

EC axial fans - HyBlade® US-edition

version 05/2011



The engineer's choice

ebmpapst

The new EC axial fans - HyBlade®

A new and unique hybrid blade design makes ebm-papst axial fans even quieter, more powerful and lasting longer. The novel HyBlade® fan blades use a support structure made of highly robust, corrosion-proof aluminium alloy and a coating made of special reinforced fibre plastics. Their aerodynamically optimal form results in enormous acoustic benefits at even higher efficiencies compared to conventional blades. And this, in turn, offers further benefits when used in refrigeration, heating and ventilation.

A revolutionary development

In refrigeration and ventilation, axial fans are frequently used, for instance to cool heat exchangers with air passing through them. For compact systems, the best tried and tested choice is the ebm-papst external-rotor motor with the axial fan blades mounted onto its rotor. Apart from compact dimensions, the fans in such applications are expected to yield high air performance at minimal noise.

So far, fan blades are conventionally made of sheet steel or aluminium. In order to meet exacting requirements for optimum efficiency and acoustic behaviour, ebm-papst focused intensely on developing new blade geometries. However, the limited design possibilities of a monolithic sheet metal blade with uniform sheet thickness are obstacles engineers have to simply accept.

To manage the required quantum leap and arrive at lower noise and better efficiency, new construction principles and materials, or component structures, to be more precise, are needed. This is the approach ebm-papst took with its revolutionary hybrid blade concept, using hybrid components and structures to join seemingly irreconcilable characteristics in one harmonious functional unit.

The modular system consisting of motor, electronics and impeller allows for optimum configuration, making the new line of EC HyBlade® axial fans unbeatable as to combinatorics and power range. The integrated motor electronics are based on state-of-the-art EC technology and correspond to the "2nd generation". This makes them highly efficient and they already comply with the latest standards of the defined European Efficiency Classes.

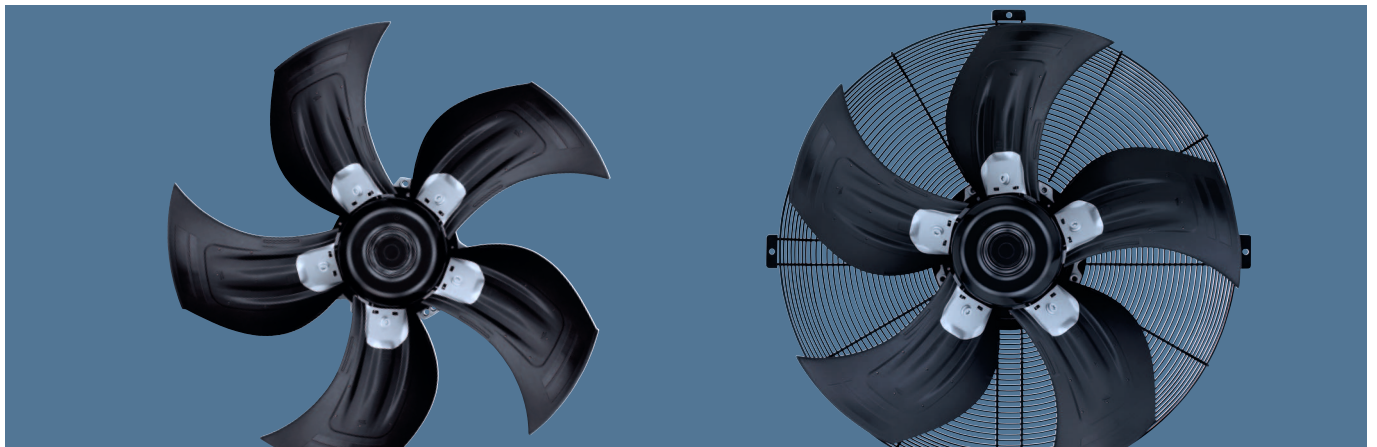
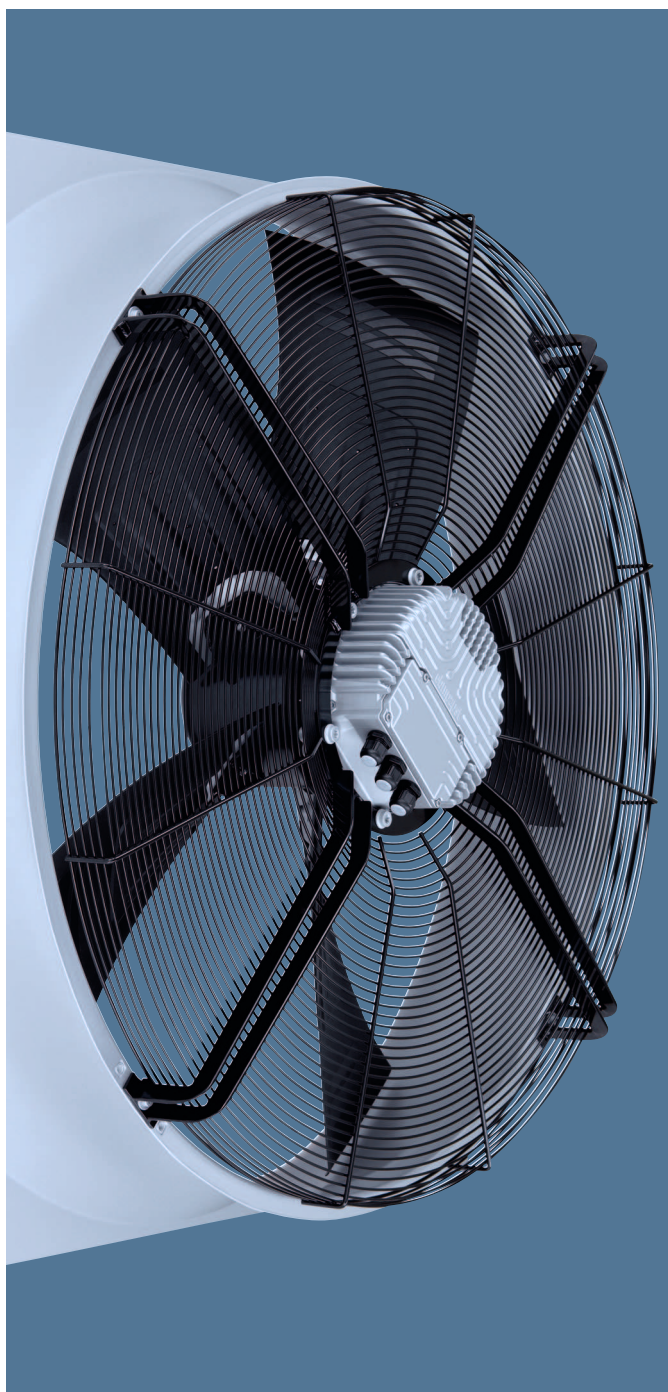


Table of contents



| | |
|--|----|
| ■ New EC axial fans - HyBlade® | 2 |
| ■ GreenTech: The Green Company | 4 |
| ■ Size 500 | 6 |
| ■ Size 560 | 10 |
| ■ Size 630 | 14 |
| ■ Size 710 | 20 |
| ■ Size 800 | 24 |
| ■ Size 910 | 28 |
| ■ Size 990 | 32 |
| ■ Electrical connections | 35 |
| ■ Technical parameters & scope | 40 |
| ■ ebm-papst representatives & subsidiaries | 44 |

Sustainability is at the Centre of Our Thoughts and Actions. Out of Conviction!

Eco-friendliness and sustainability have always been at the core of our thoughts and actions. For decades, we have worked according to the simple but strict creed of our co-founder Gerhard Sturm: "Each new product we develop has to be better than the last one in terms of economy and ecology." GreenTech is the ultimate expression of our corporate philosophy.





GreenTech is pro-active development.

Even in the design phase, the materials and processes we use are optimised for the greatest possible eco-friendliness, energy balance and – wherever possible – recyclability. We continually improve the material and performance of our products, as well as the flow and noise characteristics. At the same time, we significantly reduce energy consumption. Close cooperation with universities and scientific institutes and the professorship we endow in the area of power engineering and regenerative energies allows us to profit from the latest research findings in these fields – and at the same time ensure highly qualified young academics.

GreenTech is ecofriendly production.

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

GreenTech is acknowledged and certified.

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

Our customers profit from this every day.

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

EC axial fans - HyBlade®

Ø 500



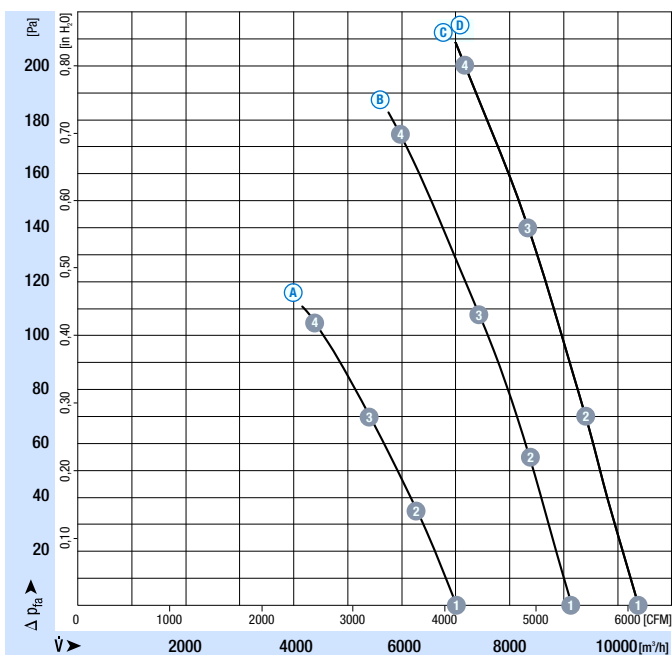
- **Material:** Guard grille: Steel, phosphated and coated in black plastic
Wall ring: Sheet steel, pre-galvanised and coated in black plastic
Blades: Pressed-on round sheet steel plate, extrusion-coated in PP plastics
Rotor: Coated in black
Electronics enclosure: Die-cast aluminium, ^(B) ^(C) ^(D) coated in black additionally
- **Number of blades:** 5
- **Direction of rotation:** Counter-clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "B" ("F" applying to the main components as per EN)
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

| Nominal data | | Blade angle | Curve | Nominal voltage range | Frequency | Speed/rpm ⁽¹⁾ | Max. power input ⁽¹⁾ | Max. current draw ⁽¹⁾ | Max. operative range | Perm. amb. temp. | Mass without attachments | Technical features and elect. connections |
|--------------|------------|-------------|-------|-----------------------|-----------|--------------------------|---------------------------------|----------------------------------|----------------------|------------------|--------------------------|---|
| Type | Motor | | | VAC | Hz | rpm | kW | A | Pa | °C | kg | |
| *3G 500 | M3G 084-GF | 0° | (A) | 1~ 100-130 | 50/60 | 1080 | 0,38 | 3,30 | 105 | -25..+60 | 6,2 | p. 36 / K1) |
| *3G 500 | M3G 112-EA | 0° | (B) | 1~ 200-277 | 50/60 | 1420 | 0,75 | 3,40 | 175 | -25..+60 | 7,2 | p. 37 / L3) |
| *3G 500 | M3G 112-GA | 0° | (C) | 3~ 200-240 | 50/60 | 1600 | 0,98 | 3,20 | 200 | -25..+60 | 9,2 | p. 35 / L2) |
| *3G 500 | M3G 112-GA | 0° | (D) | 3~ 380-480 | 50/60 | 1600 | 0,98 | 1,60 | 200 | -25..+60 | 9,2 | p. 39 / K3) |

subject to alterations

(1) Nominal data in operating point with maximum load and 115 VAC or 230 VAC or 400 VAC

Curves



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

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

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

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

For detailed information see page 40 ff.

| | n [rpm] | P_1 [kW] | I [A] | L_{wA} [dB(A)] |
|-------|---------|------------|-------|------------------|
| (A) 1 | 1080 | 0,26 | 2,26 | 72 |
| (A) 2 | 1080 | 0,30 | 2,61 | 68 |
| (A) 3 | 1080 | 0,33 | 2,87 | 65 |
| (A) 4 | 1080 | 0,38 | 3,30 | 66 |
| (B) 1 | 1420 | 0,55 | 2,51 | 78 |
| (B) 2 | 1420 | 0,62 | 2,80 | 75 |
| (B) 3 | 1420 | 0,68 | 3,03 | 73 |
| (B) 4 | 1420 | 0,75 | 3,40 | 74 |
| (C) 1 | 1600 | 0,73 | 2,32 | 80 |
| (C) 2 | 1600 | 0,83 | 2,66 | 77 |
| (C) 3 | 1600 | 0,91 | 2,82 | 75 |
| (C) 4 | 1600 | 0,98 | 3,20 | 76 |
| (D) 1 | 1600 | 0,73 | 1,16 | 80 |
| (D) 2 | 1600 | 0,83 | 1,33 | 77 |
| (D) 3 | 1600 | 0,91 | 1,41 | 75 |
| (D) 4 | 1600 | 0,98 | 1,60 | 76 |

- **Technical features:** See electrical connections p. 36 ff.
- **EMC:** Ⓐ Ⓑ Interference emission acc. to EN 61000-6-3
 Ⓒ Ⓓ Interference emission acc. to EN 61000-6-4
 Interference immunity acc. to EN 61000-6-2
 Harmonics acc. to EN 61000-3-2/3
- **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
- **Cable exit:** Ⓐ Ⓑ Ⓓ Variable
- **Terminal box:** Ⓒ Electrical connection via terminal strip
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standards:** CE
- **Approvals:** GOST; UL/CSA are applied for; CCC on request

| Direction of air flow | | | |
|-----------------------|---------------------|-------------------------|------------------------------------|
| | Without attachments | With full square nozzle | With guard grille for short nozzle |
| "V" | on request | W3G 500-GD09 -41 | on request |
| "V" | A3G 500-AM56 -21 | W3G 500-GM56 -21 | S3G 500-AM56 -21 |
| "V" | on request | W3G 500-GN38 -13 | on request |
| "V" | A3G 500-AN33 -01 | W3G 500-GN33 -01 | S3G 500-AN33 -01 |

Direction of air flow "A" on request

EC axial fans - HyBlade®

Ø 500 with motor M3G084, drawings for direction of air flow "V"

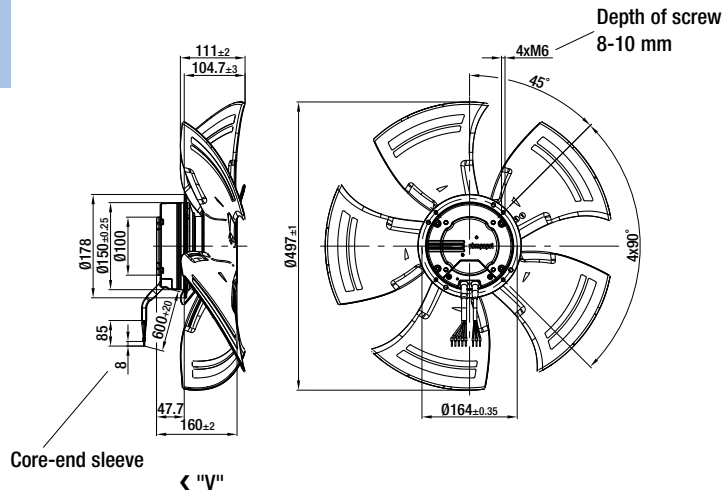


Without attachments

Type

Mass [kg]

Ⓐ on request 6,2



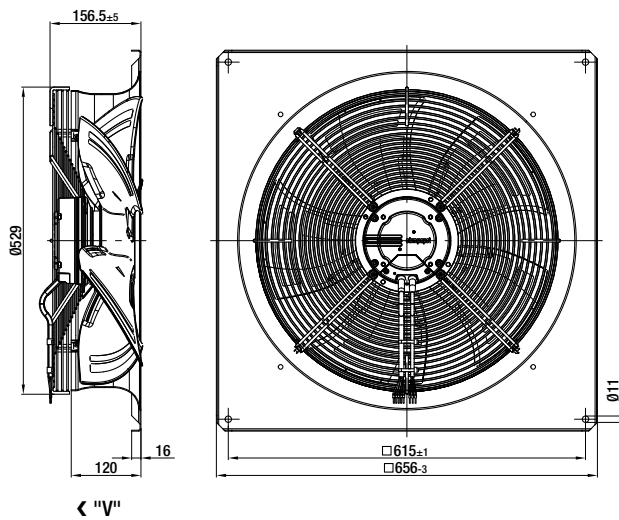
Internal diameter of the wall ring at least 503 mm

With full square nozzle

Type

Mass [kg]

Ⓐ W3G 500-GD09 -41 12,2

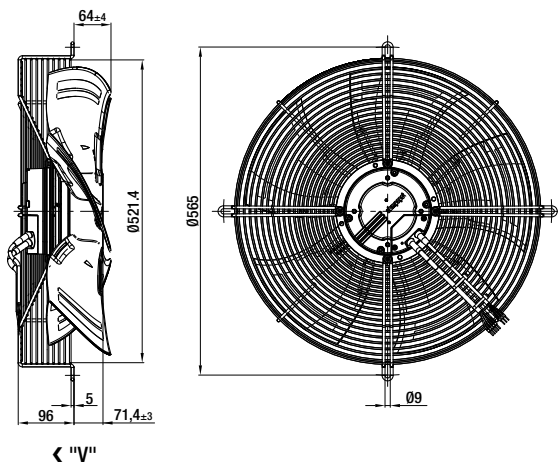


With guard grille for short nozzle

Type

Mass [kg]

Ⓐ on request 8,7



Internal diameter of the wall ring at least 503 mm

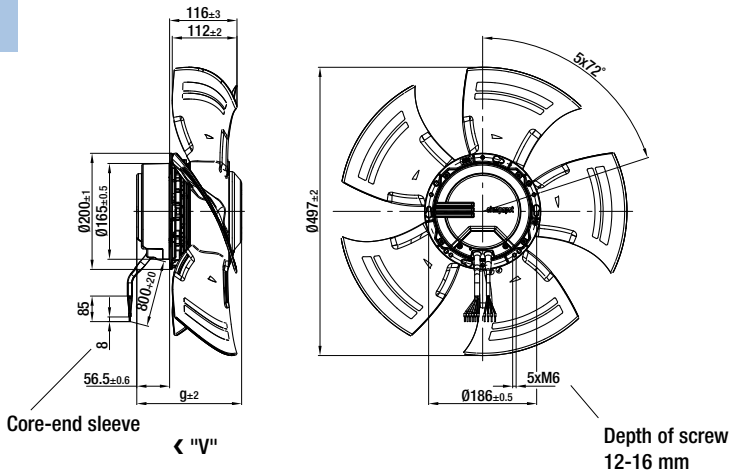
EC axial fans - HyBlade®

Ø 500 with motor M3G112, drawings for direction of air flow "V"



Without attachments

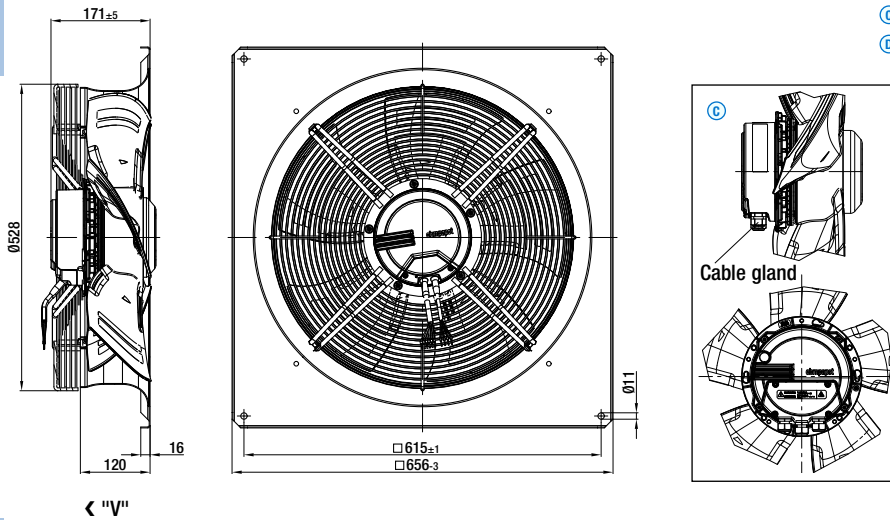
| Type | Mass [kg] | g |
|--------------------|-----------|-------|
| Ⓑ A3G 500-AM56 -21 | 7,2 | 160,5 |
| Ⓒ on request | 9,2 | 180,5 |
| Ⓓ A3G 500-AN33 -01 | 9,2 | 180,5 |



Internal diameter of the wall ring at least 503 mm

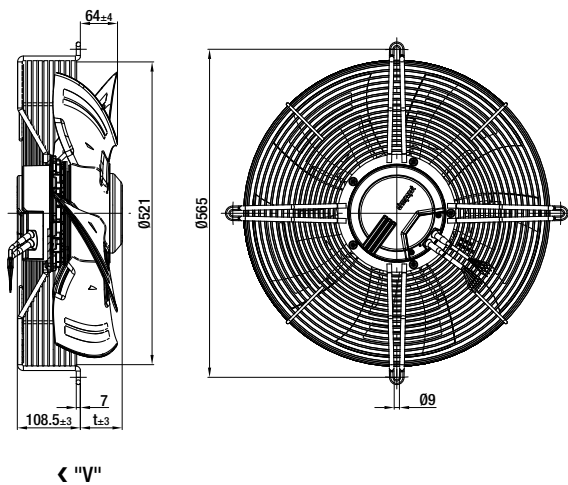
With full square nozzle

| Type | Mass [kg] |
|--------------------|-----------|
| Ⓑ W3G 500-GM56 -21 | 17,2 |
| Ⓒ W3G 500-GN38 -13 | 19,2 |
| Ⓓ W3G 500-GN33 -01 | 19,2 |



With guard grille for short nozzle

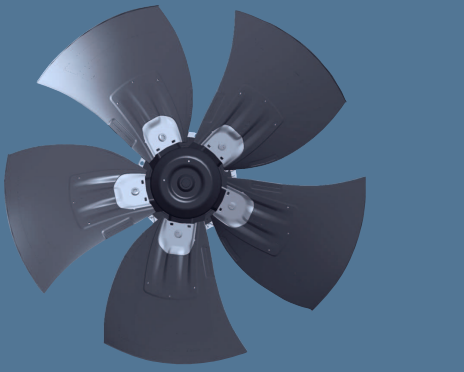
| Type | Mass [kg] | t |
|--------------------|-----------|------|
| Ⓑ S3G 500-AM56 -21 | 10,5 | 52,0 |
| Ⓒ on request | 12,5 | 72,0 |
| Ⓓ S3G 500-AN33 -01 | 12,5 | 72,0 |



Internal diameter of the wall ring at least 503 mm

EC axial fans - HyBlade®

Ø 560



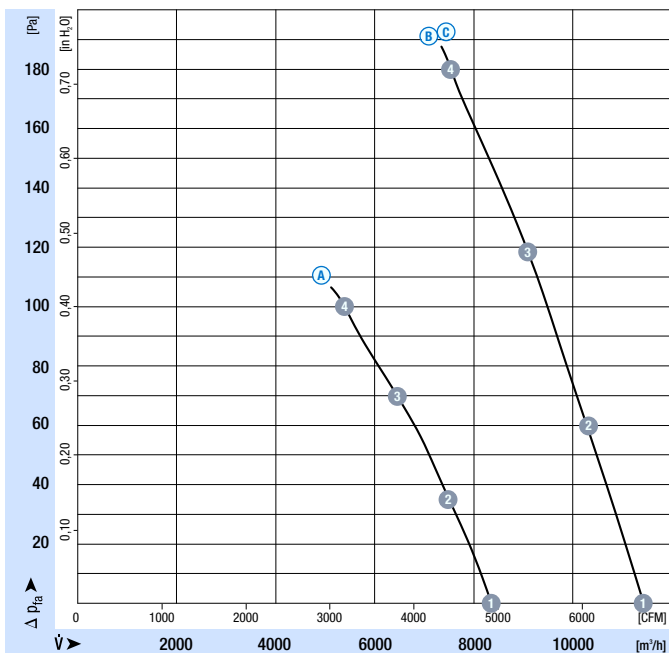
- **Material:** Guard grille: Steel, phosphated and coated in black plastic
Wall ring: Sheet steel, pre-galvanised and coated in black plastic
Blades: Insertion part made of sheet aluminium, extrusion-coated in PP plastics
Rotor: Coated in black
Electronics enclosure: Die-cast aluminium, coated in black
- **Number of blades:** 5
- **Direction of rotation:** Counter-clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "B" ("F" applying to the main components as per EN)
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

| Nominal data | | Blade angle | Curve | Nominal voltage range | Frequency | Speed/rpm ⁽¹⁾ | Max. power input ⁽¹⁾ | Max. current draw ⁽¹⁾ | Max. operative range | Perm. amb. temp. | Mass without attachments | Technical features and elect. connections |
|--------------|------------|-------------|-------|-----------------------|-----------|--------------------------|---------------------------------|----------------------------------|----------------------|------------------|--------------------------|---|
| Type | Motor | | | VAC | Hz | rpm | kW | A | Pa | °C | kg | |
| *3G 560 | M3G 112-EA | -5° | Ⓐ | 1~ 200-277 | 50/60 | 1000 | 0,40 | 1,80 | 100 | -25..+60 | 9,3 | p. 36 / K1) |
| *3G 560 | M3G 112-GA | -5° | Ⓑ | 3~ 200-240 | 50/60 | 1350 | 0,95 | 3,00 | 180 | -25..+60 | 9,3 | p. 35 / L2) |
| *3G 560 | M3G 112-GA | -5° | Ⓒ | 3~ 380-480 | 50/60 | 1350 | 0,95 | 1,50 | 180 | -25..+60 | 9,3 | p. 39 / K3) |

subject to alterations

(1) Nominal data in operating point with maximum load and 230 VAC or 400 VAC

Curves



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

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




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

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

For detailed information see page 40 ff.

| | n [rpm] | P ₁ [kW] | I [A] | L _{wA} [dB(A)] |
|-----|---------|---------------------|-------|-------------------------|
| Ⓐ ① | 1000 | 0,29 | 1,29 | 67 |
| Ⓐ ② | 1000 | 0,34 | 1,48 | 66 |
| Ⓐ ③ | 1000 | 0,37 | 1,61 | 66 |
| Ⓐ ④ | 1000 | 0,40 | 1,80 | 68 |
| Ⓑ ① | 1350 | 0,67 | 2,22 | 75 |
| Ⓑ ② | 1350 | 0,78 | 2,50 | 74 |
| Ⓑ ③ | 1350 | 0,86 | 2,74 | 73 |
| Ⓑ ④ | 1350 | 0,95 | 3,00 | 77 |
| Ⓒ ① | 1350 | 0,67 | 1,11 | 75 |
| Ⓒ ② | 1350 | 0,78 | 1,25 | 74 |
| Ⓒ ③ | 1350 | 0,86 | 1,37 | 73 |
| Ⓒ ④ | 1350 | 0,95 | 1,50 | 77 |

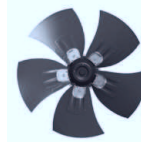
- **Technical features:** See electrical connections p. 36 ff.
- **EMC:** ⓑ ⓒ Interference emission acc. to EN 61000-6-3
 ⓐ Interference emission acc. to EN 61000-6-4
 Interference immunity acc. to EN 61000-6-2
 Harmonics acc. to EN 61000-3-2/3
- **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
- **Cable exit:** ⓐ ⓒ Variable
- **Terminal box:** ⓑ Electrical connection via terminal strip
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standards:** CE
- **Approvals:** GOST; UL/CSA are applied for; CCC on request

| Direction of air flow |  ⊲ "V" |  ⊲ "V" |  ⊲ "V" |
|-----------------------|--|--|--|
| | Without attachments | With full square nozzle | With guard grille for short nozzle |
| "V" | A3G 560-AP68 -21 | W3G 560-GP68 -21 | S3G 560-AP68 -21 |
| "V" | on request | W3G 560-GQ49 -13 | on request |
| "V" | A3G 560-AQ41 -01 | W3G 560-GQ41 -01 | S3G 560-AQ41 -01 |

Direction of air flow "A" on request

EC axial fans - HyBlade®

Ø 560 with motor M3G112, drawings for direction of air flow "V"



Without attachments

Type

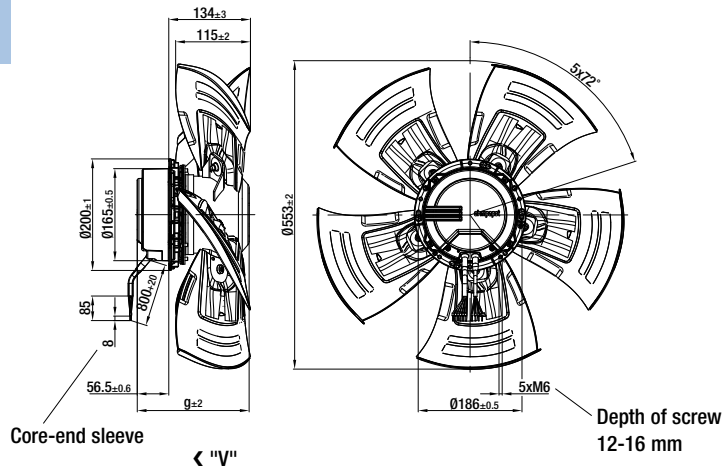
Mass

[kg]

g

| | | | |
|---|------------------|-----|-------|
| Ⓐ | A3G 560-AP68 -21 | 7,2 | 180,5 |
| Ⓑ | on request | 9,3 | 200,5 |
| Ⓒ | A3G 560-AQ41 -01 | 9,3 | 200,5 |

Internal diameter of the wall ring at least 559 mm



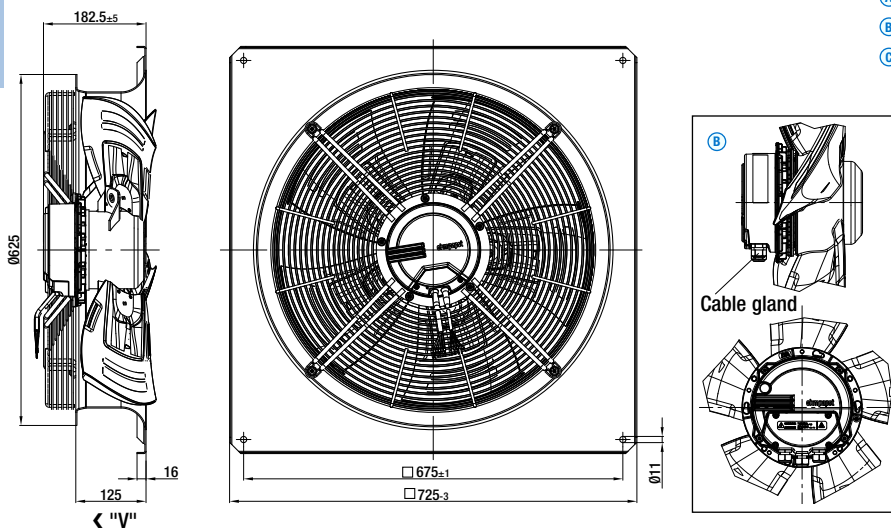
With full square nozzle

Type

Mass

[kg]

| | | |
|---|------------------|------|
| Ⓐ | W3G 560-GP68 -21 | 18,9 |
| Ⓑ | W3G 560-GQ49 -13 | 21,0 |
| Ⓒ | W3G 560-GQ41 -01 | 21,0 |



With guard grille for short nozzle

Type

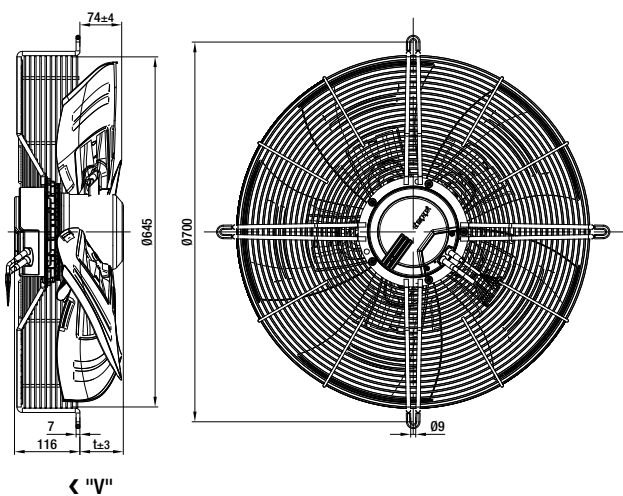
Mass

[kg]

t

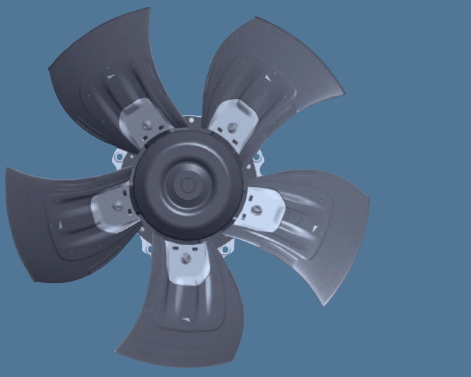
| | | | |
|---|------------------|------|----|
| Ⓐ | S3G 560-AP68 -21 | 11,8 | 64 |
| Ⓑ | on request | 13,9 | 84 |
| Ⓒ | S3G 560-AQ41 -01 | 13,9 | 84 |

Internal diameter of the wall ring at least 559 mm



EC axial fans - HyBlade®

Ø 630



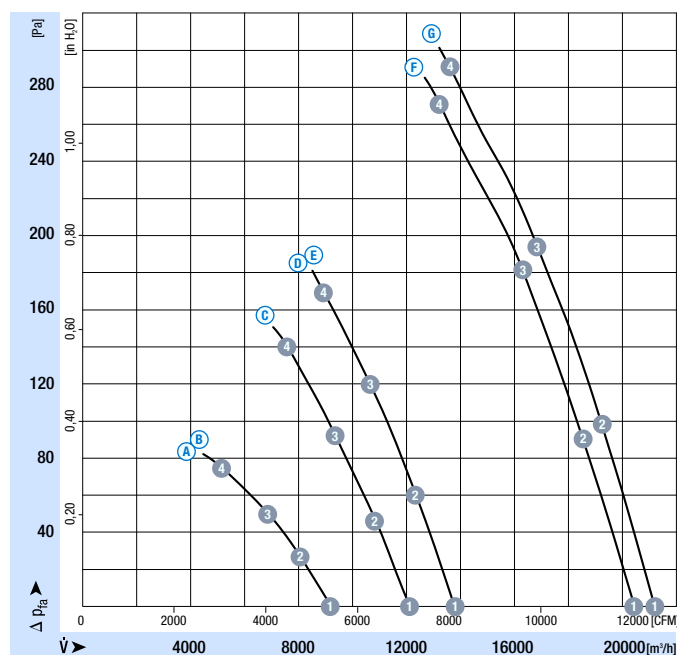
- **Material:** Guard grille: Steel, phosphated and coated in black plastic
Wall ring: Sheet steel, pre-galvanised and coated in black plastic
Blades (5): (A) (B) (C) (D) (E) Pressed-on round sheet steel plate; (F) (G) Insertion part made of sheet aluminium; Both versions extrusion-coated in PP plastics
Rotor: Coated in black
Electronics enclosure: Die-cast aluminium, (C) (D) (E) (F) (G) coated in black additionally
- **Direction of rotation:** (A) (B) (C) (D) (E) counter-clockwise, (F) (G) clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** (A) (B) (C) (D) (E) "B" ("F" applying to the main components as per EN), (F) (G) "F"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

| Nominal data | | Blade angle | Curve | Nominal voltage range | Frequency | Speed/rpm ⁽¹⁾ | Max. power input ⁽¹⁾ | Max. current draw ⁽¹⁾ | Max. operative range | Perm. amb. temp. | Mass without attachments | Technical features and electr. connections |
|--------------|------------|-------------|-------|-----------------------|-----------|--------------------------|---------------------------------|----------------------------------|----------------------|------------------|--------------------------|--|
| Type | Motor | | | VAC | Hz | rpm | kW | A | Pa | °C | kg | |
| *3G 630 | M3G 084-GF | 0° | (A) | 1~ 100-130 | 50/60 | 800 | 0,28 | 2,40 | 75 | -25..+60 | 6,3 | p. 36 / K1) |
| *3G 630 | M3G 084-GF | 0° | (B) | 1~ 200-277 | 50/60 | 800 | 0,28 | 1,20 | 75 | -25..+60 | 6,3 | p. 36 / K1) |
| *3G 630 | M3G 112-GA | -5° | (C) | 1~ 200-277 | 50/60 | 1000 | 0,72 | 3,20 | 140 | -25..+60 | 9,3 | p. 37 / L3) |
| *3G 630 | M3G 112-IA | -5° | (D) | 3~ 200-240 | 50/60 | 1140 | 0,97 | 3,20 | 170 | -25..+60 | 11,3 | p. 35 / L2) |
| *3G 630 | M3G 112-IA | -5° | (E) | 3~ 380-480 | 50/60 | 1140 | 0,97 | 1,60 | 170 | -25..+60 | 11,3 | p. 39 / K3) |
| *3G 630 | M3G 150-IF | 0° | (F) | 3~ 200-240 | 50/60 | 1450 | 2,95 | 8,90 | 270 | -25..+60 | 24,4 | p. 38 / L5) |
| *3G 630 | M3G 150-IF | 0° | (G) | 3~ 380-480 | 50/60 | 1510 | 3,20 | 5,00 | 290 | -25..+65 | 24,4 | p. 38 / L5) |

subject to alterations

(1) Nominal data in operating point with maximum load and 115 VAC or 230 VAC or 400 VAC

Curves



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

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

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

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

For detailed information see page 40 ff.

| | n [rpm] | P ₁ [kW] | I [A] | L _{wA} [dB(A)] |
|-------|---------|---------------------|-------|-------------------------|
| (A) 1 | 800 | 0,18 | 1,64 | 65 |
| (A) 2 | 800 | 0,23 | 2,04 | 63 |
| (A) 3 | 800 | 0,27 | 2,34 | 63 |
| (A) 4 | 800 | 0,28 | 2,40 | 66 |
| (B) 1 | 800 | 0,18 | 0,82 | 65 |
| (B) 2 | 800 | 0,23 | 1,02 | 63 |
| (B) 3 | 800 | 0,27 | 1,17 | 63 |
| (B) 4 | 800 | 0,28 | 1,20 | 66 |
| (C) 1 | 1000 | 0,46 | 2,11 | 71 |
| (C) 2 | 1000 | 0,55 | 2,51 | 68 |
| (C) 3 | 1000 | 0,64 | 2,88 | 68 |
| (C) 4 | 1000 | 0,72 | 3,20 | 71 |
| (D) 1 | 1140 | 0,64 | 2,04 | 74 |
| (D) 2 | 1140 | 0,78 | 2,50 | 71 |
| (D) 3 | 1140 | 0,89 | 2,84 | 72 |
| (D) 4 | 1140 | 0,97 | 3,20 | 74 |

- **Technical features:** See electrical connections p. 36 ff.
- **EMC:** A B D E F G Interference emission acc. to EN 61000-6-3
 C Interference emission acc. to EN 61000-6-4
 Interference immunity acc. to EN 61000-6-2
 Harmonics acc. to EN 61000-3-2/3
- **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
- **Cable exit:** A B C E Variable
- **Terminal box:** D F G Electrical connection via terminal strip
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standards:** CE
- **Approvals:** A B C D E GOST; UL/CSA are applied for; CCC on request
 F G GOST, UL/CSA; CCC on request

| Direction of air flow | Direction of air flow "V" | | |
|-----------------------|---------------------------|-------------------------|------------------------------------|
| | Without attachments | With full square nozzle | With guard grille for short nozzle |
| "V" | on request | W3G 630-GD10 -41 | on request |
| "V" | A3G 630-AD03 -A1 | W3G 630-GD03 -A1 | S3G 630-AD03 -A1 |
| "V" | A3G 630-AQ37 -21 | W3G 630-GQ37 -21 | S3G 630-AQ37 -21 |
| "V" | on request | W3G 630-GR92 -13 | on request |
| "V" | A3G 630-AR85 -01 | W3G 630-GR85 -01 | S3G 630-AR85 -01 |
| "V" | on request | W3G 630-GU29 -11 | on request |
| "V" | A3G 630-AU23 -01 | W3G 630-GU23 -01 | S3G 630-AU23 -01 |

Direction of air flow "A" on request

| | n [rpm] | P ₁ [kW] | I [A] | L _{wA} [dB(A)] |
|-----|---------|---------------------|-------|-------------------------|
| E 1 | 1140 | 0,64 | 1,02 | 74 |
| E 2 | 1140 | 0,78 | 1,25 | 71 |
| E 3 | 1140 | 0,89 | 1,42 | 72 |
| E 4 | 1140 | 0,97 | 1,60 | 74 |
| F 1 | 1450 | 2,24 | 6,80 | 81 |
| F 2 | 1450 | 2,45 | 7,50 | 80 |
| F 3 | 1450 | 2,67 | 8,20 | 80 |
| F 4 | 1450 | 2,95 | 8,90 | 84 |
| G 1 | 1510 | 2,49 | 3,77 | 81 |
| G 2 | 1510 | 2,74 | 4,18 | 81 |
| G 3 | 1510 | 2,94 | 4,47 | 81 |
| G 4 | 1510 | 3,20 | 5,00 | 85 |

EC axial fans - HyBlade®

Ø 630 with motor M3G084, drawings for direction of air flow "V"

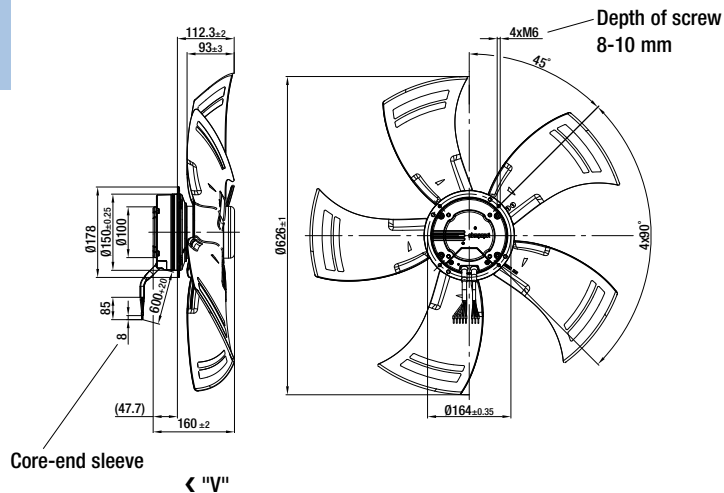


Without attachments

Type Mass [kg]

| | | |
|---|------------------|-----|
| Ⓐ | on request | 6,3 |
| Ⓑ | A3G 630-AD03 -A1 | 6,3 |

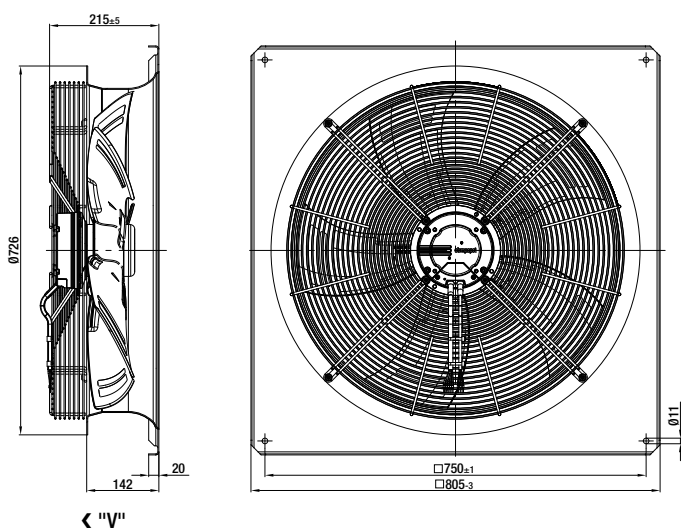
Internal diameter of the wall ring at least 634 mm



With full square nozzle

Type Mass [kg]

| | | |
|---|------------------|------|
| Ⓐ | W3G 630-GD10 -A1 | 20,4 |
| Ⓑ | W3G 630-GD03 -A1 | 20,4 |

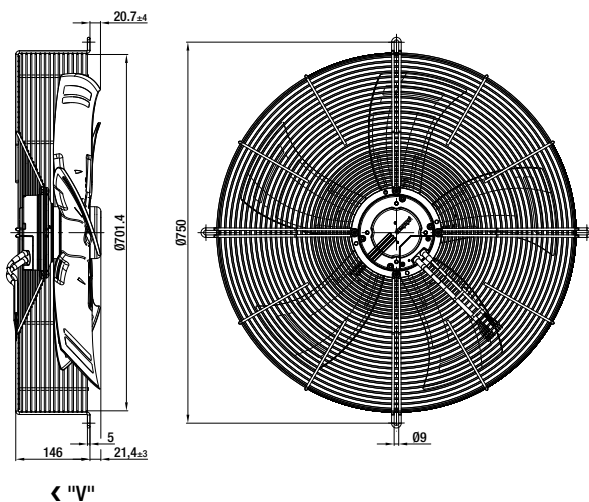


With guard grille for short nozzle

Type Mass [kg]

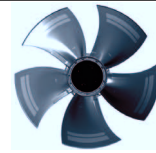
| | | |
|---|------------------|------|
| Ⓐ | on request | 10,6 |
| Ⓑ | S3G 630-AD03 -A1 | 10,6 |

Internal diameter of the wall ring at least 634 mm



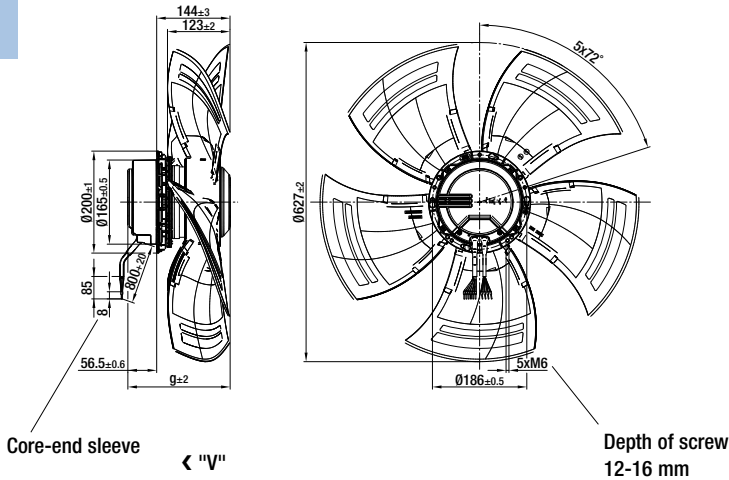
EC axial fans - HyBlade[®]

Ø 630 with motor M3G112, drawings for direction of air flow "V"



Without attachments

| Type | Mass [kg] | g |
|--------------------|--------------|-------|
| Ⓒ A3G 630-AQ37 -21 | 9,3 | 180,5 |
| Ⓓ on request | 11,3 | 200,5 |
| Ⓔ A3G 630-AR85 -01 | 11,3 | 200,5 |

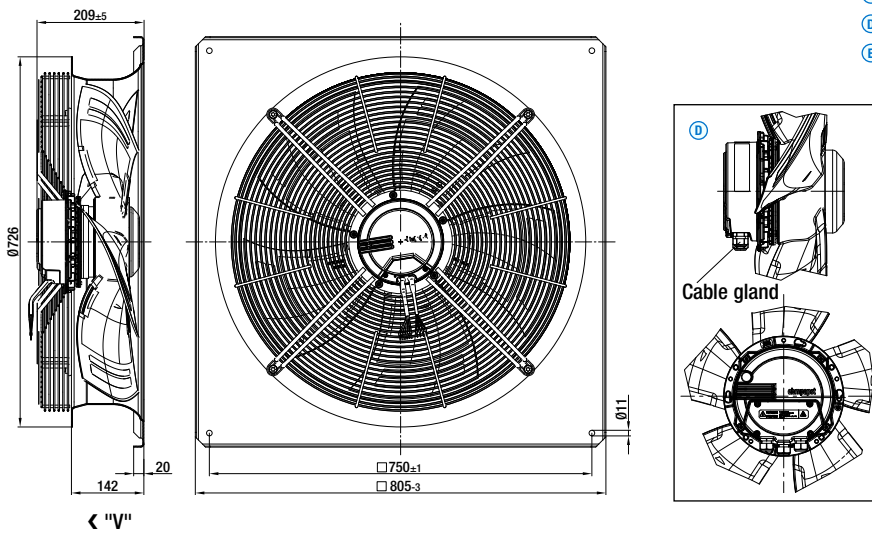


Internal diameter of the wall ring at least 634 mm



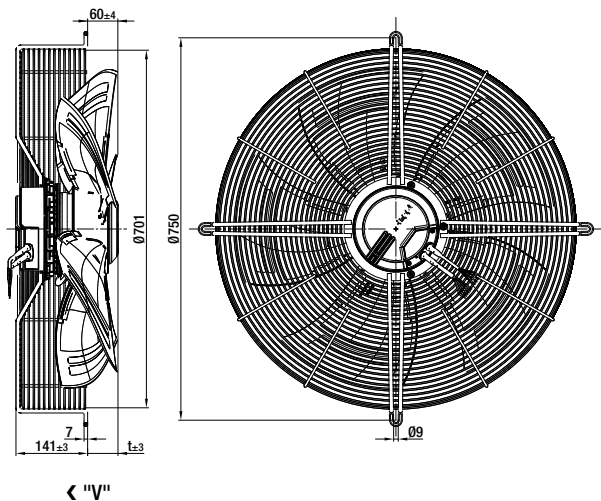
With full square nozzle

| Type | Mass [kg] |
|--------------------|--------------|
| Ⓒ W3G 630-GQ37 -21 | 24,3 |
| Ⓓ W3G 630-GR92 -13 | 26,3 |
| Ⓔ W3G 630-GR85 -01 | 26,3 |



With guard grille for short nozzle

| Type | Mass [kg] | t |
|--------------------|--------------|------|
| Ⓒ S3G 630-AQ37 -21 | 14,6 | 39,5 |
| Ⓓ on request | 16,6 | 59,5 |
| Ⓔ S3G 630-AR85 -01 | 16,6 | 59,5 |



Internal diameter of the wall ring at least 634 mm

EC axial fans - HyBlade®

Ø 630 with motor M3G150, drawings for direction of air flow "V"

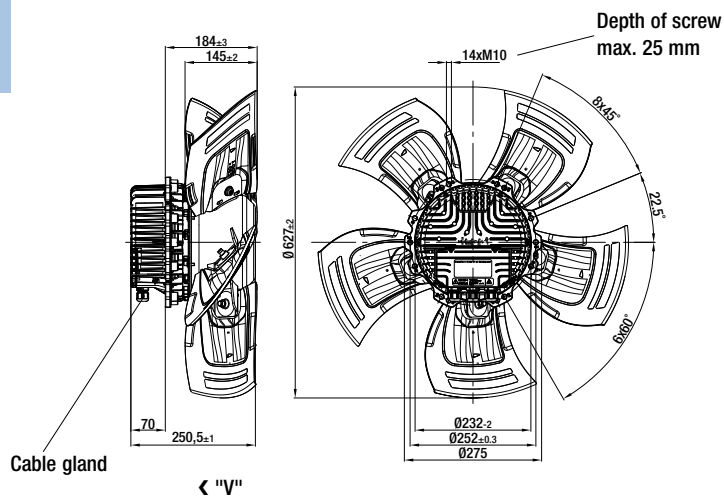


Without attachments

Type Mass [kg]

| | | |
|---|------------------|------|
| F | on request | 24,4 |
| G | A3G 630-AU23 -01 | 24,4 |

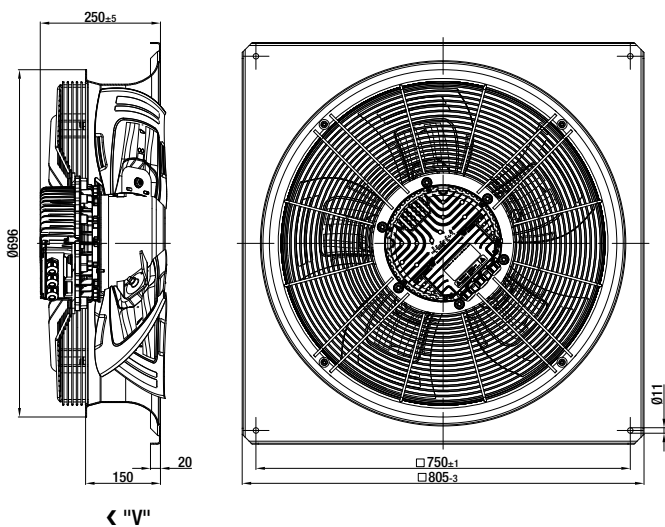
Internal diameter of the wall ring at least 634 mm



With full square nozzle

Type Mass [kg]

| | | |
|---|------------------|------|
| F | W3G 630-GU29 -11 | 39,5 |
| G | W3G 630-GU23 -01 | 39,5 |

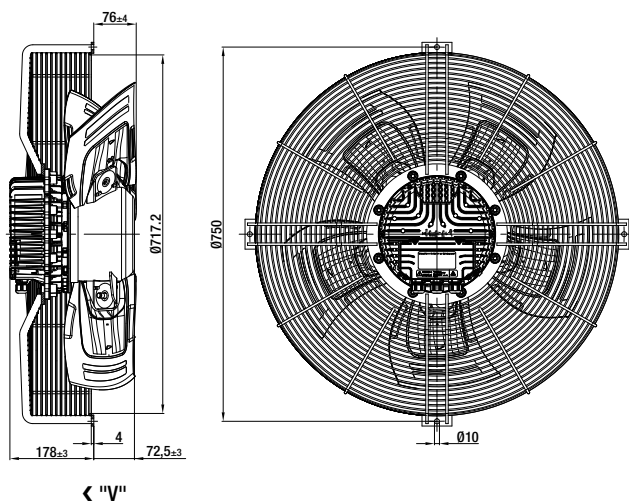


With guard grille for short nozzle

Type Mass [kg]

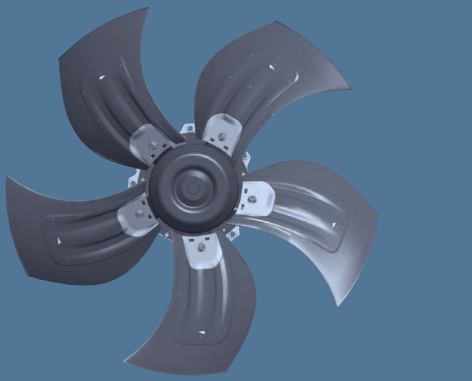
| | | |
|---|------------------|------|
| F | on request | 31,5 |
| G | S3G 630-AU23 -01 | 31,5 |

Internal diameter of the wall ring at least 634 mm



EC axial fans - HyBlade®

Ø 710



- **Material:** Guard grille: Steel, phosphated and coated in black plastic
Wall ring: Sheet steel, pre-galvanised and coated in black plastic
Blades: Insertion part made of sheet aluminium, extrusion-coated in PP plastics
Rotor: Coated in black
Electronics enclosure: Die-cast aluminium, coated in black
- **Number of blades:** 5
- **Direction of rotation:** (A) (B) (C) counter-clockwise, (D) (E) clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** (A) (B) (C) "B" ("F" applying to the main components as per EN), (D) (E) "F"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

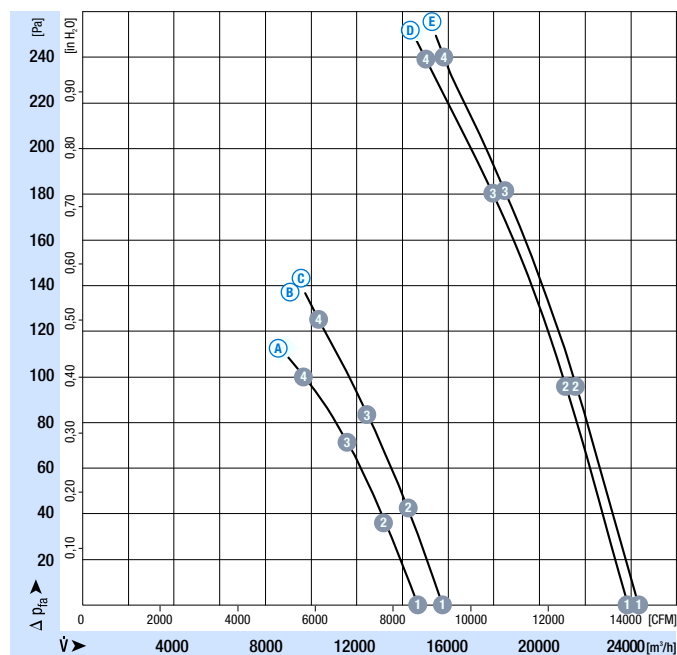
Nominal data

| Type | Motor | Blade angle | Curve | Nominal voltage range | Frequency | Speed/rpm ⁽¹⁾ | Max. power input ⁽¹⁾ | Max. current draw ⁽¹⁾ | Max. operative range | Perm. amb. temp. | Mass without attachments | Technical features and elect. connections |
|---------|------------|-------------|-------|-----------------------|-----------|--------------------------|---------------------------------|----------------------------------|----------------------|------------------|--------------------------|---|
| Type | Motor | | | VAC | Hz | rpm | kW | A | Pa | °C | kg | |
| *3G 710 | M3G 112-IA | 0° | (A) | 1~ 200-277 | 50/60 | 830 | 0,70 | 3,10 | 100 | -25..+60 | 12,0 | p. 37 / L3) |
| *3G 710 | M3G 112-IA | 0° | (B) | 3~ 200-240 | 50/60 | 900 | 0,93 | 3,00 | 125 | -25..+60 | 12,0 | p. 35 / L2) |
| *3G 710 | M3G 112-IA | 0° | (C) | 3~ 380-480 | 50/60 | 900 | 0,93 | 1,50 | 125 | -25..+60 | 12,0 | p. 39 / K3) |
| *3G 710 | M3G 150-IF | 0° | (D) | 3~ 200-240 | 50/60 | 1230 | 2,65 | 8,10 | 240 | -25..+60 | 25,3 | p. 38 / L5) |
| *3G 710 | M3G 150-IF | 0° | (E) | 3~ 380-480 | 50/60 | 1250 | 2,83 | 4,30 | 240 | -25..+60 | 25,3 | p. 38 / L5) |

subject to alterations

(1) Nominal data in operating point with maximum load and 230 VAC or 400 VAC

Curves



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

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

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

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

For detailed information see page 40 ff.

| | n [rpm] | P_1 [kW] | I [A] | L_{wA} [dB(A)] |
|-------|---------|------------|-------|------------------|
| (A) 1 | 830 | 0,45 | 2,08 | 69 |
| (A) 2 | 830 | 0,55 | 2,49 | 67 |
| (A) 3 | 830 | 0,64 | 2,86 | 68 |
| (A) 4 | 830 | 0,70 | 3,10 | 73 |
| (B) 1 | 900 | 0,59 | 1,92 | 70 |
| (B) 2 | 900 | 0,70 | 2,28 | 69 |
| (B) 3 | 900 | 0,81 | 2,60 | 70 |
| (B) 4 | 900 | 0,93 | 3,00 | 76 |
| (C) 1 | 900 | 0,59 | 0,96 | 70 |
| (C) 2 | 900 | 0,70 | 1,12 | 69 |
| (C) 3 | 900 | 0,81 | 1,30 | 70 |
| (C) 4 | 900 | 0,93 | 1,50 | 76 |
| (D) 1 | 1230 | 2,05 | 6,40 | 79 |
| (D) 2 | 1230 | 2,33 | 7,20 | 78 |
| (D) 3 | 1230 | 2,56 | 7,80 | 79 |
| (D) 4 | 1230 | 2,65 | 8,10 | 83 |
| (E) 1 | 1250 | 2,23 | 3,40 | 79 |
| (E) 2 | 1250 | 2,44 | 3,71 | 79 |
| (E) 3 | 1250 | 2,67 | 4,06 | 79 |
| (E) 4 | 1250 | 2,83 | 4,30 | 83 |

- **Technical features:** See electrical connections p. 37 ff.
- **EMC:** **B C D E** Interference emission acc. to EN 61000-6-3
A Interference emission acc. to EN 61000-6-4
Interference immunity acc. to EN 61000-6-2
Harmonics acc. to EN 61000-3-2/3
- **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
- **Cable exit:** **A C** Variable
- **Terminal box:** **B D E** Electrical connection via terminal strip
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standards:** CE
- **Approvals:** **A B C** GOST; UL/CSA are applied for; CCC on request
D E GOST, UL/CSA; CCC on request

| Direction of air flow | | | |
|-----------------------|---------------------|-------------------------|------------------------------------|
| | Without attachments | With full square nozzle | With guard grille for short nozzle |
| "V" | A3G 710-A085 -21 | W3G 710-G085 -21 | S3G 710-A085 -21 |
| "V" | on request | W3G 710-G087 -13 | on request |
| "V" | A3G 710-A081 -01 | W3G 710-G081 -01 | S3G 710-A081 -01 |
| "V" | on request | W3G 710-GU30 -11 | on request |
| "V" | A3G 710-AU21 -01 | W3G 710-GU21 -01 | S3G 710-AU21 -01 |

Direction of air flow "A" on request

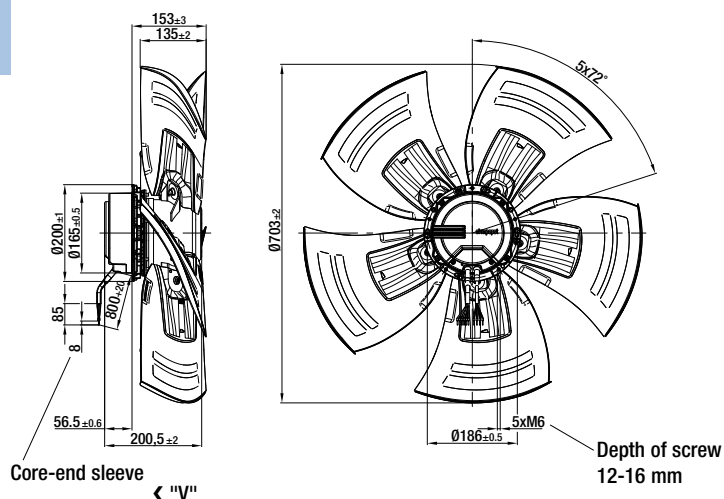
EC axial fans - HyBlade®

Ø 710 with motor M3G112, drawings for direction of air flow "V"



Without attachments

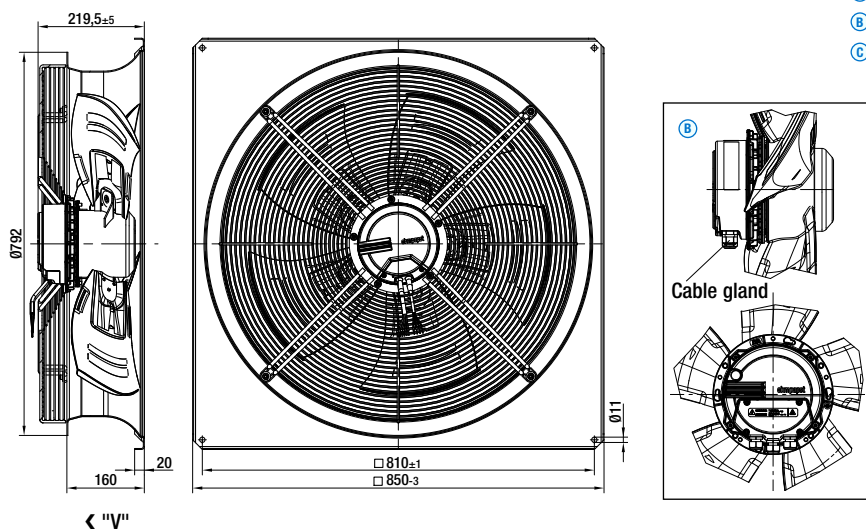
| Type | Mass [kg] |
|--------------------|-----------|
| Ⓐ A3G 710-A085 -21 | 12,0 |
| Ⓑ on request | 12,0 |
| Ⓒ A3G 710-A081 -01 | 12,0 |



Internal diameter of the wall ring at least 710 mm

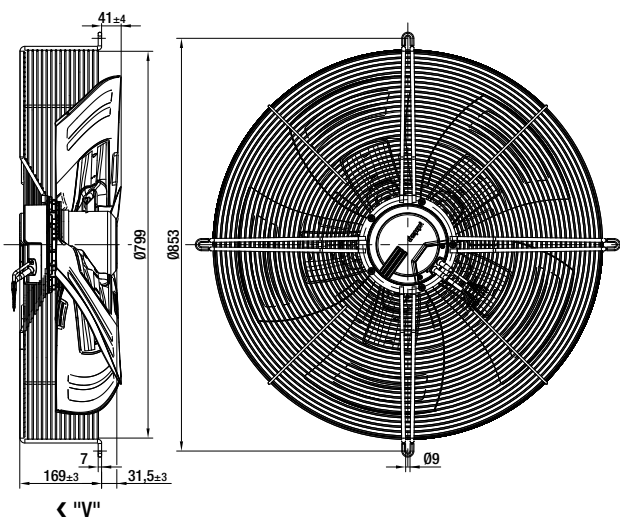
With full square nozzle

| Type | Mass [kg] |
|--------------------|-----------|
| Ⓐ W3G 710-G085 -21 | 26,9 |
| Ⓑ W3G 710-G087 -13 | 26,9 |
| Ⓒ W3G 710-G081 -01 | 26,9 |



With guard grille for short nozzle

| Type | Mass [kg] |
|--------------------|-----------|
| Ⓐ S3G 710-A085 -21 | 18,8 |
| Ⓑ on request | 18,8 |
| Ⓒ S3G 710-A081 -01 | 18,8 |



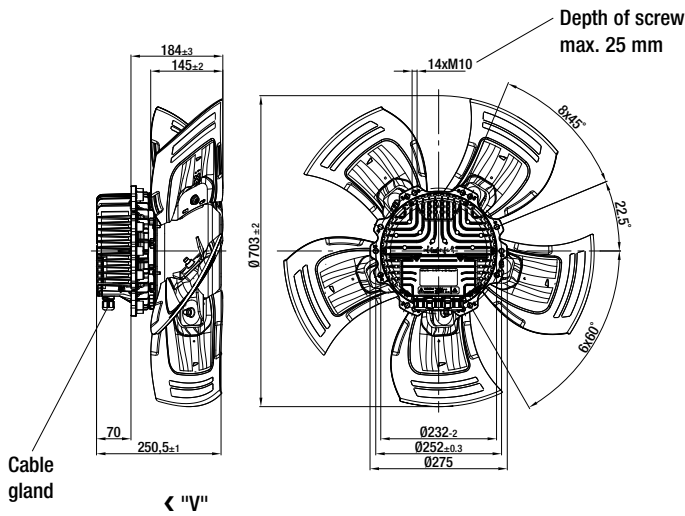
Internal diameter of the wall ring at least 710 mm

EC axial fans - HyBlade®

Ø 710 with motor M3G150, drawings for direction of air flow "V"



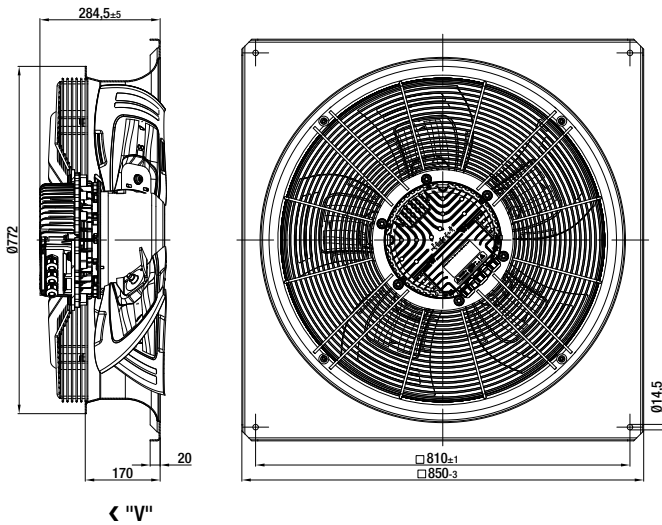
Without attachments



| Type | Mass [kg] |
|--------------------|-----------|
| ⓓ on request | 25,3 |
| Ⓔ A3G 710-AU21 -01 | 25,3 |

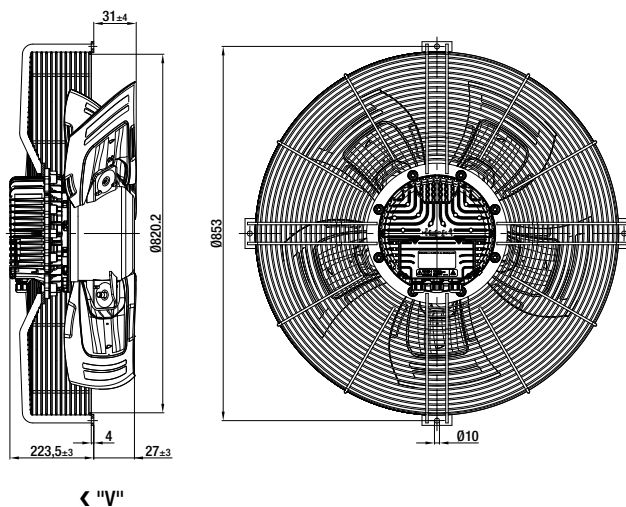
Internal diameter of the wall ring at least 710 mm

With full square nozzle



| Type | Mass [kg] |
|--------------------|-----------|
| ⓓ W3G 710-GU30 -11 | 42,4 |
| Ⓔ W3G 710-GU21 -01 | 42,4 |

With guard grille for short nozzle

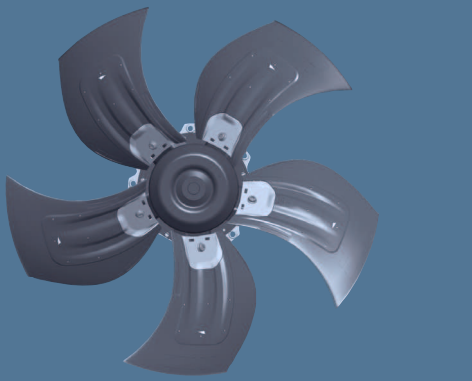


| Type | Mass [kg] |
|--------------------|-----------|
| ⓓ on request | 34,5 |
| Ⓔ S3G 710-AU21 -01 | 34,5 |

Internal diameter of the wall ring at least 710 mm

EC axial fans - HyBlade®

Ø 800



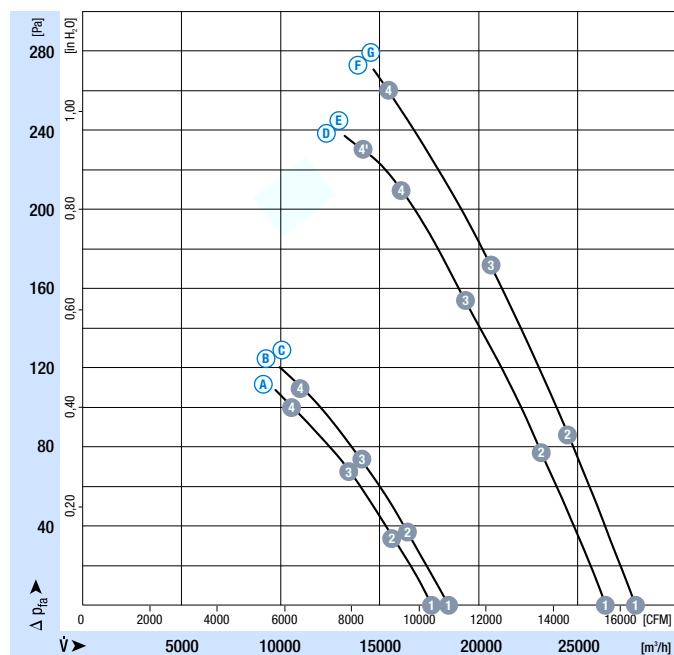
- **Material:** Guard grille: Steel, phosphated and coated in black plastic
Wall ring: Sheet steel, pre-galvanised and coated in black plastic
Blades (5): (A) (B) (C) Pressed-on round sheet steel plate; (D) (E) (F) (G) Insertion part made of sheet aluminium; Both versions extrusion-coated in PP plastics
Rotor: Coated in black
Electronics enclosure: Die-cast aluminium, coated in black
- **Direction of rotation:** clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** (A) (B) (C) "B" ("F" applying to the main components as per EN), (D) (E) (F) (G) "F"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

| Nominal data | | Blade angle | Curve | Nominal voltage range | Frequency | Speed/rpm ⁽¹⁾ | Max. power input ⁽¹⁾ | Max. current draw ⁽¹⁾ | Max. operative range | Perm. amb. temp. | Mass without attachments | Technical features and electr. connections |
|--------------|------------|-------------|-------|-----------------------|-----------|--------------------------|---------------------------------|----------------------------------|----------------------|------------------|--------------------------|--|
| Type | Motor | | | VAC | Hz | rpm | kW | A | Pa | °C | kg | |
| *3G 800 | M3G 112-IA | 0° | (A) | 1~ 200-277 | 50/60 | 710 | 0,73 | 3,20 | 100 | -25..+60 | 12,1 | p. 37 / L3) |
| *3G 800 | M3G 112-IA | 0° | (B) | 3~ 200-240 | 50/60 | 735 | 0,84 | 2,80 | 110 | -25..+60 | 12,1 | p. 35 / L2) |
| *3G 800 | M3G 112-IA | 0° | (C) | 3~ 380-480 | 50/60 | 735 | 0,84 | 1,40 | 110 | -25..+60 | 12,1 | p. 39 / K3) |
| *3G 800 | M3G 150-IF | 0° | (D) | 3~ 200-240 | 50/60 | 1020 | 2,40 | 7,50 | 210 | -25..+60 | 25,9 | p. 38 / L5) |
| *3G 800 | M3G 150-IF | 0° | (E) | 3~ 380-480 | 50/60 | 1020 | 2,56 | 3,90 | 230 | -25..+60 | 25,9 | p. 38 / L5) |
| *3G 800 | M3G 150-NA | 0° | (F) | 3~ 200-240 | 50/60 | 1090 | 2,98 | 9,00 | 260 | -25..+65 | 30,4 | p. 38 / L5) |
| *3G 800 | M3G 150-NA | 0° | (G) | 3~ 380-480 | 50/60 | 1090 | 2,98 | 4,50 | 260 | -25..+65 | 30,4 | p. 38 / L5) |

subject to alterations

(1) Nominal data in operating point with maximum load and 230 VAC or 400 VAC

Curves



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

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

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

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

For detailed information see page 40 ff.

| | n [rpm] | P ₁ [kW] | I [A] | L _{wA} [dB(A)] |
|-------|---------|---------------------|-------|-------------------------|
| (A) 1 | 710 | 0,46 | 2,15 | 70 |
| (A) 2 | 710 | 0,55 | 2,49 | 66 |
| (A) 3 | 710 | 0,63 | 2,84 | 64 |
| (A) 4 | 710 | 0,73 | 3,20 | 69 |
| (B) 1 | 735 | 0,52 | 1,76 | 70 |
| (B) 2 | 735 | 0,62 | 2,04 | 66 |
| (B) 3 | 735 | 0,72 | 2,36 | 64 |
| (B) 4 | 735 | 0,84 | 2,80 | 70 |
| (C) 1 | 735 | 0,52 | 0,88 | 70 |
| (C) 2 | 735 | 0,62 | 1,02 | 66 |
| (C) 3 | 735 | 0,72 | 1,18 | 64 |
| (C) 4 | 735 | 0,84 | 1,40 | 70 |
| (D) 1 | 1020 | 1,62 | 4,94 | 75 |
| (D) 2 | 1020 | 1,88 | 5,76 | 75 |
| (D) 3 | 1020 | 2,15 | 6,58 | 77 |
| (D) 4 | 1020 | 2,40 | 7,50 | 85 |

- **Technical features:** See electrical connections p. 37 ff.
- **EMC:** **B C D E F G** Interference emission acc. to EN 61000-6-3
A Interference emission acc. to EN 61000-6-4
Interference immunity acc. to EN 61000-6-2
Harmonics acc. to EN 61000-3-2/3
- **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
- **Cable exit:** **A C** Variable
- **Terminal box:** **B D E F G** Electrical connection via terminal strip
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standards:** CE
- **Approvals:** **A B C** GOST; UL/CSA are applied for; CCC on request
D E F G GOST, UL/CSA; CCC on request

| Direction of air flow | | | |
|-----------------------|---------------------|-------------------------|-----------------------------------|
| | Without attachments | With full square nozzle | With guard grille for full nozzle |
| "V" | A3G 800-A081 -21 | W3G 800-G081 -21 | S3G 800-B081 -21 |
| "V" | on request | W3G 800-G091 -13 | on request |
| "V" | A3G 800-A084 -01 | W3G 800-G084 -01 | S3G 800-B084 -01 |
| "V" | on request | W3G 800-GU24 -11 | on request |
| "V" | A3G 800-AU25 -01 | W3G 800-GU25 -01 | S3G 800-BU25 -01 |
| "V" | on request | W3G 800-GV10 -11 | on request |
| "V" | A3G 800-AV01 -01 | W3G 800-GV01 -01 | S3G 800-BV01 -01 |

Direction of air flow "A" on request

| | n [rpm] | P ₁ [kW] | I [A] | L _{wA} [dB(A)] |
|------------|------------|------------------------|----------|----------------------------|
| E ① | 1020 | 1,62 | 2,47 | 75 |
| E ② | 1020 | 1,88 | 2,88 | 75 |
| E ③ | 1020 | 2,15 | 3,29 | 77 |
| E ④ | 1020 | 2,56 | 3,90 | 85 |
| F ① | 1090 | 1,87 | 5,68 | 76 |
| F ② | 1090 | 2,18 | 6,64 | 76 |
| F ③ | 1090 | 2,50 | 7,62 | 78 |
| F ④ | 1090 | 2,98 | 9,00 | 84 |
| G ① | 1090 | 1,87 | 2,84 | 76 |
| G ② | 1090 | 2,18 | 3,32 | 76 |
| G ③ | 1090 | 2,50 | 3,81 | 78 |
| G ④ | 1090 | 2,98 | 4,50 | 84 |

EC axial fans - HyBlade®

Ø 800 with motor M3G112, drawings for direction of air flow "V"

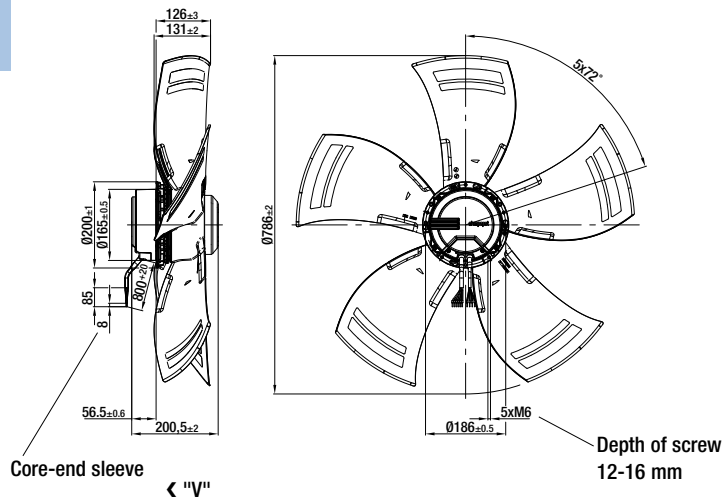


Without attachments

Type

Mass [kg]

| | | |
|---|------------------|------|
| Ⓐ | A3G 800-A081 -21 | 12,1 |
| Ⓑ | on request | 12,1 |
| Ⓒ | A3G 800-A084 -01 | 12,1 |



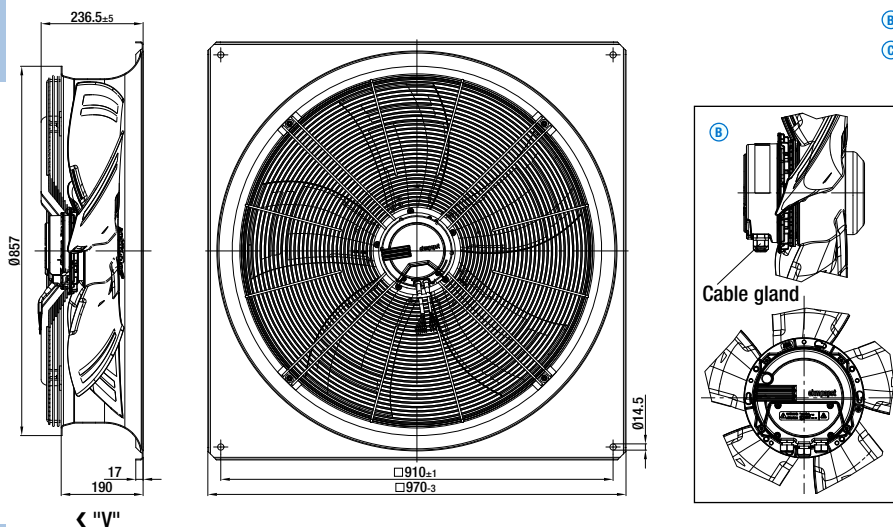
Internal diameter of the wall ring at least 795 mm

With full square nozzle

Type

Mass [kg]

| | | |
|---|------------------|------|
| Ⓐ | W3G 800-G081 -21 | 33,3 |
| Ⓑ | W3G 800-G091 -13 | 33,3 |
| Ⓒ | W3G 800-G084 -01 | 33,3 |

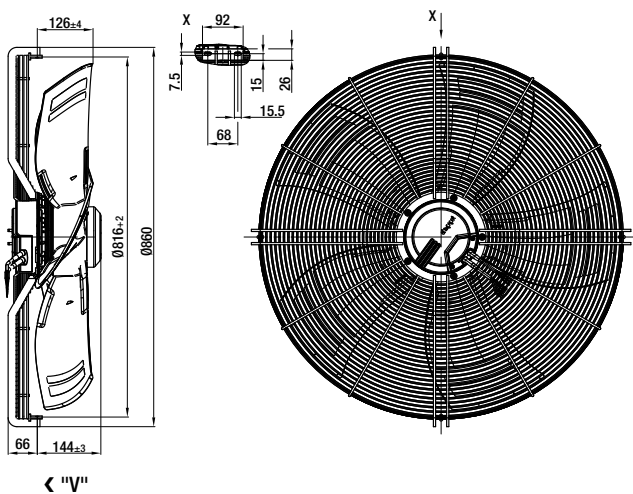


With guard grille for full nozzle

Type

Mass [kg]

| | | |
|---|------------------|------|
| Ⓐ | S3G 800-B081 -21 | 18,3 |
| Ⓑ | on request | 18,3 |
| Ⓒ | S3G 800-B084 -01 | 18,3 |

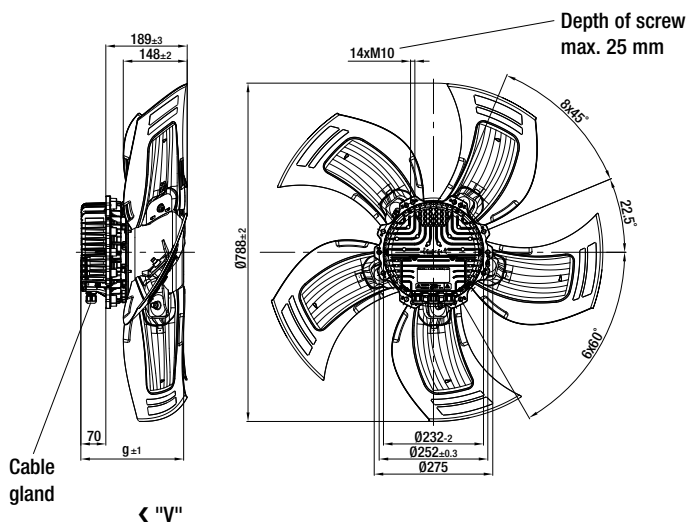


EC axial fans - HyBlade®

Ø 800 with motor M3G150, drawings for direction of air flow "V"



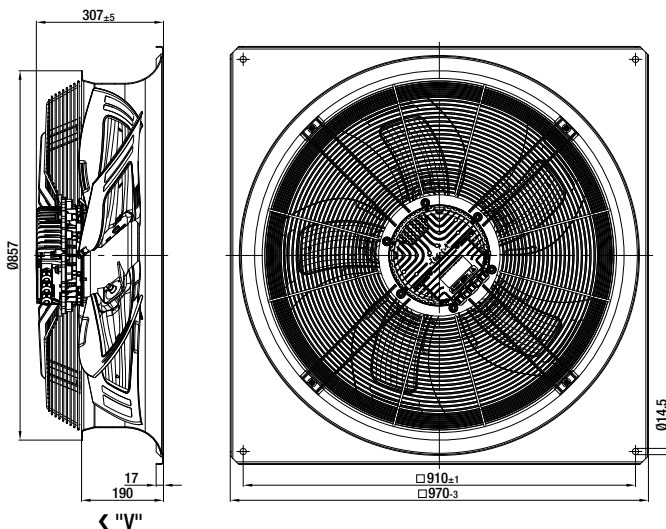
Without attachments



| Type | Mass [kg] | g |
|--------------------|-----------|-------|
| ⓓ on request | 25,9 | 250,5 |
| ⓔ A3G 800-AU25 -01 | 25,9 | 250,5 |
| ⓕ on request | 30,4 | 289,5 |
| ⓖ A3G 800-AV01 -01 | 30,4 | 289,5 |

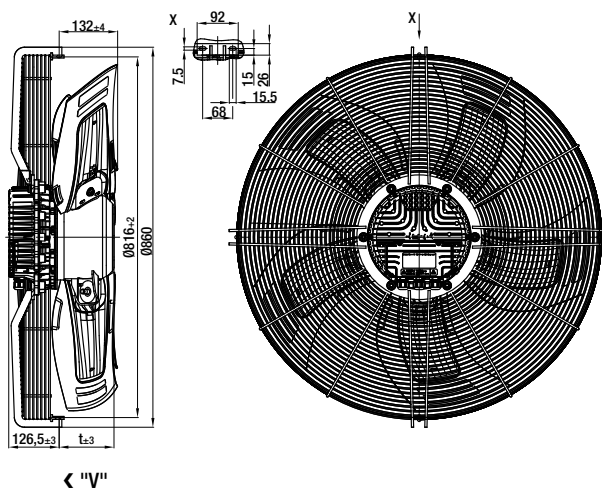
Internal diameter of the wall ring at least 795 mm

With full square nozzle



| Type | Mass [kg] |
|--------------------|-----------|
| ⓓ W3G 800-GU24 -11 | 45,7 |
| ⓔ W3G 800-GU25 -01 | 45,7 |
| ⓕ W3G 800-GV10 -11 | 50,2 |
| ⓖ W3G 800-GV01 -01 | 50,2 |

With guard grille for full nozzle

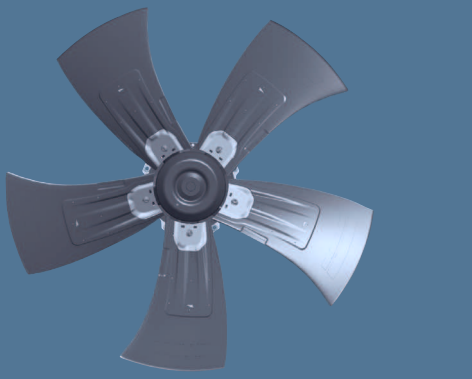


| Type | Mass [kg] | t |
|--------------------|-----------|-------|
| ⓓ on request | 33,7 | 124,0 |
| ⓔ S3G 800-BU25 -01 | 33,7 | 124,0 |
| ⓕ on request | 38,2 | 163,0 |
| ⓖ S3G 800-BV01 -01 | 38,2 | 163,0 |

Internal diameter of the wall ring at least 795 mm

EC axial fans - HyBlade®

Ø 910



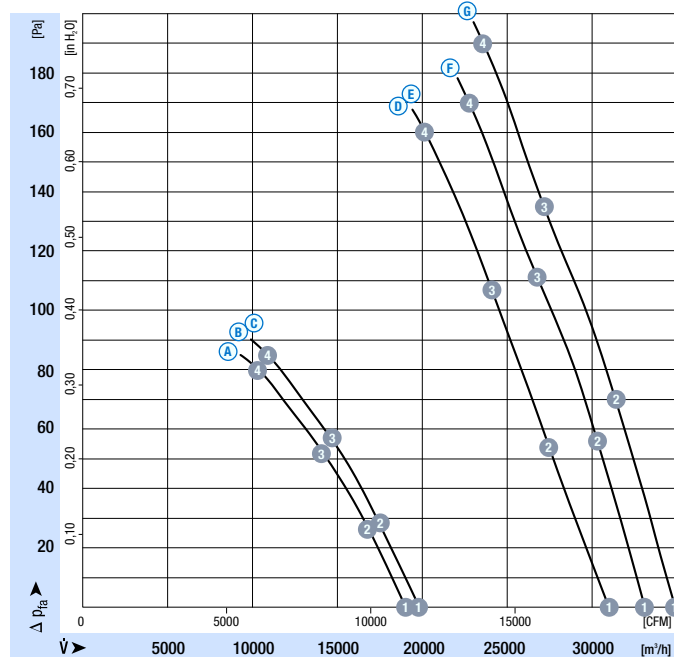
- **Material:** Guard grille: Steel, phosphated and coated in black plastic
Wall ring: Sheet steel, pre-galvanised and coated in black plastic
Blades (5): (A) (B) (C) Pressed-on round sheet steel plate; (D) (E) (F) (G) Insertion part made of sheet aluminium; Both versions extrusion-coated in PP plastics
Rotor: Coated in black
Electronics enclosure: Die-cast aluminium, coated in black
- **Direction of rotation:** clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** (A) (B) (C) "B" ("F" applying to the main components as per EN), (D) (E) (F) (G) "F"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

| Nominal data | | Blade angle | Curve | Nominal voltage range | Frequency | Speed/rpm ⁽¹⁾ | Max. power input ⁽¹⁾ | Max. current draw ⁽¹⁾ | Max. operative range | Perm. amb. temp. | Mass without attachments | Technical features and electr. connections |
|--------------|------------|-------------|-------|-----------------------|-----------|--------------------------|---------------------------------|----------------------------------|----------------------|------------------|--------------------------|--|
| Type | Motor | | | VAC | Hz | rpm | kW | A | Pa | °C | kg | |
| *3G 910 | M3G 112-IA | 0° | (A) | 1~ 200-277 | 50/60 | 590 | 0,58 | 2,60 | 80 | -25..+60 | 12,2 | p. 37 / L3) |
| *3G 910 | M3G 112-IA | 0° | (B) | 3~ 200-240 | 50/60 | 610 | 0,63 | 2,20 | 85 | -25..+60 | 12,2 | p. 35 / L2) |
| *3G 910 | M3G 112-IA | 0° | (C) | 3~ 380-480 | 50/60 | 610 | 0,63 | 1,10 | 85 | -25..+60 | 12,2 | p. 39 / K3) |
| *3G 910 | M3G 150-IF | 0° | (D) | 3~ 200-240 | 50/60 | 885 | 2,10 | 6,40 | 160 | -25..+60 | 26,4 | p. 38 / L5) |
| *3G 910 | M3G 150-IF | 0° | (E) | 3~ 380-480 | 50/60 | 885 | 2,10 | 3,20 | 160 | -25..+60 | 26,4 | p. 38 / L5) |
| *3G 910 | M3G 150-NA | 0° | (F) | 3~ 200-240 | 50/60 | 960 | 2,47 | 7,60 | 170 | -25..+60 | 30,9 | p. 38 / L5) |
| *3G 910 | M3G 150-NA | 0° | (G) | 3~ 380-480 | 50/60 | 1000 | 2,88 | 4,40 | 190 | -25..+65 | 30,9 | p. 38 / L5) |

subject to alterations

(1) Nominal data in operating point with maximum load and 230 VAC or 400 VAC

Curves



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

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

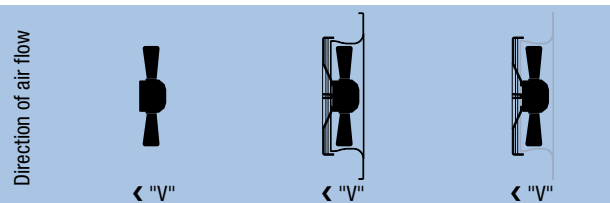
The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

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

For detailed information see page 40 ff.

| | n [rpm] | P ₁ [kW] | I [A] | L _{wA} [dB(A)] |
|-------|---------|---------------------|-------|-------------------------|
| (A) 1 | 590 | 0,35 | 1,64 | 67 |
| (A) 2 | 590 | 0,43 | 1,97 | 66 |
| (A) 3 | 590 | 0,50 | 2,26 | 66 |
| (A) 4 | 590 | 0,58 | 2,60 | 71 |
| (B) 1 | 610 | 0,39 | 1,38 | 68 |
| (B) 2 | 610 | 0,48 | 1,40 | 67 |
| (B) 3 | 610 | 0,56 | 1,84 | 66 |
| (B) 4 | 610 | 0,63 | 2,20 | 70 |
| (C) 1 | 610 | 0,39 | 0,69 | 68 |
| (C) 2 | 610 | 0,48 | 0,80 | 67 |
| (C) 3 | 610 | 0,56 | 0,92 | 66 |
| (C) 4 | 610 | 0,63 | 1,10 | 70 |
| (D) 1 | 885 | 1,36 | 4,14 | 76 |
| (D) 2 | 885 | 1,60 | 4,86 | 75 |
| (D) 3 | 885 | 1,83 | 5,58 | 75 |
| (D) 4 | 885 | 2,10 | 6,40 | 78 |

- **Technical features:** See electrical connections p. 37 ff.
- **EMC:** **B C D E F G** Interference emission acc. to EN 61000-6-3
A Interference emission acc. to EN 61000-6-4
 Interference immunity acc. to EN 61000-6-2
 Harmonics acc. to EN 61000-3-2/3
- **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
- **Cable exit:** **A C** Variable
- **Terminal box:** **B D E F G** Electrical connection via terminal strip
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standards:** CE
- **Approvals:** **A B C** GOST; UL/CSA are applied for; CCC on request
D E F G GOST, UL/CSA; CCC on request



| | Without attachments | With full square nozzle | With guard grille for full nozzle |
|-----|---------------------|-------------------------|-----------------------------------|
| "V" | A3G 910-A084 -21 | W3G910-G084 -21 | S3G 910-B084 -21 |
| "V" | on request | W3G910-G090 -13 | on request |
| "V" | A3G 910-A083 -01 | W3G910-G083 -01 | S3G 910-B083 -01 |
| "V" | on request | W3G910-GU31 -11 | on request |
| "V" | A3G 910-AU22 -01 | W3G910-GU22 -01 | S3G 910-BU22 -01 |
| "V" | on request | W3G910-GV06 -11 | on request |
| "V" | A3G 910-AV02 -01 | W3G910-GV02 -01 | S3G 910-BV02 -01 |

Direction of air flow "A" on request

| | n [rpm] | P ₁ [kW] | I [A] | L _{wA} [dB(A)] |
|------------|---------|---------------------|-------|-------------------------|
| E ① | 885 | 1,36 | 2,07 | 76 |
| E ② | 885 | 1,60 | 2,43 | 75 |
| E ③ | 885 | 1,83 | 2,79 | 75 |
| E ④ | 885 | 2,10 | 3,20 | 78 |
| F ① | 960 | 1,64 | 5,00 | 78 |
| F ② | 960 | 1,94 | 6,00 | 77 |
| F ③ | 960 | 2,21 | 6,80 | 77 |
| F ④ | 960 | 2,47 | 7,60 | 80 |
| G ① | 1000 | 1,92 | 2,91 | 79 |
| G ② | 1000 | 2,29 | 3,49 | 78 |
| G ③ | 1000 | 2,60 | 3,97 | 79 |
| G ④ | 1000 | 2,88 | 4,40 | 82 |

EC axial fans - HyBlade®

Ø 910 with motor M3G112, drawings for direction of air flow "V"

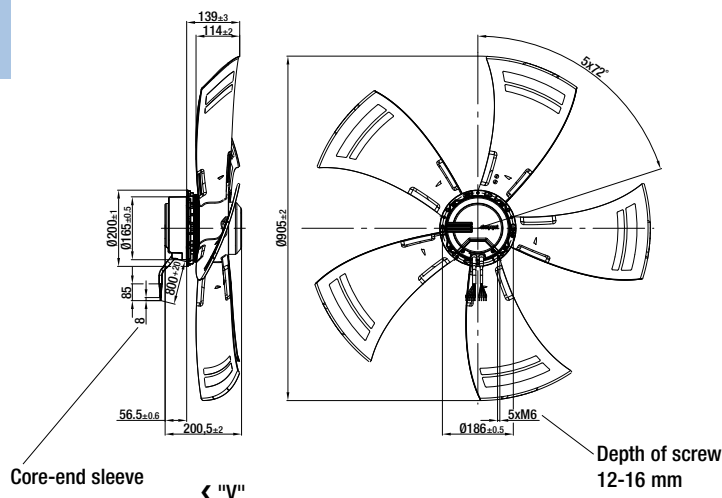


Without attachments

Type Mass [kg]

| | | |
|---|------------------|------|
| Ⓐ | A3G 910-A084 -21 | 12,2 |
| Ⓑ | on request | 12,2 |
| Ⓒ | A3G 910-A083 -01 | 12,2 |

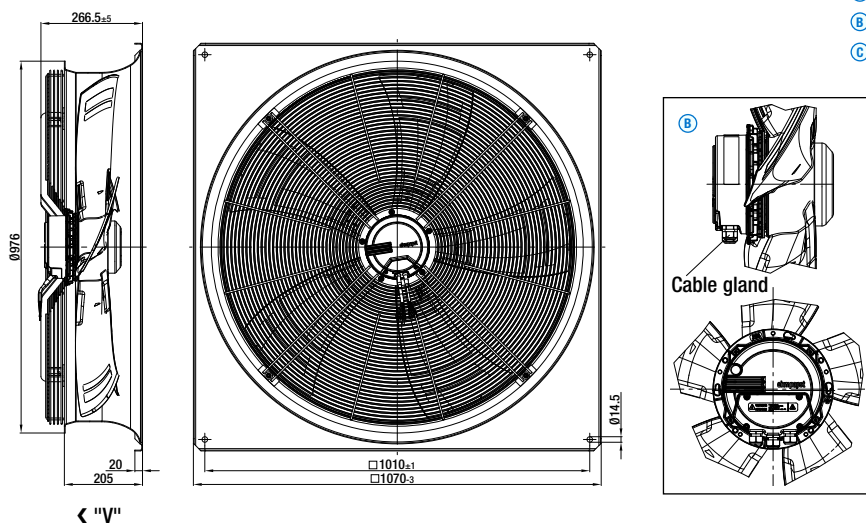
Internal diameter of the wall ring at least 913 mm



With full square nozzle

Type Mass [kg]

| | | |
|---|------------------|------|
| Ⓐ | W3G 910-G084 -21 | 37,0 |
| Ⓑ | W3G 910-G090 -13 | 37,0 |
| Ⓒ | W3G 910-G083 -01 | 37,0 |

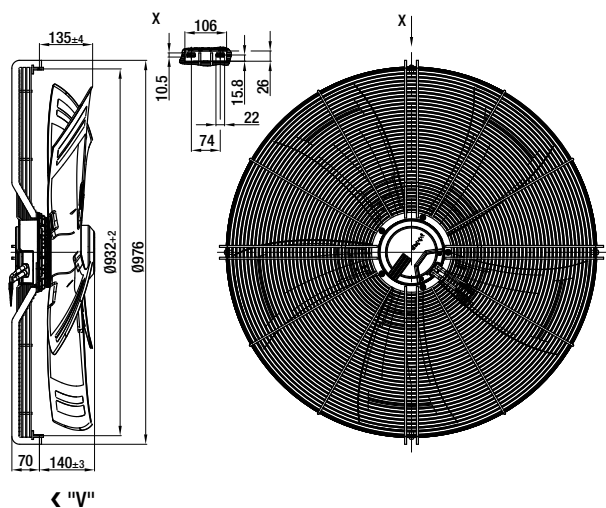


With guard grille for full nozzle

Type Mass [kg]

| | | |
|---|------------------|------|
| Ⓐ | S3G 910-B084 -21 | 19,8 |
| Ⓑ | on request | 19,8 |
| Ⓒ | S3G 910-B083 -01 | 19,8 |

Internal diameter of the wall ring at least 913 mm

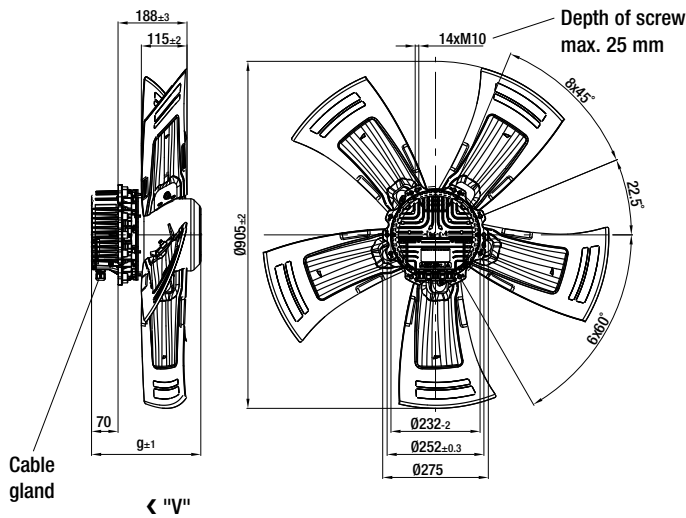


EC axial fans - HyBlade®

Ø 910 with motor M3G150, drawings for direction of air flow "V"



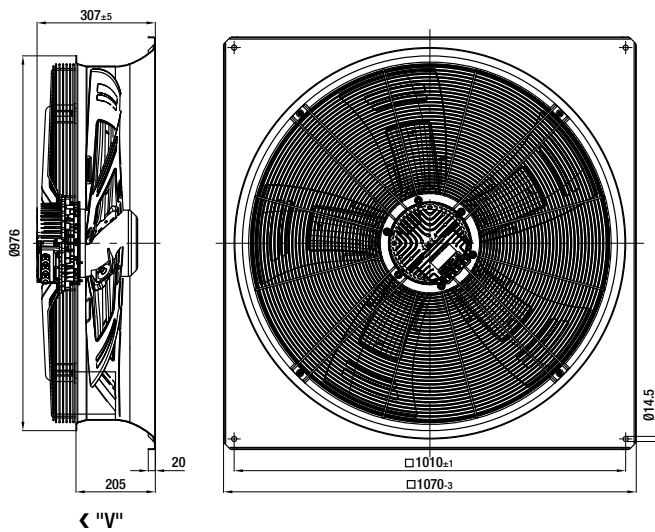
Without attachments



| Type | Mass [kg] | g |
|--------------------|-----------|-------|
| ⓓ on request | 26,4 | 250,0 |
| ⓔ A3G 910-AU22 -01 | 26,4 | 250,5 |
| ⓕ on request | 30,9 | 289,5 |
| ⓖ A3G 910-AV02 -01 | 30,9 | 289,5 |

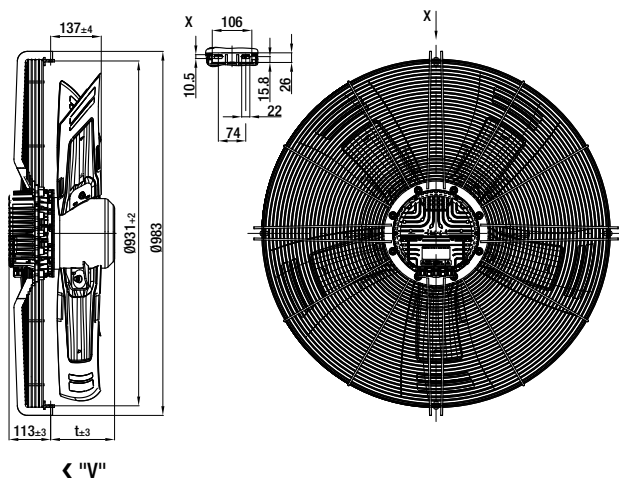
Internal diameter of the wall ring at least 913 mm

With full square nozzle



| Type | Mass [kg] |
|--------------------|-----------|
| ⓓ W3G 910-GU31 -11 | 51,6 |
| ⓔ W3G 910-GU22 -01 | 51,6 |
| ⓕ W3G 910-GV06 -11 | 56,1 |
| ⓖ W3G 910-GV02 -01 | 56,1 |

With guard grille for full nozzle

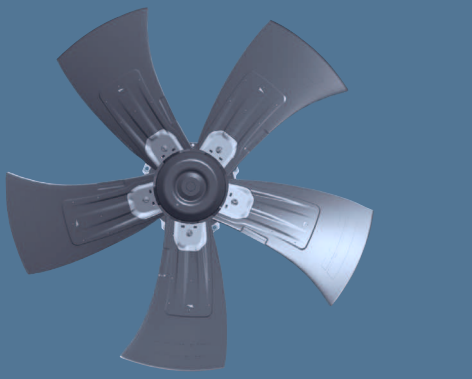


| Type | Mass [kg] | t |
|--------------------|-----------|-------|
| ⓓ on request | 35,2 | 137,5 |
| ⓔ S3G 910-BU22 -01 | 35,2 | 137,5 |
| ⓕ on request | 39,7 | 176,5 |
| ⓖ S3G 910-BV02 -01 | 39,7 | 176,5 |

Internal diameter of the wall ring at least 913 mm

EC axial fans - HyBlade®

Ø 990



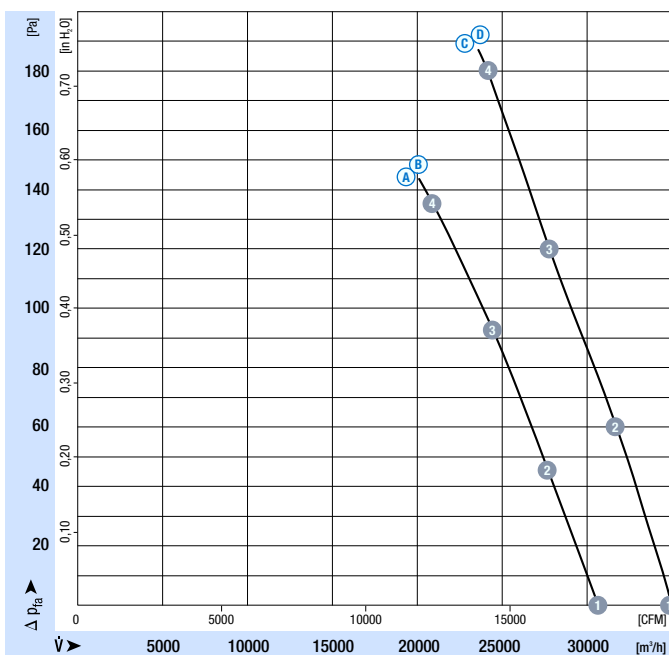
- **Material:** Guard grille: Steel, phosphated and coated in black plastic
Wall ring: Sheet steel, pre-galvanised and coated in black plastic
Blades: Insertion part made of sheet aluminium, extrusion-coated in PP plastics
Rotor: Coated in black
Electronics enclosure: Die-cast aluminium, coated in black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

| Nominal data | | Blade angle | Curve | Nominal voltage range | Frequency | Speed/rpm ⁽¹⁾ | Max. power input ⁽¹⁾ | Max. current draw ⁽¹⁾ | Max. operative range | Perm. amb. temp. | Mass without attachments | Technical features and electr. connections |
|--------------|------------|-------------|-------|-----------------------|-----------|--------------------------|---------------------------------|----------------------------------|----------------------|------------------|--------------------------|--|
| Type | Motor | | | VAC | Hz | rpm | kW | A | Pa | °C | kg | |
| *3G 990 | M3G 150-IF | -5° | A | 3~ 200-240 | 50/60 | 820 | 1,64 | 5,00 | 135 | -25..+60 | 25,7 | p. 38 / L5) |
| *3G 990 | M3G 150-IF | -5° | B | 3~ 380-480 | 50/60 | 820 | 1,64 | 2,50 | 135 | -25..+60 | 25,7 | p. 38 / L5) |
| *3G 990 | M3G 150-NA | -5° | C | 3~ 200-240 | 50/60 | 960 | 2,58 | 8,00 | 180 | -25..+65 | 31,2 | p. 38 / L5) |
| *3G 990 | M3G 150-NA | -5° | D | 3~ 380-480 | 50/60 | 960 | 2,58 | 4,00 | 180 | -25..+70 | 31,2 | p. 38 / L5) |

subject to alterations

(1) Nominal data in operating point with maximum load and 400 VAC

Curves



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


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

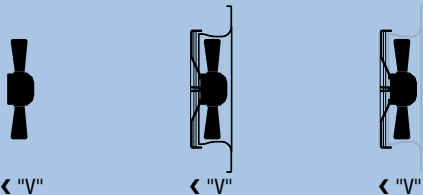
The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

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

For detailed information see page 40 ff.

| | n [rpm] | P_1 [kW] | I [A] | L_{wA} [dB(A)] |
|-----|---------|------------|-------|------------------|
| A 1 | 820 | 0,98 | 2,98 | 80 |
| A 2 | 820 | 1,22 | 3,70 | 78 |
| A 3 | 820 | 1,46 | 4,46 | 78 |
| A 4 | 820 | 1,64 | 5,00 | 79 |
| B 1 | 820 | 0,98 | 1,49 | 80 |
| B 2 | 820 | 1,22 | 1,85 | 78 |
| B 3 | 820 | 1,46 | 2,23 | 78 |
| B 4 | 820 | 1,64 | 2,50 | 79 |
| C 1 | 960 | 1,49 | 4,54 | 85 |
| C 2 | 960 | 1,90 | 5,76 | 83 |
| C 3 | 960 | 2,26 | 6,86 | 84 |
| C 4 | 960 | 2,58 | 8,00 | 85 |
| D 1 | 960 | 1,49 | 2,27 | 85 |
| D 2 | 960 | 1,90 | 2,88 | 83 |
| D 3 | 960 | 2,26 | 3,43 | 84 |
| D 4 | 960 | 2,58 | 4,00 | 85 |

- **Technical features:** See electrical connections p. 38
- **EMC:** Interference emission acc. to EN 61000-6-3
Interference immunity acc. to EN 61000-6-2
Harmonics acc. to EN 61000-3-2/3
- **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
- **Terminal box:** Electrical connection via terminal strip
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standards:** CE
- **Approvals:**  GOST; UL/CSA; CCC on request

| Direction of air flow |  | | |
|-----------------------|---|-------------------------|-----------------------------------|
| | Without attachments | With full square nozzle | With guard grille for full nozzle |
| "V" | on request | W3G 990-GY32 -11 | on request |
| "V" | A3G 990-AY28 -01 | W3G 990-GY28 -01 | S3G 990-BY28 -01 |
| "V" | on request | W3G 990-GZ09 -11 | on request |
| "V" | A3G 990-AZ02 -01 | W3G 990-GZ02 -01 | S3G 990-BZ02 -01 |

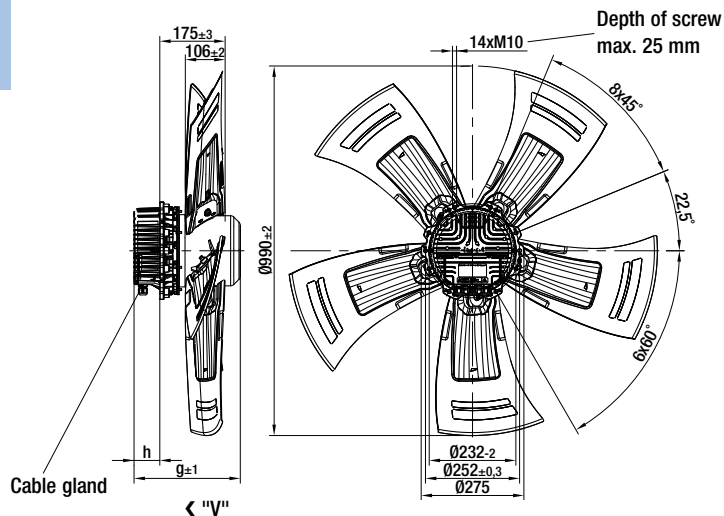
Direction of air flow "A" on request

EC axial fans - HyBlade®

Ø 990 with motor M3G150, drawings for direction of air flow "V"



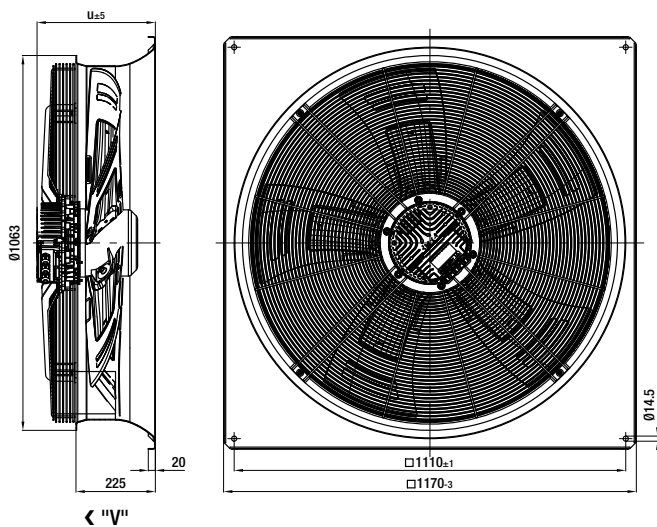
Without attachments



| Type | Mass [kg] | g | | h |
|--------------------|-----------|-------|------|---|
| | | g | h | |
| Ⓐ on request | 25,7 | 238,0 | 57,5 | |
| Ⓑ A3G 990-AY28 -01 | 25,7 | 238,0 | 57,5 | |
| Ⓒ on request | 31,2 | 289,5 | 70,0 | |
| Ⓓ A3G 990-AZ02 -01 | 31,2 | 289,5 | 70,0 | |

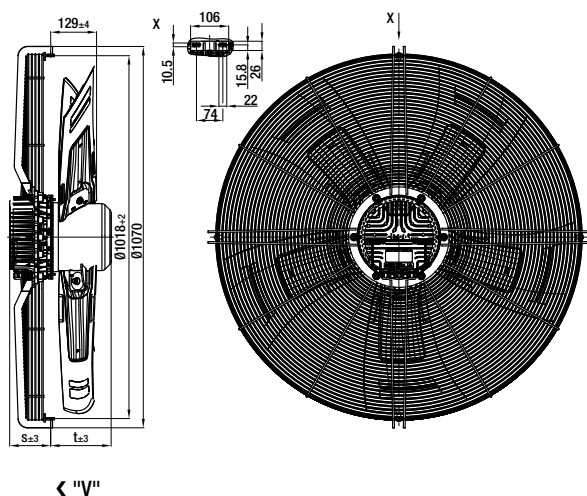
Internal diameter of the wall ring at least 1000 mm

With full square nozzle



| Type | Mass [kg] | u | |
|--------------------|-----------|-------|--|
| | | u | |
| Ⓐ W3G 990-GY32 -11 | 55,9 | 323,5 | |
| Ⓑ W3G 990-GY28 -01 | 55,9 | 323,5 | |
| Ⓒ W3G 990-GZ09 -11 | 61,4 | 336,0 | |
| Ⓓ W3G 990-GZ02 -01 | 61,4 | 336,0 | |

With guard grille for full nozzle



| Type | Mass [kg] | s | | t |
|--------------------|-----------|-------|-------|---|
| | | s | t | |
| Ⓐ on request | 35,7 | 103,5 | 134,5 | |
| Ⓑ S3G 990-BY28 -01 | 35,7 | 103,5 | 134,5 | |
| Ⓒ on request | 41,2 | 116,0 | 173,5 | |
| Ⓓ S3G 990-BZ02 -01 | 41,2 | 116,0 | 173,5 | |

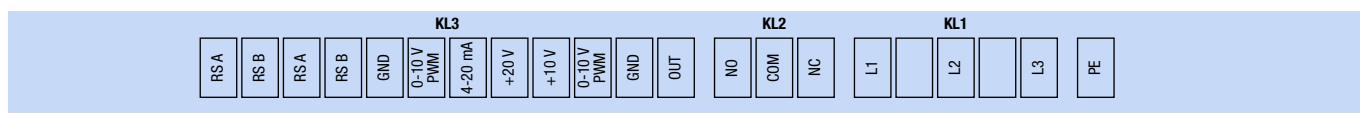
Internal diameter of the wall ring at least 1000 mm

Electrical connections EC

L2)

Technical features:

- PFC (passive)
- Integrated PID controller
- Control input 0-10 VDC / PWM
- Input for sensor 0-10 V or 4-20 mA
- Slave output 0-10 V max. 3 mA
- Output 20 VDC ($\pm 20\%$) max. 50 mA
- Output 10 VDC ($+10\%$) max. 10 mA
- RS485 ebmBUS
- Alarm relay
- Line undervoltage detection
- Phase failure detection
- Motor current limitation
- Electronics / motor overtemperature protection
- Locked-rotor protection
- Soft start



| Connector | Connection | Assignment / function |
|-----------|------------|--|
| PE | PE | Protective earth |
| KL1 | L3 | Mains; L3 |
| | L2 | Mains; L2 |
| | L1 | Mains; L1 |
| KL2 | NC | Alarm relay, break for failure |
| | COM | Alarm relay, COMMON (2A, 250 VAC, AC1) |
| | NO | Alarm relay, make for failure |

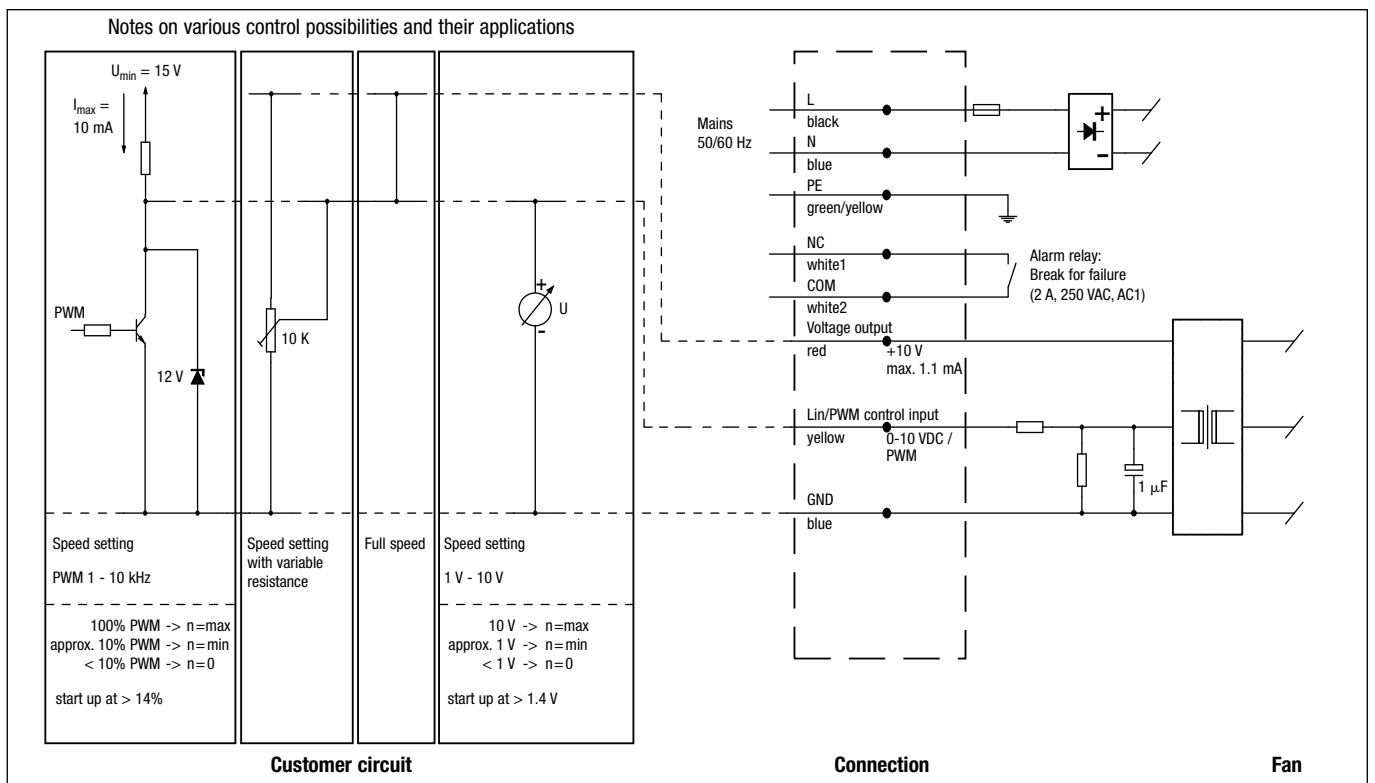
| Connector | Connection | Assignment / function |
|-----------|--------------|--|
| KL3 | OUT | Master output 0-10 V max. 3 mA |
| | GND | GND |
| | 0-10 V / PWM | Control / Actual value input (Impedance 100 k Ω) |
| | +10 V | Supply for external potentiometer, 10 VDC ($+10\%$) max. 10 mA |
| | +20 V | Supply for external sensor, 20 VDC ($\pm 20\%$) max. 50 mA |
| | 4-20 mA | Control / Actual value input |
| | 0-10 V / PWM | Control / Actual value input |
| | GND | GND |
| | RSB | RS485 interface for ebmBUS; RS B |
| | RSA | RS485 interface for ebmBUS; RS A |
| | RSB | RS485 interface for ebmBUS; RS B |
| | RSA | RS485 interface for ebmBUS; RS A |

Electrical connections EC

K1)

Technical features:

- Control input 0-10 VDC / PWM
- Output 10 VDC max. 1.1 mA
- Alarm relay
- Electronics / motor overtemperature protection
- Line undervoltage detection
- Motor current limitation
- Locked-rotor protection
- Soft start



| Line | Connection | Colour | Assignment / function |
|------|------------|-----------|--------------------------------|
| 1 | L | black | Mains 50/60 Hz, phase |
| | N | blue | Mains 50/60 Hz, neutral |
| | PE | green/yel | Protective earth |
| | NC | white1 | Alarm relay, break for failure |
| | COM | white2 | Alarm relay, COMMON |

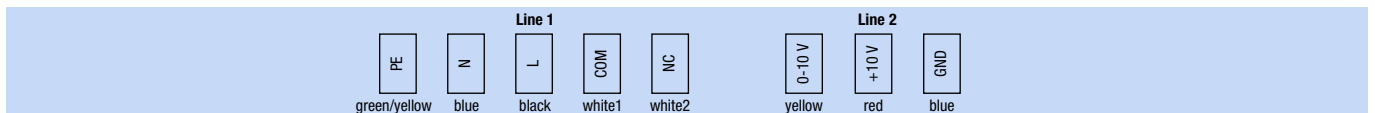
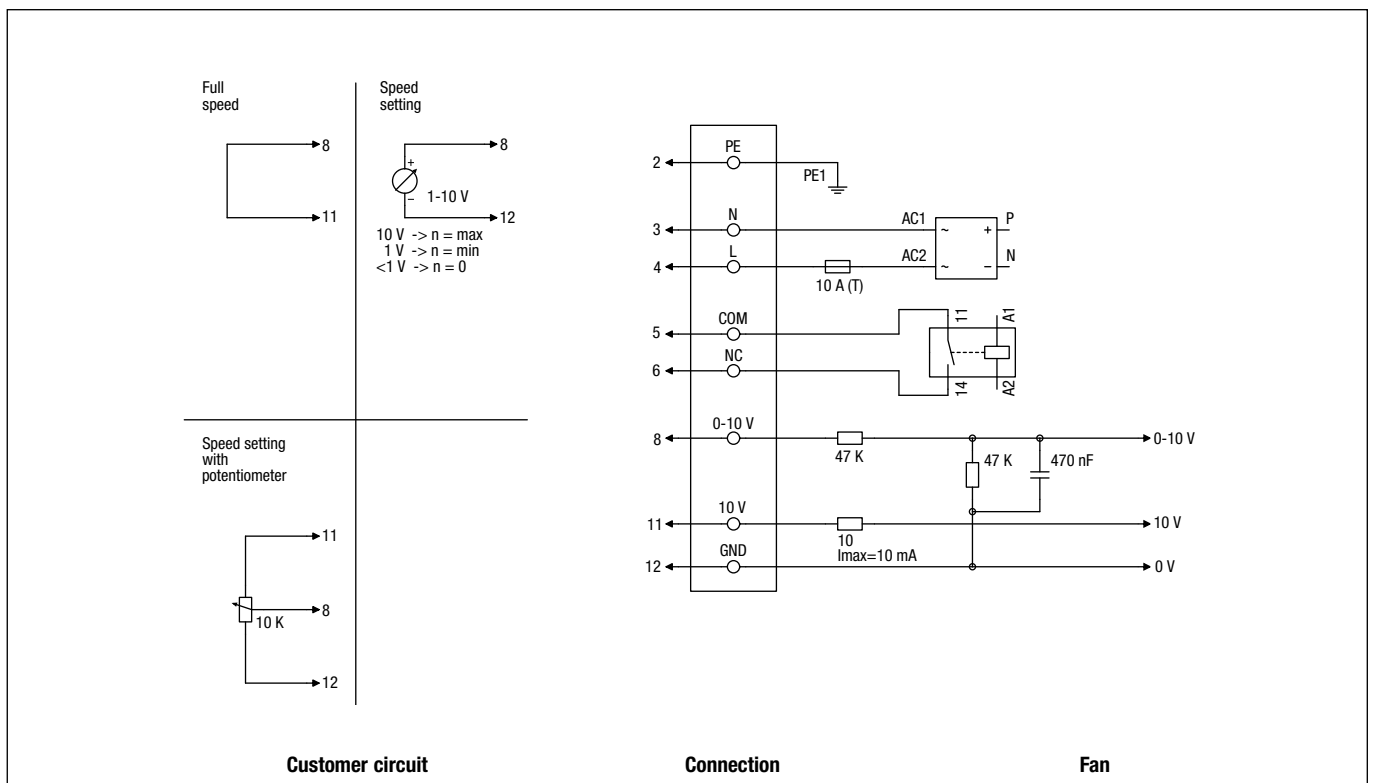
| Line | Connection | Colour | Assignment / function |
|------|--------------|--------|----------------------------------|
| 2 | +10 V | red | Voltage output +10 V max. 1.1 mA |
| | 0-10 V / PWM | yellow | Control input (Impedance 100 kΩ) |
| | GND | blue | GND |

Electrical connections EC

L3)

Technical features:

- PFC (active)
- Control input 0-10 VDC / PWM
- Output 10 VDC max. 10 mA
- Alarm relay
- Electronics / motor overtemperature protection
- Line undervoltage detection
- Motor current limitation
- Locked-rotor protection, soft start



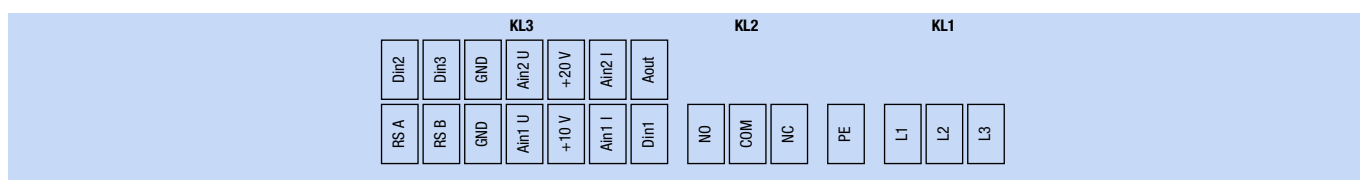
| Line | Pin | Connection | Colour | Assignment / function |
|------|-----|------------|--------------|--|
| 1 | 2 | PE | green/yellow | Protective earth |
| 1 | 3 | N | blue | Mains 50/60 Hz, neutral |
| 1 | 4 | L | black | Mains 50/60 Hz, phase |
| 1 | 5 | COM | white1 | Alarm relay, COMMON (2A, max. 250 VAC, min. 10 mA, AC1) |
| 1 | 6 | NC | white2 | Alarm relay, break for failure |
| 2 | 8 | 0-10 V | yellow | Control input (Impedance 100 kΩ), SELV |
| 2 | 11 | +10 V | red | Voltage output 10 VDC (+/- 3%), max. 10 mA, supply voltage for external units (e.g. potentiometer), SELV |
| 2 | 12 | GND | blue | GND, SELV |

Electrical connections EC

L5)

Technical features:

- PFC (passive)
- Integrated PID controller
- Control input 0-10 VDC or 4-20 mA
- Input for sensor 0-10 V or 4-20 mA
- Slave output 0-10 V max. 5 mA
- Output 20 VDC (+25 % / -10 %) max. 50 mA
- Output 10 VDC (+3 %) max. 10 mA
- RS485 MODBUS
- Motor current limitation, alarm relay
- Line undervoltage / phase failure detection
- Electronics / motor overtemperature protection
- Locked-rotor protection, soft start
- Digital inputs for day/night switch, enabling, cooling / heating



| Connector | Connection | Assignment / function |
|-----------|------------|--|
| KL1 | L3 | Mains; L3 |
| | L2 | Mains; L2 |
| | L1 | Mains; L1 |
| PE | PE | Protective earth |
| KL2 | NC | Alarm relay, break for failure |
| | COM | Alarm relay, COMMON (2A, 250 VAC, AC1) |
| | NO | Alarm relay, make for failure |

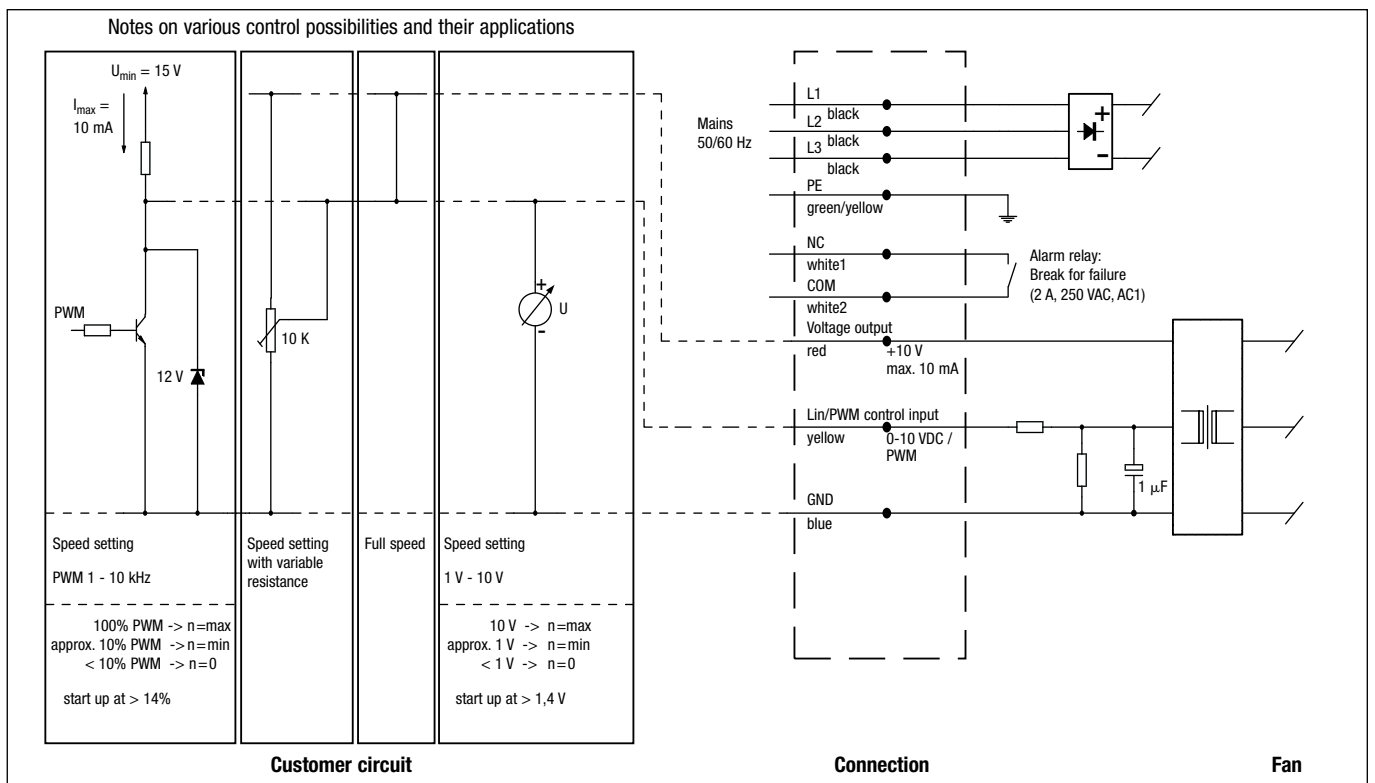
| Connector | Connection | Assignment / function |
|-----------|------------|---|
| KL3 | Din1 | Digital input 1 (enabling / disabling of electronics), Enabling: Pin open or applied voltage 5...50 VDC Disabling: Bridge to GND or applied voltage < 1 VDC |
| | Ain1 I | Analogue set value input, 4-20 mA (impedance 100 Ω), only to be used as alternative to terminal Ain1 U |
| | +10 V | Supply for external potentiometer, 10 VDC (±3 %) max. 10 mA |
| | Ain1U | Analogue set value input, 0-10 V (impedance 100 kΩ), only to be used as alternative to terminal Ain1 I |
| | GND | GND |
| | RSB | RS485 interface for MODBUS RTU; RS B |
| | RSA | RS485 interface for MODBUS RTU; RS A |
| | Aout | Analogue output 0-10 V max. 5 mA, reading of current motor speed / current motor control factor |
| | Ain2 I | Analog. actual value input, 4-20mA (impedance 100Ω), only to be used as alternative to terminal Ain2 U |
| | +20 V | Supply for external sensor, 20 VDC (+25 % / -10%) max. 40 mA |
| | Ain2 U | Analog. actual value input, 0-10 V (impedance 100 kΩ), only to be used as alternative to terminal Ain2 I |
| | GND | GND |
| | Din3 | Digital input 3 (switch Normal / Inverse), The preset effective direction of the integrated controller can be selected via BUS or via digital input Normal/Inverse. Normal: Pin open or applied voltage 5...50 VDC Inverse: Bridge to GND or applied voltage < 1 VDC |
| | Din2 | Digital input 2 (switch Day / Night), The preset set of parameters can be selected via BUS or via digital input Day/Night. Day: Pin open or applied voltage 5...50 VDC Night: Bridge to GND or applied voltage < 1 VDC |

Electrical connections EC

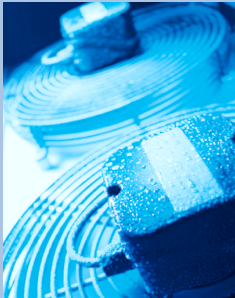
K3)

Technical features:

- PFC (passive)
- Control input 0-10 VDC / PWM
- Output 10 VDC ($\pm 20\%$) max. 10 mA
- Alarm relay
- Electronics / motor overtemperature protection
- Line undervoltage / phase failure detection
- Motor current limitation
- Locked-rotor protection, soft start



Technical parameters & scope



High standards for all ebm-papst products

Here at ebm-papst, we constantly strive to further improve our products in order to be able to offer you the best possible product for your application. Careful monitoring of the market ensures that technical innovations are reflected in the improvements of our products.

Based on the technical parameters listed below and the ambience you want our product to operate in, we here at ebm-papst can always work out the best solution for your specific application.

General performance parameters

Any deviations from the technical data and parameters described here are listed on the product-specific data sheet.

Type of protection

The type of protection is specified in the product-specific data sheets.

Insulation class

The insulation class is specified in the product-specific data sheets.

Mounting position

The mounting position is specified in the product-specific data sheets.

Condensate discharge holes

Information on the condensate discharge holes is provided in the product-specific data sheets.

Mode of operation

The mode of operation is specified in the product-specific data sheets.

Protection class

The protection class is specified in the product-specific data sheets..

Service life

The service life of ebm-papst products depends on two major factors:

- The service life of the insulation system
- The service life of the bearing system

The service life of the insulation system mainly depends on voltage level, temperature and ambient conditions, such as humidity and condensation. The service life of the bearing system depends mainly on the thermal load on the bearing.

The majority of our products use maintenance-free ball bearings for any mounting position possible. As an option, sleeve bearings can be used, which is indicated on the product-specific data sheet wherever applicable.

The service life L10 of the ball bearings can be taken as approx. 40,000 operating hours at an ambient temperature of 40 °C, yet this estimate can vary according to the actual ambient conditions.

We will gladly provide you with a lifetime calculation taking into account your specific operating conditions.

Motor protection / thermal protection

Information on motor protection and thermal protection is provided in the product-specific data sheets.

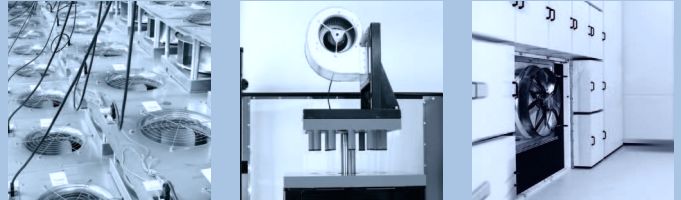
Depending on motor type and field of application, the following protective features are realised:

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

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

Products without fitted TOP and without protection against improper use, a motor protection complying with the valid standards has to be installed.

*Left: Endurance test room
Middle: Shock test
Right: Chamber test rig*



■ Mechanical strain / performance parameters

All ebm-papst products are subjected to comprehensive tests complying with the normative specifications. In addition to this, the tests also reflect the vast experience and expertise of ebm-papst.

Vibration test

Vibration tests are carried out in compliance with

- Vibration test in operation according to DIN IEC 68, parts 2-6
- Vibration test at standstill according to DIN IEC 68, parts 2-6

Shock load

Shock load tests are carried out in compliance with

- Shock load according to DIN IEC 68, parts 2-27

Balancing quality

Testing the balancing quality is carried out in compliance with

- Residual imbalance according to DIN ISO 1940
- Standard balancing quality level G 6.3

Should you require a higher balancing quality level for your specific application, please let us know and specify this when ordering your product.

■ Chemo-physical strain / performance parameters

Should you have questions about chemo-physical strain, please direct them to your ebm-papst contact.

■ Fields of application, industries and applications

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

■ Legal and normative directives

The products described in this catalogue are designed, developed and produced in keeping with the standards in place for the relevant product and, if known, the conditions governing the relevant fields of application.

Standards

Information on standards is provided in the product-specific data sheets.

EMC

Information on EMC standards is provided in the product-specific data sheets.

Complying with the EMC standards has to be established on the final appliance, as different mounting situations can result in changed EMC properties.

Leakage current

Information on the leakage current is provided in the product-specific data sheets.

Measuring is according to IEC 60990.

Approvals

In case you require a specific approval for your ebm-papst product (VDE, UL, GOST, CCC, CSA, etc.) please let us know.

Most of our products can be supplied with the relevant approval. Information on existing approvals is provided in the product-specific data sheets.

■ Air performance measurements

All air performance measurements are carried out on suction side and on chamber test beds conforming to the specifications as per ISO 5801 and DIN 24163. The fans under test are installed in the measuring chamber at free air intake and exhaust (installation category A) and are operated at nominal voltage, with AC also at nominal frequency, and without any additional components such as guard grilles.

As required by the standard, the air performance curves correspond to an air density of 1.2 kg/m³.

Room for precision noise measuring



■ Measurement conditions for air and noise measurement

ebm-papst products are measured under the following conditions:

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

■ Noise measurements

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

Sound pressure level and sound level

All acoustic values are established according to ISO 13347, DIN 45635 and ISO 3744/3745 to accuracy class 2 and given in A-rated form.

When the sound pressure level (L_p) is measured, the microphone is on the intake side of the fan being tested, usually at a distance of 1 m on the fan axis.

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

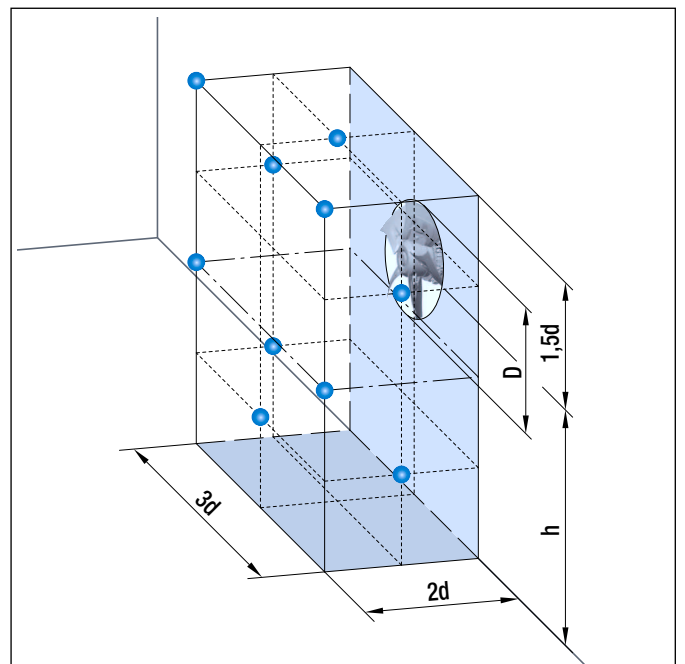
Measuring configuration as per ISO 13347-3 respectively DIN 45635-38:

- 10 measuring points

$$d \geq D$$

$$h = 1,5d \dots 4,5d$$

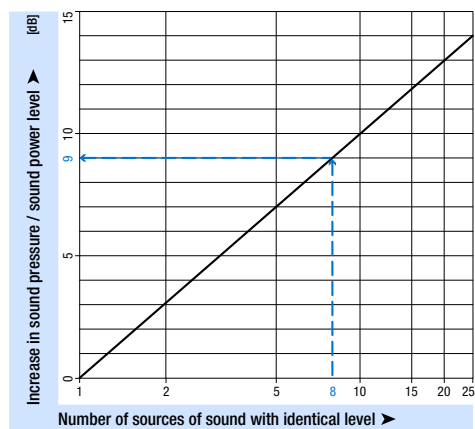
$$\text{Measurement area } S = 6d^2 + 7d(h + 1,5d)$$



Adding multiple noise sources with the same level

Adding 2 noise sources with the same volume results in a level increase of approx. 3 dB. The noise characteristics of multiple identical fans can be determined in advance based on the noise values specified in the data sheet. This is shown in the diagram opposite.

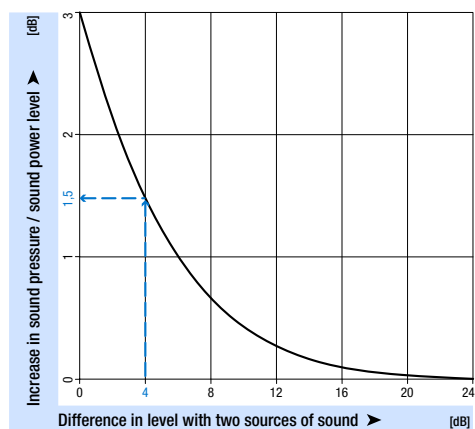
Example: 8 A3G800 axial fans are on a condenser. According to the data sheet, the sound pressure level of a fan is approximately 75 dB(A). The level increase measured from the diagram is 9 dB. Thus the overall sound level of the installation can be expected to be 84 dB(A).



Adding two noise sources with different levels

The acoustic performance of two different fans can be predetermined based on the sound levels given in the data sheet. This is shown in the diagram opposite.

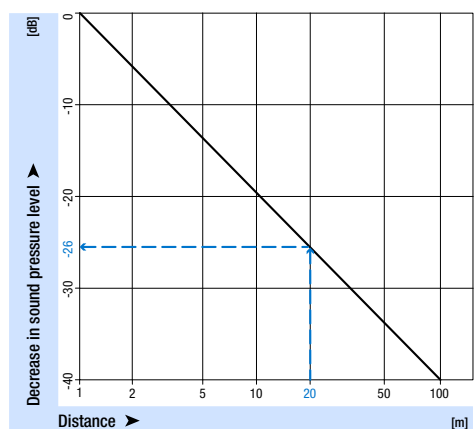
Example: There is an axial fan A3G800 with a sound pressure level of 75 dB(A) at the operating point and an axial fan A3G710 with 71 dB(A) in a ventilation unit. The level difference is 4 dB. The level increase can now be read in the diagram as approx. 1.5 dB. This means that the overall sound level of the unit can be expected to be 76.5 dB(A).







Distance laws

Sound power level is independent of distance to the sound source. In contrast to this, sound pressure level decreases the further away the noise source is. The adjacent diagram shows the decrease in level under far sound field conditions. Far sound field conditions apply whenever the distance between microphone and fan is big when compared to fan diameter and wavelength to be considered. For more information on far sound field, please consult the relevant literature on this complex topic. Per doubling of distance, the level in the far sound field decreases by 6 dB. In the near field of the fan, other correlations apply and the decrease in levels can be considerably smaller. The following example only applies to far sound field conditions and can vary strongly depending on the installation effects:

With an axial fan A3G300, a sound pressure level of 65 dB(A) was measured at a distance of 1 m. According to the adjacent diagram, at a distance of 20 m we would get a reduction by 26 dB, i.e. a sound pressure level of 39 dB(A).



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

ebm-papst in Germany

Germany

ebm-papst Muldingen GmbH & Co. KG

Bachmühle 2
D-74673 Muldingen
Phone +49 7938 81-0
Fax +49 7938 81-110
info1@de.ebmpapst.com

www.ebmpapst.com

ebm-papst St. Georgen GmbH & Co. KG

Hermann-Papst-Straße 1
D-78112 St. Georgen
Phone +49 7724 81-0
Fax +49 7724 81-1309
info2@de.ebmpapst.com

www.ebmpapst.com

ebm-papst Landshut GmbH

Hofmark-Aich-Straße 25
D-84030 Landshut
Phone +49 871 707-0
Fax +49 871 707-465
info3@de.ebmpapst.com

www.ebmpapst.com




 **Berlin**
Dipl.-Ing. (TH) Jens Duchow
 Händelstraße 7
 D-16341 Panketal
Phone +49 30 944149-2
Fax +49 30 944149-63
Jens.Duchow@de.ebmpapst.com

 **Bielefeld**
Dipl.-Ing. (FH) Wolf-Jürgen Weber
 Niehausweg 13
 D-33739 Bielefeld
Phone +49 5206 91732-31
Fax +49 5206 91732-35
Wolf-Juergen.Weber@de.ebmpapst.com

 **Dortmund**
 Dipl.-Ing. (FH) Hans-Joachim Pundt
 Auf den Steinern 3
D-59519 Möhnese-Völlinghausen
Phone +49 2925 800-407
Fax +49 2925 800-408
Hans-Joachim.Pundt@de.ebmpapst.com

 **Frankfurt**
 Dipl.-Ing. Christian Kleffmann
 Dr.-Hermann-Krause-Straße 23
D-63452 Hanau
Phone +49 6181 1898-12
Fax +49 6181 1898-13
Christian.Kleffmann@de.ebmpapst.com

 **Halle**
 Dipl.-Ing. (TU) Michael Hanning
 Lercheneck 4
D-06198 Salzdahlau / OT Lieskau
Phone +49 345 55124-56
Fax +49 345 55124-57
Michael.Hanning@de.ebmpapst.com

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

 **Heilbronn / Heidelberg**
Dipl.-Ing. Mark Gartner
 Gehrweg 12
 D-74199 Unterheinriet
Phone +49 7130 404569-1
Fax +49 7130 404569-2
Mark.Gartner@de.ebmpapst.com

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

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

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

 **Nuremberg**
 Dipl.-Wirt.-Ing. (FH) Axel Resch
 Steinsfeldstraße 80
D-74626 Bretzfeld
Phone +49 7946 94401-02
Fax +49 7946 94401-03
Axel.Resch@de.ebmpapst.com

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

 **Stuttgart**
Dipl.-Ing. (FH) Rudi Weinmann
 Hindenburgstraße 100/1
 D-73207 Plochingen
Phone +49 7153 9289-80
Fax +49 7153 9289-81
Rudi.Weinmann@de.ebmpapst.com

 **Ulm**
 M.Sc. Reinhard Sommerreißer
 Am Silbermannpark 10
D-86161 Augsburg
Phone +49 821 6610-7023
Fax +49 821 6610-7024
Reinhard.Sommerreisser@de.ebmpapst.com

Distributors

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

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

 **Munich**
A. Schweiger GmbH
Ohmstraße 1
D-82054 Sauerlach
Phone +49 8104 897-0
Fax +49 8104 897-90
info@schweiger-gmbh.de
www.schweiger-gmbh.com


● **Express Service-Center** (1 to 5 pieces)

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

 **South**
 HDS Ventilatoren Vertriebs GmbH
 Glaswiesenstraße 1
D-74677 Dörzbach
Phone +49 7937 8033520
Fax +49 7937 8033525
info@hds-gmbh.net

Europe

 **Austria**
 ebm-papst Motoren & Ventilatoren GmbH
 Straubingstraße 17
A-4030 Linz
Phone +43 732 321150-0
Fax +43 732 321150-20
info@at.ebmpapst.com
www.ebmpapst.at

 **Belarus**
 ebm-papst Bel AgmbH
 P.O. Box 117
BY-220138 Minsk
Phone +375 17 3851556
Fax +375 17 3851556
info@by.ebmpapst.com
www.ebmpapst.by

 **Belgium**
 ebm-papst Benelux B.V.
 Sales office Belgium-Luxemburg
Romeinsestraat 6/0101
Research Park Haasrode
B-3001 Heverlee-Leuven
Phone +32 16 396-200
Fax +32 16 396-220
info@be.ebmpapst.com
www.ebmpapst.be

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


 **Croatia**
 ebm-papst Industries Kft.
 Ezred u. 2.
H-1044 Budapest
Phone +36 1 8722-190
Fax +36 1 8722-194
office@hu.ebmpapst.com

 **Czech Republic / Slovakia**
 ebm-papst CZ s.r.o.
 Kaštanová 34a
CZ-620 00 Brno
Phone +420 544 502-411
Fax +420 547 232-622
info@ebmpapst.cz
www.ebmpapst.cz

 **Denmark**
 ebm-papst Denmark ApS
 Vallensbækvej 21
DK-2605 Brøndby
Phone +45 43 631111
Fax +45 43 630505
mail@dk.ebmpapst.com
www.ebmpapst.dk

 **Estonia**
 ebm-papst Oy, Eesti Filiaal
 Kesk tee 13
Aaviku küla, Jüri Tehnopol
EST-75301 Rae Vald, Harjumaa
Phone +372 65569-78
Fax +372 65569-79
www.ebmpapst.ee

 **Finland**
 ebm-papst Oy
 Puistotie 1
FIN-02760 Espoo
Phone +358 9 887022-0
Fax +358 9 887022-13
mailbox@ebmpapst.fi
www.ebmpapst.fi

 **France**
 ebm-papst sarl
 ZI Nord - rue A. Mohler
BP 62
F-67212 Obernai Cedex
Phone +33 820 326266
Fax +33 3 88673883
info@ebmpapst.fr
www.ebmpapst.fr

 **Greece**
 Helcoma
 Th. Rotas & Co OE
Davaki 65
GR-17672 Kallithea-Attiki
Phone +30 210 9513-705
Fax +30 210 9513-490
contact@helcoma.gr
www.helcoma.gr



 **Hungary**
 ebm-papst Industries Kft.
 Ezred u. 2.
H-1044 Budapest
Phone +36 1 8722-190
Fax +36 1 8722-194
office@hu.ebmpapst.com





 **Iceland**
 RJ Engineers
 Stangarhyl 1a
IS-110 Reykjavik
Phone +354 567 8030
Fax +354 567 8015
rj@rj.is
www.rj.is

 **Ireland**
 ebm-papst UK Ltd.
 Chelmsford Business Park
GB-Chelmsford Essex CM2 5EZ
Phone +44 1245 468555
Fax +44 1245 466336
sales@uk.ebmpapst.com
www.ebmpapst.co.uk

 **AuBren Limited**
 Portlaoise Business & Technology Park
 Mountrath Road
IRL-Portlaoise, Co. Laois
Phone +353 57 8664343
Fax +353 57 8664346
sales@ie.aubren.com
www.aubren.com


 **Italy**
 ebm-papst Srl
 Via Cornaggia 108
I-22076 Mozzate (Co)
Phone +39 0331 836201
Fax +39 0331 821510
info@it.ebmpapst.com
www.ebmpapst.it

 **Macedonia**
 ebm-papst Industries Kft.
 Ezred u. 2.
H-1044 Budapest
Phone +36 1 8722-190
Fax +36 1 8722-194
office@hu.ebmpapst.com

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

ebm-papst in Europe

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

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

 **Poland**
 ebm-papst Polska Sp. z o.o.
 ul. Annopol 4A
 PL-03236 Warszawa
 Phone +48 22 6757819
 Fax +48 22 6769587
 office@ebmpapst.pl
 www.ebmpapst.pl

 **Portugal**
 ebm-papst (Portugal), Lda.
 Centro Empresarial de Alverca
 Rua de Adarse, Vale D'Ervas
 Corpo D / Fracção 3
 P-2615-178 Alverca do Ribatejo
 Phone +351 218 394 880
 Fax +351 218 394 759
 info@pt.ebmpapst.com
 www.ebmpapst.pt


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

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

 ebm-papst Rus GmbH
 proezd 4529, vladenie 5, stroenie 1
 RU-141000 Mytistschi, Oblast Moskau
 Phone +7 495 9807524
 Fax +7 495 5140924
 info@ebmpapst.ru
 www.ebmpapst.ru

 **Serbia & Montenegro**
 ebm-papst Industries Kft.
 Ezred u. 2.
 H-1044 Budapest
 Phone +36 1 8722-190
 Fax +36 1 8722-194
 office@hu.ebmpapst.com

 **Spain**
 ebm-papst Ibérica S.L.
 Avda. del Sistema Solar, 29
 E-28830 San Fernando de Henares (Madrid)
 Phone +34 91 6780894
 Fax +34 91 6781530
 ventas@ebmpapst.es

 **Sweden**
 ebm-papst AB
 Äggelundavägen 2
 S-17562 Järfälla
 Phone +46 8 7619400
 Fax +46 8 362306
 info@ebmpapst.se
 www.ebmpapst.se

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

 **Turkey**
 Akantel Elektronik San. Tic. LTD. Sti.
 Atatürk Organize Sanayi
 Bölgesi 10007 SK. No.:6
 TR-35620 Cigli-Izmir
 Phone +90 232 3282090
 Fax +90 232 3280270
 akantel@akantel.com.tr
 www.ebmpapst.com.tr

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

 **United Kingdom**
 ebm-papst UK Ltd.
 Chelmsford Business Park
 GB-Chelmsford Essex CM2 5EZ
 Phone +44 1245 468555
 Fax +44 1245 466336
 sales@uk.ebmpapst.com
 www.ebmpapst.co.uk

 ebm-papst Automotive & Drives (UK) Ltd.
 The Smithy
 Fidlers Lane
 GB-East Ilsley, Berkshire RG20 7LG
 Phone +44 1635 2811-11
 Fax +44 1635 2811-61
 A&Dsales@uk.ebmpapst.com
 www.ebmpapst.com

America



Argentina



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



Brasil



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



Canada



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



Mexico



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

USA



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



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





Africa



South Africa



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

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

ebm-papst in Asia and Australia

Asia

 **China**
 ebm-papst Ventilator (Shanghai) Co., Ltd.
 No. 418, Huajing Road
 WaiGaoQiao Free Trade Zone
 No. 2001, Yang Gao (N) Road
 VRC-200131 Shanghai, P.R. of China
 Phone +86 21 5046-0183
 Fax +86 21 5046-1119
 sales@cn.ebmpapst.com
 www.ebmpapst.com.cn

 **Hong Kong**
 ebm-papst Hong Kong Ltd.
 Unit No. 13,9 / F
 Technology Park, 18 On Lai Street
 Siu Lek Yuen, Shatin N.T.
 Hong Kong - P.R. of China
 Phone +852 2145-8678
 Fax +852 2145-7678
 info@hk.ebmpapst.com

 **India**
 ebm-papst India Pvt. Ltd.
 26/3, G.N.T. Road, Erukkencherry
 IND-Chennai-600118
 Phone +91 44 25372556
 Fax +91 44 25371149
 sales@in.ebmpapst.com
 www.ebmpapst.in

 **Indonesia**
 ebm-papst Indonesia
 Representative Office
 German Centre, 4th Floor, Suite 4470
 Jl. Kapt. Subijono Dj. Bumi Serpong Damai
 RI-15321 Tangerang
 Phone +62 21 5376250
 Fax +62 21 5388305
 salesdept@id.ebmpapst.com

 **Israel**
 Polak Bros. Import Agencies Ltd.
 9 Hamefalsim Street
 IL-Kiryat Arie, Petach-Tikva 49514
 Phone +972 3 9100300
 Fax +972 3 5796679
 polak@polak.co.il
 www.polak.co.il

 **Japan**
 ebm-papst Industries Japan K.K.
 12 Floor, Benex S-3 Bldg.
 3-20-8 Shinyokohama, Kohoku-ku
 J-222-0033 Yokohama
 Phone +81 45 47057-51
 Fax +81 45 47057-52
 info@jp.ebmpapst.com
 www.ebmpapst.jp

 **Korea**
 ebm-papst Korea Co. Ltd.
 6F, Trutec Bldg.
 B 6-2, Digital Media City (DMC)
 Sangam-Dong, Mapo-Gu
 ROK-Seoul 121-270
 Phone +82 2 366213-24
 Fax +82 2 366213-26
 info@kr.ebmpapst.com
 www.ebmpapst.co.kr

 **Malaysia**
 ebm-papst Malaysia
 Representative Office
 Unit 12-2, Jalan USJ Sentral 3
 Persiaran Subang, Selangor Darul Ehsan
 MAL-47600 Subang Jaya
 Phone +60 3 8024-1680
 Fax +60 3 8024-8718
 salesdept@my.ebmpapst.com

 **Singapore**
 ebm-papst SEA Pte. Ltd.
 No. 23 Ubi Road 4
 #06-00 Olympia Industrial Building
 SGP-Singapore 408620
 Phone +65 65513789
 Fax +65 68428439
 salesdept@sg.ebmpapst.com

 **Taiwan**
 ETECO Engineering & Trading Corp.
 10F-I, No. 92, Teh-Wei Str.
 RC-Tsow-Inn District, Kaohsiung
 Phone +886 7 557-4268
 Fax +886 7 557-2788
 eteco@ms22.hinet.net
 www.ebmpapst.com.tw

 **Thailand**
 ebm-papst Thailand Co., Ltd.
 99/349 Na-Nakorn Bldg., 4th Floor
 Chaeng Wattana Road, Thungsonghong,
 THA-10210 Laksi, BKK
 Phone +66 2 57615-24
 Fax +66 2 57615-42
 salesdept@th.ebmpapst.com

 **United Arab Emirates**
 ebm-papst Middle East FZE
 PO Box 17755
 Jebel Ali Free Zone / FZS1 / AP05
 UAE-Dubai
 Phone +971 4 88608-26
 Fax +971 4 88608-27
 info@ae.ebmpapst.com
 www.ebmpapst.ae

 **Vietnam**
 ebm-papst Vietnam
 Representative Office
 Room #102, 25 Nguyen Van Thu Street
 District 1
 VN-Ho Chi Minh City
 Phone +84 8 39104099
 Fax +84 8 39103970
 linh.nguyen@vn.ebmpapst.com

Australia



Australia

ebm-papst A&NZ Pty Ltd.



10 Oxford Road



AUS-Laverton North, Victoria, 3026

Phone +61 3 9360-6400

Fax +61 3 9360-6464

sales@ebmpapst.com.au

www.ebmpapst.com.au



New Zealand

ebm-papst A&NZ Pty Ltd.



102 Henderson Valley Road



NZ-Henderson, Auckland 1230

Phone +64 9 837-1884

Fax +64 9 837-1899

sales@ebmpapst.com.au

www.ebmpapst.com.au

ebm-papst
Mulfingen GmbH & Co. KG

Bachmühle 2
D-74673 Mulfingen
Phone +49 7938 81-0
Fax +49 7938 81-110
info1@de.ebmpapst.com

www.ebmpapst.com