

Tangential-, radial-, axial blowers  
Hot air blowers  
Pumps

Catalogue 2009







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## Company profile: ebm-papst

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.



*Our location in Landshut*



*Left:  
Our headquarters in Mulfingen  
Right:  
Our location in St. Georgen*

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 suppliers 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 environmental 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 pricing. 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.



*Production*



*Winding machine*

## **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 air-flow - 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.



*Left: Endurance test lab  
Centre: Shaker  
Right: Measurement station*



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:



*Top: Betz manometer  
Left: Precision noise measurement lab*

- 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.

**The introductory pages preceeding 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.

## Glossary

| symbol          | term                                 | unit                                          |
|-----------------|--------------------------------------|-----------------------------------------------|
| $\dot{V}$       | air flow                             | m <sup>3</sup> /h, l/sec                      |
| $\Delta P_{fa}$ | pressure difference at free air flow | Pa (Pascal)                                   |
| $\Delta P_{st}$ | static pressure difference           | Pa                                            |
|                 | former units                         | 1 mmWS $\cong$ 10 Pa<br>1 mbar $\cong$ 100 Pa |
| $n$             | speed formerly                       | min <sup>-1</sup> , 1/min<br>U/min, Upm       |
| $U$             | voltage                              | V (Volt)                                      |
| $f$             | frequency                            | Hz (Hertz)                                    |
| $P_1$           | power input                          | W (Watt)                                      |
| $P_2$           | power output                         | W (Watt)                                      |
| $I_N$           | nominal current draw                 | mA (Milliampere)                              |
| $M$             | torque former unit                   | Ncm, Nm, mNm<br>1 kpm $\cong$ 10 Nm           |

## 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

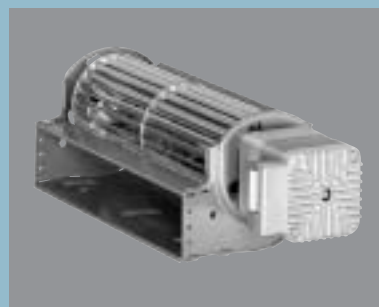
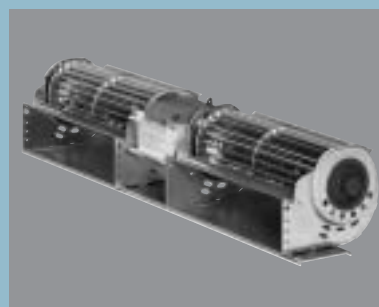
**LH** = high temperature version

**LN** = low temperature version

**B** = brake

### 9 Code for mechanical design of the motor

### 10 Code for electrical design of the motor



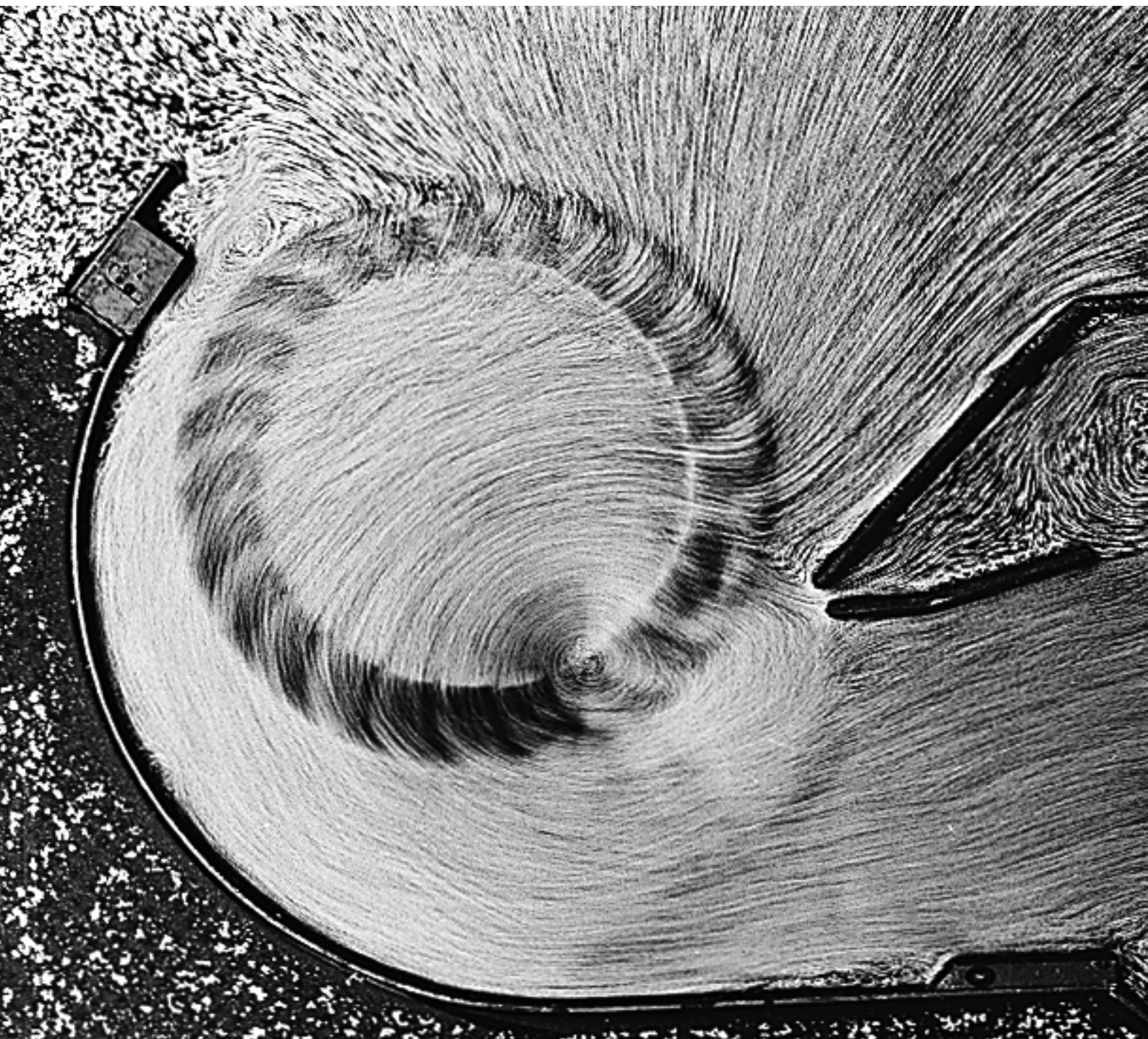
# Tangential blowers

|                                                       |    |
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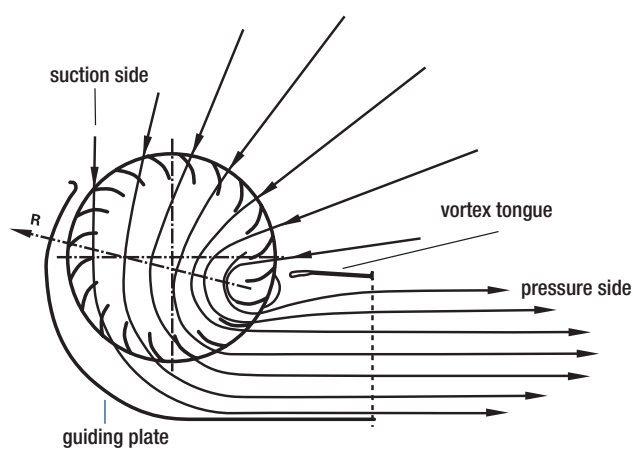


## Tangential blowers series QL 3, QL 4, QLK 45, QLZ 06, QLN 65

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.

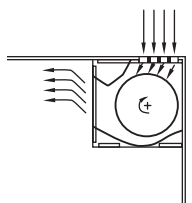


## Vortex stream through tangential blower

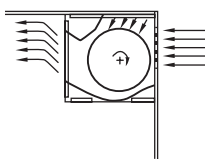


### Mounting conditions for QL 4 series

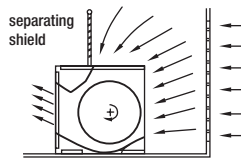
air sucked in from top,  
covered backside



air sucked in from the  
back, covered topside

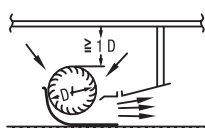
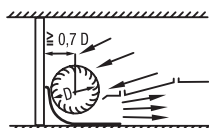


air sucked in from top and back

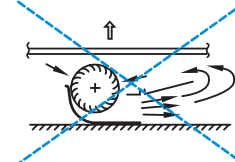
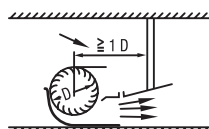
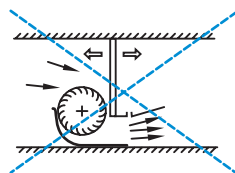


### Mounting conditions on suction side QL 3, QLK, QLZ, QLN

functional

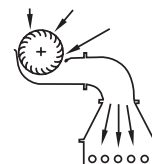
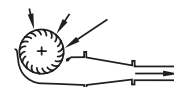
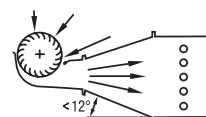


non functional

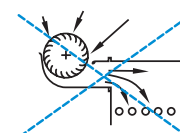
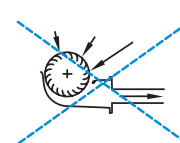
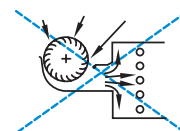


### Mounting conditions on pressure side QL 3, QLK, QLZ, QLN

functional

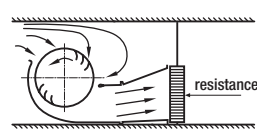


non functional

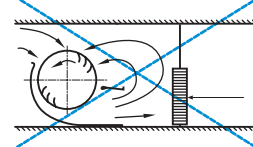


### Separation of suction and pressure area

functional



non functional



# Tangential blowers

## QL 3



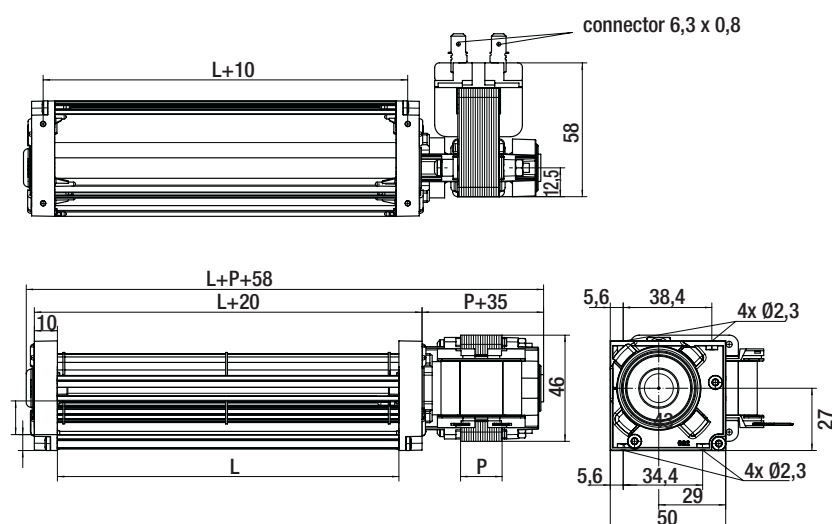
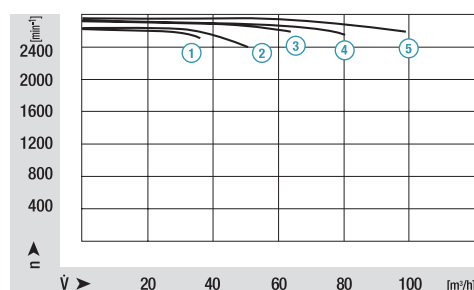
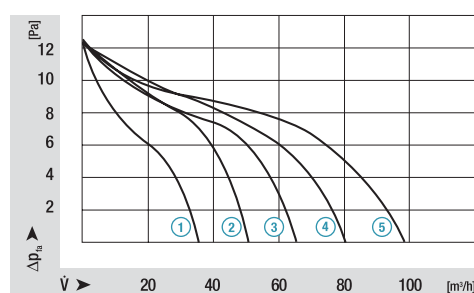
- impeller diameter 30 mm
- mounting position horizontal or vertical with motor at the bottom
- permissible ambient temperature 0 - 60°C
- insulation class B, class F or H on request

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| Nominal data  |               | characteristic curve | rated voltage | frequency | air flow | max. pressure increase | power input | rated current | speed | mass | Dimensions mm |    |
|---------------|---------------|----------------------|---------------|-----------|----------|------------------------|-------------|---------------|-------|------|---------------|----|
| motor right*  | motor left    |                      | V             | Hz        | m³/h     | Pa                     | W           | mA            | min⁻¹ | kg   | L             | P  |
| QL3/1500-2112 | QL3/0015-2112 | ①                    | 230           | 50        | 35       | 12,3                   | 8           | 77            | 2550  | 0,36 | 148,0         | 12 |
| QL3/2000-2112 | QL3/0020-2112 | ②                    | 230           | 50        | 51       | 12,6                   | 8           | 79            | 2400  | 0,40 | 198,0         | 12 |
| QL3/2500-2118 | QL3/0025-2118 | ③                    | 230           | 50        | 67       | 12,2                   | 10          | 82            | 2600  | 0,56 | 248,0         | 18 |
| QL3/3000-2118 | QL3/0030-2118 | ④                    | 230           | 50        | 80       | 12,7                   | 10          | 82            | 2580  | 0,60 | 302,6         | 18 |
| QL3/3500-2124 | QL3/0035-2124 | ⑤                    | 230           | 50        | 98       | 12,3                   | 10          | 77            | 2600  | 0,68 | 352,6         | 24 |

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

### Characteristic curves



# 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

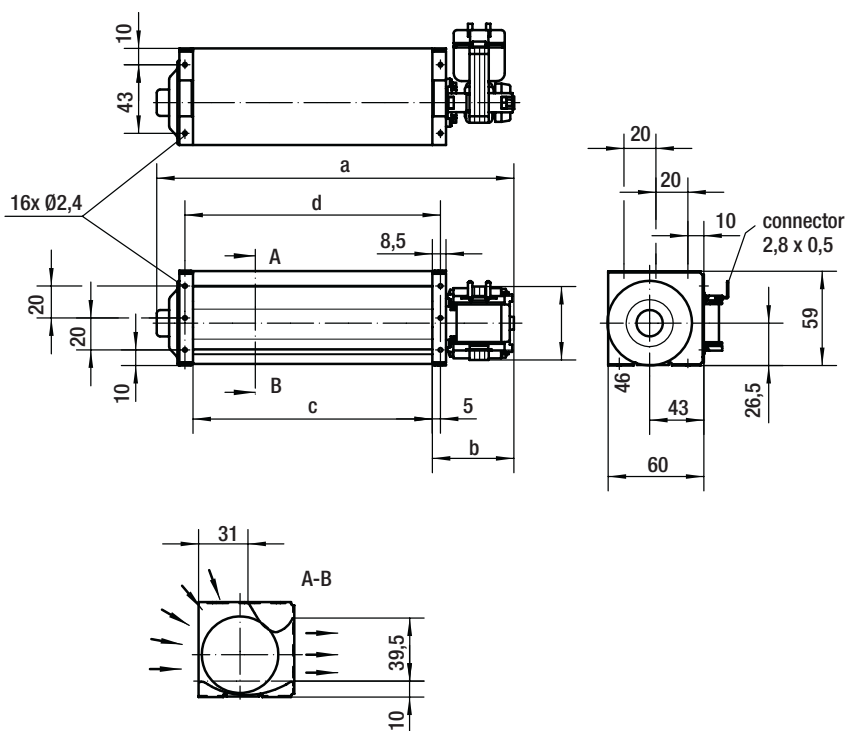
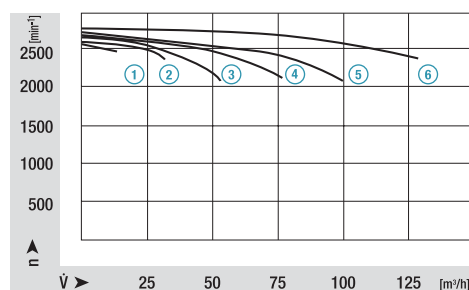
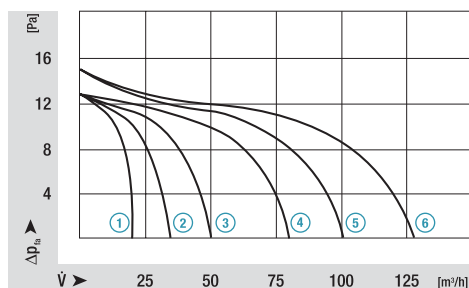
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| Nominal data  |               | characteristic curve | rated voltage | frequency | air flow | max. pressure increase | power input | rated current | speed | mass | Dimensions mm |    |     |     |
|---------------|---------------|----------------------|---------------|-----------|----------|------------------------|-------------|---------------|-------|------|---------------|----|-----|-----|
| motor right*  | motor left    |                      | V             | Hz        | m³/h     | Pa                     | W           | mA            | min⁻¹ | kg   | a             | b  | c   | d   |
| QL4/0500-2112 | QL4/0005-2112 | ①                    | 230           | 50        | 18       | 13                     | 8           | 100           | 2500  | 0,40 | 126           | 51 | 50  | 60  |
| QL4/1000-2112 | QL4/0010-2112 | ②                    | 230           | 50        | 36       | 13                     | 9           | 100           | 2300  | 0,45 | 176           | 51 | 100 | 110 |
| QL4/1500-2112 | QL4/0015-2112 | ③                    | 230           | 50        | 50       | 13                     | 12          | 130           | 2150  | 0,50 | 226           | 51 | 150 | 160 |
| QL4/2000-2118 | QL4/0020-2118 | ④                    | 230           | 50        | 80       | 14                     | 14          | 140           | 2250  | 0,60 | 282           | 57 | 200 | 210 |
| QL4/2500-2118 | QL4/0025-2118 | ⑤                    | 230           | 50        | 100      | 15                     | 15          | 140           | 2200  | 0,65 | 338           | 63 | 250 | 260 |
| QL4/3000-2124 | QL4/0030-2124 | ⑥                    | 230           | 50        | 126      | 15                     | 20          | 170           | 2300  | 0,80 | 388           | 63 | 300 | 310 |

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

### Characteristic curves



# 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

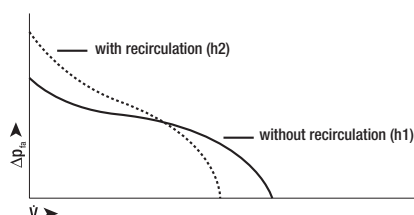
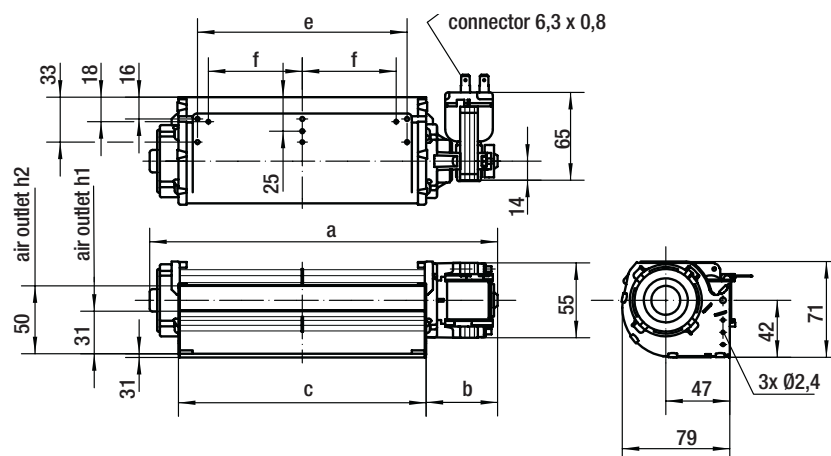
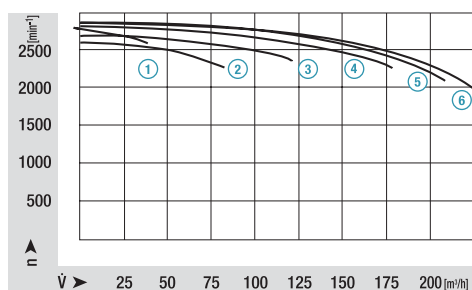
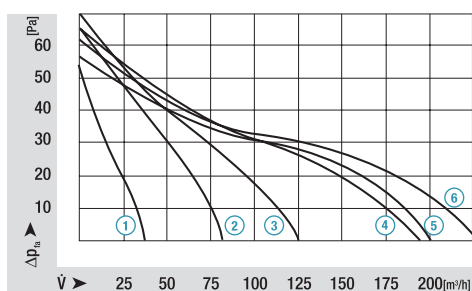
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| Nominal data    |                 | characteristic curve | rated voltage | frequency | air flow | max. pressure increase | power input | rated current | speed | mass | Dimensions mm |    |     |     |     |
|-----------------|-----------------|----------------------|---------------|-----------|----------|------------------------|-------------|---------------|-------|------|---------------|----|-----|-----|-----|
| motor right*    | motor left      |                      | V             | Hz        | m³/h     | Pa                     | W           | mA            | min⁻¹ | kg   | a             | b  | c   | e   | f   |
| QLK45/0600-2513 | QLK45/0006-2513 | ①                    | 230           | 50        | 36       | 55                     | 15          | 170           | 2650  | 0,60 | 140           | 55 | 62  | 32  | -   |
| QLK45/1200-2513 | QLK45/0012-2513 | ②                    | 230           | 50        | 80       | 66                     | 17          | 180           | 2250  | 0,65 | 200           | 55 | 122 | 94  | -   |
| QLK45/1800-2518 | QLK45/0018-2518 | ③                    | 230           | 50        | 125      | 67                     | 26          | 245           | 2350  | 0,85 | 265           | 60 | 182 | 154 | 69  |
| QLK45/2400-2524 | QLK45/0024-2524 | ④                    | 230           | 50        | 190      | 64                     | 32          | 280           | 2200  | 1,10 | 331           | 66 | 242 | 212 | 98  |
| QLK45/3000-2524 | QLK45/0030-2524 | ⑤                    | 230           | 50        | 200      | 56                     | 32          | 280           | 2100  | 1,25 | 391           | 66 | 302 | 272 | 128 |
| QLK45/3600-2524 | QLK45/0036-2524 | ⑥                    | 230           | 50        | 230      | 63                     | 35          | 300           | 1800  | 1,40 | 451           | 66 | 362 | 332 | 158 |

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

### Characteristic curves

with recirculation (air outlet h2)

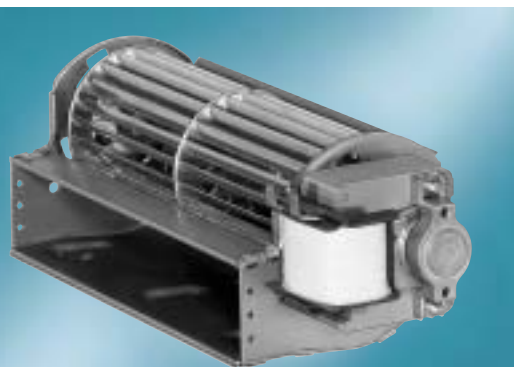


# Tangential blowers

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

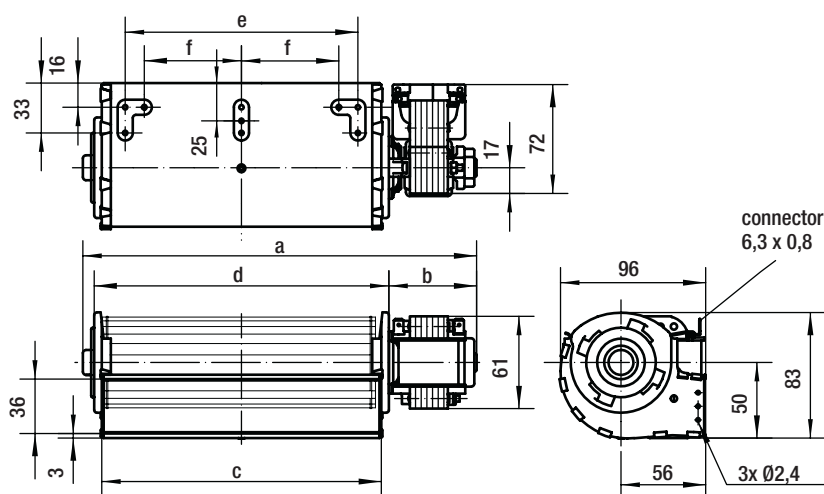
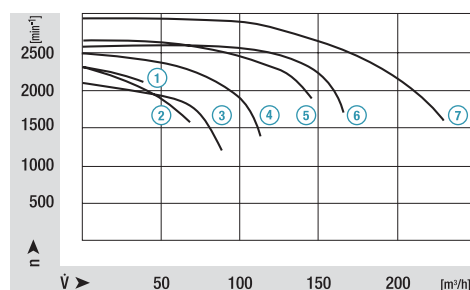
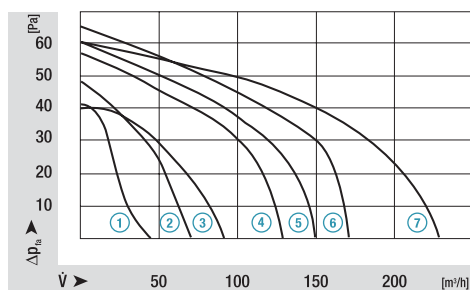
ebm-papst • Landshut



| Nominal data    |                 | characteristic curve | rated voltage | frequency | air flow | max. pressure increase | power input | rated current | speed             | mass | Dimensions mm |    |     |     |     |     |
|-----------------|-----------------|----------------------|---------------|-----------|----------|------------------------|-------------|---------------|-------------------|------|---------------|----|-----|-----|-----|-----|
| motor right*    | motor left      |                      | V             | Hz        | m³/h     | Pa                     | W           | mA            | min <sup>-1</sup> | kg   | a             | b  | c   | d   | e   | f   |
| QLZ06/0600-2513 | QLZ06/0006-2513 | ①                    | 230           | 50        | 40       | 42                     | 15          | 160           | 2500              | 0,60 | 124           | 42 | 63  | 73  | 32  | -   |
| QLZ06/1200-2513 | QLZ06/0012-2513 | ②                    | 230           | 50        | 70       | 48                     | 20          | 180           | 1550              | 0,70 | 186           | 42 | 125 | 135 | 94  | -   |
| QLZ06/1800-2513 | QLZ06/0018-2513 | ③                    | 230           | 50        | 90       | 40                     | 20          | 160           | 1200              | 0,80 | 246           | 42 | 183 | 196 | 154 | 64  |
| QLZ06/1800-2518 | QLZ06/0018-2518 | ④                    | 230           | 50        | 130      | 58                     | 30          | 220           | 1350              | 0,90 | 251           | 47 | 183 | 196 | 154 | 64  |
| QLZ06/1800-2524 | QLZ06/0018-2524 | ⑤                    | 230           | 50        | 150      | 60                     | 33          | 240           | 1800              | 1,00 | 257           | 53 | 183 | 196 | 154 | 64  |
| QLZ06/2400-3030 | QLZ06/0024-3030 | ⑥                    | 230           | 50        | 170      | 63                     | 33          | 290           | 1700              | 1,40 | 324           | 62 | 243 | 253 | 212 | 93  |
| QLZ06/3000-3038 | QLZ06/0030-3038 | ⑦                    | 230           | 50        | 230      | 60                     | 45          | 350           | 1600              | 1,70 | 395           | 72 | 303 | 313 | 272 | 123 |

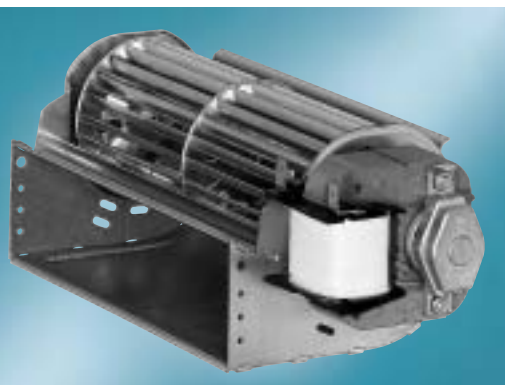
\*) Corresponding to dimensional drawing; Technical data valid at free air flow and rated voltage; bold print = standard type; subject to alterations

## Characteristic curves



# Tangential blowers

## QLN 65



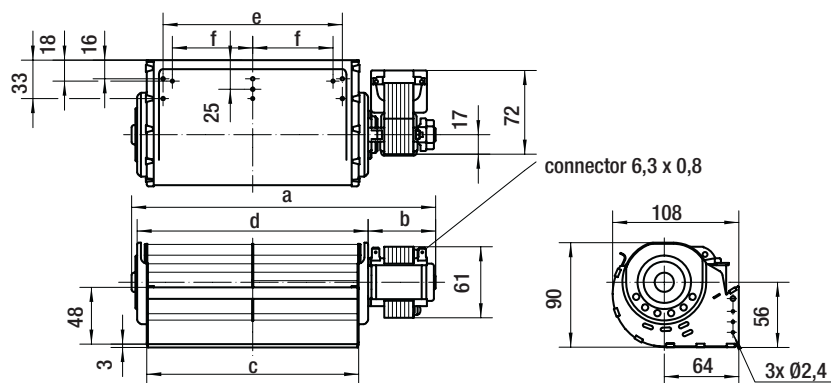
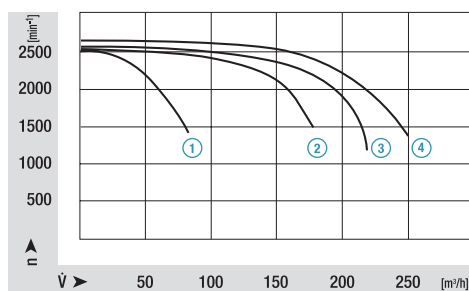
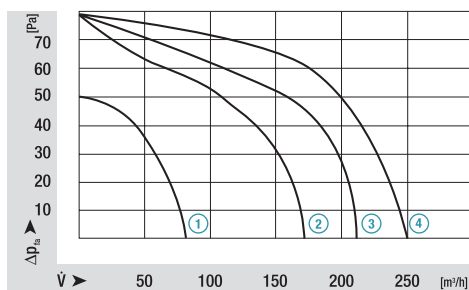
- impeller diameter 65 mm
- horizontal or vertical mounting position with motor at the bottom
- permissible ambient temperature 0 - 60°C
- insulation class B, class F or H on request

ebm-papst • Landshut

| Nominal data    |                 | characteristic curve | rated voltage | frequency | air flow | max. pressure increase | power input | rated current | speed | mass | Dimensions mm |    |     |     |     |     |
|-----------------|-----------------|----------------------|---------------|-----------|----------|------------------------|-------------|---------------|-------|------|---------------|----|-----|-----|-----|-----|
| motor right*    | motor left      |                      | V             | Hz        | m³/h     | Pa                     | W           | mA            | min⁻¹ | kg   | a             | b  | c   | d   | e   | f   |
| QLN65/1200-3015 | QLN65/0012-3015 | ①                    | 230           | 50        | 83       | 50                     | 14          | 135           | 1300  | 0,90 | 196           | 49 | 122 | 139 | 94  | -   |
| QLN65/1800-3025 | QLN65/0018-3025 | ②                    | 230           | 50        | 170      | 80                     | 30          | 270           | 1500  | 1,20 | 266           | 59 | 182 | 199 | 154 | 77  |
| QLN65/2400-3030 | QLN65/0024-3030 | ③                    | 230           | 50        | 220      | 80                     | 38          | 360           | 1200  | 1,45 | 331           | 65 | 242 | 259 | 212 | 106 |
| QLN65/3000-3038 | QLN65/0030-3038 | ④                    | 230           | 50        | 250      | 80                     | 45          | 415           | 1200  | 1,75 | 400           | 73 | 302 | 319 | 272 | 136 |

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

### Characteristic curves



# Tangential blowers

## QL 4 with double housing

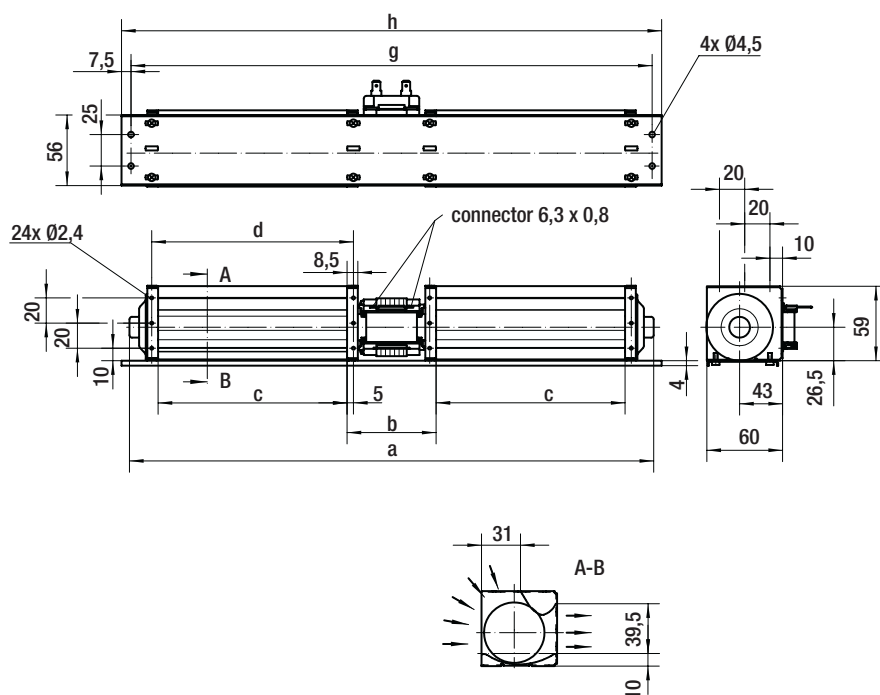
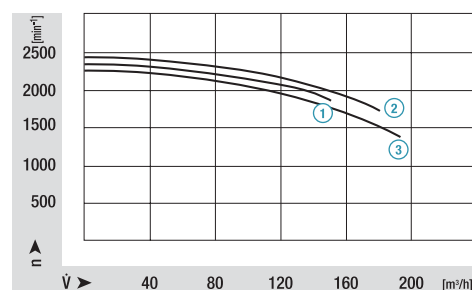
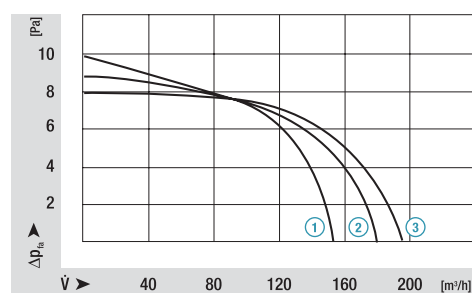
- impeller diameter 40 mm
- airflow direction of 180° possible
- horizontal mounting position
- permissible ambient temperature 0 - 60°C
- insulation class B, class F or H on request

ebm-papst • Landshut

| Nominal data  | characteristic curve | rated voltage | frequency | air flow | max. pressure increase | power input | rated current | speed             | mass | Dimensions mm |    |     |     |     |     |
|---------------|----------------------|---------------|-----------|----------|------------------------|-------------|---------------|-------------------|------|---------------|----|-----|-----|-----|-----|
| type          |                      | V             | Hz        | m³/h     | Pa                     | W           | mA            | min <sup>-1</sup> | kg   | a             | b  | c   | d   | g   | h   |
| QL4/2020-2124 | ①                    | 230           | 50        | 155      | 10                     | 16          | 130           | 1900              | 1,2  | 522           | 72 | 200 | 210 | 515 | 530 |
| QL4/2525-2124 | ②                    | 230           | 50        | 180      | 9                      | 16          | 135           | 1700              | 1,3  | 622           | 72 | 250 | 260 | 615 | 630 |
| QL4/3030-2124 | ③                    | 230           | 50        | 190      | 8                      | 17          | 140           | 1500              | 1,4  | 722           | 72 | 300 | 310 | 715 | 730 |

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

### Characteristic curves



# Tangential blowers

## QLK 45 with double housing

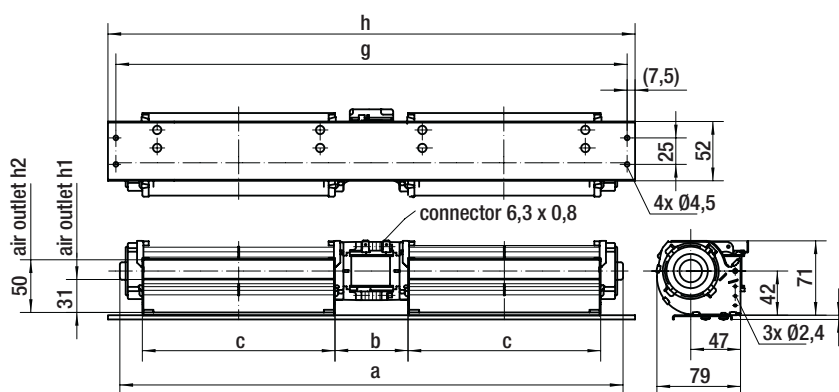
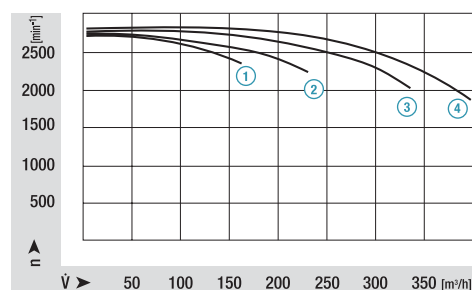
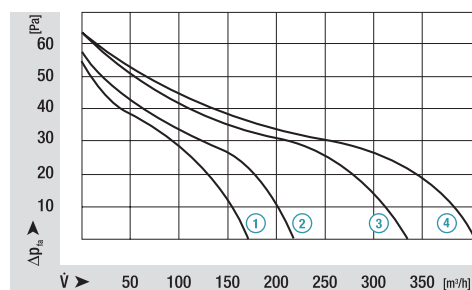
- impeller diameter 45 mm
- horizontal mounting position
- permissible ambient temperature 0 - 60°C
- insulation class B, class F or H on request

ebm-papst • Landshut

| Nominal data           | characteristic curve | rated voltage | frequency | air flow | max. pressure increase | power input | rated current | speed | mass | Dimensions mm |    |     |     |     |
|------------------------|----------------------|---------------|-----------|----------|------------------------|-------------|---------------|-------|------|---------------|----|-----|-----|-----|
| type                   |                      | V             | Hz        | m³/h     | Pa                     | W           | mA            | min⁻¹ | kg   | a             | b  | c   | g   | h   |
| QLK45/1212-3030        | ①                    | 230           | 50        | 160      | 55                     | 29          | 250           | 2300  | 1,85 | 372           | 81 | 122 | 375 | 390 |
| <b>QLK45/1818-3030</b> | ②                    | 230           | 50        | 220      | 59                     | 32          | 265           | 2200  | 2,15 | 492           | 81 | 182 | 495 | 510 |
| <b>QLK45/2424-3038</b> | ③                    | 230           | 50        | 330      | 64                     | 46          | 385           | 2000  | 2,40 | 620           | 89 | 242 | 620 | 635 |
| <b>QLK45/3030-3038</b> | ④                    | 230           | 50        | 400      | 64                     | 48          | 390           | 1700  | 2,60 | 740           | 89 | 302 | 740 | 755 |

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

### Characteristic curves

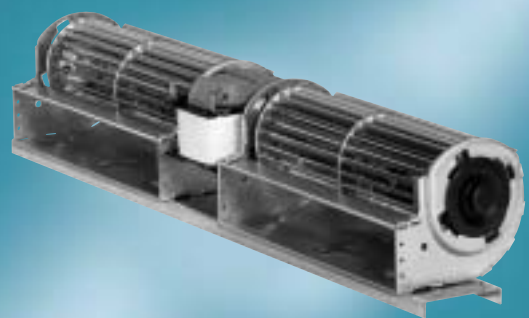


# Tangential blowers

## 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

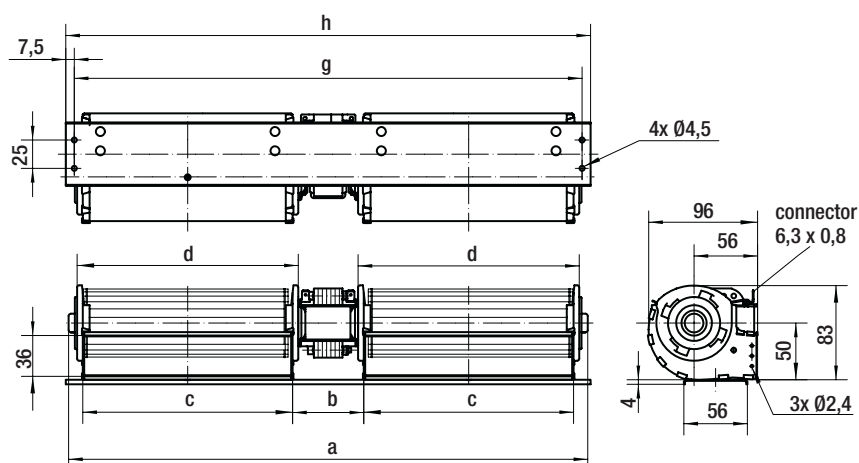
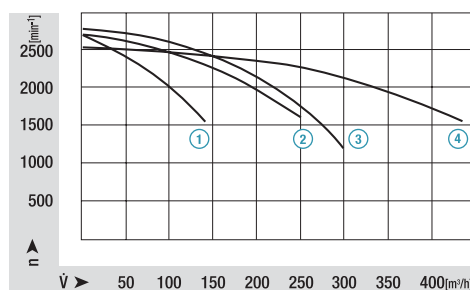
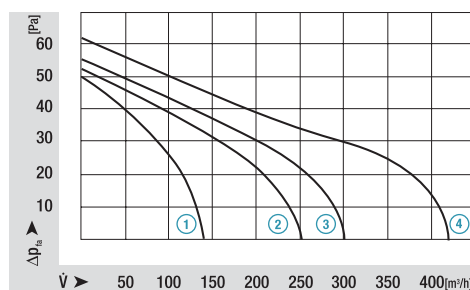
ebm-papst • Landshut



| Nominal data    | characteristic curve | rated voltage | frequency | air flow | max. pressure increase | power input | rated current | speed | mass | Dimensions mm |    |     |     |     |     |
|-----------------|----------------------|---------------|-----------|----------|------------------------|-------------|---------------|-------|------|---------------|----|-----|-----|-----|-----|
| type            |                      | V             | Hz        | m³/h     | Pa                     | W           | mA            | min⁻¹ | kg   | a             | b  | c   | d   | g   | h   |
| QLZ06/1212-3020 | ①                    | 230           | 50        | 140      | 50                     | 26          | 210           | 1500  | 1,55 | 340           | 58 | 125 | 135 | -   | -   |
| QLZ06/1818-3030 | ②                    | 230           | 50        | 250      | 52                     | 45          | 400           | 1550  | 2,00 | 468           | 69 | 183 | 196 | 455 | 470 |
| QLZ06/2424-3038 | ③                    | 230           | 50        | 300      | 55                     | 45          | 350           | 1150  | 2,30 | 591           | 76 | 243 | 253 | 579 | 594 |
| QLZ06/3030-3045 | ④                    | 230           | 50        | 420      | 62                     | 65          | 550           | 1500  | 2,75 | 720           | 83 | 303 | 313 | 705 | 720 |

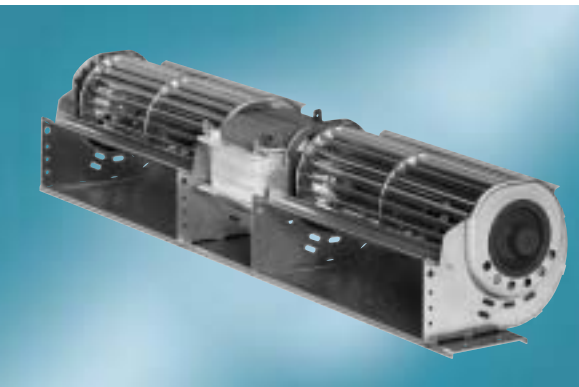
Technical data valid at free air flow and rated voltage; bold print = standard type; subject to alterations

### Characteristic curves



# Tangential blowers

## QLN 65 with double housing



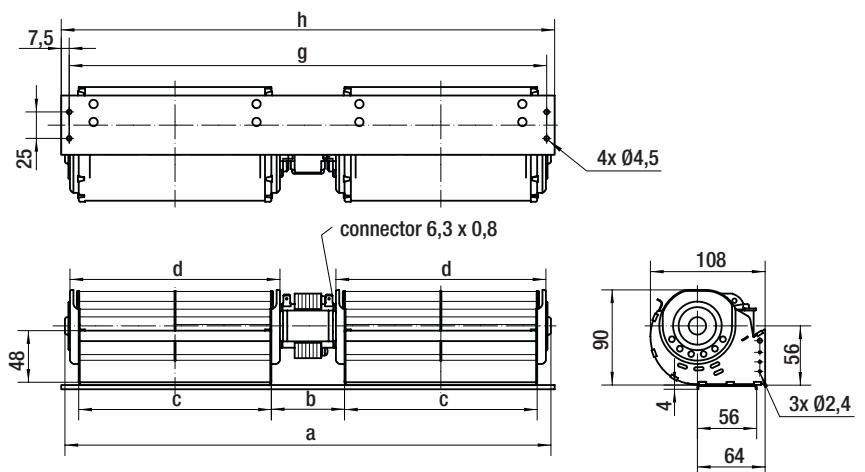
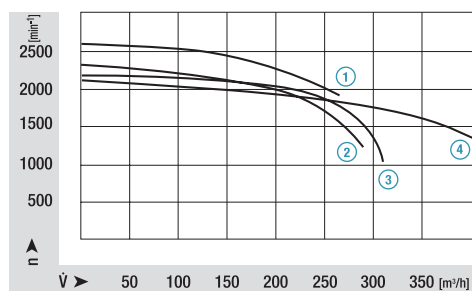
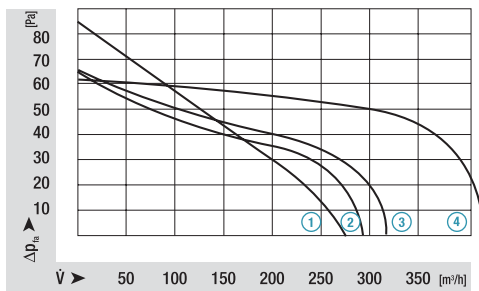
- impeller diameter 65 mm
- horizontal mounting position
- permissible ambient temperature 0 - 60°C
- insulation class B, class F or H on request

ebm-papst • Landshut

| Nominal data    | characteristic curve | rated voltage | frequency | air flow | max. pressure increase | power input | rated current | speed | mass | Dimensions mm |    |     |     |     |     |
|-----------------|----------------------|---------------|-----------|----------|------------------------|-------------|---------------|-------|------|---------------|----|-----|-----|-----|-----|
| type            |                      | V             | Hz        | m³/h     | Pa                     | W           | mA            | min⁻¹ | kg   | a             | b  | c   | d   | g   | h   |
| QLN65/1212-3030 | ①                    | 230           | 50        | 270      | 85                     | 54          | 460           | 1900  | 1,7  | 352           | 76 | 122 | 139 | -   | -   |
| QLN65/1818-3045 | ②                    | 230           | 50        | 295      | 66                     | 51          | 420           | 1250  | 2,4  | 480           | 84 | 182 | 199 | 463 | 478 |
| QLN65/2424-3038 | ③                    | 230           | 50        | 320      | 65                     | 55          | 480           | 1050  | 2,6  | 600           | 84 | 242 | 259 | 583 | 598 |
| QLN65/3030-3045 | ④                    | 230           | 50        | 410      | 62                     | 72          | 560           | 1225  | 2,8  | 728           | 92 | 302 | 319 | 706 | 721 |

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

### Characteristic curves



# Tangential blowers

with humidity protected bobbin

Special design for refrigeration.

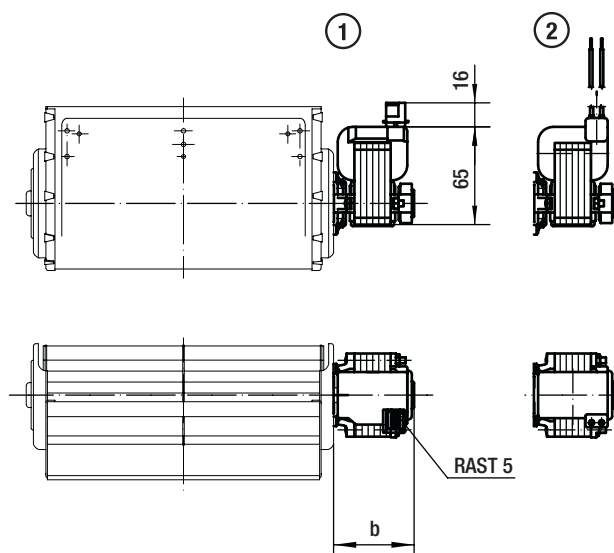
- shaded pole motor, humidity protected with plastic-encapsulated coil
- electrical connection with leads or Rast-5 plug
- permissible ambient temperature -40 ° – +60 °C

ebm-papst • Landshut



| Nominal data    |                 | rated voltage | frequency | air flow | max. pressure increase | power input | speed             | electrical connection | mass | Dimensions mm |
|-----------------|-----------------|---------------|-----------|----------|------------------------|-------------|-------------------|-----------------------|------|---------------|
| motor right*    | motor left      | V             | Hz        | m³/h     | Pa                     | W           | min <sup>-1</sup> |                       | kg   | b             |
| QL4/1000-2118   | QL4/0010-2118   | 230           | 50        | 40       | 13                     | 10          | 2550              | ②                     | 0,5  | 57            |
| QL4/1500-2118   | QL4/0015-2118   | 230           | 50        | 55       | 13                     | 10          | 2350              | ②                     | 0,55 | 57            |
| QL4/2000-2118   | QL4/0020-2118   | 230           | 50        | 75       | 13                     | 10          | 2150              | ②                     | 0,65 | 57            |
| QL4/2500-2118   | QL4/0025-2118   | 230           | 50        | 85       | 12                     | 10          | 1900              | ②                     | 0,7  | 57            |
| QL4/3000-2118   | QL4/0030-2118   | 230           | 50        | 90       | 12                     | 10          | 1700              | ②                     | 0,75 | 57            |
| QLK45/0600-2513 | QLK45/0006-2513 | 230           | 50        | 36       | 55                     | 15          | 2650              | ②                     | 0,65 | 55            |
| QLK45/1200-2513 | QLK45/0012-2513 | 230           | 50        | 82       | 65                     | 15          | 2300              | ②                     | 0,9  | 66            |
| QLK45/1800-2524 | QLK45/0018-2524 | 230           | 50        | 120      | 65                     | 27          | 2300              | ① ②                   | 1    | 66            |
| QLK45/2400-2524 | QLK45/0024-2524 | 230           | 50        | 140      | 65                     | 27          | 2100              | ① ②                   | 1,15 | 66            |
| QLK45/3000-2524 | QLK45/0030-2524 | 230           | 50        | 160      | 60                     | 27          | 1600              | ① ②                   | 1,35 | 66            |
| QLK45/3600-2524 | QLK45/0036-2524 | 230           | 50        | 175      | 60                     | 27          | 1400              | ① ②                   | 1,5  | 66            |
| QLZ06/1200-2524 | QLZ06/0012-2524 | 230           | 50        | 115      | 70                     | 24          | 2200              | ① ②                   | 0,95 | 58            |
| QLZ06/1800-2524 | QLZ06/0018-2524 | 230           | 50        | 130      | 65                     | 24          | 1600              | ① ②                   | 1,1  | 58            |
| QLZ06/2400-2524 | QLZ06/0024-2524 | 230           | 50        | 145      | 62                     | 24          | 1100              | ① ②                   | 1,2  | 58            |
| QLN65/1200-2524 | QLN65/0012-2524 | 230           | 50        | 130      | 60                     | 24          | 2000              | ① ②                   | 1,05 | 54            |
| QLN65/1800-2524 | QLN65/0018-2524 | 230           | 50        | 140      | 60                     | 24          | 1200              | ① ②                   | 1,2  | 54            |

\*) Corresponding to dimensional drawing; subject to alterations



for blower Dimensions, see basic AC types

# Tangential blowers

## QL 4 with EC motor



Tangential blowers with electronically commutated EC-motors.

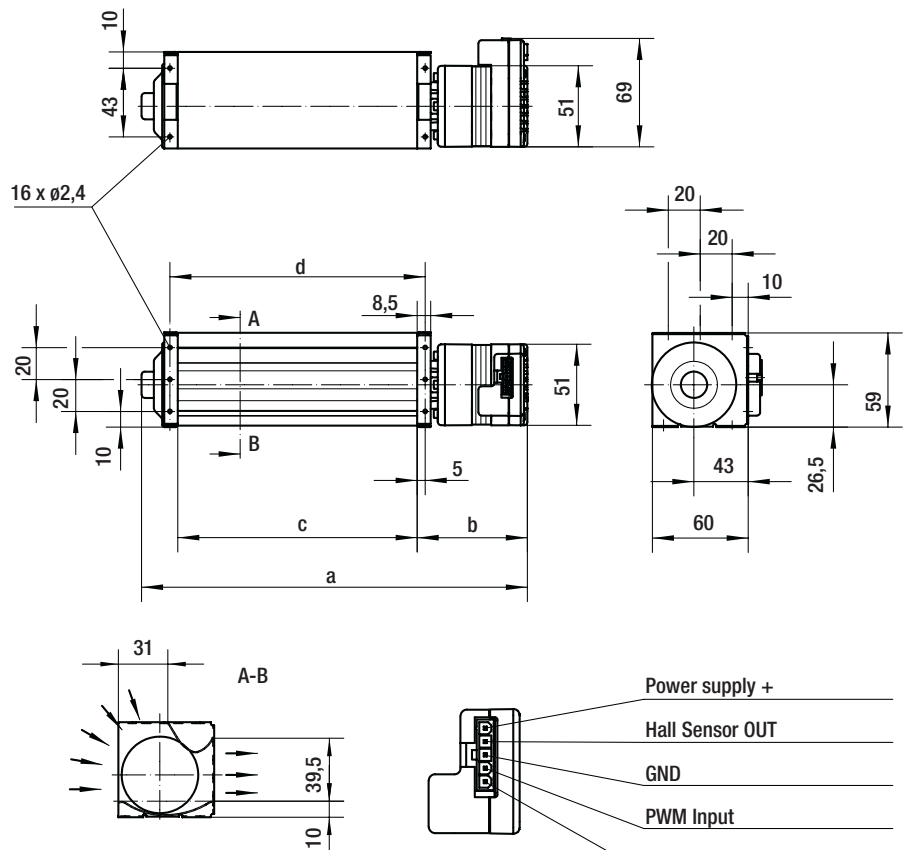
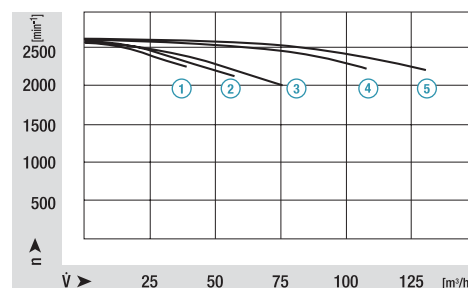
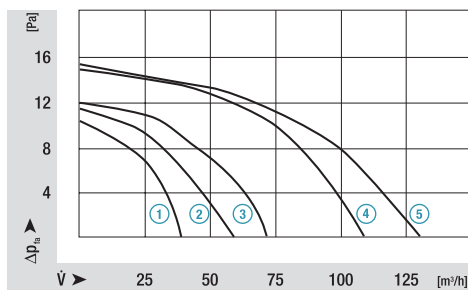
- integrated electronics
- blower speed variable via PWM (pulse width modulation) signal, optionally speed adjustment via 0 - 10 V analogous voltage signal
- impeller diameter 40 mm
- airflow direction of 180° possible
- mounting position horizontal or vertical with motor at the bottom
- protection class IP20, insulation class F
- permissible ambient temperature 0 – 60 °C

ebm-papst • Landshut

| Nominal data  |               | rated voltage | air flow | max. pressure increase | power input | speed | mass | Dimensions mm |    |     |     |
|---------------|---------------|---------------|----------|------------------------|-------------|-------|------|---------------|----|-----|-----|
| motor right*  | motor left    | VDC           | m³/h     | Pa                     | W           | min⁻¹ | kg   | a             | b  | c   | d   |
| QL4/1000-2212 | QL4/0010-2212 | 24            | 35       | 10                     | 5           | 2250  | 0,55 | 193           | 71 | 100 | 110 |
| QL4/1500-2212 | QL4/0015-2212 | 24            | 60       | 12                     | 5           | 2150  | 0,6  | 243           | 71 | 150 | 160 |
| QL4/2000-2212 | QL4/0020-2212 | 24            | 75       | 12                     | 6           | 2000  | 0,65 | 293           | 71 | 200 | 210 |
| QL4/2500-2212 | QL4/0025-2212 | 24            | 110      | 15                     | 7           | 2250  | 0,7  | 343           | 71 | 250 | 260 |
| QL4/3000-2212 | QL4/0030-2212 | 24            | 130      | 15                     | 7           | 2200  | 0,75 | 393           | 71 | 300 | 310 |

\*) 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

## QLK 45 with EC motor



Tangential blowers with electronically commutated EC-motors.

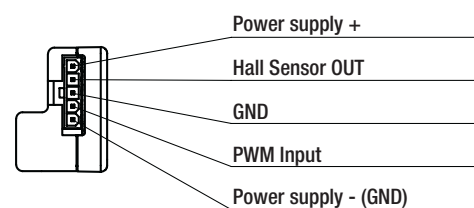
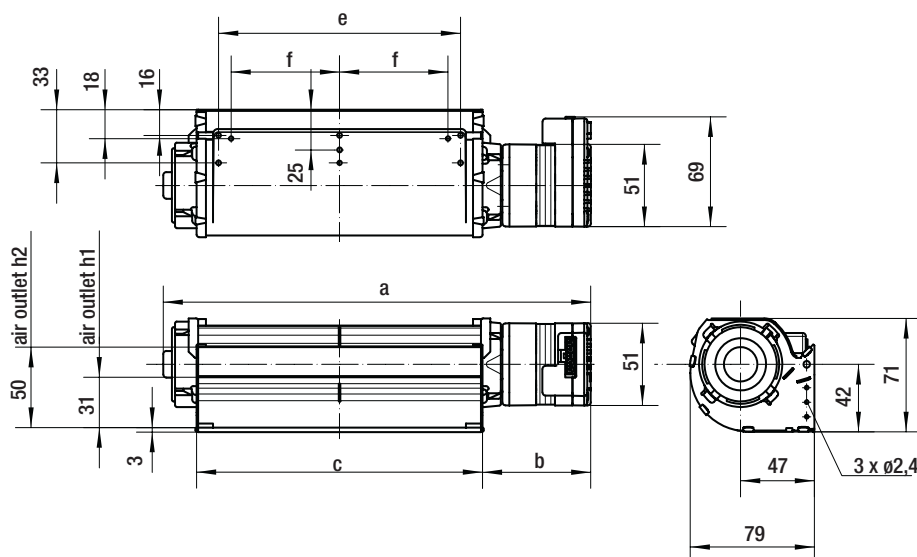
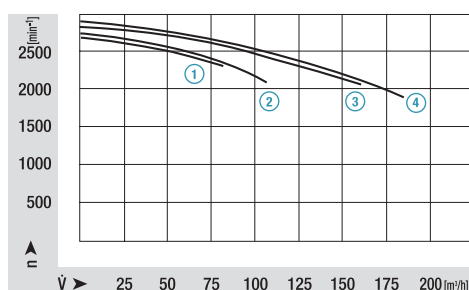
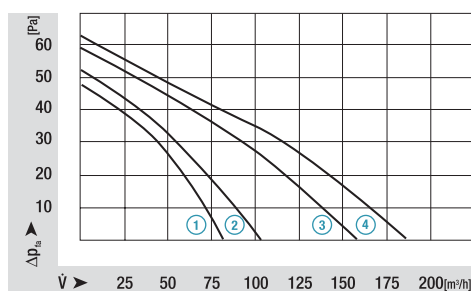
- integrated electronics
- blower speed variable via PWM (pulse width modulation) signal, optionally speed adjustment via 0 - 10 V analogue voltage signal
- impeller diameter 45 mm
- horizontal or vertical mounting position with motor at the bottom
- protection class IP20, insulation class F
- permissible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

ebm-papst • Landshut

| Nominal data    |                 | rated voltage | air flow | max. pressure increase | power input | speed | mass | Dimensions mm |    |     |     |     |
|-----------------|-----------------|---------------|----------|------------------------|-------------|-------|------|---------------|----|-----|-----|-----|
| motor right*    | motor left      | VDC           | m³/h     | Pa                     | W           | min⁻¹ | kg   | a             | b  | c   | e   | f   |
| QLK45/1200-2212 | QLK45/0012-2212 | 24            | 80       | 50                     | 7           | 2250  | 0,65 | 215           | 70 | 122 | 94  | 39  |
| QLK45/1800-2212 | QLK45/0018-2212 | 24            | 110      | 55                     | 8           | 2050  | 0,7  | 275           | 70 | 182 | 154 | 69  |
| QLK45/2400-2212 | QLK45/0024-2212 | 24            | 160      | 60                     | 10          | 2050  | 0,75 | 335           | 70 | 242 | 212 | 98  |
| QLK45/3000-2212 | QLK45/0030-2212 | 24            | 190      | 60                     | 11          | 1900  | 0,8  | 395           | 70 | 302 | 272 | 128 |

\*) 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

## QLZ 06 with EC motor



Tangential blowers with electronically commutated EC-motors.

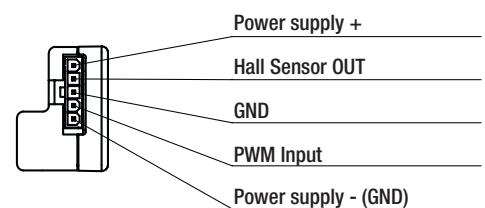
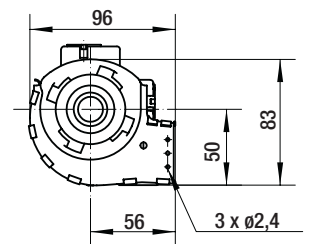
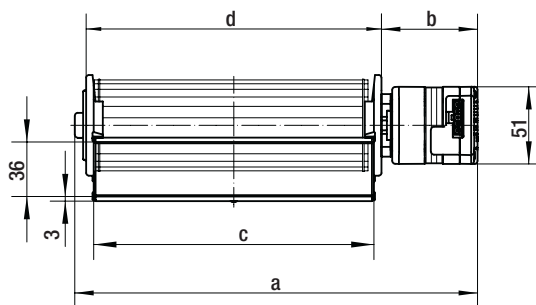
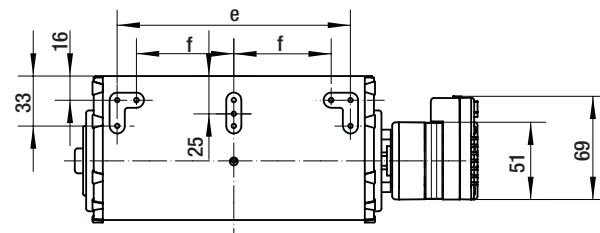
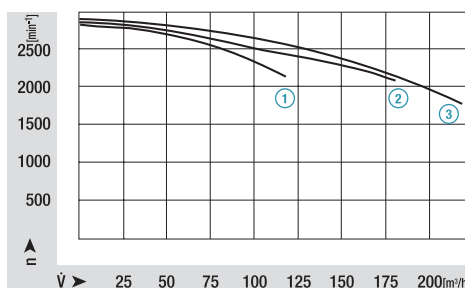
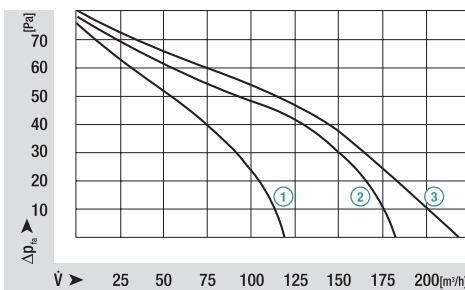
- integrated electronics
- blower speed variable via PWM (pulse width modulation) signal, optionally speed adjustment via 0 - 10 V analogous voltage signal
- impeller diameter 60 mm
- horizontal or vertical mounting position with motor at the bottom
- protection class IP20, insulation class F
- permissible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

ebm-papst • Landshut

| Nominal data    |                 | rated voltage | air flow | max. pressure increase | power input | speed | mass | Dimensions mm |      |     |     |     |    |
|-----------------|-----------------|---------------|----------|------------------------|-------------|-------|------|---------------|------|-----|-----|-----|----|
| motor right*    | motor left      | VDC           | m³/h     | Pa                     | W           | min⁻¹ | kg   | a             | b    | c   | d   | e   | f  |
| QLZ06/1200-2212 | QLZ06/0012-2212 | 24            | 120      | 75                     | 10          | 2100  | 0,7  | 206,5         | 64,5 | 125 | 135 | 94  | –  |
| QLZ06/1800-2212 | QLZ06/0018-2212 | 24            | 180      | 80                     | 15          | 2050  | 0,75 | 267           | 64,5 | 185 | 195 | 154 | 64 |
| QLZ06/2400-2212 | QLZ06/0024-2212 | 24            | 220      | 80                     | 17          | 1800  | 0,8  | 327           | 64,5 | 243 | 253 | 212 | 93 |

\*) 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

QLN 65 with EC motor

Tangential blowers with electronically commutated EC-motors.

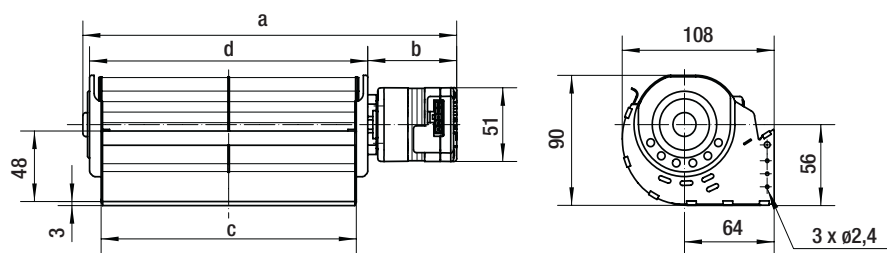
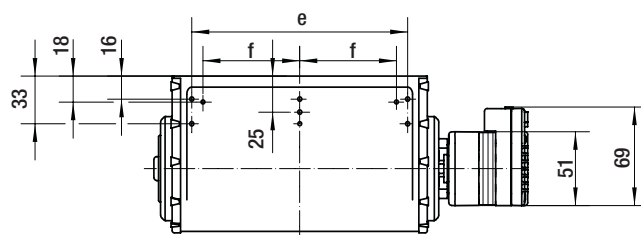
- integrated electronics
- blower speed variable via PWM (pulse width modulation) signal, optionally speed adjustment via 0 - 10 V analogous voltage signal
- impeller diameter 65 mm
- horizontal or vertical mounting position with motor at the bottom
- protection class IP20, insulation class F
- permissible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

ebm-papst • Landshut

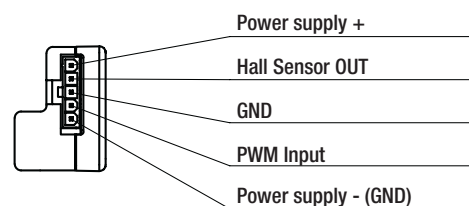
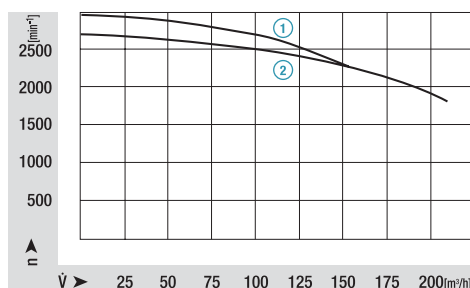
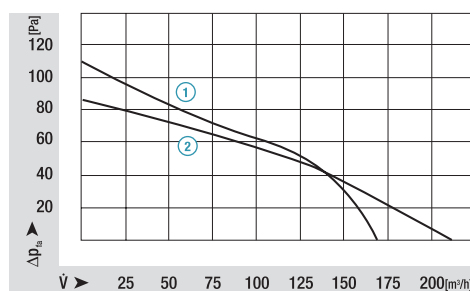


| Nominal data    |                 | rated voltage | air flow | max. pressure increase | power input | speed | mass | Dimensions mm |      |     |     |     |    |
|-----------------|-----------------|---------------|----------|------------------------|-------------|-------|------|---------------|------|-----|-----|-----|----|
| motor right*    | motor left      | VDC           | m³/h     | Pa                     | W           | min⁻¹ | kg   | a             | b    | c   | d   | e   | f  |
| QLN65/1200-2212 | QLN65/0012-2212 | 24            | 160      | 110                    | 14          | 2200  | 0,75 | 209           | 64,5 | 122 | 139 | 94  | –  |
| QLN65/1800-2212 | QLN65/0018-2212 | 24            | 210      | 85                     | 16          | 1850  | 0,8  | 269           | 64,5 | 182 | 199 | 154 | 69 |

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



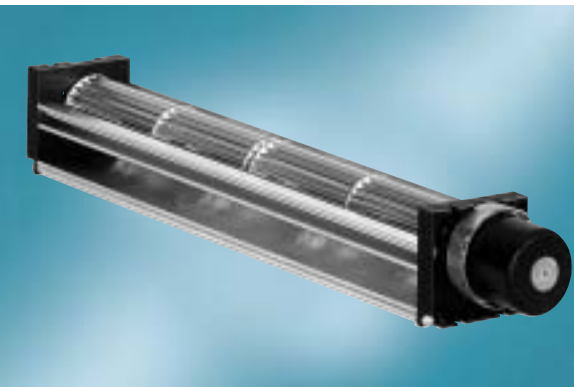
## Characteristic curves



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.

ebm-papst • St. Georgen

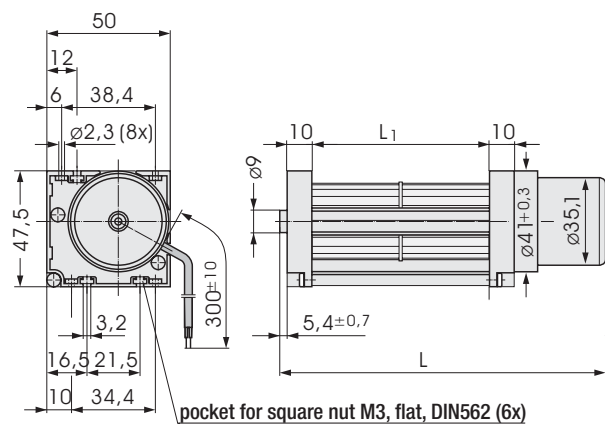
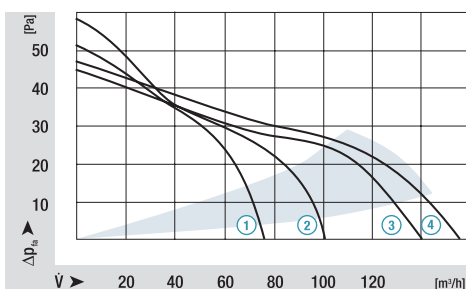
| Nominal data  | characteristic curve | rated voltage | voltage range | air flow | noise level | power input | perm. ambient temp. | service life L <sub>10</sub><br>at 40 °C | at t <sub>max</sub> | mass | Dimensions mm |     |
|---------------|----------------------|---------------|---------------|----------|-------------|-------------|---------------------|------------------------------------------|---------------------|------|---------------|-----|
| type          |                      | V DC          | V DC          | m³/h     | db(A)       | Watt        | °C                  | Std.*                                    | Std.*               | kg   | L             | L1  |
| QG 030-148/12 | ①                    | 12            | 8...14        | 75       | 49          | 6,2         | -20...+60           | 30 000 / 10 000                          |                     | 0,23 | 201           | 148 |
| QG 030-198/12 | ②                    | 12            | 8...14        | 100      | 51          | 8,0         | -20...+60           | 30 000 / 10 000                          |                     | 0,29 | 258           | 198 |
| QG 030-303/12 | ③                    | 12            | 8...14        | 140      | 51          | 8,7         | -20...+60           | 30 000 / 10 000                          |                     | 0,38 | 363           | 303 |
| QG 030-353/12 | ④                    | 12            | 8...14        | 155      | 51          | 9,6         | -20...+60           | 30 000 / 10 000                          |                     | 0,41 | 413           | 353 |
| QG 030-148/14 | ①                    | 24            | 16...28       | 75       | 49          | 6,2         | -20...+60           | 30 000 / 10 000                          |                     | 0,23 | 201           | 148 |
| QG 030-198/14 | ②                    | 24            | 16...28       | 100      | 51          | 8,0         | -20...+60           | 30 000 / 10 000                          |                     | 0,29 | 258           | 198 |
| QG 030-303/14 | ③                    | 24            | 16...28       | 140      | 51          | 8,7         | -20...+60           | 30 000 / 10 000                          |                     | 0,38 | 363           | 303 |
| QG 030-353/14 | ④                    | 24            | 16...28       | 155      | 51          | 9,6         | -20...+60           | 30 000 / 10 000                          |                     | 0,41 | 413           | 353 |

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

### present ebm designation:

Q2G 030-EA 21-01 → QG 030-148/12  
 Q2G 030-GC 01-01 → QG 030-198/12  
 Q2G 030-FB 01-01 → QG 030-303/12  
 Q2G 030-ID 01-01 → QG 030-353/12  
 Q2G 030-EA 19-01 → QG 030-148/14  
 Q2G 030-GC 03-01 → QG 030-198/14  
 Q2G 030-FB 03-01 → QG 030-303/14  
 Q2G 030-ID 03-01 → QG 030-353/14

### Characteristic curves



## Tangential blowers

QL 4 double housing with EC motor



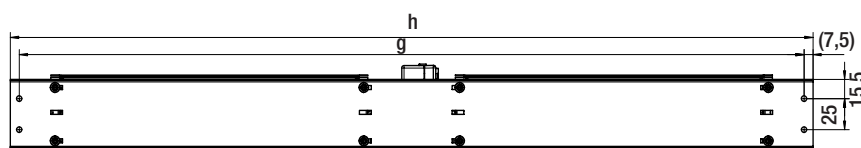
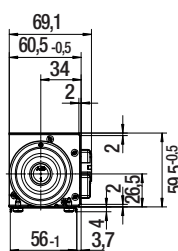
Tangential blowers with electronically commutated EC-motors.

- integrated electronics
- speed setting via 0 - 10 V analogue voltage signal
- speed-adjustable (version) via PWM signal available upon request
- impeller diameter 40 mm
- airflow direction of 180° possible
- mounting position horizontal or vertical
- protection class IP20, insulation class F
- permissible ambient temperature 0 – 60 °C

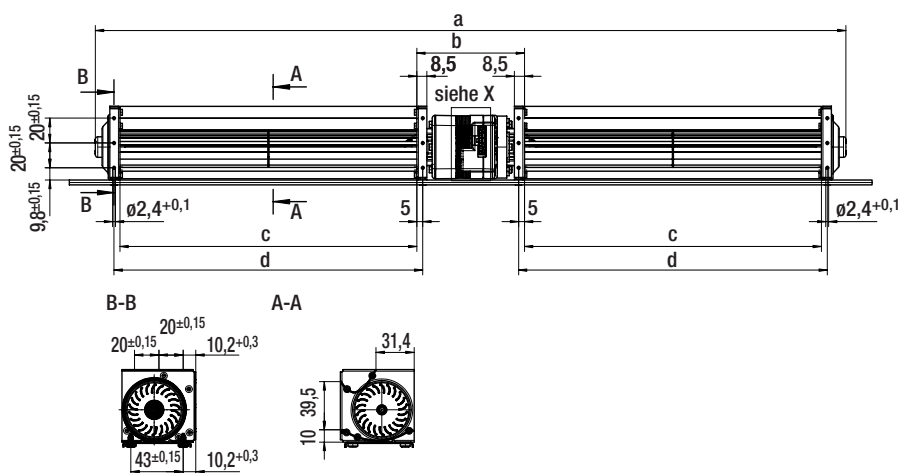
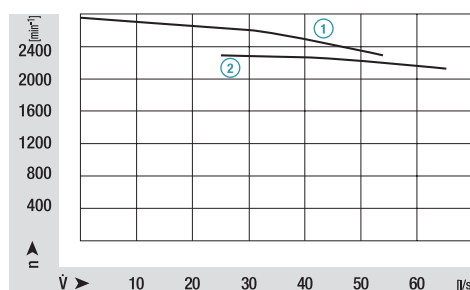
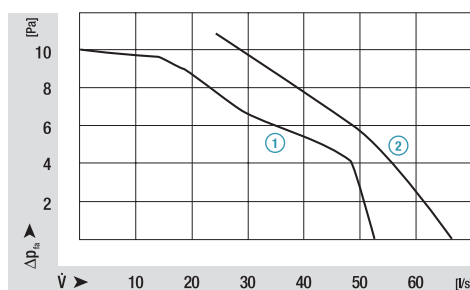
**ebm-papst • Landshut**

| Nominal data  |   | characteristic curve | rated voltage | air flow | max. pressure increase | power input       | speed | mass | Dimensions mm |   |   |   |   |
|---------------|---|----------------------|---------------|----------|------------------------|-------------------|-------|------|---------------|---|---|---|---|
|               |   |                      |               |          |                        |                   |       |      | a             | b | c | g | h |
| type          |   | VDC                  | m³/h          | Pa       | W                      | min <sup>-1</sup> | kg    |      |               |   |   |   |   |
| QL4/2525-2212 | ① | 24                   | 194           | 12       | 7                      | 2550              | 1,3   |      |               |   |   |   |   |
| QL4/3030-2212 | ② | 24                   | 234           | 15       | 8                      | 2200              | 1.4   |      |               |   |   |   |   |

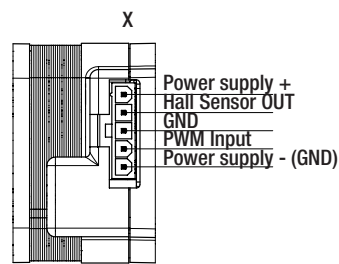
subject to alterations



### Characteristic curves



Power supply: 24 DC (10V...26,8V)  
Hall sensor out: 2 pulses per rotation  
 $U_H = 12\text{ V}$ ;  $R_i = 1\text{ k}\Omega$   
Input: control voltage: 0...10V  
input switched to GND: fan off  
input open: fan off



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

### QLK 45 double housing with EC motor



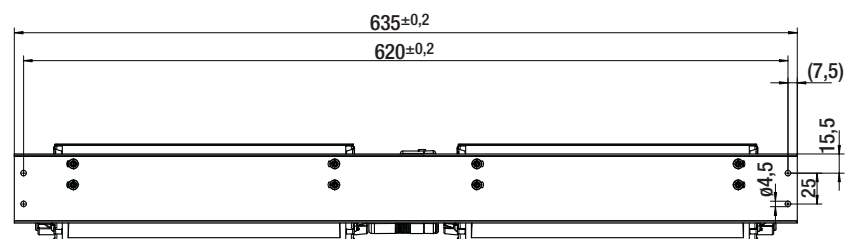
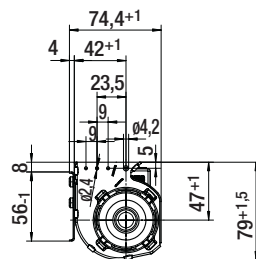
Tangential blowers with electronically commutated EC-motors.

- 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

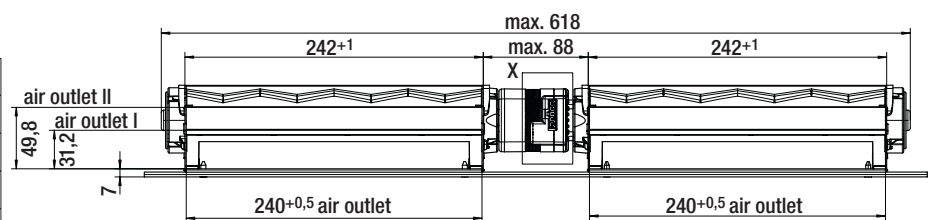
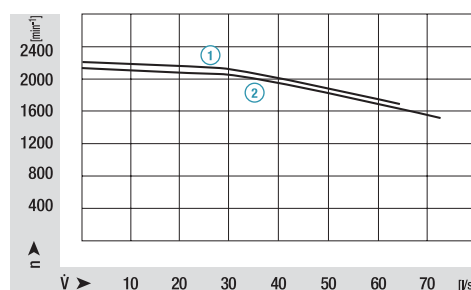
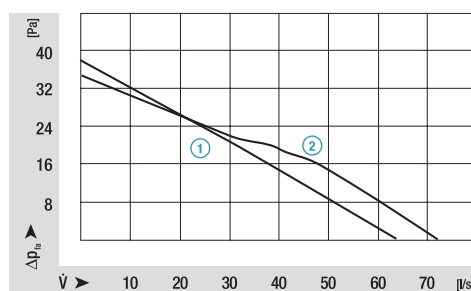
**ebm-papst • Landshut**

| Nominal data     | characteristic curve | rated voltage | air flow | max. pressure increase | power input | speed | mass | Dimensions mm |   |   |   |   |
|------------------|----------------------|---------------|----------|------------------------|-------------|-------|------|---------------|---|---|---|---|
|                  |                      |               |          |                        |             |       |      | a             | b | c | g | h |
| type             |                      | VDC           | m³/h     | Pa                     | W           | min⁻¹ | kg   |               |   |   |   |   |
| QLK45/2424-2212* | ①                    | 24            | 230      | 37                     | 8           | 1650  | 2,4  |               |   |   |   |   |
| QLK45/3030-2212  | ②                    | 24            | 265      | 34                     | 10          | 1500  | 2,6  |               |   |   |   |   |

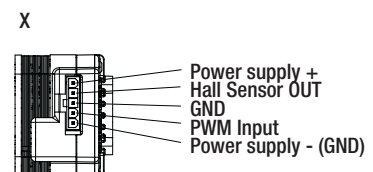
\*) Corresponding to dimensional drawing; subject to alterations



### Characteristic curves



Power supply: 24 DC (10V...26,8V)  
Hall sensor out: 2 pulses per rotation  
 $U_H = 12\text{ V}$ ;  $R_i = 1\text{ k}\Omega$   
Input: control voltage: 0...10V  
input switched to GND: fan off  
input open: fan off



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

# Tangential blowers

## QLN 65 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 65 mm
- horizontal or vertical mounting position
- protection class IP20, insulation class F
- permissible ambient temperature 0 – 60 °C

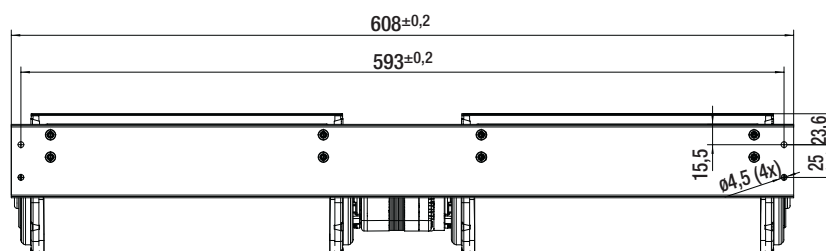
ebm-papst • Landshut



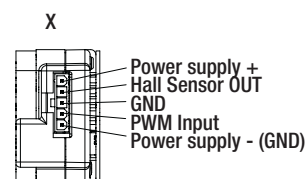
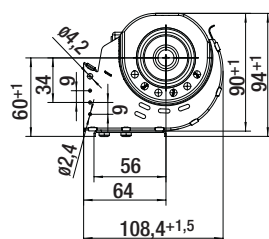
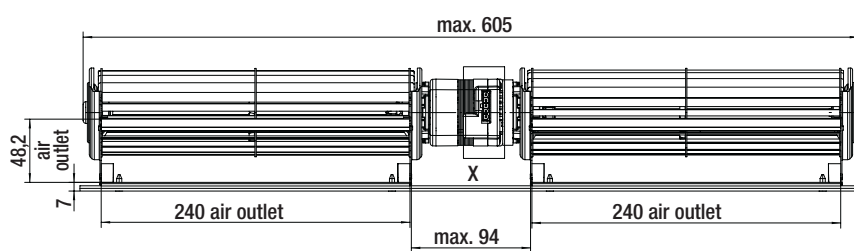
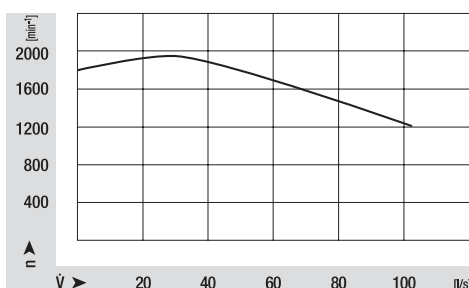
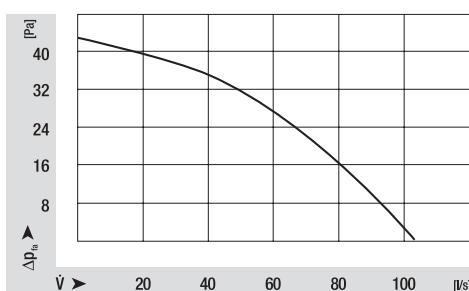
### Nominal data

| type            | V  | m³/h | Pa | W  | min <sup>-1</sup> | kg  | a | b | c | g | h |
|-----------------|----|------|----|----|-------------------|-----|---|---|---|---|---|
| QLN65/2424-2212 | 24 | 360  | 42 | 19 | 1250              | 1,5 |   |   |   |   |   |

subject to alterations



### Characteristic curves

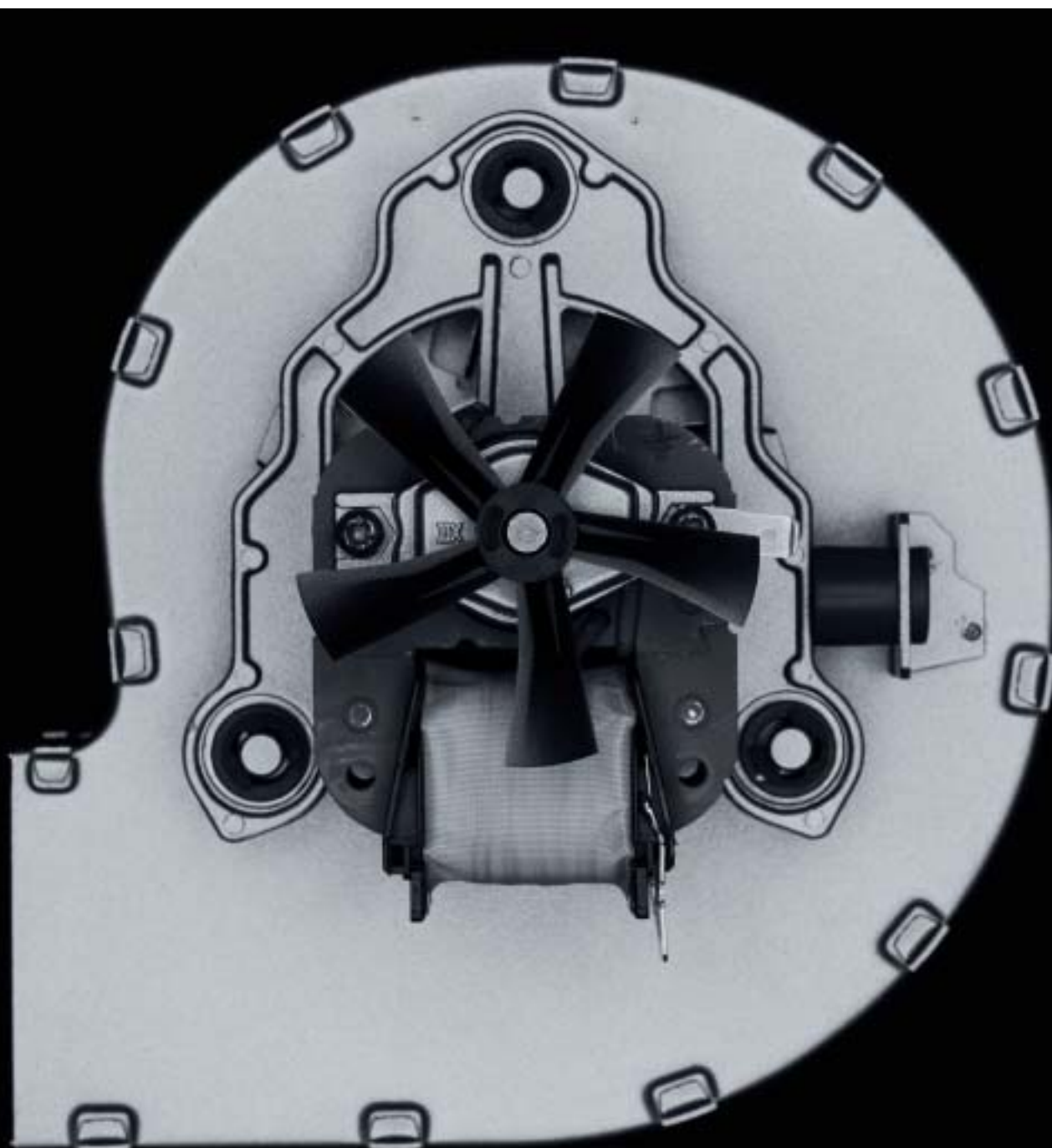


suitable for connector housing Mini-Fit, Jr. (Fa. Molex)  
order number 39-01-4050

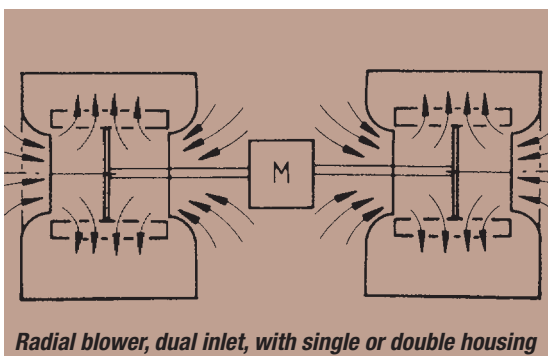
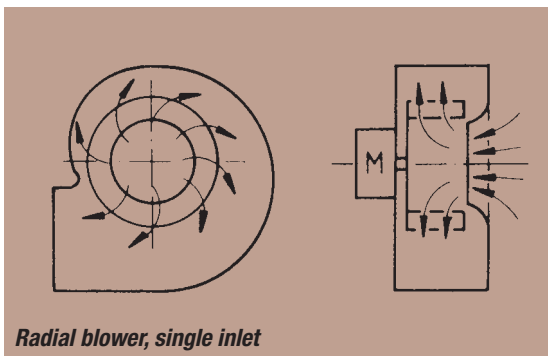


# Radial blowers with AC motor

|                                                                    |    |
|--------------------------------------------------------------------|----|
| Description                                                        | 32 |
| Radial blowers, motor directly mounted RL, RLF, RLD, RLA, RLE, RLS | 33 |
| Radial blowers with double housing                                 | 37 |
| Radial blowers, motor decoupled mounted, high temperature version  | 39 |
| Radial blowers D2E.. with external-rotor motor for extractor hoods | 47 |



## Radial blowers with AC internal-rotor motor



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



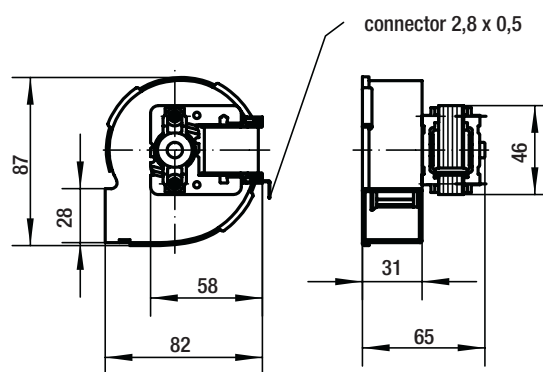
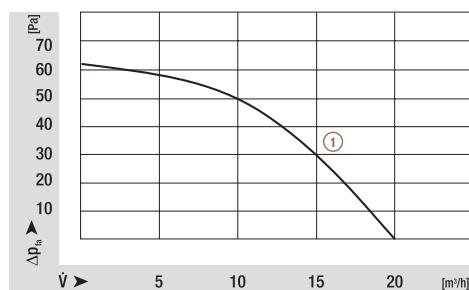
- mounting position: shaft horizontal
- insulation class B
- permissible ambient temperature 0 – 60 °C
- housing: plastic PA6 GF
- impeller: forward curved, plastic PA6 GF

ebm-papst • Landshut

| Nominal data   |                | characteristic curve | rated voltage | frequency | air flow | max. pressure increase | power input | rated current | speed             | mass |
|----------------|----------------|----------------------|---------------|-----------|----------|------------------------|-------------|---------------|-------------------|------|
| motor right*   | motor left     |                      | V             | Hz        | m³/h     | Pa                     | W           | mA            | min <sup>-1</sup> | kg   |
| RL59/2400-2112 | RL59/0024-2112 | ①                    | 230           | 50        | 20       | 63                     | 6           | 40            | 2400              | 0,30 |

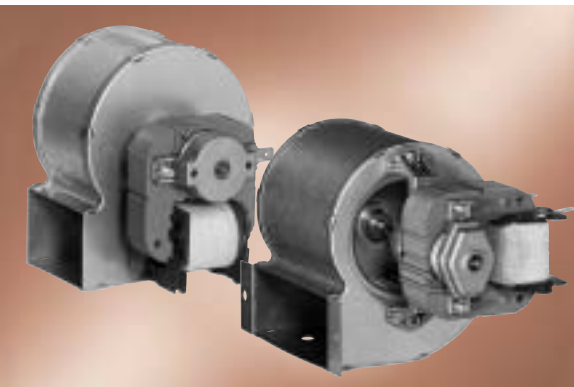
\*) Corresponding to dimensional drawing; Technical data valid at free air flow and rated voltage; bold print = standard type; subject to alterations

## Characteristic curves



# Radial blowers with AC internal-rotor motor

RLF 67



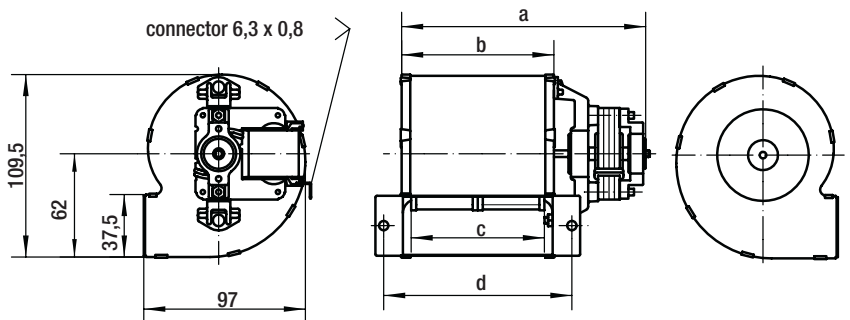
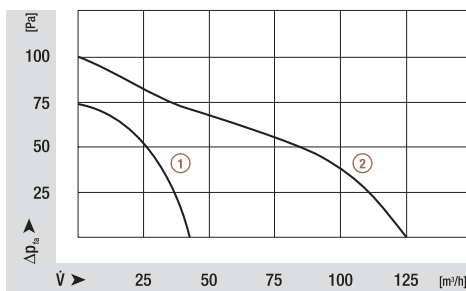
- mounting position: shaft horizontal
- insulation class B
- permissible ambient temperature 0 – 60 °C
- housing: galvanized sheet steel
- impeller: forward curved, aluminium (galvanized sheet steel)

ebm-papst • Landshut

| Nominal data      |                   | characteristic curve | rated voltage | frequency | air flow | max. pressure increase | power input | rated current | speed             | mass | Dimensions mm |    |    |     |
|-------------------|-------------------|----------------------|---------------|-----------|----------|------------------------|-------------|---------------|-------------------|------|---------------|----|----|-----|
| motor right*      | motor left        |                      | V             | Hz        | m³/h     | Pa                     | W           | mA            | min <sup>-1</sup> | kg   | a             | b  | c  | d   |
| RLF67/3800-3015L  | RLF67/0038-3015L  | ①                    | 230           | 50        | 40       | 73                     | 12          | 90            | 2000              | 0,7  | 104           | 49 | 38 | 70  |
| RLF67/7600Z-3025L | RLF67/0076Z-3025L | ②                    | 230           | 50        | 125      | 115                    | 27          | 220           | 2500              | 1,2  | 164           | 92 | 76 | 113 |

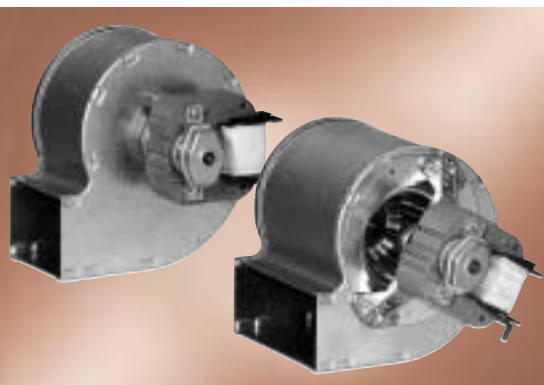
\*) Corresponding to dimensional drawing; Technical data valid at free air flow and rated voltage; bold print = standard type; subject to alterations

## Characteristic curves



# Radial blowers with AC internal-rotor motor

RLD 76 (85)



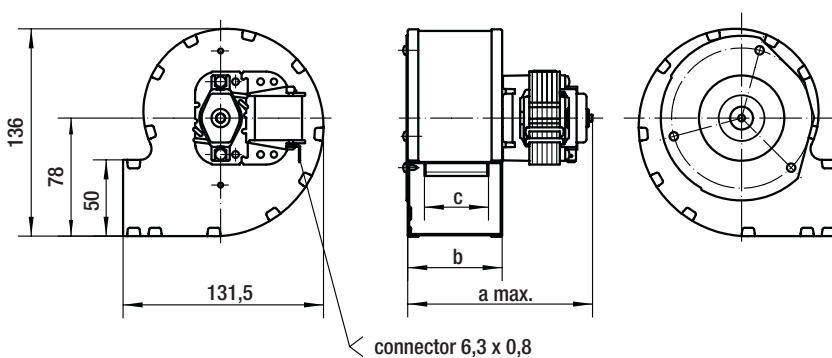
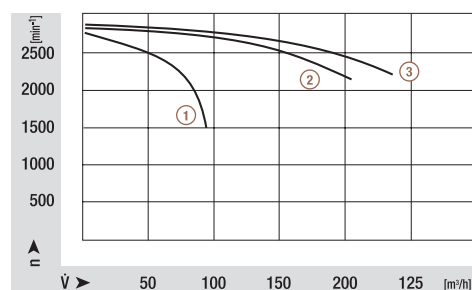
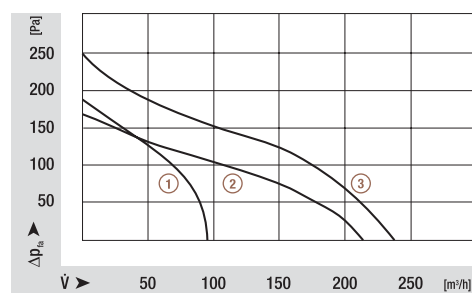
- mounting position: shaft horizontal
- insulation class B
- permissible ambient temperature 0 – 60 °C
- housing: FAL sheet steel
- impeller: forward curved, aluminium (FAL sheet steel)

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| Nominal data      |                   | characteristic curve | rated voltage | frequency | air flow | max. pressure increase | power input | rated current | speed | mass | Dimensions mm |     |    |
|-------------------|-------------------|----------------------|---------------|-----------|----------|------------------------|-------------|---------------|-------|------|---------------|-----|----|
| motor right*      | motor left        |                      | V             | Hz        | m³/h     | Pa                     | W           | mA            | min⁻¹ | kg   | a             | b   | c  |
| RLD85/4200-3020L  | RLD85/0042-3020L  | ①                    | 230           | 50        | 95       | 185                    | 30          | 250           | 1500  | 1,1  | 123           | 62  | 42 |
| RLD76/8600Z-3030L | RLD76/0086Z-3030L | ②                    | 230           | 50        | 210      | 165                    | 58          | 530           | 2150  | 1,5  | 185           | 108 | 86 |
| RLD85/8600Z-3038L | RLD85/0086Z-3038L | ③                    | 230           | 50        | 235      | 250                    | 82          | 720           | 2250  | 1,9  | 193           | 108 | 86 |

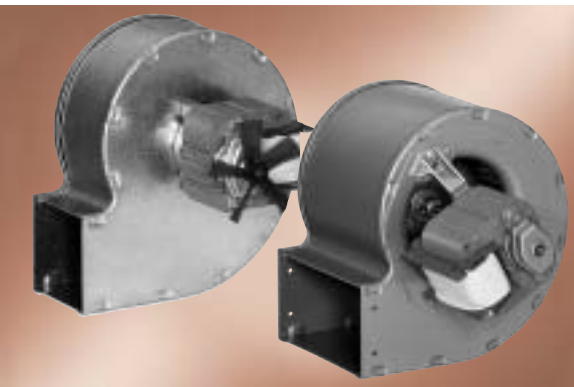
\*) Corresponding to dimensional drawing; Technical data valid at free air flow with inlet ring; bold print = standard type; subject to alterations

## Characteristic curves



# Radial blowers with AC internal-rotor motor

RLA 97 (108)



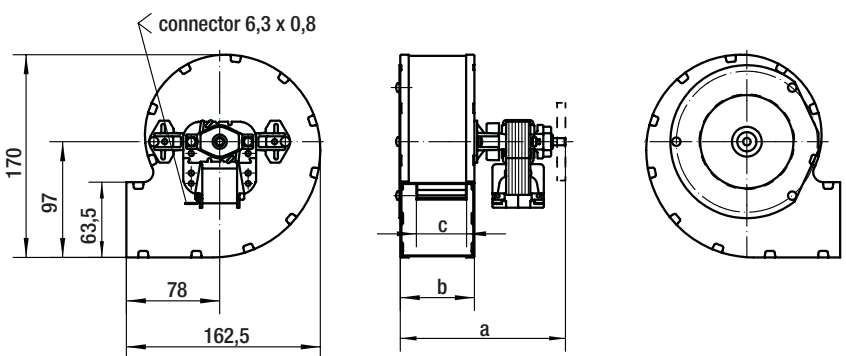
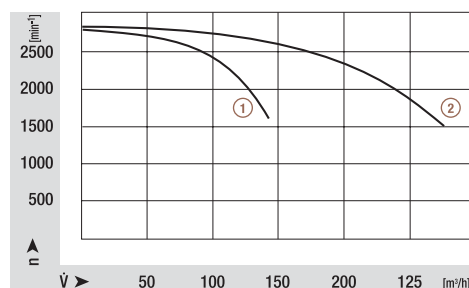
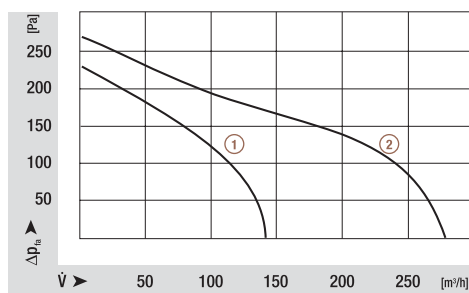
- mounting position: shaft horizontal
- insulation class B
- permissible ambient temperature 0 – 60 °C
- housing: FAL sheet steel
- impeller: forward curved, FAL sheet steel (aluminium)

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| Nominal data      |                  | characteristic curve | rated voltage | frequency | air flow | max. pressure increase | power input | rated current | speed | mass | Dimensions mm |     |    |
|-------------------|------------------|----------------------|---------------|-----------|----------|------------------------|-------------|---------------|-------|------|---------------|-----|----|
| motor right*      | motor left       |                      | V             | Hz        | m³/h     | Pa                     | W           | mA            | min⁻¹ | kg   | a             | b   | c  |
| RLA97/4200-3030L  | RLA97/0042-3030L | ①                    | 230           | 50        | 140      | 225                    | 54          | 480           | 1600  | 1,5  | 146           | 62  | 42 |
| RLA97/8600Z-3045L |                  | ②                    | 230           | 50        | 280      | 260                    | 95          | 780           | 1550  | 2,3  | 204           | 112 | 86 |

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

## Characteristic curves



# Radial blowers AC with double housing

RLF 67, RLD 85, RLA 97



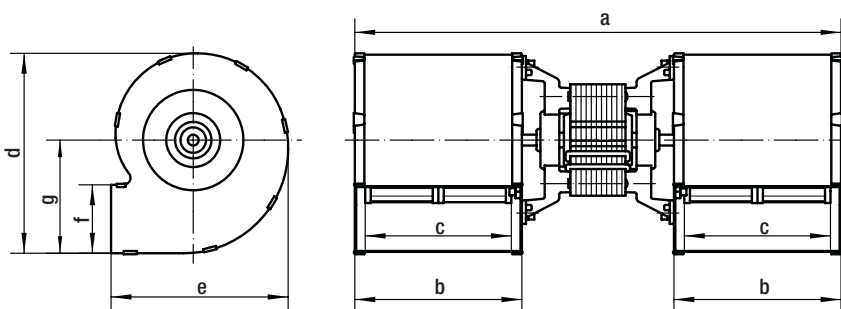
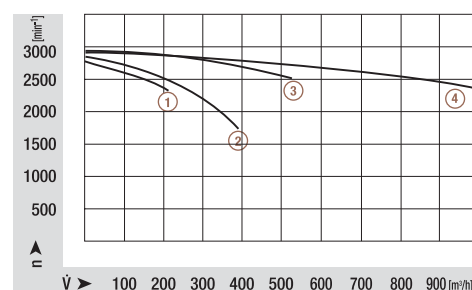
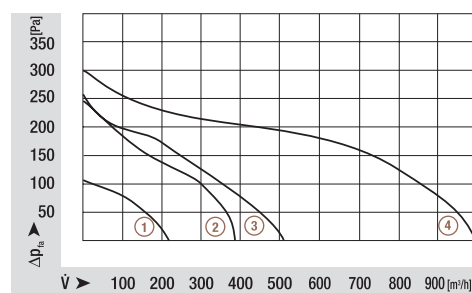
- mounting position: RLF, RLD shaft horizontal  
RLA all positions available
- insulation class B
- permissible ambient temperature 0 – 60 °C
- housing: FAL sheet steel
- impeller: forward curved, aluminium

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| Nominal data         | characteristic curve | rated voltage | frequency | air flow | max. pressure increase | power input | rated current | speed | mass | Dimensions mm |     |     |     |     |      |    |
|----------------------|----------------------|---------------|-----------|----------|------------------------|-------------|---------------|-------|------|---------------|-----|-----|-----|-----|------|----|
|                      |                      |               |           |          |                        |             |               |       |      | a             | b   | c   | d   | e   | f    | g  |
| RLF67/7676Z-3030L    | ①                    | 230           | 50        | 230      | 106                    | 38          | 330           | 2400  | 1,6  | 267           | 92  | 76  | 110 | 97  | 37,5 | 62 |
| RLD85/8686Z-3045L    | ②                    | 230           | 50        | 380      | 240                    | 95          | 910           | 1800  | 2,4  | 316           | 108 | 86  | 136 | 132 | 50   | 78 |
| RLD85/8686Z-4020/2   | ③                    | 230           | 50        | 512      | 254                    | 120         | 503           | 2550  | 2,2  | 329           | 108 | 106 | 136 | 132 | 50   | 78 |
| RLA97/120120Z-4340/2 | ④                    | 230           | 50        | 1000     | 310                    | 200         | 950           | 2300  | 3,9  | 445           | 146 | 120 | 170 | 163 | 63,5 | 97 |

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

## Characteristic curves



# 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

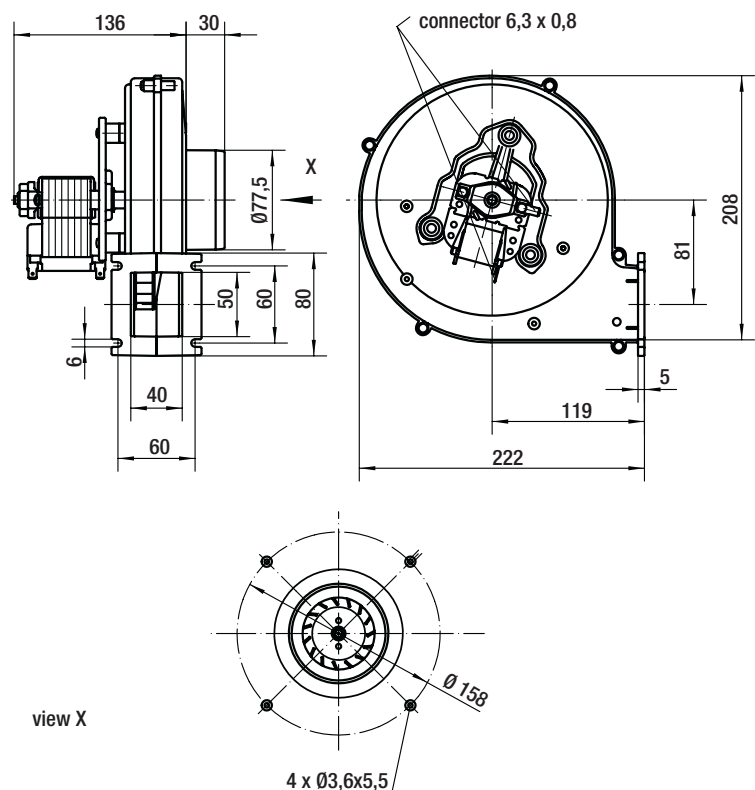
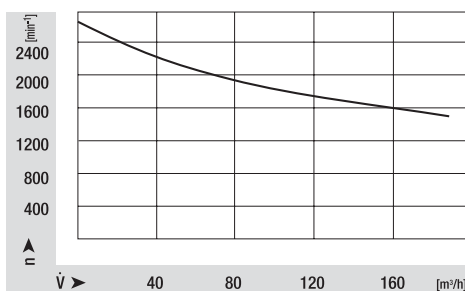
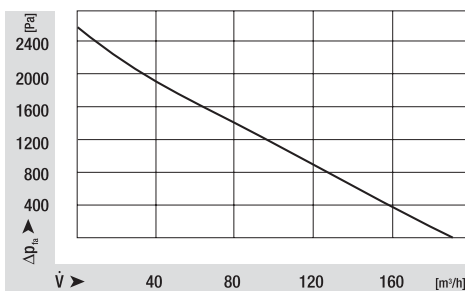
ebm-papst • Landshut

### Nominal data

| type               | rated voltage<br>V | frequency<br>Hz | air flow<br>m³/h | max. pressure increase<br>Pa | power input<br>W | rated current<br>mA | speed<br>min⁻¹ | mass<br>kg |
|--------------------|--------------------|-----------------|------------------|------------------------------|------------------|---------------------|----------------|------------|
| RLS170/0013-3030LH | 230                | 50              | 95               | 460                          | 46               | 350                 | 1900           | 1,3        |

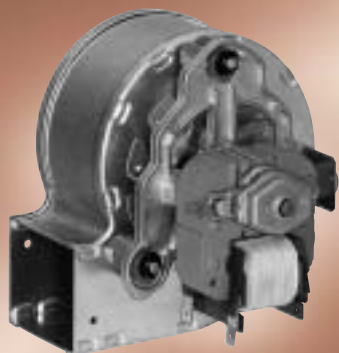
Technical data valid at free air flow and rated voltage; subject to alterations

### Characteristic curves



# Radial blowers high temperature version

RLD 85...LH



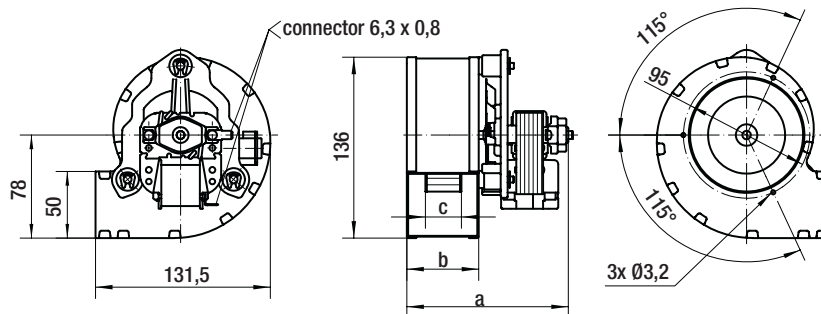
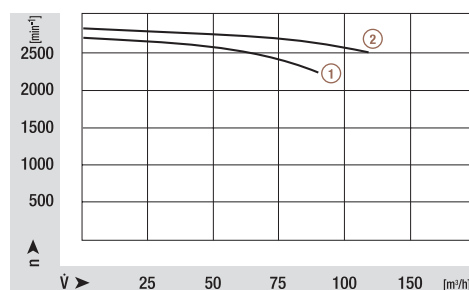
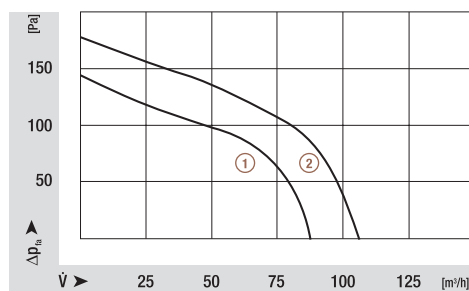
- insulation class H
- max. ambient air stream temperature 180 °C (250 °C with FAL impeller)
- housing: FAL sheet steel
- impeller: forward curved, aluminium (FAL sheet steel)
- motor mounting decoupled by silicon elements
- mounting position must be specified for corresponding support elements

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| Nominal data             |                          | characteristic curve | rated voltage | frequency | air flow | max. pressure increase | power input | rated current | speed | mass | Dimensions mm |    |    |
|--------------------------|--------------------------|----------------------|---------------|-----------|----------|------------------------|-------------|---------------|-------|------|---------------|----|----|
| motor right*             | motor left               |                      | V             | Hz        | m³/h     | Pa                     | W           | mA            | min⁻¹ | kg   | a             | b  | c  |
| RLD85/2700-3020LH        | RLD85/0027-3020LH        | ①                    | 230           | 50        | 86       | 150                    | 28          | 245           | 2300  | 1,1  | 113           | 45 | 27 |
| <b>RLD85/3400-3025LH</b> | <b>RLD85/0034-3025LH</b> | ②                    | 230           | 50        | 108      | 180                    | 39          | 350           | 2550  | 1,3  | 129           | 54 | 34 |

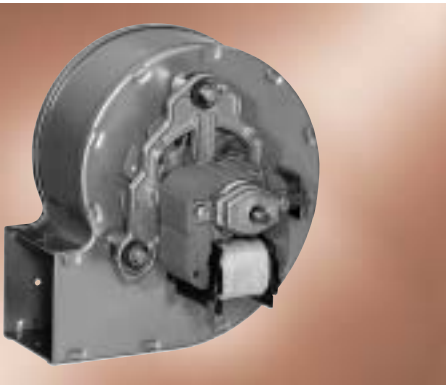
\*) Corresponding to dimensional drawing; Technical data valid at free air flow without inlet ring; bold print = standard type; subject to alterations

## Characteristic curves



# Radial blowers high temperature version

RLA 97 (108)...LH



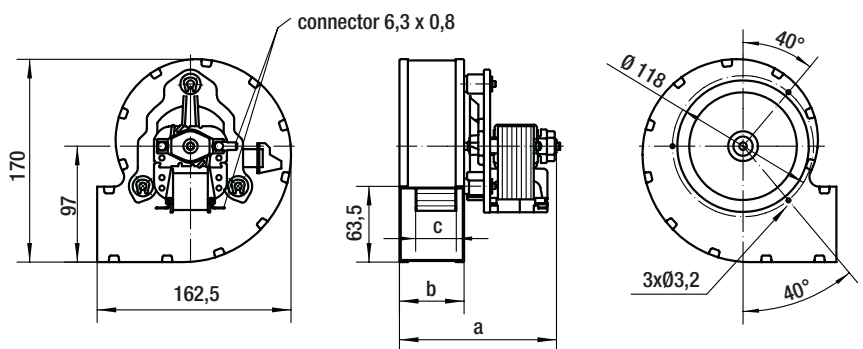
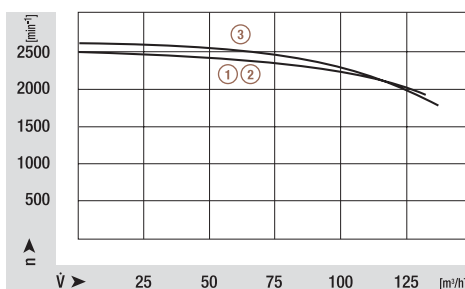
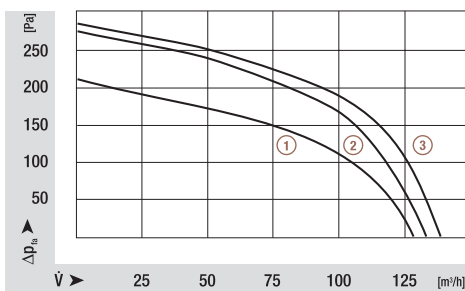
- insulation class H
- max. ambient air stream temperature 250 °C
- housing: FAL sheet steel
- impeller: forward curved, FAL sheet steel
- motor mounting decoupled by silicon elements
- mounting position must be specified for corresponding support elements

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| Nominal data              |                    | characteristic curve | rated voltage | frequency | air flow | max. pressure increase | power input | rated current | speed             | mass | Dimensions mm |    |    |
|---------------------------|--------------------|----------------------|---------------|-----------|----------|------------------------|-------------|---------------|-------------------|------|---------------|----|----|
| motor right*              | motor left         |                      | V             | Hz        | m³/h     | Pa                     | W           | mA            | min <sup>-1</sup> | kg   | a             | b  | c  |
| <b>RLA97/4200-3030LH</b>  | RLA97/0042-3030LH  | ①                    | 230           | 50        | 130      | 220                    | 41          | 390           | 2000              | 1,6  | 146           | 62 | 42 |
| RLA108/3400-3030LH        | RLA108/0034-3030LH | ②                    | 230           | 50        | 135      | 280                    | 58          | 490           | 1925              | 1,6  | 144           | 54 | 34 |
| <b>RLA108/4200-3030LH</b> | RLA108/0042-3030LH | ③                    | 230           | 50        | 140      | 290                    | 64          | 520           | 1870              | 1,6  | 152           | 62 | 42 |

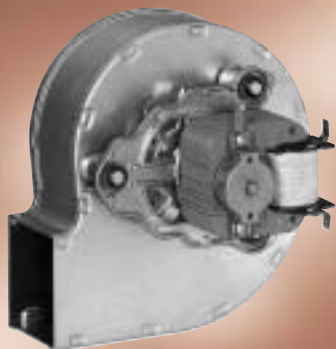
\*) Corresponding to dimensional drawing; Technical data valid at free air flow without inlet ring; bold print = standard type; subject to alterations

## Characteristic curves



# Radial blowers high temperature version

RLE 108 (120)...LH



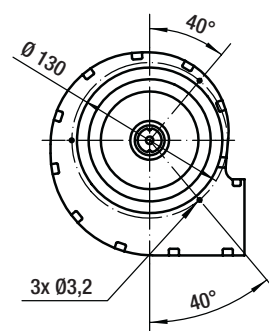
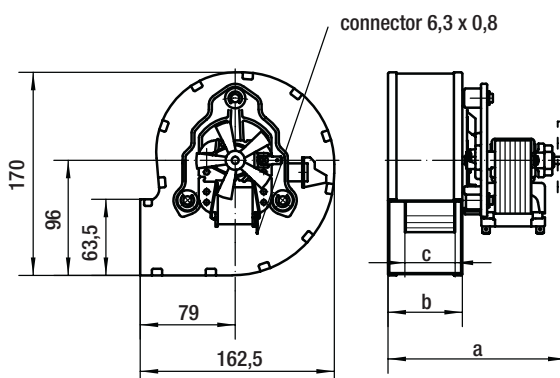
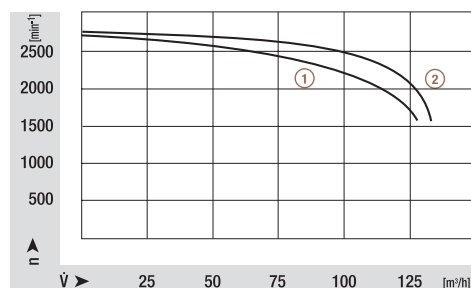
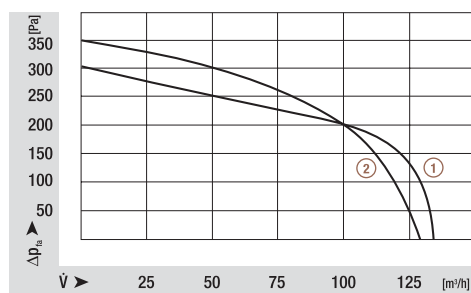
- insulation class H
- max. ambient air stream temperature 250 °C
- housing: FAL sheet steel
- impeller: forward curved, FAL sheet steel
- motor mounting decoupled by silicon elements
- mounting position must be specified for corresponding support elements

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| Nominal data       |            | characteristic curve | rated voltage | frequency | air flow | max. pressure increase | power input | rated current | speed | mass | Dimensions mm |    |    |
|--------------------|------------|----------------------|---------------|-----------|----------|------------------------|-------------|---------------|-------|------|---------------|----|----|
| motor right*       | motor left |                      | V             | Hz        | m³/h     | Pa                     | W           | mA            | min⁻¹ | kg   | a             | b  | c  |
| RLE108/3400-3030LH |            | ①                    | 230           | 50        | 135      | 300                    | 53          | 440           | 1500  | 1,6  | 134           | 54 | 34 |
| RLE120/3400-3030LH |            | ②                    | 230           | 50        | 130      | 350                    | 62          | 520           | 1550  | 1,6  | 134           | 54 | 34 |

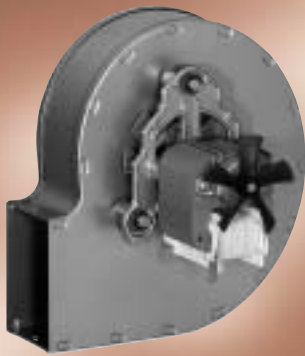
\*) Corresponding to dimensional drawing; Technical data valid at free air flow with inlet ring; bold print = standard type; subject to alterations

## Characteristic curves



# Radial blowers high temperature version

RLB 130...LH



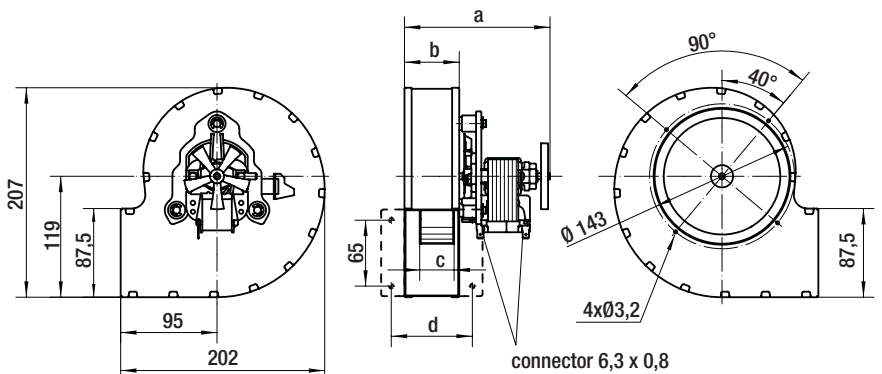
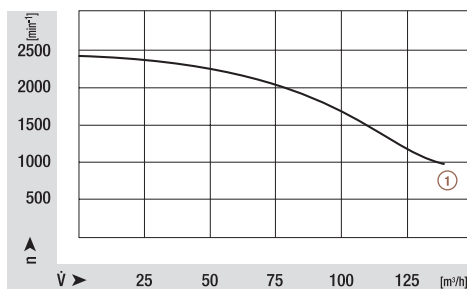
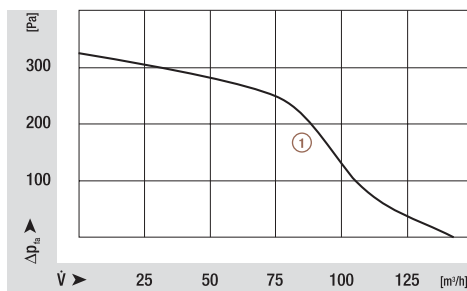
- insulation class H
- max. ambient air stream temperature 180 °C
- housing: FAL sheet steel
- impeller: forward curved, aluminium
- motor mounting decoupled by silicon elements
- mounting position must be specified for corresponding support elements

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| Nominal data              | characteristic curve | rated voltage | frequency | air flow | max. pressure increase | power input | rated current | speed             | mass | Dimensions mm |    |    |   |
|---------------------------|----------------------|---------------|-----------|----------|------------------------|-------------|---------------|-------------------|------|---------------|----|----|---|
| type                      |                      | V             | Hz        | m³/h     | Pa                     | W           | mA            | min <sup>-1</sup> | kg   | a             | b  | c  | d |
| <b>RLB130/3400-3038LH</b> | ①                    | 230           | 50        | 140      | 325                    | 70          | 600           | 950               | 2,0  | 145           | 54 | 34 | - |

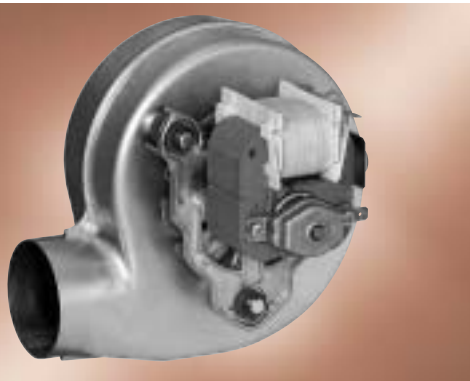
Technical data valid at free air flow with inlet ring; bold print = standard type; subject to alterations

## Characteristic curves



# Radial blowers high temperature version

RLG 97 (108)...LH



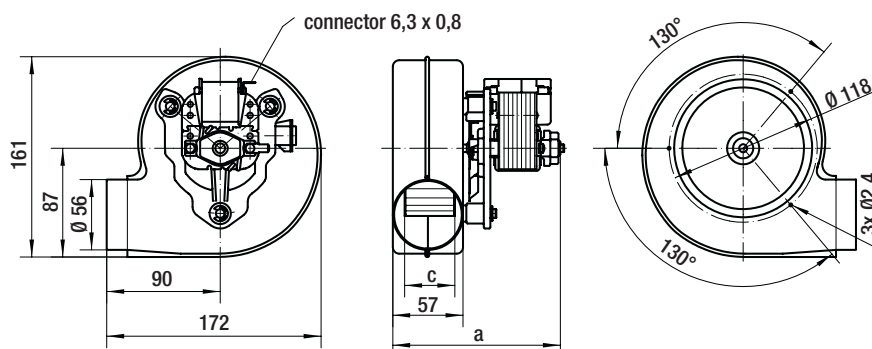
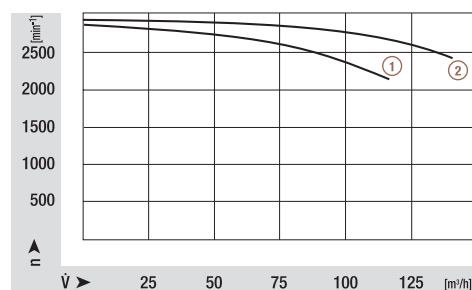
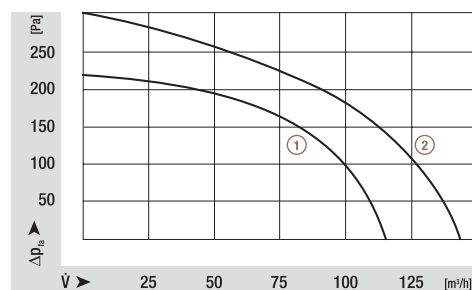
- insulation class H
- max. ambient air stream temperature 250 °C
- housing: FAL sheet steel
- impeller: forward curved, FAL sheet steel
- motor mounting decoupled by silicon elements
- mounting position must be specified for corresponding support elements

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| Nominal data              |                           | characteristic curve | rated voltage | frequency | air flow | max. pressure increase | power input | rated current | speed | mass | Dimensions mm |    |
|---------------------------|---------------------------|----------------------|---------------|-----------|----------|------------------------|-------------|---------------|-------|------|---------------|----|
| motor right*              | motor left                |                      | V             | Hz        | m³/h     | Pa                     | W           | mA            | min⁻¹ | kg   | a             | c  |
| RLG97/4200-3025LH         | RLG97/0042-3025LH         | ①                    | 230           | 50        | 115      | 220                    | 42          | 360           | 2100  | 1,5  | 132           | 42 |
| <b>RLG108/4200-3030LH</b> | <b>RLG108/0042-3030LH</b> | ②                    | 230           | 50        | 145      | 300                    | 60          | 520           | 2400  | 1,6  | 138           | 42 |

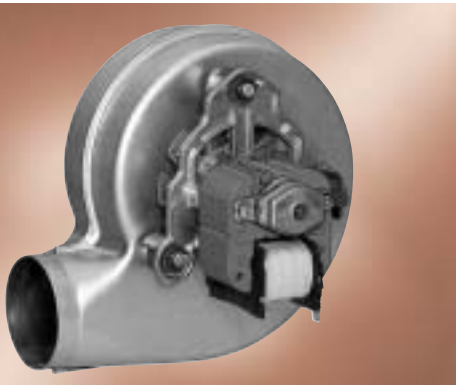
\*) Corresponding to dimensional drawing; Technical data valid at free air flow without inlet ring; bold print = standard type; subject to alterations

## Characteristic curves



# Radial blowers high temperature version

RLH 108 (120)...LH



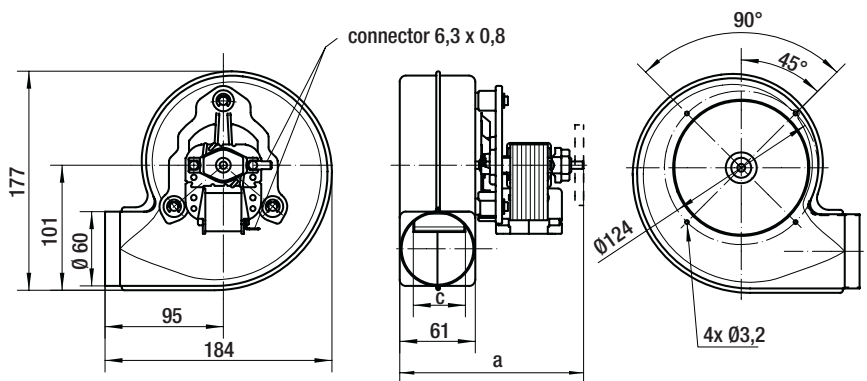
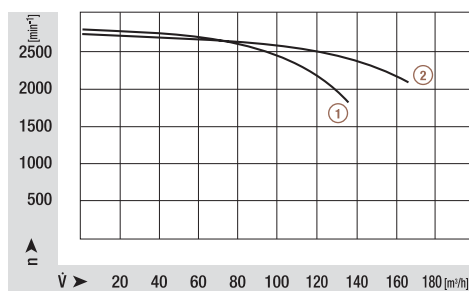
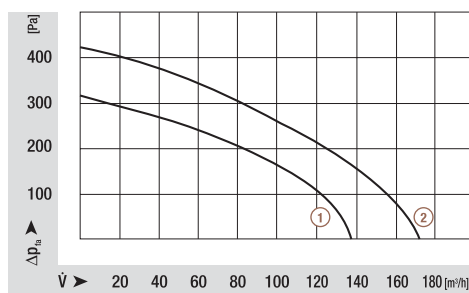
- insulation class H
- max. ambient air stream temperature 250 °C
- housing: FAL sheet steel
- impeller: forward curved, FAL sheet steel
- motor mounting decoupled by silicon elements
- mounting position must be specified for corresponding support elements

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| Nominal data       |                    | characteristic curve | rated voltage | frequency | air flow | max. pressure increase | power input | rated current | speed             | mass | Dimensions mm |    |
|--------------------|--------------------|----------------------|---------------|-----------|----------|------------------------|-------------|---------------|-------------------|------|---------------|----|
| motor right*       | motor left         |                      | V             | Hz        | m³/h     | Pa                     | W           | mA            | min <sup>-1</sup> | kg   | a             | c  |
| RLH108/4200-3030LH | RLH108/0042-3030LH | ①                    | 230           | 50        | 135      | 315                    | 58          | 480           | 1850              | 1,7  | 143           | 42 |
| RLH120/3800-3038LH | RLH120/0038-3038LH | ②                    | 230           | 50        | 170      | 420                    | 92          | 870           | 2100              | 2,0  | 155           | 38 |

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

## Characteristic curves



# Radial blowers high temperature version

RLK 108...LH



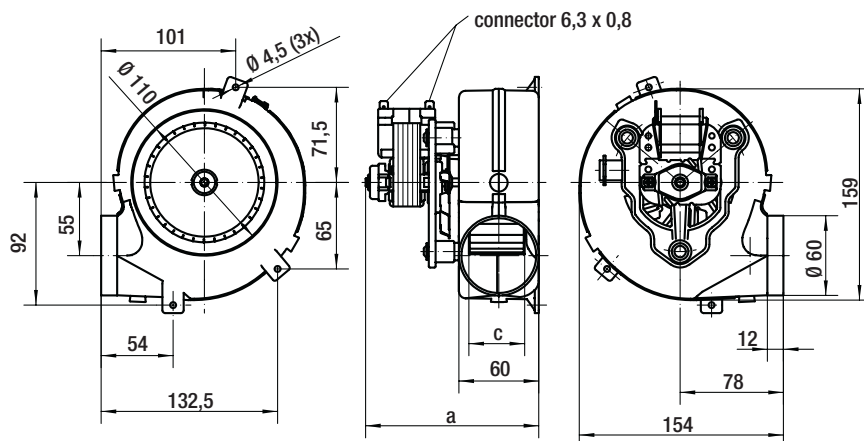
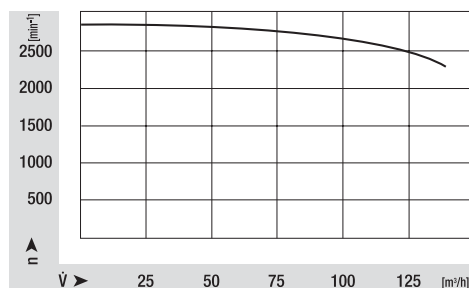
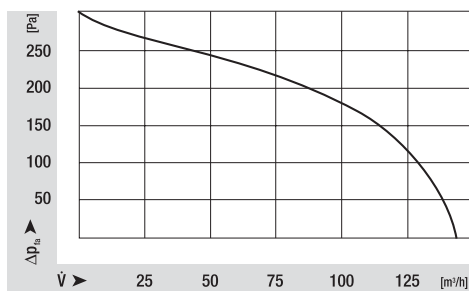
- housing: die-cast aluminium
- insulation class H
- max. ambient air stream temperature 250 °C
- impeller: forward curved, FAL sheet steel
- motor mounting decoupled by silicon elements
- mounting position must be specified for corresponding support elements

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| Nominal data       | rated voltage | frequency | air flow | max. pressure increase | power input | rated current | speed             | mass | Dimensions mm |    |
|--------------------|---------------|-----------|----------|------------------------|-------------|---------------|-------------------|------|---------------|----|
| type               | V             | Hz        | m³/h     | Pa                     | W           | mA            | min <sup>-1</sup> | kg   | a             | c  |
| RLK108/0042-3030LH | 230           | 50        | 142      | 305                    | 65          | 550           | 2350              | 1,4  | 142           | 42 |

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

## Characteristic curves



# Impulse transmitter

## SG 2



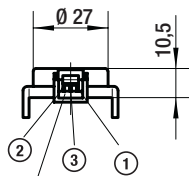
The signal transmitter SG2 is an impulse transmitter suitable to be connected to EM30 and KM motors. 12 square impulses per rotation of the motor shaft are formed by means of a 24-pole, plastic-bonded ferrite magnet ring, in connection with a Hall-IC.

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 k $\Omega$  and 0.25W is necessary to obtain a digital signal of equal amplitude at the output.

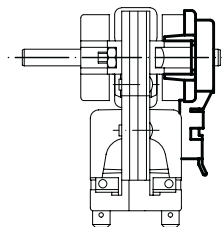
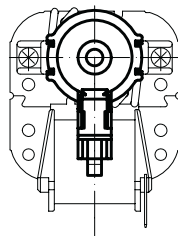
Features of the signal transmitter are high operating reliability, small Dimensions, no limitation to build-in position and no operating noise.

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- ①  $\Delta$  V cc = 4,5...24V (supply)
- ②  $\Delta$  V out (square wave signal, open collector, max.25 mA)
- ③  $\Delta$  GND

suitable for Molex Mini Spox



# Radial blowers

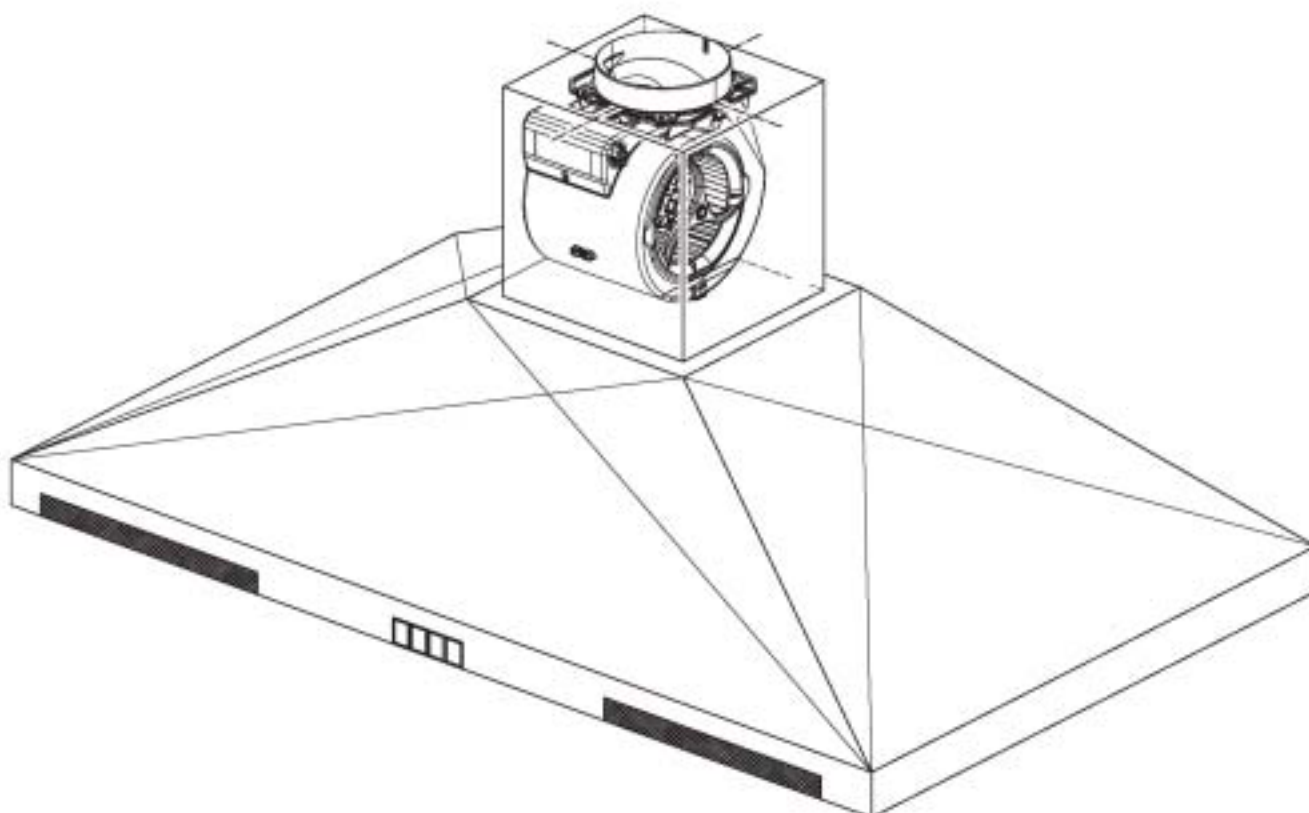
dual inlet, for extractor hoods  
with AC external-rotor motor

Radial blowers, dual inlet, with external-rotor motor made by ebm-papst Mulfingen 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



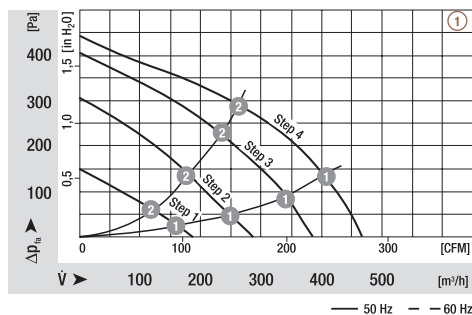
- **Material:** Housing: PP plastic, black  
Impeller: PP plastic, white  
Rotor: Partially cast in aluminium  
Terminal box: PP plastic, black
  - **Direction of rotation:** Clockwise, seen on rotor
  - **Type of protection:** IP 44
  - **Insulation class:** "F"
  - **Mounting position:** Any
  - **Condensate 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
- ebm-papst • Mulfingen**

| Nominal data |            | characteristic curve | voltage | frequency | air flow | speed | power input | rated current | capacitor | noise level | back pressure min. | perm. ambient temp. |
|--------------|------------|----------------------|---------|-----------|----------|-------|-------------|---------------|-----------|-------------|--------------------|---------------------|
| type         | motor      |                      | VAC     | Hz        | m³/h     | min⁻¹ | W           | A             | µF/VDB    | dB(A)       | Pa                 | °C                  |
| D2E 140      | M2E 068-CF | ①                    | 1~230   | 50        | 470      | 1150  | 130         | 0,58          | 2,0/400   | 58          | 0                  | -25 to +50          |
|              |            |                      | 1~230   | 60        | 430      | 1050  | 130         | 0,58          | 2,0/400   | 56          | 0                  | -25 to +40          |

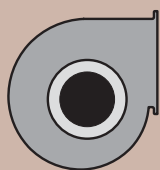
subject to alterations

|   |   |        | n<br>[min <sup>-1</sup> ] | P <sub>1</sub><br>[W] | I<br>[A] | L <sub>pA</sub><br>[dBA] |
|---|---|--------|---------------------------|-----------------------|----------|--------------------------|
| ① | ① | Step 1 | 690                       | 56                    | 0,26     | 36                       |
| ① | ② | Step 1 | 1015                      | 55                    | 0,25     | 38                       |
| ① | ① | Step 2 | 1000                      | 73                    | 0,33     | 46                       |
| ① | ② | Step 2 | 1540                      | 68                    | 0,31     | 49                       |
| ① | ① | Step 3 | 1385                      | 93                    | 0,41     | 52                       |
| ① | ② | Step 3 | 2020                      | 80                    | 0,36     | 56                       |
| ① | ① | Step 4 | 1675                      | 118                   | 0,51     | 56                       |
| ① | ② | Step 4 | 2235                      | 100                   | 0,43     | 59                       |

### Characteristic curves



- **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



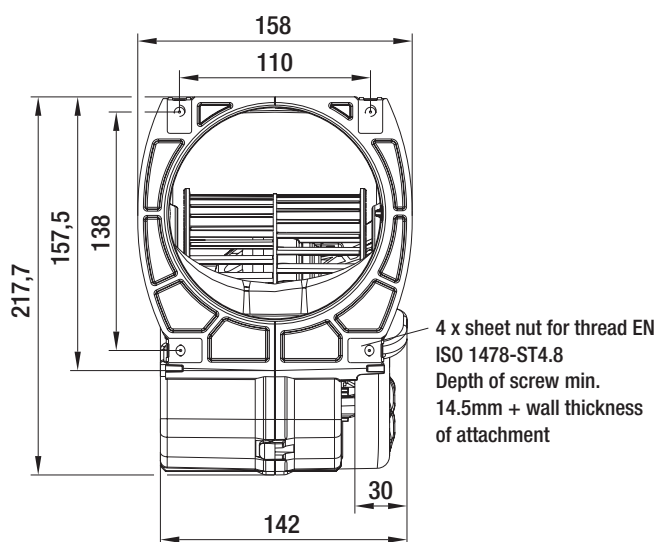
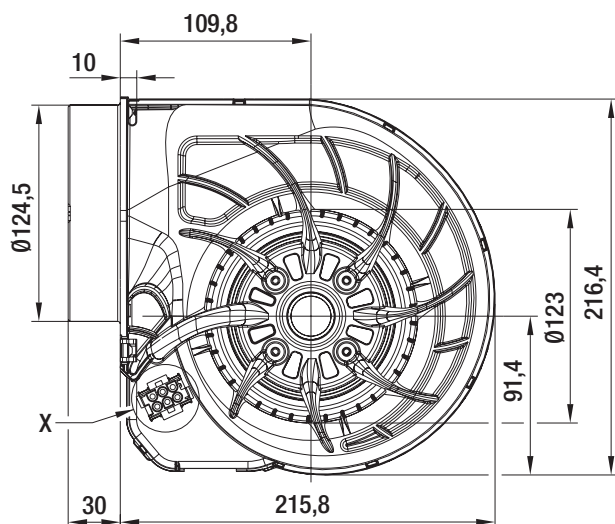
Mass of  
centrifugal blower

Centrifugal blower  
with flange

kg

D2E 140-HR97 -07

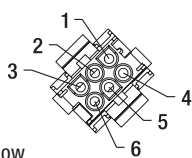
2,3



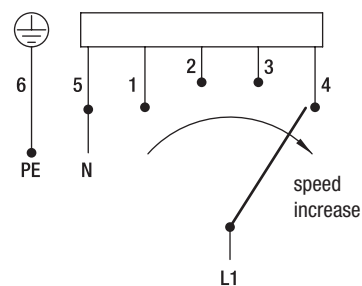
#### Detail X

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.



# 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
- ebm-papst • Mulfingen**

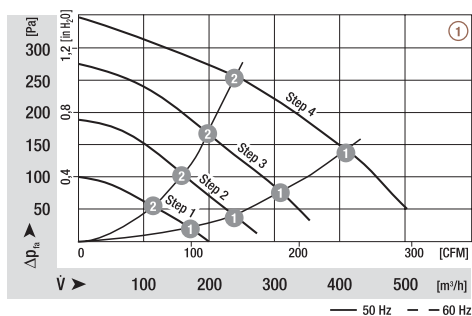
| Nominal data |            | characteristic curve | voltage | frequency | air flow | speed | power input | rated current | capacitor | noise level | back pressure min. | perm. ambient temp. |
|--------------|------------|----------------------|---------|-----------|----------|-------|-------------|---------------|-----------|-------------|--------------------|---------------------|
| type         | motor      |                      | VAC     | Hz        | m3/h     | min-1 | W           | A             | µF/VDB    | dB(A)       | Pa                 | °C                  |
| D2E 146      | M2E 068-CA | ①                    | 1~ 230  | 50        | 520      | 1350  | 120         | 0,53          | 3,0/400   | 51          | 50                 | -25 to +55          |
|              |            |                      | 1~ 230  | 60        | 375      | 1400  | 125         | 0,55          | 3,0/400   | 53          | 100                | -25 to +40          |
| D2E 146      | M2E 068-CF | ②                    | 1~ 230  | 50        | 665      | 1250  | 160         | 0,70          | 4,0/400   | 53          | 0                  | -25 to +50          |
|              |            |                      | 1~ 230  | 60        | 390      | 1950  | 170         | 0,75          | 4,0/400   | 58          | 200                | -25 to +40          |

subject to alterations

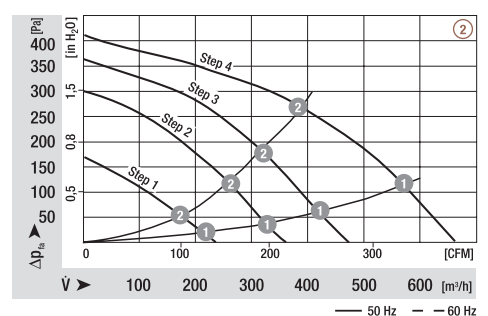
|   |   |        | n<br>[min-1] | P <sub>1</sub><br>[W] | I<br>[A] | L <sub>pA</sub><br>[dBA] |
|---|---|--------|--------------|-----------------------|----------|--------------------------|
| ① | ① | Step 1 | 660          | 48                    | 0,27     | 31                       |
| ① | ② | Step 1 | 960          | 46                    | 0,26     | 38                       |
| ① | ① | Step 2 | 925          | 58                    | 0,31     | 40                       |
| ① | ② | Step 2 | 1355         | 55                    | 0,30     | 47                       |
| ① | ① | Step 3 | 1210         | 72                    | 0,36     | 48                       |
| ① | ② | Step 3 | 1740         | 66                    | 0,35     | 53                       |
| ① | ① | Step 4 | 1635         | 113                   | 0,49     | 55                       |
| ① | ② | Step 4 | 2115         | 104                   | 0,45     | 58                       |

|   |   |        | n<br>[min-1] | P <sub>1</sub><br>[W] | I<br>[A] |
|---|---|--------|--------------|-----------------------|----------|
| ② | ① | Step 1 | 660          | 71                    | 0,37     |
| ② | ② | Step 1 | 960          | 68                    | 0,36     |
| ② | ① | Step 2 | 950          | 85                    | 0,43     |
| ② | ② | Step 2 | 1440         | 80                    | 0,42     |
| ② | ① | Step 3 | 1230         | 101                   | 0,50     |
| ② | ② | Step 3 | 1800         | 92                    | 0,47     |
| ② | ① | Step 4 | 1675         | 151                   | 0,66     |
| ② | ② | Step 4 | 2185         | 136                   | 0,60     |

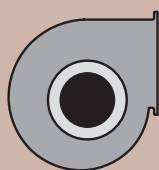
Characteristic curves



Characteristic curves



- **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



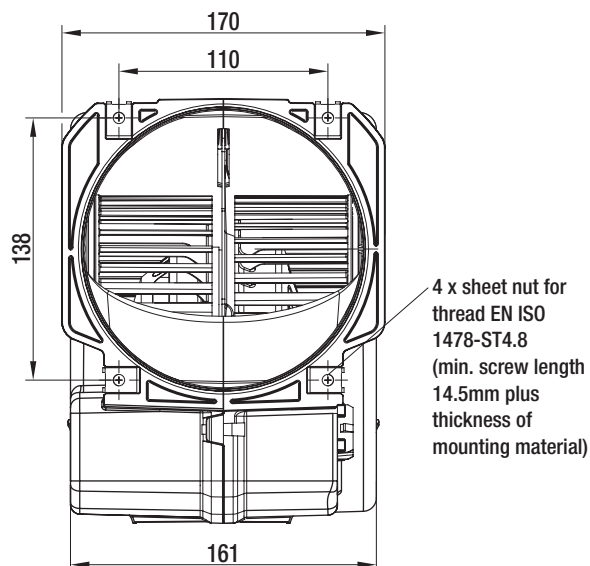
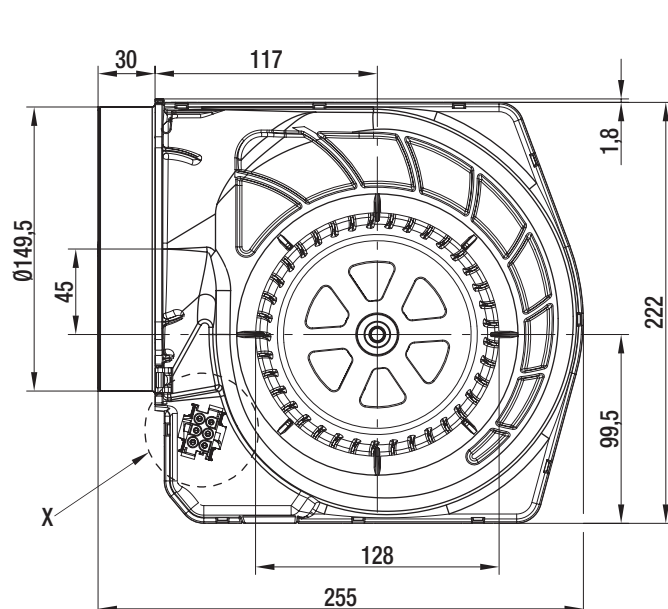
Mass of  
centrifugal blower

Centrifugal blower  
with flange

kg

D2E 146-KA45 -01 2,5

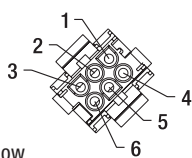
D2E 146-KB27 -01 2,7



#### Detail X

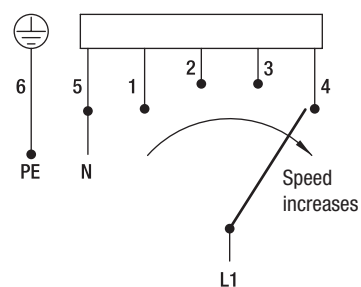
Coded plug system AMP Universal-Mate-N-Lok  
connector shell: AMP 926 682-3  
6 x pin connector: AMP 926 886-1

- 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.



# 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

ebm-papst • Mulmungen

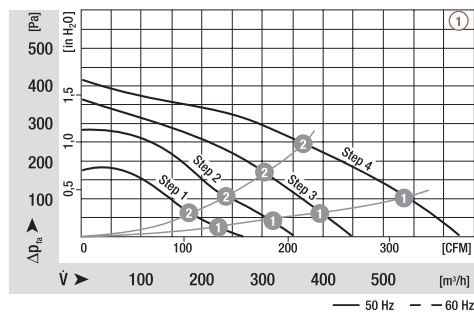
| Nominal data |            | characteristic curve | voltage | frequency | voltage | speed | power input | rated current | capacitor | noise level | back pressure min. | perm. ambient temp. |
|--------------|------------|----------------------|---------|-----------|---------|-------|-------------|---------------|-----------|-------------|--------------------|---------------------|
| type         | motor      |                      | VAC     | Hz        | m³/h    | min⁻¹ | W           | A             | µF/VDB    | dB(A)       | Pa                 | °C                  |
| D2E 146      | M2E 068-CF | ①                    | 1~230   | 50        | 630     | 1100  | 150         | 0,66          | 4,0/400   | 51          | 0                  | -25 to +50          |
|              |            |                      | 1~230   | 60        | 415     | 1600  | 160         | 0,71          | 4,0/400   | 55          | 150                | -25 to +45          |
| D2E 146      | M2E 068-DF | ②                    | 1~230   | 50        | 755     | 1350  | 195         | 0,86          | 5,0/400   | 57          | 0                  | -25 to +55          |
|              |            |                      | 1~230   | 60        | 580     | 1750  | 215         | 0,94          | 5,0/400   | 54          | 150                | -25 to +40          |

subject to alterations

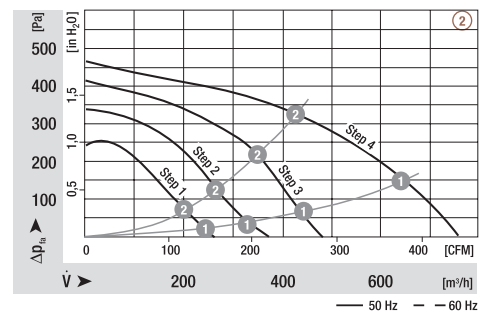
|   |   |        | n<br>[min⁻¹] | P <sub>1</sub><br>[W] | I<br>[A] | Lp <sub>A</sub><br>[dBA] |
|---|---|--------|--------------|-----------------------|----------|--------------------------|
| ① | ① | Step 1 | 680          | 69                    | 0,38     | 31                       |
| ① | ② | Step 1 | 990          | 67                    | 0,37     | 35                       |
| ① | ① | Step 2 | 890          | 81                    | 0,42     | 37                       |
| ① | ② | Step 2 | 1315         | 77                    | 0,42     | 43                       |
| ① | ① | Step 3 | 1110         | 98                    | 0,49     | 47                       |
| ① | ② | Step 3 | 1635         | 92                    | 0,47     | 49                       |
| ① | ① | Step 4 | 1490         | 143                   | 0,62     | 51                       |
| ① | ② | Step 4 | 2005         | 133                   | 0,59     | 55                       |

|   |   |        | n<br>[min⁻¹] | P <sub>1</sub><br>[W] | I<br>[A] | Lp <sub>A</sub><br>[dBA] |
|---|---|--------|--------------|-----------------------|----------|--------------------------|
| ② | ① | Step 1 | 710          | 94                    | 0,47     | 30                       |
| ② | ② | Step 1 | 1055         | 91                    | 0,46     | 38                       |
| ② | ① | Step 2 | 910          | 106                   | 0,52     | 38                       |
| ② | ② | Step 2 | 1415         | 100                   | 0,50     | 45                       |
| ② | ① | Step 3 | 1210         | 125                   | 0,60     | 45                       |
| ② | ② | Step 3 | 1820         | 112                   | 0,57     | 52                       |
| ② | ① | Step 4 | 1790         | 185                   | 0,81     | 56                       |
| ② | ② | Step 4 | 2290         | 164                   | 0,72     | 59                       |

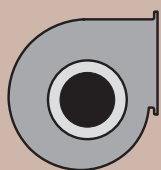
Characteristic curves



Characteristic curves



- **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



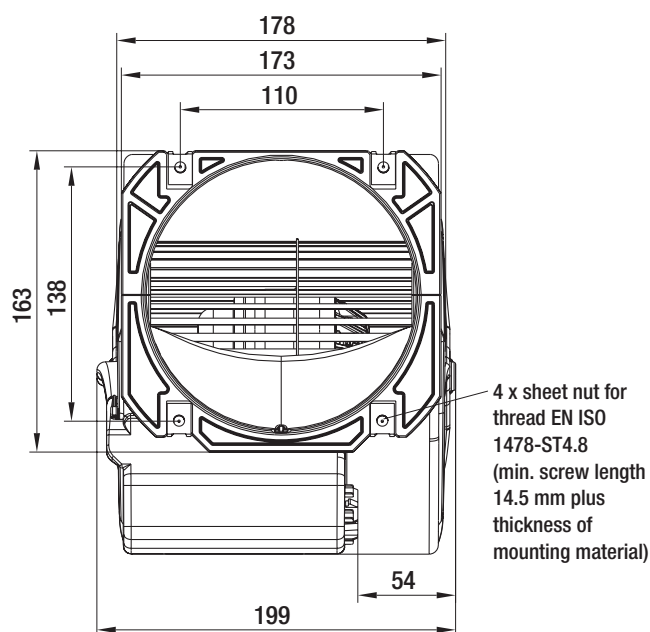
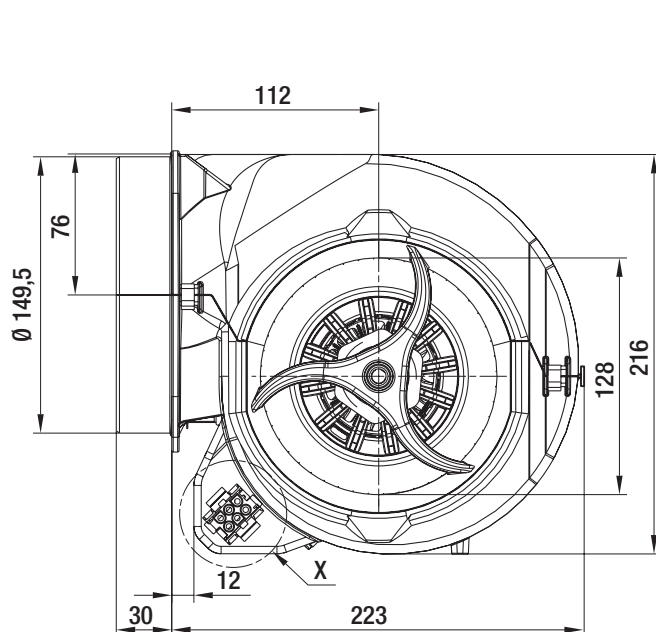
Mass of  
centrifugal blower

Centrifugal blower  
with flange

kg

D2E 146-HR93 -03 3,0

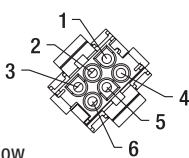
D2E 146-HS97 -03 3,5



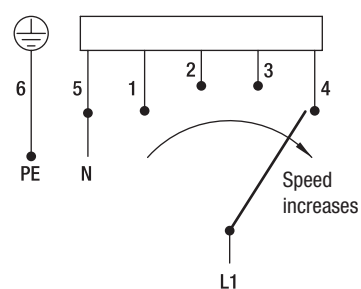
#### Detail X

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.



# 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

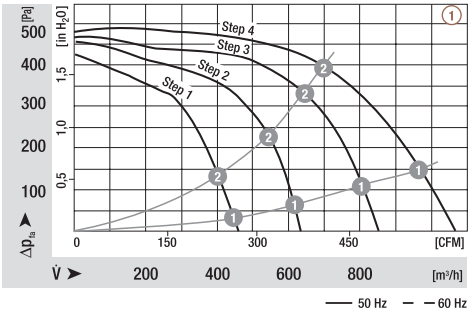
ebm-papst • Mulfingen

| Nominal data |            | characteristic curve | voltage | frequency | voltage | speed | power input | rated current | capacitor | noise level | back pressure min. | perm. ambient temp. |
|--------------|------------|----------------------|---------|-----------|---------|-------|-------------|---------------|-----------|-------------|--------------------|---------------------|
| type         | motor      |                      | VAC     | Hz        | m³/h    | min⁻¹ | W           | A             | µF/VDB    | dB(A)       | Pa                 | °C                  |
| D2E 146      | M2E 068-EC | ①                    | 1~ 230  | 50        | 1060    | 1850  | 355         | 1,55          | 8,0/450   | 66          | 0                  | -25 to 55           |
|              |            |                      | 1~ 230  | 60        | 875     | 2100  | 400         | 1,75          | 8,0/450   | 63          | 200                | -25 to 50           |

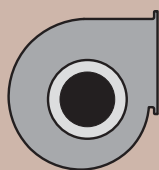
subject to alterations

|   |   |        | n<br>[min <sup>-1</sup> ] | P <sub>1</sub><br>[W] | I<br>[A] | Lp <sub>A</sub><br>[dBA] |
|---|---|--------|---------------------------|-----------------------|----------|--------------------------|
| ① | ① | Step 1 | 1000                      | 192                   | 0,88     | 45                       |
| ① | ② | Step 1 | 1415                      | 180                   | 0,84     | 49                       |
| ① | ① | Step 2 | 1375                      | 225                   | 1,03     | 54                       |
| ① | ② | Step 2 | 1885                      | 197                   | 0,94     | 57                       |
| ① | ① | Step 3 | 1770                      | 268                   | 1,20     | 61                       |
| ① | ② | Step 3 | 2230                      | 222                   | 1,04     | 62                       |
| ① | ① | Step 4 | 2075                      | 328                   | 1,42     | 66                       |
| ① | ② | Step 4 | 2430                      | 269                   | 1,17     | 61                       |

### Characteristic curves



- **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



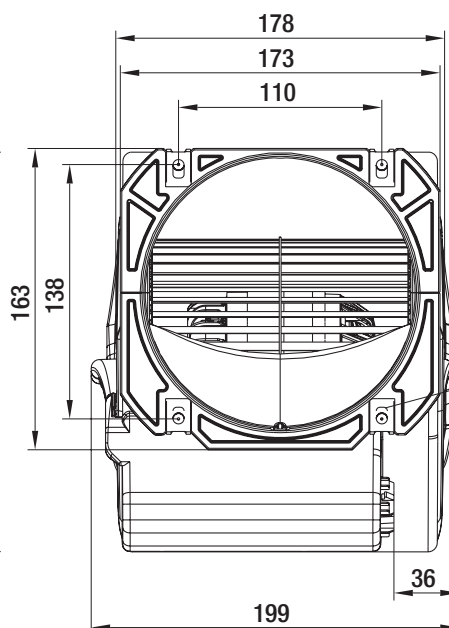
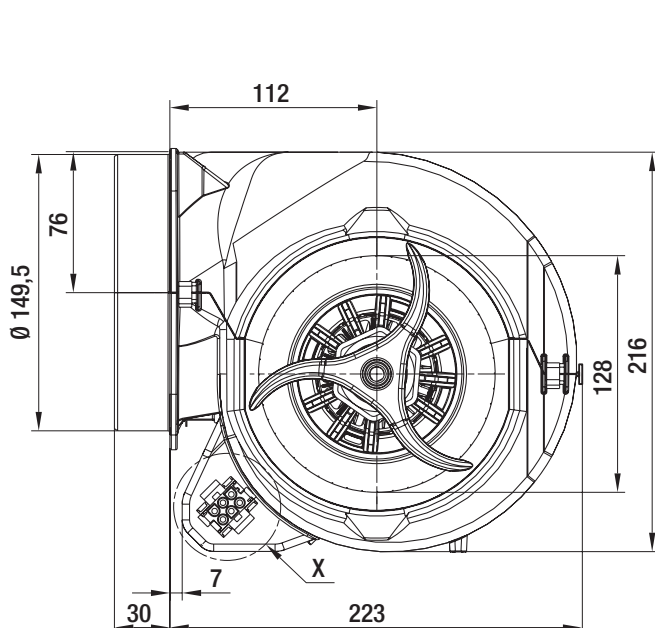
Mass of  
centrifugal blower

Centrifugal blower  
with flange

kg

D2E 146-HT67 -02

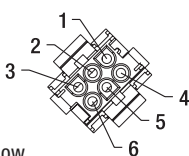
3,6



#### View X

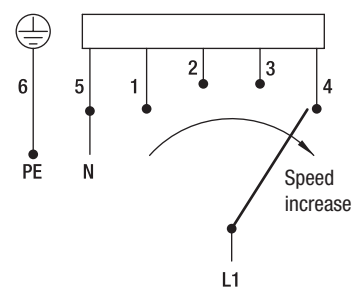
coded plug system AMP Universal-Mate-N-Lok  
connector shell AMP 926 682-3  
6 x plug pin AMP 926 886-1

- 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
- ebm-papst • Mulfingen**

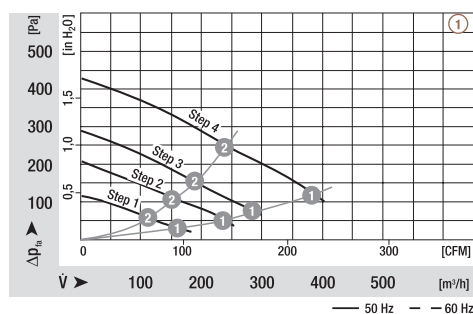
| Nominal data |            | characteristic curve | voltage | frequency | voltage           | speed             | power input | rated current | capacitor | noise level | back pressure min. | perm. ambient temp. |
|--------------|------------|----------------------|---------|-----------|-------------------|-------------------|-------------|---------------|-----------|-------------|--------------------|---------------------|
| type         | motor      |                      | VAC     | Hz        | m <sup>3</sup> /h | min <sup>-1</sup> | W           | A             | μF/VDB    | dB(A)       | Pa                 | °C                  |
| D2E 160      | M2E 068-BF | ①                    | 1~ 230  | 50        | 400               | 1170              | 110         | 0,49          | 2,5/400   | 53          | 100                | -25 to 45           |
| D2E 160      | M2E 068-CF | ②                    | 1~ 230  | 50        | 550               | 1400              | 180         | 0,80          | 4,0/400   | 59          | 150                | -25 to 40           |

subject to alterations

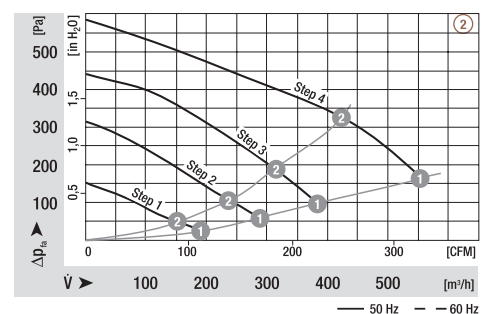
|   |   |        | n<br>[min <sup>-1</sup> ] | P <sub>1</sub><br>[W] | I<br>[A] | Lp <sub>A</sub><br>[dBA] |
|---|---|--------|---------------------------|-----------------------|----------|--------------------------|
| ① | ① | Step 1 | 555                       | 50                    | 0,26     | 30                       |
| ① | ② | Step 1 | 835                       | 49                    | 0,25     | 36                       |
| ① | ① | Step 2 | 765                       | 64                    | 0,31     | 38                       |
| ① | ② | Step 2 | 1135                      | 61                    | 0,30     | 44                       |
| ① | ① | Step 3 | 910                       | 74                    | 0,35     | 43                       |
| ① | ② | Step 3 | 1345                      | 71                    | 0,34     | 48                       |
| ① | ① | Step 4 | 1210                      | 108                   | 0,47     | 51                       |
| ① | ② | Step 4 | 1735                      | 102                   | 0,44     | 55                       |

|   |   |        | n<br>[min <sup>-1</sup> ] | P <sub>1</sub><br>[W] | I<br>[A] | Lp <sub>A</sub><br>[dBA] |
|---|---|--------|---------------------------|-----------------------|----------|--------------------------|
| ② | ① | Step 1 | 500                       | 76                    | 0,38     | 28                       |
| ② | ② | Step 1 | 740                       | 75                    | 0,37     | 34                       |
| ② | ① | Step 2 | 770                       | 96                    | 0,46     | 40                       |
| ② | ② | Step 2 | 1115                      | 93                    | 0,45     | 44                       |
| ② | ① | Step 3 | 1010                      | 120                   | 0,56     | 48                       |
| ② | ② | Step 3 | 1450                      | 113                   | 0,53     | 52                       |
| ② | ① | Step 4 | 1430                      | 176                   | 0,76     | 57                       |
| ② | ② | Step 4 | 1920                      | 162                   | 0,70     | 60                       |

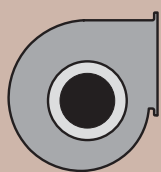
Characteristic curves



Characteristic curves



- **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



Mass of  
centrifugal blower

Centrifugal blower  
with flange

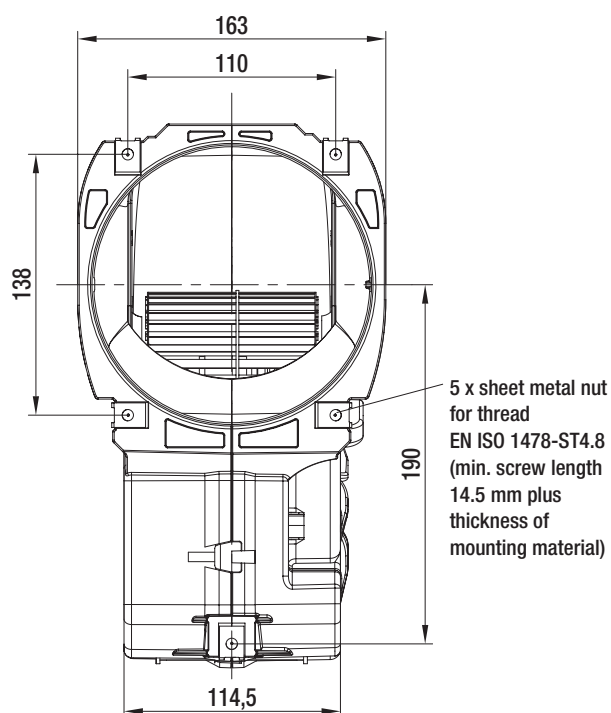
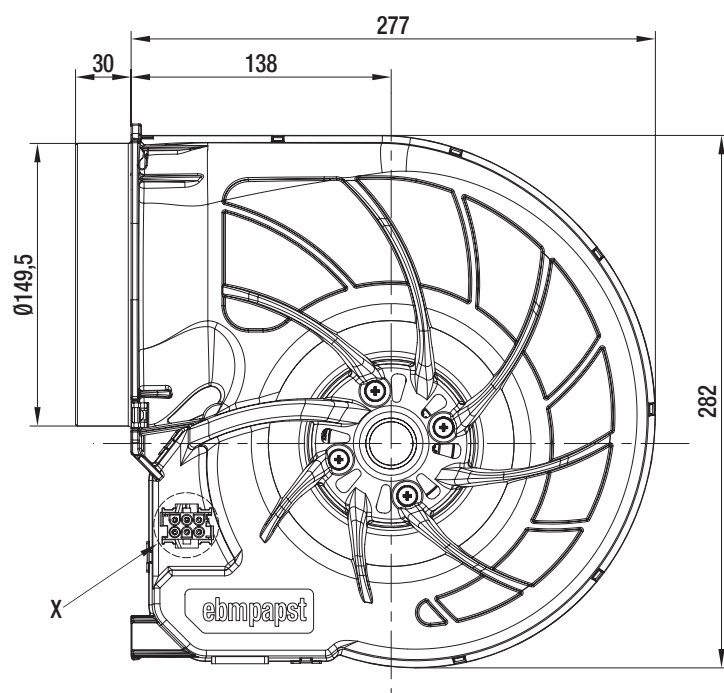
kg

D2E 160-FI01 -01

2,5

D2E 160-FK11 -02

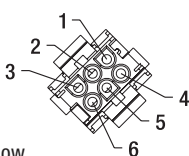
3,0



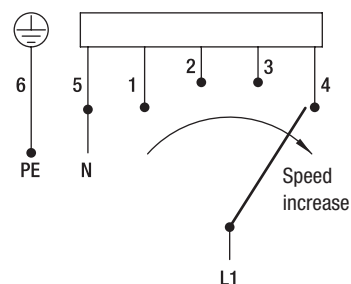
#### View X

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:** 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

ebm-papst • Mulfingen

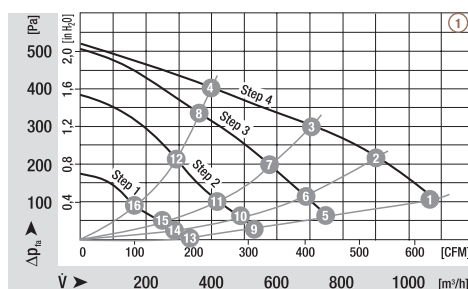
| Nominal data |            | characteristic curve | voltage | frequency | air flow | speed/rpm | power input | current draw | capacitor | sound pressure level | min. back pressure | perm. amb. temp. |
|--------------|------------|----------------------|---------|-----------|----------|-----------|-------------|--------------|-----------|----------------------|--------------------|------------------|
| type         | motor      |                      | VAC     | Hz        | m³/h     | min⁻¹     | W           | A            | µF/VDB    | dB(A)                | Pa                 | °C               |
| D2E 160      | M2E 068-EC | ①                    | 1~230   | 50        | 1070     | 1400      | 340         | 1,49         | 10,0/400  | 58                   | 100                | -25..+45         |
| D2E 160      | M2E 074-HA | ②                    | 1~230   | 50        | 1495     | 1800      | 500         | 2,19         | 12,0/400  | 67                   | 100                | -25 to 40        |

subject to alterations

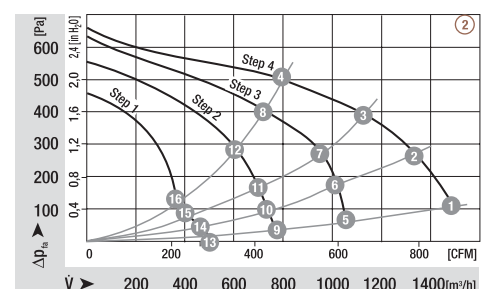
|     | n<br>[min⁻¹] | P <sub>i</sub><br>[W] | I<br>[A] | Lp <sub>A</sub><br>[dB(A)] |
|-----|--------------|-----------------------|----------|----------------------------|
| ① ① | 1400         | 340                   | 1,49     | 58                         |
| ① ② | 1650         | 337                   | 1,47     | 58                         |
| ① ③ | 1985         | 329                   | 1,45     | 59                         |
| ① ④ | 2280         | 312                   | 1,39     | ---                        |
| ① ⑤ | 1035         | 211                   | 1,12     | 47                         |
| ① ⑥ | 1260         | 208                   | 1,12     | 48                         |
| ① ⑦ | 1610         | 199                   | 1,11     | 53                         |
| ① ⑧ | 2115         | 179                   | 1,09     | ---                        |
| ① ⑨ | 730          | 160                   | 0,92     | 37                         |
| ① ⑩ | 900          | 158                   | 0,92     | 38                         |
| ① ⑪ | 1170         | 154                   | 0,91     | 44                         |
| ① ⑫ | 1665         | 143                   | 0,90     | ---                        |
| ① ⑬ | 455          | 129                   | 0,78     | 23                         |
| ① ⑭ | 565          | 128                   | 0,78     | 24                         |
| ① ⑮ | 730          | 126                   | 0,77     | 30                         |
| ① ⑯ | 1055         | 122                   | 0,77     | ---                        |

|     | n<br>[min⁻¹] | P <sub>i</sub><br>[W] | I<br>[A] | Lp <sub>A</sub><br>[dB(A)] |
|-----|--------------|-----------------------|----------|----------------------------|
| ② ① | 1800         | 500                   | 2,19     | 67                         |
| ② ② | 2045         | 461                   | 2,03     | 66                         |
| ② ③ | 2320         | 405                   | 1,82     | 65                         |
| ② ④ | 2570         | 334                   | 1,58     | 65                         |
| ② ⑤ | 1205         | 403                   | 1,80     | 56                         |
| ② ⑥ | 1510         | 380                   | 1,72     | 56                         |
| ② ⑦ | 1895         | 339                   | 1,58     | 59                         |
| ② ⑧ | 2330         | 270                   | 1,36     | 63                         |
| ② ⑨ | 925          | 330                   | 1,50     | 47                         |
| ② ⑩ | 1085         | 323                   | 1,47     | 47                         |
| ② ⑪ | 1395         | 309                   | 1,43     | 49                         |
| ② ⑫ | 1950         | 262                   | 1,28     | 58                         |
| ② ⑬ | 680          | 281                   | 1,29     | 35                         |
| ② ⑭ | 805          | 276                   | 1,27     | 36                         |
| ② ⑮ | 960          | 272                   | 1,24     | 37                         |
| ② ⑯ | 1185         | 265                   | 1,22     | 42                         |

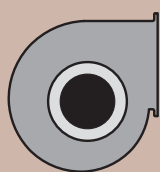
Characteristic curves



Characteristic curves



- **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



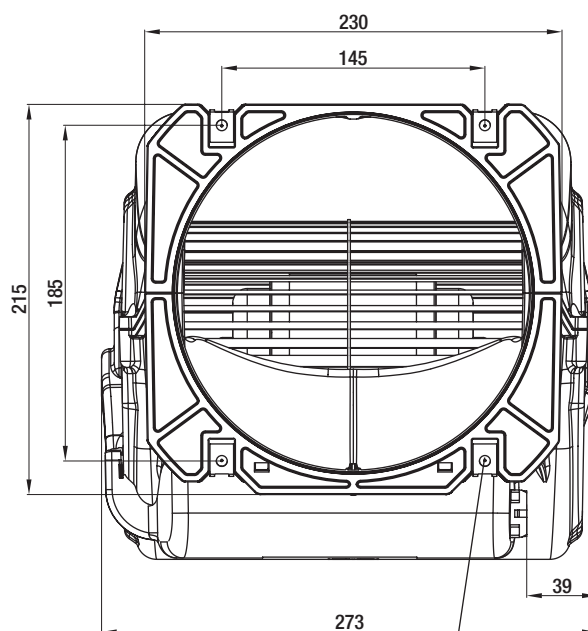
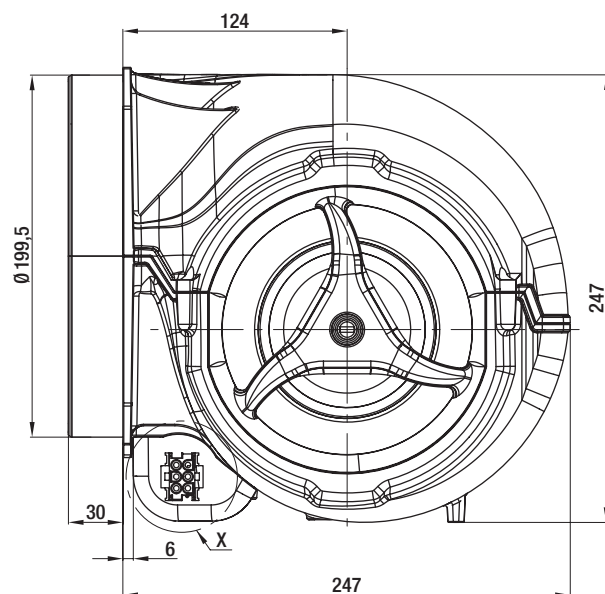
mass

Centrifugal blower  
with flange

kg

D2E 160-GM93 -01 4,0

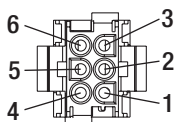
D2E 160-GL07 -01 5,5



## View X

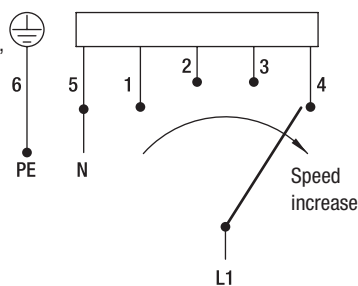
coded plug system AMP Universal-Mate-N-Lok  
connector shell AMP 926 682-3  
6 x plug pin AMP 926 886-1

- 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

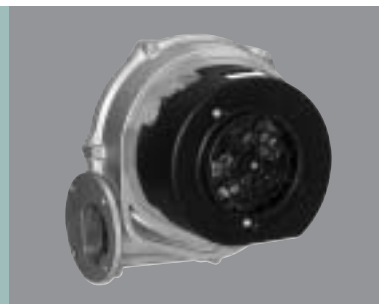


## Connection diagram

When changing speeds,  
the switch must break  
the circuit.

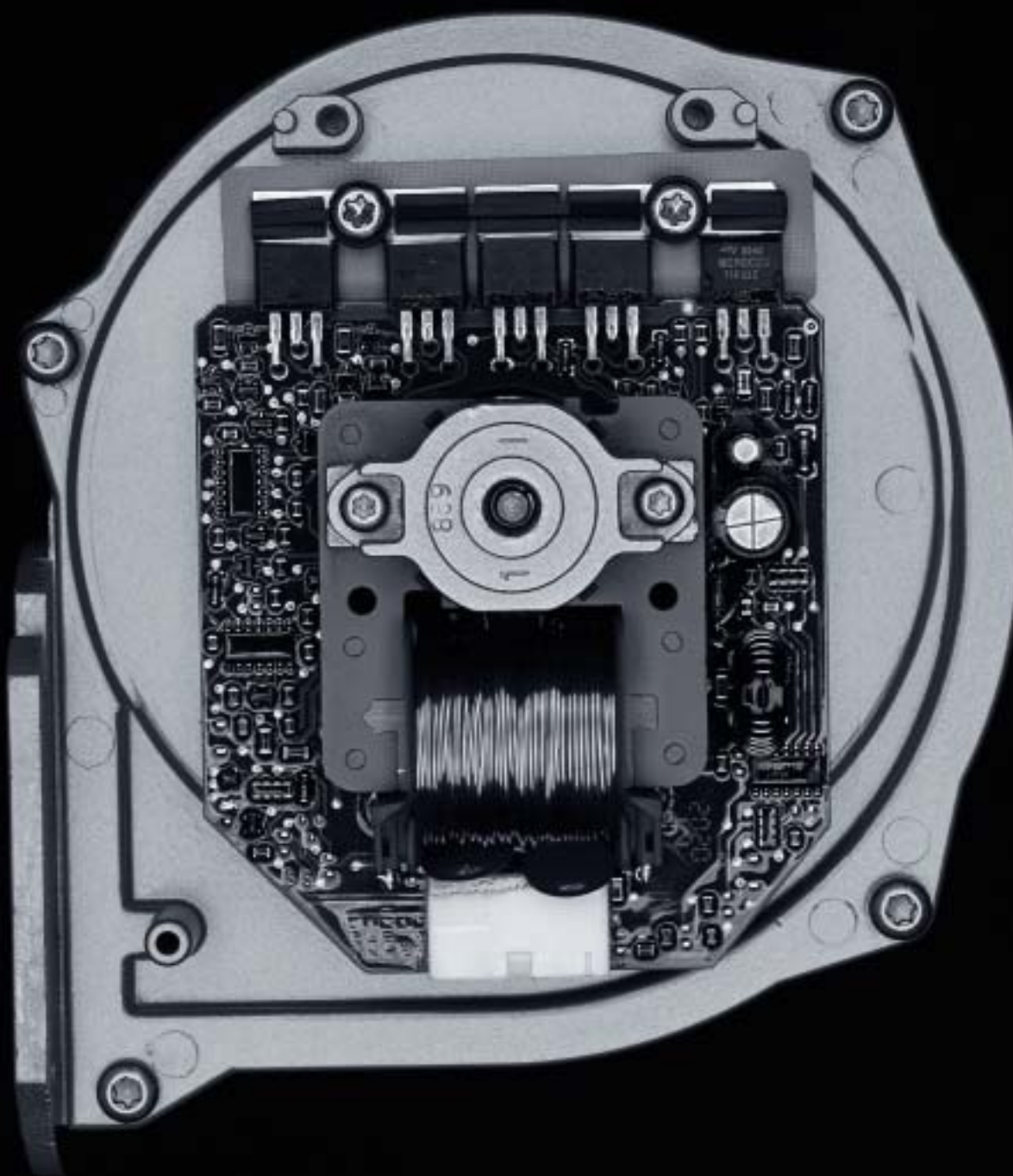


4 x sheet metal nut for  
thread  
EN ISO 1478-ST4.8  
(min. screw length 14.5 mm  
plus thickness of mounting  
material)



# Radial blowers with EC motor

|                                                               |        |
|---------------------------------------------------------------|--------|
| Description                                                   | 62     |
| with internal-rotor motor, HRG, NRG..., RG..., RLS..., RLB... | 64     |
| with external-rotor motor, G1G..., G3G...                     | 76     |
| Interfaces, additional electronics                            | 85, 75 |



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  $<10^9$ , 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

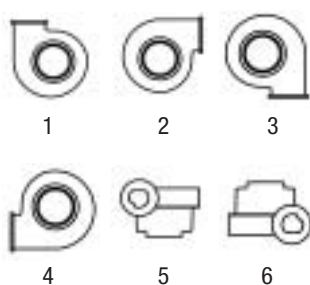
#### **Protection class:**

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  $L_{10}$  40,000 hours of operation at an ambient temperature of 40°C, horizontal mounting position and typical operating conditions.

**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 indispensable 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.

**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

# 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

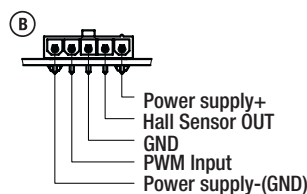
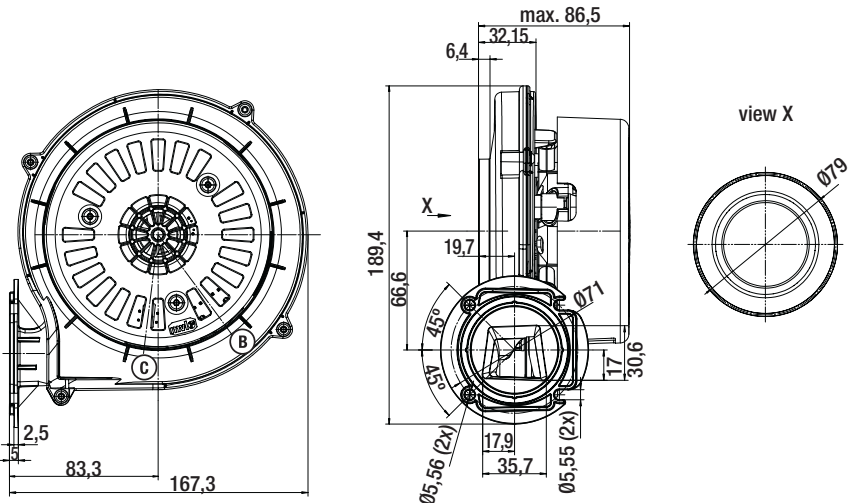
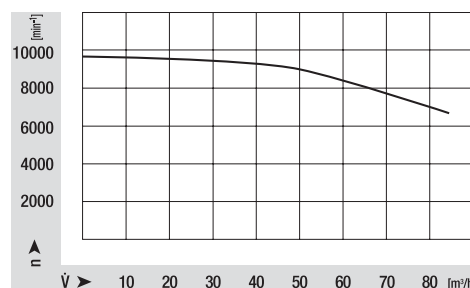
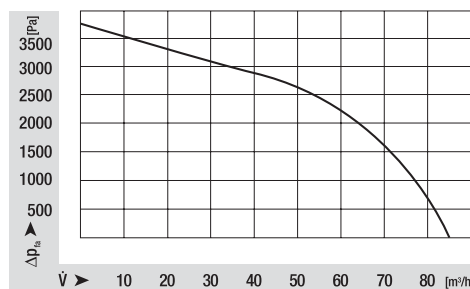
ebm-papst • Landshut

## Nominal data

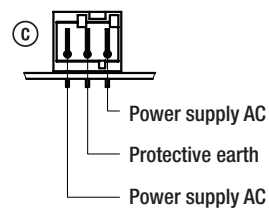
| type          | V      | Hz    | m <sup>3</sup> /h | Pa   | W   | min <sup>-1</sup> | kg  |
|---------------|--------|-------|-------------------|------|-----|-------------------|-----|
| <b>HRG134</b> | 230 AC | 50/60 | 80                | 3800 | 110 | 10000             | 0,8 |

bold print = standard type; subject to alterations

## 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

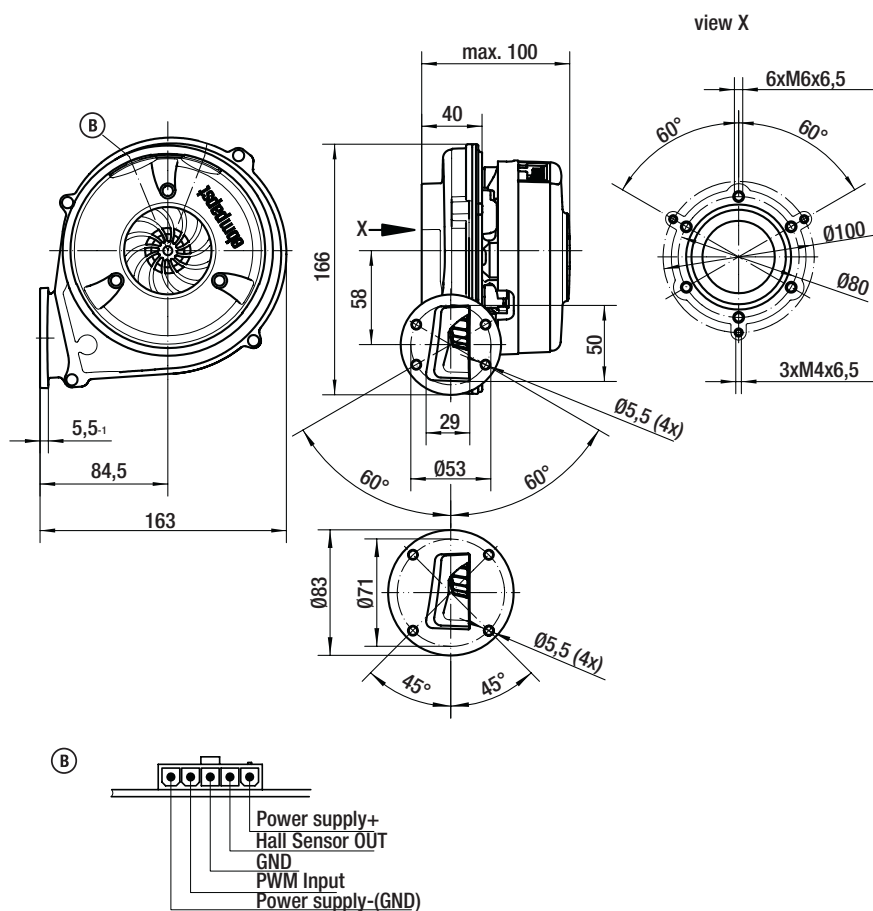
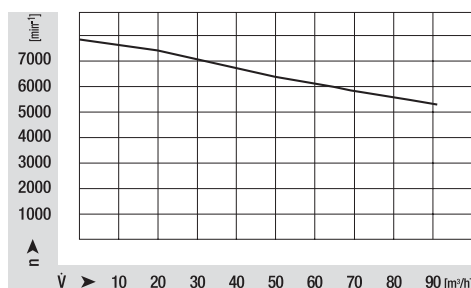
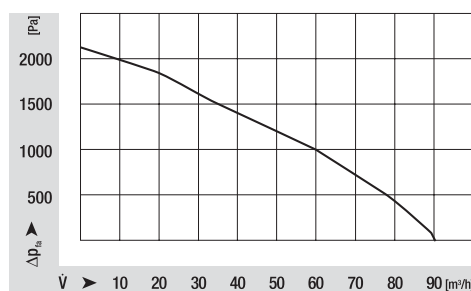
ebm-papst • Landshut



| Nominal data  | characteristic curve | rated voltage | frequency | max. air flow | max. pressure increase | max. power input | max. speed | electrical connection | mass |
|---------------|----------------------|---------------|-----------|---------------|------------------------|------------------|------------|-----------------------|------|
| type          |                      | V             | Hz        | m³/h          | Pa                     | W                | min⁻¹      |                       | kg   |
| <b>NRG118</b> |                      | 24 DC         | -         | 90            | 2150                   | 53               | 7800       | Ⓑ                     | 0,9  |

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

# 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

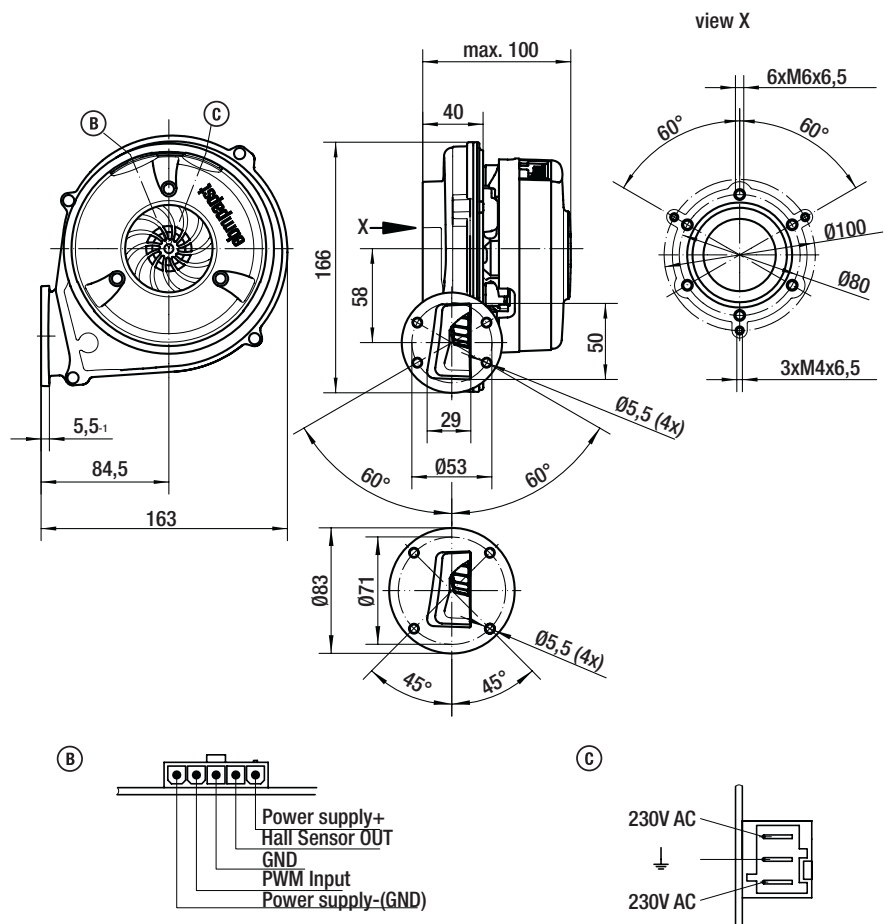
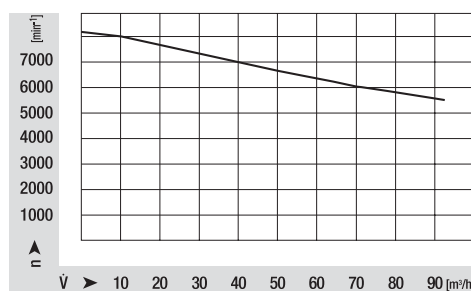
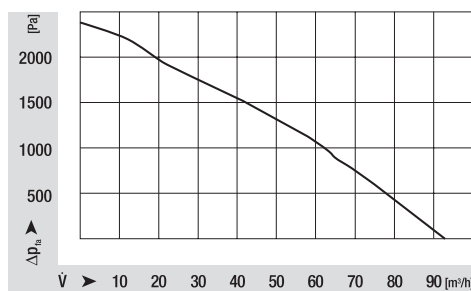
ebm-papst • Landshut

## Nominal data

| type           | V      | Hz    | m³/h | Pa   | W  | min⁻¹ | kg  |
|----------------|--------|-------|------|------|----|-------|-----|
| <b>NRG 118</b> | 230 AC | 50/60 | 90   | 2350 | 56 | 8150  | 0,9 |

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

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:

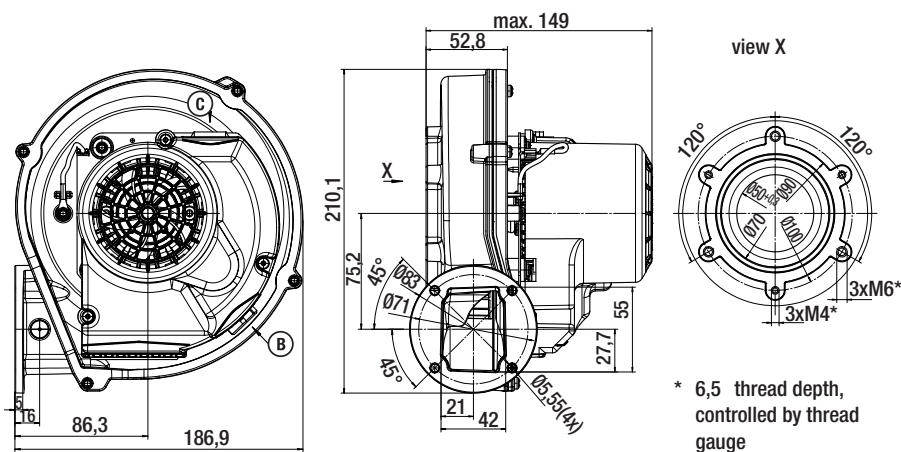
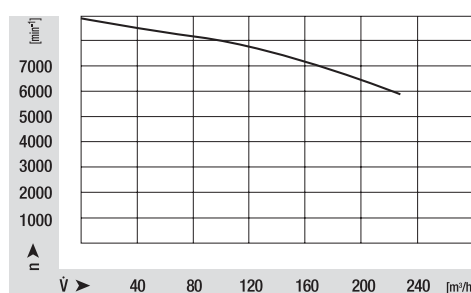
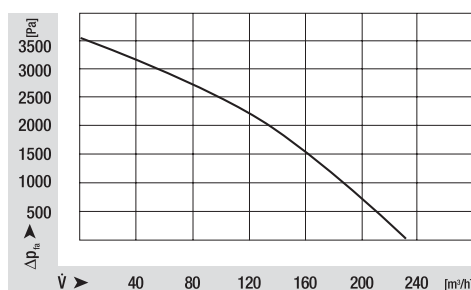
- interfaces see page 85, no. 2
- special interfaces upon request

**ebm-papst • Landshut**

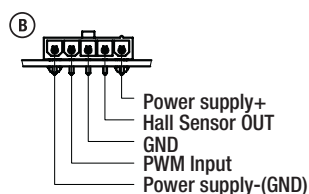
| Nominal data | characteristic curve | rated voltage | frequency | max. air flow | max. pressure increase | max. power input | max. speed        | electrical connection | mass |
|--------------|----------------------|---------------|-----------|---------------|------------------------|------------------|-------------------|-----------------------|------|
|              | type                 | V             | Hz        | m³/h          | Pa                     | W                | min <sup>-1</sup> |                       | kg   |
| NRG137       |                      | 230 AC        | 59/60Hz   | 230           | 3500                   | 190              | 9000              | Ⓑ Ⓒ                   | 1,9  |

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

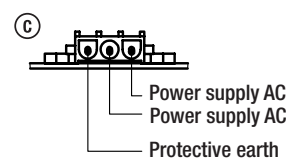
### Characteristic curves



\* 6,5 thread depth,  
controlled by thread  
gauge



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: 926882-1 (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

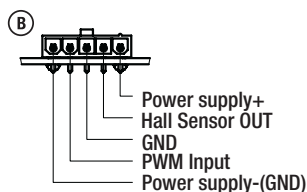
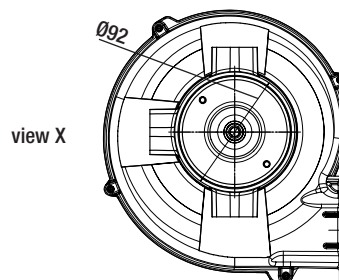
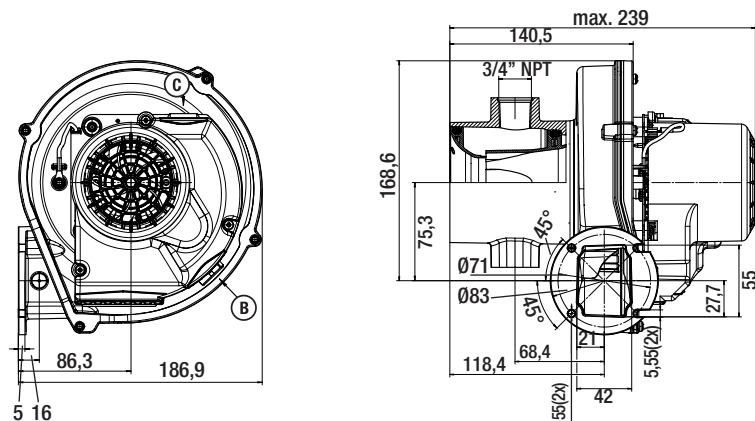
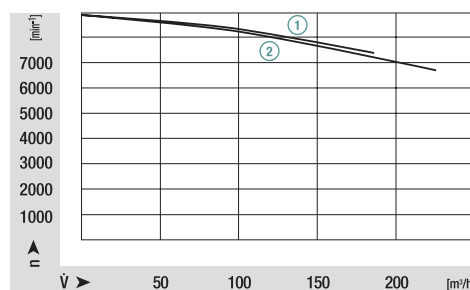
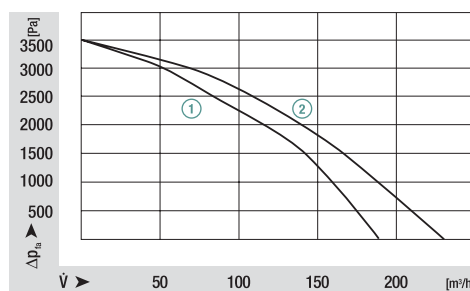
ebm-papst • Landshut

## Nominal data

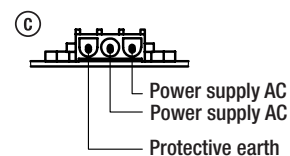
| type                      | characteristic curve | rated voltage | frequency | max. air flow     | max. pressure increase | max. power input | max. speed        | electrical connection | mass | Heat performance up to (turn down ratio of 1:6 possible with min. $\Delta P$ Venturi 50 pa) |
|---------------------------|----------------------|---------------|-----------|-------------------|------------------------|------------------|-------------------|-----------------------|------|---------------------------------------------------------------------------------------------|
|                           |                      | V             | Hz        | m <sup>3</sup> /h | Pa                     | W                | min <sup>-1</sup> |                       | kg   | kw                                                                                          |
| <b>NRG137 - Venturi 1</b> | ①                    | 230 AC        | 50/60     | 180               | 3500                   | 230              | 9000              | Ⓑ Ⓒ                   | 2,4  | 110                                                                                         |
| <b>NRG137 - Venturi 2</b> | ②                    | 230 AC        | 50/60     | 230               | 3500                   | 245              | 9000              | Ⓑ Ⓒ                   | 2,4  | 150                                                                                         |

bold print = standard type; subject to alterations

## Characteristic curves



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



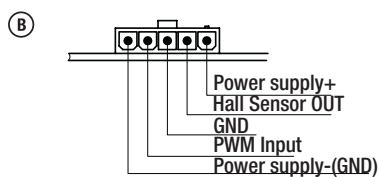
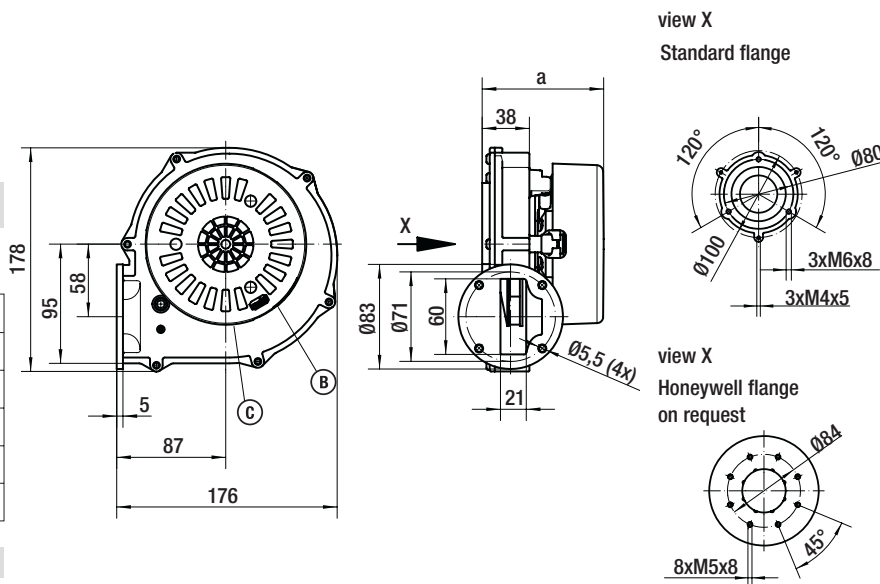
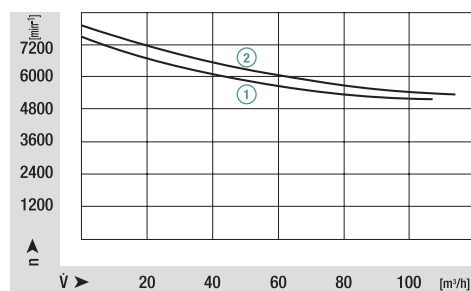
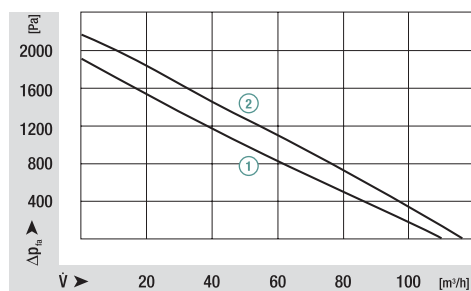
- die-cast aluminium housing
- brushless EC motor
- ball bearings
- motor anti-vibration mounted
- mounting position must be specified for corresponding support elements
- interfaces see page 85, no. 1/2

ebm-papst • Landshut

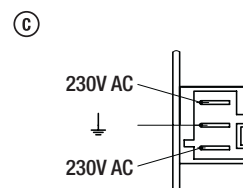
| Nominal data           | characteristic curve | rated voltage | frequency | max. air flow | max. pressure increase | max. power input | max. speed | electrical connection | mass | Dimensions mm |
|------------------------|----------------------|---------------|-----------|---------------|------------------------|------------------|------------|-----------------------|------|---------------|
| type                   |                      | V             | Hz        | m³/h          | Pa                     | W                | min⁻¹      |                       | kg   | a             |
| <b>RG130/0800-3612</b> | ①                    | 24 DC         | -         | 110           | 1900                   | 40               | 7200       | Ⓑ                     | 1,4  | 98            |
| <b>RG130/0800-3612</b> | ②                    | 230 AC        | 50        | 115           | 2200                   | 54               | 8000       | Ⓑ ③                   | 1,4  | 98            |

bold print = standard type; subject to alterations

### Characteristic curves



suitable for connector Molex Mini-Fit, Jr



suitable for connector RAST-5

# Radial blowers with EC internal-rotor motor

## RG 128



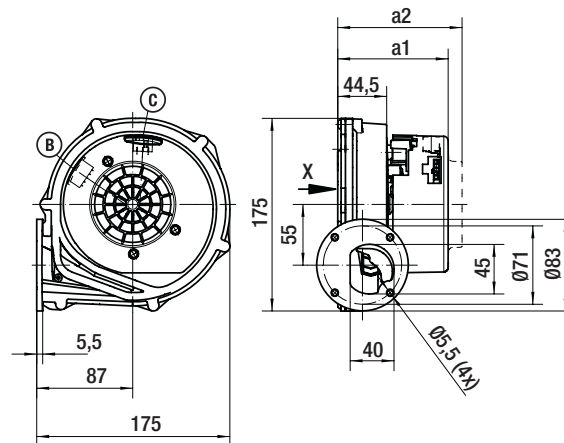
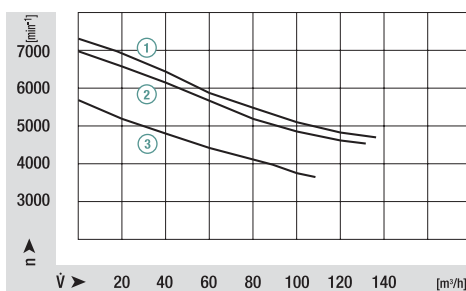
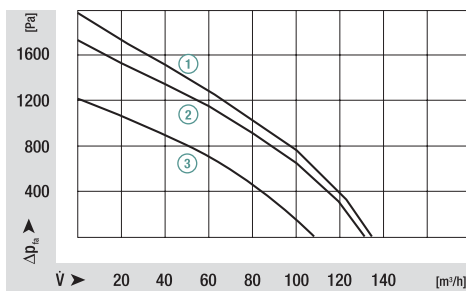
- die-cast aluminium housing
- brushless EC motor
- ball bearings
- motor anti-vibration mounted
- mounting position must be specified for corresponding support elements
- interfaces see page 85, no. 1/2

ebm-papst • Landshut

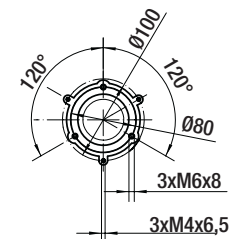
| Nominal data             | characteristic curve | rated voltage | frequency | max. air flow | max. pressure increase | max. power input | max. speed | electrical connection | mass | Dimensions mm |     |
|--------------------------|----------------------|---------------|-----------|---------------|------------------------|------------------|------------|-----------------------|------|---------------|-----|
| type                     |                      | V             | Hz        | m³/h          | Pa                     | W                | min⁻¹      |                       | kg   | a1            | a2  |
| <b>RG128/1300-3612</b>   | ①                    | 230 AC        | 50/60     | 134           | 2000                   | 67               | 7400       | Ⓑ Ⓒ                   | 1,4  | -             | 116 |
| <b>RG128/1300-3612</b>   | ②                    | 24 DC         | -         | 132           | 1700                   | 61               | 6900       | Ⓑ                     | 1,4  | -             | 116 |
| <b>RG128/1300-3612*)</b> | ③                    | 24 DC         | -         | 109           | 1200                   | 32               | 5650       | Ⓑ                     | 1,4  | 105           | -   |

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

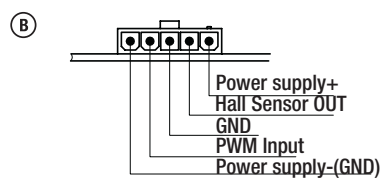
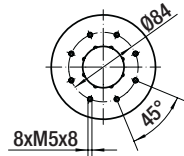
### Characteristic curves



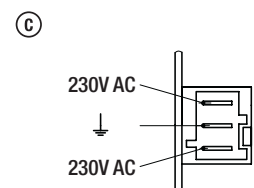
view X  
Standard flange



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 148



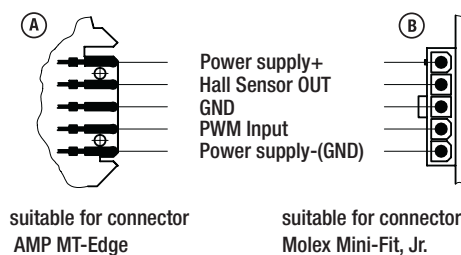
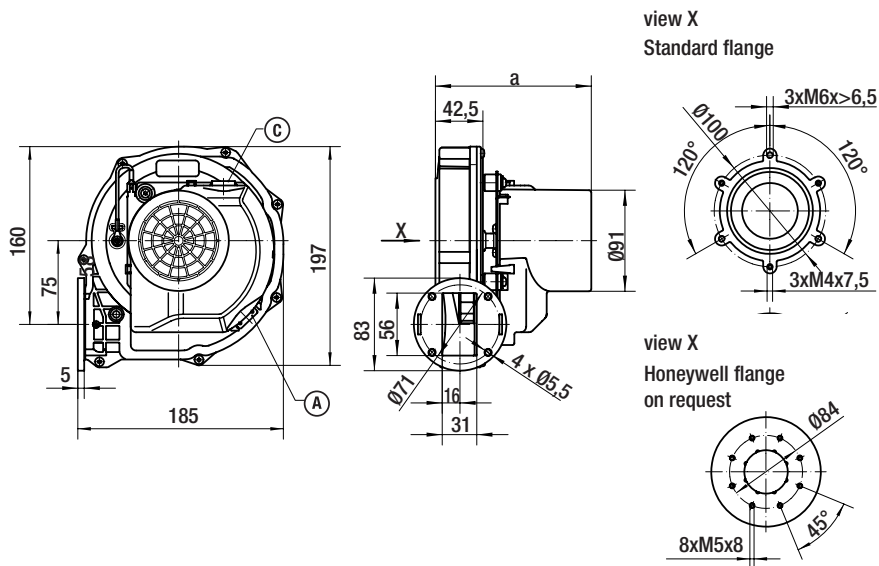
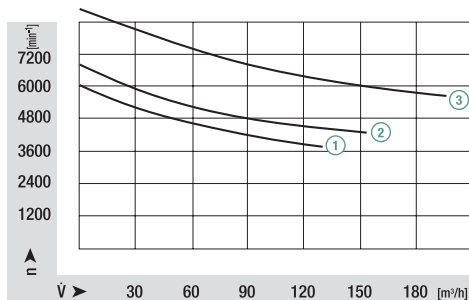
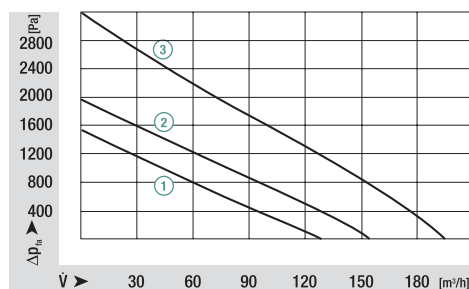
- die-cast aluminium housing
- brushless EC motor
- ball bearings
- motor anti-vibration mounted
- mounting position must be specified for corresponding support elements
- interfaces see page 85, no. 1/2

ebm-papst • Landshut

| Nominal data           | characteristic curve | rated voltage | frequency | max. air flow | max. pressure increase | max. power input | max. speed | electrical connection | mass | Dimensions mm |
|------------------------|----------------------|---------------|-----------|---------------|------------------------|------------------|------------|-----------------------|------|---------------|
| type                   |                      | V             | Hz        | m³/h          | Pa                     | W                | min⁻¹      |                       | kg   | a1            |
| <b>RG148/1200-3612</b> | ①                    | 24 DC         | -         | 130           | 1600                   | 50               | 6000       | Ⓐ                     | 1,6  | 108           |
| <b>RG148/1200-3612</b> | ②                    | 230 AC        | 50        | 150           | 2000                   | 80               | 6600       | Ⓐ Ⓒ                   | 1,6  | 121           |
| <b>RG148/1200-3633</b> | ③                    | 230 AC        | 50        | 190           | 3200                   | 135              | 8500       | Ⓐ Ⓒ                   | 1,9  | 145           |

bold print = standard type; subject to alterations

## Characteristic curves



suitable for connector  
AMP MT-Edge

suitable for connector  
Molex Mini-Fit, Jr.

suitable for connector  
AMP Universal MATE-N-LOK

# 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

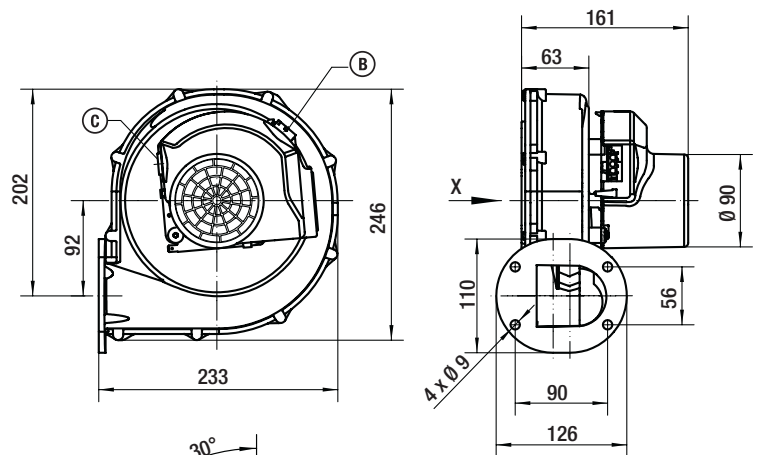
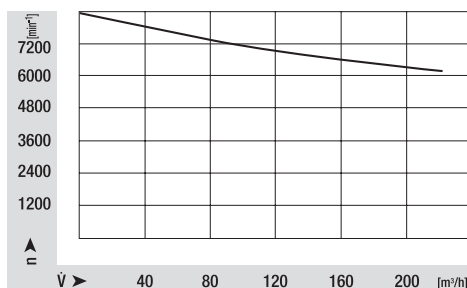
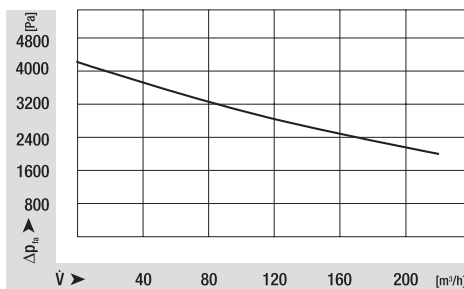
ebm-papst • Landshut

## Nominal data

| type            | rated voltage<br>V | frequency<br>Hz | max. air flow<br>m³/h | back pressure min.<br>Pa | max. pressure increase<br>Pa | max. power input<br>W | max. speed<br>min <sup>-1</sup> | electrical connection | mass<br>kg |
|-----------------|--------------------|-----------------|-----------------------|--------------------------|------------------------------|-----------------------|---------------------------------|-----------------------|------------|
| RG175/2000-3633 | 230 AC             | 50              | 216                   | 2000                     | 4200                         | 240                   | 8400                            | Ⓑ Ⓒ                   | 3,3        |

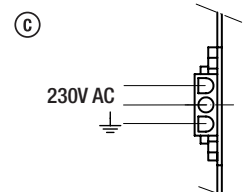
subject to alterations

## Characteristic curves



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

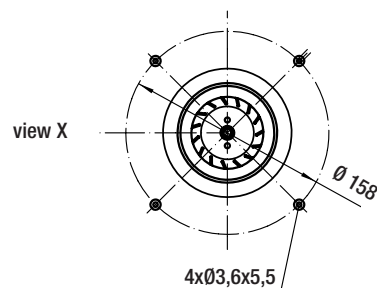
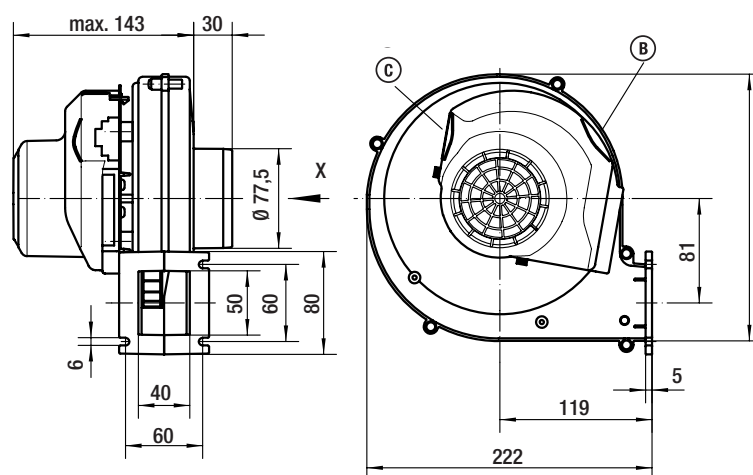
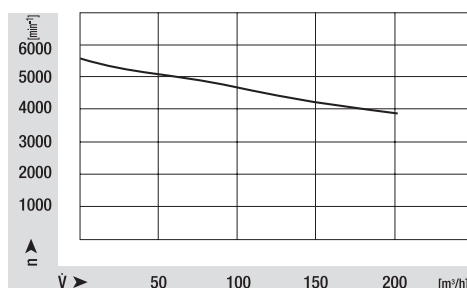
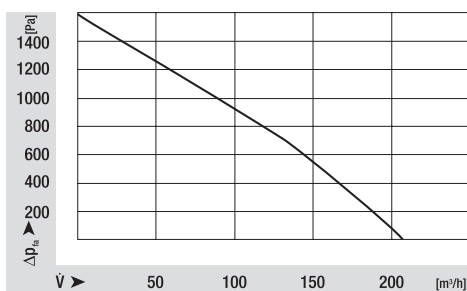
ebm-papst • Landshut

### Nominal data

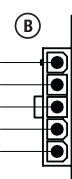
| type             | rated voltage<br>V | frequency<br>Hz | max. air flow<br>m³/h | max. pressure increase<br>Pa | max. power input<br>W | max. speed<br>min <sup>-1</sup> | electrical connection | mass<br>kg |
|------------------|--------------------|-----------------|-----------------------|------------------------------|-----------------------|---------------------------------|-----------------------|------------|
| RLS170/0013-3633 | 230 AC             | 50              | 200                   | 1600                         | 105                   | 5500                            | Ⓐ Ⓒ                   | 1,6        |

subject to alterations

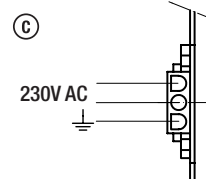
### Characteristic curves



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

## 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

ebm-papst • Landshut

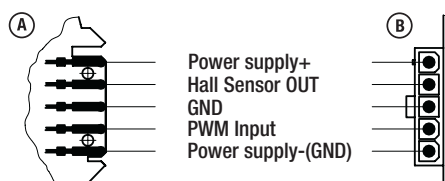
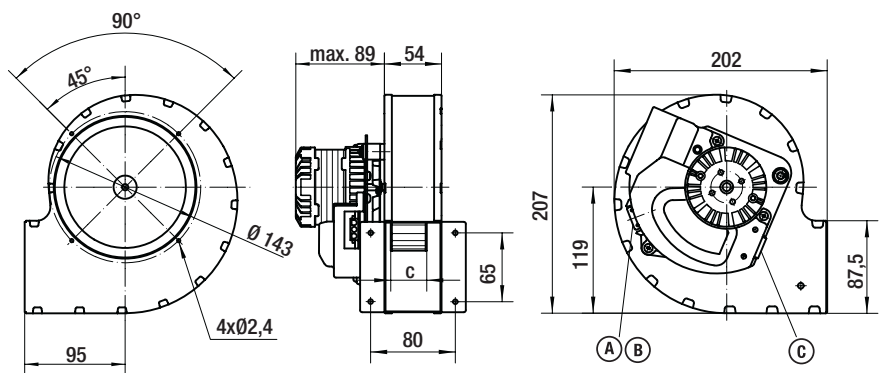
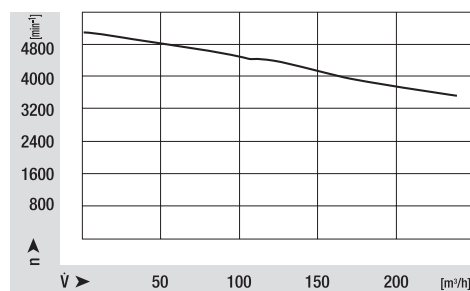
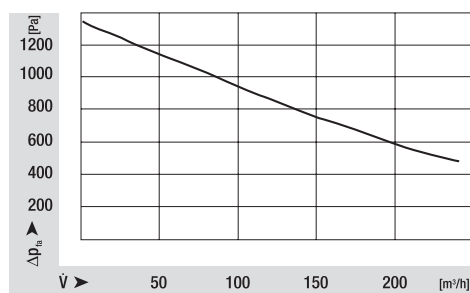
### Nominal data

| type             | rated voltage<br>V | frequency<br>Hz | max. air flow<br>m³/h | back pressure min.<br>Pa | max. pressure increase<br>Pa | max. power input<br>W | max. speed<br>min <sup>-1</sup> | electrical connection | mass<br>kg | Dimensions mm<br>c |
|------------------|--------------------|-----------------|-----------------------|--------------------------|------------------------------|-----------------------|---------------------------------|-----------------------|------------|--------------------|
| RLB120/0034-3633 | 230 AC             | 50              | 240                   | 500                      | 1350                         | 120                   | 5400                            | Ⓐ Ⓒ                   | 2,1        | 34                 |

subject to alterations

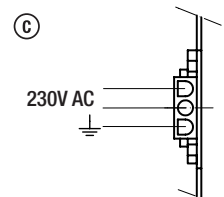
### Characteristic curves

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



suitable for connector  
AMP MT-Edge

suitable for connector  
Molex Mini-Fit, Jr.



suitable for connector  
AMP Universal MATE-N-LOK

# Additional electronics for EC motor BG20..., BG36..

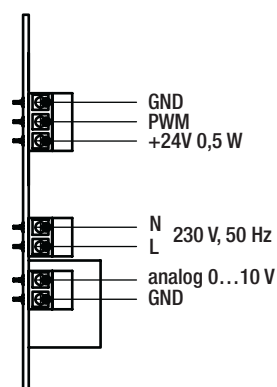
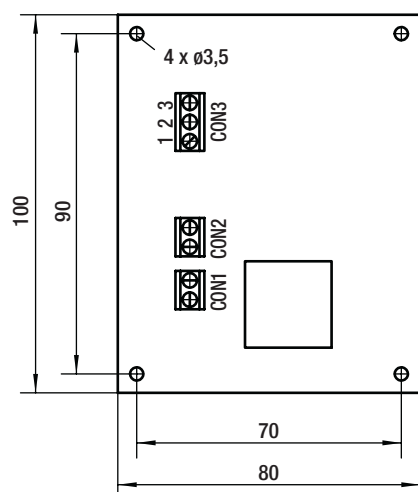
only for blowers listed on pages 64 to 74

Speed variation for EC motors BG20 and BG36 is usually realized via digital PWM-signal. Two additional electronics are available:

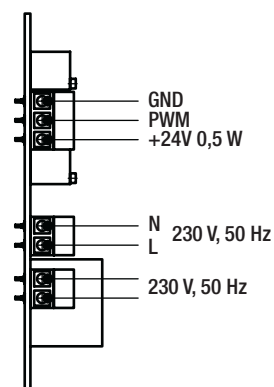
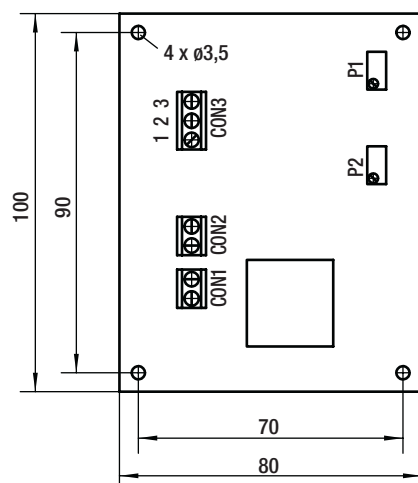
1. To convert an analog voltage signal of 0-10 V into the required PWM signal
2. To activate two speeds, preset with potentiometers, via control input

ebm-papst • Landshut

## 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

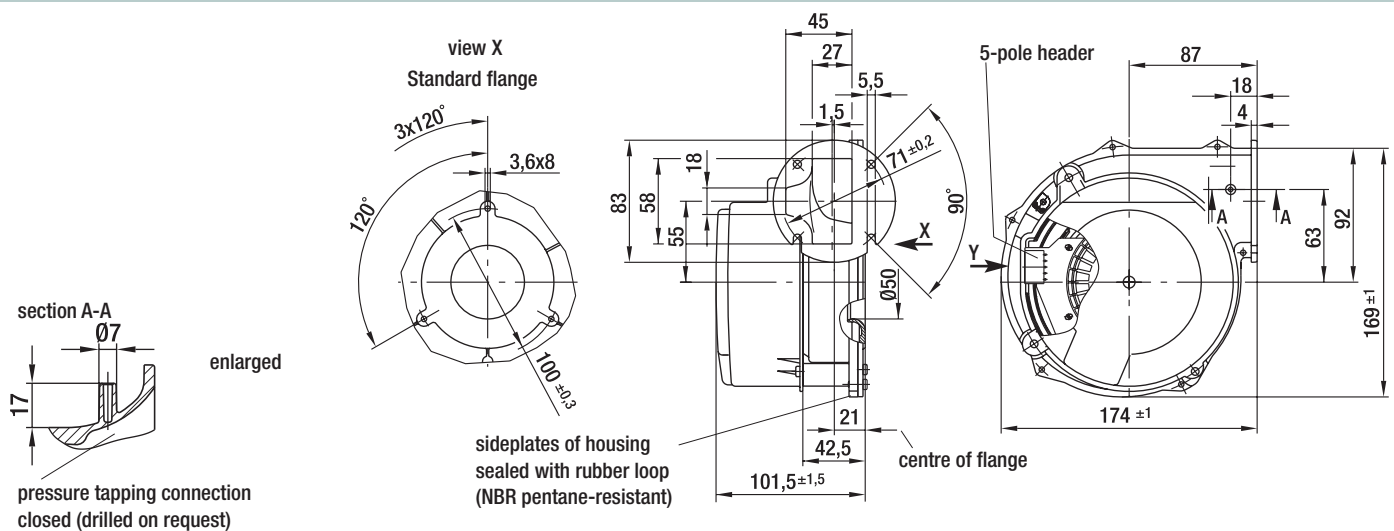
## premix

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

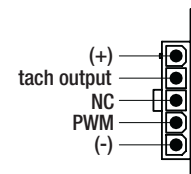
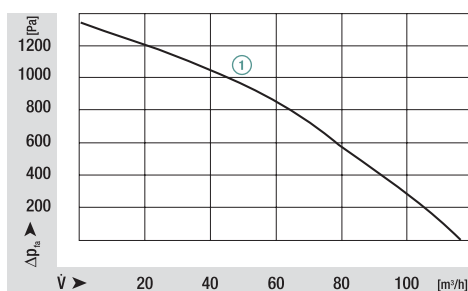
ebm-papst • Muldingen

| Nominal data                         | characteristic curve | voltage | voltage range | air volume | power input | speed | current draw | perm. temp. of medium | perm. amb. motor temp. | mass |
|--------------------------------------|----------------------|---------|---------------|------------|-------------|-------|--------------|-----------------------|------------------------|------|
| type                                 |                      | VDC     | VDC           | m³/h       | W           | min⁻¹ | A            | °C                    | °C                     | kg   |
| G1G 126 -AC13 -50 (Standard flange)  | ①                    | 24      | 16-28         | 115        | 50          | 4450  | 2,35         | 80                    | 70                     | 1,4  |
| G1G 126 -AC13 -51 (Honeywell flange) | ①                    | 24      | 16-28         | 110        | 50          | 4450  | 2,35         | 80                    | 70                     | 1,4  |

subject to alterations



## Characteristic curves



## 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.

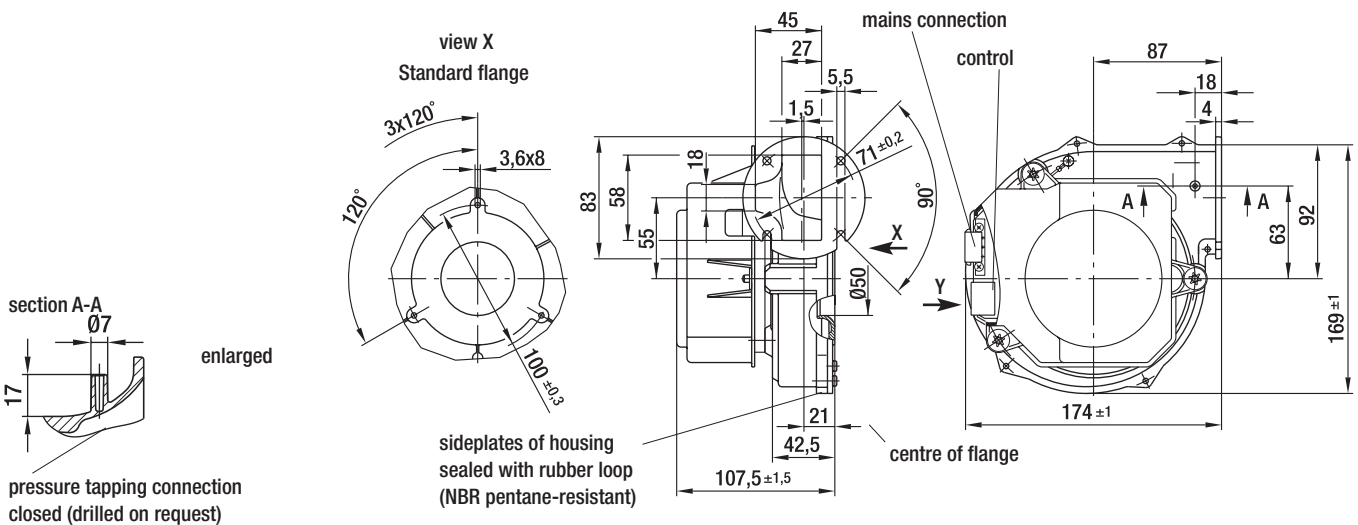
ebm-papst • Muldingen



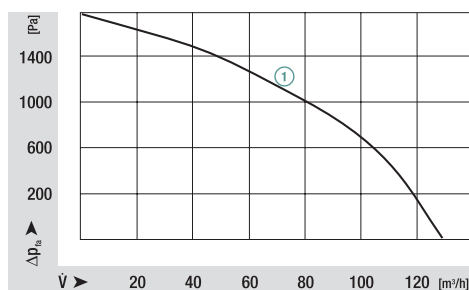
## Nominal data

| type                                 |   | VAC | Hz    | m³/h | W  | min⁻¹ | A    | °C | °C | kg  |
|--------------------------------------|---|-----|-------|------|----|-------|------|----|----|-----|
| G1G 126 -AA45 -71 (Standard flange)  | ① | 115 | 50/60 | 130  | 75 | 5100  | 1,10 | 80 | 70 | 1,4 |
| G1G 126 -AA49 -71 (Standard flange)  | ① | 230 | 50/60 | 125  | 75 | 5000  | 0,55 | 80 | 70 | 1,4 |
| G1G 126 -AA45 -74 (Honeywell flange) | ① | 115 | 50/60 | 120  | 78 | 5050  | 1,10 | 80 | 70 | 1,4 |
| G1G 126 -AA49 -74 (Honeywell flange) | ① | 230 | 50/60 | 120  | 75 | 5000  | 0,61 | 80 | 70 | 1,4 |

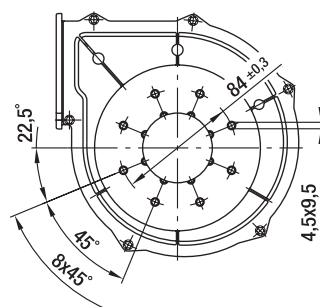
subject to alterations



## Characteristic curves



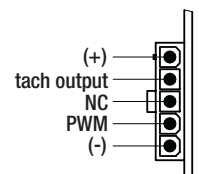
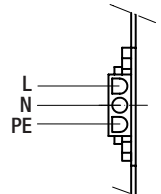
view X  
Honeywell Flange



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

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

G1G144 – 24 VDC



## material

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

## interface

- see page 86, interface no. 3

## premix

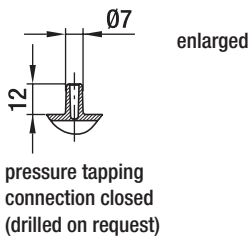
- If gas needs to be premixed in the blower, then a special blower will have to be used. For further details, please contact us.

ebm-papst • Mulmingen

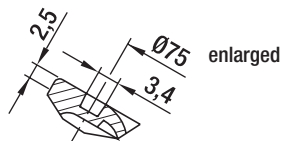
| Nominal data                     | voltage | voltage range | air volume | power input | speed             | current draw | perm. temp. of medium <sup>(1)</sup> | perm. amb. motor temp. | mass | dimensions mm |
|----------------------------------|---------|---------------|------------|-------------|-------------------|--------------|--------------------------------------|------------------------|------|---------------|
| type                             | VDC     | VDC           | m³/h       | W           | min <sup>-1</sup> | A            | °C                                   | °C                     | kg   | a             |
| G1G 144 -AE13 -50                | 24      | 16-28         | 175        | 51          | 4300              | 2,50         | 80                                   | 70                     | 1,5  | 111,5±1,5     |
| G1G 144 -AE13 -70 <sup>(2)</sup> | 24      | 16-28         | 175        | 51          | 4300              | 2,50         | 80                                   | 70                     | 1,5  | 118,5±1,5     |

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

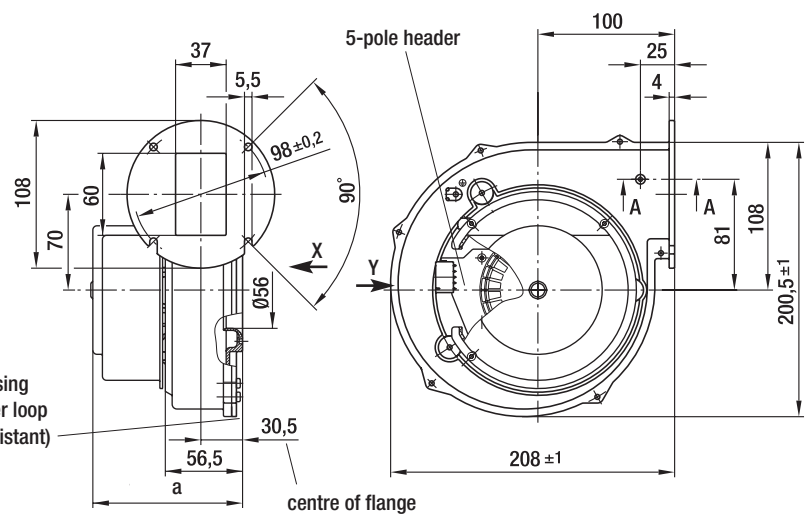
## section A-A



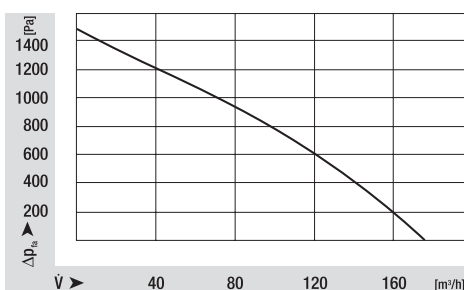
## section B-B



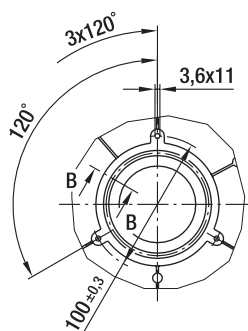
sideplates of housing  
sealed with rubber loop  
(NBR pentane-resistant)



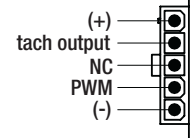
## Characteristic curves



## 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

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.

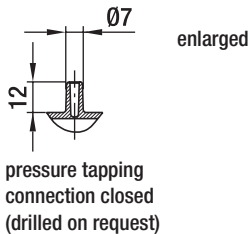
ebm-papst • Mulmingen



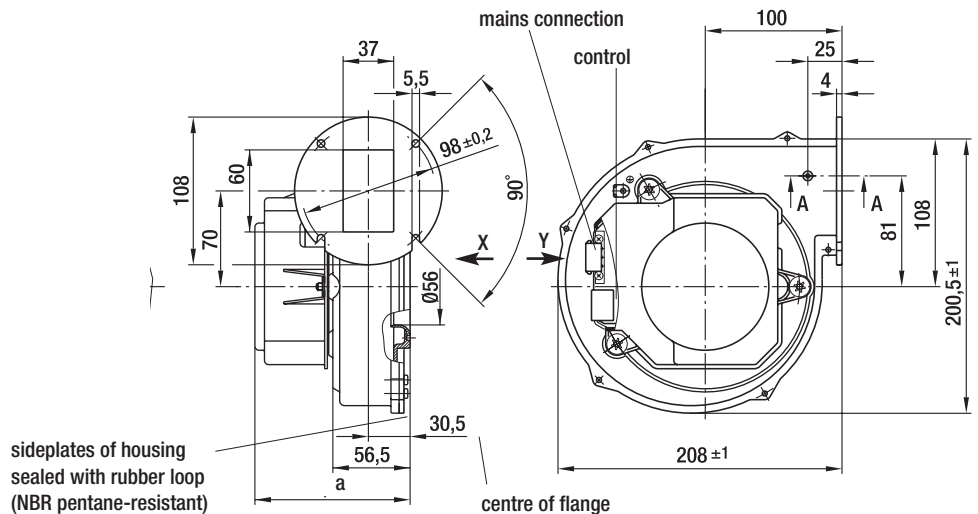
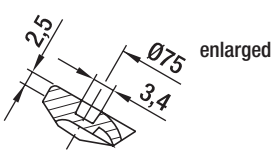
| Nominal data                     | characteristic curve | voltage | frequency | air volume | back pressure min. | power input | speed             | current draw | perm. temp. of medium <sup>(1)</sup> | perm. amb. motor temp. | mass | dimensions mm |
|----------------------------------|----------------------|---------|-----------|------------|--------------------|-------------|-------------------|--------------|--------------------------------------|------------------------|------|---------------|
| type                             |                      | VAC     | Hz        | m³/h       | Pa                 | W           | min <sup>-1</sup> | A            | °C                                   | °C                     | kg   | a             |
| G1G 144 -AF45 -01                | ①                    | 115     | 50/60     | 205        | 0                  | 83          | 4900              | 1,00         | 80                                   | 70                     | 1,6  | 113,5±1,5     |
| G1G 144 -AF49 -01                | ①                    | 230     | 50/60     | 193        | 0                  | 75          | 4800              | 0,50         | 80                                   | 70                     | 1,6  | 113,5±1,5     |
| G1G 144 -AF49 -70 <sup>(2)</sup> | ①                    | 230     | 50/60     | 193        | 0                  | 75          | 4800              | 0,50         | 80                                   | 70                     | 1,6  | 122,5±1,5     |
| G1G 144 -AF25 -01                | ②                    | 230     | 50/60     | 170        | 600                | 94          | 5400              | 0,67         | 80                                   | 70                     | 1,6  | 113,5±1,5     |

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

## section A-A



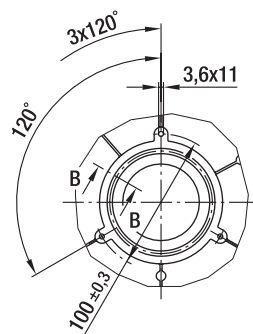
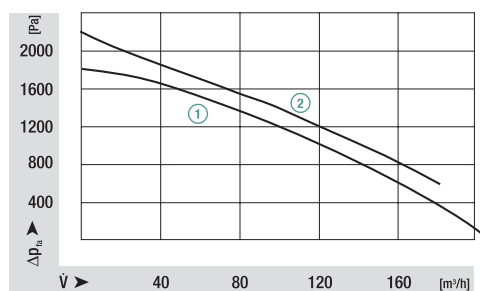
## section B-B



view X

view Y

## Characteristic curves

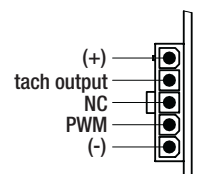
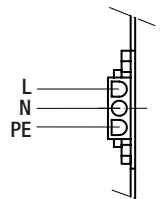


## mains connection

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



## 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.

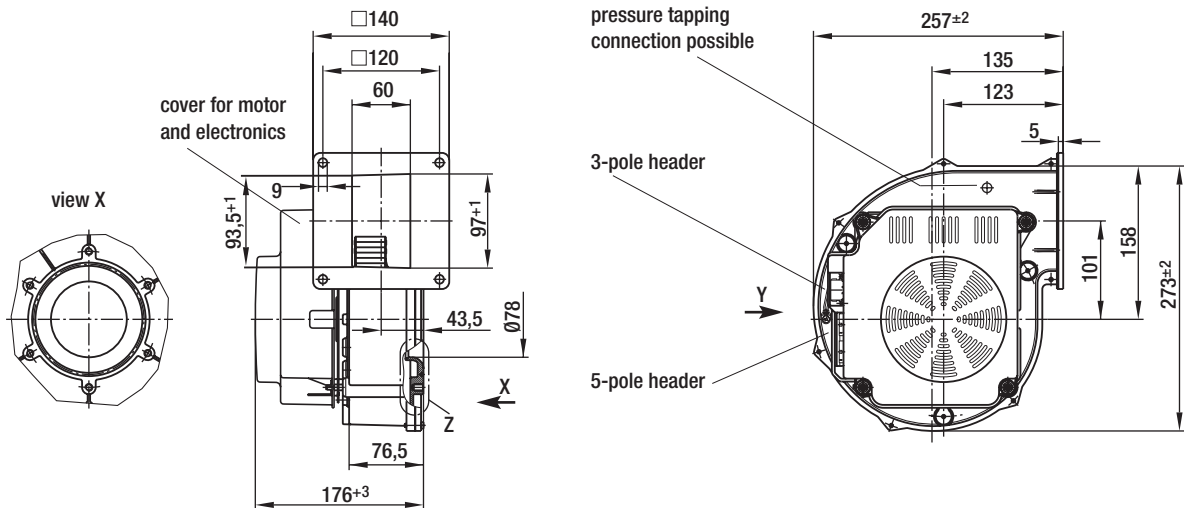
## approvals

- UL and CSA, VDE

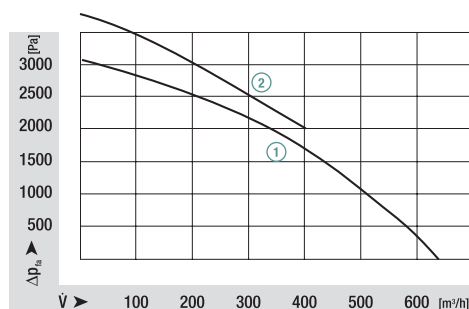
ebm-papst • Mulmingen

| Nominal data                     | characteristic curve | voltage | frequency | air volume | back pressure min. | power input | speed | current draw | perm. temp. of medium | perm. amb. motor temp. | mass |
|----------------------------------|----------------------|---------|-----------|------------|--------------------|-------------|-------|--------------|-----------------------|------------------------|------|
| type                             |                      | VAC     | Hz        | m³/h       | Pa                 | W           | min⁻¹ | A            | °C                    | °C                     | kg   |
| G1G 170 -AB05 -20                | ①                    | 115     | 50/60     | 645        | 0                  | 345         | 5730  | 4,0          | 80                    | 55                     | 4,8  |
| G1G 170 -AB53 -01                | ①                    | 230     | 50/60     | 645        | 0                  | 360         | 5830  | 2,2          | 80                    | 55                     | 4,8  |
| G1G 170 -AB53 -03 <sup>(1)</sup> | ①                    | 230     | 50/60     | 645        | 0                  | 360         | 5830  | 2,2          | 80                    | 55                     | 4,8  |
| G1G 170 -AB31 -51                | ②                    | 230     | 50/60     | 380        | 2000               | 410         | 6530  | 1,8          | 80                    | 55                     | 4,8  |
| G1G 170 -AB31 -53 <sup>(1)</sup> | ②                    | 230     | 50/60     | 380        | 2000               | 410         | 6530  | 1,8          | 80                    | 55                     | 4,8  |

<sup>(1)</sup>L&S interface; subject to alterations



## Characteristic curves



detail Z

enlarged

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

### control

5-pole header

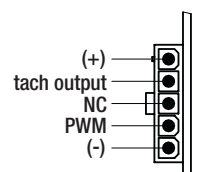
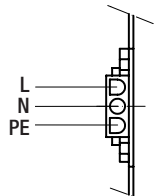
### mating connector

(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

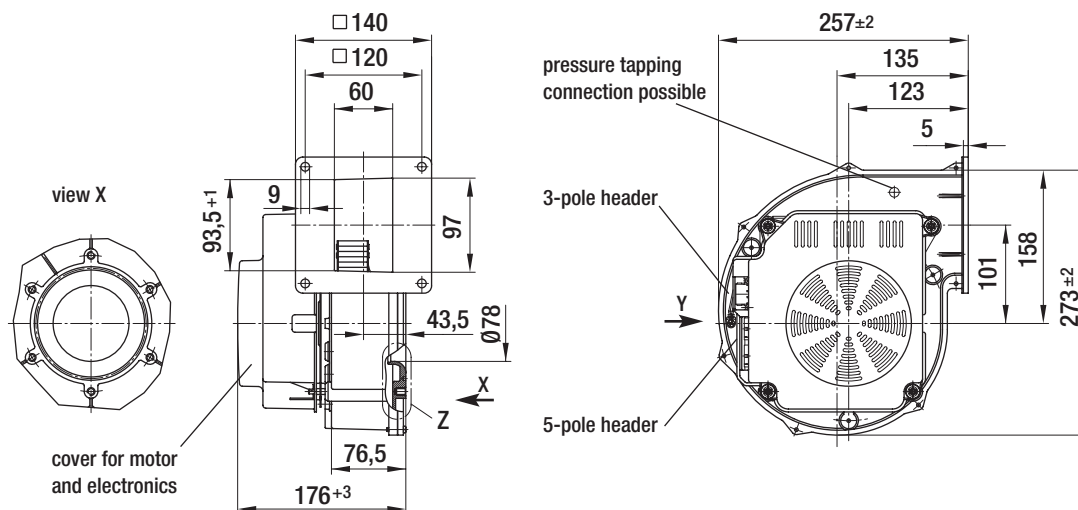
## premix

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

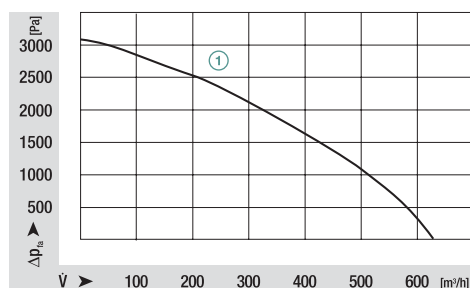
ebm-papst • Mulfingen

| Nominal data      | characteristic curve | voltage | frequency | air volume | back pressure min. | power input | speed | current draw | perm. temp. of medium | perm. amb. motor temp. | mass |
|-------------------|----------------------|---------|-----------|------------|--------------------|-------------|-------|--------------|-----------------------|------------------------|------|
| type              |                      | VAC     | Hz        | m³/h       | Pa                 | W           | min⁻¹ | A            | °C                    | °C                     | kg   |
| G1G 170 -AB05 -81 | ①                    | 115     | 50/60     | 645        | 0                  | 345         | 5730  | 4,0          | 80                    | 55                     | 4,8  |
| G1G 170 -AB53 -80 | ①                    | 230     | 50/60     | 645        | 0                  | 360         | 5830  | 2,2          | 80                    | 55                     | 4,8  |

subject to alterations

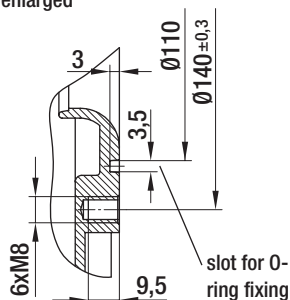


## Kennlinien



detail Z

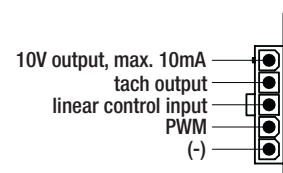
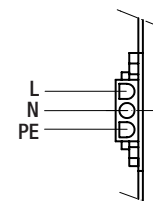
enlarged



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

**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

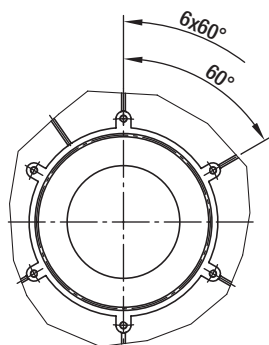
- 115 VAC: UL

ebm-papst • Muldingen

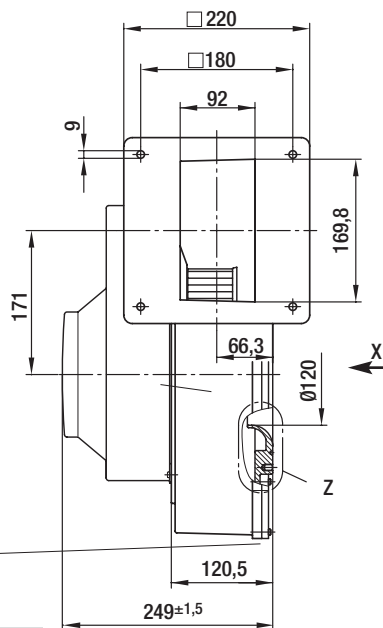
| Nominal data      | characteristic curve | voltage range | frequency | air volume | max. power input* | speed* | max. current draw* | perm. temp. of medium | perm. amb. motor temp. | mass |
|-------------------|----------------------|---------------|-----------|------------|-------------------|--------|--------------------|-----------------------|------------------------|------|
| type              |                      | VDC           | Hz        | m³/h       | W                 | min⁻¹  | A                  | °C                    | °C                     | kg   |
| G3G 250 -GN39 -01 | ②                    | 100-130       | 50/60     | 1650       | 1200              | 4800   | 13,0               | 60                    | 60                     | 12,8 |
| G3G 250 -GN44 -01 | ①                    | 208-240       | 50/60     | 1500       | 860               | 4500   | 4,8                | 60                    | 60                     | 12,8 |
| G3G 250 -GN17 -01 | ②                    | 208-240       | 50/60     | 1650       | 1150              | 4800   | 5,7                | 60                    | 60                     | 12,8 |

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

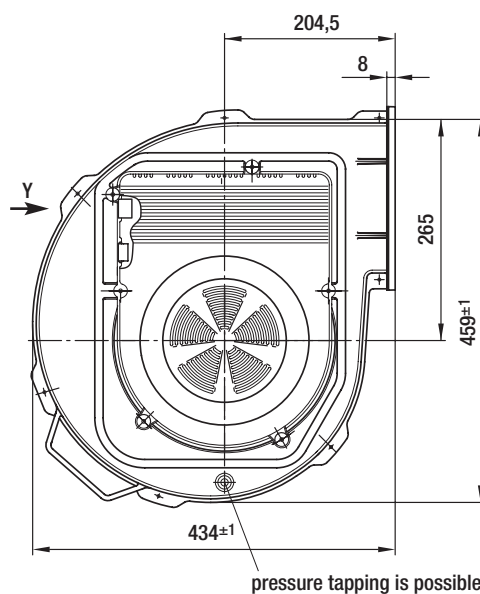
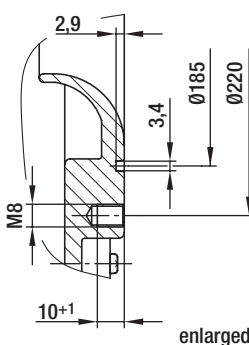
view X



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



detail Z



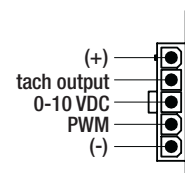
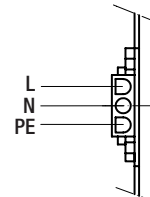
view Y

## mains connection

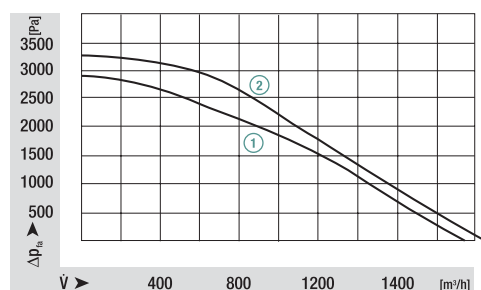
3-pole header  
mating connector  
(not part of delivery):  
tyco no. 350 766-1  
female terminal:  
tyco no. 926 884-1

## control

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



## Characteristic curves



# 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.

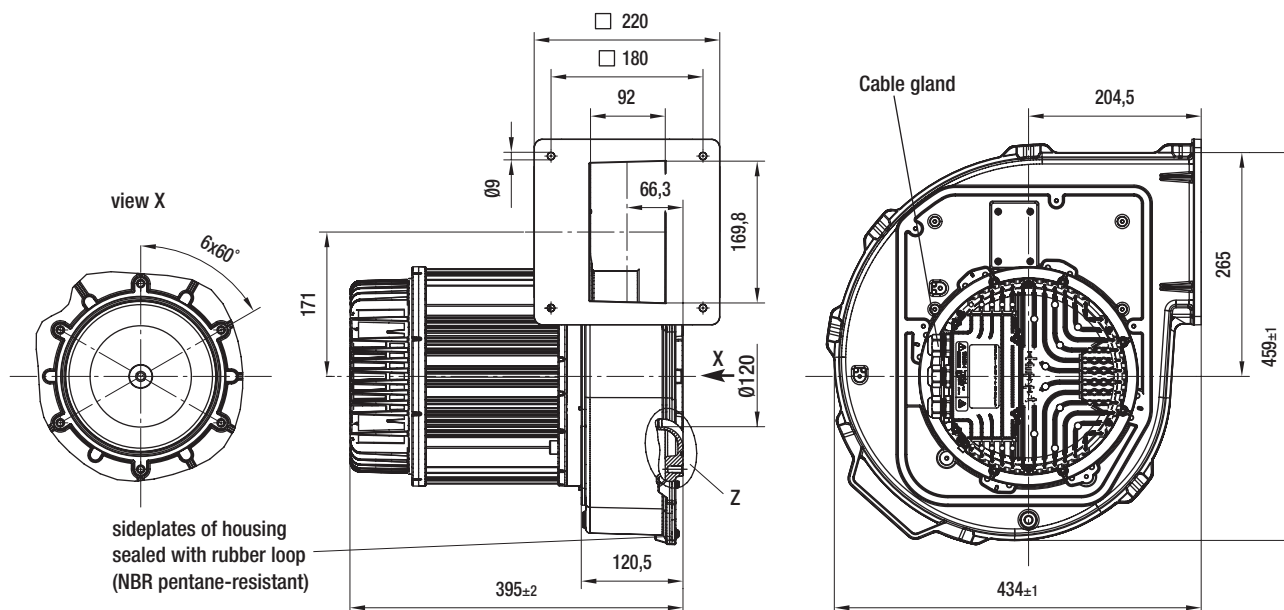
## approvals

- VDE, UL, CSA, GOST are applied for

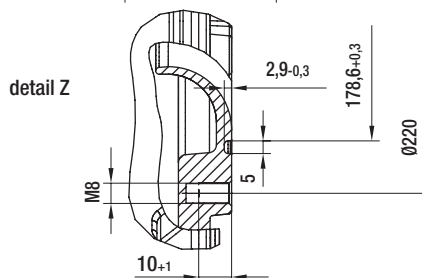
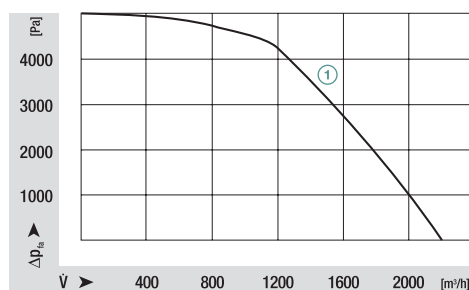
**ebm-papst • Muldingen**

| Nominal data      | characteristic curve | voltage range | frequency | air volume | max. power input* | speed*            | max. current draw | perm. temp. of medium | perm. amb. motor temp. | mass |
|-------------------|----------------------|---------------|-----------|------------|-------------------|-------------------|-------------------|-----------------------|------------------------|------|
| type              |                      | VAC           | Hz        | m³/h       | kW                | min <sup>-1</sup> | A                 | °C                    | °C                     | kg   |
| G3G 250 -MW50 -01 | ①                    | 3~ 380-480    | 50/60     | 2200       | 2,5               | 6400              | 4,0               | 50                    | 50                     | 22,3 |

subject to alterations; Nominal data established at 400 VAC



## Characteristic curves

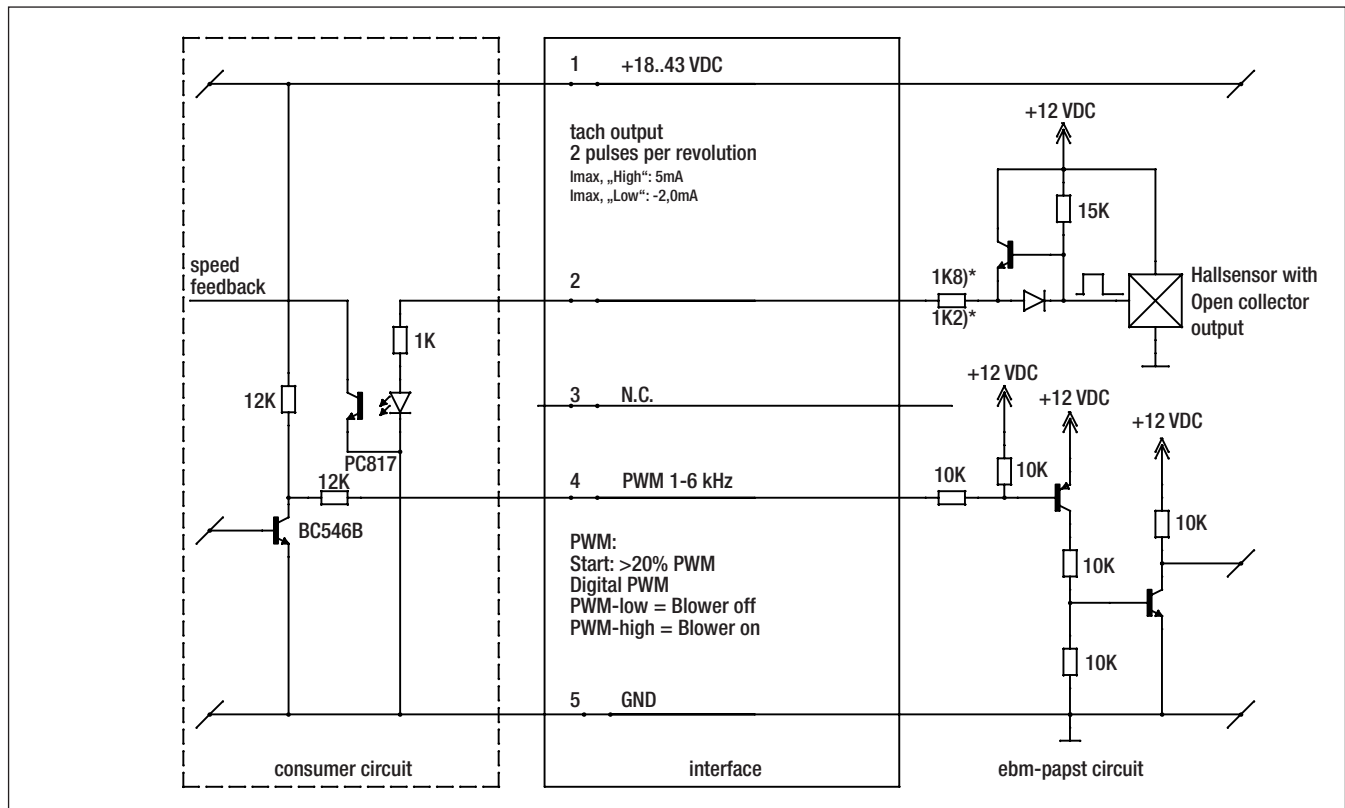


# Interfaces

for blowers with EC internal-rotor motor BG3612/3633

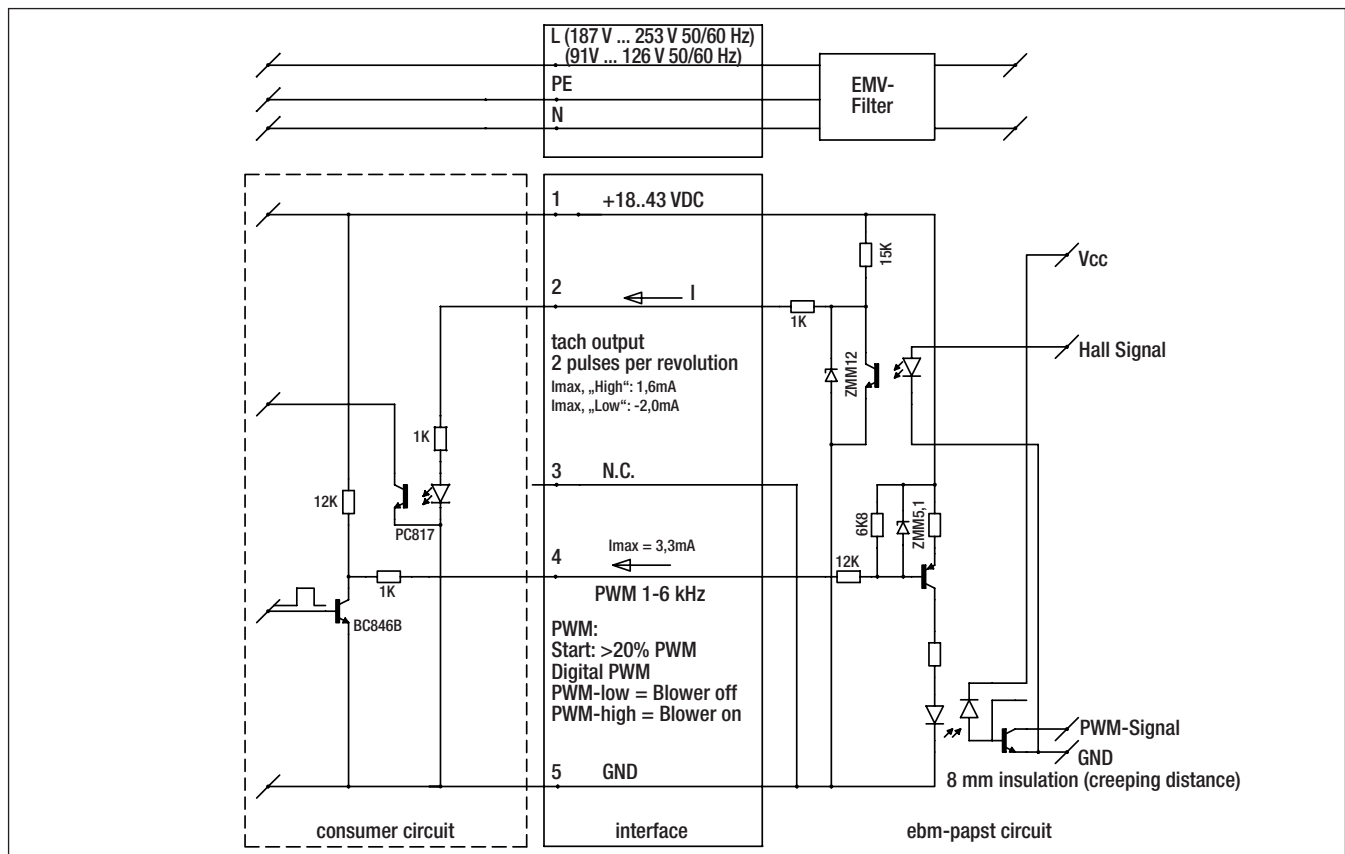
## standard interface 1

24 VDC control



## standard interface 2

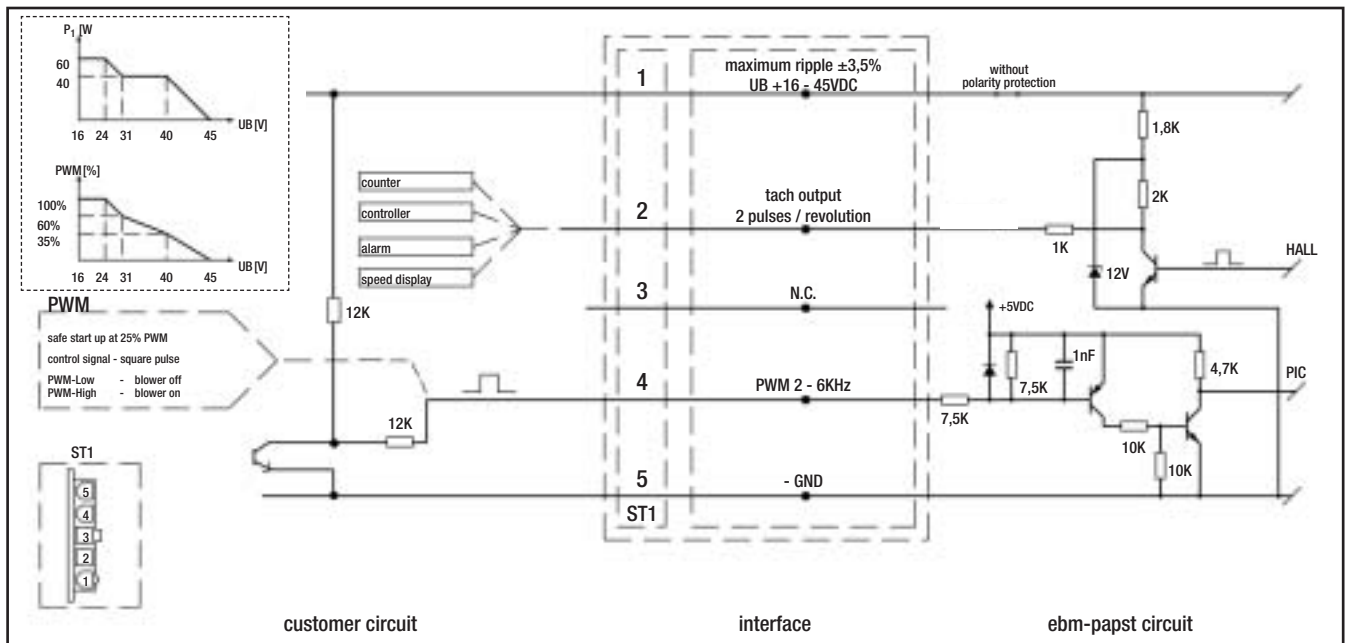
230 VAC, 50/60 Hz 120 VAC, 50/60 Hz control



# Interfaces for blowers with EC external-rotor motor

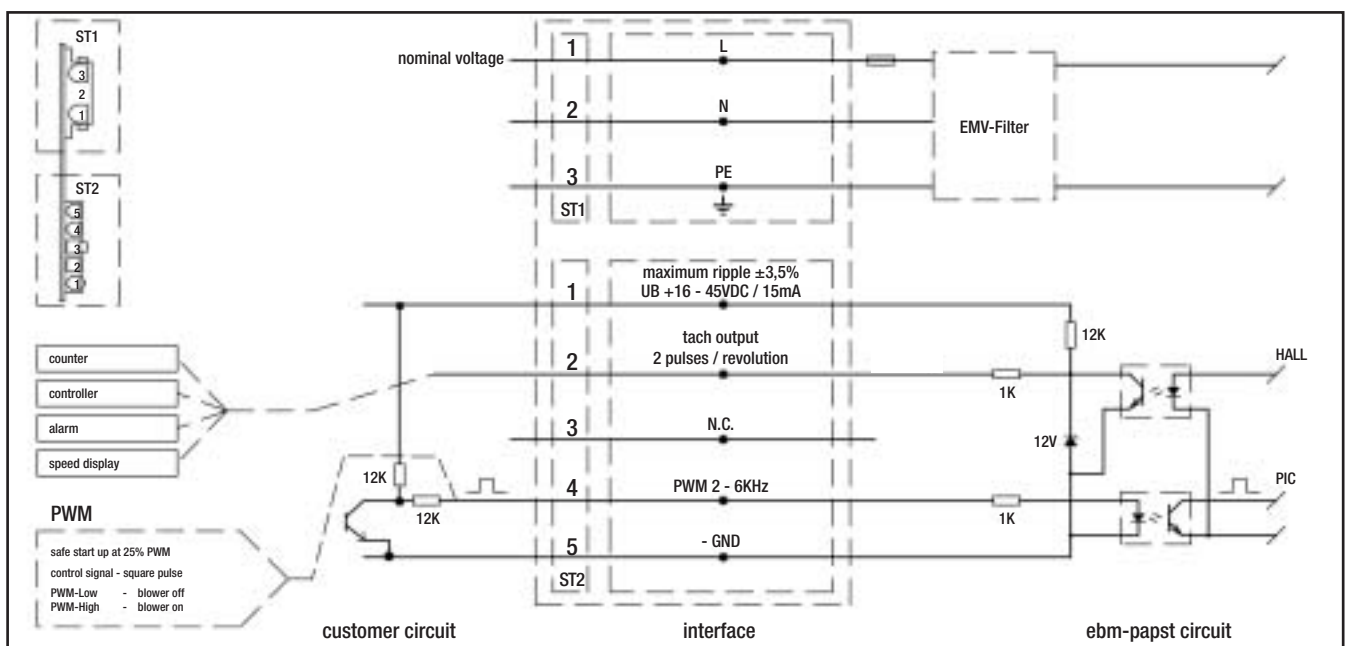
## standard interface 3

24 VDC



## standard interface 4

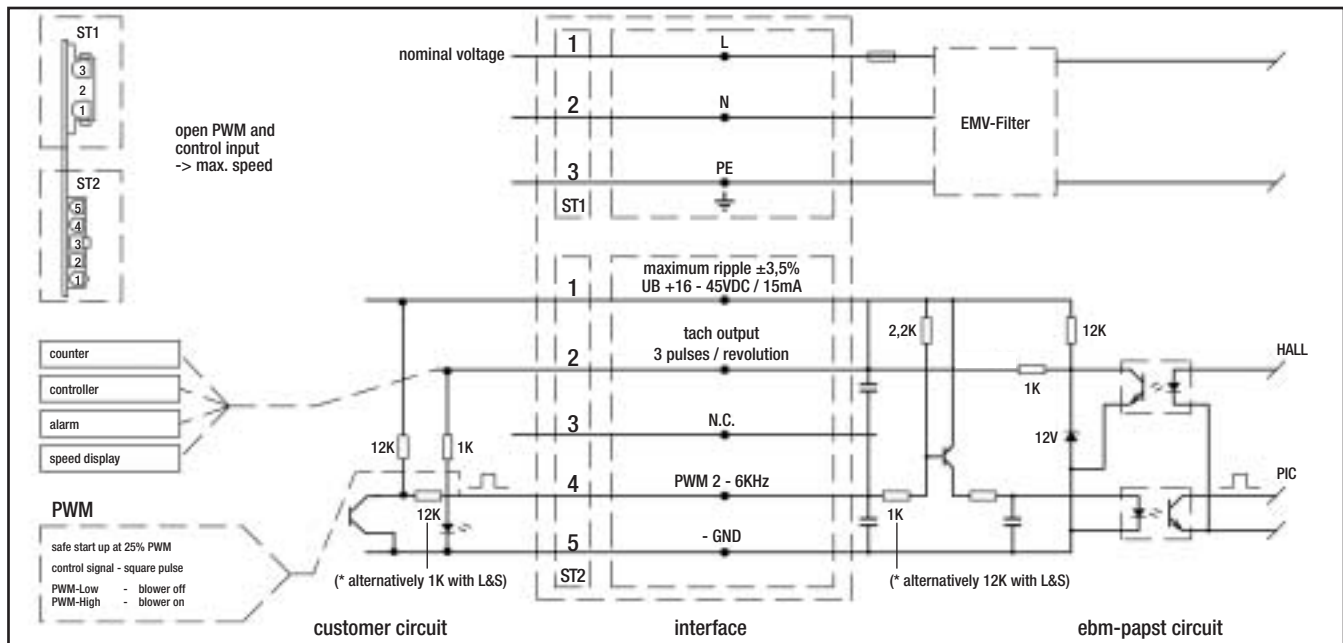
115/230 VAC



# Interfaces for blowers with EC external-rotor motor

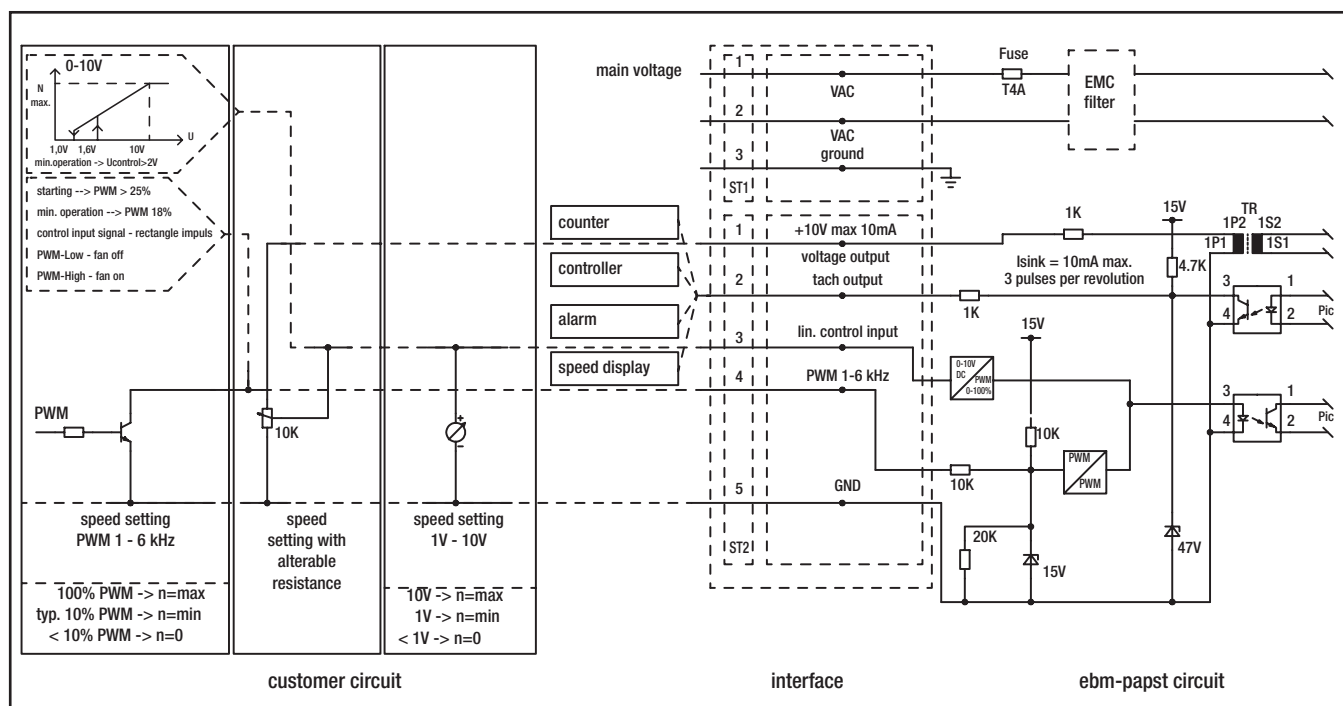
## standard interface 5

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



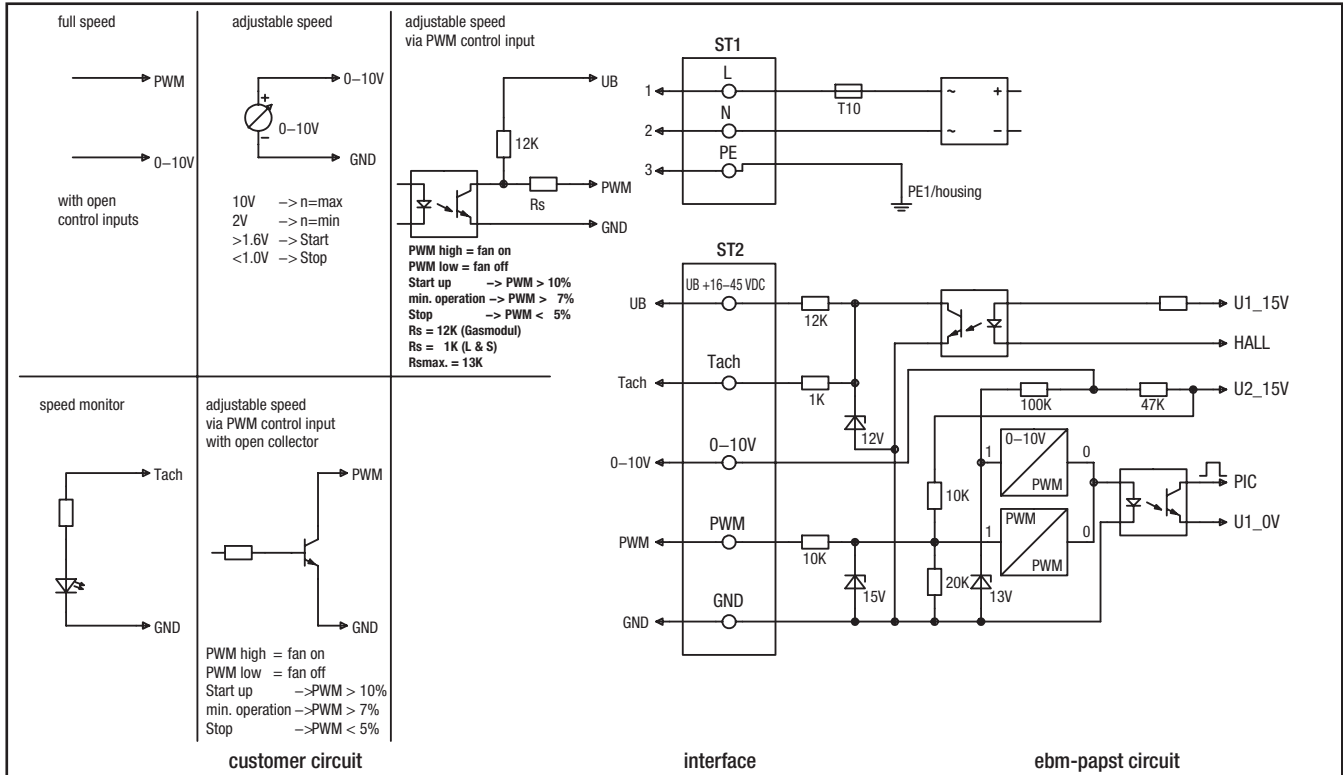
## standard interface 6

115/230 VAC



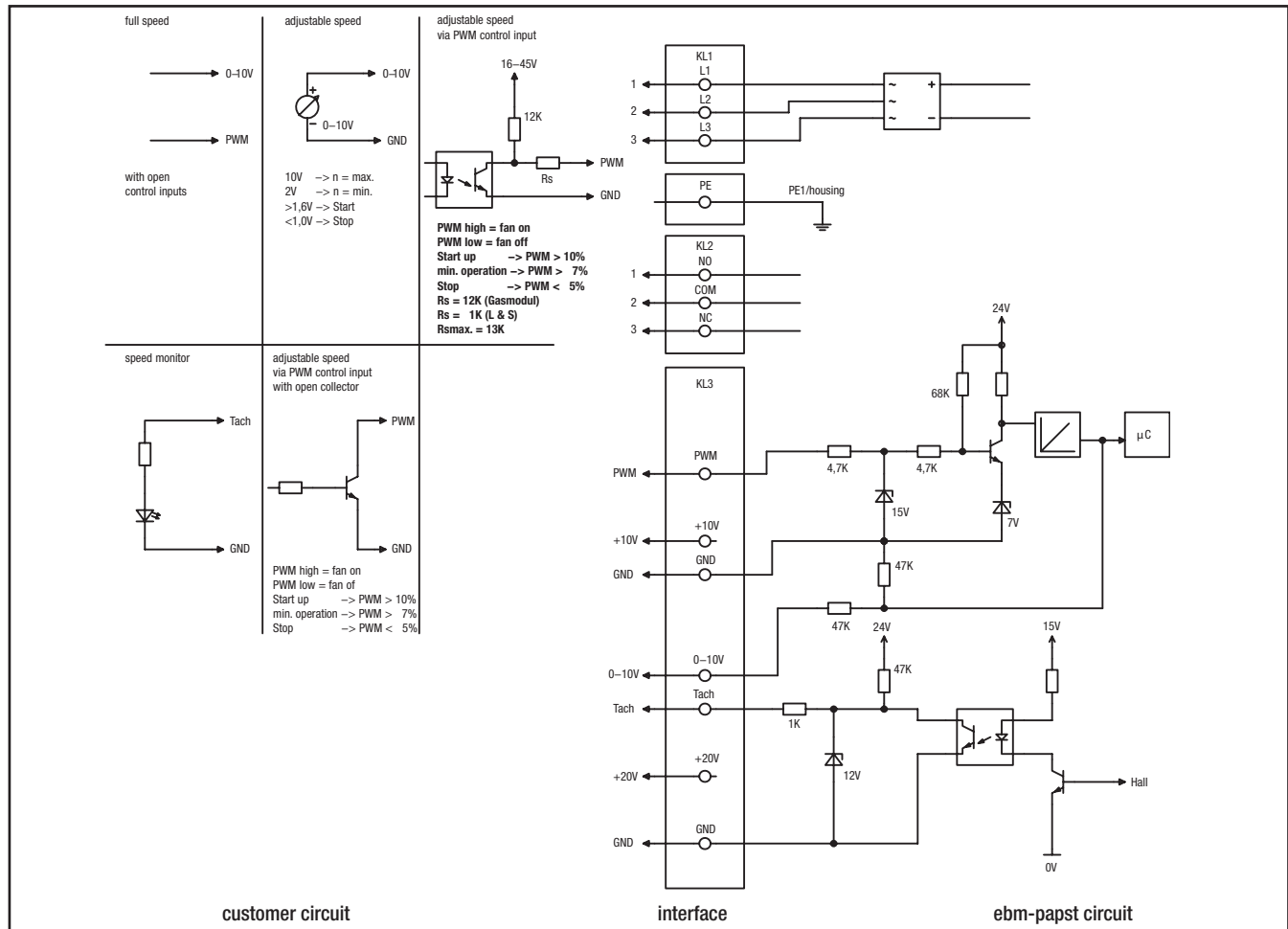
## standard interface 7

115/230 VAC

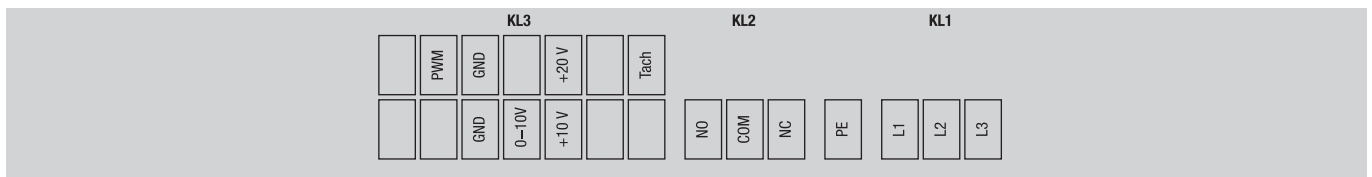


## standard interface 8

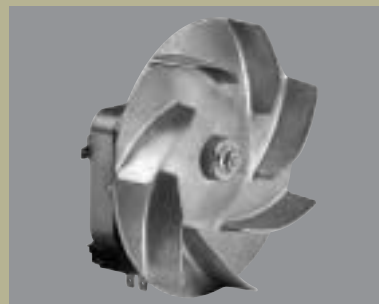
400 VAC



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



| Connector | Connection | Assignment / function                  | Connector | Connection | Assignment / function                                                                               |
|-----------|------------|----------------------------------------|-----------|------------|-----------------------------------------------------------------------------------------------------|
| KL1       | L1         | Mains; L1                              | KL3       | PWM        | PWM set value; specified set value PWM; 16-45 V high level; 1-10 KHz                                |
|           | L2         | Mains; L2                              |           | GND        | GND                                                                                                 |
|           | L3         | Mains; L3                              |           | GND        | GND                                                                                                 |
| PE        | PE         | Protective earth                       |           | 0-10V      | Analogue set value input, 0-10 V (impedance 100 kΩ), only to be used as alternative to terminal PWM |
| KL2       | NO         | Alarm relay, make for failure          |           | +20 V      | Supply for external sensor, 20 VDC (+/- 20%) max. 50 mA                                             |
|           | COM        | Alarm relay, COMMON (2A, 250 VAC, AC1) |           | +10 V      | Supply for external potentiometer, 10 VDC (+/- 10%) max. 10 mA                                      |
|           | NC         | Alarm relay, break for failure         |           | Tach       | Speed monitor output; 12 VDC (+/- 10%) max. 10 mA; impedance 1 kΩ; 5 pulses/rotation                |



# Hot air blowers

|                                                                               |    |
|-------------------------------------------------------------------------------|----|
| Description                                                                   | 92 |
| RRL series EM30 motor, impeller diameter 120 to 160 mm                        | 93 |
| R2A series EM42 motor, impeller diameter 152 mm                               | 95 |
| R2K series EM42 motor „unit bearing“, ball bearings, impeller diameter 152 mm | 96 |
| RR series EM30 motor, with bayonet-type mounting bracket                      | 96 |
| R2E, R2D series, with external-rotor motor                                    | 97 |



# 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).

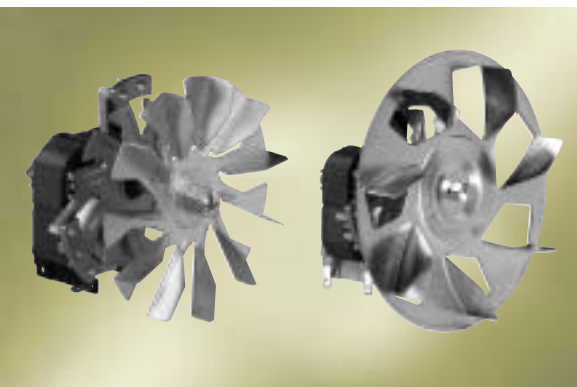
Depending on the measures taken for thermal insulation between motor and impeller and the impeller material, circulation temperatures of up to approx. 250° C, temporarily even up to 500° C (e.g. for pyrolytic self-cleaning processes in ovens) can be managed.

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



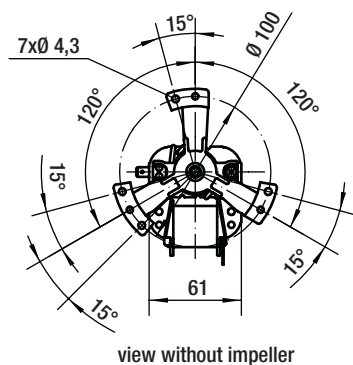
- sintered sleeve bearings with additional lubricant depot for bearing temperature up to max. 120 °C
- mounting position: horizontal shaft
- insulation class H (EN 60335)
- impeller: FAL sheet steel

ebm-papst • Landshut

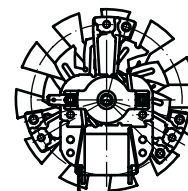
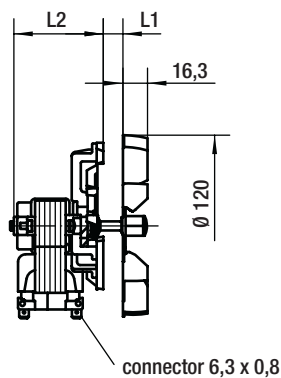
| Nominal data  | rated voltage | frequency | air flow | max. pressure increase | power input | speed             | mass | recommended air intake | Dimensions mm |    |
|---------------|---------------|-----------|----------|------------------------|-------------|-------------------|------|------------------------|---------------|----|
| type          | V             | Hz        | m³/h     | Pa                     | W           | min <sup>-1</sup> | kg   | Ø                      | L1            | L2 |
| RRL120-3020LH | 230           | 50        | 100      | 100                    | 29          | 2000              | 0,75 | 100                    | 13            | 62 |
| RRL140-3020LH | 230           | 50        | 170      | 140                    | 38          | 1700              | 0,8  | 120                    | 12            | 60 |

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

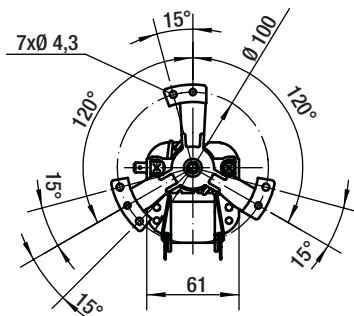
## RRL 120



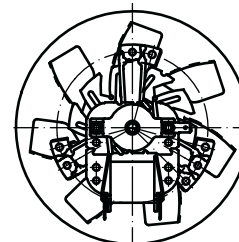
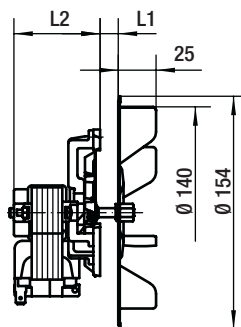
view without impeller



## RRL 140

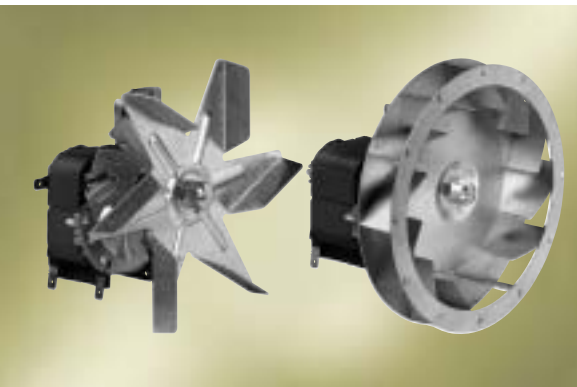


view without impeller



# Hot air blowers

RRL 152, RRL 160



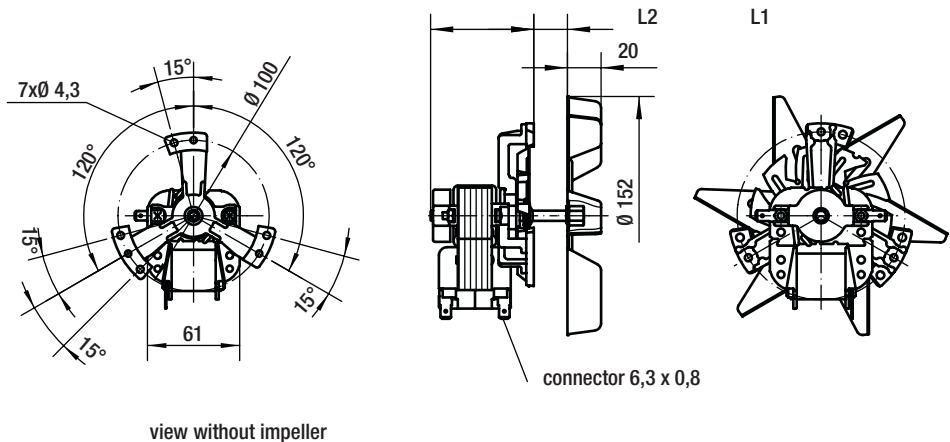
- bearing: RRL 152 ball bearings  
RRL 160 sintered sleeve bearings with additional lubricant depot
- mounting position: RRL 152 all mounting positions possible  
RRL 160 horizontal shaft
- impeller: RRL 152 FAL sheet steel  
RRL 160 galvanized sheet steel
- insulation class: H (EN 60335)

ebm-papst • Landshut

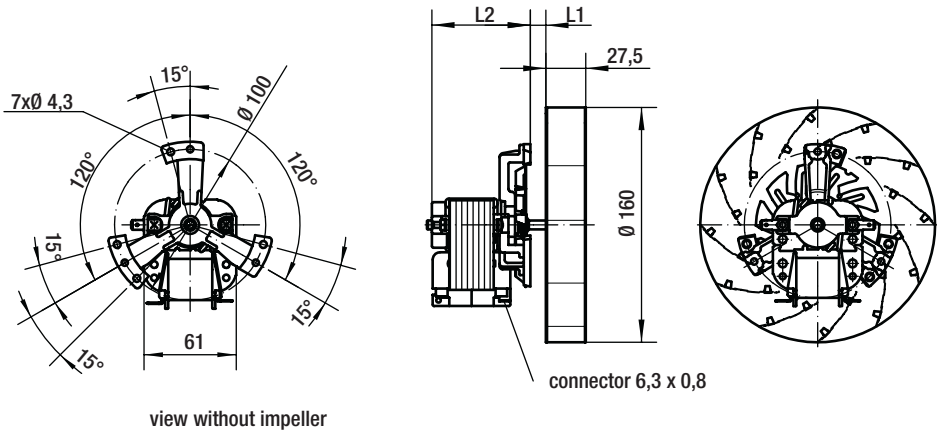
| Nominal data         | rated voltage | frequency | air flow | max. pressure increase | power input | speed             | mass | recommended air intake | Dimensions mm |    |
|----------------------|---------------|-----------|----------|------------------------|-------------|-------------------|------|------------------------|---------------|----|
| type                 | V             | Hz        | m³/h     | Pa                     | W           | min <sup>-1</sup> | kg   | Ø                      | L1            | L2 |
| <b>RRL152-3030LH</b> | 230           | 50        | 200      | 150                    | 45          | 2200              | 1    | 120                    | 30            | 71 |
| RRL160-3038LH        | 230           | 50        | 210      | 200                    | 37          | 1600              | 1,4  | 120                    | 26            | 79 |

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

## RRL 152

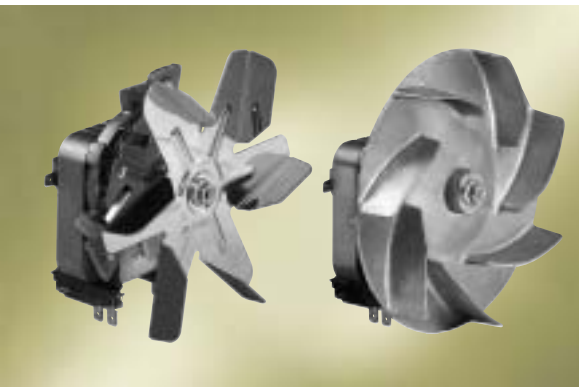


## RRL 160



# Hot air blowers

R2A150AC, R2A150AA

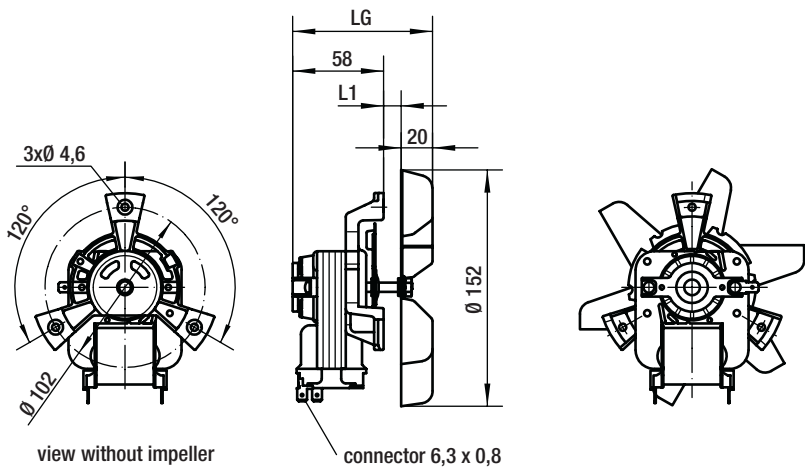


- bearing: sintered sleeve bearings with additional lubricant depot
- mounting position: horizontal shaft
- impeller: R2A150AC stainless steel  
R2A150AA die-cast aluminium
- insulation class: H (EN 60335)

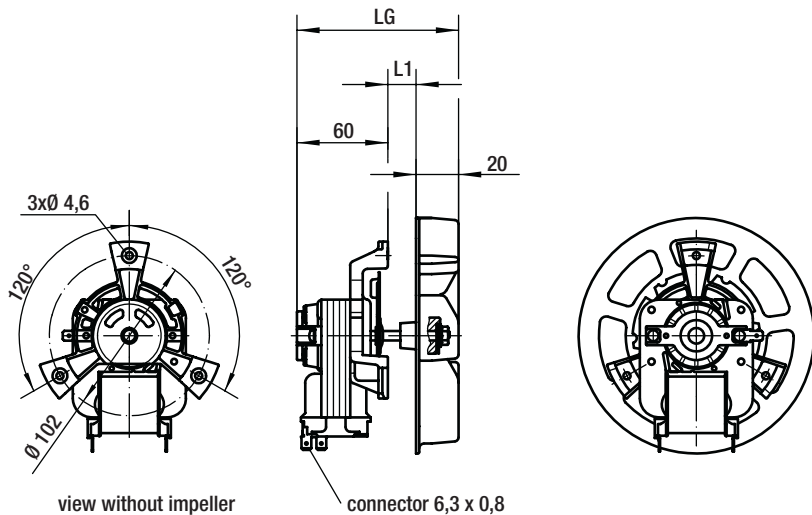
| Nominal data | rated voltage | frequency | air flow | max. pressure increase | power input | speed             | mass | recommended air intake | Dimensions mm |       |
|--------------|---------------|-----------|----------|------------------------|-------------|-------------------|------|------------------------|---------------|-------|
| type         | V             | Hz        | m³/h     | Pa                     | W           | min <sup>-1</sup> | kg   | Ø                      | L1            | LG    |
| R2A150-AC    | 230           | 50        | 170      | 140                    | 32          | 1800              | 1    | 120                    | 21            | 98    |
| R2A150-AA    | 230           | 50        | 190      | 180                    | 30          | 2000              | 1,1  | 120                    | 18,4          | 102,5 |

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

## R2A150AC

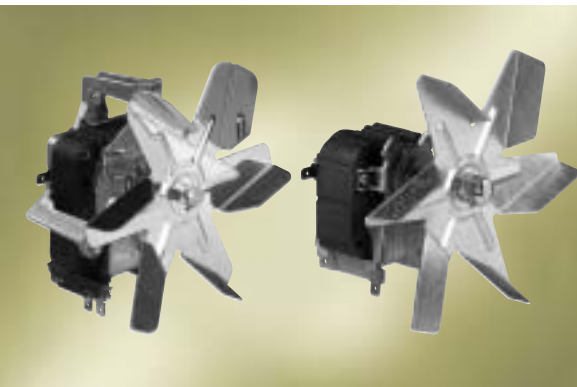


## R2A150AA



# Hot air blowers

R2K, RR



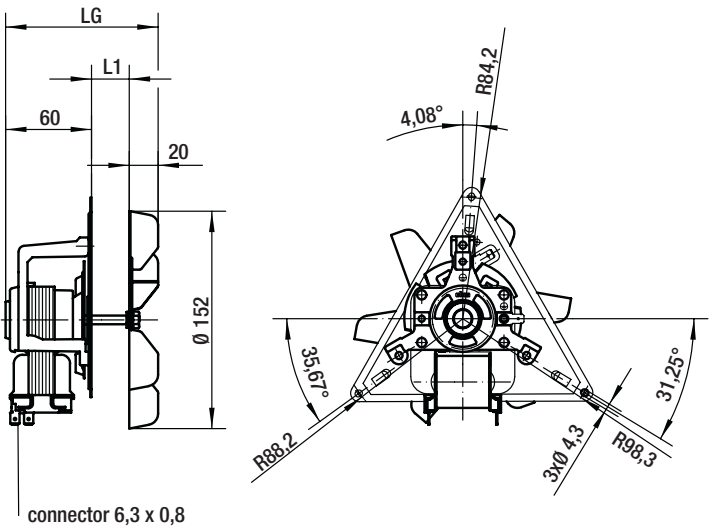
- bearing: R2K150 ball bearings „unit bearing“, integrated in rotor  
RR 152 sintered sleeve bearings with additional lubricant depot
- mounting position: R2K150 all mounting positions possible  
RR 152 horizontal shaft
- impeller: R2K150 stainless steel  
RR 152 FAL sheet steel
- mounting bracket: R2K150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

ebm-papst • Landshut

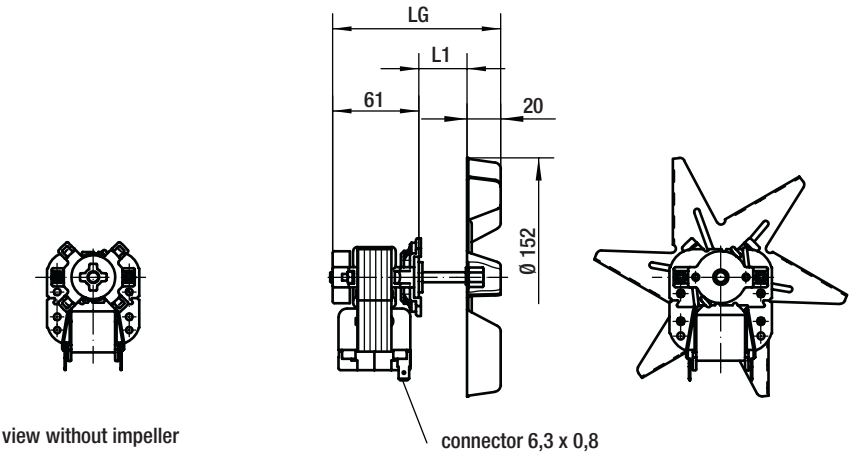
| Nominal data | rated voltage | frequency | air flow | max. pressure increase | power input | speed             | mass | recommended air intake | Dimensions mm |    |      |
|--------------|---------------|-----------|----------|------------------------|-------------|-------------------|------|------------------------|---------------|----|------|
| type         | V             | Hz        | m³/h     | Pa                     | W           | min <sup>-1</sup> | kg   | Ø                      | L1            | L2 | LG   |
| R2K150-AC    | 230           | 50        | 200      | 155                    | 32          | 2000              | 1    | 120                    | 19            | -  | 98,5 |
| RR152-3025LH | 230           | 50        | 190      | 150                    | 37          | 2000              | 0,85 | 120                    | 18,5          | 61 | -    |

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

## R2K150



## RR152



# 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 • Mulmingen

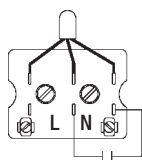
| Nominal data       |           | characteristic curve | rated voltage | frequency | air flow | current draw | power input | speed | mass | capacitor |
|--------------------|-----------|----------------------|---------------|-----------|----------|--------------|-------------|-------|------|-----------|
| type               | motor     |                      | V             | Hz        | m³/h     | A            | W           | min⁻¹ | kg   | μF/VDB    |
| R2E 180 -AH05-06   | M2E068-DF | ①                    | 230           | 50        | 480      | 0,51         | 115         | 2600  | 3,1  | 3,0/400   |
|                    |           |                      | 230           | 60        | 520      | 0,68         | 155         | 2850  | 3,1  | 3,0/400   |
| R2D 225 -AG02-10*) | M2D068-EC | ②                    | 230/400       | 50        | 1265     | 0,29         | 165         | 2700  | 4,0  | -         |
|                    |           |                      | 230/400       | 60        | 1395     | 0,39         | 250         | 3000  | 4,0  | -         |

\*) current draw established at 400 VAC (Y), subject to alterations

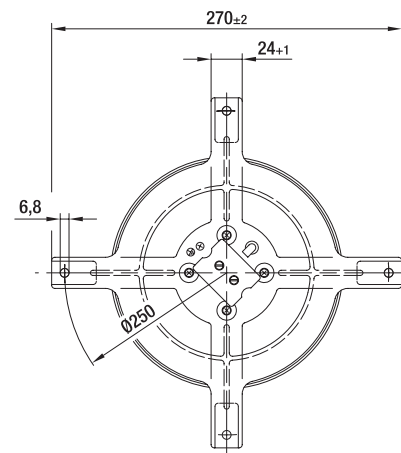
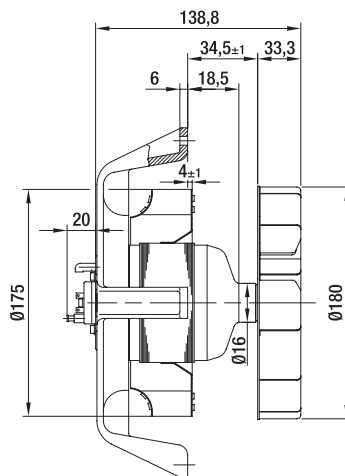
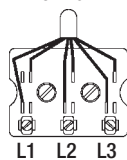
## R2E 180

electrical connection:

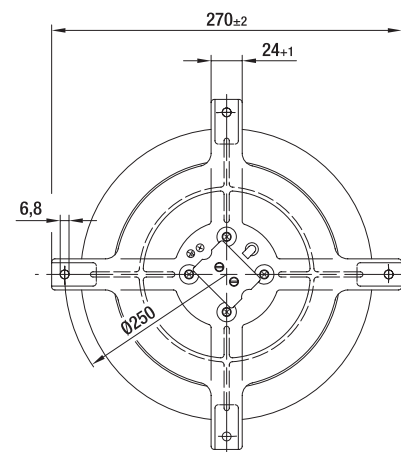
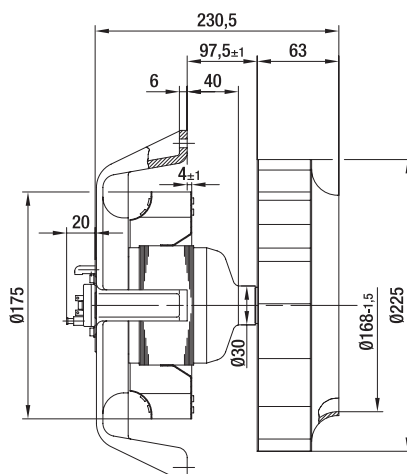
R2E 180 -AH



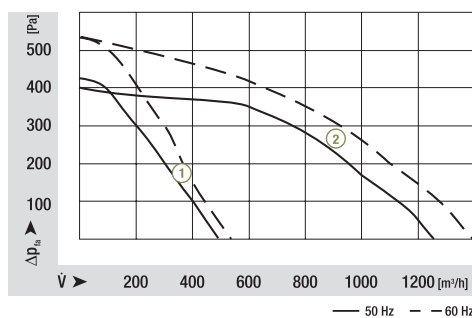
R2D 225 -AG

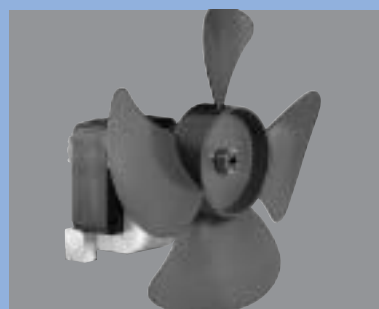


## R2D 225



### Characteristic curves





# 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



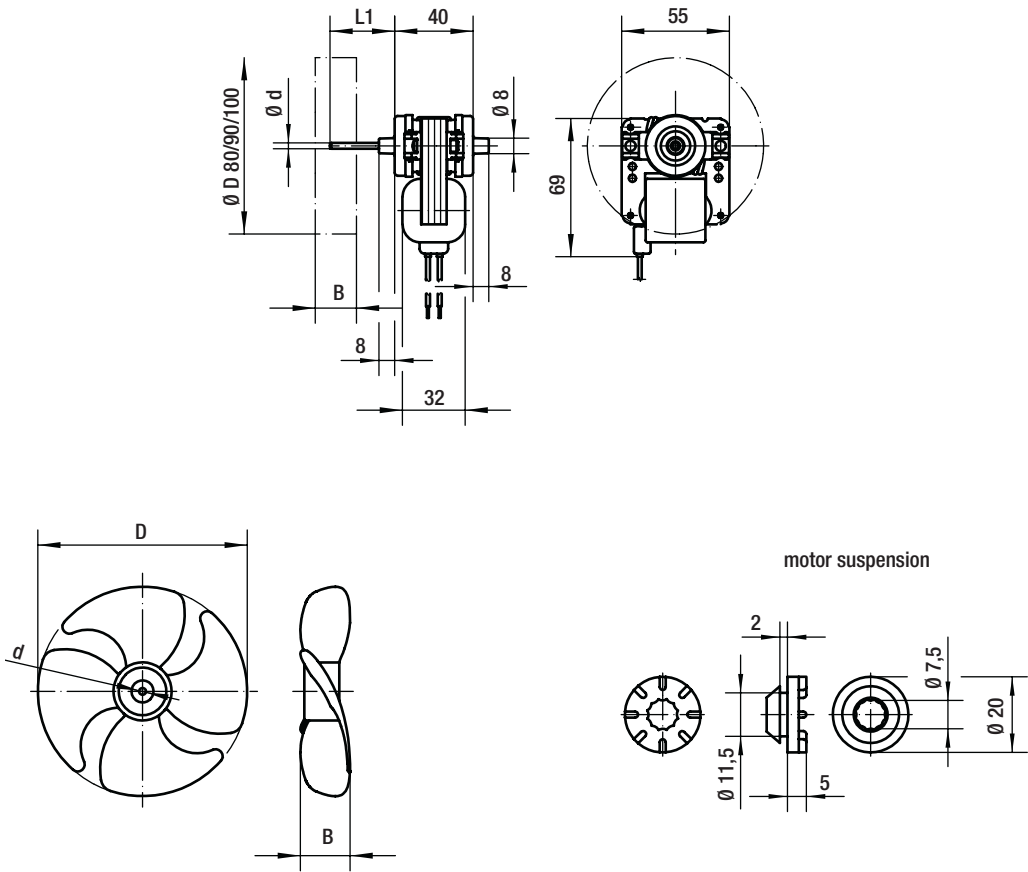
Circulation blowers are required in chest and upright freezers with automatic defrost function ("NoFrost" technology) as well as in chiller compartments in refrigerators. In these appliances, blowers must meet special requirements:

- 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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| Nominal data | rated voltage | rated frequency | power input (230V) | rated current | speed             | Dimensions mm |          |      |      |
|--------------|---------------|-----------------|--------------------|---------------|-------------------|---------------|----------|------|------|
| type         | V             | Hz              | W                  | mA            | min <sup>-1</sup> | ØD            | Ød       | B    | L1   |
| EM2513LN     | 220-240       | 50              | 4,2                | 37            | 2650              | 80            | 3,0/3,17 | 27   | 26,5 |
| EM2513LN     | 220-240       | 50              | 4,5                | 38            | 2600              | 90            | 3,0/3,17 | 21   | 26,5 |
| EM2513LN     | 220-240       | 50              | 4,8                | 40            | 2400              | 100           | 3,0/3,17 | 26,5 | 26,5 |

subject to alterations



# Axial blowers EC, NoFrost design

BG2012

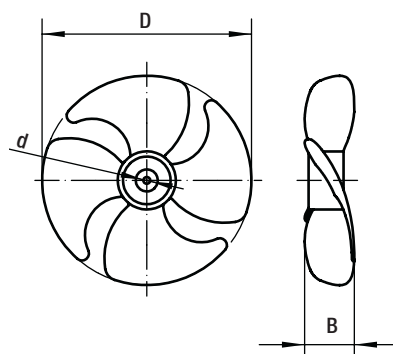
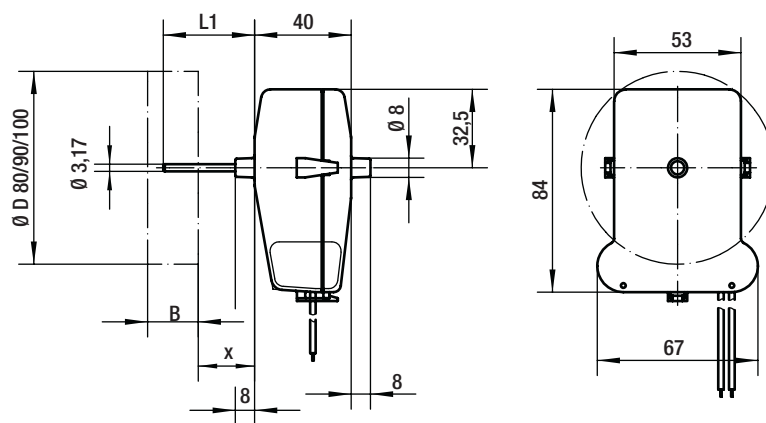


- Brushless DC motor with integrated humidity protected PCB electronics for direct connection to mains
- Plastic housing for motor and electronics

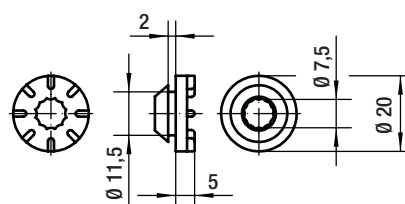
ebm-papst • Landshut

| Nominal data | rated voltage | rated frequency | power input | rated current | speed             | Dimensions mm |      |    |      |
|--------------|---------------|-----------------|-------------|---------------|-------------------|---------------|------|----|------|
| type         | V             | Hz              | W           | mA            | min <sup>-1</sup> | ØD            | B    | L1 | x    |
| BG2012       | 230 VAC       | 50              | 1,9         | 70            | 2100              | 100           | 26,5 | 30 | 13,2 |

subject to alterations

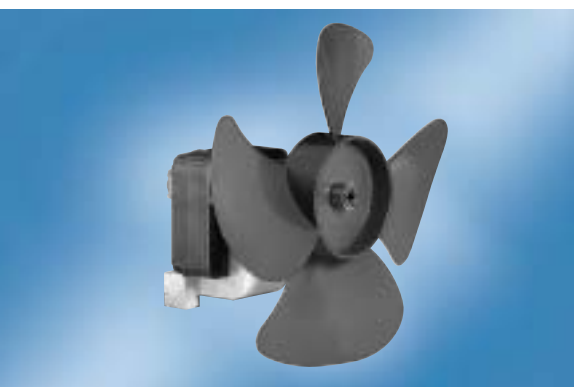


motor suspension



# Axial blowers

AL



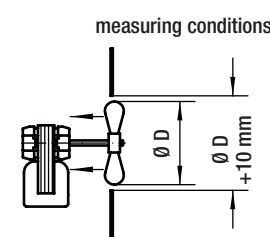
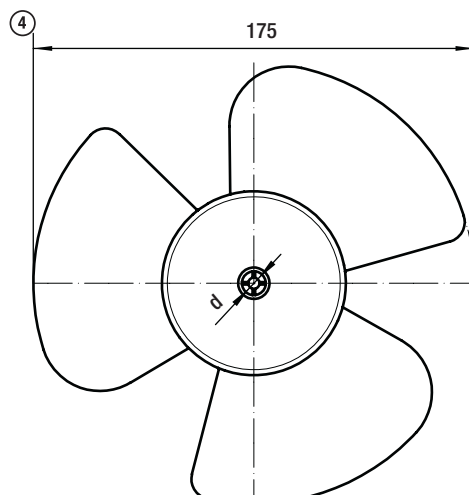
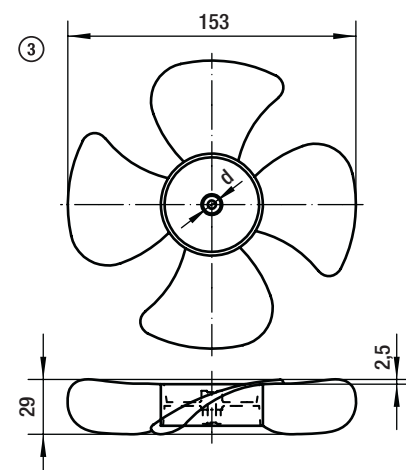
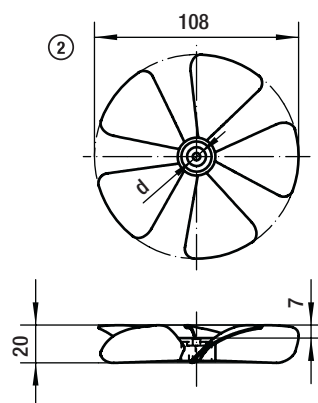
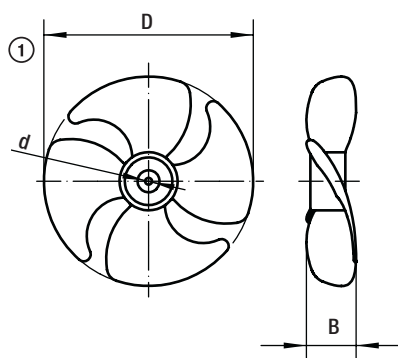
Shaded pole motors of the EM21, EM25 and EM30 series can be combined with axial plastic impellers. For standard applications, this makes for low cost, powerful solutions. The suitable motor/impeller combination depends on the technical requirements and must be determined in each case.

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

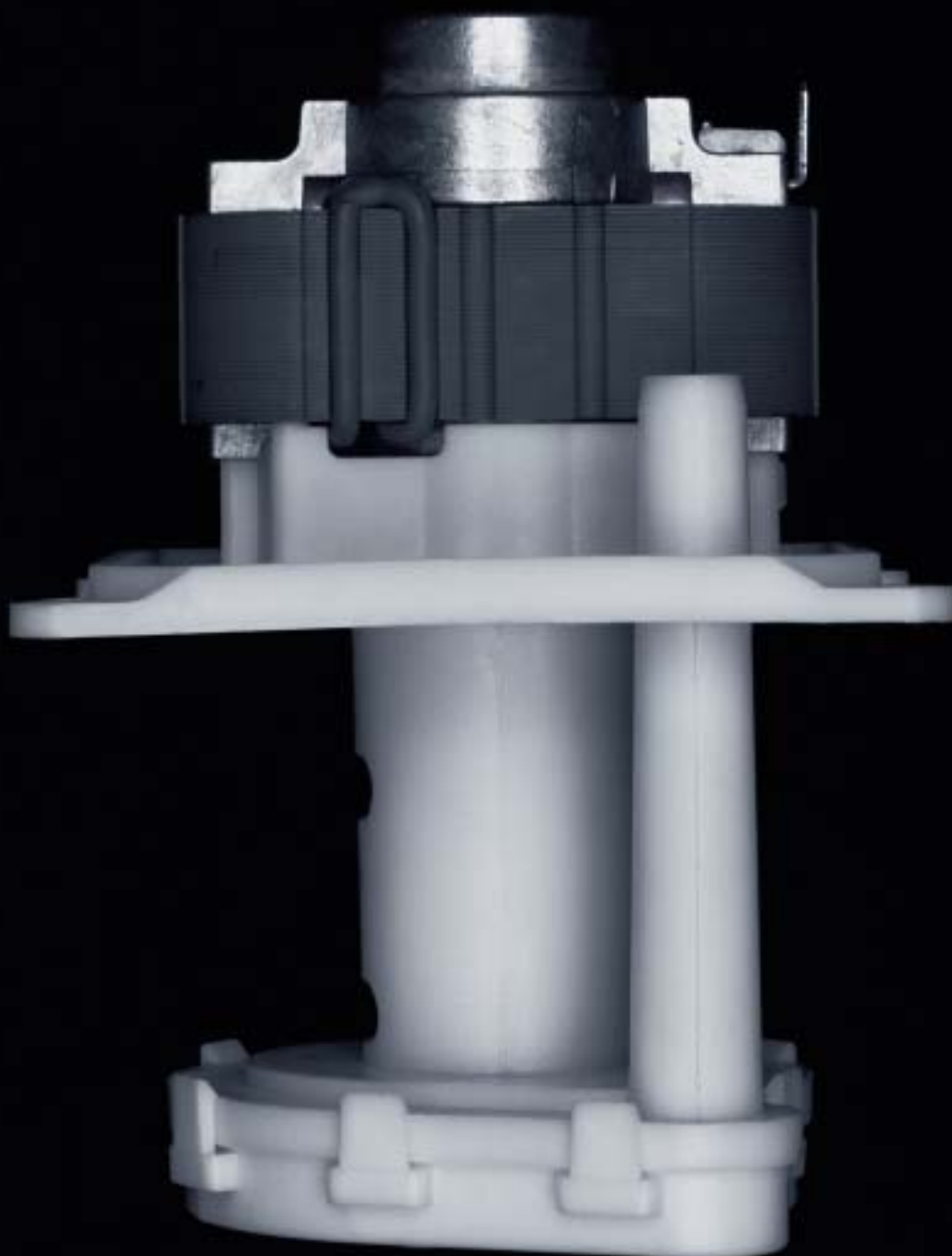
ebm-papst • Landshut

| Nominal data | dimensional drawing | Ø diameter | Ø d (shaft) | material  | air flow | max. pressure increase | reference speed | recommended motors |
|--------------|---------------------|------------|-------------|-----------|----------|------------------------|-----------------|--------------------|
|              | d                   | D          | d           | Pa        | m³/h*)   | Pa                     | min⁻¹           |                    |
|              | ①                   | 80         | 3,0/3,17    | ABS       | 46       | 22                     | 2000            | EM21, EM25         |
|              | ①                   | 90         | 3,0/3,17    | ABS       | 54       | 24                     | 2000            | EM21, EM25         |
|              | ①                   | 100        | 3,0/3,17    | ABS       | 72       | 34                     | 2000            | EM25               |
|              | ②                   | 108        | 4,0/4,5     | PA 6 GV   | 105      | 28                     | 2000            | EM25               |
|              | ③                   | 153        | 4,0/4,5/6,0 | PA 6.6 GV | 235      | 70                     | 2000            | EM25, EM30         |
|              | ④                   | 175        | 4,5         | PA 6.6 GV | 255      | 82                     | 2000            | EM25, EM30         |

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



|                                                      |            |     |
|------------------------------------------------------|------------|-----|
| 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

P4



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.

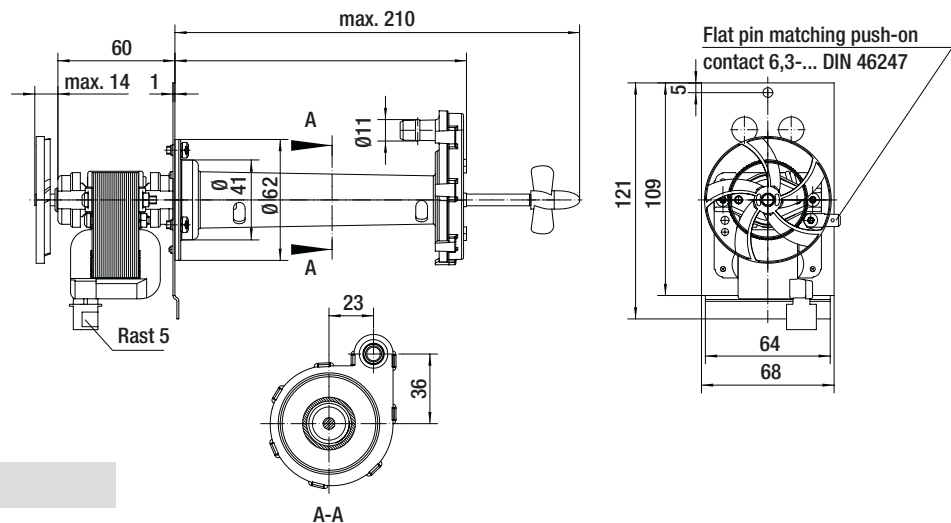
Special versions with longer pump shaft, other mounting plates etc. on request.

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## Nominal data

| type           | rated voltage<br>V | frequency<br>Hz | power input<br>W | rated current<br>mA | flow rate (H 100cm)<br>l/min | mode of operation | insulation class | mass<br>kg |
|----------------|--------------------|-----------------|------------------|---------------------|------------------------------|-------------------|------------------|------------|
| <b>P4-2524</b> | 230                | 50              | 27               | 220                 | 1,2                          | S1                | B                | 0,7        |

bold print = standard type; subject to alterations



## Characteristic curves



# 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.

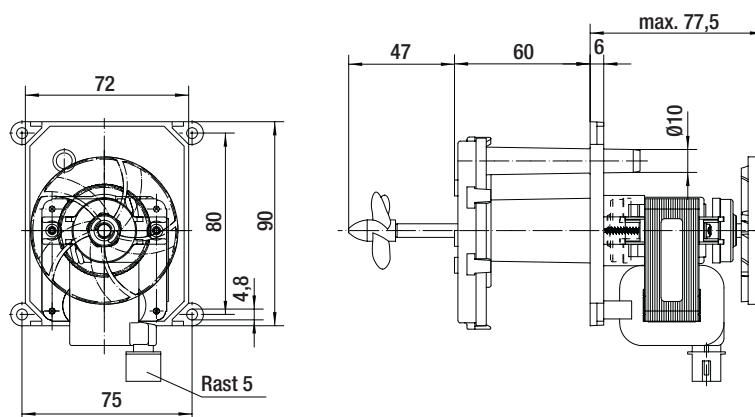
Motor above the pump housing.

Special versions with longer pump shaft, other mounting plates etc. on request.

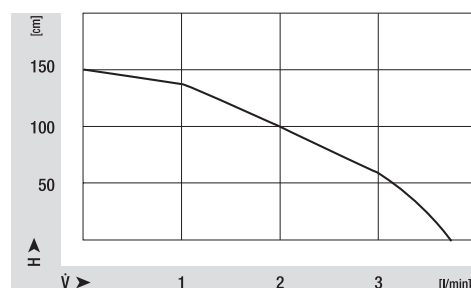
ebm-papst • Landshut

| Nominal data   |  | rated voltage | frequency | power input | rated current | flow rate (H 100cm) | mode of operation | insulation class | mass |
|----------------|--|---------------|-----------|-------------|---------------|---------------------|-------------------|------------------|------|
| type           |  | V             | Hz        | W           | mA            | l/min               |                   |                  | kg   |
| <b>P5-2524</b> |  | 230           | 50        | 24          | 200           | 2,0                 | S1                | B                | 0,7  |

bold print = standard type; subject to alterations



## Characteristic curves



# 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.

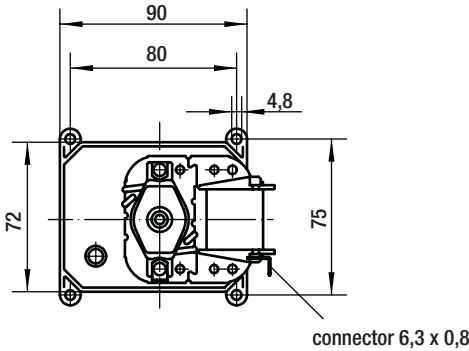
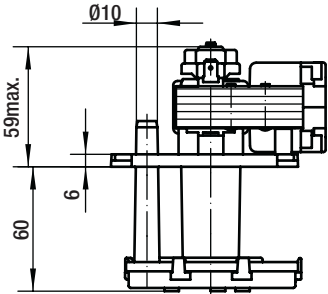
Motor: Shaded pole motor EM30.

Motor above the pump housing.

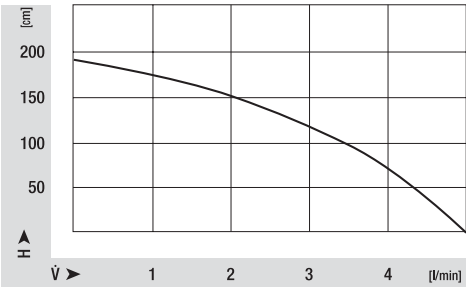
Special versions with longer pump shaft, other mounting plates etc. on request.

ebm-papst • Landshut

| Nominal data                                       | rated voltage | frequency | power input | rated current | flow rate (H 100cm) | mode of operation | insulation class | mass |
|----------------------------------------------------|---------------|-----------|-------------|---------------|---------------------|-------------------|------------------|------|
| type                                               | V             | Hz        | W           | mA            | l/min               |                   |                  | kg   |
| P5-3020                                            | 230           | 50        | 22          | 190           | 3,5                 | S1                | B                | 0,7  |
| bold print = standard type; subject to alterations |               |           |             |               |                     |                   |                  |      |



## Characteristic curves



# Submersible circulation pumps

P7



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.

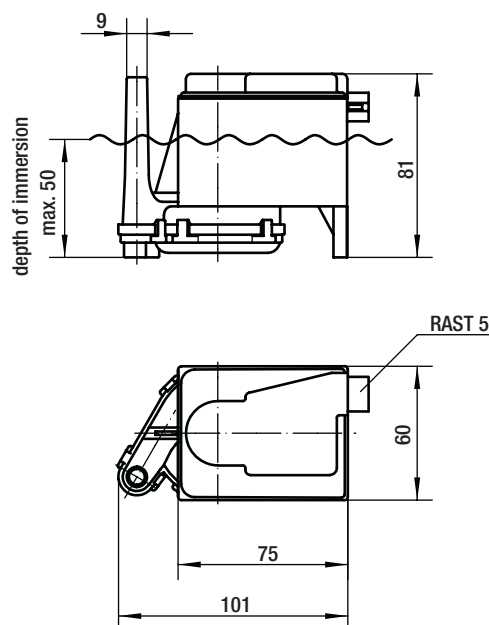
May be mounted directly in the condensate container.

ebm-papst • Landshut

## Nominal data

| type           | rated voltage<br>V | frequency<br>Hz | power input<br>W | rated current<br>mA | flow rate (H 100cm)<br>l/min | mode of operation | insulation class | mass<br>kg | mass |
|----------------|--------------------|-----------------|------------------|---------------------|------------------------------|-------------------|------------------|------------|------|
| <b>P7-2524</b> | 230                | 50              | 25               | 210                 | 3,2                          | S2                | F                | 0,65       |      |

bold print = standard type; subject to alterations



## Characteristic curves



# Submersible circulation pumps

## P30

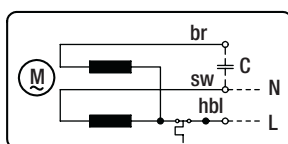


- immersion pump for low-viscosity liquids
- motor: capacitor motor KM43
- housing and impeller: ABS GV
- shaft: stainless steel 1.4305

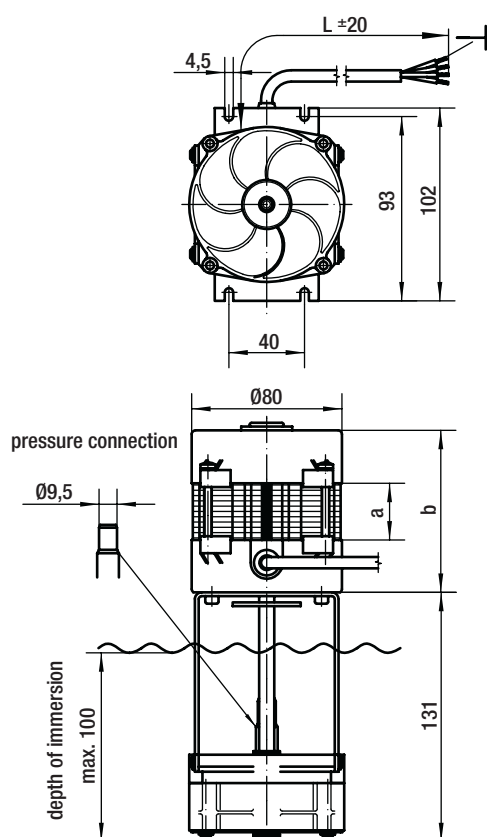
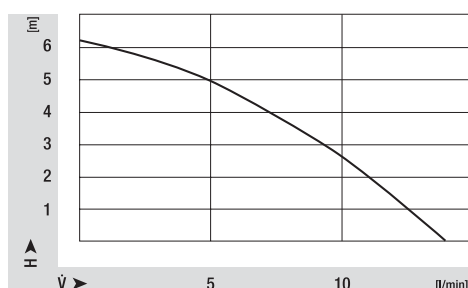
ebm-papst • Landshut

| Nominal data |                    |                 |                  |                     |                                     |                              |                   |                  |            | Dimensions mm |    |     |
|--------------|--------------------|-----------------|------------------|---------------------|-------------------------------------|------------------------------|-------------------|------------------|------------|---------------|----|-----|
| type         | rated voltage<br>V | frequency<br>Hz | power input<br>W | rated current<br>mA | capacitor (400V)<br>$\mu\text{F}^*$ | flow rate (H 100cm)<br>l/min | mode of operation | insulation class | mass<br>kg | a             | b  | L   |
| P30-4330     | 230                | 50              | 48               | 210                 | 1,5                                 | 12,5                         | S1                | F                | 2,0        | 30            | 87 | 600 |

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



### Characteristic curves



# Submersible circulation pumps

## P2E 070 – with stirring propeller

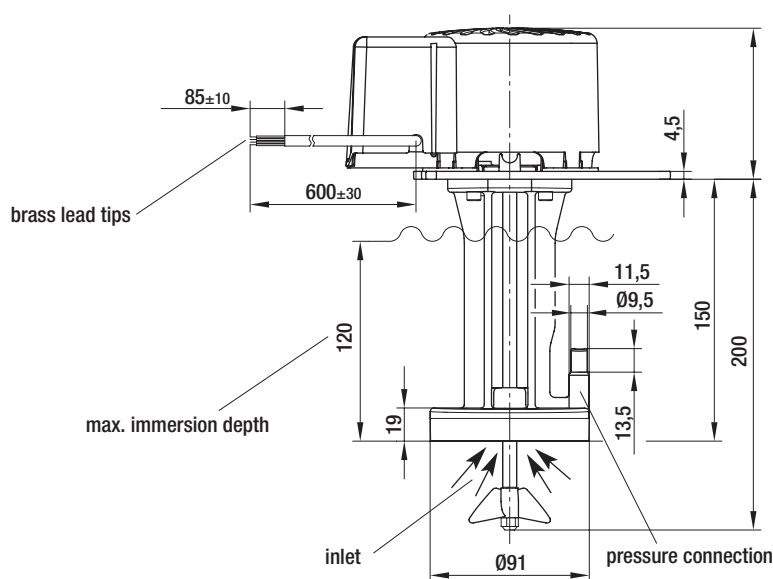


- for circulation or pumping of water or similar liquids
- pump housing, pump impeller, crosshead connecting and covers made of fibre-glass reinforced plastic, stirring propeller made of PE
- top mounted external-rotor motor, vacuum-encapsulated stator, varnished in black, protected against accidental 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)
- 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

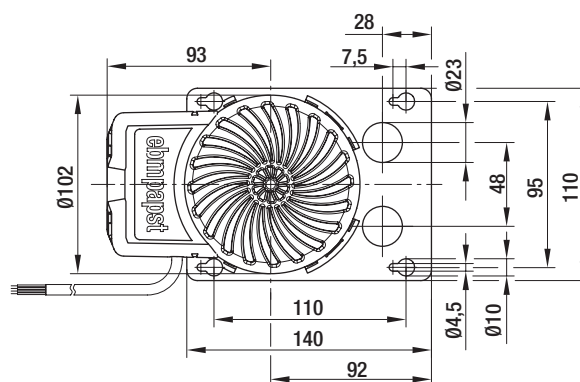
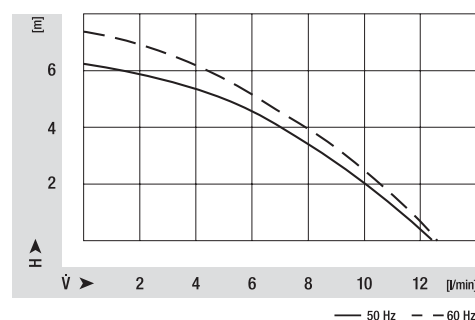
**ebm-papst • Mulmingen**

| Nominal data             | rated voltage | frequency | power input | current draw | flow rate (H 100cm) | speed             | capacitor | max. delivery head | perm. amb. temp. motor | mass |
|--------------------------|---------------|-----------|-------------|--------------|---------------------|-------------------|-----------|--------------------|------------------------|------|
| type                     | V             | Hz        | W           | mA           | l/min               | min <sup>-1</sup> | μF/VDB    | m                  | °C                     | kg   |
| <b>P2E 070 -AA26 -01</b> | 230           | 50        | 66          | 290          | 11,1                | 2300              | 1,5/400   | 6,20               | 40                     | 1,6  |
|                          | 230           | 60        | 83          | 370          | 11,6                | 2370              | 1,5/400   | 7,30               | 40                     | 1,6  |

bold print = standard type; subject to alterations



### Characteristic curves



# Dosing pumps

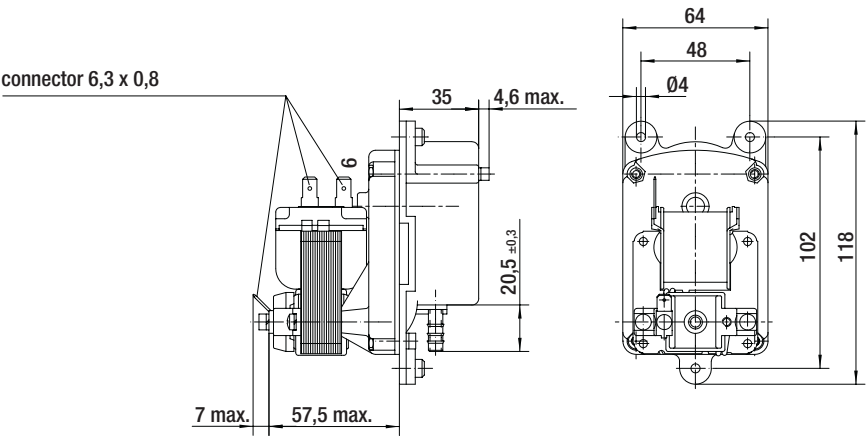
P51



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

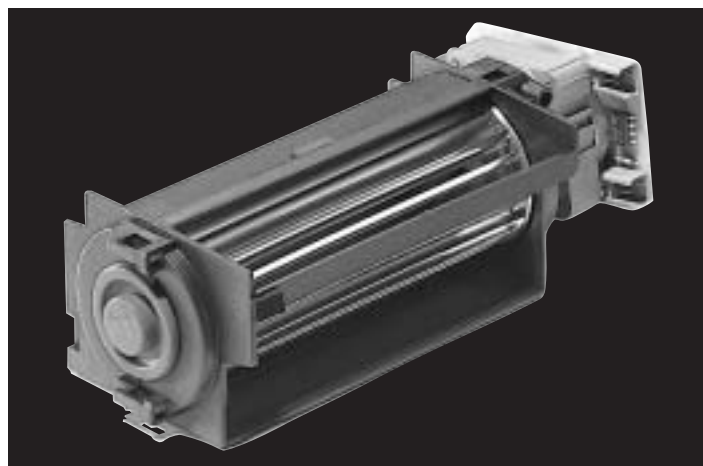
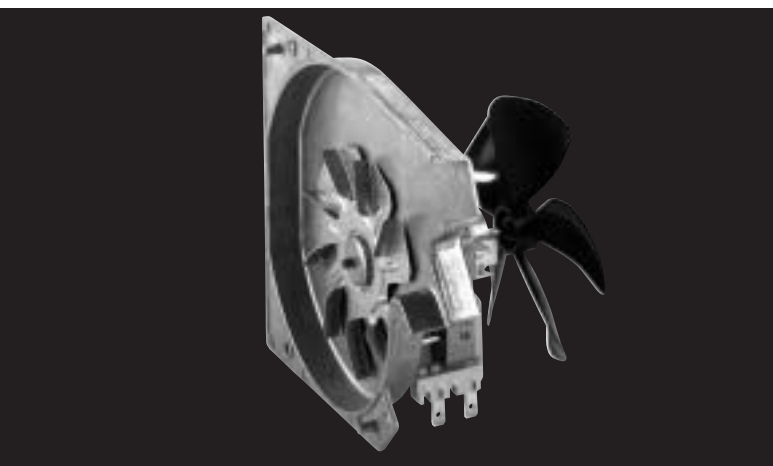
ebm-papst • Landshut

| Nominal data                                       | rated voltage | frequency | power input | rated current | flow rate | max. pressure | mode of operation | service life | insulation class | mass |
|----------------------------------------------------|---------------|-----------|-------------|---------------|-----------|---------------|-------------------|--------------|------------------|------|
| type                                               | V             | Hz        | W           | mA            | ml/min    | bar           |                   | Std          |                  | kg   |
| P51-2518/Gtp22                                     | 230           | 50        | 18          | 260           | 60        | 2,0           | S2                | 500          | B                | 0,7  |
| bold print = standard type; subject to alterations |               |           |             |               |           |               |                   |              |                  |      |



# 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.



-  fan agent
-  compact fan agent
-  motor specialist
-  motor agent

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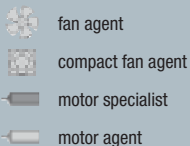
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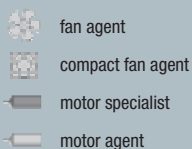
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