong P.R. of China
Phone +852 / 21 45 / 86 78
Fax +852 / 21 45 / 76 78
info@hk.ebmpapst.com

India
ebm NADI International Pvt Ltd.
26/3, G.N.T. Road, Erukkencherry
IND-Chennai-600118
Phone +91 / 44 / 25 37 25 56
Fax +91 / 44 / 25 37 11 49
ebmnadi@md2.vsnl.net.in
www.ebmnadi.com

Indonesia
ebm-papst Indonesia
Wisma Slipi, Lt. Leilenda S. Parman Kav. 12
14th Floor, No. 1410
RT 11480 Jakarta Barat
Phone +62 / 21 / 53 66 19 01
Fax +62 / 21 / 53 66 19 05
salesdept@id.ebmpapst.com

Israel
Polak Bros. Import Agencies Ltd.
9 Hamefaolaim Street
IL-Kiryat Arie, Petach-Tikva 49514
Phone +972 / 3 / 910 03 00
Fax +972 / 3 / 579 66 79
polak@polak.co.il
www.polak.co.il

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

Korea
ebm-papst Korea Co. Ltd.
6F, Trutec Bldg.
B-6-2, Digital Media City (DMC)
Sangam-Dong, Mapo-Gu
ROK-Seoul 121-270
Phone +82 / 2 / 36 62 / 13 24
Fax +82 / 2 / 36 62 / 13 26
info@kr.ebmpapst.com
www.ebmpapst.co.kr

Malaysia
ebm-papst Malaysia
Representative Office
Block F1, 9A-4, Jin PJJU 1/42
Datran Prima
MAL-47301 Petaling Jaya
Phone +60 / 3 / 78 06 54 40
Fax +60 / 3 / 78 06 54 41
salesdept@my.ebmpapst.com

Singapore
ebm-papst SEA Pte. Ltd.
No. 25 Ubi Road 4
#06-00 Olympia Industrial Building
SGP-Singapore 408620
Phone +65 / 65 51 37 89
Fax +65 / 65 51 37 89
salesdept@sg.ebmpapst.com

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

Thailand
ebm-papst Thailand Co., Ltd.
99/349 Na-Nakorn Bldg., 4th Floor
Chaeng Wattana Road, Thungsonhong,
THA-10210 Laksi, BKK
Phone +66 / 2 / 5 76 15 24
Fax +66 / 2 / 5 76 15 42
salesdept@th.ebmpapst.com

United Arab Emirates
ebm-papst Middle East FZE
PO Box 17755
Jebel Ali Free Zone / FZ51 / AP05
UAE-Dubai
Phone +971 / 4 / 886 08 26
Fax +971 / 4 / 886 08 27
info@ae.ebmpapst.com
www.ebmpapst.ae
Australia

Australia

ebm-papst A&NZ Pty Ltd.
10 Oxford Road
AUS-Laverton North, Victoria, 3026
Phone +61 / 3 / 83 25 64 00
Fax +61 / 3 / 83 25 64 64
sales@ebmpapst.com.au
www.ebmpapst.com.au

New Zealand

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