



# Axial fans

*As genuine "space-saving miracle workers", ebm-papst axial fans handle air for heat or negative heat exchange in a diversity of appliances and systems. Their low mounting depth, low noise level and their excellent efficiency make them the perfect choice, especially when it comes to optimum flow of air through heat exchangers. In EC design, they even turn into real "energy-saving miracle workers" - for a vast number of different applications, mainly in ventilation, air-conditioning, refrigeration and in the automotive field.*

## **One principle, countless possibilities**

With the axial fan, resembling a propeller in function, the air flow is conveyed in axial direction in parallel to the rotating motor shaft. The ebm-papst external-rotor motor is directly integrated in the axial impeller, resulting in a compact axial fan unit. This axial fan unit is normally mounted with wall rings in long or short nozzles.

Our comprehensive portfolio of ebm-papst products offers a suitable solution for every kind of demand and is divided into individual categories to meet the different demands of various fields of application:

- S-Range with sickle-shaped blades for high air flow at medium pressure
- K-Range with particularly low noise level – especially suited for use in refrigeration plants and systems
- A-Range for higher pressures

## **Design meeting individual specifications**

Energy efficiency, controllability, low noise and the perfect interplay with external-rotor motors in AC and EC technology: ebm-papst axial fans are optimally adapted to customer specifications.

EC technology with either 12 VDC to 110 VDC or line voltage commutated with 100 VAC to 480 VAC with integrated or external electronics allows exact open and closed loop control of the air flow at high efficiency.

The standard design comes with tach output, alarm display, linear or PWM input, temperature or airflow dependent control or BUS-connectable interface.



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## Company profile: ebm-papst

The entire scope of air and drive technology: this is the world of ebm-papst. Originating from the companies ebm, PAPST and mvl, all three rich in tradition, ebm-papst offers a unique range of products that makes us world market leader. We unite the fortes of three remarkable companies – each of them having worked hard to succeed in attaining a leading position in the most diverse fields and segments. More than 7,000 members of staff in Germany and throughout the world develop, produce and distribute our motors and fans. Striving for perfect solutions in applications in the different industries is what determines our daily work. Those who know us know the high standards we apply to our work and know our creed: to be as close to our customers as possible and to simply be the best in terms of innovation and reliability.



*Our headquarters in Mulfingen*



*Left:  
Our location in St. Georgen  
Right:  
Our location in Landshut*

For years, ebm, PAPST und mvl have been working together hand in hand. For the benefit of our customers, we use the synergy effect generated by our co-operation and the product ranges that complement each other so well. And now, in 2003, we move even closer and document this closeness in a joint public appearance and a joint name: ebm-papst.

#### **We remain the same- only better!**

Though our outward appearance may have changed, our "inner" values remain the same. We still want you to enjoy being close to your established contacts, making their commitment and know-how help you succeed in your specific task. And, of course, we also want you to enjoy the same quality and choice of ebm-papst products (formerly ebm, PAPST and mvl): ebm products are now available from ebm-papst Mulfingen  
PAPST products are now available from ebm-papst St. Georgen  
mvl products are now available from ebm-papst Landshut

#### **Passionately involved in R&D**

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

#### **Producing and safeguarding high-quality products and services**

This is our promise beyond all bounds. Whether we manufacture in our national headquarters or in one of our 15 international production facilities - we insist on the same high level of quality! No cheap compromises when it comes to quality control! And this across all levels of production and throughout all processes: consulting customers, development, material selection through to picking certified, choice suppliers and on to the production of parts and final delivery. On top of this, our products have to pass the most rigorous test procedures under all realistic operating conditions: continuous stress test, salt spray test, vibration test, or in the room for precision noise measuring, just to mention a few.

And the product gets clearance for serial production only after all the desired characteristics have been determined to be just right.

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

#### **Global Domestic**

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

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

# Our key to success

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



*Production*



*Winding machine*

## **Motor engineering, aero-dynamics, electronics**

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

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

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

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

## **Setting new standards with EC technology**

Wherever intelligent air handling is required, where energy consumption needs to be reduced and performance has to be maximised, there our EC motors are your reliable answer. They do not waste financial or natural resources. Instead, they boost high efficiency, continuous controllability via analogue or digital inputs, long and maintenance-free service life, and robustness.



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



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

Without any problems, the ebm-papst EC technology allows you to realise networked, bus-linked appliances, to integrate simple or complex controls at low cost and to also realise time and again new and customised and complete solutions. Here, ebm-papst excels as competent development partner, with our experience of more than 25 years and our excellent know-how in R & D and production also being well documented in a few hundred national and international patents. And there is also our ability to listen intently, to pay good attention to our customers and their demands - in order to come up with new and pioneering ideas, such as:

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

# How to use this catalogue



The ebm-papst catalogue combines a technical and a product-specific section.

**Technical section:** General information on how to select and find ebm-papst products for your specific application is found in the chapters "Selection" (p. 10) and "Technical parameters" (p. 220).

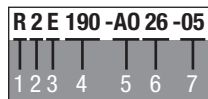
In case you require technical background information on ebm-papst product groups, simply turn to the chapters "Impellers" (p. 224), "Motors" (p.234) and "Control technology" (p. 238).

**Product-specific section:** The product-specific section is organised according to product diameters, lines, materials and/or design principles.

## Headline

The headline indicates which technology (AC or EC), which design (centrifugal, axial, ...), and which line (e.g. S-Range) the product belongs to. Impeller diameter or other features are also indicated.

## Part designation / Type



This key designates and identifies all ebm-papst products and serves as part number:

### 1) Type

- A - axial fan
- S - axial fan with guard grille
- W - axial fan with wall ring
- R - centrifugal fan, single inlet
- G - centrifugal blower, single inlet (with scroll housing)
- B - centrifugal fan, dual inlet
- D - centrifugal blower, dual inlet (with scroll housing)
- K - combination
- M - motor
- P - pumps

### 2) Number of poles (AC) / number of cores (EC)

- 2-, 4- and 6-pole / 1- and 3-core

### 3) Type of motor

- D - 3-phase motor
- E - single-phase motor with capacitor
- G - EC motor
- S - shaded-pole motor
- Q - square shaded-pole motor

### 4) Impeller diameter in mm

### 5) Key for mechanical design

### 6) Key for electrical design

### 7) Key for mechanical variants

## Characteristic curves with operating points (duty points)

The diagram gives air performance curves pertaining to the product.

The relevant operating points (duty points) indicating speed, power input, current draw, sound pressure level and efficiency are listed in the table above each diagram.

### AC centrifugal fans

backward curved, 3-D, Ø 400

- Material: sheet aluminium
- Direction of rotation: clockwise, seen on rotor
- Type of protection: IP 44
- Approvals: CE

ebm-papst · Mulfingen

Nominal data		Characteristic		Voltage		Frequency		Air flow		Speed/rpm		Power input		Current draw		Capacitor		Sound pressure level		Perm. amb. temp.		Mass	
Type	Motor	VAC	Hz	m <sup>3</sup> /h	min <sup>-1</sup>	W	A	µF/VDB	dB(A)	°C	kg												
R4E 400-AB23 -05*	M4E 074-EI	230	50	3150	1300	270	1,20	8,0/400	68	45	5,2												
R6E 400-AA04 -05	M6E 074-EI	230	50	2225	910	117	0,52	3,0/450	62	55	5,2												
		230	60	2455	1000	160	0,70	3,0/450	64	40													

\* subject to alterations      \*\* insulation class "F"

**reduced scale - 65%**

n [min <sup>-1</sup> ]	P <sub>1</sub> [W]
1240	292
1250	287

**Characteristics**

n [min <sup>-1</sup> ]	P <sub>1</sub> [W]
880	125
880	125

**Characteristics**

What a product page is made up of (reduced scale - 50%)



Type	Inlet ring
RAE 400-AB23 -05	54476-2-4013
RSE 400-AA04 -05	54476-2-4013

35

Inlet ring p. 274	Capacitor p. 284 f.	Terminal box p. 283
----------------------	------------------------	------------------------

**Product description**

Here, you find information on:

- material / design  
(bearing, capacitor, direction of rotation, inlet ring, direction of air flow, balancing quality, motor protection)
- electrical connection / connection diagram
- type of protection / insulation class
- safety regulations
- standards and directives
- mounting / mounting position
- approvals

**Nominal data**

Measuring conditions:

- axial and centrifugal fans with direction of air flow "V", without guard grilles and in the wall ring
- backward curved centrifugal fans, free running and with inlet rings
- forward curved single and dual inlet centrifugal fans with housing

**Graphic rendition of products**

All drawings represent the design principle and are not to scale. Dimensions are either given in the product drawing or, with varying dimensions, in the table of dimensions given above the drawing.

**Indication of relevant accessories**

The pages indicated at the bottom refer to the accessories, e.g. inlet rings, guard grilles, wall rings, etc. for this particular product.

# How to select your ebm-papst product



## Solutions for ventilation offered by ebm-papst

*In the field of ventilation, ebm-papst offers the perfect solution for a vast number of applications.*

*Depending on motor, impeller and control technology, there is almost no limit to the number of possible combinations, thus making sure you can find the best solution for your application.*

## Criteria for selection

When selecting a fan for a specific application, two parameters play an important role:

- The airflow with given back pressure, and
- The voltage supply, divided into DC and AC voltage (1~, 3~).

## Further criteria for selection

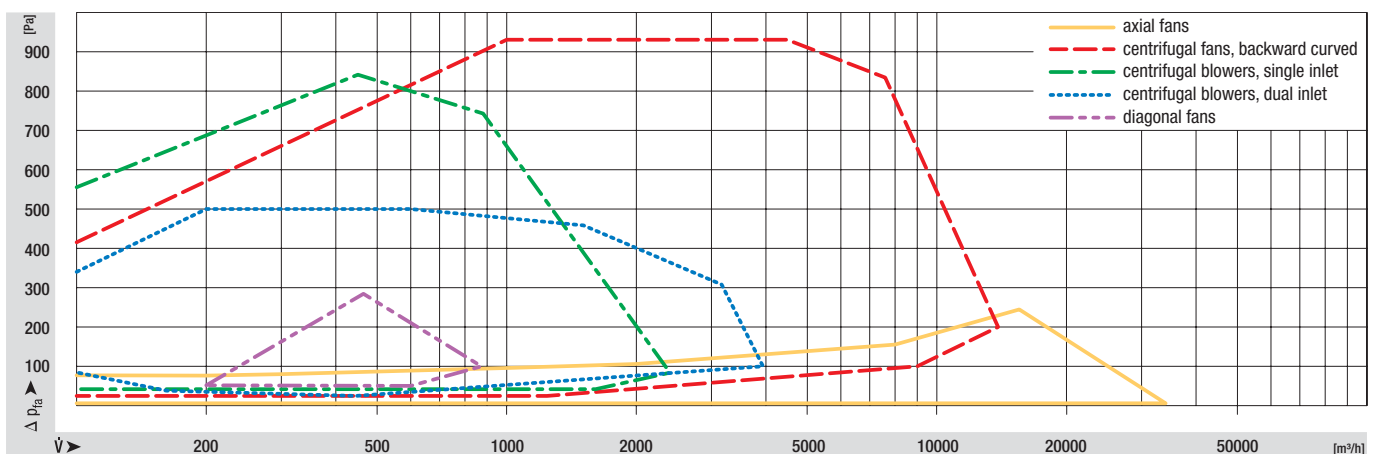
This pre-selection can, of course, only be a helpful tool in selecting the right fan. In addition to these criteria, other data such as noise generation, efficiency, available mounting space, etc. are necessary to find the suitable fan.

Simply turn to our data sheets for this kind of information.

## Selecting a fan

The following diagram shows the range of characteristic curves for the most important fan designs and serves as helpful tool in pre-selecting a design on the basis of airflow and back pressure.

Characteristic curves of the various designs



# How to order your ebm-papst product



**You have found the suitable ebm-papst product and would like to order it now?**

**In this case, simply contact your nearest ebm-papst sales office by E-mail, fax or phone.**

## **You don't know exactly which ebm-papst product you need to order?**

In this case, simply contact your nearest ebm-papst sales office by E-mail, fax or phone. Our specialists in ventilation and drive technology are always there to help you find the best solution for your specific application.

Using the questions provided in the checklist here as a guideline, you can make sure your ebm-papst contact has all the necessary information to handle your enquiry as efficiently and quickly as possible.

## **Checklist**

- part designation / type
- quantity needed
- field of application
- ambient conditions (humidity, temperature, climate)
- impeller diameter
- required airflow
- back pressure
- voltage supply

## **How your ebm-papst product gets delivered**

In our order confirmation, you will find information on when, how and where to the delivery will be made.

We deliver:

- ex works (excluding packaging)
- via freight carrier (up to 30 kg, we also use postal services)

All the other details such as packaging, freight, insurance and custom duty will be settled with your ebm-papst contact prior to the time we issue our order confirmation.

## **Is there anything else you need and want to know about your ebm-papst product?**

In this case, simply contact your nearest ebm-papst sales office by E-mail, fax or phone. We have the answer to your problem and are always glad to be able to be of assistance.

Using the questions provided in the checklist here as a guideline, you can make sure your ebm-papst contact has all the necessary information to handle your enquiry as efficiently and quickly as possible.

**For your nearest sales office , please turn to page 248.**





# AC axial fans

Axial fans, diagonal fans	Ø 130 - Ø 250	14
S-Range	Ø 200 - Ø 450	22
K-Range	Ø 250 - Ø 450	44
A-Range	Ø 200 - Ø 350	60



# AC axial fans

Ø 130

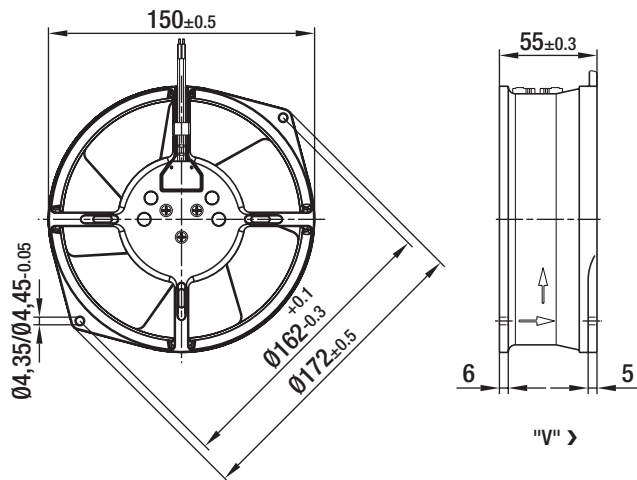


- **Material:** housing made of die-cast aluminium, impeller made of sheet steel (directly welded onto rotor and stove-enamelled in black)
- **Direction of rotation:** counter-clockwise, seen on rotor
- **Direction of air flow:** "V", blowing over struts
- **Connection leads:** cable length 330 mm as of wall ring
- **Approvals:** UL, VDE, CSA

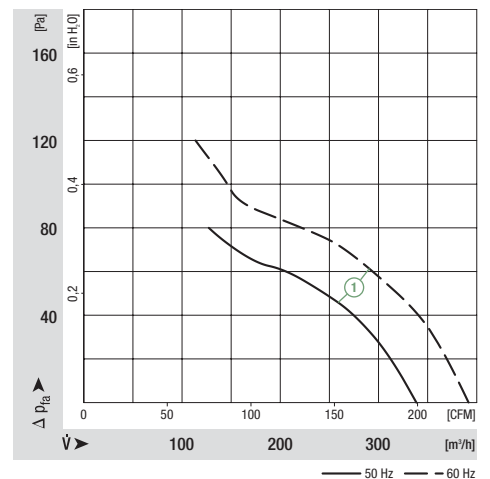
ebm-papst • Mulfingen

Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass	Direction of air flow
Type	Motor		VAC	Hz	m³/h	min⁻¹	W	A	µF/VDB	dB(A)	Pa	°C	kg	
W2S 130-AA25 -01	M2S052-CA	①	115	50	325	2800	41	---	---	49	80	60	1,1	"V"
			115	60	380	3250	38	---	---	53	120	80		
W2S 130-AA03 -01	M2S052-CA	①	230	50	325	2800	45	---	---	49	80	50	1,1	"V"
			230	60	380	3250	39	---	---	53	120	70		

subject to alterations



## Characteristics



# AC axial fans

Ø 130

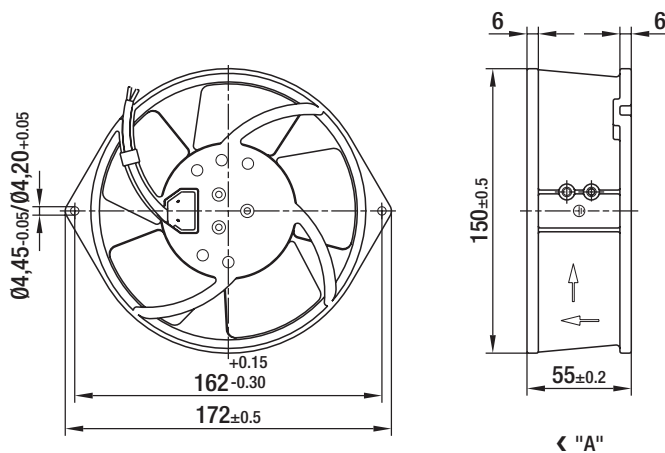


- **Material:** housing made of die-cast aluminium, impeller made of sheet steel (directly welded onto rotor and stove-enamelled in black)
- **Direction of rotation:** counter-clockwise, seen on rotor
- **Direction of air flow:** "A", sucking over struts
- **Connection leads:** cable length 330 mm as of wall ring
- **Approvals:** UL, VDE, CSA

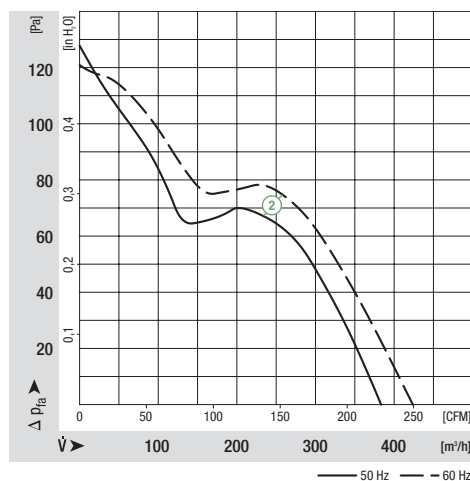
ebm-papst • Mulfingen

Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass	Direction of air flow
Type	Motor		VAC	Hz	m³/h	min⁻¹	W	A	µF/VDB	dB(A)	Pa	°C	kg	
W2S 130-BM15 -01	M2S052-CA	②	115	50	380	2700	47	---	---	60	---	50	1,1	"A"
			115	60	425	3050	46	---	---	62	---	70		
W2S 130-BM03 -01	M2S052-CA	②	230	50	380	2700	47	---	---	60	---	50	1,1	"A"
			230	60	425	3050	46	---	---	62	---	70		

subject to alterations



## Characteristics



# AC axial fans

Ø 142

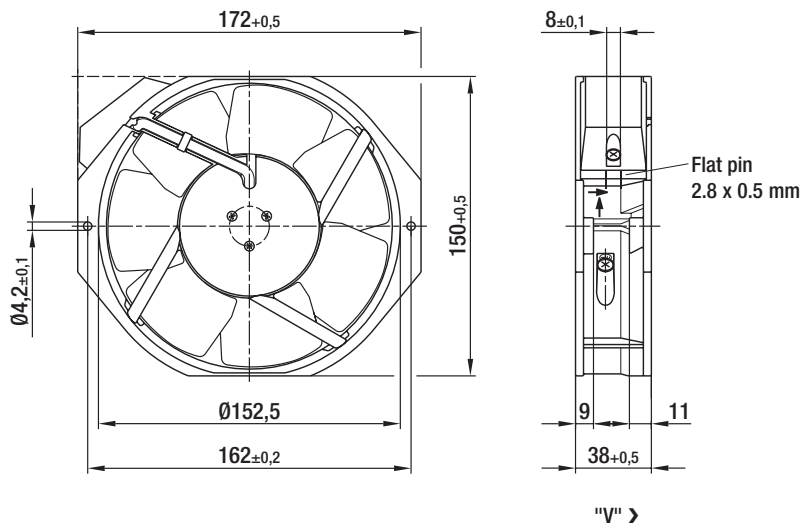


- **Material:** housing made of die-cast aluminium, impeller made of sheet steel (directly welded onto rotor and stove-enamelled in black)
- **Direction of rotation:** counter-clockwise, seen on rotor
- **Direction of air flow:** "V", blowing over struts
- **Connection leads:** flat pin terminal 2.8 x 0.5 mm, integrated capacitor
- **Approvals:** UL, VDE, CSA

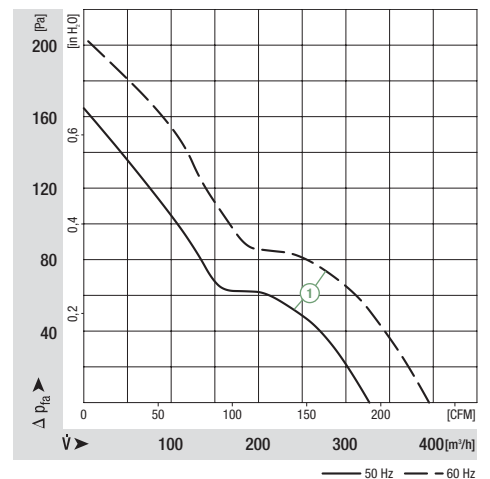
ebm-papst • Mulfingen

Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass	Direction of air flow
Type	Motor		VAC	Hz	m³/h	min⁻¹	W	A	µF/VDB	dB(A)	Pa	°C	kg	
W2E 142-BB05 -01	M2E 052-BA	①	115	50	330	2800	25	---	---	52	---	55	0,9	"V"
			115	60	390	3300	24	---	---	57	---	70		
W2E 142-BB01 -01	M2E 052-BA	①	230	50	330	2800	29	---	---	52	---	55	0,9	"V"
			230	60	390	3300	28	---	---	57	---	70		

subject to alterations



## Characteristics





# AC axial fans

Ø 143

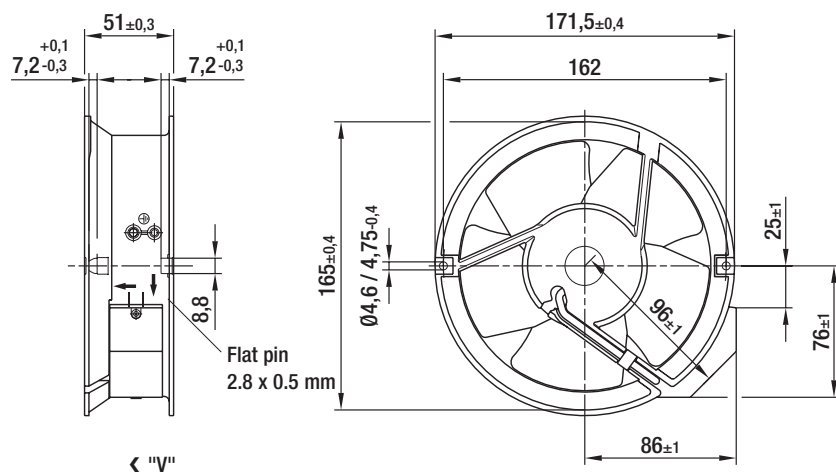


- **Material:** housing made of die-cast aluminium, impeller made of sheet steel (directly welded onto rotor and stove-enamelled in black)
- **Direction of rotation:** counter-clockwise, seen on rotor
- **Direction of air flow:** "V", blowing over struts
- **Connection leads:** flat pin terminal 2.8 x 0.5 mm, integrated capacitor
- **Approvals:** UL, VDE, CSA

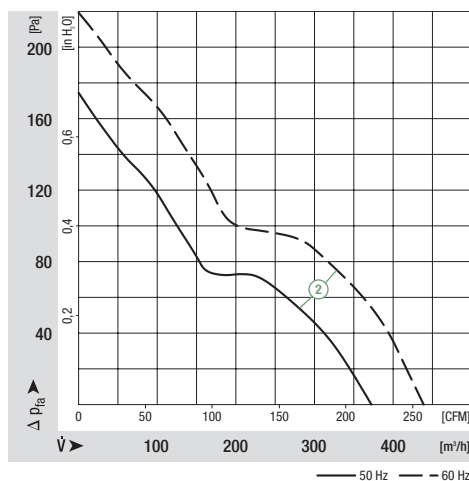
ebm-papst • Muldingen

Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass	Direction of air flow
Type	Motor		VAC	Hz	m³/h	min⁻¹	W	A	µF/VDB	dB(A)	Pa	°C	kg	
W2E 143-AA15 -01	M2E 052-BF	②	115	50	375	2800	24	---	---	55	---	70	1,0	"V"
			115	60	440	3300	26	---	---	60	---	70		
W2E 143-AA09 -01	M2E 052-BF	②	230	50	375	2800	24	---	---	55	---	70	1,0	"V"
			230	60	440	3300	26	---	---	60	---	70		

subject to alterations



## Characteristics



# AC axial fans

Ø 143

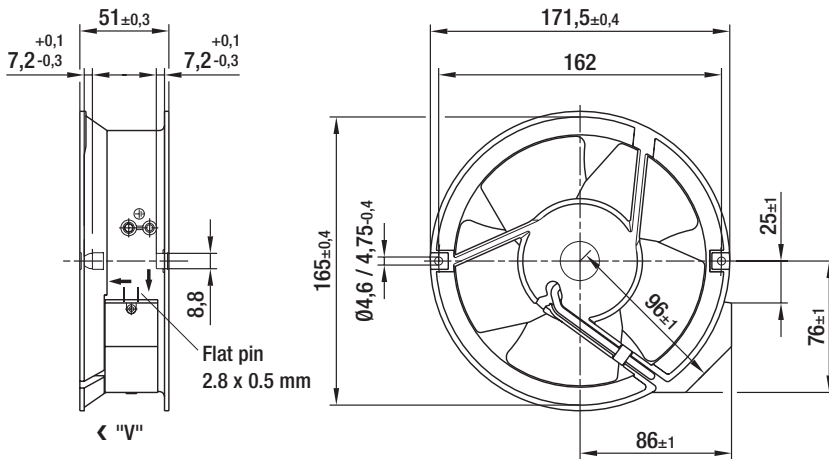


- **Material:** housing made of die-cast aluminium, impeller made of sheet steel (directly welded onto rotor and stove-enamelled in black)
- **Direction of rotation:** counter-clockwise, seen on rotor
- **Direction of air flow:** "V", blowing over struts
- **Connection leads:** flat pin terminal 2.8 x 0.5 mm, integrated capacitor
- **Approvals:** CE, UL, CSA, VDE

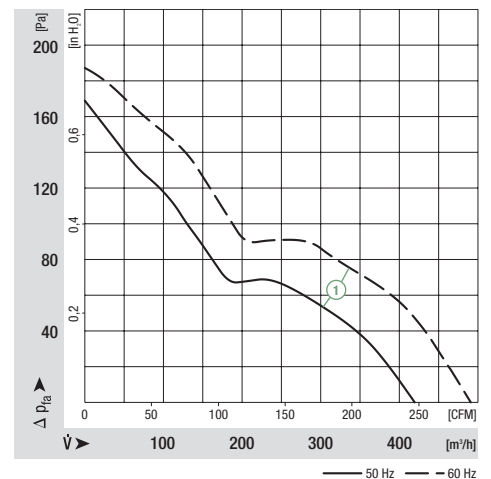
ebm-papst • Muldingen

Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass	Direction of air flow
Type	Motor		VAC	Hz	m <sup>3</sup> /h	min <sup>-1</sup>	W	A	µF/VDB	dB(A)	Pa	°C	kg	
W2E 143-AB15 -01	M2E 052-BF	①	115	50	420	2800	26	---	---	54	---	60	1,0	"V"
			115	60	500	3300	29	---	---	58	---	75		
W2E 143-AB09 -01	M2E 052-BF	①	230	50	420	2800	26	---	---	54	---	60	1,0	"V"
			230	60	500	3300	29	---	---	58	---	75		

subject to alterations



## Characteristics



# AC axial fans

Ø 200



- **Material:** housing made of die-cast aluminium, impeller made of sheet steel (directly welded onto rotor and stove-enamelled in black)
- **Direction of rotation:** counter-clockwise, seen on rotor
- **Direction of air flow:** "V", blowing over struts
- **Connection leads:** wired with capacitor on terminal strip
- **Motor protection:** integrated thermal overload protector
- **Approvals:** UL, VDE, CSA, CE

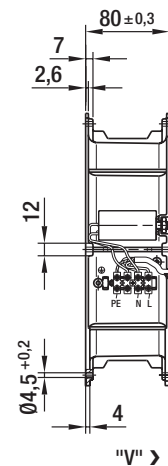
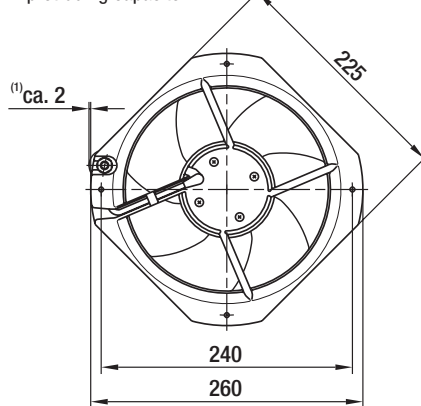
ebm-papst • Mulfingen

Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass	Direction of air flow
Type	Motor		VAC	Hz	m³/h	min⁻¹	W	A	µF/VDB	dB(A)	Pa	°C	kg	
W2E 200-HK86 -01	M2E 068-BF	②	115	50	925	2550	64	0,58	5,0/220	59	100	60	2,0	"V"
			115	60	1030	2800	80	0,70	5,0/220	61	120	65		
W2E 200-HK38 -01	M2E 068-BF	②	230	50	925	2550	64	0,29	1,5/400	59	100	60	2,0	"V"
			230	60	1030	2800	80	0,35	1,5/400	61	120	65		
W4S 200-HK04 -01	M4S 068-BF	③	230	50	450	1370	30	0,21	---	40	50	70	2,0	"V"
			230	60	525	1590	26	0,18	---	44	50	80		

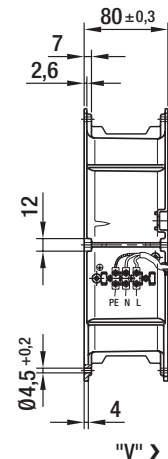
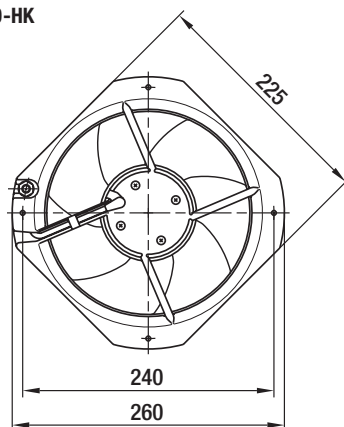
subject to alterations

## W2E 200-HK

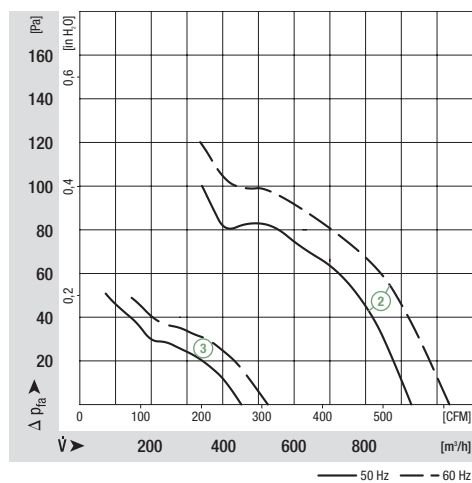
(1) protruding capacitor



## W4S 200-HK



## Characteristics



# AC diagonal fans

Ø 208



- **Material:** housing made of die-cast aluminium GDAISI, impeller made of plastic PA6.6
- **Direction of rotation:** counter-clockwise, seen on rotor
- **Direction of air flow:** "V", blowing over struts
- **Connection leads:** wired with capacitor on terminal strip

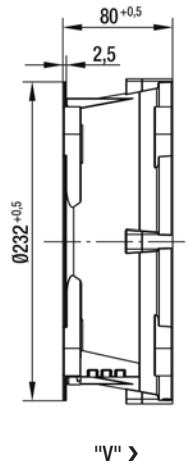
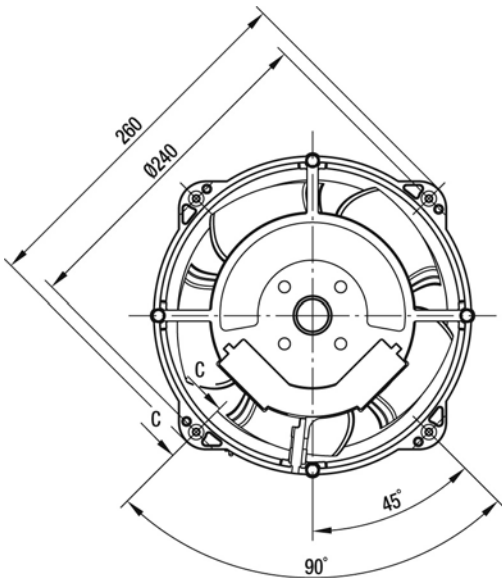
ebm-papst • Muldingen

Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass	Direction of air flow
Type	Motor	VAC	Hz	m³/h	min⁻¹	W	A	µF/VDB	dB(A)	Pa	°C	kg		
W2D208-BA02 -01 <sup>(1)</sup>	M2D068-CF	①	400 Y	50	820	2740	60	0,15	---	67	135	70	2,8	"V"
			400 Y	60	920	3090	80	0,15	---	70	165	70		
W2E 208-BA86 -01 <sup>(1)(2)</sup>	M2E 068-CF	②	115	50	815	2750	67	0,70	6,0/220	68	135	72	2,8	"V"
			115	60	925	3100	87	0,78	6,0/220	70	165	72		
W2E 208-BA20 -01 <sup>(1)(2)</sup>	M2E 068-CF		230	50	815	2750	67	0,33	1,5/450	68	135	72	2,8	"V"
			230	60	925	3100	87	0,39	1,5/450	70	165	72		

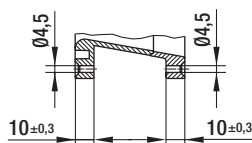
subject to alterations

<sup>(1)</sup> insulation class "F"

<sup>(2)</sup> CE approval

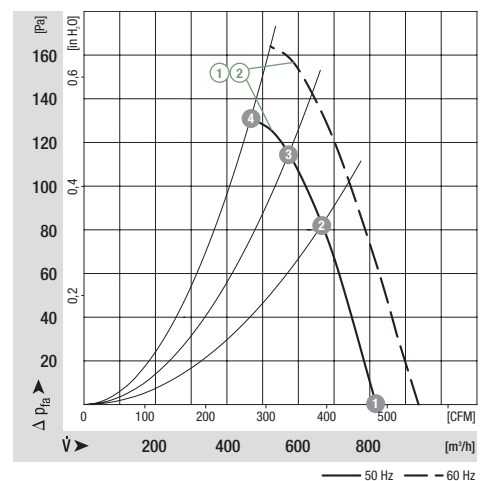


Section C-C



	n [min <sup>-1</sup> ]	P <sub>1</sub> [W]	Lp <sub>A</sub> [dBA]
① ①	3090	80	70
① ②	2990	93	69
① ③	2960	96	69
① ④	2990	92	70
② ①	3100	87	70
② ②	2990	100	70
② ③	2960	102	69
② ④	3020	97	70

## Characteristics



# AC axial fans

Ø 250



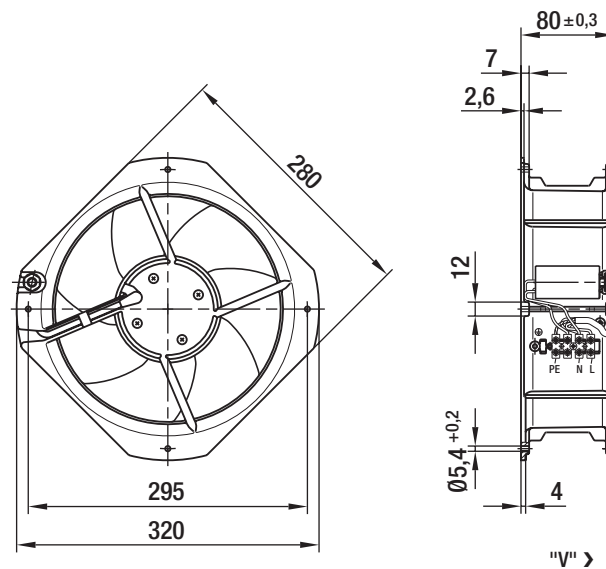
- **Material:** housing made of die-cast aluminium, impeller made of sheet steel (directly welded onto rotor and stove-enamelled in black)
- **Direction of rotation:** counter-clockwise, seen on rotor
- **Direction of air flow:** "V", blowing over struts
- **Connection leads:** wired with capacitor on terminal strip
- **Motor protection:** integrated thermal overload protector
- **Approvals:** UL, CSA, VDE, CE

ebm-papst • Muldingen

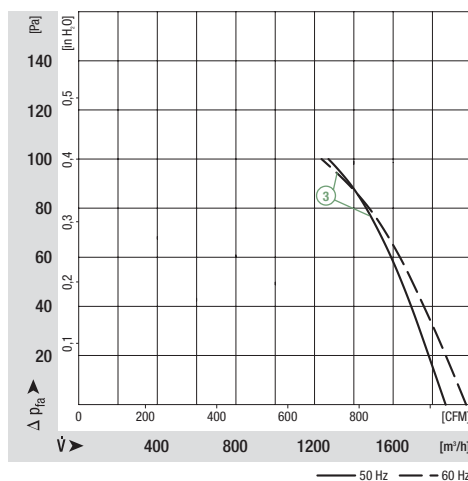
Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass	Direction of air flow
Type	Motor		VAC	Hz	m³/h	min⁻¹	W	A	µF/VDB	dB(A)	Pa	°C	kg	
W2E 250-HL06 -01 <sup>(1)</sup>	M2E 068-CF	③	230	50	1865	2550	127	0,56	4,0/400	69	100	60	2,0	"V"
			230	60	1970	2700	180	0,79	4,0/400	70	100	45		

subject to alterations

<sup>(1)</sup> insulation class "F"



## Characteristics



# AC axial fans

S-Range, Ø 200



- **Material:** sheet steel (coated in black)
- **Direction of rotation:** counter-clockwise, seen on rotor
- **Type of protection:** IP 44

ebm-papst • Muldingen

Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor	VAC	Hz	m <sup>3</sup> /h	min <sup>-1</sup>	W	A	µF/VDB	dB(A)	Pa	°C	kg	
*2D 200 <sup>(1)</sup>	M2D068-BF	①	230/400	50	890	2600	68	0,17	---	65	140	45	1,6
			230/400	60	990	2900	70	0,13	---	68	140	70	
*2E 200	M2E068-BF	②	230	50	890	2600	64	0,30	1,5/400	65	150	70	1,4
			230	60	990	2900	78	0,34	1,5/400	68	150	70	
*4D 200 <sup>(1)</sup>	M4D068-BF	③	230/400	50	500	1440	20	0,07	---	43	70	80	1,4
			230/400	60	600	1690	20	0,06	---	47	90	90	
*4S 200	M4S068-BF	④	230	50	470	1370	30	0,21	---	42	50	75	1,2
			230	60	540	1580	27	0,19	---	46	50	80	

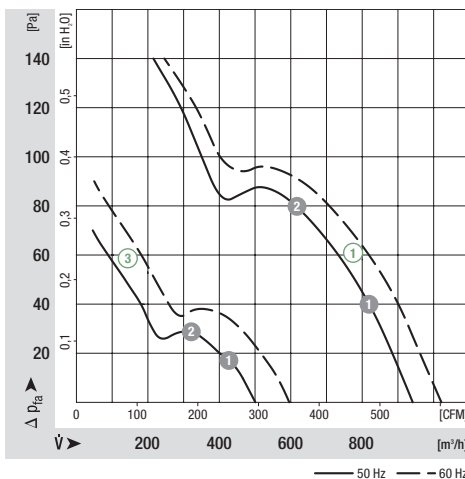
subject to alterations

<sup>(1)</sup> current draw established at 400 VAC (V)

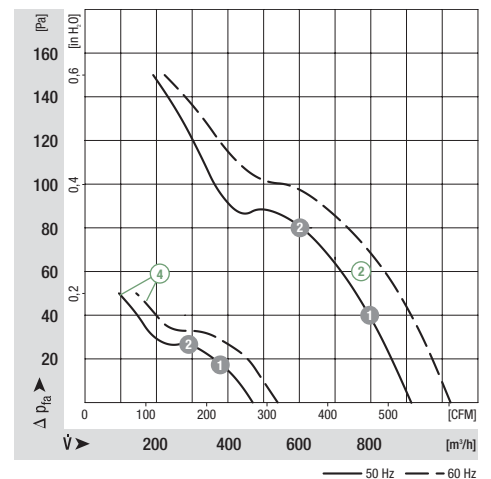
	n [min <sup>-1</sup> ]	P <sub>1</sub> [W]
① ①	2540	70
① ②	2470	74
③ ①	1430	21
③ ②	1420	23

	n [min <sup>-1</sup> ]	P <sub>1</sub> [W]
② ①	2555	67
② ②	2465	70
④ ①	1360	30
④ ②	1350	31

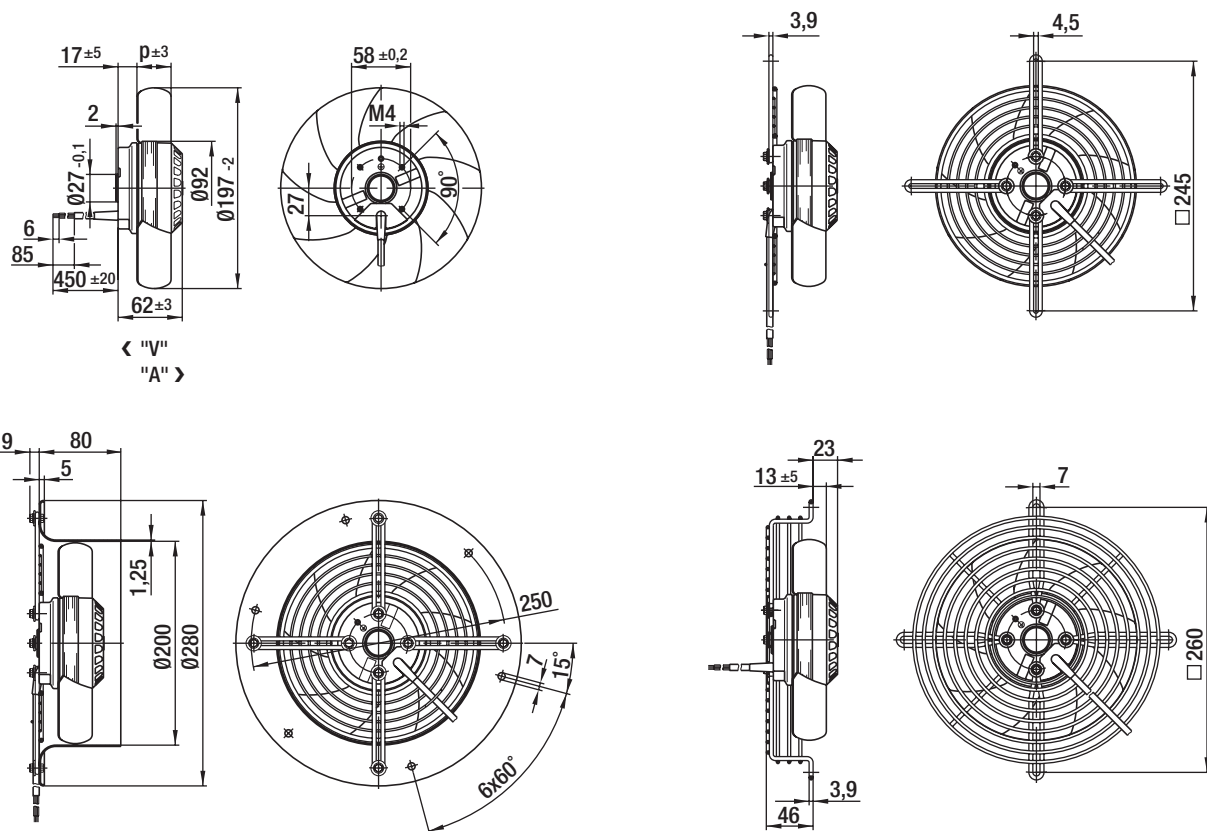
## Characteristics



## Characteristics



Selection		Cable exit	Direction of air flow					Dimensions
Type	S/A/B							p
*2D 200	S	"V"		A2D200-AH18 -01	S2D200-BH18 -01	W2D200-CH18 -01	S2D200-AH18 -01	39
		"A"		A2D200-AI18 -01	S2D200-BI18 -01	W2D200-CI18 -01	S2D200-AI18 -01	35
*2E 200	B	"V"		A2E 200-AH38 -01	S2E 200-BH38 -01	W2E 200-CH38 -01	S2E 200-AH38 -01	39
		"A"		A2E 200-AI38 -01	S2E 200-BI38 -01	W2E 200-CI38 -01	S2E 200-AI38 -01	35
*4D 200	S	"V"		A4D200-AH14 -01	S4D200-BH14 -01	W4D200-CH14 -01	S4D200-AH14 -01	39
		"A"		A4D200-AI14 -01	S4D200-BI14 -01	W4D200-CI14 -01	S4D200-AI14 -01	35
*4S 200	S	"V"		A4S 200-AH04 -01	S4S 200-BH04 -01	W4S 200-CH04 -01	S4S 200-AH04 -01	39
		"A"		A4S 200-AI04 -01	S4S 200-BI04 -01	W4S 200-CI04 -01	S4S 200-AI04 -01	35



# AC axial fans

S-Range, Ø 250



- **Material:** sheet steel (coated in black)
- **Direction of rotation:** counter-clockwise, seen on rotor
- **Type of protection:** IP 44

ebm-papst • Muldingen

Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor	VAC	Hz	m³/h	min⁻¹	W	A	µF/VDB	dB(A)	Pa	°C	kg	
*2D 250 <sup>(1)</sup>	M2D068-CF	① 230/400	50	1830	2500	100	0,20	---	69	150	65	2,1	
		230/400	60	1950	2650	140	0,23	---	70	150	45		
*2E 250	M2E068-CF	② 230	50	1820	2450	115	0,51	3,0/400	69	120	65	1,9	
		230	60	1970	2600	150	0,66	3,0/400	71	85	50		
*4D 250 <sup>(1)</sup>	M4D068-CF	③ 230/400	50	1010	1400	25	0,07	---	54	70	85	1,9	
		230/400	60	1140	1580	32	0,07	---	57	70	80		
*4E 250	M4E068-BF	④ 230	50	1010	1400	42	0,19	1,5/400	54	80	55	1,9	
		230	60	1200	1630	45	0,20	1,5/400	58	100	70		
*4S 250	M4S068-CF	⑤ 230	50	1000	1390	69	0,53	---	54	80	50	1,7	
		230	60	1160	1600	63	0,45	---	58	80	65		

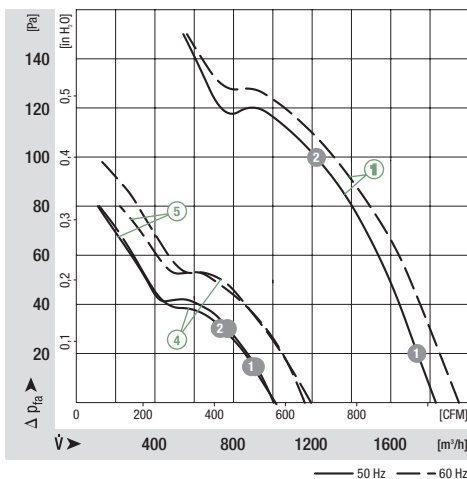
subject to alterations

<sup>(1)</sup> current draw established at 400 VAC (V)

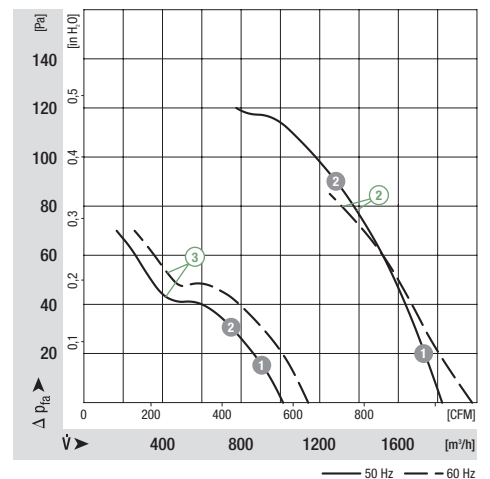
	n [min⁻¹]	P <sub>1</sub> [W]
① ①	2455	106
① ②	2310	125
④ ①	1370	43
④ ②	1360	45
⑤ ①	1370	71
⑤ ②	1360	73

	n [min⁻¹]	P <sub>1</sub> [W]
② ①	2455	116
② ②	2290	132
③ ①	1375	27
③ ②	1350	30

## Characteristics

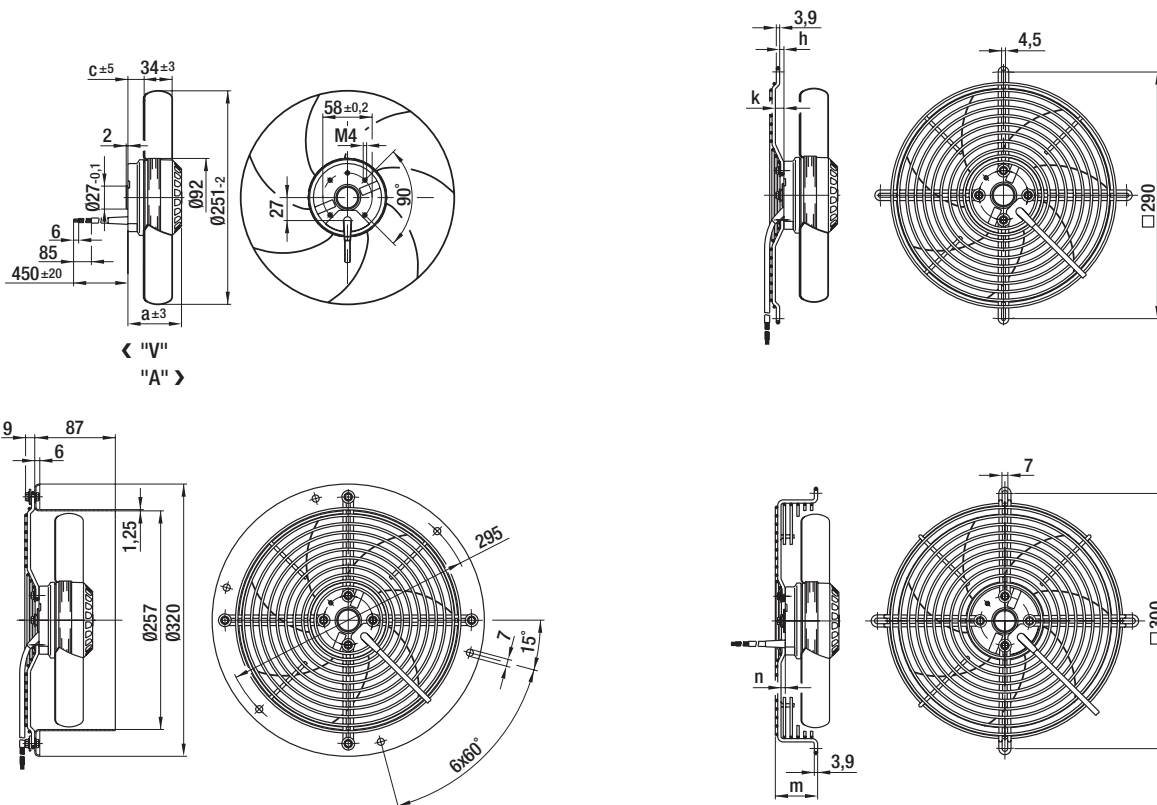


## Characteristics





Selection	Cable exit	Direction of air flow	Image icons				Dimensions					
			Type	S/A/B	a	c	h	k	m	n		
*2D 250	S	"V"	A2D250-AH02 -01	S2D250-BH02 -01	W2D250-CH02 -01	S2D250-AH02 -01	72	18	5	10	50	5
		"A"	A2D250-AI02 -01	S2D250-BI02 -01	W2D250-CI02 -01	S2D250-AI02 -01	72	21	0	0	45	0
*2E 250	B	"V"	A2E 250-AL06 -01	S2E 250-BL06 -01	W2E 250-CL06 -01	S2E 250-AL06 -01	72	18	5	10	50	5
		"A"	A2E 250-AM06 -01	S2E 250-BM06 -01	W2E 250-CM06 -01	S2E 250-AM06 -01	72	27	0	0	45	0
*4D 250	S	"V"	A4D250-AH22 -01	S4D250-BH22 -01	W4D250-CH22 -01	S4D250-AH22 -01	72	18	5	10	50	5
		"A"	A4D250-AI22 -01	S4D250-BI22 -01	W4D250-CI22 -01	S4D250-AI22 -01	72	27	0	0	45	0
*4E 250	S	"V"	A4E 250-AH02 -01	S4E 250-BH02 -01	W4E 250-CH02 -01	S4E 250-AH02 -01	62	14	5	10	50	5
		"A"	A4E 250-AI02 -01	S4E 250-BI02 -01	W4E 250-CI02 -01	S4E 250-AI02 -01	62	22	0	0	45	0
*4S 250	S	"V"	A4S 250-AH02 -01	S4S 250-BH02 -01	W4S 250-CH02 -01	S4S 250-AH02 -01	72	18	5	10	50	5
		"A"	A4S 250-AI02 -01	S4S 250-BI02 -01	W4S 250-CI02 -01	S4S 250-AI02 -01	72	23	0	0	45	0



# AC axial fans 2 poles

S-Range, Ø 300



- **Material:** sheet steel (coated in black)
- **Direction of rotation:** direction of air flow "V" counter-clockwise, direction of air flow "A" clockwise
- **Type of protection:** IP 44
- **Option:** also available with terminal box

ebm-papst • Mulfingen

Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor	VAC	Hz	m³/h	min⁻¹	W	A	µF/VDB	dB(A)	Pa	°C	kg	
*2D 300 <sup>(1)</sup>	M2D074-DF	①	230/400	50	3130	2580	210	0,36	---	72	200	55	3,0
			230/400	60	3350	2750	300	0,48	---	73	125	40	
*2E 300	M2E074-DF	②	230	50	3410	2700	230	1,10	8,0/400	73	200	50	3,0
			230	60	3740	3000	350	1,55	8,0/400	76	50	40	

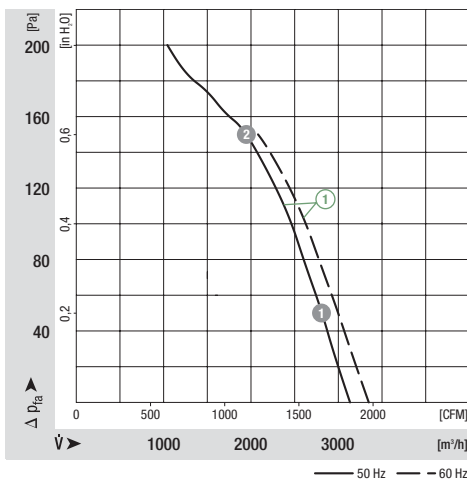
subject to alterations

<sup>(1)</sup> current draw established at 400 VAC (Y)

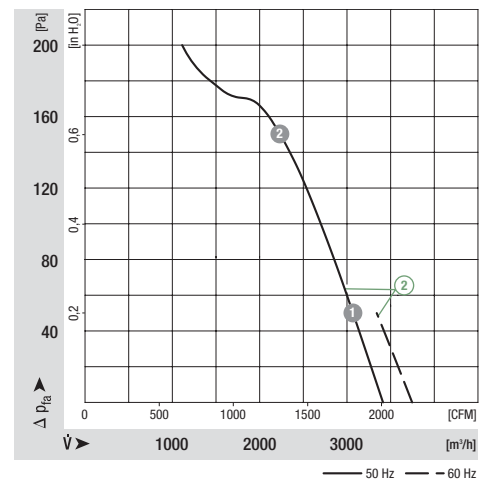
	n [min⁻¹]	P <sub>1</sub> [W]
① ①	2530	228
① ②	2400	273

	n [min⁻¹]	P <sub>1</sub> [W]
② ①	2680	252
② ②	2560	290

## Characteristics



## Characteristics





# AC axial fans 4 poles

S-Range, Ø 300



- **Material:** sheet steel (coated in black)
- **Direction of rotation:** direction of air flow "V" counter-clockwise, direction of air flow "A" clockwise
- **Type of protection:** IP 44

ebm-papst • Muldingen

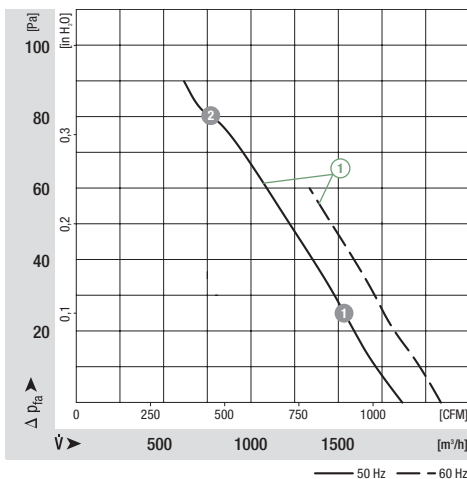
Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor		VAC	Hz	m³/h	min⁻¹	W	A	µF/VDB	dB(A)	Pa	°C	kg
*4D 300	M4D068-CF	①	230/400	50	1860	1370	60	0,17	---	57	90	45	1,9
			230/400	60	2080	1540	75	0,15	---	60	60	40	
*4E 300	M4E068-CF	②	230	50	1740	1400	68	0,30	2,0/400	59	80	60	1,9
			230	60	2040	1630	92	0,41	2,0/400	63	70	45	

subject to alterations

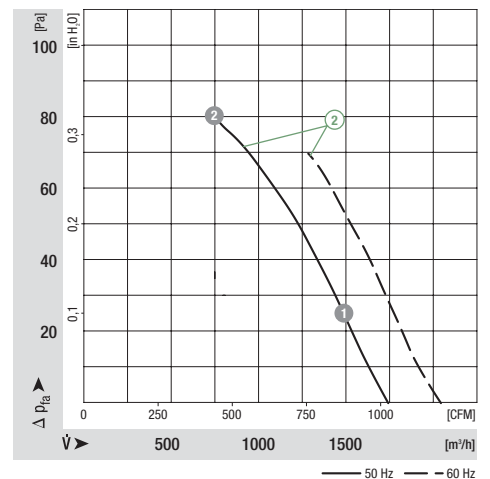
	n [min⁻¹]	P <sub>1</sub> [W]
① ①	1350	66
① ②	1260	88

	n [min⁻¹]	P <sub>1</sub> [W]
② ①	1390	72
② ②	1290	88

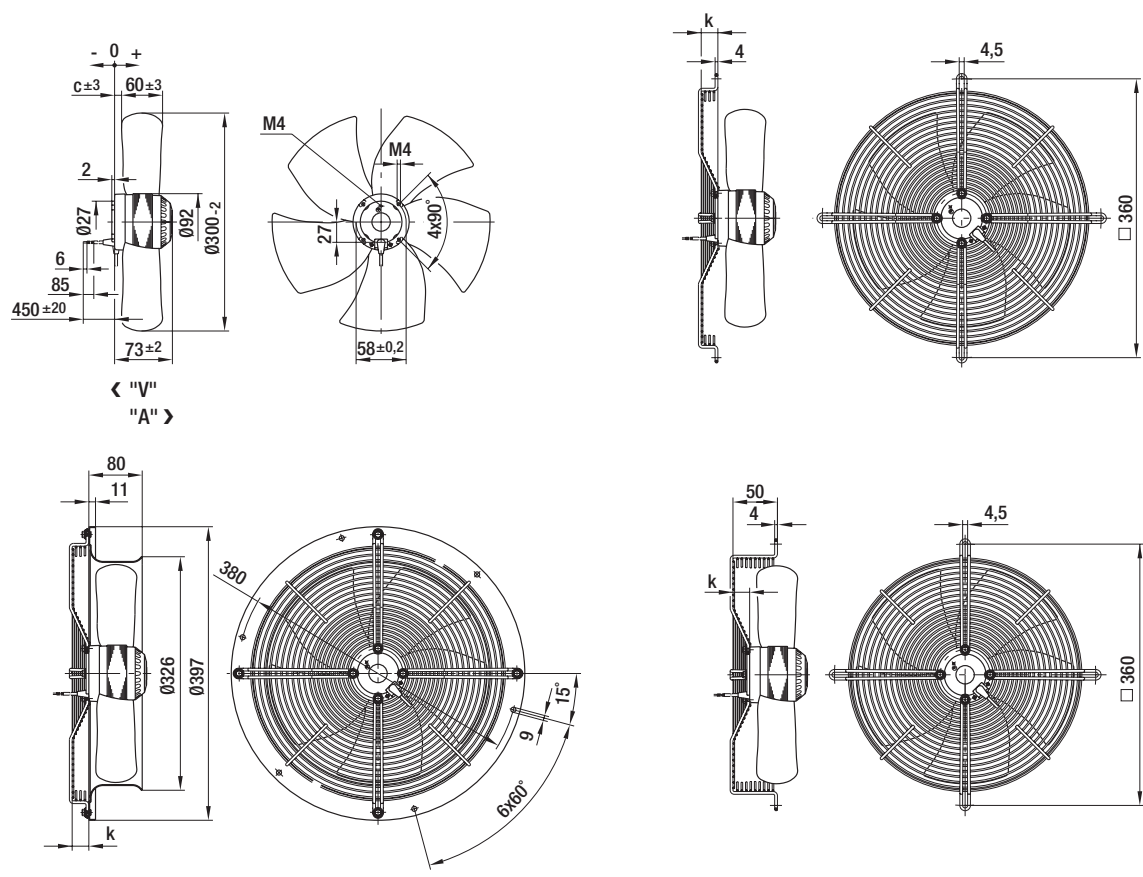
## Characteristics



## Characteristics



Selection	Cable exit	Direction of air flow	Image				Dimensions	
			Type	S/A/B	c	k		
*4D 300	A	"V"	A4D300-AP28 -01	S4D300-BP28 -30	W4D300-CP28 -30	S4D300-AP28 -30	13	0
		"A"	A4D300-AP28 -02	S4D300-BP28 -31	W4D300-CP28 -31	S4D300-AP28 -31	-7	30
*4E 300	A	"V"	A4E 300-AP26 -01	S4E 300-BP26 -30	W4E 300-CP26 -30	S4E 300-AP26 -30	13	0
		"A"	A4E 300-AP26 -02	S4E 300-BP26 -31	W4E 300-CP26 -31	S4E 300-AP26 -31	-7	30



# AC axial fans

S-Range, Ø 315



- **Material:** sheet steel (coated in black)
- **Direction of rotation:** direction of air flow "V" counter-clockwise, direction of air flow "A" clockwise
- **Type of protection:** IP 44

ebm-papst • Muldingen

Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor	VAC	Hz	m <sup>3</sup> /h	min <sup>-1</sup>	W	A	µF/VDB	dB(A)	Pa	°C	kg	
*4D 315 <sup>(1)</sup>	M4D068-DF	①	230/400	50	2450	1400	85	0,26	---	60	120	55	2,4
			230/400	60	2810	1620	110	0,24	---	64	120	55	
*4E 315	M4E068-DF	②	230	50	2440	1410	102	0,52	4,0/400	59	120	55	2,4
			230	60	2840	1650	120	0,53	4,0/400	64	120	55	
*6E 315	M6E068-DF	③	230	50	1650	950	65	0,33	2,0/400	51	70	50	2,4
			230	60	1950	1120	68	0,30	2,0/450	55	80	60	

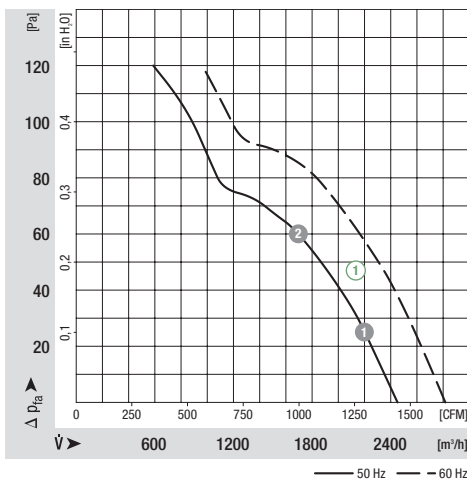
subject to alterations

<sup>(1)</sup> current draw established at 400 VAC (V)

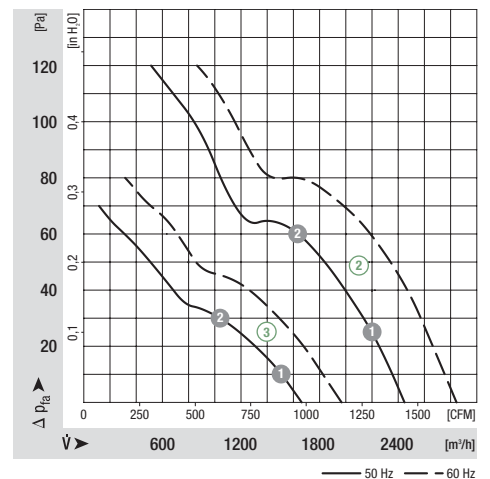
	n [min <sup>-1</sup> ]	P <sub>1</sub> [W]
① ①	1400	90
① ②	1380	103

	n [min <sup>-1</sup> ]	P <sub>1</sub> [W]
② ①	1400	108
② ②	1380	120
③ ①	945	63
③ ②	930	66

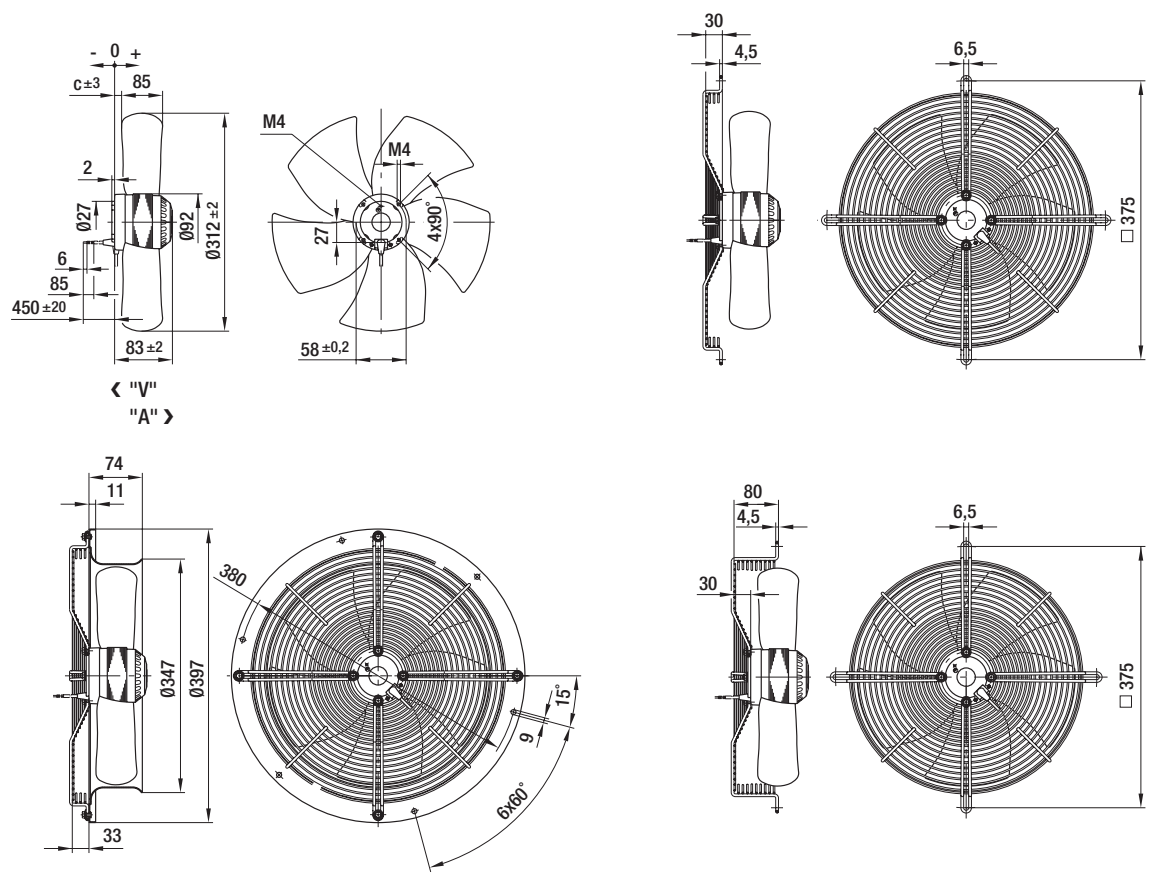
## Characteristics



## Characteristics



Selection	Cable exit	Direction of air flow	Image icons				Dimensions
			Type	S/A/B			
*4D 315	A	"V"	A4D315-AP10 -01	S4D315-BP10 -30	W4D315-CP10 -30	S4D315-AP10 -30	5
		"A"	A4D315-AP10 -02	S4D315-BP10 -31	W4D315-CP10 -31	S4D315-AP10 -31	-7
*4E 315	A	"V"	A4E 315-AP18 -01	S4E 315-BP18 -30	W4E 315-CP18 -30	S4E 315-AP18 -30	5
		"A"	A4E 315-AP18 -02	S4E 315-BP18 -31	W4E 315-CP18 -31	S4E 315-AP18 -31	-7
*6E 315	A	"V"	A6E 315-AP02 -01	S6E 315-BP02 -30	W6E 315-CP02 -30	S6E 315-AP02 -30	5
		"A"	A6E 315-AP02 -02	S6E 315-BP02 -31	W6E 315-CP02 -31	S6E 315-AP02 -31	-7



# AC axial fans

S-Range, Ø 330



- **Material:** sheet steel (coated in black)
- **Direction of rotation:** direction of air flow "V" counter-clockwise, direction of air flow "A" clockwise
- **Type of protection:** IP 44

ebm-papst • Muldingen

Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor	VAC	Hz	m³/h	min⁻¹	W	A	µF/VDB	dB(A)	Pa	°C	kg	
*4D 330 <sup>(1)</sup>	M4D068-DF	①	230/400	50	2800	1390	100	0,26	---	59	120	55	2,6
			230/400	60	3180	1570	130	0,24	---	63	120	45	
*4E 330	M4E068-DF	②	230	50	2830	1390	120	0,57	4,0/400	63	90	50	2,5
			230	60	3230	1600	140	0,60	4,0/400	67	75	40	
*6E 330	M6E068-DF	③	230	50	1940	940	65	0,33	2,0/400	49	60	50	2,5
			230	60	2280	1100	72	0,32	2,0/450	53	70	65	

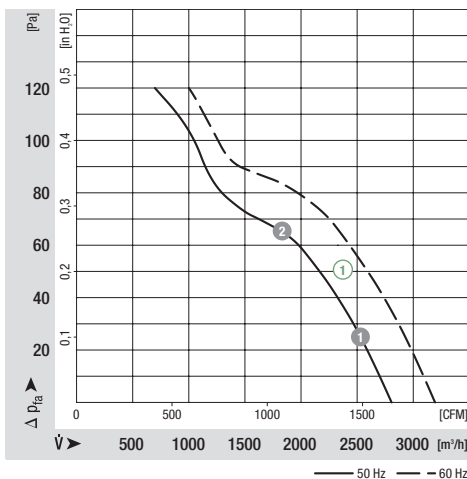
subject to alterations

<sup>(1)</sup> current draw established at 400 VAC (V)

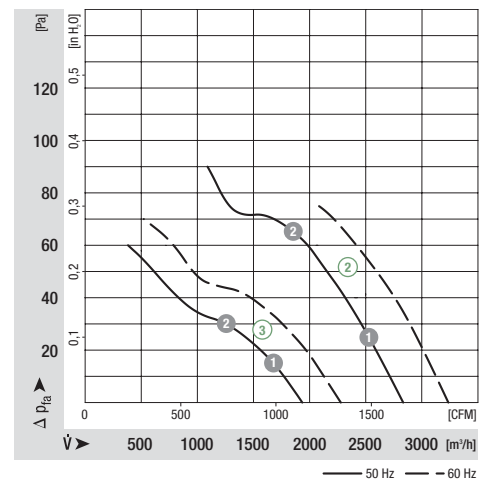
	n [min⁻¹]	P <sub>1</sub> [W]
① ①	1370	102
① ②	1325	126

	n [min⁻¹]	P <sub>1</sub> [W]
② ①	1375	122
② ②	1325	140
③ ①	925	68
③ ②	910	70

## Characteristics

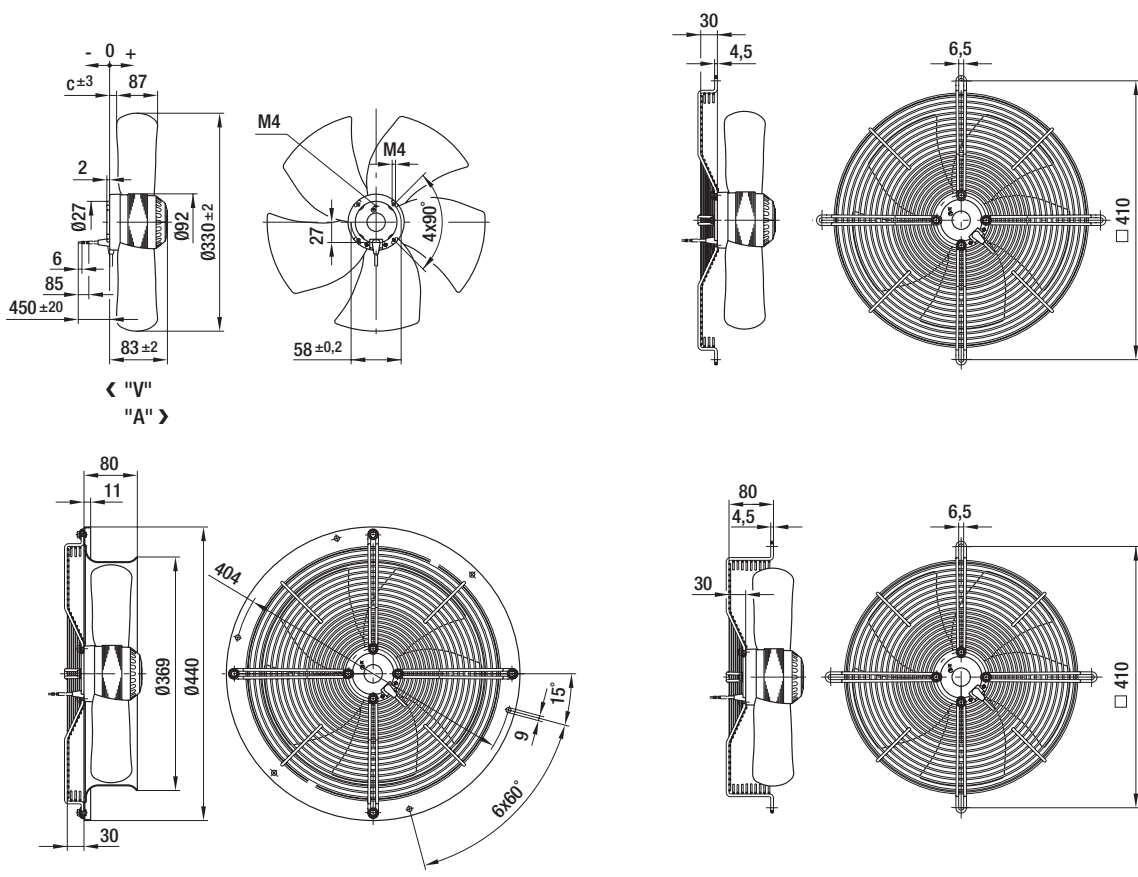


## Characteristics





Selection	Cable exit	Direction of air flow	Image				Dimensions
			Type	S/A/B			
*4D 330	A	"V"	A4D330-AP10 -01	S4D330-BP10 -30	W4D330-CP10 -30	S4D330-AP10 -30	6
		"A"	A4D330-AP10 -02	S4D330-BP10 -31	W4D330-CP10 -31	S4D330-AP10 -31	-8
*4E 330	A	"V"	A4E 330-AP18 -01	S4E 330-BP18 -30	W4E 330-CP18 -30	S4E 330-AP18 -30	6
		"A"	A4E 330-AP18 -02	S4E 330-BP18 -31	W4E 330-CP18 -31	S4E 330-AP18 -31	-8
*6E 330	A	"V"	A6E 330-AP02 -01	S6E 330-BP02 -30	W6E 330-CP02 -30	S6E 330-AP02 -30	6
		"A"	A6E 330-AP02 -02	S6E 330-BP02 -31	W6E 330-CP02 -31	S6E 330-AP02 -31	-8



# AC axial fans

S-Range, Ø 350



- **Material:** sheet steel (coated in black)
- **Direction of rotation:** direction of air flow "V" counter-clockwise, direction of air flow "A" clockwise
- **Type of protection:** IP 44

ebm-papst • Muldingen

Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor	VAC	Hz	m <sup>3</sup> /h	min <sup>-1</sup>	W	A	µF/VDB	dB(A)	Pa	°C	kg	
*4D 350 <sup>(1)(2)</sup>	M4D068-EC	①	230/400	50	3340	1420	135	0,42	---	64	120	60	3,6
			230/400	60	3815	1620	185	0,37	---	68	145	45	
*4E 350 <sup>(2)</sup>	M4E068-EC	②	230	50	3250	1365	132	0,58	5,0/400	64	90	60	3,6
			230	60	3640	1530	180	0,80	5,0/400	67	65	50	
*6E 350	M6E068-DF	③	230	50	2110	905	60	0,27	2,5/400	55	40	60	3,6
			230	60	2420	1040	85	0,38	2,5/400	58	45	55	

subject to alterations

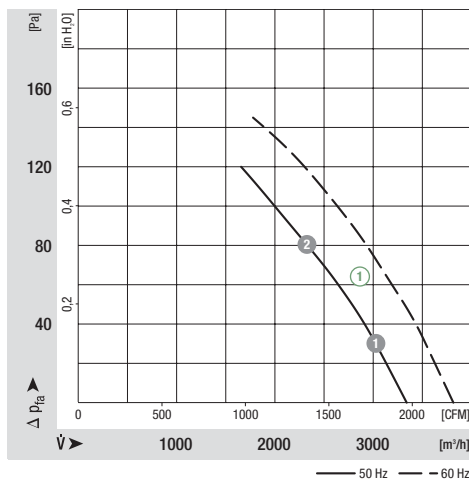
<sup>(1)</sup> current draw established at 400 VAC (V)

<sup>(2)</sup> insulation class "F"

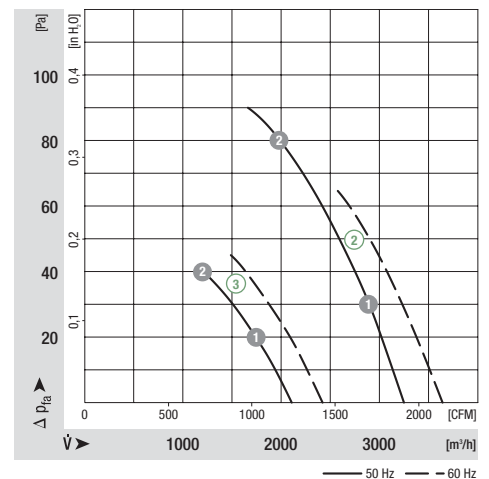
	n [min <sup>-1</sup> ]	P <sub>1</sub> [W]
① ①	1400	150
① ②	1380	173

	n [min <sup>-1</sup> ]	P <sub>1</sub> [W]
② ①	1335	142
② ②	1260	166
③ ①	880	63
③ ②	825	68

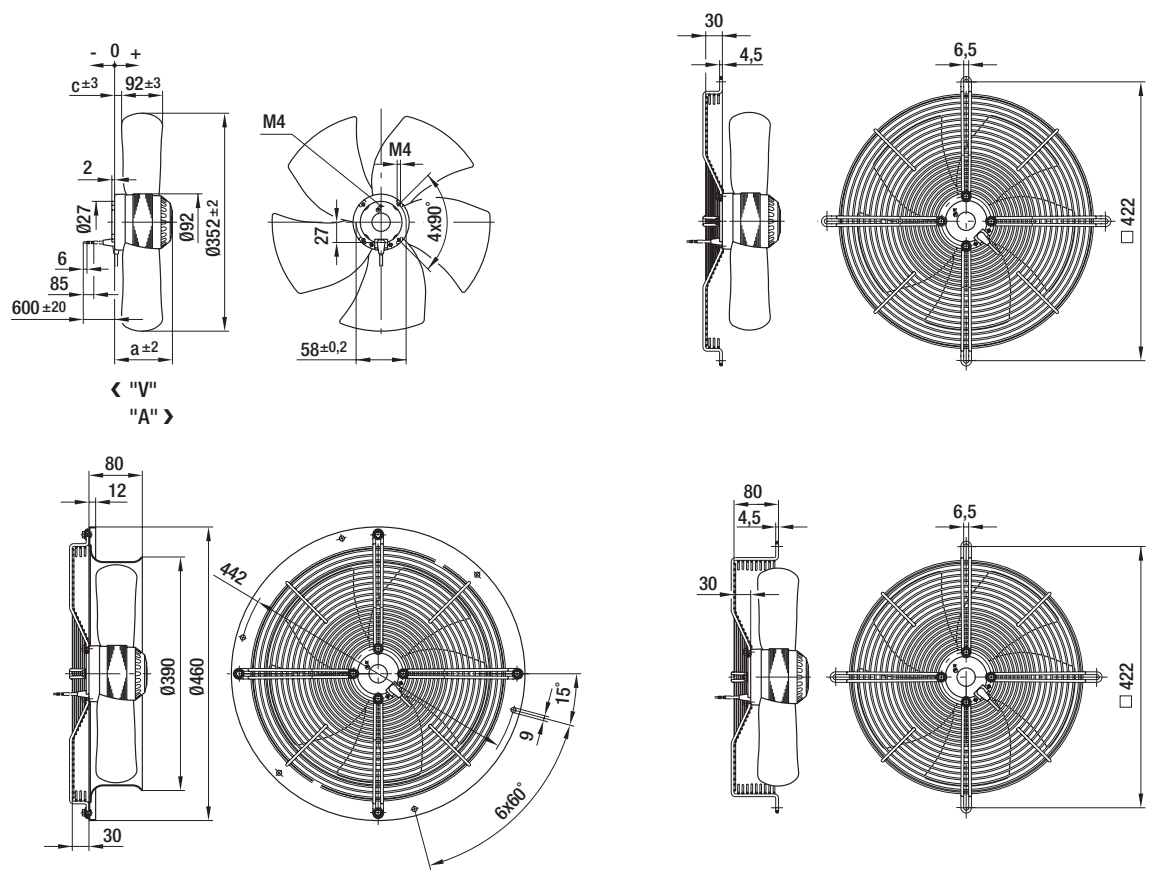
## Characteristics



## Characteristics



Selection	Cable exit	Direction of air flow	Image				Dimensions	
			Type	S/A/B	p	c		
*4D 350	A	"V"	A4D350-AR06 -01	S4D350-BR06 -30	W4D350-CR06 -30	S4D350-AR06 -30	102	10
		"A"	A4D350-AR06 -02	S4D350-BR06 -31	W4D350-CR06 -31	S4D350-AR06 -31	102	-10
*4E 350	A	"V"	A4E350-AR06 -01	S4E350-BR06 -30	W4E350-CR06 -30	S4E350-AR06 -30	102	10
		"A"	A4E350-AR06 -02	S4E350-BR06 -31	W4E350-CR06 -31	S4E350-AR06 -31	102	-10
*6E 350	A	"V"	A6E350-AR08 -01	S6E350-BR08 -30	W6E350-CR08 -30	S6E350-AR08 -30	83	5
		"A"	A6E350-AR08 -02	S6E350-BR08 -31	W6E350-CR08 -31	S6E350-AR08 -31	83	-12



# AC axial fans

S-Range, Ø 400



- **Material:** sheet steel (coated in black)
- **Direction of rotation:** direction of air flow "V" counter-clockwise, direction of air flow "A" clockwise
- **Type of protection:** IP 44
- **Option:** also available with terminal box

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Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor	VAC	Hz	m <sup>3</sup> /h	min <sup>-1</sup>	W	A	µF/VDB	dB(A)	Pa	°C	kg	
*4D 400 <sup>(1)</sup>	M4D074-EI	①	230/400	50	4000	1450	135	0,44	---	68	150	40	4,2
			230/400	60	4610	1690	185	0,39	---	72	120	40	
*4E 400	M4E074-EI	②	230	50	4235	1430	160	0,73	6,0/400	69	150	40	4,2
			230	60	4950	1700	240	1,06	6,0/400	73	75	40	
*6E 400 <sup>(2)</sup>	M6E074-DF	③	230	50	3290	940	120	0,55	3,0/450	59	50	40	4,0
			230	60	3780	1080	170	0,75	3,0/400	62	40	40	

subject to alterations

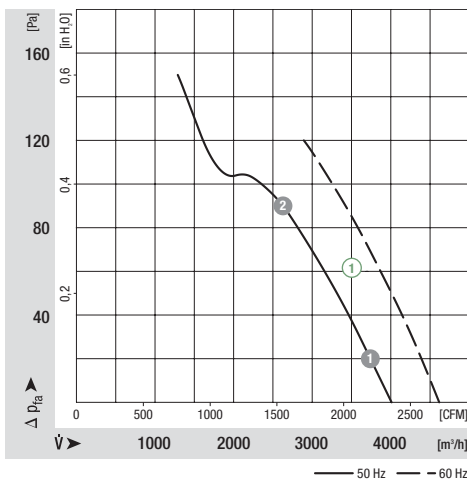
<sup>(1)</sup> 400 VAC Δ/Y for two speed steps available on request, current draw established at 400 VAC (Y)

<sup>(2)</sup> insulation class "F"

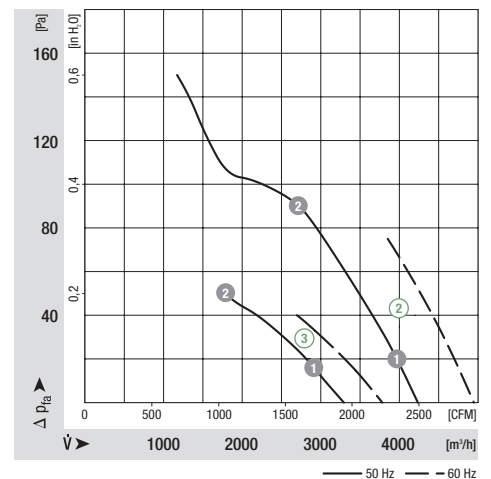
	n [min <sup>-1</sup> ]	P <sub>1</sub> [W]
① ①	1440	152
① ②	1415	195

	n [min <sup>-1</sup> ]	P <sub>1</sub> [W]
② ①	1430	172
② ②	1395	210
③ ①	935	126
③ ②	895	140

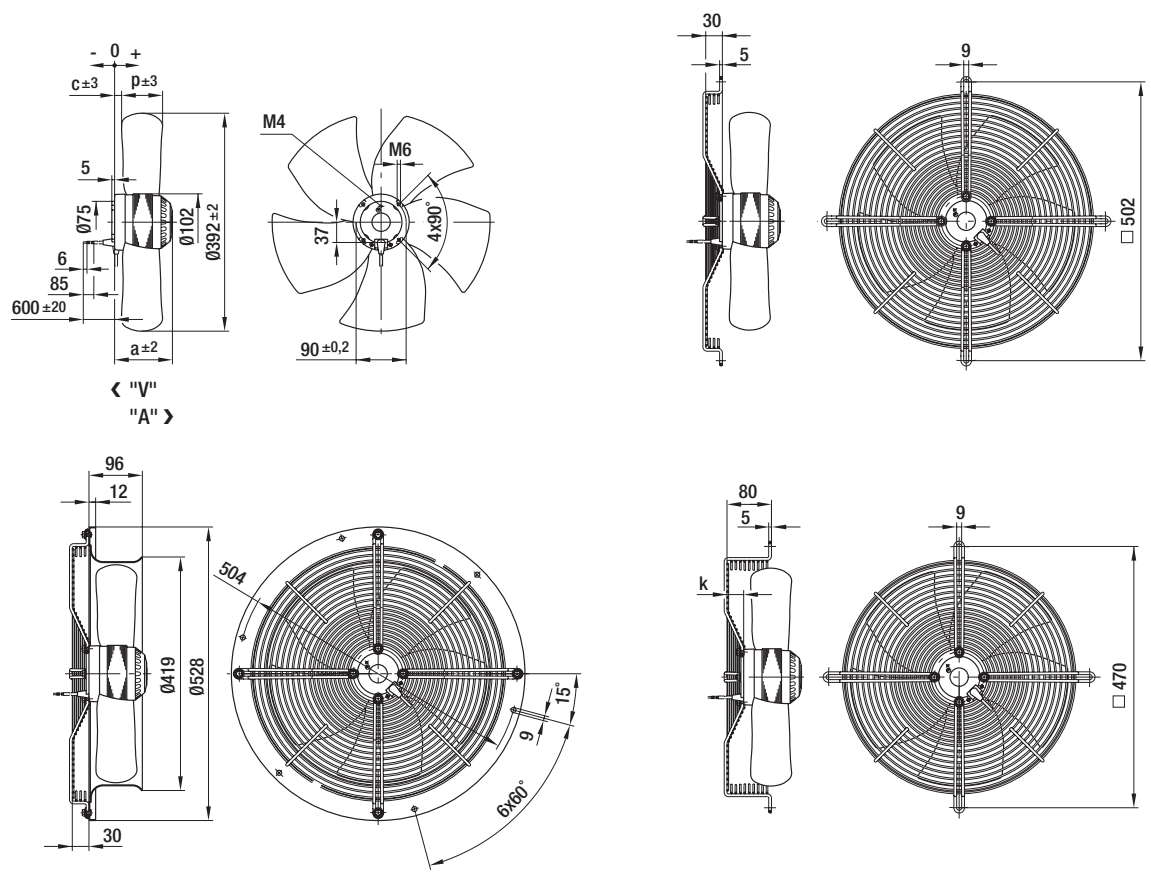
## Characteristics



## Characteristics



Selection	Cable exit	Direction of air flow	Dimensions							
			a	c	p	k				
<b>*4D 400</b>	B	"V" "A"	A4D400-AP12 -01 A4D400-AP12 -02	S4D400-BP12 -30 S4D400-BP12 -31	W4D400-CP12 -30 W4D400-CP12 -31	S4D400-AP12 -03 S4D400-AP12 -04	117 117	26 22	68 68	10 10
<b>*4E 400</b>	B	"V" "A"	A4E 400-AP02 -01 A4E 400-AP02 -02	S4E 400-BP02 -30 S4E 400-BP02 -31	W4E 400-CP02 -30 W4E 400-CP02 -31	S4E 400-AP02 -03 S4E 400-AP02 -04	117 117	26 22	68 68	10 10
<b>*6E 400</b>	B	"V" "A"	A6E 400-AP10 -01 A6E 400-AP10 -02	S6E 400-BP10 -30 S6E 400-BP10 -31	W6E 400-CP10 -30 W6E 400-CP10 -31	S6E 400-AP10 -30 S6E 400-AP10 -31	104 104	-5 14	90 88	30 30



# AC axial fans

S-Range, Ø 420



- **Material:** sheet steel (coated in black)
- **Direction of rotation:** direction of air flow "V" counter-clockwise, direction of air flow "A" clockwise
- **Type of protection:** IP 44
- **Option:** also available with terminal box

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Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor	VAC	Hz	m³/h	min⁻¹	W	A	µF/VDB	dB(A)	Pa	°C	kg	
*4D 420 <sup>(1)</sup>	M4D074-GA	①	230/400	50	4890	1430	160	0,44	---	69	160	65	4,8
			230/400	60	5635	1660	235	0,45	---	72	120	40	
*4E 420	M4E074-GA	②	230	50	4830	1430	200	0,94	7,0/400	70	150	50	4,8
			230	60	5630	1680	285	1,25	7,0/400	74	50	40	
*6E 420 <sup>(2)</sup>	M6E074-EI	③	230	50	3940	940	145	0,67	4,0/450	60	90	50	4,4
			230	60	4570	1090	205	0,90	4,0/450	63	80	45	

subject to alterations

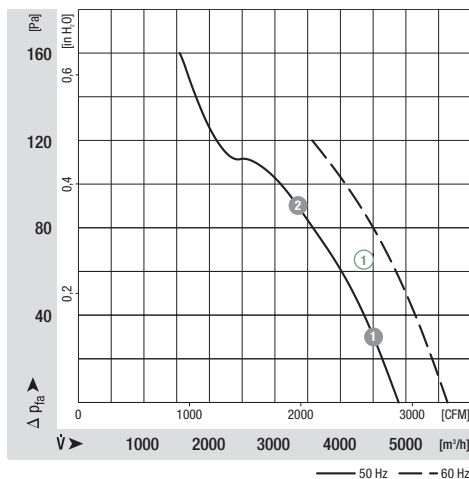
<sup>(1)</sup> 400 VAC Δ/Y for two speed steps available on request, current draw established at 400 VAC (Y)

<sup>(2)</sup> insulation class "F"

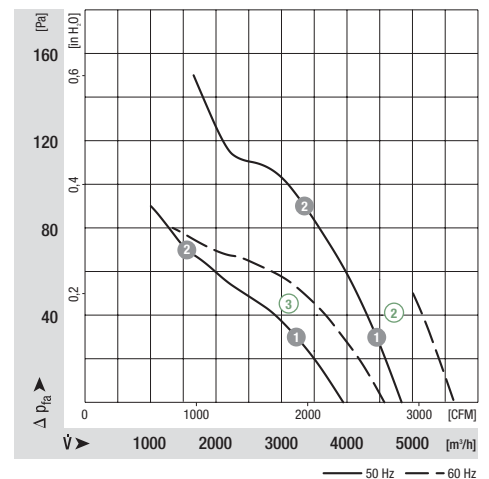
	n [min⁻¹]	P <sub>1</sub> [W]
① ①	1420	185
① ②	1390	237

	n [min⁻¹]	P <sub>1</sub> [W]
② ①	1430	220
② ②	1400	260
③ ①	930	155
③ ②	890	176

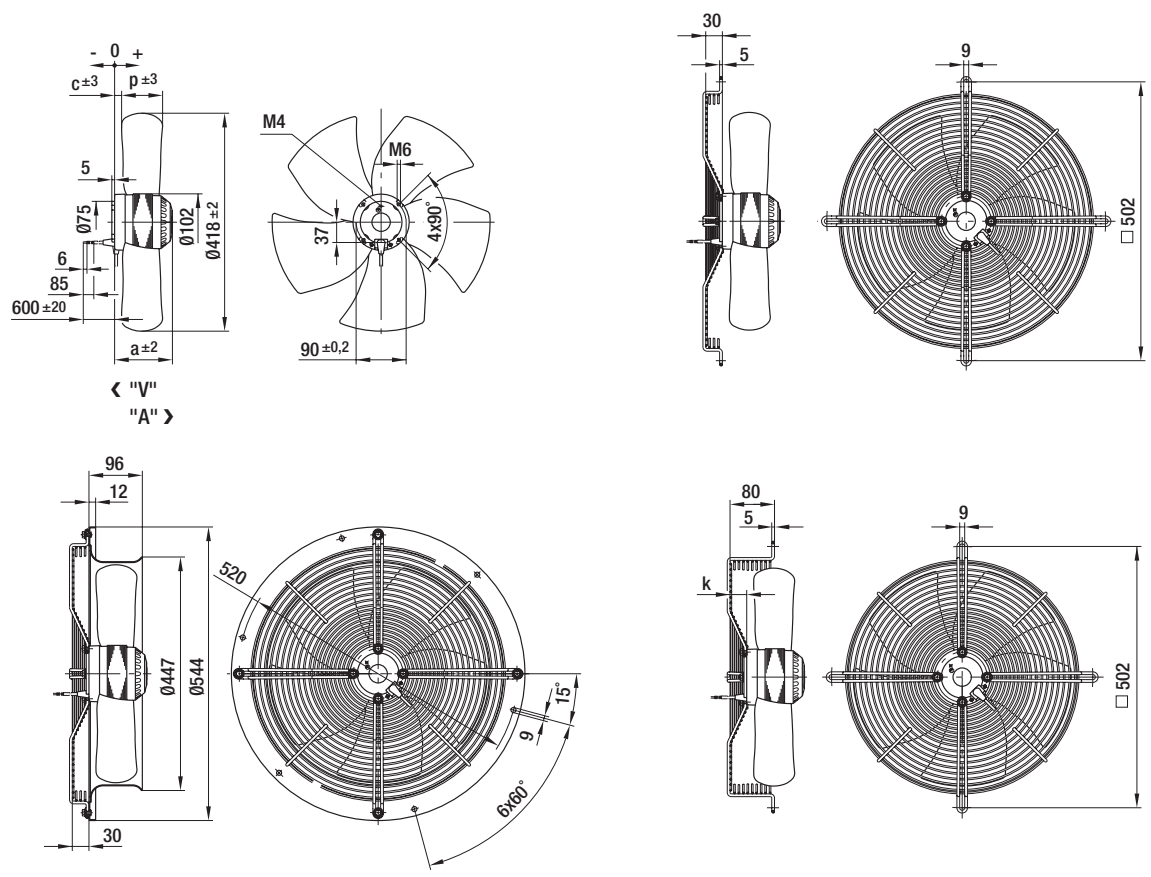
## Characteristics



## Characteristics



Selection	Cable exit	Direction of air flow	Dimensions							
			a	c	p	k				
<b>*4D 420</b>	B	"V" "A"	A4D420-AP02 -01 A4D420-AP02 -02	S4D420-BP02 -30 S4D420-BP02 -31	W4D420-CP02 -30 W4D420-CP02 -31	S4D420-AP02 -03 S4D420-AP02 -04	129 129	28 25	67 67	0 0
<b>*4E 420</b>	B	"V" "A"	A4E 420-AP02 -01 A4E 420-AP02 -02	S4E 420-BP02 -30 S4E 420-BP02 -31	W4E 420-CP02 -30 W4E 420-CP02 -31	S4E 420-AP02 -03 S4E 420-AP02 -04	129 129	28 25	67 67	0 0
<b>*6E 420</b>	B	"V" "A"	A6E 420-AP02 -01 A6E 420-AP02 -02	S6E 420-BP02 -30 S6E 420-BP02 -31	W6E 420-CP02 -30 W6E 420-CP02 -31	S6E 420-AP02 -30 S6E 420-AP02 -31	117 117	2 21	89 89	30 30



# AC axial fans

S-Range, Ø 450



- **Material:** sheet steel (coated in black)
- **Direction of rotation:** direction of air flow "V" counter-clockwise, direction of air flow "A" clockwise
- **Type of protection:** IP 44
- **Option:** also available with terminal box

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Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor	VAC	Hz	m <sup>3</sup> /h	min <sup>-1</sup>	W	A	µF/VDB	dB(A)	Pa	°C	kg	
*4D 450 <sup>(1)(2)</sup>	M4D074-GA	①	230/400	50	5440	1380	200	0,48	---	72	120	45	5,0
			230/400	60	6040	1540	285	0,53	---	75	70	45	
*4E 450 <sup>(2)</sup>	M4E074-GA	②	230	50	5700	1400	245	1,10	8,0/400	73	85	40	5,0
			230	60	6500	1600	355	1,55	8,0/400	76	30	40	
*6E 450	M6E074-GA	③	230	50	4725	980	165	0,80	4,0/450	63	70	40	5,0
			230	60	5450	1070	225	0,98	4,0/450	67	45	40	

subject to alterations

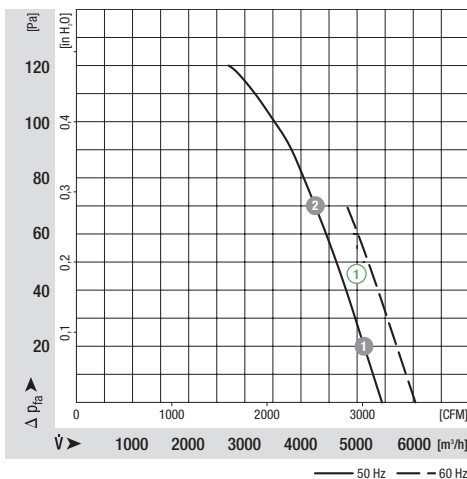
<sup>(1)</sup> 400 VAC Δ/Y for two speed steps available on request, current draw established at 400 VAC (Y)

<sup>(2)</sup> insulation class "F"

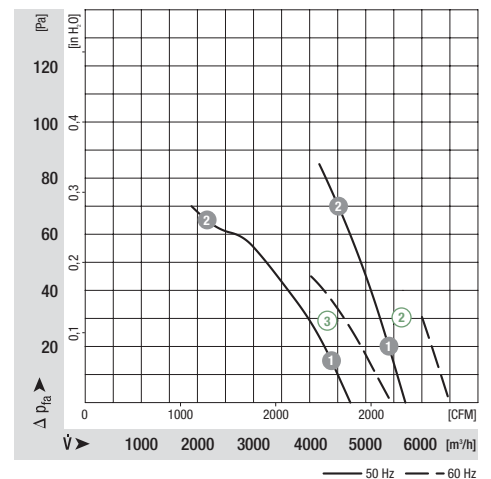
	n [min <sup>-1</sup> ]	P <sub>1</sub> [W]
① ①	1360	220
① ②	1330	258

	n [min <sup>-1</sup> ]	P <sub>1</sub> [W]
② ①	1390	258
② ②	1360	292
③ ①	930	171
③ ②	870	200

## Characteristics

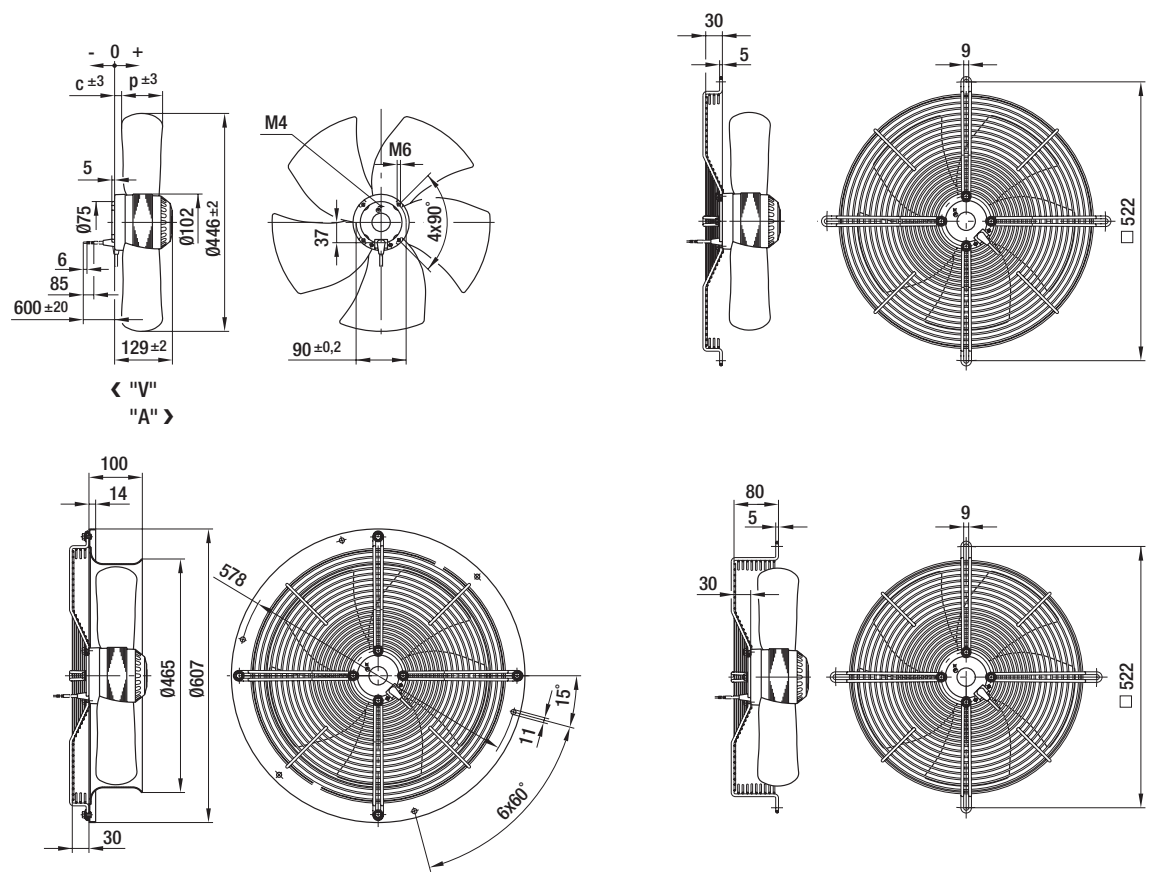


## Characteristics





Selection	Cable exit	Direction of air flow	Image				Dimensions	
			Type	S/A/B	c	p		
*4D 450	B	"V"	A4D450-AP01 -01	S4D450-BP01 -01	W4D450-CP01 -01	S4D450-AP01 -01	35	68
		"A"	A4D450-AP01 -02	S4D450-BP01 -02	W4D450-CP01 -02	S4D450-AP01 -02	27	68
*4E 450	B	"V"	A4E 450-AP01 -01	S4E 450-BP01 -01	W4E 450-CP01 -01	S4E 450-AP01 -01	35	68
		"A"	A4E 450-AP01 -02	S4E 450-BP01 -02	W4E 450-CP01 -02	S4E 450-AP01 -02	27	68
*6E 450	B	"V"	A6E 450-AP02 -01	S6E 450-BP02 -01	W6E 450-CP02 -01	S6E 450-AP02 -01	10	92
		"A"	A6E 450-AP02 -02	S6E 450-BP02 -02	W6E 450-CP02 -02	S6E 450-AP02 -02	25	92



# AC axial fans

S-Range, Ø 450



- **Material:** sheet steel (coated in black)
- **Type of protection:** IP 54 (please note drilled condensate discharges)
- **Insulation class:** "F"
- **Directive:** complying with EN 60034-1
- **Motor protection:** thermal overload protector brought out

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Nominal data		Characteristic	Voltage	Frequency	Speed/rpm <sup>(1)</sup>	Max. power input <sup>(1)</sup>	Max. current draw <sup>(1)</sup>	Capacitor	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor	VAC	Hz	min <sup>-1</sup>	W	A	µF/VDB	Pa	°C	kg	
*4D 450	M4D094-HA	①	400 Y	50	1000	390	0,67	---	110	70	7,9
			400 Y	60	1060	400	0,70	---	55	50	
		②	400 Δ	50	1330	585	1,10	---	200	70	7,9
			400 Δ	60	1540	660	1,16	---	110	50	
*4E 450	M4E094-HA	③	230	50	1350	480	2,10	10 / 400	125	65	7,9
			230	60	1490	665	2,90	10 / 400	115	50	

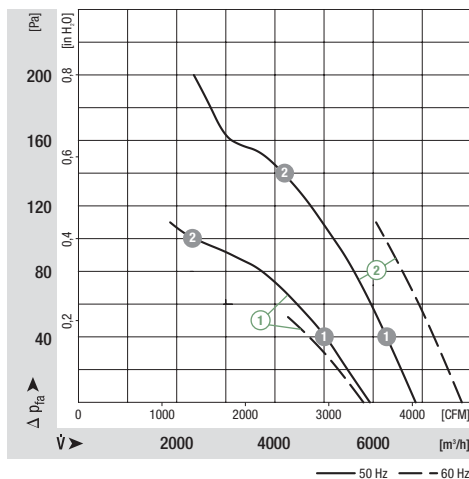
subject to alterations

<sup>(1)</sup> in operating point with maximum load

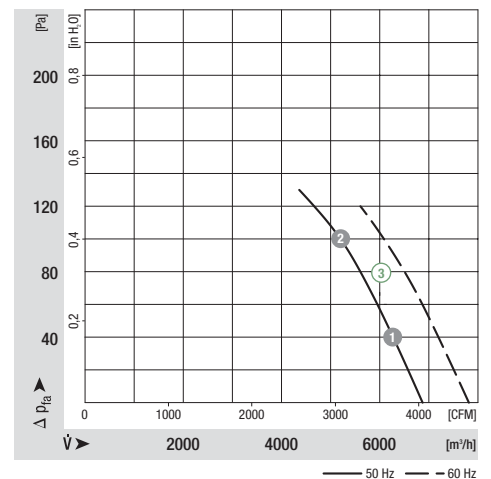
	n [min <sup>-1</sup> ]	P <sub>1</sub> [W]	I [A]	Lp <sub>A</sub> [dBA]
① ①	1170	303	0,53	72
① ②	1030	375	0,63	70
② ①	1400	392	0,89	68
② ②	1370	476	0,98	66

	n [min <sup>-1</sup> ]	P <sub>1</sub> [W]	I [A]	Lp <sub>A</sub> [dBA]
③ ①	1380	413	2,01	72
③ ②	1360	460	2,20	70

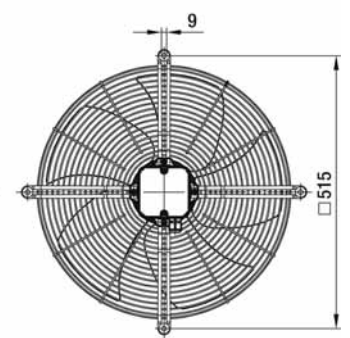
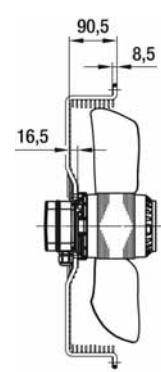
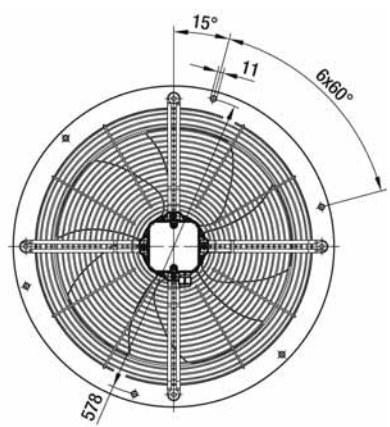
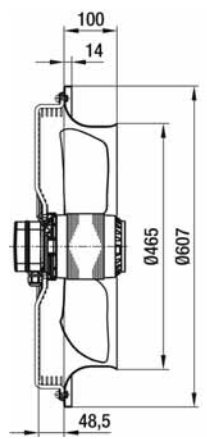
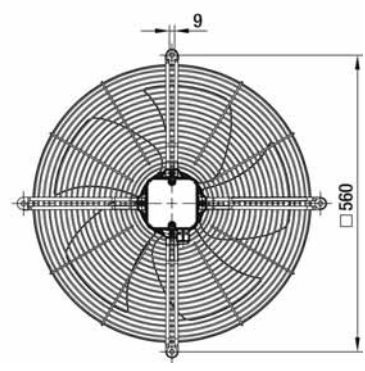
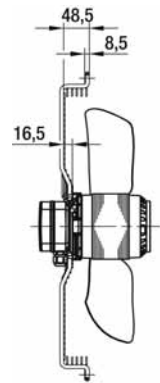
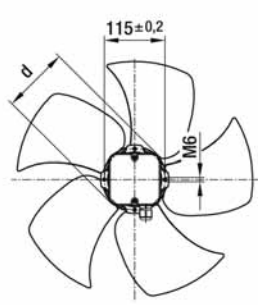
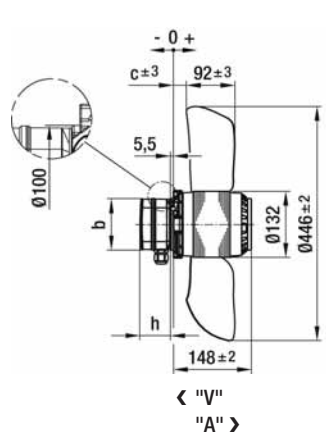
## Characteristics



## Characteristics



Selection	Terminal box version	Direction of air flow	[Fan icons]				Dimensions			
			Type	b	c	d	h			
*4D 450	∅ 89	"V"	A4D450-BA14 -01	S4D450-HA14 -01	W4D450-GA14 -01	S4D450-GA14 -01	∅ 89	35,0	---	33,5
		"A"	A4D450-BA14 -02	S4D450-HA14 -02	W4D450-GA14 -02	S4D450-GA14 -02	∅ 89	36,7	---	33,5
*4E 450	□ 99	"V"	A4E 450-BA09 -01	S4E 450-HA09 -01	W4E 450-GA09 -01	S4E 450-GA09 -01	□ 99	35,0	126	59,5
		"A"	A4E 450-BA09 -02	S4E 450-HA09 -02	W4E 450-GA09 -02	S4E 450-GA09 -02	□ 99	36,7	126	59,5



# AC axial fans

K-Range, Ø 250



- **Material:** polyamide PA6
- **Direction of rotation:** direction of air flow "V" counter-clockwise, direction of air flow "A" clockwise
- **Type of protection:** IP 44
- **Approvals:** CE

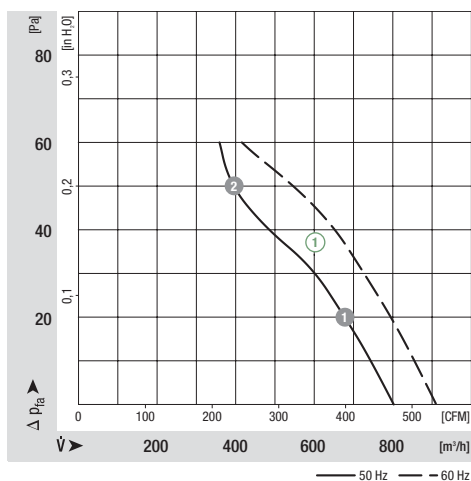
ebmpapst • Muldingen

Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor		VAC	Hz	m³/h	min⁻¹	W	A	µF/VDB	dB(A)	Pa	°C	kg
*4E 250	M4E068-BF	①	230	50	800	1350	41	0,18	1,5/400	47	60	60	1,2
			230	60	910	1550	50	0,23	1,5/400	50	60	70	

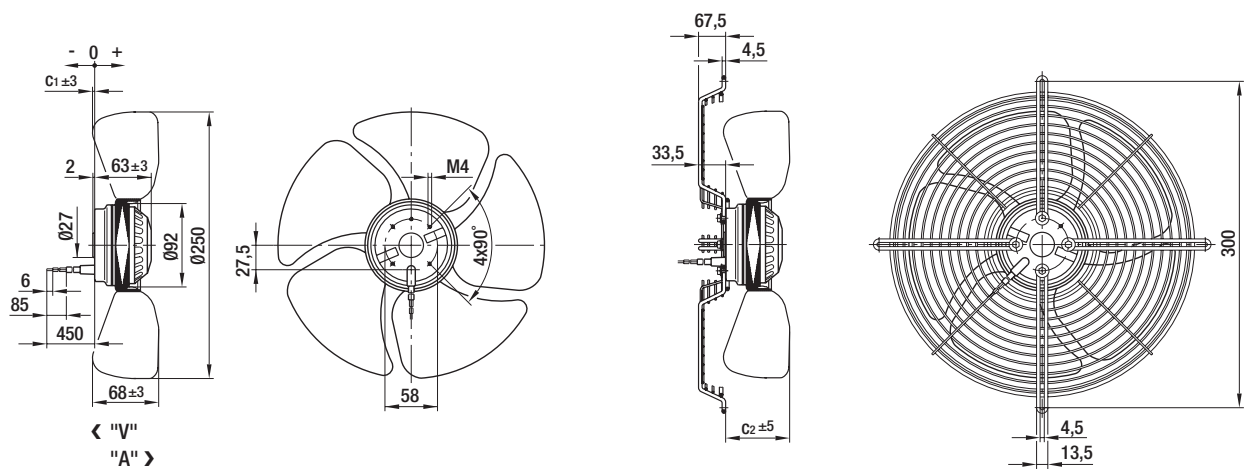
subject to alterations

	n [min⁻¹]	P <sub>1</sub> [W]
① ①	1315	42
① ②	1280	44

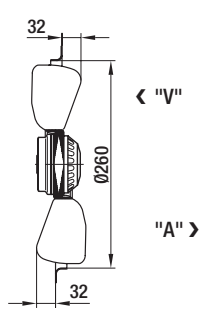
## Characteristics



Selection		Cable exit	Direction of air flow		Dimensions	
Type	S/A/B				C <sub>1</sub>	C <sub>2</sub>
*4E 250	A	"V"	A4E 250-AE32 -05	S4E 250-AE32 -01	-9	25
		"A"	A4E 250-AE32 -06	S4E 250-AE32 -02	2	36



Mounting configuration



# AC axial fans

K-Range, Ø 300



- **Material:** polyamide PA6
- **Direction of rotation:** direction of air flow "V" counter-clockwise, direction of air flow "A" clockwise
- **Type of protection:** IP 44
- **Approvals:** CE

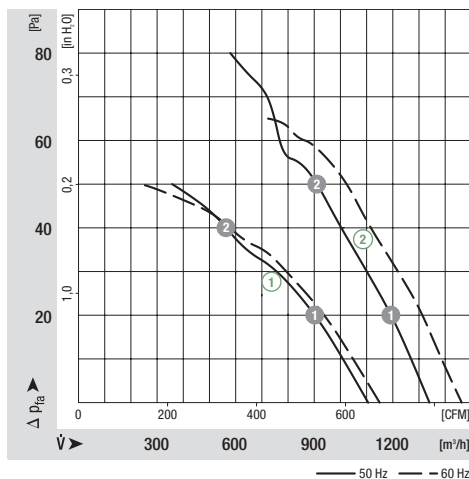
ebm-papst • Muldingen

Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor		VAC	Hz	m³/h	min⁻¹	W	A	µF/VDB	dB(A)	Pa	°C	kg
*4E 300-*E	M4E068-BF	①	230	50	1100	1100	52	0,23	1,5/400	53	50	45	1,3
			230	60	1150	1150	60	0,27	1,5/400	54	50	40	
*4E 300-*H	M4E068-CF	②	230	50	1340	1350	70	0,31	1,5/400	58	80	60	1,7
			230	60	1460	1480	90	0,40	1,5/400	61	65	55	

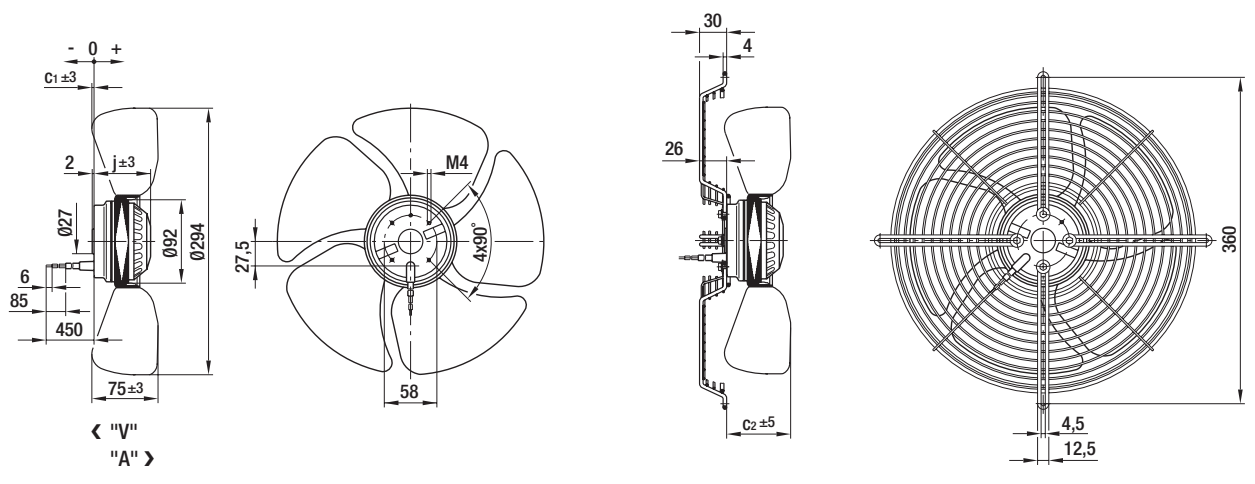
subject to alterations

	n [min⁻¹]	P <sub>1</sub> [W]
① ①	1060	53
① ②	985	55
② ①	1325	71
② ②	1310	73

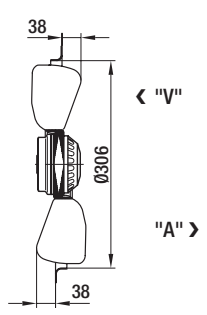
## Characteristics



Selection	Cable exit	Direction of air flow	Dimensions				
			c <sub>1</sub>	c <sub>2</sub>	j		
<b>*4E 300-*E</b>	B	"V" "A"	A4E 300-AE20 -05 A4E 300-AE20 -06	S4E 300-EE20 -05 S4E 300-EE20 -06	-9 -3	66 72	63 63
<b>*4E 300-*H</b>	A	"V" "A"	A4E 300-AH26 -05 A4E 300-AH26 -06	S4E 300-EH26 -05 S4E 300-EH26 -06	-4 -4	71 71	73 73



Mounting configuration



# AC axial fans

K-Range, Ø 350



- **Material:** polyamide PA6
- **Direction of rotation:** direction of air flow "V" counter-clockwise, direction of air flow "A" clockwise
- **Type of protection:** IP 44
- **Approvals:** CE

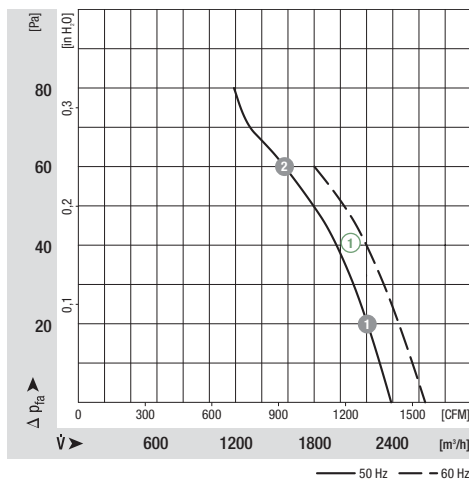
ebm-papst • Muldingen

Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor	VAC	Hz	m³/h	min⁻¹	W	A	µF/VDB	dB(A)	Pa	°C	kg	
*4E 350	M4E068-DC	①	230	50	2390	1350	105	0,50	3,0/400	63	80	50	2,0
			230	60	2650	1500	135	0,60	3,0/400	66	60	40	

subject to alterations

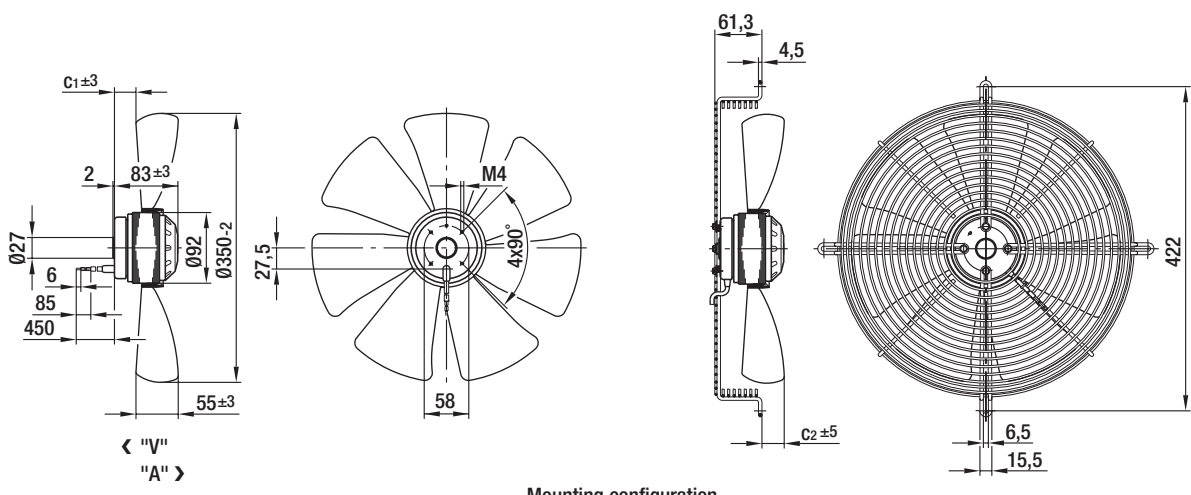
	n [min⁻¹]	P <sub>1</sub> [W]
① ①	1335	110
① ②	1300	120

## Characteristics

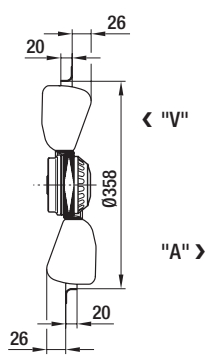




Selection	Cable exit	Direction of air flow	Dimensions			
			Type	S/A/B	C <sub>1</sub>	C <sub>2</sub>
*4E 350	A	"V"	A4E 350-AF20 -05	S4E 350-AF20 -01	18	19
		"A"	A4E 350-AF20 -06	S4E 350-AF20 -02	28	29



Mounting configuration



# AC axial fans

K-Range, Ø 360



- **Material:** plastic
- **Direction of rotation:** direction of air flow "V" counter-clockwise, direction of air flow "A" clockwise
- **Type of protection:** IP 44
- **Approvals:** CE

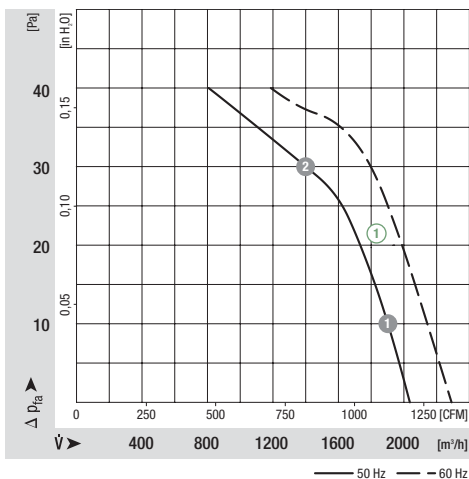
ebm-papst • Muldingen



Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor	VAC	Hz	m³/h	min⁻¹	W	A	µF/VDB	dB(A)	Pa	°C	kg	
*6E 360	M6E068-DF	① 230 230	50 60	2030 2290	850 960	65 85	0,29 0,38	2,5/400 2,5/400	46 51	40 40	50 40	2,0	

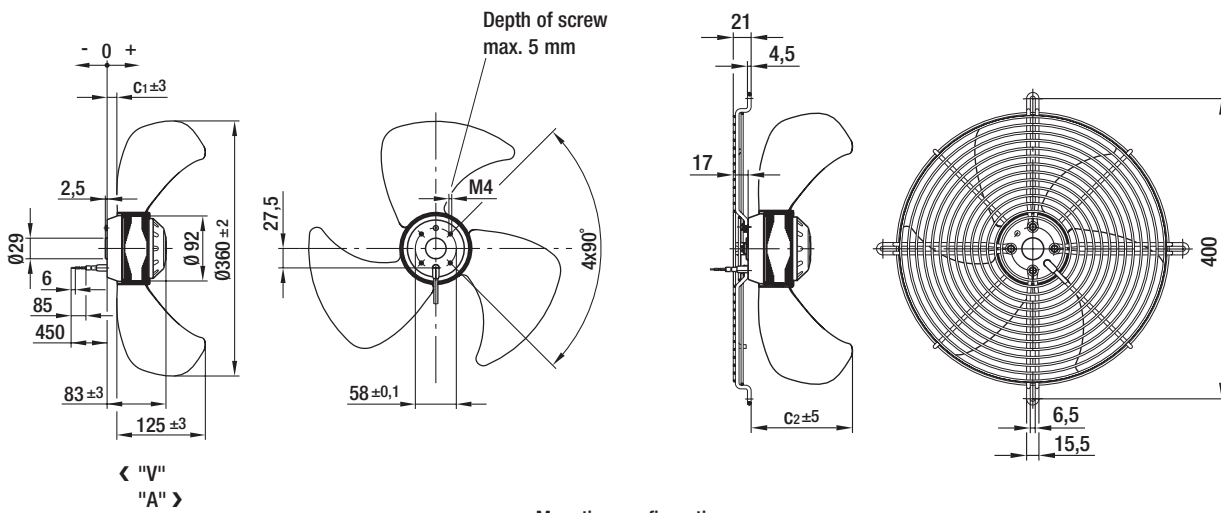
subject to alterations

	n [min⁻¹]	P <sub>1</sub> [W]
① ①	850	64
① ②	820	67

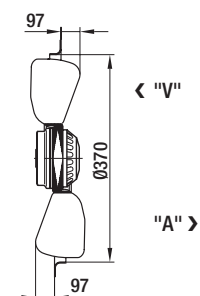
## Characteristics



Selection	Cable exit	Direction of air flow	 			Dimensions	
						Type	S/A/B
*6E 360	A	"V"	A6E 360-AE08 -01	S6E 360-AE08 -01	13	134	
		"A"	A6E 360-AE08 -02	---	-42	---	



Mounting configuration



# AC axial fans

K-Range, Ø 360



- **Material:** plastic
- **Direction of rotation:** direction of air flow "V" counter-clockwise, direction of air flow "A" clockwise
- **Type of protection:** IP 44
- **Approvals:** CE

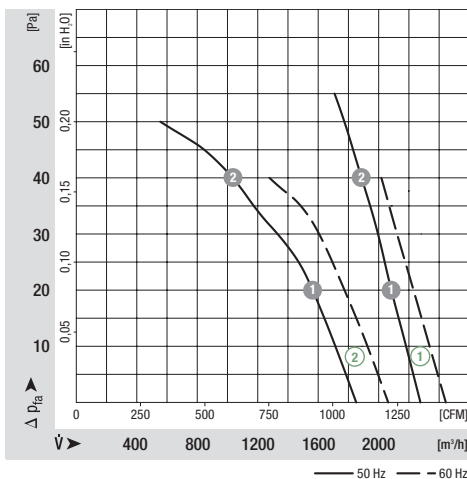
ebm-papst • Muldingen

Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor		VAC	Hz	m³/h	min⁻¹	W	A	µF/VDB	dB(A)	Pa	°C	kg
*4E 360	M4E068-DF	①	230	50	2275	1320	115	0,54	3,0/400	55	55	40	2,1
			230	60	2440	1430	145	0,64	3,0/400	57	40	40	
*6E 360	M6E068-DF	②	230	50	1850	850	65	0,29	2,5/400	49	50	55	2,2
			230	60	2060	960	85	0,38	2,5/400	52	40	45	

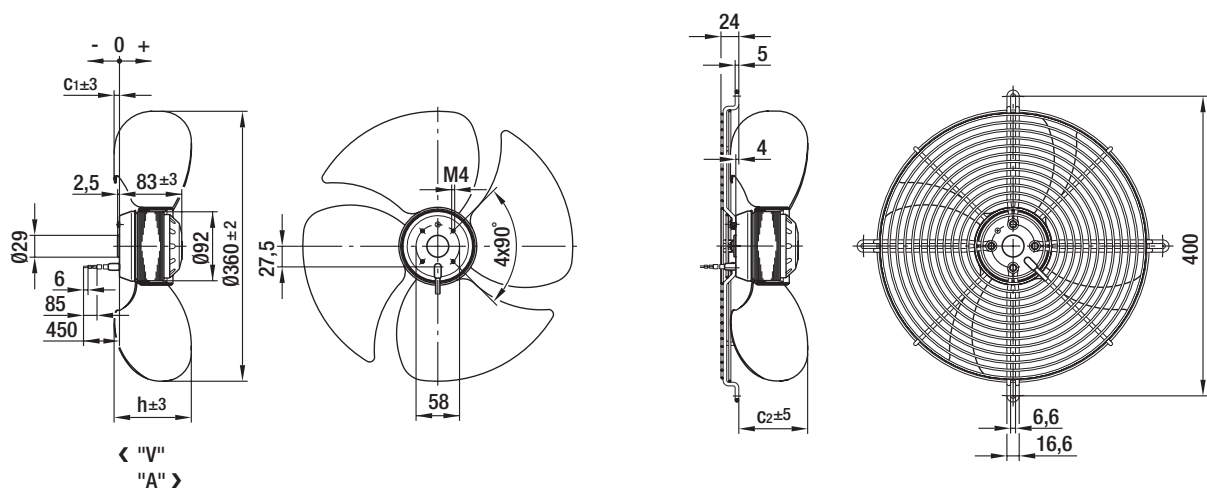
subject to alterations

	n [min⁻¹]	P <sub>1</sub> [W]
① ①	1310	113
① ②	1300	119
② ①	840	66
② ②	790	71

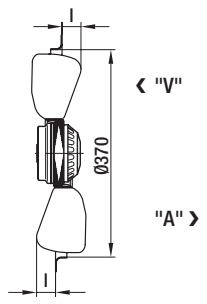
## Characteristics



Selection	Cable exit	Direction of air flow	Dimensions					
			Type	S/A/B		c <sub>1</sub>	c <sub>2</sub>	h
*4E 360	B	"V"	A4E 360-AC20 -05	S4E 360-EC20 -05	8	88	84	43
		"A"	A4E 360-AC20 -06	---	-8	72	84	43
*6E 360	A	"V"	A6E 360-AA08 -05	S6E 360-EA08 -05	-11	65	103	65
		"A"	A6E 360-AA08 -06	---	-8	38	103	65



Mounting configuration



# AC axial fans

K-Range, Ø 420



- **Material:** plastic
- **Direction of rotation:** direction of air flow "V" counter-clockwise, direction of air flow "A" clockwise
- **Type of protection:** IP 54 (please note drilled condensate discharges)
- **Directive:** complying with EN 60034-1
- **Motor protection:** thermal overload protector brought out
- **Option:** also available with terminal box

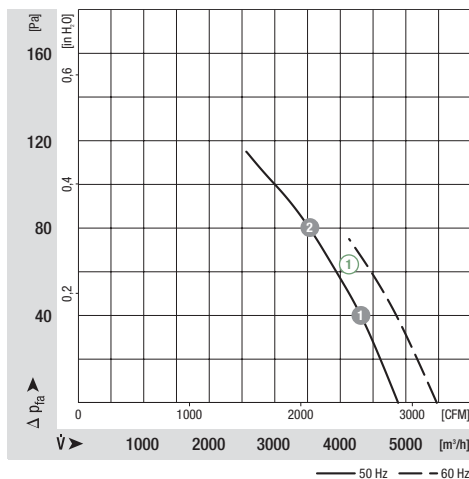
ebmpapst • Mulfingen

Nominal data		Characteristic	Voltage	Frequency	Speed/rpm <sup>(1)</sup>	Max. power input <sup>(1)</sup>	Max. current draw <sup>(1)</sup>	Capacitor	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor	VAC	Hz	min <sup>-1</sup>	W	A	µF/VDB	Pa	°C	kg	
*4E 420	M4E094-EA	① 230 230	50 60	1300 1430	280 370	1,22 1,61	7,0/400 7,0/400	115 75	80 60	4,2	

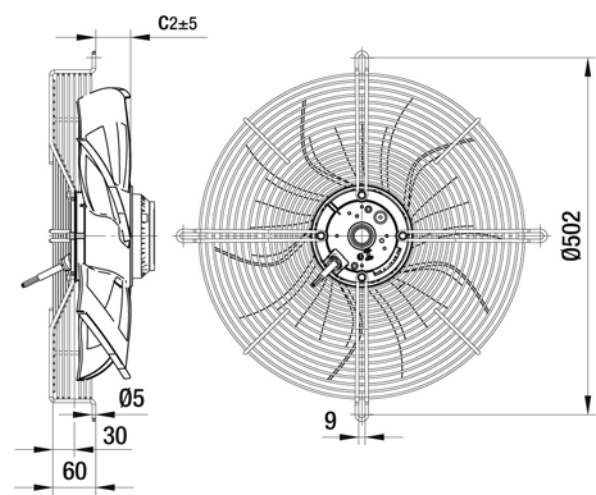
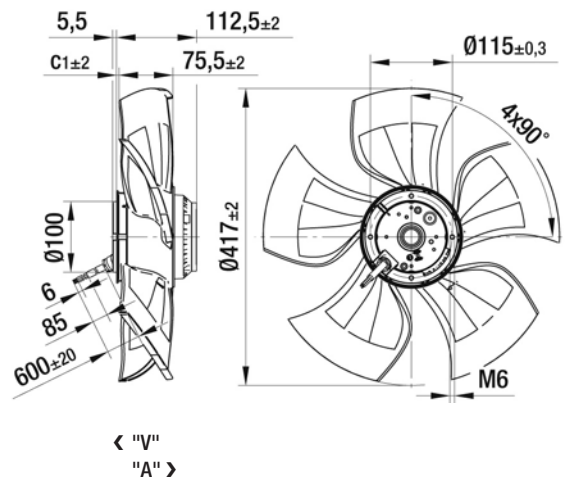
subject to alterations <sup>(1)</sup> in operating point with maximum load

	n [min <sup>-1</sup> ]	P <sub>i</sub> [W]	I [A]	Lp <sub>A</sub> [dBA]
① ①	1355	240	1,07	68
① ②	1330	258	1,14	66

## Characteristics



Selection	Cable exit	Direction of air flow	Dimensions			
			C <sub>1</sub>	C <sub>2</sub>		
*4E 420	S	"V" "A"	A4E 420-AU01 -01 A4E 420-AU01 -02	S4E 420-AU01 -01 S4E 420-AU01 -02	2 16	47,5 61,5



# AC axial fans

K-Range, Ø 450



- **Material:** plastic
- **Direction of rotation:** direction of air flow "V" counter-clockwise, direction of air flow "A" clockwise
- **Type of protection:** IP 44
- **Approvals:** CE
- **Option:** also available with terminal box

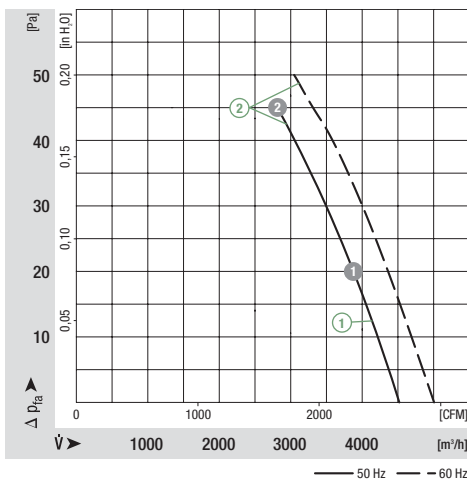
ebm-papst • Muldingen

Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor	VAC	Hz	m <sup>3</sup> /h	min <sup>-1</sup>	W	A	µF/VDB	dB(A)	Pa	°C	kg	
*6E 450-AF <sup>(1)</sup>	M6E074-EI	①	230	50	4565	890	140	0,62	4,0/400	57	45	45	3,7
*6E 450-AG	M6E074-GA	②	230	50	4550	890	142	0,65	4,0/400	57	45	50	4,2
			230	60 <sup>(2)</sup>	5050	990	190	0,84	4,0/400	61	50	40	

subject to alterations <sup>(1)</sup> insulation class "F" <sup>(2)</sup> insulation class "F" required at 60 Hz

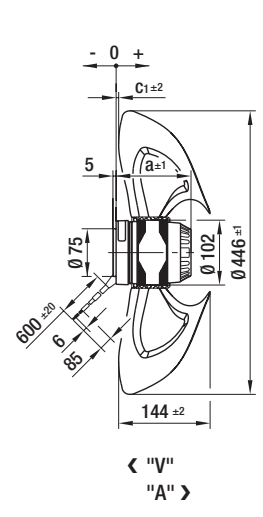
	n [min <sup>-1</sup> ]	P <sub>1</sub> [W]
① ①	890	147
① ②	870	155
② ①	880	151
② ②	860	160

## Characteristics

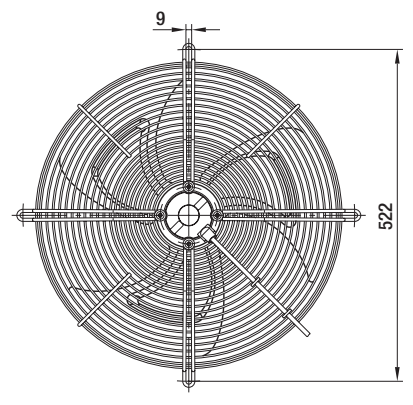
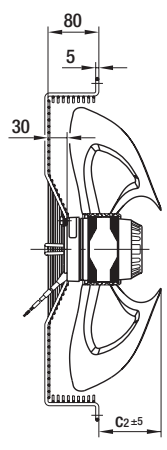
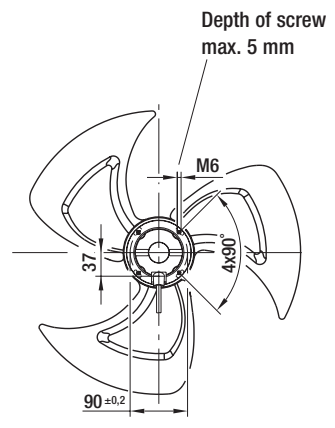




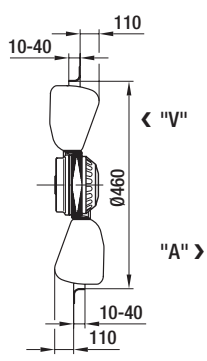
Selection	Cable exit	Direction of air flow	Dimensions				
			a	c <sub>1</sub>	c <sub>2</sub>		
<b>*6E 450-AF</b>	B	"V" "A"	A6E 450-AF08 -01 A6E 450-AF08 -02	S6E 450-AF08 -01 ---	117 117	4 -18	98 ---
<b>*6E 450-AG</b>	B	"V" "A"	A6E 450-AG05 -01 A6E 450-AG05 -02	S6E 450-AG05 -01 ---	129 129	4 -18	98 ---



< "V"  
"A" >



Mounting configuration



# AC axial fans

K-Range, Ø 450



- **Material:** plastic
- **Direction of rotation:** direction of air flow "V" counter-clockwise, direction of air flow "A" clockwise
- **Type of protection:** IP 44
- **Approvals:** CE
- **Option:** also available with terminal box

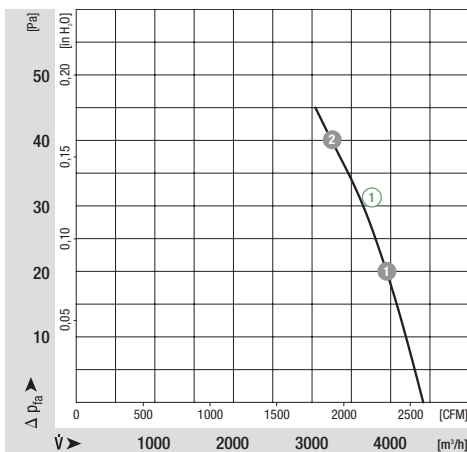
ebm-papst • Muldingen

Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor	VAC	Hz	m <sup>3</sup> /h	min <sup>-1</sup>	W	A	µF/VDB	dB(A)	Pa	°C	kg	
*6E 450 <sup>(1)</sup>	M6E074-EI	①	230	50	4415	900	145	0,64	4,0/400	61	45	55	3,7

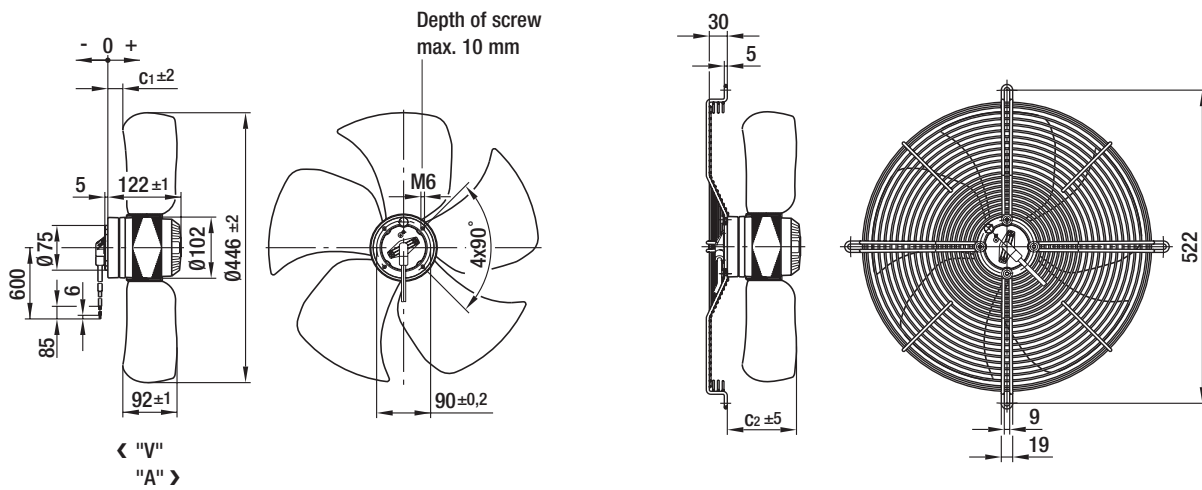
subject to alterations ① insulation class "F"

	n [min <sup>-1</sup> ]	P <sub>1</sub> [W]
① ①	880	151
① ②	850	160

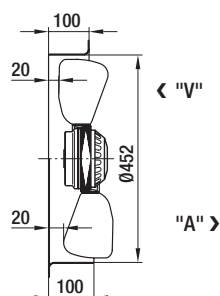
## Characteristics



Selection	Cable exit	Direction of air flow	Dimensions			
			Type	S/A/B	C <sub>1</sub>	C <sub>2</sub>
*6E 450	S	"V"	A6E 450-AN08 -01	S6E 450-BN08 -01	8	100
		"A"	A6E 450-AN08 -02	S6E 450-BN08 -02	25	117



Mounting configuration



# AC axial fans

A-Range, Ø 200



- **Material:** sheet steel (coated in black)
- **Direction of rotation:** direction of air flow "V" counter-clockwise, direction of air flow "A" clockwise
- **Type of protection:** IP 44

ebm-papst • Muldingen

Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor	VAC	Hz	m³/h	min⁻¹	W	A	µF/VDB	dB(A)	Pa	°C	kg	
*2D 200 <sup>(1)</sup>	M2D068-CF	① 230/400	50	830	2800	53	0,15	---	67	140	75	1,7	
		230/400	60	940	3150	70	0,14	---	70	140	75		
*2E 200	M2E068-CA	② 230	50	740	2740	50	0,24	1,5/400	65	200	75	1,4	
		230	60	830	3120	61	0,28	1,5/400	69	200	75		
*4D 200 <sup>(1)</sup>	M4D068-CF	③ 230/400	50	390	1450	22	0,09	---	51	70	60	1,5	
		230/400	60	460	1730	21	0,07	---	55	100	80		
*4S 200	M4S068-BF	④ 230	50	375	1380	40	0,30	---	52	60	50	1,2	
		230	60	445	1630	34	0,24	---	53	80	65		

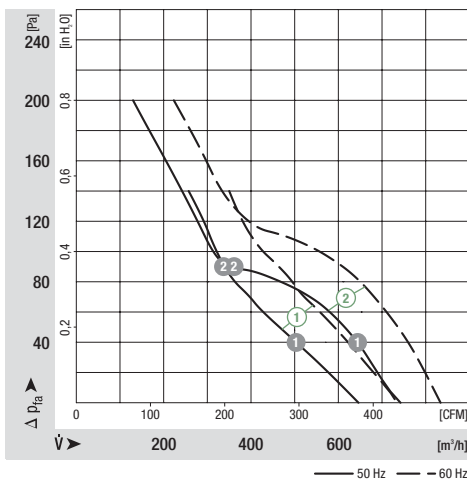
subject to alterations

<sup>(1)</sup> current draw established at 400 VAC (V)

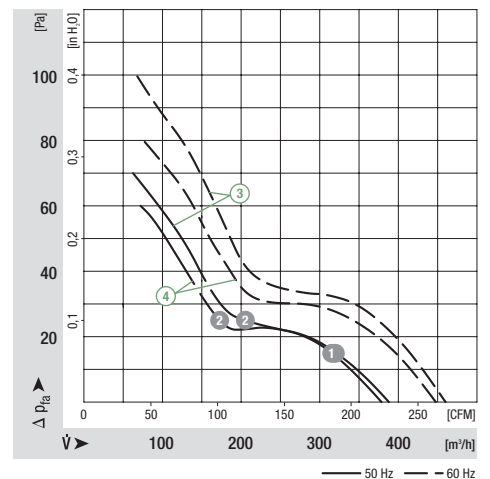
	n [min <sup>-1</sup> ]	P <sub>1</sub> [W]
① ①	2785	53
① ②	2770	55
② ①	2670	51
② ②	2670	50

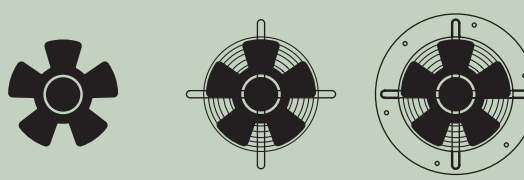
	n [min <sup>-1</sup> ]	P <sub>1</sub> [W]
③ ①	1460	24
③ ②	1460	24
④ ①	1375	40
④ ②	1380	39

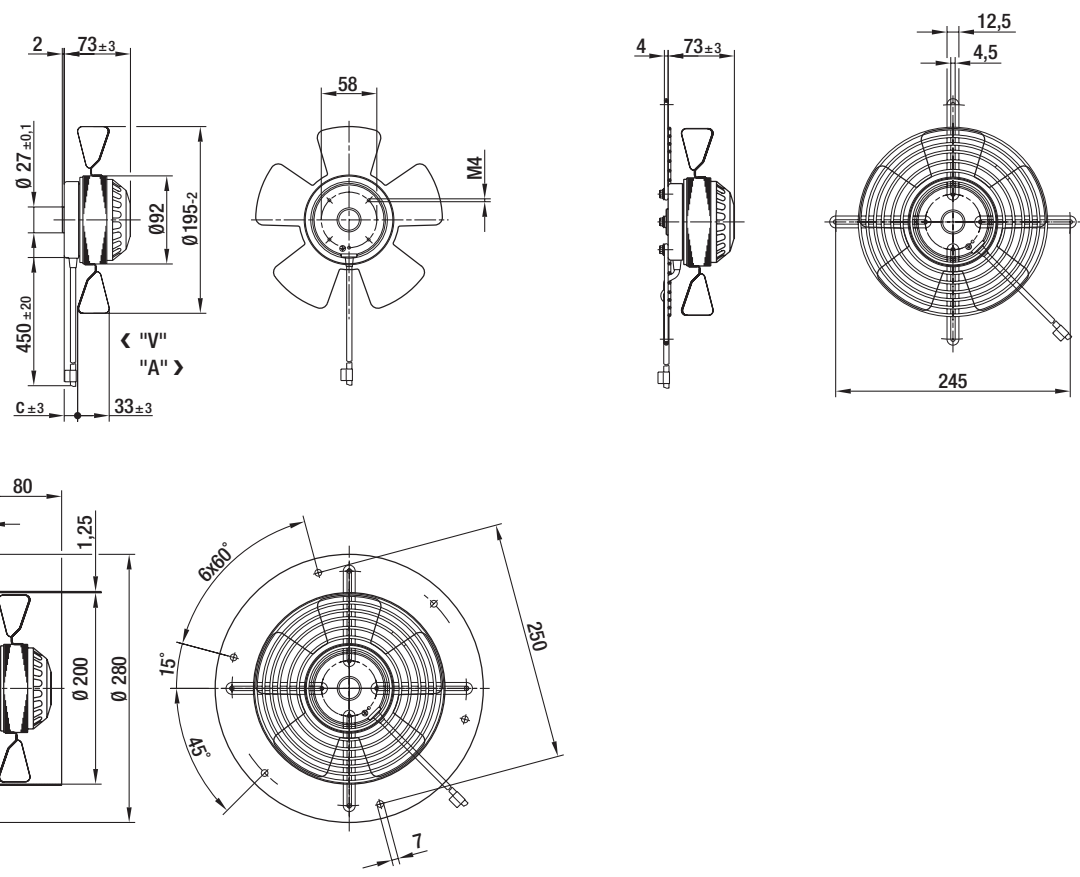
## Characteristics



## Characteristics



Selection	Cable exit	Direction of air flow				Dimensions	
						Type	S/A/B
*2D 200	S	"V"	A2D200-AA02 -01	S2D200-BA02 -01	W2D200-CA02 -01	21	
		"A"	A2D200-AA02 -02	S2D200-BA02 -02	W2D200-CA02 -02	21	
*2E 200	B	"V"	A2E 200-AF02 -01	S2E 200-BF02 -01	W2E 200-CF02 -01	21	
		"A"	A2E 200-AF02 -02	S2E 200-BF02 -02	W2E 200-CF02 -02	21	
*4D 200	S	"V"	A4D200-AA04 -01	S4D200-BA04 -01	W4D200-CA04 -01	20	
		"A"	A4D200-AA04 -02	S4D200-BA04 -02	W4D200-CA04 -02	20	
*4S 200	S	"V"	A4S 200-AA02 -01	S4S 200-BA02 -01	W4S 200-CA02 -01	20	
		"A"	A4S 200-AA02 -02	S4S 200-BA02 -02	W4S 200-CA02 -02	20	



# AC axial fans

A-Range, Ø 250



- **Material:** sheet steel (coated in black)
- **Direction of rotation:** direction of air flow "V" counter-clockwise, direction of air flow "A" clockwise
- **Type of protection:** IP 44

ebm-papst • Muldingen

Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor	VAC	Hz	m³/h	min⁻¹	W	A	µF/VDB	dB(A)	Pa	°C	kg	
*2D 250 <sup>(1)</sup>	M2D068-DF	① 230/400	50	1685	2650	110	0,22	---	72	300	70	2,2	
		230/400	60	1845	2950	160	0,26	---	75	300	40		
*2E 250	M2E068-DF	② 230	50	1610	2550	115	0,51	4,0/400	72	150	55	2,2	
		230	60	1740	2750	165	0,74	4,0/400	73	130	50		
*4D 250 <sup>(1)</sup>	M4D068-CF	③ 230/400	50	890	1420	30	0,09	---	58	90	75	1,6	
		230/400	60	1035	1650	35	0,08	---	62	100	75		
*4S 250	M4S068-CF	④ 230	50	870	1400	72	0,53	---	58	80	40	1,7	
		230	60	1000	1620	67	0,46	---	62	100	50		

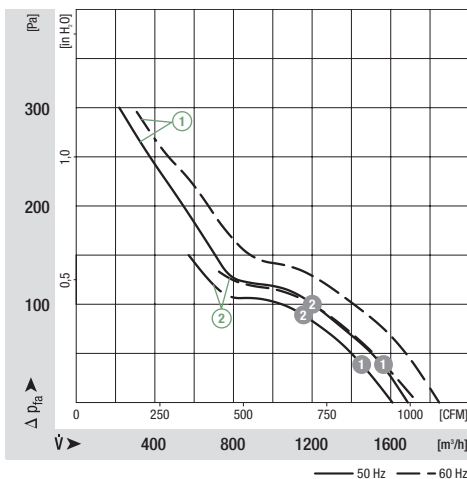
subject to alterations

<sup>(1)</sup> current draw established at 400 VAC (V)

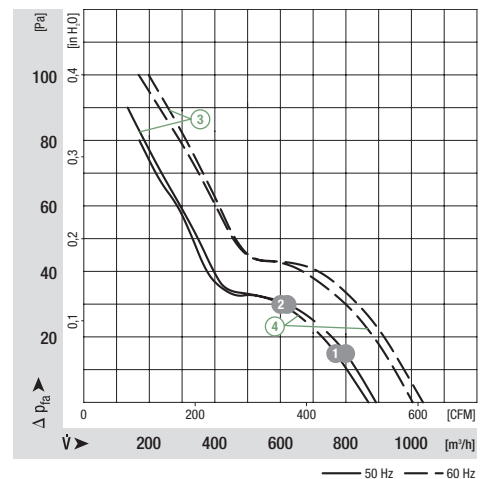
	n [min <sup>-1</sup> ]	P <sub>1</sub> [W]
① ①	2645	123
① ②	2615	131
② ①	2520	122
② ②	2480	126

	n [min <sup>-1</sup> ]	P <sub>1</sub> [W]
③ ①	1420	32
③ ②	1410	33
④ ①	1400	70
④ ②	1395	71

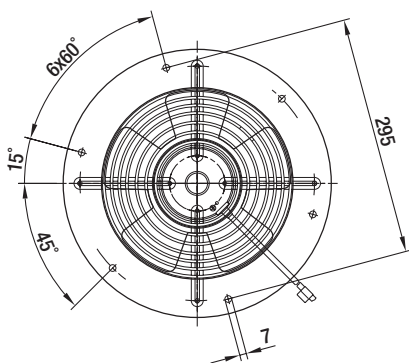
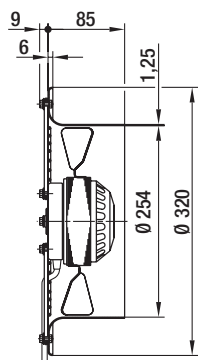
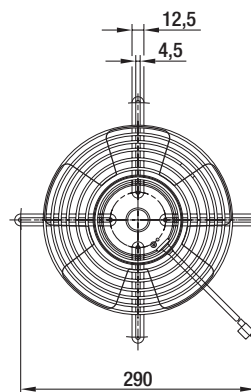
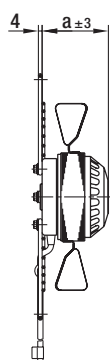
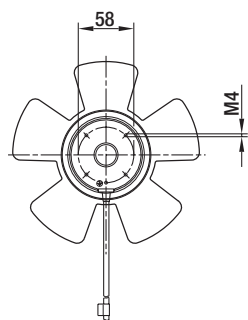
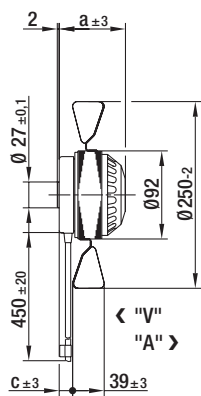
## Characteristics



## Characteristics



Selection	Cable exit	Direction of air flow	Fan models			Dimensions	
			Type	S/A/B		a	c
*2D 250	S	"V" "A"	A2D250-AA02 -01	S2D250-BA02 -01	W2D250-CA02 -01	83	27
			A2D250-AA02 -02	S2D250-BA02 -02	W2D250-CA02 -02	83	27
*2E 250	B	"V" "A"	A2E250-AE65 -01	S2E250-BE65 -01	W2E250-CE65 -01	83	27
			A2E250-AE65 -02	S2E250-BE65 -02	W2E250-CE65 -02	83	27
*4D 250	S	"V" "A"	A4D250-AA04 -01	S4D250-BA04 -01	W4D250-CA04 -01	73	19
			A4D250-AA04 -02	S4D250-BA04 -02	W4D250-CA04 -02	73	19
*4S 250	S	"V" "A"	A4S250-AA02 -01	S4S250-BA02 -01	W4S250-CA02 -01	73	19
			A4S250-AA02 -02	S4S250-BA02 -02	W4S250-CA02 -02	73	19



# AC axial fans

A-Range, Ø 300



- **Material:** sheet steel (coated in black)
- **Direction of rotation:** direction of air flow "V" counter-clockwise, direction of air flow "A" clockwise
- **Type of protection:** IP 44

ebm-papst • Muldingen

Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor	VAC	Hz	m³/h	min⁻¹	W	A	µF/VDB	dB(A)	Pa	°C	kg	
*2D 300 <sup>(1)</sup>	M2D068-EC	① 230/400	50	2760	2650	180	0,31	---	76	150	60	2,7	
		230/400	60	2940	2800	270	0,41	---	77	100	40		
*2E 300	M2E068-EC	② 230	50	2440	2650	140	0,62	5,0/400	75	150	55	2,5	
		230	60	2700	2900	190	0,83	5,0/400	78	150	50		
*4D 300 <sup>(1)</sup>	M4D068-DF	③ 230/400	50	1740	1370	85	0,21	---	66	100	55	2,3	
		230/400	60	1910	1520	110	0,22	---	68	110	40		
*4E 300	M4E068-DF	④ 230	50	1690	1350	95	0,44	3,0/400	65	120	45	2,3	
		230	60	1830	1450	105	0,47	2,0/400	66	100	40		
*4S 300	M4S068-DF	⑤ 230	50	1440	1380	94	0,67	---	62	75	30	2,1	
		230	60	1600	1550	94	0,67	---	64	60	40		

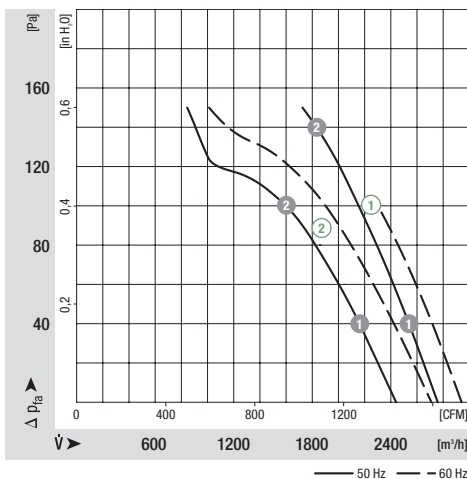
subject to alterations

<sup>(1)</sup> current draw established at 400 VAC (V)

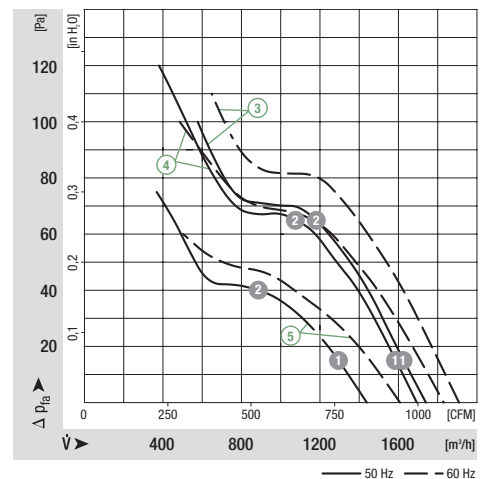
	n [min⁻¹]	P <sub>1</sub> [W]
① ①	2610	190
① ②	2535	220
② ①	2600	149
② ②	2530	162

	n [min⁻¹]	P <sub>1</sub> [W]
③ ①	1360	86
③ ②	1345	94
④ ①	1345	96
④ ②	1315	101
⑤ ①	1375	92
⑤ ②	1360	94

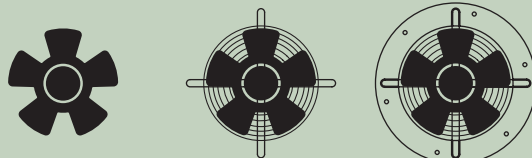
## Characteristics

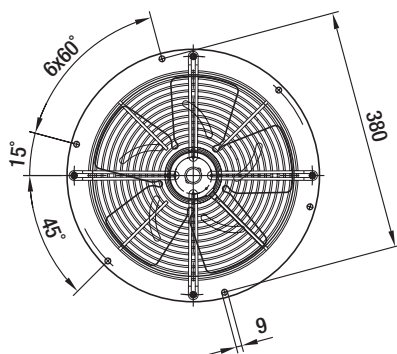
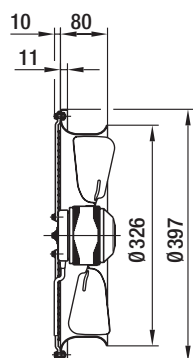
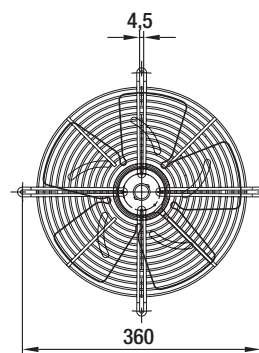
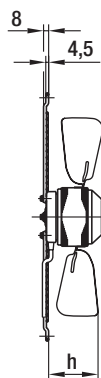
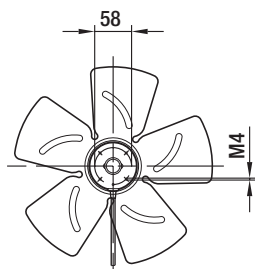
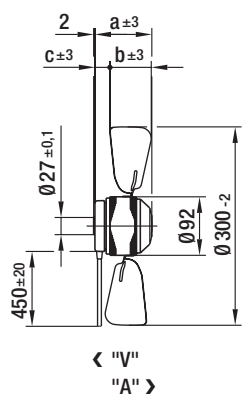


## Characteristics





Selection	Cable exit	Direction of air flow				Dimensions			
						a	b	c	h
Type	S/A/B								
*2D 300	S	"V"	A2D300-AD02 -01	S2D300-BD02 -01	W2D300-CD02 -01	101	30	32	64
		"A"	A2D300-AD02 -02	S2D300-BD02 -02	W2D300-CD02 -02	101	30	32	64
*2E 300	S	"V"	A2E 300-AC47 -01	S2E 300-BC47 -01	W2E 300-CC47 -01	98	20	30	50
		"A"	A2E 300-AC47 -02	S2E 300-BC47 -02	W2E 300-CC47 -02	98	20	30	37
*4D 300	S	"V"	A4D300-AA02 -01	S4D300-BA02 -01	W4D300-CA02 -01	83	56	20	73
		"A"	A4D300-AA02 -02	S4D300-BA02 -02	W4D300-CA02 -02	83	56	20	73
*4E 300	S	"V"	A4E 300-AA01 -01	S4E 300-BA01 -01	W4E 300-CA01 -01	83	56	20	73
		"A"	A4E 300-AA01 -02	S4E 300-BA01 -02	W4E 300-CA01 -02	83	56	20	73
*4S 300	S	"V"	A4S 300-AA02 -01	S4S 300-BA02 -01	W4S 300-CA02 -01	83	30	20	52
		"A"	A4S 300-AA02 -02	S4S 300-BA02 -02	W4S 300-CA02 -02	83	30	20	52



# AC axial fans

A-Range, Ø 315



- **Material:** sheet steel (coated in black)
- **Direction of rotation:** direction of air flow "V" counter-clockwise, direction of air flow "A" clockwise
- **Type of protection:** IP 44

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Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor		VAC	Hz	m³/h	min⁻¹	W	A	µF/VDB	dB(A)	Pa	°C	kg
*4D 315 <sup>(1)</sup>	M4D068-EC	①	230/400	50	1990	1400	78	0,19	---	65	150	80	2,8
			230/400	60	2260	1590	115	0,21	---	68	150	60	
*4E 315 <sup>(2)</sup>	M4E068-EC	②	230	50	1950	1400	120	0,53	5,0/400	67	180	50	2,8
			230	60	2230	1610	135	0,60	4,0/400	70	120	45	

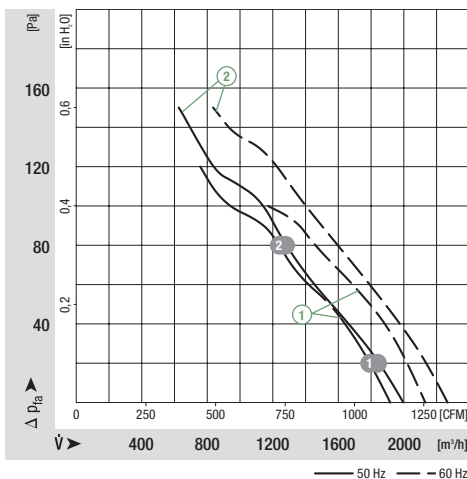
subject to alterations

<sup>(1)</sup> current draw established at 400 VAC (Y)

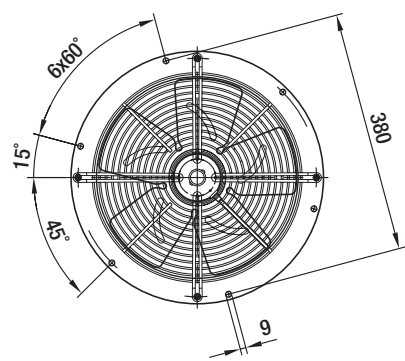
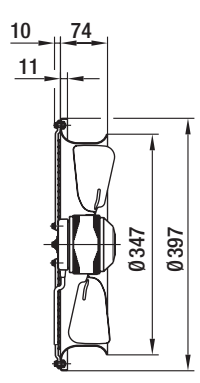
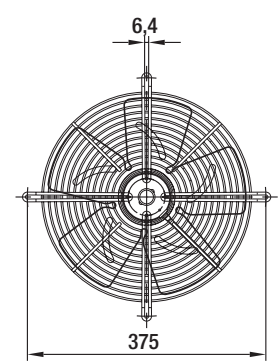
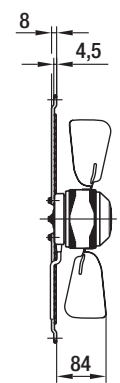
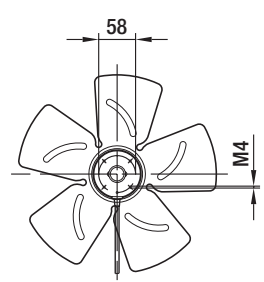
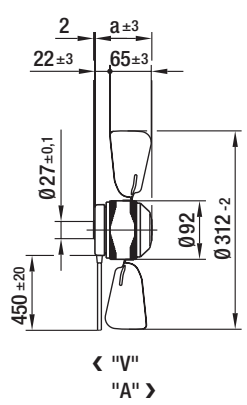
<sup>(2)</sup> insulation class "F"

	n [min⁻¹]	P <sub>1</sub> [W]
① ①	1390	82
① ②	1370	95
② ①	1395	123
② ②	1360	136

## Characteristics



Selection	Cable exit	Direction of air flow	Dimensions			
Type	S/A/B		a			
*4D 315	S	"V"	A4D315-AC20 -01	S4D315-BC20 -01	W4D315-CC20 -01	101
		"A"	A4D315-AC20 -02	S4D315-BC20 -02	W4D315-CC20 -02	101
*4E 315	S	"V"	A4E 315-AA05 -01	S4E 315-BA05 -01	W4E 315-CA05 -01	92
		"A"	A4E 315-AA05 -02	S4E 315-BA05 -02	W4E 315-CA05 -02	92



# AC axial fans

A-Range, Ø 350



- **Material:** sheet steel (coated in black)
- **Direction of rotation:** direction of air flow "V" counter-clockwise, direction of air flow "A" clockwise
- **Type of protection:** IP 44

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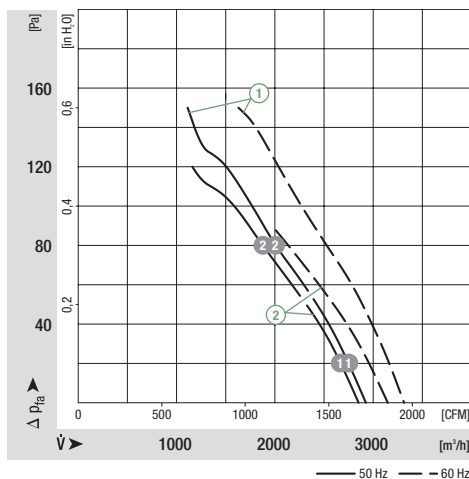
Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor		VAC	Hz	m³/h	min⁻¹	W	A	µF/VDB	dB(A)	Pa	°C	kg
*4D 350 <sup>(1)</sup>	M4D068-EC	①	230/400	50	2900	1420	145	0,39	---	69	150	45	3,1
			230/400	60	3300	1620	190	0,36	---	72	150	40	
*4E 350	M4E068-EC	②	230	50	2850	1390	140	0,62	5,0/400	68	120	60	3,1
			230	60	3190	1550	195	0,86	5,0/400	70	90	40	


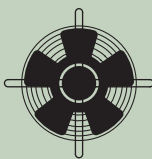
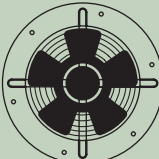
subject to alterations

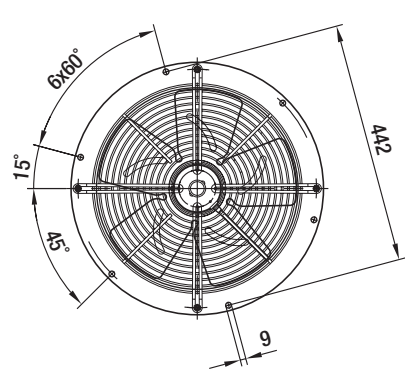
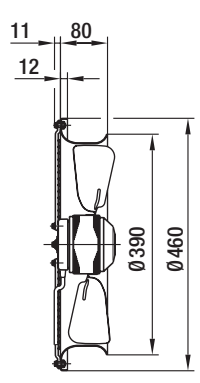
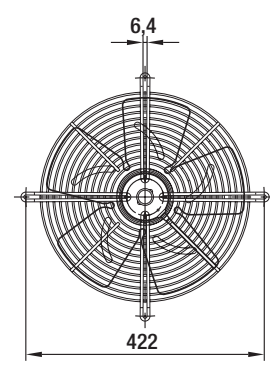
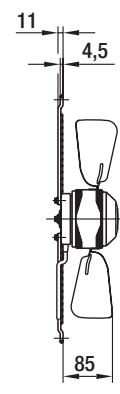
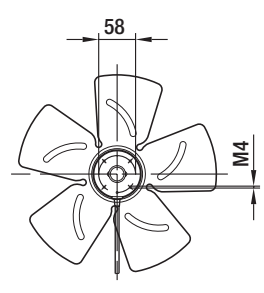
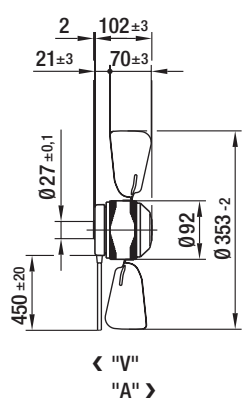
<sup>(1)</sup> current draw established at 400 VAC (Y)

	n [min <sup>-1</sup> ]	P <sub>1</sub> [W]
① ①	1405	154
① ②	1390	169
② ①	1375	147
② ②	1345	161

## Characteristics



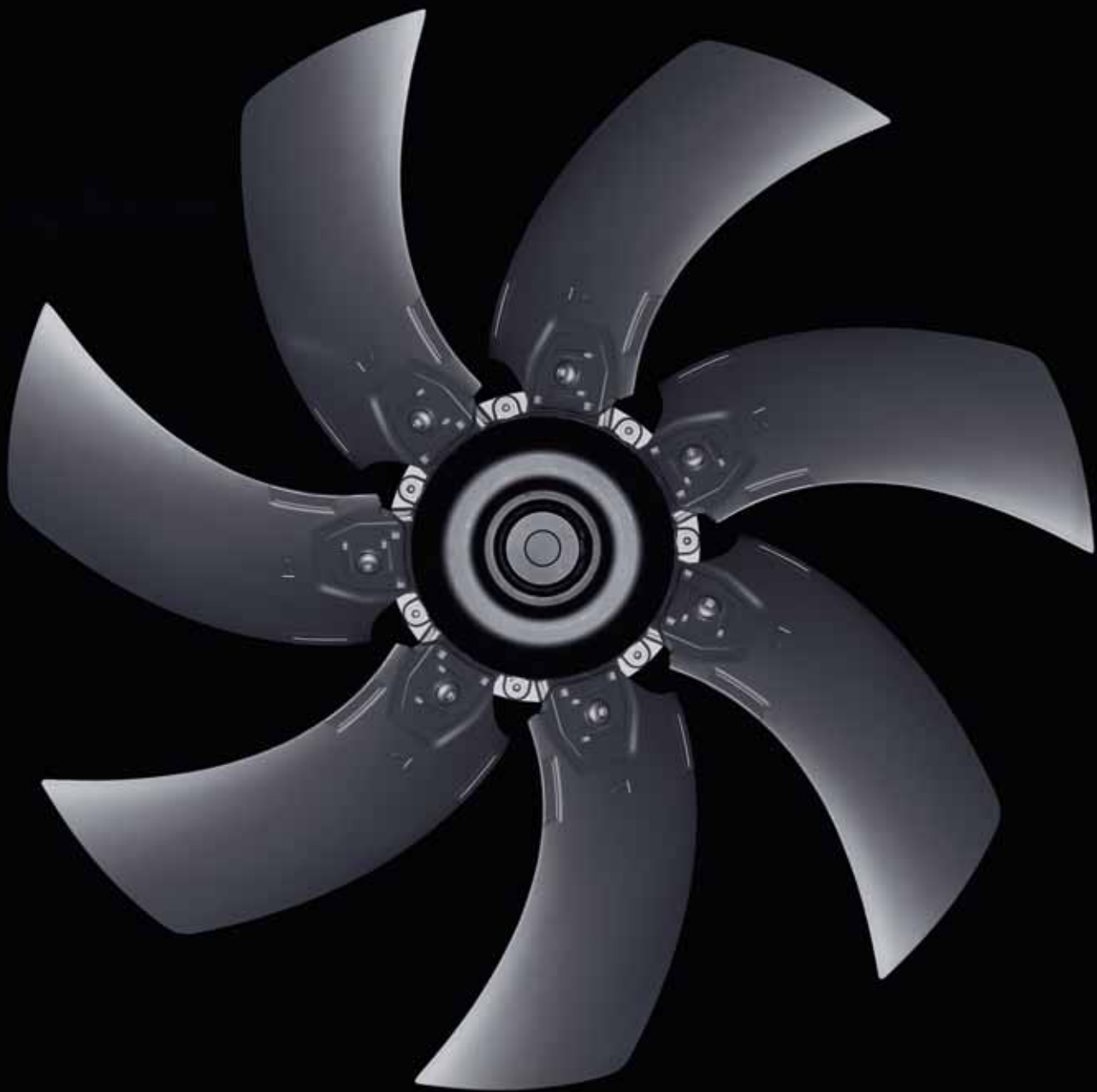
Selection	Cable exit	Direction of air flow			
Type	S/A/B				
*4D 350	S	"V"	A4D350-AA06 -01	S4D350-BA06 -01	W4D350-CA06 -01
		"A"	A4D350-AA06 -02	S4D350-BA06 -02	W4D350-CA06 -02
*4E 350	S	"V"	A4E350-AA06 -01	S4E350-BA06 -01	W4E350-CA06 -01
		"A"	A4E350-AA06 -02	S4E350-BA06 -02	W4E350-CA06 -02





# EC axial fans

Axial fans, diagonal fans	Ø 180 - Ø 250	72
S-Range, 24 / 48 VDC	Ø 200 - Ø 300	76
S-Range, line-fed	Ø 250 - Ø 990	82
K-Range, 24 / 48 VDC	Ø 250 - Ø 360	134
K-Range, line-fed	Ø 250 - Ø 360	144



# EC diagonal fans

Ø 180



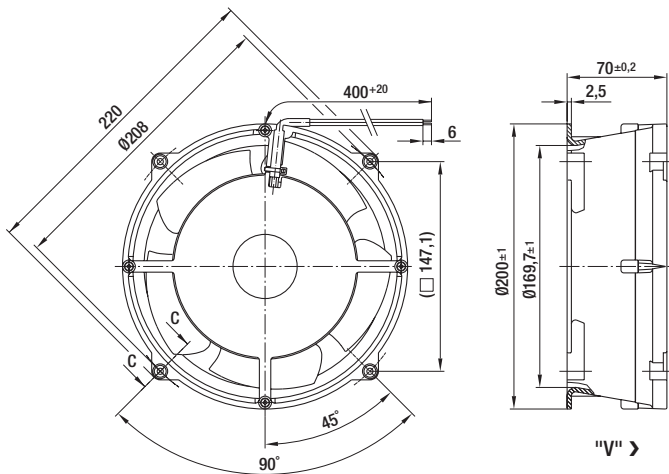
- **Material:** housing made of die-cast aluminium GDAISI, impeller made of plastic PA6.6
- **Direction of rotation:** counter-clockwise, seen on rotor
- **Direction of air flow:** "V", blowing over struts
- **Motor protection:** polarity and locked-rotor protection, soft start
- **Approvals:** CE
- **Characteristic:** determined at 48 VDC

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## Nominal data

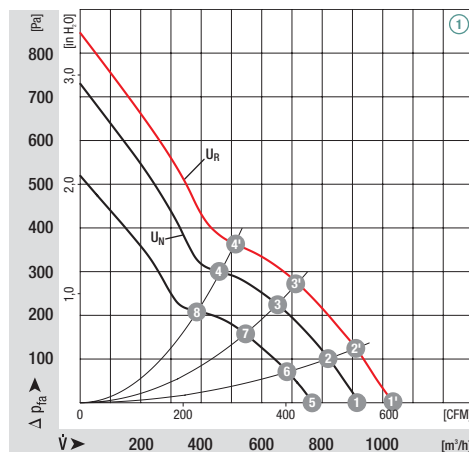
Type	Motor	Characteristic	Voltage VDC	Voltage range VDC	Air flow m³/h	Speed/rpm min⁻¹	Power input W	Current draw A	Sound pressure level dB(A)	Max. back pressure Pa	Perm. amb. temp. °C	Mass kg	Direction of air flow
W1G180-AB31 -01	M1G074-BF	①	24	16-28	900	4550	93	4,30	68	---	-20..+60	1,8	"V"
W1G180-AB47 -01	M1G074-BF	①	48	36-57	925	4600	100	2,30	69	---	-20..+60	1,8	"V"

subject to alterations

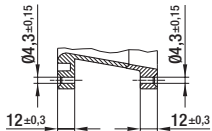


	n [min⁻¹]	P <sub>i</sub> [W]	η <sub>HL</sub> [%]	Lp <sub>A</sub> [dBA]		n [min⁻¹]	P <sub>i</sub> [W]	η <sub>HL</sub> [%]	Lp <sub>A</sub> [dBA]
① ①	5180	133	---	71	① ⑤	3920	60	---	66
① ②	4970	141	70	70	① ⑥	3790	64	70	65
① ③	4760	146	67	68	① ⑦	3660	68	67	63
① ④	5010	140	55	69	① ⑧	3790	63	55	63
① ①	4600	100	---	69					
① ②	4500	106	70	68					
① ③	4340	112	67	66					
① ④	4550	105	55	67					

## Characteristics



## Section C-C



red = +  
blue = -  
yellow = control input PWM/Lin  
white = tach output



# EC axial fans

Ø 200



- **Material:** housing made of die-cast aluminium, impeller made of sheet steel (directly welded onto rotor and stove-enamelled in black)
- **Direction of rotation:** counter-clockwise, seen on rotor
- **Direction of air flow:** "V", blowing over struts
- **Connection leads:** terminal strip
- **Approvals:** UL, VDE, CSA
- **Characteristic:** determined at 24 VDC

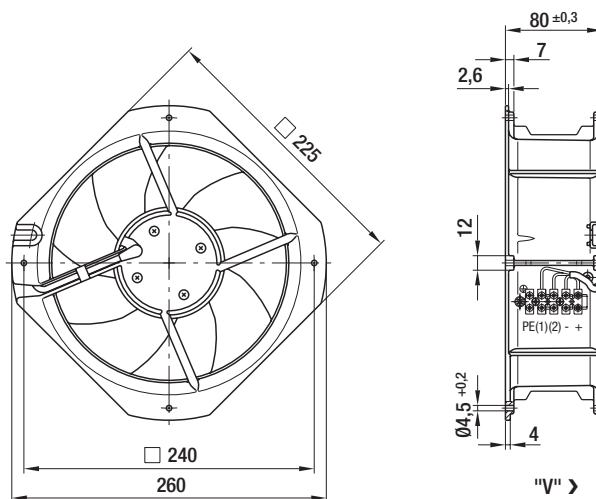
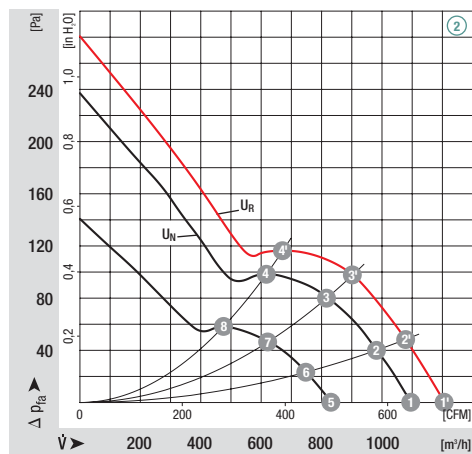
ebm-papst • Muldingen

Nominal data		Characteristic	Voltage	Voltage range	Air flow	Speed/rpm	Power input	Current draw	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass	Direction of air flow
Type	Motor		VDC	VDC	m³/h	min <sup>-1</sup>	W	A	dB(A)	Pa	°C	kg	
W1G200-HH77 -52	M1G074-BF	①	24	16-28	1090	2950	55	2,60	60	---	60	2,1	"V"
W1G200-HH01 -52	M1G074-BF	①	48	36-57	1005	2750	45	1,10	60	---	60	2,1	"V"

subject to alterations

	n [min <sup>-1</sup> ]	P <sub>I</sub> [W]	η <sub>HL</sub> [%]	Lp <sub>A</sub> [dBA]		n [min <sup>-1</sup> ]	P <sub>I</sub> [W]	η <sub>HL</sub> [%]	Lp <sub>A</sub> [dBA]
② ①	2300	73	---	63	② ⑤	2270	27	---	55
② ②	2970	77	67	62	② ⑥	2230	28	67	54
② ③	3100	80	64	63	② ⑦	2170	29	64	54
② ④	2970	80	54	66	② ⑧	2130	30	54	57
② ①	2950	55	---	60					
② ②	2890	58	67	60					
② ③	2800	61	64	61					
② ④	2780	63	54	64					

## Characteristics



① control input  
② tach output

# EC diagonal fans

Ø 208

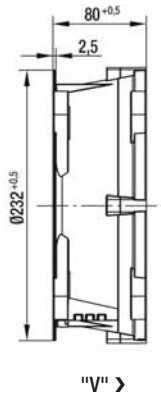
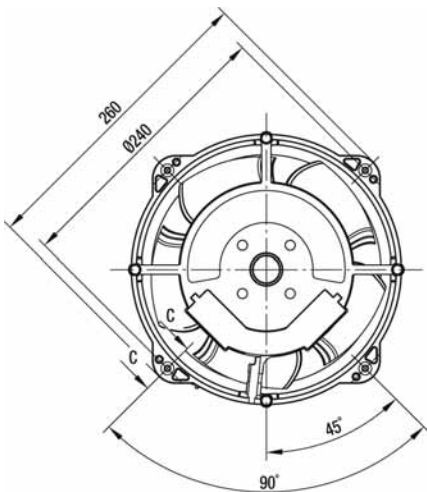


- **Material:** housing made of die-cast aluminium GDAISI, impeller made of plastic PA6.6
- **Direction of rotation:** counter-clockwise, seen on rotor
- **Direction of air flow:** "V", blowing over struts
- **Connection leads:** terminal strip

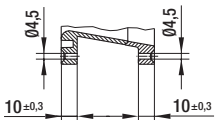
ebm-papst • Muldingen

Nominal data		Characteristic	Voltage	Voltage range	Air flow	Speed/rpm	Power input	Current draw	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass	Direction of air flow
Type	Motor	VDC	VDC	m³/h	min⁻¹	W	A	dB(A)	Pa	°C	kg		
W1G208-BA35 -52	M1G074-BF	①	24	16-28	1050	3500	96	4,40	74	---	72	2,3	"V"
W1G208-BA73 -52	M1G074-BF	①	48	36-57	1050	3500	96	2,26	74	---	72	2,3	"V"

subject to alterations



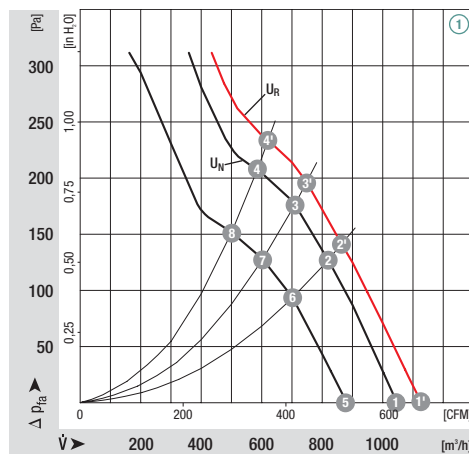
Section C-C



red = +  
blue = -  
yellow = control input PWM/Lin  
white = tach output

	n [min⁻¹]	P <sub>i</sub> [W]	η <sub>HL</sub> [%]	Lp <sub>A</sub> [dBA]		n [min⁻¹]	P <sub>i</sub> [W]	η <sub>HL</sub> [%]	Lp <sub>A</sub> [dBA]
① ①	3740	116	---	75	① ⑤	2960	58	---	70
① ②	3500	118	52	74	① ⑥	2830	63	52	69
① ③	3450	119	53	73	① ⑦	2780	64	53	68
① ④	3530	118	48	75	① ⑧	2840	62	48	70
① ①	3500	96	---	74					
① ②	3300	99	52	72					
① ③	3250	100	53	72					
① ④	3330	99	48	73					

Characteristics



# EC axial fans

Ø 250



- **Material:** housing made of die-cast aluminium, impeller made of sheet steel (directly welded onto rotor and stove-enamelled in black)
- **Direction of rotation:** counter-clockwise, seen on rotor
- **Direction of air flow:** "V", blowing over struts
- **Connection leads:** terminal strip
- **Approvals:** UL, VDE, CSA

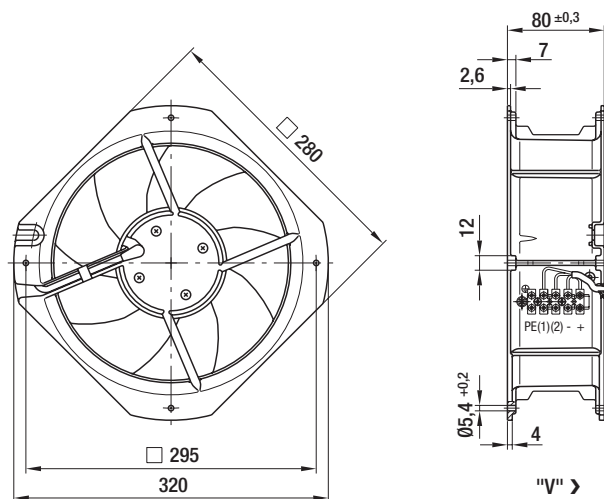
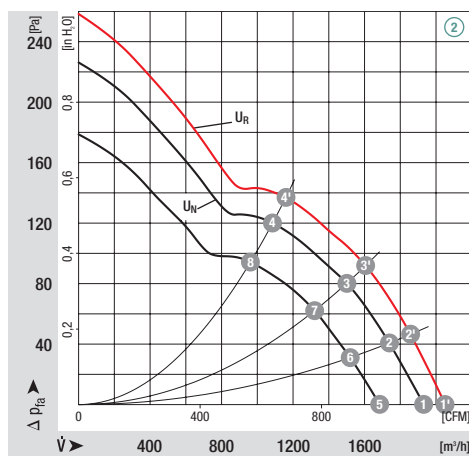
ebm-papst • Muldingen

Nominal data		Characteristic	Voltage	Voltage range	Air flow	Speed/rpm	Power input	Current draw	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass	Direction of air flow
Type	Motor		VDC	VDC	m³/h	min <sup>-1</sup>	W	A	dB(A)	Pa	°C	kg	
W1G250-HH37 -52	M1G074-BF	②	24	16-28	1920	2750	105	5,00	70	---	60	2,5	"V"
W1G250-HH67 -52	M1G074-BF	②	48	36-57	1920	2750	105	2,60	70	---	60	2,5	"V"

subject to alterations

	n [min <sup>-1</sup> ]	P <sub>1</sub> [W]	η <sub>HL</sub> [%]	Lp <sub>A</sub> [dBA]		n [min <sup>-1</sup> ]	P <sub>1</sub> [W]	η <sub>HL</sub> [%]	Lp <sub>A</sub> [dBA]
② ①	2920	129	---	71	② ⑤	2610	73	---	66
② ②	2800	132	63	72	② ⑥	2320	75	63	67
② ③	2680	135	60	71	② ⑦	2230	78	60	67
② ④	2600	139	45	72	② ⑧	2170	80	45	68
② ①	2750	105	---	70					
② ②	2630	110	63	69					
② ③	2520	111	60	69					
② ④	2440	114	45	70					

## Characteristics



① control input  
② tach output

# EC axial fans

S-Range, Ø 200



- **Material:** sheet steel (stove-enamelled in black)
- **Direction of rotation:** counter-clockwise
- **Technical features:** control input 0-10 VDC / PWM, tach output
- **Type of protection:** IP 42
- **Mounting position:** at will
- **Approvals:** UL, CSA
- **Characteristic:** determined at 24 VDC

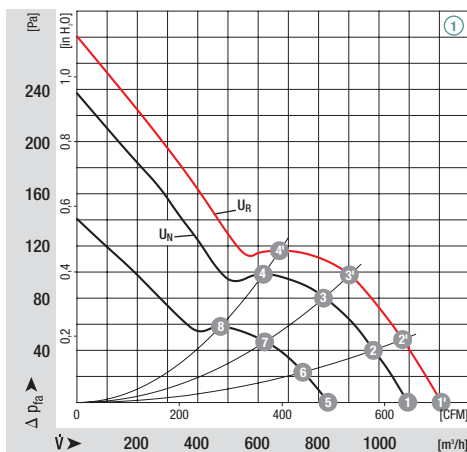
ebm-papst • Muldingen


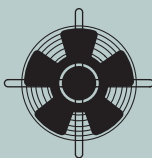
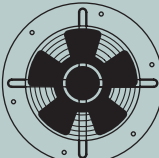

Nominal data		Characteristic	Voltage	Voltage range	Air flow	Speed/rpm	Power input	Current draw	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor		VDC	VDC	m³/h	min⁻¹	W	A	dB(A)	Pa	°C	kg
*1G 200	M1G074-BF	①	24	16-28	1090	2950	55	2,60	60	---	60	1,5
	M1G074-BF	①	48	36-57	1005	2750	45	1,10	60	---	60	1,5

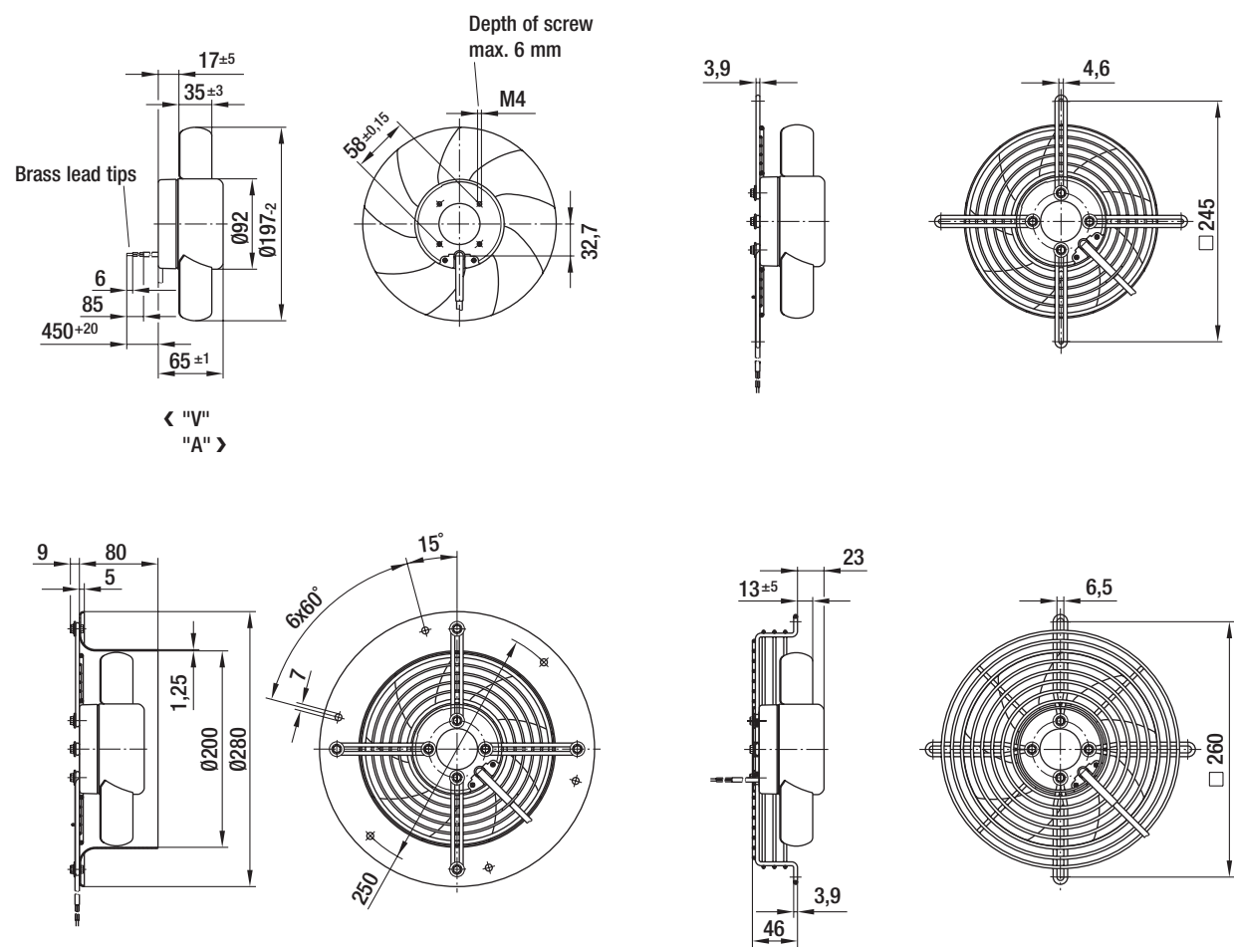
subject to alterations

	n [min⁻¹]	P <sub>1</sub> [W]	η <sub>HL</sub> [%]	Lp <sub>A</sub> [dBA]		n [min⁻¹]	P <sub>1</sub> [W]	η <sub>HL</sub> [%]	Lp <sub>A</sub> [dBA]
① ①	2300	73	---	63	① ⑤	2270	27	---	55
① ②	2970	77	67	62	① ⑥	2230	28	67	54
① ③	3100	80	64	63	① ⑦	2170	29	64	54
① ④	2970	80	54	66	① ⑧	2130	30	54	57
① ①	2950	55	---	60					
① ②	2890	58	67	60					
① ③	2800	61	64	61					
① ④	2780	63	54	64					

## Characteristics



Selection		Cable exit	Direction of air flow			
Type	S/A/B					
*1G 200	B	"V"	A1G200-AH77 -52	S1G200-BH77 -52	W1G200-CH77 -52	S1G200-AH77 -52
		"A"	A1G200-AI77 -52	S1G200-BI77 -52	W1G200-CI77 -52	S1G200-AI77 -52
	B	"V"	A1G200-AH01 -52	S1G200-BH01 -52	W1G200-CH01 -52	S1G200-AH01 -52
		"A"	A1G200-AI01 -52	S1G200-BI01 -52	W1G200-CI01 -52	S1G200-AI01 -52



# EC axial fans

S-Range, Ø 250



- **Material:** sheet steel (stove-enamelled in black)
- **Direction of rotation:** counter-clockwise
- **Technical features:** control input 0-10 VDC / PWM, tach output
- **Type of protection:** IP 42
- **Mounting position:** at will
- **Approvals:** UL, CSA

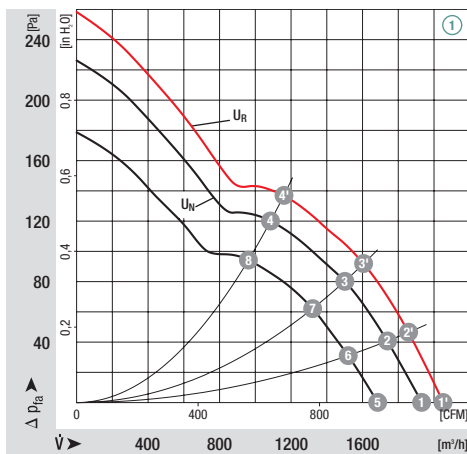
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Nominal data		Characteristic	Voltage	Voltage range	Air flow	Speed/rpm	Power input	Current draw	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor		VDC	VDC	m³/h	min⁻¹	W	A	dB(A)	Pa	°C	kg
*1G 250	M1G074-BF	①	24	16-28	1920	2750	105	5,00	70	---	60	1,6
	M1G074-BF	①	48	36-57	1920	2750	105	2,60	70	---	60	1,6

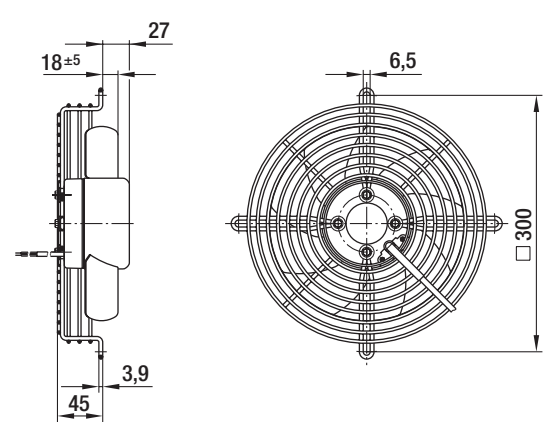
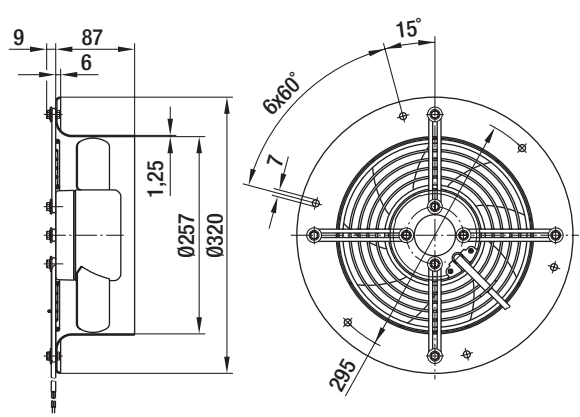
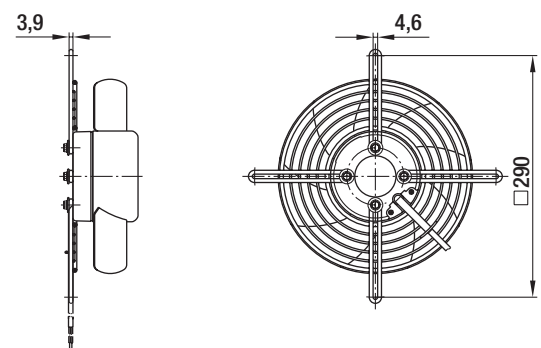
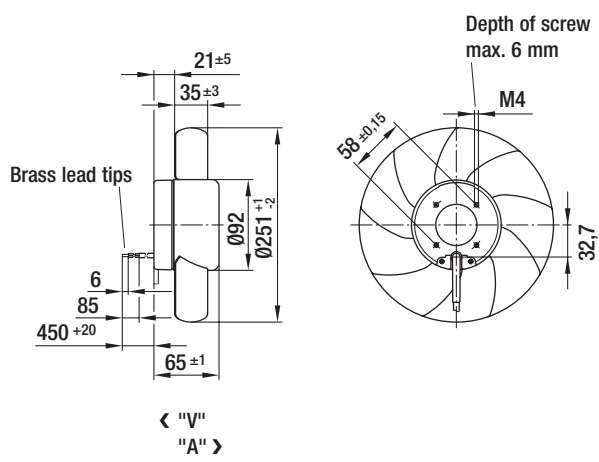
subject to alterations

	n [min⁻¹]	P <sub>I</sub> [W]	η <sub>HL</sub> [%]	Lp <sub>A</sub> [dBA]		n [min⁻¹]	P <sub>I</sub> [W]	η <sub>HL</sub> [%]	Lp <sub>A</sub> [dBA]
① 1	2920	129	---	71	① 5	2610	73	---	66
① 2	2800	132	63	72	① 6	2320	75	63	67
① 3	2680	135	60	71	① 7	2230	78	60	67
① 4	2600	139	45	73	① 8	2170	80	45	68
① 1	2750	105	---	70					
① 2	2630	110	63	69					
① 3	2520	111	60	69					
① 4	2440	114	45	71					

## Characteristics



Selection	Cable exit	Direction of air flow				
Type	S/A/B					
*1G 250	B	"V"	A1G250-AH37 -52	S1G250-BH37 -52	W1G250-CH37 -52	S1G250-AH37 -52
		"A"	A1G250-AI37 -52	S1G250-BI37 -52	W1G250-CI37 -52	S1G250-AI37 -52
	B	"V"	A1G250-AH67 -52	S1G250-BH67 -52	W1G250-CH67 -52	S1G250-AH67 -52
		"A"	A1G250-AI67 -52	S1G250-BI67 -52	W1G250-CI67 -52	S1G250-AI67 -52



# EC axial fans

S-Range, Ø 300



- **Material:** sheet steel (stove-enamelled in black)
- **Direction of rotation:** direction of air flow "V" counter-clockwise, direction of air flow "A" clockwise
- **Technical features:** control input 0-10 VDC / PWM, tach output
- **Type of protection:** IP 42
- **Mounting position:** at will
- **Approvals:** UL, CSA

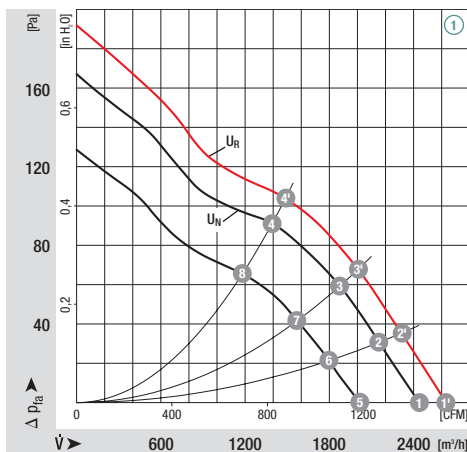
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Nominal data		Characteristic	Voltage	Voltage range	Air flow	Speed/rpm	Power input	Current draw	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor		VDC	VDC	m³/h	min⁻¹	W	A	dB(A)	Pa	°C	kg
*1G 300	M1G074-CF	①	24	16-28	2450	1800	90	4,00	65	---	60	2,2
	M1G074-CF	①	48	36-57	2450	1800	90	2,00	65	---	60	2,2


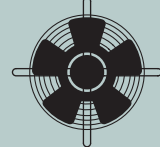
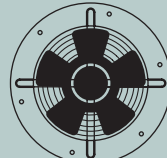

subject to alterations

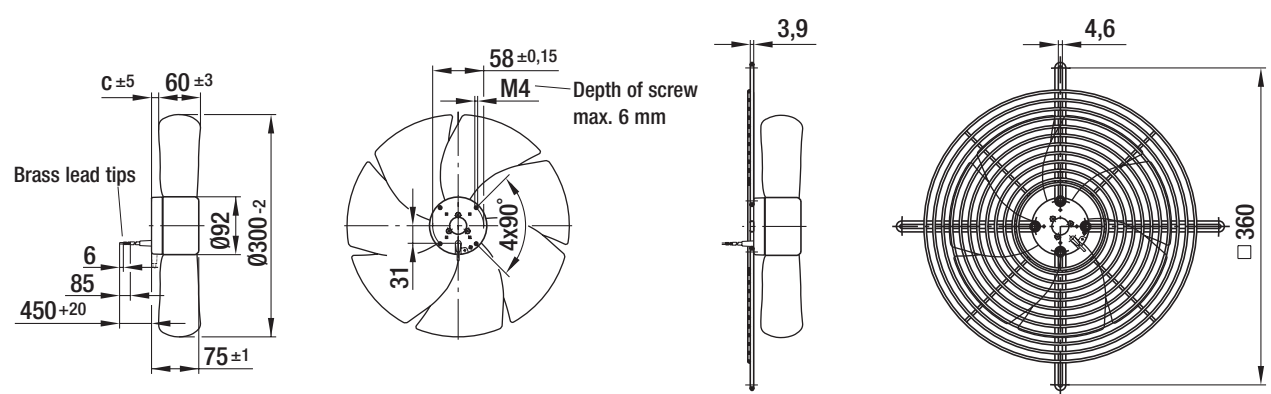
	n [min⁻¹]	P <sub>I</sub> [W]	η <sub>HL</sub> [%]	Lp <sub>A</sub> [dBA]		n [min⁻¹]	P <sub>I</sub> [W]	η <sub>HL</sub> [%]	Lp <sub>A</sub> [dBA]
① ①	1940	108	---	67	① ⑤	1480	49	---	61
① ②	1850	111	71	66	① ⑥	1440	52	71	62
① ③	1790	113	71	66	① ⑦	1400	55	71	61
① ④	1720	116	60	66	① ⑧	1350	58	60	59
① ①	1800	90	---	65					
① ②	1720	89	71	65					
① ③	1670	91	71	65					
① ④	1600	93	60	64					

## Characteristics

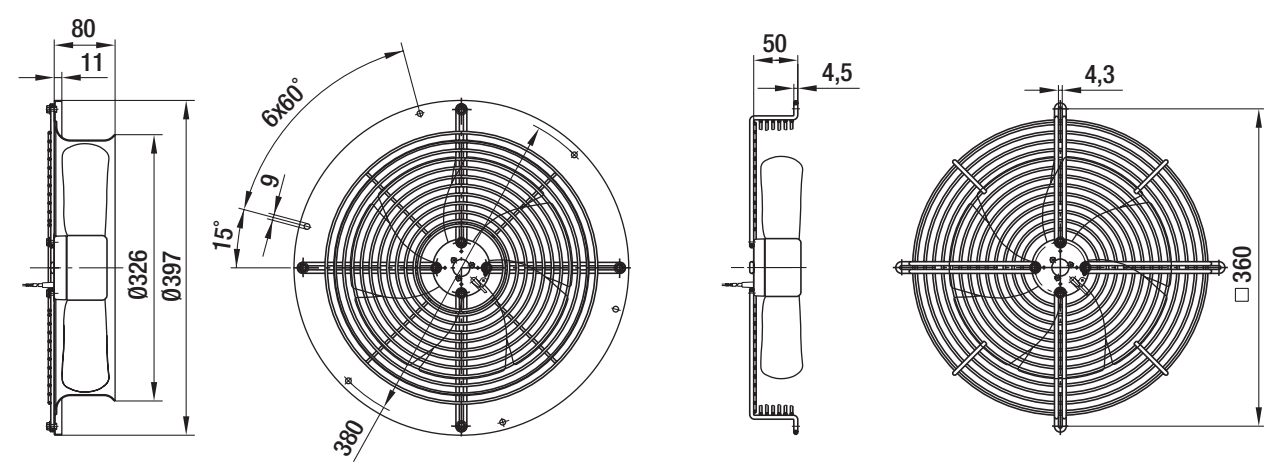




Selection		Cable exit	Direction of air flow				Dimensions
Type	S/A/B						c
*1G 300	B	"V"	A1G300-AE19 -54	S1G300-BE19 -54	W1G300-CE19 -54	S1G300-AE19 -54	19,7
		"A"	A1G300-AE19 -52	S1G300-BE19 -52	W1G300-CE19 -52	S1G300-AE19 -52	19,2
	B	"V"	A1G300-AE33 -54	S1G300-BE33 -54	W1G300-CE33 -54	S1G300-AE33 -54	19,7
		"A"	A1G300-AE33 -52	S1G300-BE33 -52	W1G300-CE33 -52	S1G300-AE33 -52	19,2



< "V"  
"A" >



# EC axial fans integrated electronics

S-Range, Ø 250



- **Material:** sheet steel (coated in black)
- **Direction of rotation:** counter-clockwise
- **Technical features:** control input 0-10 VDC / PWM, tach output, 10 V voltage output for potentiometer
- **Type of protection:** IP 44
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST are applied for

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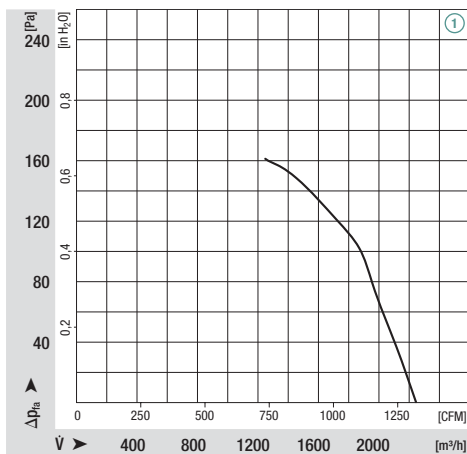
## Nominal data<sup>(1)</sup>

Type	Motor	Characteristic	Voltage range	Frequency	Air flow	Speed/rpm	Power input	Current draw	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass	
		VAC	Hz	m <sup>3</sup> /h	min <sup>-1</sup>	W	A	dB(A)	Pa	°C	kg		
*3G 250	M3G074-CF	①	200-277	50/60	2240	3100	145	1,00	76	160	-25..+60	2,4	preliminary data!

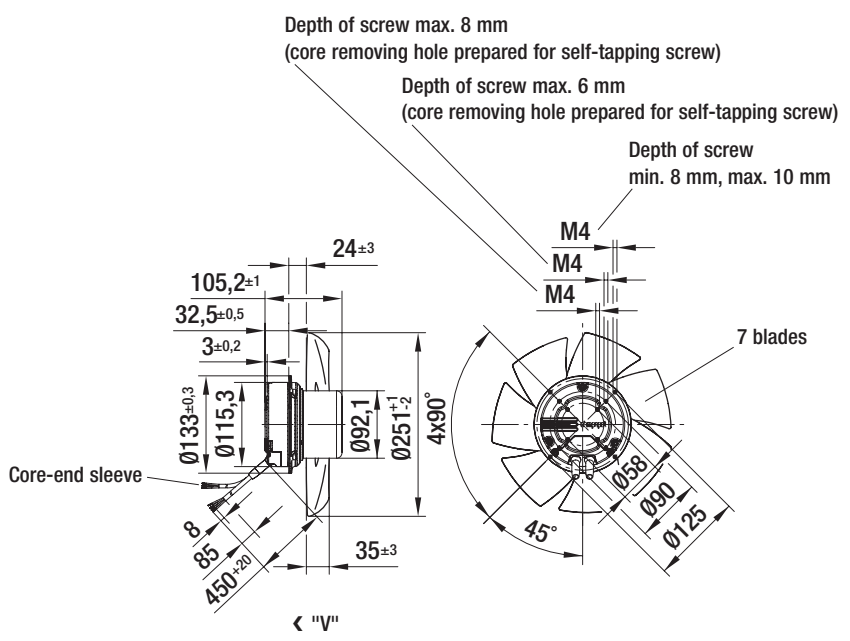
subject to alterations

<sup>(1)</sup> at 230 VAC

## Characteristics (preliminary data!)



Selection	Cable exit	Direction of air flow	
Type	S/A/B		
*3G 250	B	"V"	A3G250-AC** -01



# EC axial fans integrated electronics

S-Range, Ø 300



- **Material:** sheet steel (coated in black)
- **Direction of rotation:** counter-clockwise
- **Technical features:** control input 0-10 VDC / PWM, tach output, 10 V voltage output for potentiometer
- **Type of protection:** IP 44
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST are applied for

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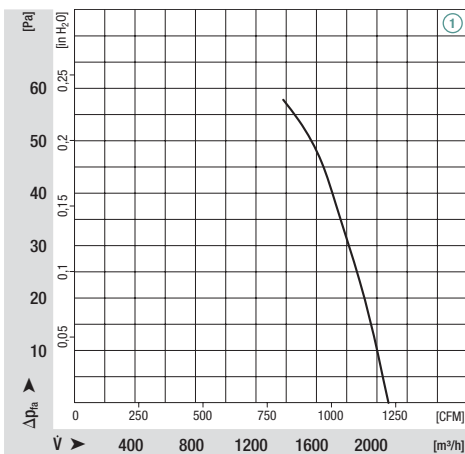
## Nominal data<sup>(1)</sup>

Type	Motor	Characteristic	Voltage range	Frequency	Air flow	Speed/rpm	Power input	Current draw	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
		VAC	Hz	m <sup>3</sup> /h	min <sup>-1</sup>	W	A	dB(A)	Pa	°C	kg	
*3G 300	M3G074-CF	①	200-277	50/60	2080	1630	65	0,40	66	55	-25..+60	2,7

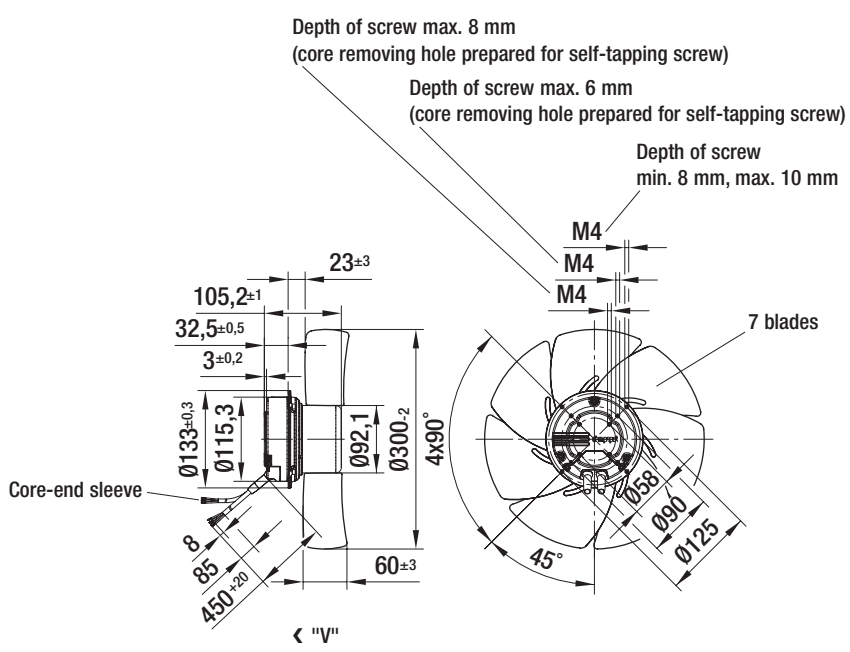
subject to alterations ① at 230 VAC

preliminary data!

## Characteristics (preliminary data!)



Selection		Cable exit	Direction of air flow
Type	S/A/B		
*3G 300	B	"V"	A3G300-AB** -01



# EC axial fans integrated electronics

S-Range, Ø 315



- **Material:** sheet steel (coated in black)
- **Direction of rotation:** counter-clockwise
- **Technical features:** control input 0-10 VDC / PWM, tach output, 10 V voltage output for potentiometer
- **Type of protection:** IP 44
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST are applied for

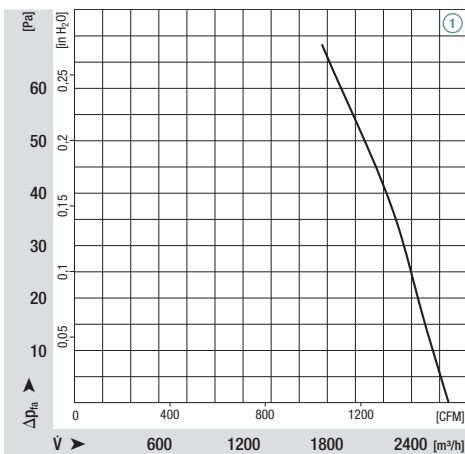
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## Nominal data<sup>(1)</sup>

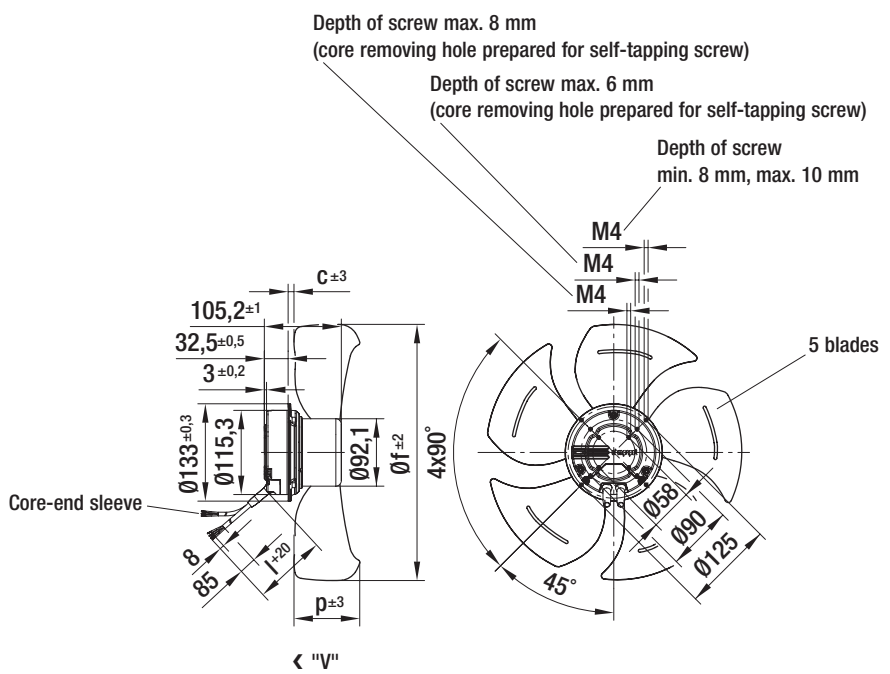
Type	Motor	Characteristic	Voltage range	Frequency	Air flow	Speed/rpm	Power input	Current draw	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass	
		VAC	Hz	m <sup>3</sup> /h	min <sup>-1</sup>	W	A	dB(A)	Pa	°C	kg		
*3G 315	M3G074-CF	①	200-277	50/60	2670	1510	100	0,70	61	65	-25..+60	2,9	preliminary data!

subject to alterations ① at 230 VAC

## Characteristics (preliminary data!)



Selection		Cable exit	Direction of air flow		Dimensions			
Type	S/A/B				c	f	p	l
*3G 315	B	"V"	A3G315-AA** -01	6	312	85	450	



# EC axial fans integrated electronics

S-Range, Ø 330



- **Material:** sheet steel (coated in black)
- **Direction of rotation:** counter-clockwise
- **Technical features:** control input 0-10 VDC / PWM, tach output, 10 V voltage output for potentiometer
- **Type of protection:** IP 44
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST are applied for

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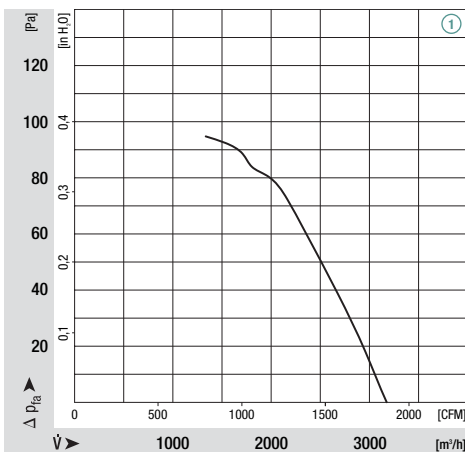
## Nominal data<sup>(1)</sup>

Type	Motor	Characteristic	Voltage range	Frequency	Air flow	Speed/rpm	Power input	Current draw	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass	
		VAC	Hz	m <sup>3</sup> /h	min <sup>-1</sup>	W	A	dB(A)	Pa	°C	kg		
*3G 330	M3G074-CF	①	200-277	50/60	3170	1540	90	0,60	69	95	-25..+60	2,9	preliminary data!


subject to alterations

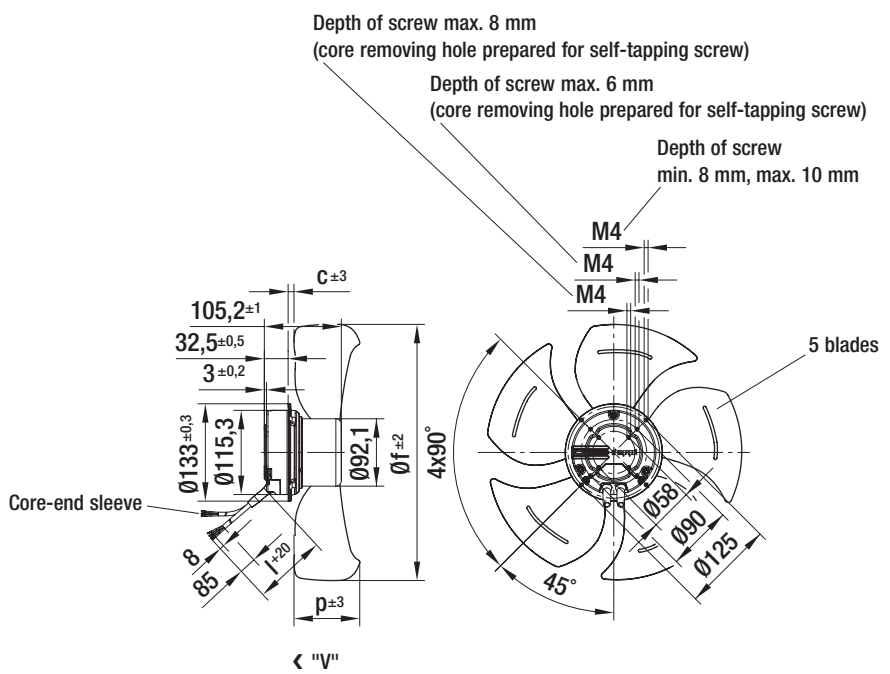
<sup>(1)</sup> at 230 VAC

## Characteristics (preliminary data!)





Selection		Cable exit	Direction of air flow		Dimensions			
Type	S/A/B				c	f	p	l
*3G 330	B	"V"	A3G330-AA** -01	6	330	87	450	



# EC axial fans integrated electronics

S-Range, Ø 350



- **Material:** sheet steel (coated in black)
- **Direction of rotation:** counter-clockwise
- **Technical features:** control input 0-10 VDC / PWM, tach output, 10 V voltage output for potentiometer
- **Type of protection:** IP 44
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST are applied for

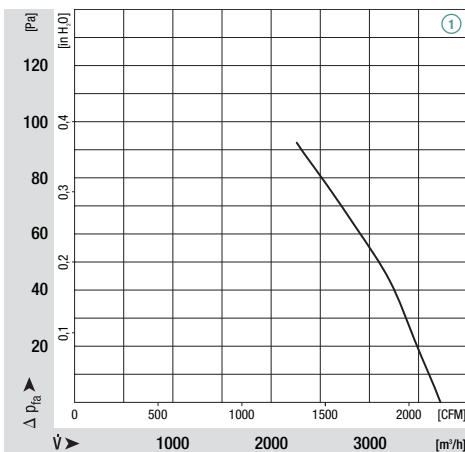
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## Nominal data<sup>(1)</sup>

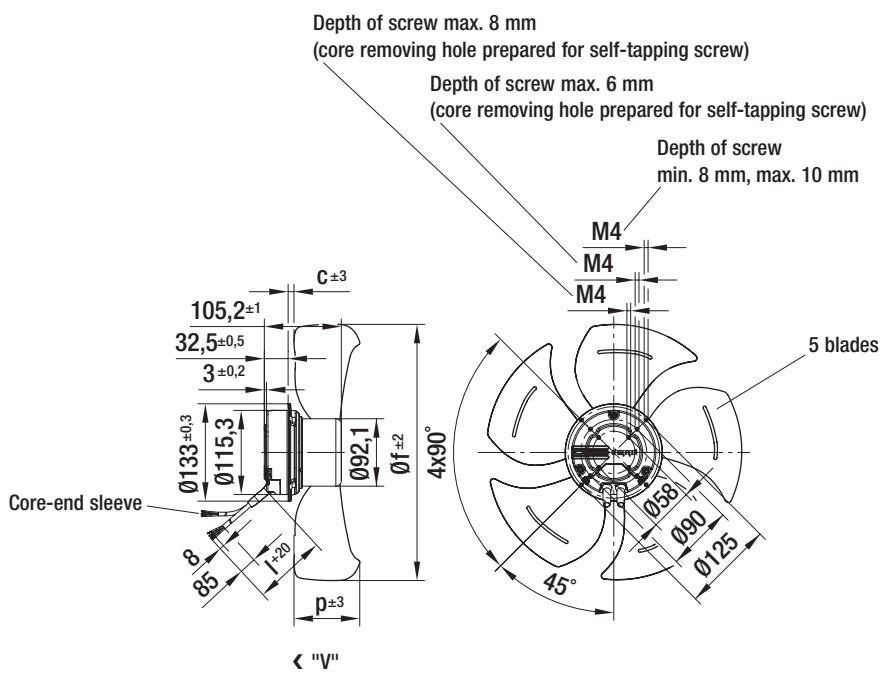
Type	Motor	Characteristic	Voltage range	Frequency	Air flow	Speed/rpm	Power input	Current draw	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass	
		VAC	Hz	m <sup>3</sup> /h	min <sup>-1</sup>	W	A	dB(A)	Pa	°C	kg		
*3G 350	M3G074-CF	①	200-277	50/60	3720	1535	125	0,90	67	90	-25..+60	2,9	preliminary data!

subject to alterations ① at 230 VAC

## Characteristics (preliminary data!)



Selection		Cable exit	Direction of air flow		Dimensions			
Type	S/A/B				c	f	p	l
*3G 350	B	"V"	A3G350-AA** -01	0	350	92	600	



# EC axial fans integrated electronics

S-Range, Ø 400



- **Material:** sheet steel (black, KTL coated)
- **Cable exit:** variable
- **Technical features:** electronics integrated in the motor, control input 0-10 VDC / PWM, alarm relay
- **Direction of rotation:** counter-clockwise
- **Type of protection:** IP 44
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST are applied for
- **Mounting position:** at will

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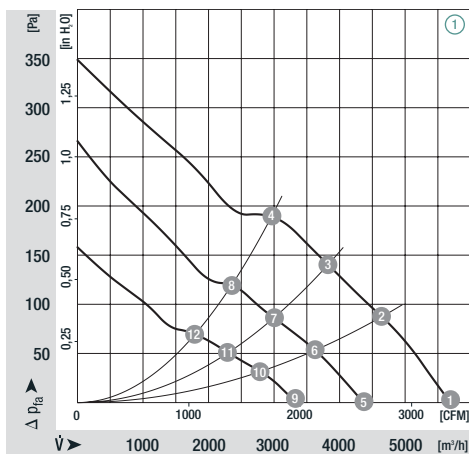
Nominal data		Characteristic	Voltage range	Frequency	Speed/rpm	Max. power input <sup>(1)</sup>	Max. current draw <sup>(1)</sup>	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor	VAC	Hz	min <sup>-1</sup>	W	A	Pa	°C	kg	
*3G 400	M3G084-FA	① 200-277	50/60	1690	390	2,50	180	-25..+60	5,2	


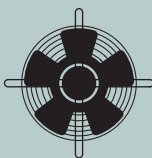
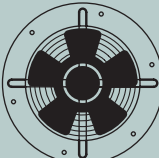

subject to alterations

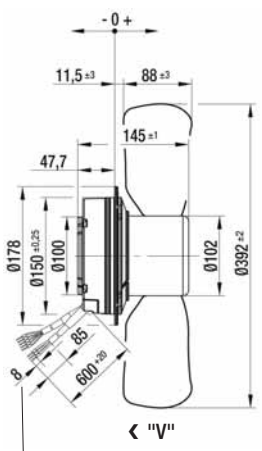
<sup>(1)</sup> in operating point with maximum load (at 230 VAC)

	n	P <sub>1</sub>	I	Lp <sub>A</sub>	η <sub>HL</sub>		n	P <sub>1</sub>	I	Lp <sub>A</sub>	η <sub>HL</sub>
	[min <sup>-1</sup> ]	[W]	[A]	[dBA]	[%]		[min <sup>-1</sup> ]	[W]	[A]	[dBA]	[%]
① ①	1690	340	2,1	75	---	① ⑨	1000	76	0,5	61	---
① ②	1660	375	2,3	72	64	① ⑩	1000	91	0,6	60	64
① ③	1640	380	2,4	70	61	① ⑪	1000	93	0,6	57	61
① ④	1630	390	2,5	68	54	① ⑫	1000	100	0,7	56	54
① ⑤	1300	162	1,0	68	---						
① ⑥	1300	179	1,1	66	64						
① ⑦	1300	192	1,2	64	61						
① ⑧	1300	203	1,2	63	54						

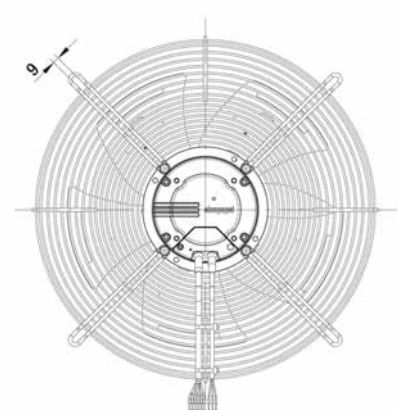
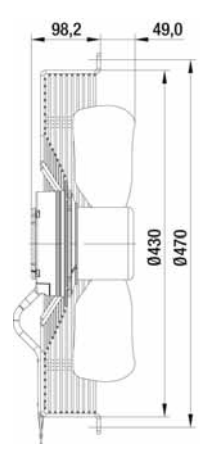
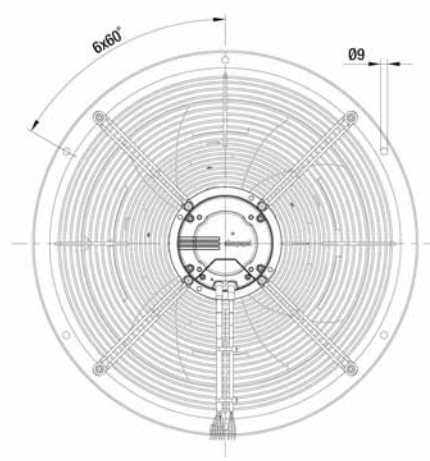
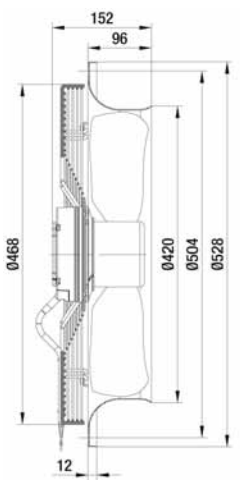
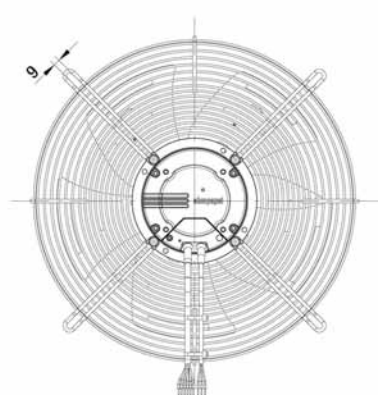
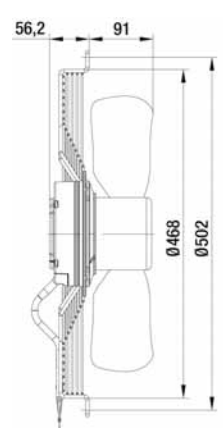
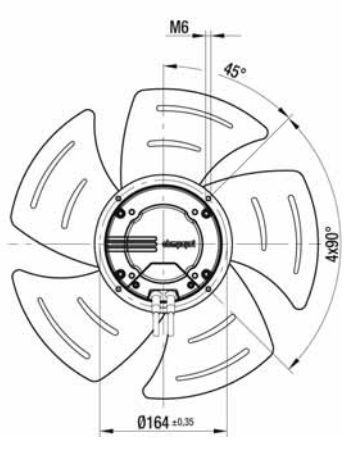
## Characteristics



Selection	Cable exit	Direction of air flow				
Type	S/A/B					
*3G 400	B	"V"	A3G400-AA22 -71	S3G400-KA22 -71	W3G400-CA22 -71	S3G400-LA22 -71



Core-end sleeve



# EC axial fans integrated electronics

S-Range, Ø 450



- **Material:** sheet steel (black, KTL coated)
- **Cable exit:** variable
- **Technical features:** electronics integrated in the motor, control input 0-10 VDC / PWM, alarm relay
- **Direction of rotation:** counter-clockwise
- **Type of protection:** IP 44
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST are applied for
- **Mounting position:** at will

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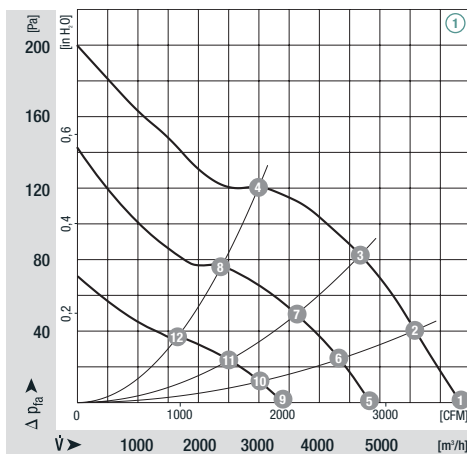
Nominal data		Characteristic	Voltage range	Frequency	Speed/rpm	Max. power input <sup>(1)</sup>	Max. current draw <sup>(1)</sup>	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor	VAC	Hz	min <sup>-1</sup>	W	A	Pa	°C	kg	
*3G 450	M3G084-FA	① 200-277	50/60	1310	325	2,10	120	-25..+60	5,5	


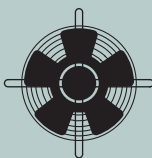
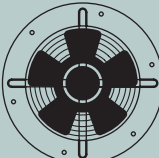

subject to alterations

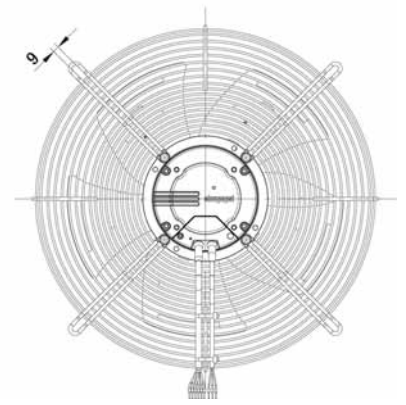
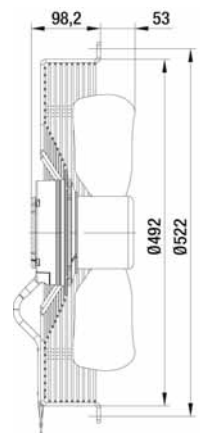
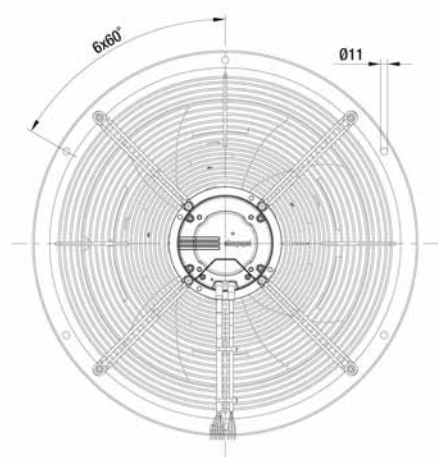
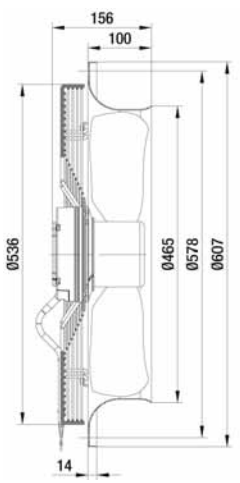
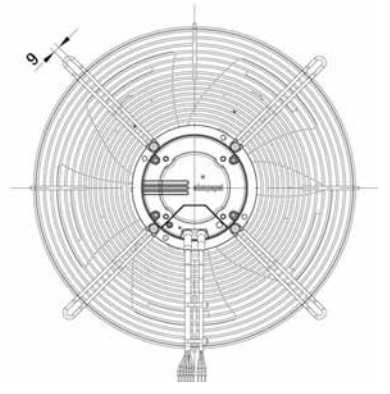
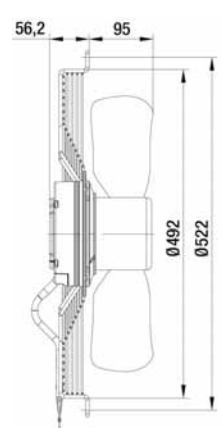
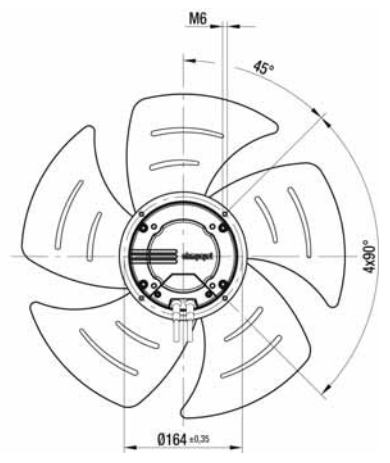
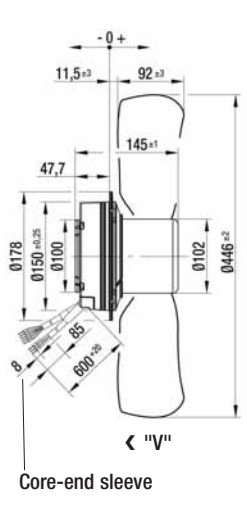
<sup>(1)</sup> in operating point with maximum load (at 230 VAC)

	n	P <sub>1</sub>	I	Lp <sub>A</sub>	η <sub>HL</sub>		n	P <sub>1</sub>	I	Lp <sub>A</sub>	η <sub>HL</sub>
	[min <sup>-1</sup> ]	[W]	[A]	[dBA]	[%]		[min <sup>-1</sup> ]	[W]	[A]	[dBA]	[%]
① ①	1310	245	1,5	73	---	① ⑨	700	38	0,3	61	---
① ②	1290	262	1,7	72	70	① ⑩	700	42	0,3	60	70
① ③	1270	290	1,9	70	66	① ⑪	700	48	0,3	58	66
① ④	1240	325	2,1	66	42	① ⑫	700	60	0,4	56	42
① ⑤	1000	108	0,7	68	---						
① ⑥	1000	122	0,8	67	70						
① ⑦	1000	140	0,9	65	66						
① ⑧	1000	174	1,1	61	42						

## Characteristics



Selection		Cable exit	Direction of air flow			
Type	S/A/B					
*3G 450	B	"V"	A3G450-AA14 -71	S3G450-KA14 -71	W3G450-CA14 -71	S3G450-LA14 -71



# EC axial fans integrated electronics

S-Range, Ø 500



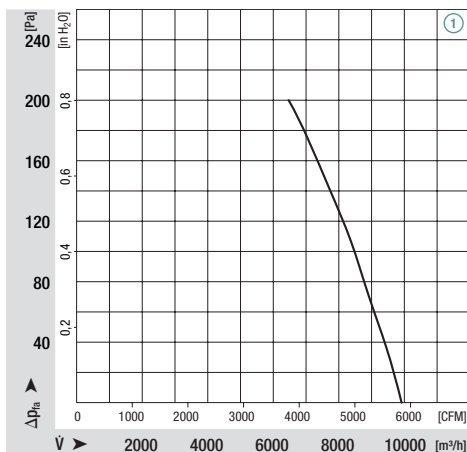
- **Material:** stator and electronics housing made of die-cast aluminium, rotor with injection-blow moulded blades made of PA 6 plastic ( fibre-glass reinforced)
- **Technical features:** control input 0-10 VDC / PWM, RS485 ebmBUS, alarm relay, integrated PID control, voltage supply for sensor, input for sensor 0-10 V respectively 4-20 mA, 0-10 V output for slave, PFC (passive), soft start, line undervoltage detection, phase failure detection, motor current limitation, over-temperature protected electronics and motor, locked-rotor protection
- **Direction of rotation:** counter-clockwise
- **Type of protection:** IP 44
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST are applied for

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Nominal data		Characteristic	Voltage range	Frequency	Speed/rpm	Max. power input <sup>(1)</sup>	Max. current draw <sup>(1)</sup>	Max. back pressure	Perm. amb. temp.	Mass A3G..	Mass S3G..	Mass W3G...	
Type	Motor	3~ VAC	Hz	min <sup>-1</sup>	kW	A	Pa	°C	kg	kg	kg		
*3G 500	M3G112-GA	①	380-480	50/60	1430	0,93	2,2	200	-25..+60	8,7	11,2	16,2	preliminary data!




subject to alterations ① in operating point with maximum load (at 400 VAC)

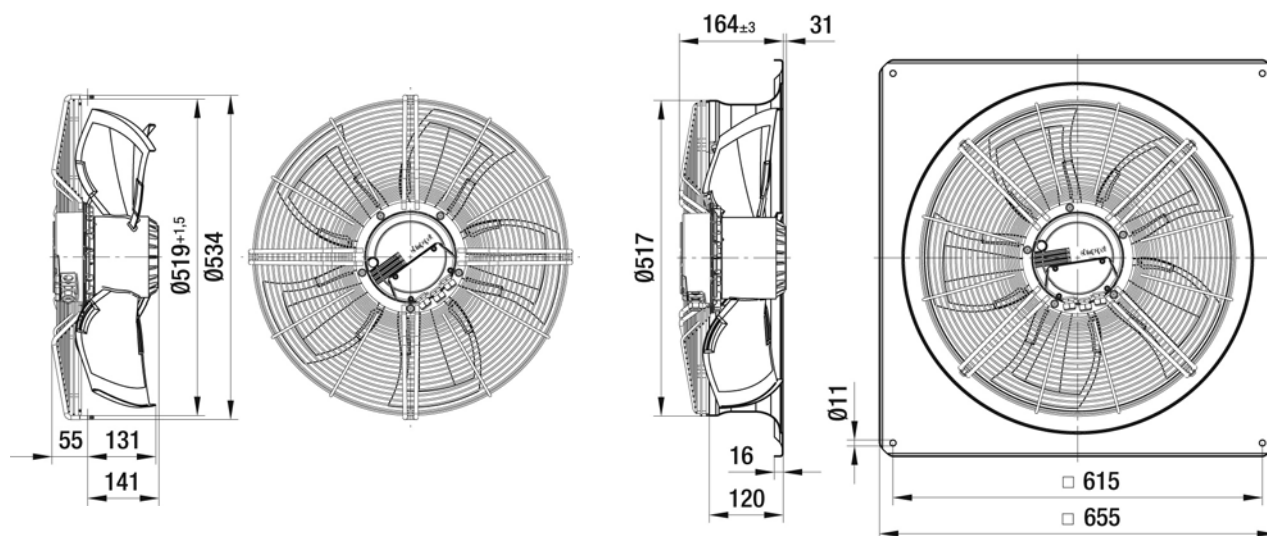
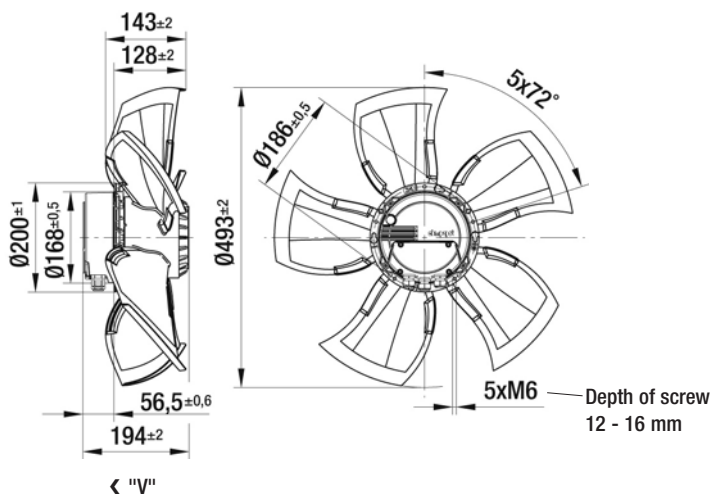
## Characteristics (preliminary data!)





- **Mounting position / condensate discharges:** norm is shaft horizontal without condensate discharges or rotor down with 4 condensate discharges drilled into rotor; mounting position rotor on top on request

Selection	Cable exit	Direction of air flow			
Type	S/A/B				
*3G 500	S	"V"	A3G500-**** _**	S3G500-**** _**	W3G500-**** _**



# EC axial fans integrated electronics

S-Range, Ø 560



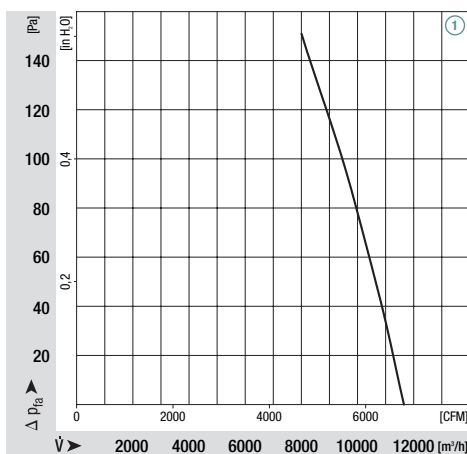
- **Material:** stator and electronics housing made of die-cast aluminium, rotor with injection-blow moulded blades made of PA 6 plastic ( fibre-glass reinforced)
- **Technical features:** control input 0-10 VDC / PWM, RS485 ebmBUS, alarm relay, integrated PID control, voltage supply for sensor, input for sensor 0-10 V respectively 4-20 mA, 0-10 V output for slave, PFC (passive), soft start, line undervoltage detection, phase failure detection, motor current limitation, over-temperature protected electronics and motor, locked-rotor protection
- **Direction of rotation:** counter-clockwise
- **Type of protection:** IP 44
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST are applied for

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Nominal data		Characteristic	Voltage range	Frequency	Speed/rpm	Max. power input <sup>(1)</sup>	Max. current draw <sup>(1)</sup>	Max. back pressure	Perm. amb. temp.	Mass A3G..	Mass S3G..	Mass W3G...	
Type	Motor	3~ VAC	Hz	min <sup>-1</sup>	kW	A	Pa	°C	kg	kg	kg		
*3G 560	M3G112-GA	① 380-480	50/60	1200	0,91	2,0	150	-25..+60	8,9	11,9	18,0	preliminary data!	

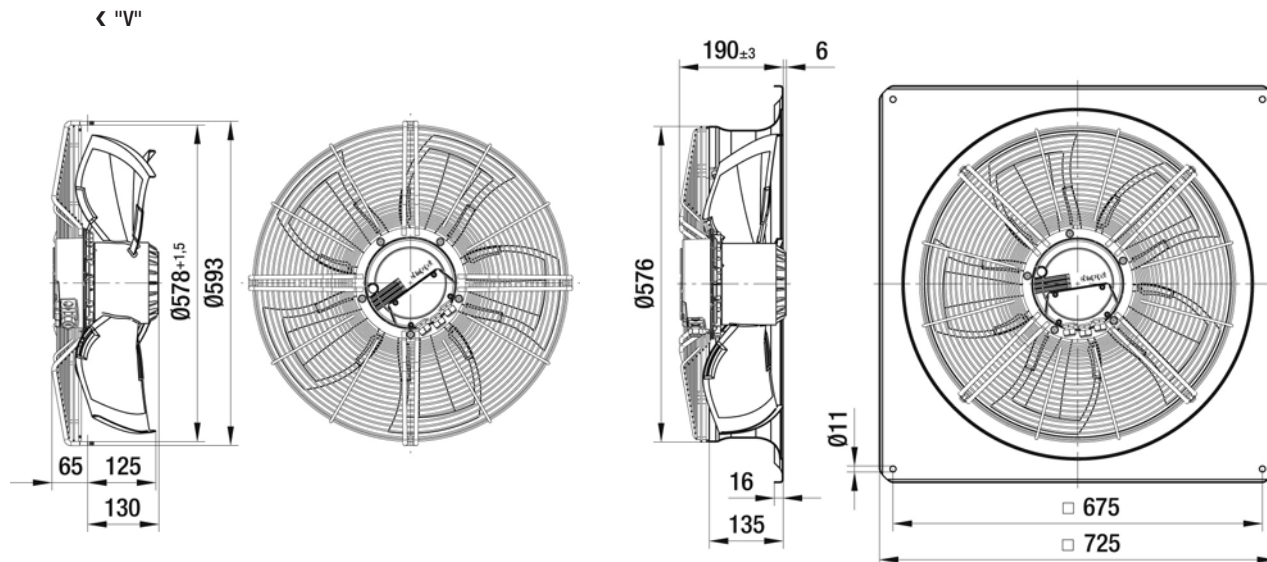
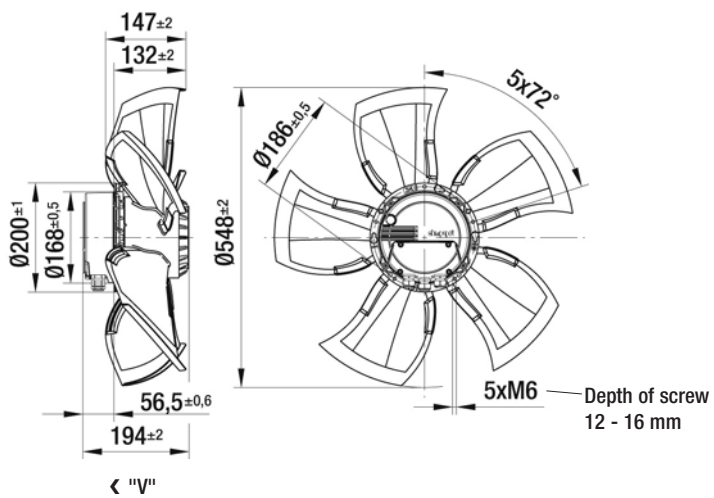
subject to alterations ① in operating point with maximum load (at 400 VAC)

## Characteristics (preliminary data!)



- **Mounting position / condensate discharges:** norm is shaft horizontal without condensate discharges or rotor down with 4 condensate discharges drilled into rotor; mounting position rotor on top on request

Selection	Cable exit	Direction of air flow			
Type	S/A/B				
*3G 560	S	"V"	A3G560-**** _**	S3G560-**** _**	W3G560-**** _**



# EC axial fans integrated electronics

S-Range, Ø 630



- **Material:** stator and electronics housing made of die-cast aluminium, rotor with injection-blow moulded blades made of PA 6 plastic ( fibre-glass reinforced)
- **Technical features:** control input 0-10 VDC / PWM, RS485 ebmBUS, alarm relay, integrated PID control, voltage supply for sensor, input for sensor 0-10 V respectively 4-20 mA, 0-10 V output for slave, PFC (passive), soft start, line undervoltage detection, phase failure detection, motor current limitation, over-temperature protected electronics and motor, locked-rotor protection
- **Direction of rotation:** counter-clockwise
- **Type of protection:** IP 44
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST are applied for

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Nominal data		Characteristic	Voltage range	Frequency	Speed/rpm	Max. power input <sup>(1)</sup>	Max. current draw <sup>(1)</sup>	Max. back pressure	Perm. amb. temp.	Mass A3G...	Mass S3G...	Mass W3G...	
Type	Motor	3~ VAC	Hz	min <sup>-1</sup>	kW	A	Pa	°C	kg	kg	kg		
*3G 630 <sup>(2)</sup>	M3G112-GA	①	380-480	50/60	1000	0,79	1,8	160	-25..+60	9,1	12,8	20,4	preliminary data!
*3G 630 <sup>(3)</sup>	M3G112-GA	②	380-480	50/60	1000	0,74	1,8	140	-25..+60	9,1	12,8	20,4	preliminary data!

subject to alterations

<sup>(1)</sup> in operating point with maximum load (at 400 VAC)

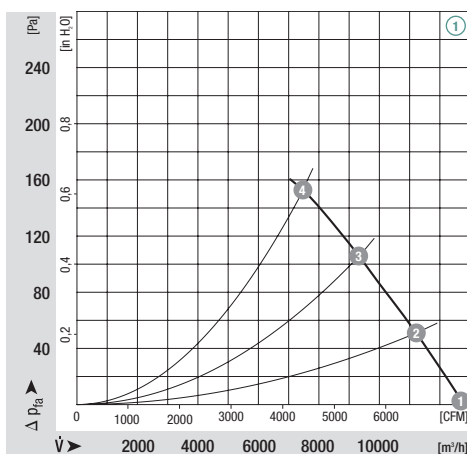
<sup>(2)</sup> determined with long nozzle

<sup>(3)</sup> determined with short nozzle

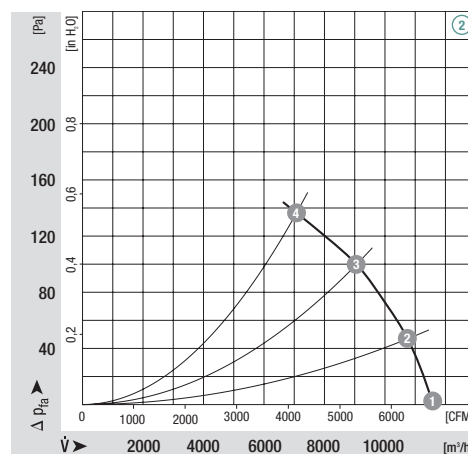
	n	P <sub>1</sub>	I	Lp <sub>A</sub>	η <sub>IL</sub>
	[min <sup>-1</sup> ]	[kW]	[A]	[dBA]	[%]
① ①	1000	0,58	1,4	68	65
① ②	1000	0,66	1,6	75	71
① ③	1000	0,72	1,7	71	68
① ④	1000	0,79	1,8	73	63

	n	P <sub>1</sub>	I	Lp <sub>A</sub>	η <sub>IL</sub>
	[min <sup>-1</sup> ]	[kW]	[A]	[dBA]	[%]
② ①	1000	0,63	1,5	74	46
② ②	1000	0,68	1,6	68	60
② ③	1000	0,72	1,7	72	61
② ④	1000	0,74	1,8	74	53




Characteristics (preliminary data!)

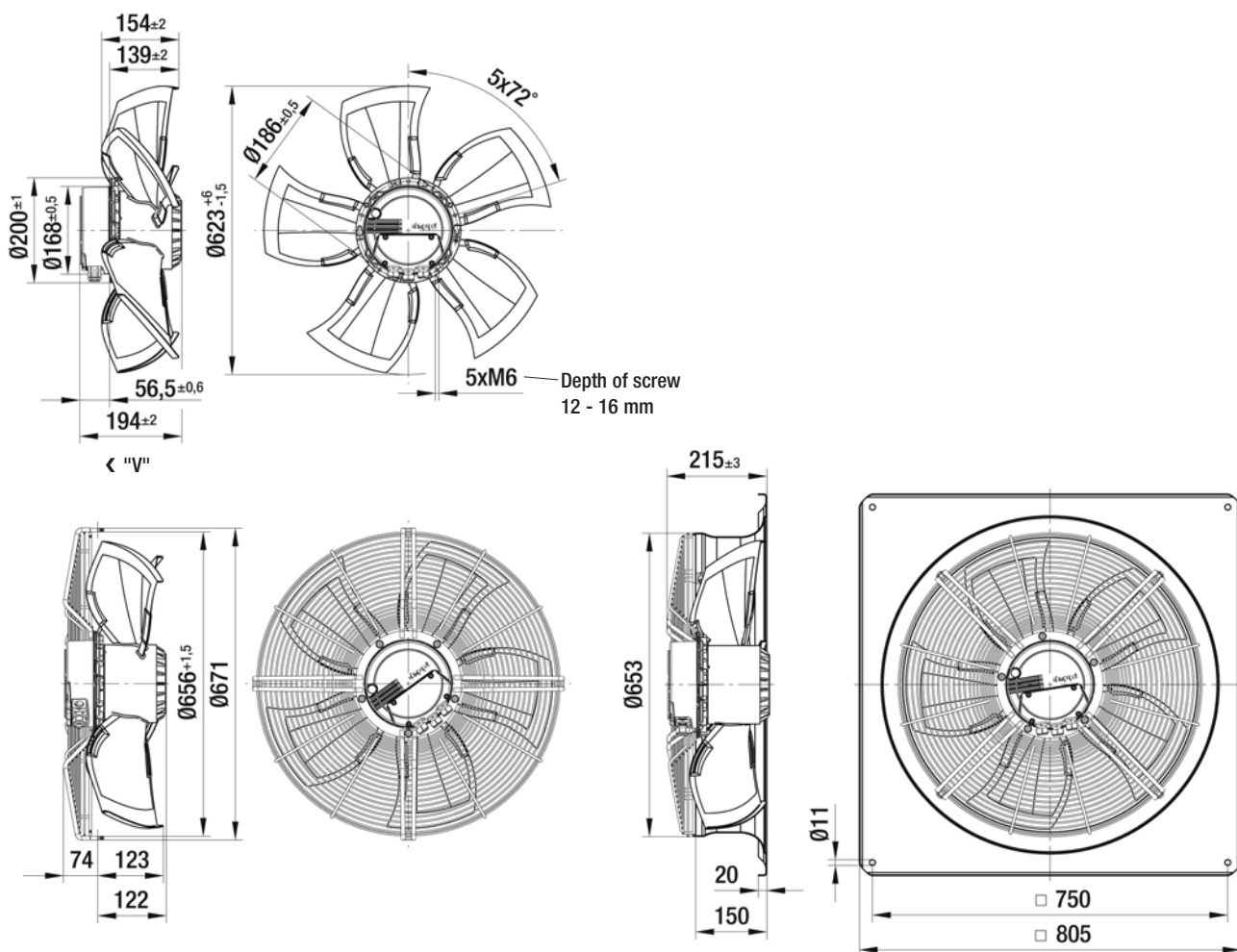


Characteristics (preliminary data!)



- **Mounting position / condensate discharges:** norm is shaft horizontal without condensate discharges or rotor down with 4 condensate discharges drilled into rotor; mounting position rotor on top on request

Selection	Cable exit	Direction of air flow			
Type	S/A/B				
*3G 630	S	"V"	A3G630-**** _**	S3G630-**** _**	W3G630-**** _**
*3G 630	S	"V"	A3G630-**** _**	S3G630-**** _**	W3G630-**** _**



# EC axial fans integrated electronics

S-Range, Ø 650



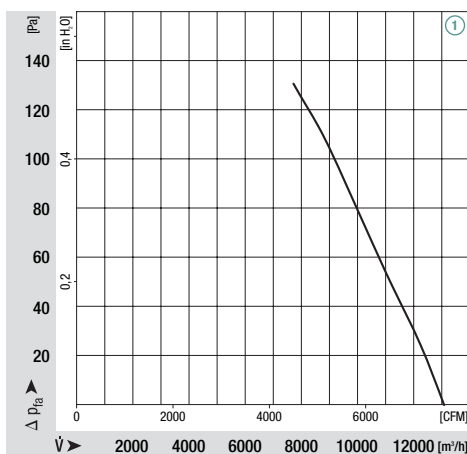
- **Material:** stator and electronics housing made of die-cast aluminium, rotor with injection-blow moulded blades made of PA 6 plastic ( fibre-glass reinforced)
- **Technical features:** control input 0-10 VDC / PWM, RS485 ebmBUS, alarm relay, integrated PID control, voltage supply for sensor, input for sensor 0-10 V respectively 4-20 mA, 0-10 V output for slave, PFC (passive), soft start, line undervoltage detection, phase failure detection, motor current limitation, over-temperature protected electronics and motor, locked-rotor protection
- **Direction of rotation:** counter-clockwise
- **Type of protection:** IP 44
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST are applied for

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Nominal data		Characteristic	Voltage range	Frequency	Speed/rpm	Max. power input <sup>(1)</sup>	Max. current draw <sup>(1)</sup>	Max. back pressure	Perm. amb. temp.	Mass A3G..	Mass S3G..	Mass W3G...	
Type	Motor	3~ VAC	Hz	min <sup>-1</sup>	kW	A	Pa	°C	kg	kg	kg		
*3G 650	M3G112-GA	① 380-480	50/60	890	0,70	1,6	130	-25..+60	9,2	13,1	21,5	preliminary data!	

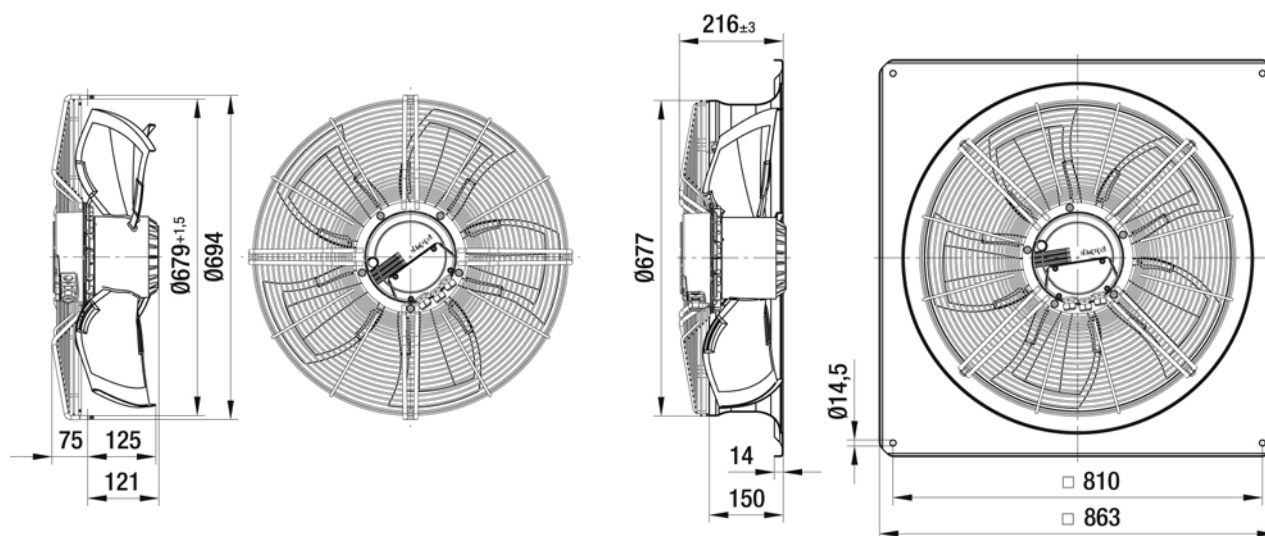
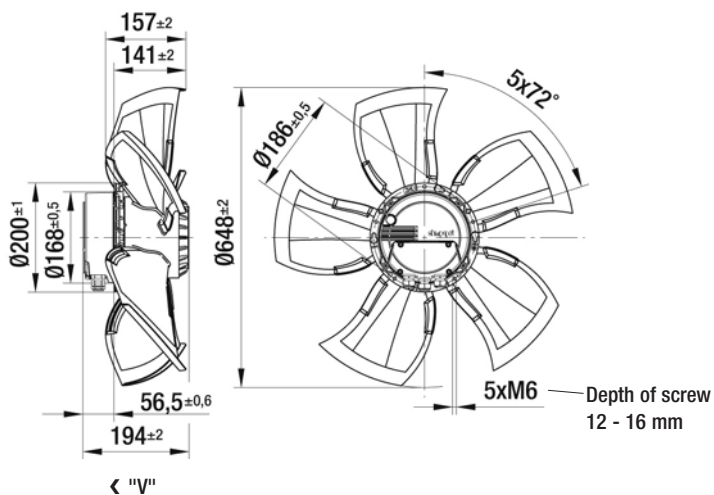
subject to alterations ① in operating point with maximum load (at 400 VAC)

## Characteristics (preliminary data!)



- **Mounting position / condensate discharges:** norm is shaft horizontal without condensate discharges or rotor down with 4 condensate discharges drilled into rotor; mounting position rotor on top on request

Selection	Cable exit	Direction of air flow			
Type	S/A/B				
*3G 650	S	"V"	A3G650-**** _**	S3G650-**** _**	W3G650-**** _**



# EC axial fans integrated electronics

S-Range, Ø 650



- **Material:** stator and electronics housing made of die-cast aluminium, rotor made of sheet steel (black, KTL coated), impeller blades made of die-cast aluminium
- **Technical features:** control input 0-10 VDC / PWM, RS485 ebmBUS, alarm relay, integrated PID control, voltage supply for sensor, input for sensor 0-10 V respectively 4-20 mA, 0-10 V output for slave, PFC (passive), soft start, line undervoltage detection, phase failure detection, motor current limitation, over-temperature protected electronics and motor, locked-rotor protection
- **Type of protection:** IP 54 according to DIN VDE 0470, part 1 (EN 60 529) category 2
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST
- **Mounting position / condensate discharges:** norm is shaft horizontal or rotor down with 4 condensate discharges drilled into rotor; mounting position rotor on top on request

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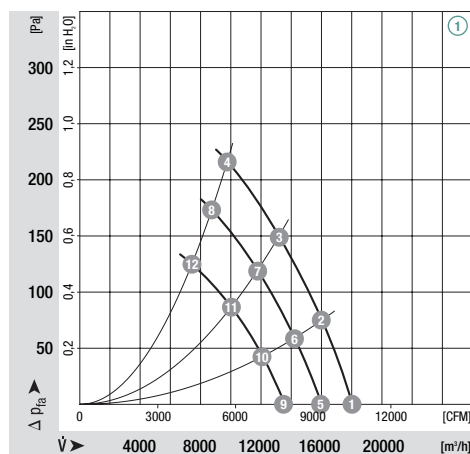
Nominal data		Characteristic	Voltage range	Frequency	Speed/rpm	Max. power input <sup>(1)</sup>	Max. current draw <sup>(1)</sup>	Max. back pressure	Perm. amb. temp.	Mass A3G..	Mass S3G..	Mass W3G...
Type	Motor	3~ VAC	Hz	min <sup>-1</sup>	kW	A	Pa	°C	kg	kg	kg	
*3G 650	M3G150-FF	①	200-240	50/60	1120	1,70	5,7	210	-25..+60	22,5	28,5	37,0
	M3G150-FF	①	380-480	50/60	1120	1,70	3,0	210	-25..+60	22,5	28,5	37,0

subject to alterations




<sup>(1)</sup> in operating point with maximum load (at 400 resp. 200 VAC)

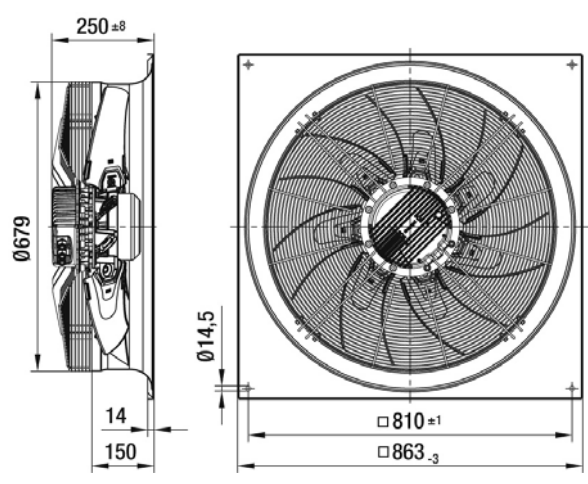
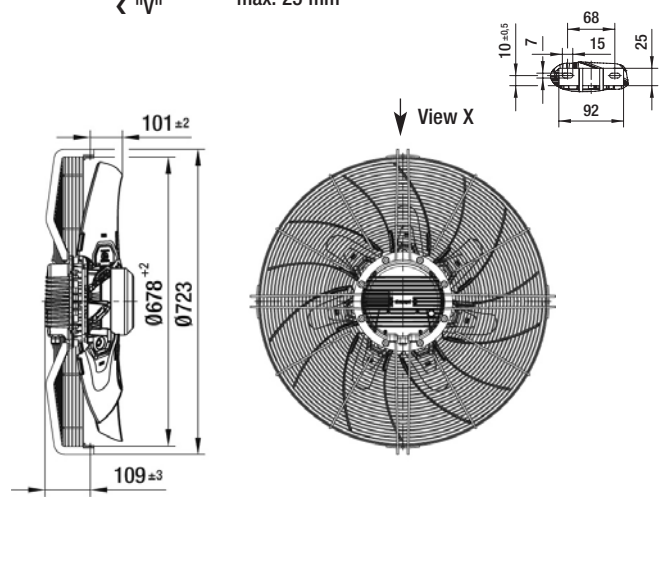
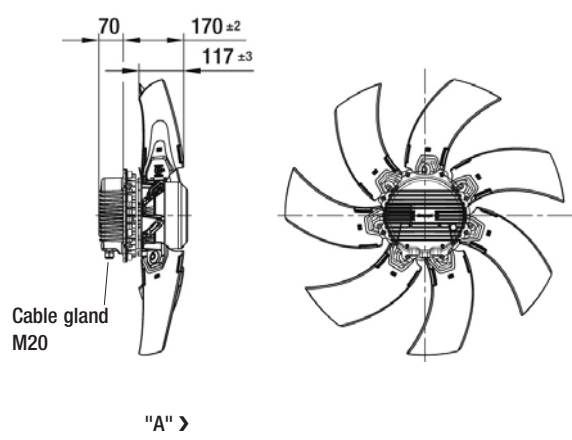
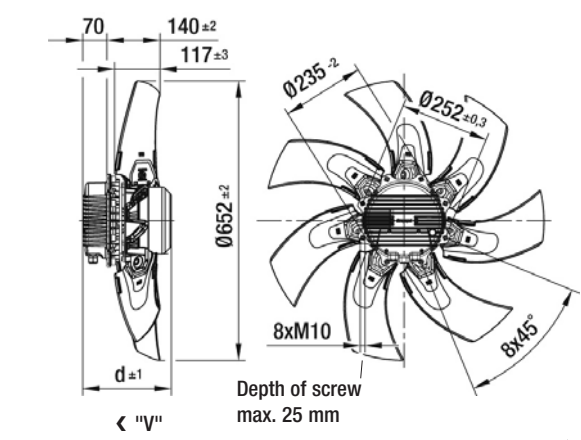
	n	P <sub>1</sub>	I <sup>(2)</sup>	Lp <sub>A</sub>	η <sub>HL</sub>		n	P <sub>1</sub>	I <sup>(2)</sup>	Lp <sub>A</sub>	η <sub>HL</sub>
	[min <sup>-1</sup> ]	[kW]	[A]	[dBA]	[%]		[min <sup>-1</sup> ]	[kW]	[A]	[dBA]	[%]
① ①	1120	1,29	2,1	79	78	① ⑨	850	0,58	1,1	73	78
① ②	1120	1,45	2,4	75	76	① ⑩	850	0,64	1,2	70	76
① ③	1120	1,53	2,5	77	69	① ⑪	850	0,70	1,3	71	69
① ④	1120	1,57	2,5	79	63	① ⑫	850	0,73	1,3	72	63
① ⑤	1000	0,93	1,6	76	78	<sup>(2)</sup> Current draw at 400 VAC Current draw at 200 VAC twice as high					
① ⑥	1000	1,03	1,8	73	76						
① ⑦	1000	1,13	1,9	74	69						
① ⑧	1000	1,16	2,0	76	63						

## Characteristics





Selection		Cable exit	Direction of air flow	Direction of rotation				Dimensions
Type	S/A/B	R/L	R/L					d
*3G 650	S	"V"	R	A3G650-AA11 -13	S3G650-BA11 -13	W3G650-CA11 -13		219,5
		"A"	L	A3G650-AA11 -14	---	---		219,5
	S	"V"	R	A3G650-AA07 -03	S3G650-BA07 -03	W3G650-CA07 -03		219,5
		"A"	L	A3G650-AA07 -04	---	---		219,5



# EC axial fans integrated electronics

S-Range, Ø 650



- **Material:** stator and electronics housing made of die-cast aluminium, rotor made of sheet steel (black, KTL coated), impeller blades made of die-cast aluminium
- **Technical features:** control input 0-10 VDC / PWM, RS485 ebmBUS, alarm relay, integrated PID control, voltage supply for sensor, input for sensor 0-10 V respectively 4-20 mA, 0-10 V output for slave, PFC (passive), soft start, line undervoltage detection, phase failure detection, motor current limitation, over-temperature protected electronics and motor, locked-rotor protection
- **Type of protection:** IP 54 according to DIN VDE 0470, part 1 (EN 60 529) category 2
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST
- **Mounting position / condensate discharges:** norm is shaft horizontal or rotor down with 4 condensate discharges drilled into rotor; mounting position rotor on top on request

ebm-papst • Muldingen

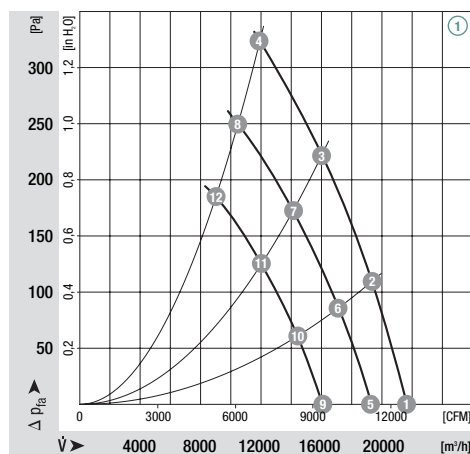
Nominal data		Characteristic	Voltage range	Frequency	Speed/rpm	Max. power input <sup>(1)</sup>	Max. current draw <sup>(1)</sup>	Max. back pressure	Perm. amb. temp.	Mass A3G..	Mass S3G..	Mass W3G...
Type	Motor	3~ VAC	Hz	min <sup>-1</sup>	kW	A	Pa	°C	kg	kg	kg	
*3G 650	M3G150-IF	①	200-240	50/60	1350	2,80	8,7	310	-25..+60	26,5	32,5	41,0
	M3G150-IF	①	380-480	50/60	1350	2,80	4,6	310	-25..+60	26,5	32,5	41,0




subject to alterations

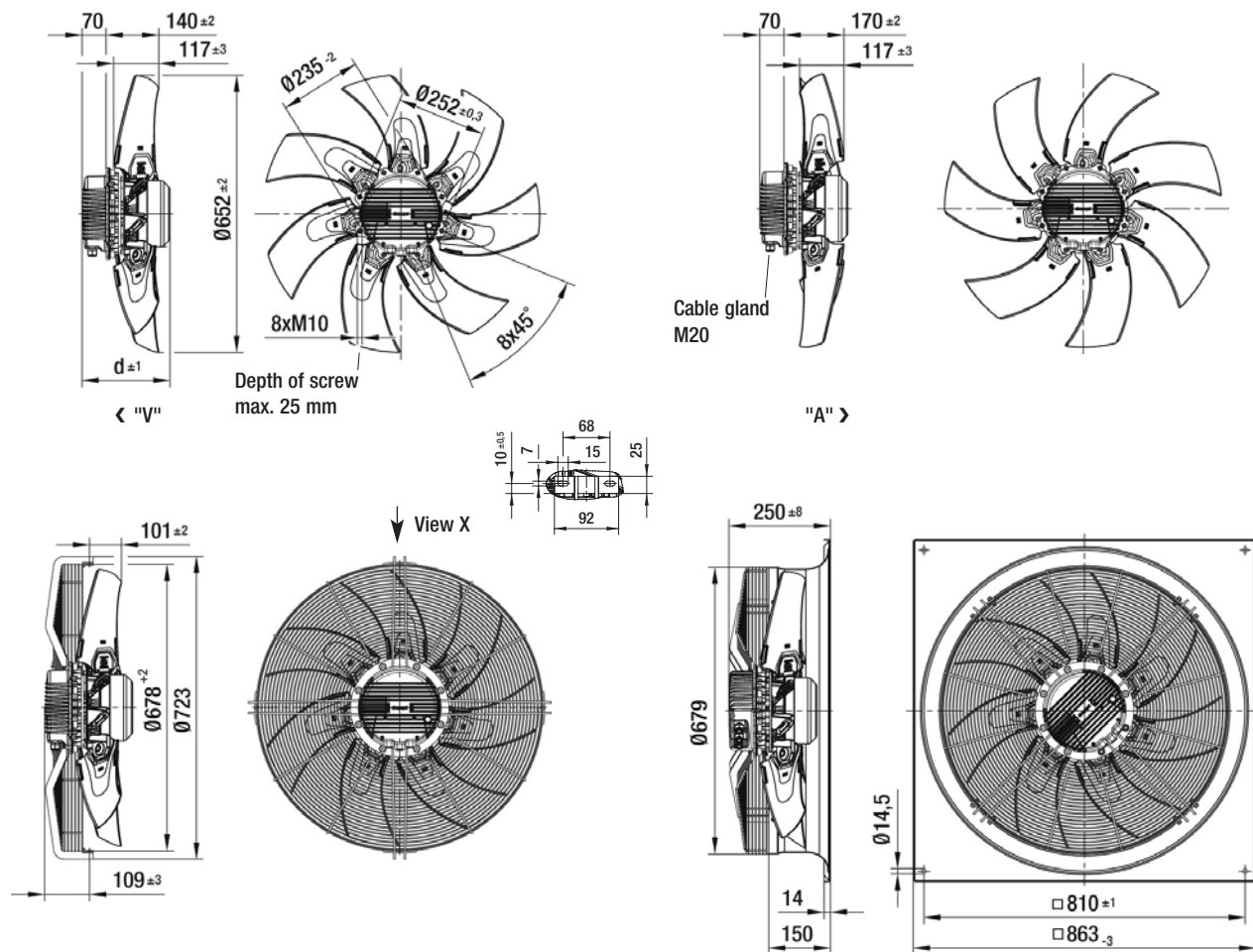
<sup>(1)</sup> in operating point with maximum load (at 400 resp. 200 VAC)

	n	P <sub>1</sub>	I <sup>(2)</sup>	Lp <sub>A</sub>	η <sub>HL</sub>		n	P <sub>1</sub>	I <sup>(2)</sup>	Lp <sub>A</sub>	η <sub>HL</sub>
	[min <sup>-1</sup> ]	[kW]	[A]	[dBA]	[%]		[min <sup>-1</sup> ]	[kW]	[A]	[dBA]	[%]
① ①	1350	2,18	3,4	83	78	① ⑨	1100	0,89	1,6	79	78
① ②	1350	2,42	3,8	80	76	① ⑩	1100	0,99	1,7	75	76
① ③	1350	2,63	4,1	80	69	① ⑪	1100	1,07	1,8	77	69
① ④	1350	2,75	4,3	83	63	① ⑫	1100	1,11	1,9	78	63
① ⑤	1200	1,53	2,5	80	78	<sup>(2)</sup> Current draw at 400 VAC Current draw at 200 VAC twice as high					
① ⑥	1200	1,72	2,7	77	76						
① ⑦	1200	1,84	2,9	77	69						
① ⑧	1200	1,93	3,1	80	63						

## Characteristics



Selection		Cable exit	Direction of air flow	Direction of rotation				Dimensions
Type	S/A/B	R/L						d
*3G 650	S	"V"	R	A3G650-AB07 -13	S3G650-BB07 -13	W3G650-CB07 -13		249,5
		"A"	L	A3G650-AB07 -14	---	---		249,5
	S	"V"	R	A3G650-AB02 -03	S3G650-BB02 -03	W3G650-CB02 -03		249,5
		"A"	L	A3G650-AB02 -04	---	---		249,5



# EC axial fans integrated electronics

S-Range, Ø 710



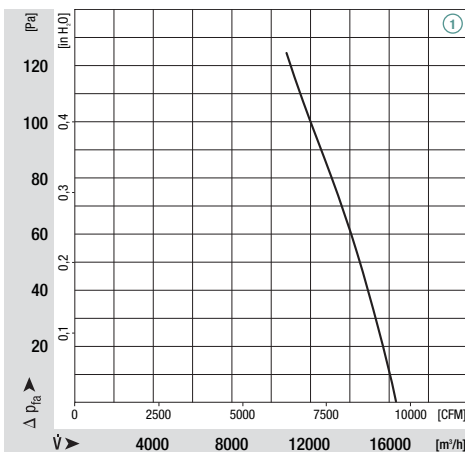
- **Material:** stator and electronics housing made of die-cast aluminium, rotor made of sheet steel (black, KTL coated), impeller blades made of die-cast aluminium
- **Technical features:** control input 0-10 VDC / PWM, RS485 ebmBUS, alarm relay, integrated PID control, voltage supply for sensor, input for sensor 0-10 V respectively 4-20 mA, 0-10 V output for slave, PFC (passive), soft start, line undervoltage detection, phase failure detection, motor current limitation, over-temperature protected electronics and motor, locked-rotor protection
- **Type of protection:** IP 54 according to DIN VDE 0470, part 1 (EN 60 529) category 2
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST
- **Mounting position / condensate discharges:** norm is shaft horizontal or rotor down with 4 condensate discharges drilled into rotor; mounting position rotor on top on request

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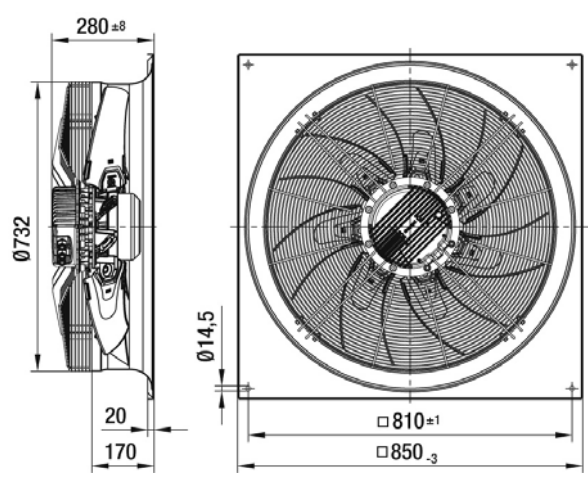
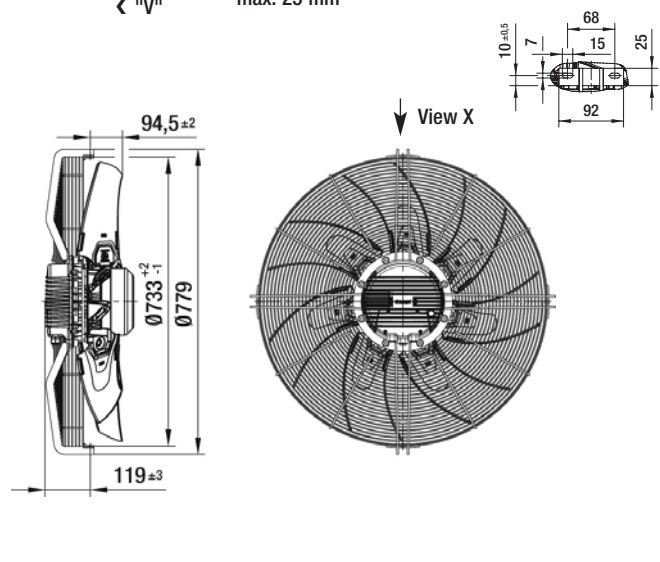
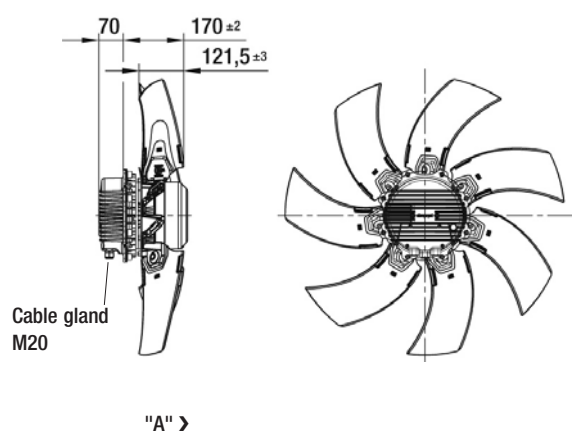
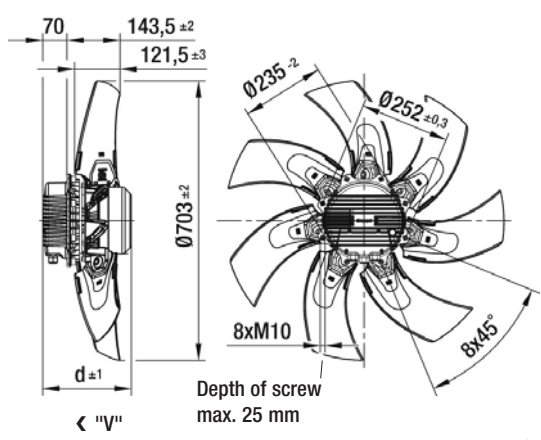
Nominal data		Characteristic	Voltage range	Frequency	Speed/rpm	Max. power input <sup>(1)</sup>	Max. current draw <sup>(1)</sup>	Max. back pressure	Perm. amb. temp.	Mass A3G..	Mass S3G..	Mass W3G...	
Type	Motor	3~ VAC	Hz	min <sup>-1</sup>	kW	A	Pa	°C	kg	kg	kg		
*3G 710	M3G150-FF	①	380-480	50/60	850	0,93	1,6	125	-25..+60	22,0	29,0	40,0	preliminary data!

subject to alterations ① in operating point with maximum load (at 400 VAC)

## Characteristics (preliminary data!)



Selection	Cable exit	Direction of air flow	Direction of rotation				Dimensions
Type	S/A/B	R/L					d
*3G 710	S	"V"	R	A3G710-AF** -03	S3G710-BF** -03	W3G710-CF** -03	219,5
		"A"	L	A3G710-AF** -04	---	---	219,5



# EC axial fans integrated electronics

S-Range, Ø 710



- **Material:** stator and electronics housing made of die-cast aluminium, rotor made of sheet steel (black, KTL coated), impeller blades made of die-cast aluminium
- **Technical features:** control input 0-10 VDC / PWM, RS485 ebmBUS, alarm relay, integrated PID control, voltage supply for sensor, input for sensor 0-10 V respectively 4-20 mA, 0-10 V output for slave, PFC (passive), soft start, line undervoltage detection, phase failure detection, motor current limitation, over-temperature protected electronics and motor, locked-rotor protection
- **Type of protection:** IP 54 according to DIN VDE 0470, part 1 (EN 60 529) category 2
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST
- **Mounting position / condensate discharges:** norm is shaft horizontal or rotor down with 4 condensate discharges drilled into rotor; mounting position rotor on top on request

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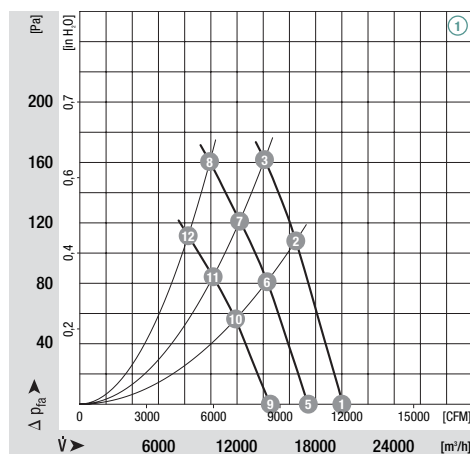
Nominal data		Characteristic	Voltage range	Frequency	Speed/rpm	Max. power input <sup>(1)</sup>	Max. current draw <sup>(1)</sup>	Max. back pressure	Perm. amb. temp.	Mass A3G..	Mass S3G..	Mass W3G...
Type	Motor	3~ VAC	Hz	min <sup>-1</sup>	kW	A	Pa	°C	kg	kg	kg	
*3G 710	M3G150-FF	①	200-240	50/60	1040	1,60	5,5	160	-25..+60	22,5	29,5	40,5
	M3G150-FF	①	380-480	50/60	1040	1,60	2,9	160	-25..+60	22,5	29,5	40,5




subject to alterations

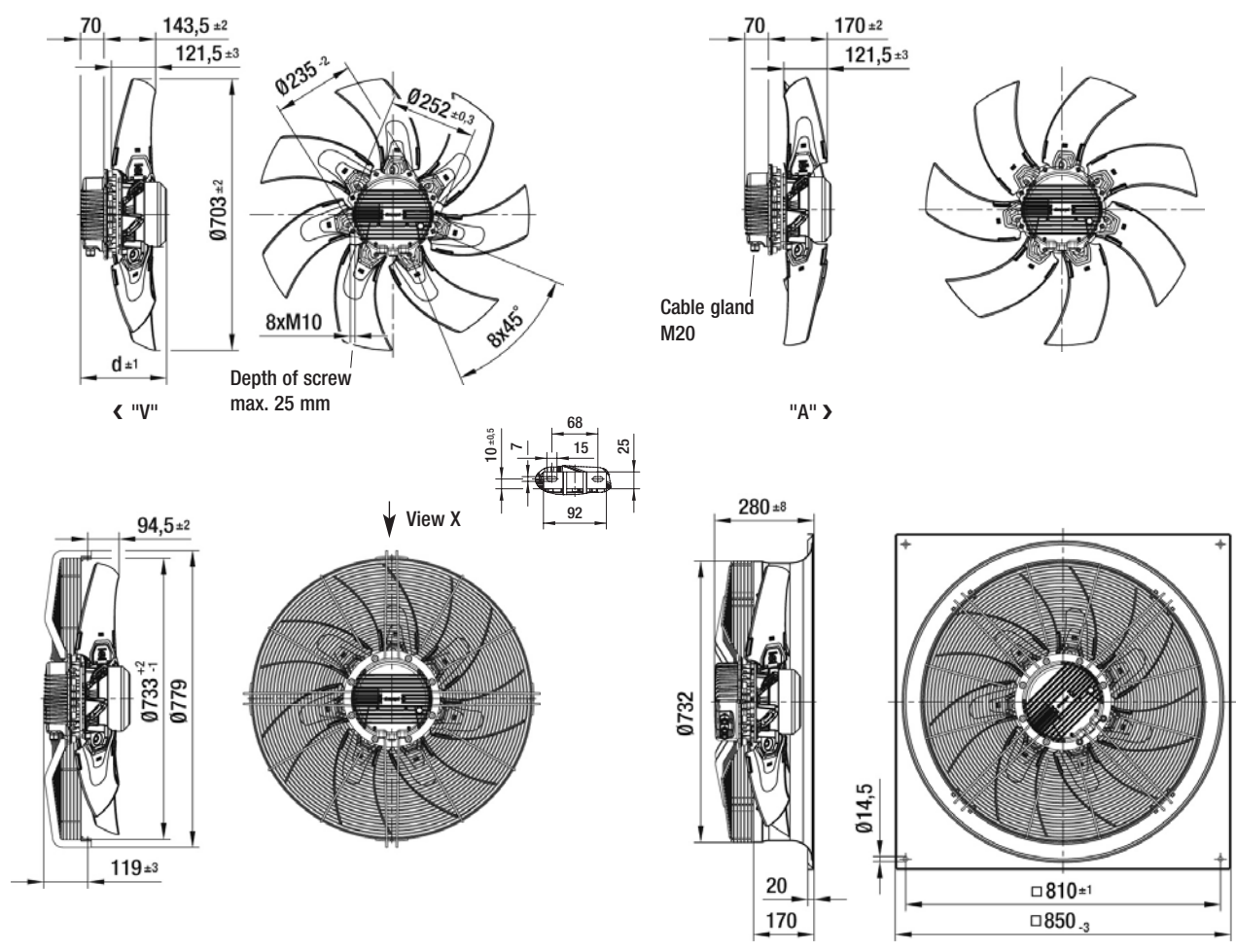
<sup>(1)</sup> in operating point with maximum load (at 400 resp. 200 VAC)

	n	P <sub>1</sub>	I <sup>(2)</sup>	Lp <sub>A</sub>	η <sub>HL</sub>		n	P <sub>1</sub>	I <sup>(2)</sup>	Lp <sub>A</sub>	η <sub>HL</sub>
	[min <sup>-1</sup> ]	[kW]	[A]	[dBA]	[%]		[min <sup>-1</sup> ]	[kW]	[A]	[dBA]	[%]
① ①	1040	1,30	2,2	76	75	① ⑨	750	0,50	1,0	68	75
① ②	1040	1,52	2,5	75	71	① ⑩	750	0,59	1,1	67	71
① ③	1040	1,58	2,6	75	65	① ⑪	750	0,61	1,1	68	65
① ④	---	---	---	---	---	① ⑫	750	0,63	1,2	67	57
① ⑤	900	0,85	1,5	72	75	<sup>(2)</sup> Current draw at 400 VAC Current draw at 200 VAC twice as high					
① ⑥	900	1,00	1,7	72	71						
① ⑦	900	1,04	1,8	72	65						
① ⑧	900	1,07	1,8	72	57						

## Characteristics



Selection		Cable exit	Direction of air flow	Direction of rotation				Dimensions
Type	S/A/B	R/L	R/L					d
*3G 710	S	"V"	R	A3G710-AC12 -13	S3G710-BC12 -13	W3G710-CC12 -13		219,5
		"A"	L	A3G710-AC12 -14	---	---		219,5
	S	"V"	R	A3G710-AC08 -03	S3G710-BC08 -03	W3G710-CC08 -03		219,5
		"A"	L	A3G710-AC08 -04	---	---		219,5



# EC axial fans integrated electronics

S-Range, Ø 710



- **Material:** stator and electronics housing made of die-cast aluminium, rotor made of sheet steel (black, KTL coated), impeller blades made of die-cast aluminium
- **Technical features:** control input 0-10 VDC / PWM, RS485 ebmBUS, alarm relay, integrated PID control, voltage supply for sensor, input for sensor 0-10 V respectively 4-20 mA, 0-10 V output for slave, PFC (passive), soft start, line undervoltage detection, phase failure detection, motor current limitation, over-temperature protected electronics and motor, locked-rotor protection
- **Type of protection:** IP 54 according to DIN VDE 0470, part 1 (EN 60 529) category 2
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST
- **Mounting position / condensate discharges:** norm is shaft horizontal or rotor down with 4 condensate discharges drilled into rotor; mounting position rotor on top on request

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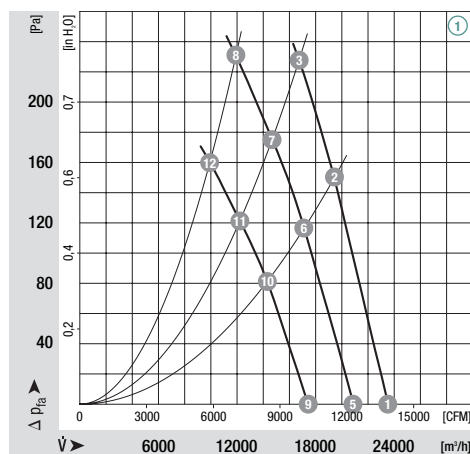
Nominal data		Characteristic	Voltage range	Frequency	Speed/rpm	Max. power input <sup>(1)</sup>	Max. current draw <sup>(1)</sup>	Max. back pressure	Perm. amb. temp.	Mass A3G..	Mass S3G..	Mass W3G...
Type	Motor	3~ VAC	Hz	min <sup>-1</sup>	kW	A	Pa	°C	kg	kg	kg	
*3G 710	M3G150-IF	①	200-240	50/60	1230	2,60	8,4	230	-25..+60	26,5	33,5	44,5
	M3G150-IF	①	380-480	50/60	1230	2,60	4,5	230	-25..+60	26,5	33,5	44,5

subject to alterations




<sup>(1)</sup> in operating point with maximum load (at 400 resp. 200 VAC)

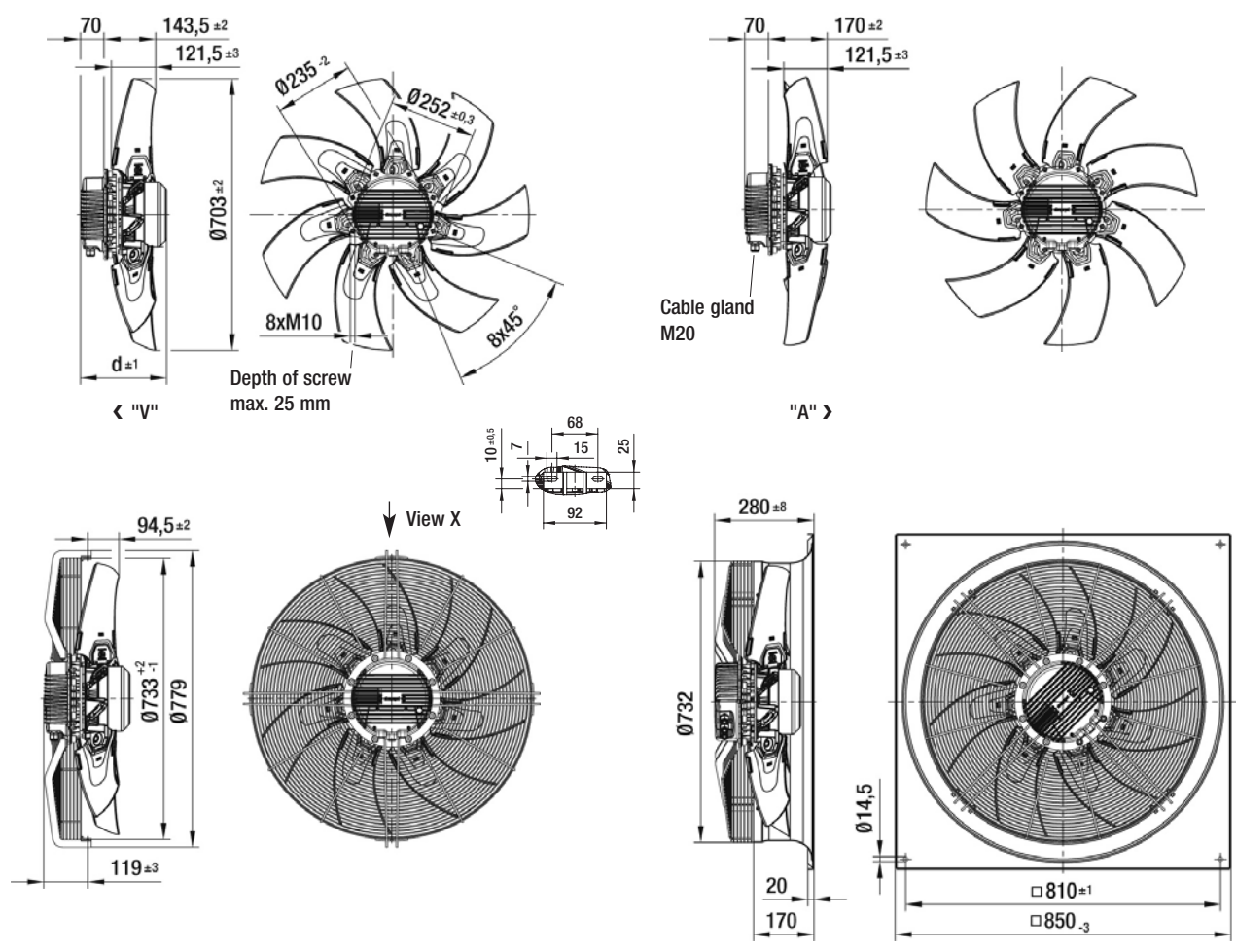
	n	P <sub>1</sub>	I <sup>(2)</sup>	Lp <sub>A</sub>	η <sub>HL</sub>	n	P <sub>1</sub>	I <sup>(2)</sup>	Lp <sub>A</sub>	η <sub>HL</sub>	
	[min <sup>-1</sup> ]	[kW]	[A]	[dBA]	[%]	[min <sup>-1</sup> ]	[kW]	[A]	[dBA]	[%]	
① ①	1230	2,13	3,3	79	75	① ⑨	900	0,87	1,5	72	75
① ②	1230	2,49	3,9	79	71	① ⑩	900	1,02	1,8	72	71
① ③	1230	2,59	4,0	79	65	① ⑪	900	1,06	1,8	72	65
① ④	---	---	---	---	---	① ⑫	900	1,09	1,9	72	57
① ⑤	1080	1,46	2,4	77	75	<sup>(2)</sup> Current draw at 400 VAC Current draw at 200 VAC twice as high					
① ⑥	1080	1,71	2,7	76	71						
① ⑦	1080	1,77	2,8	76	65						
① ⑧	1080	1,83	2,9	77	57						

## Characteristics





Selection		Cable exit	Direction of air flow	Direction of rotation				Dimensions
Type	S/A/B	R/L	R/L					d
*3G 710	S	"V"	R	A3G710-AB10 -13	S3G710-BB10 -13	W3G710-CB10 -13		249,5
		"A"	L	A3G710-AB10 -14	---	---		249,5
	S	"V"	R	A3G710-AB06 -03	S3G710-BB06 -03	W3G710-CB06 -03		249,5
		"A"	L	A3G710-AB06 -04	---	---		249,5



# EC axial fans integrated electronics

S-Range, Ø 800



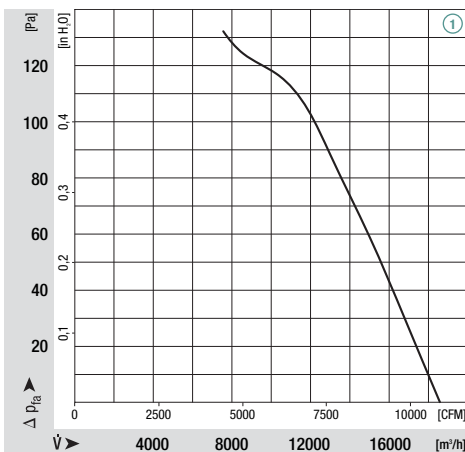
- **Material:** stator and electronics housing made of die-cast aluminium, rotor made of sheet steel (black, KTL coated), impeller blades made of die-cast aluminium
- **Technical features:** control input 0-10 VDC / PWM, RS485 ebmBUS, alarm relay, integrated PID control, voltage supply for sensor, input for sensor 0-10 V respectively 4-20 mA, 0-10 V output for slave, PFC (passive), soft start, line undervoltage detection, phase failure detection, motor current limitation, over-temperature protected electronics and motor, locked-rotor protection
- **Type of protection:** IP 54 according to DIN VDE 0470, part 1 (EN 60 529) category 2
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST
- **Mounting position / condensate discharges:** norm is shaft horizontal or rotor down with 4 condensate discharges drilled into rotor; mounting position rotor on top on request




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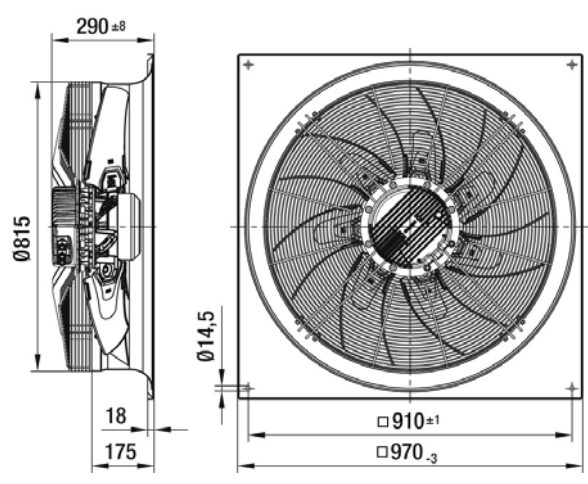
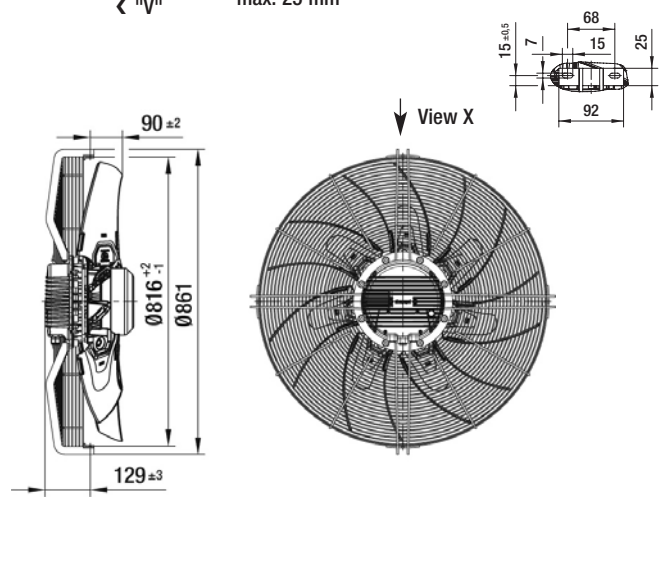
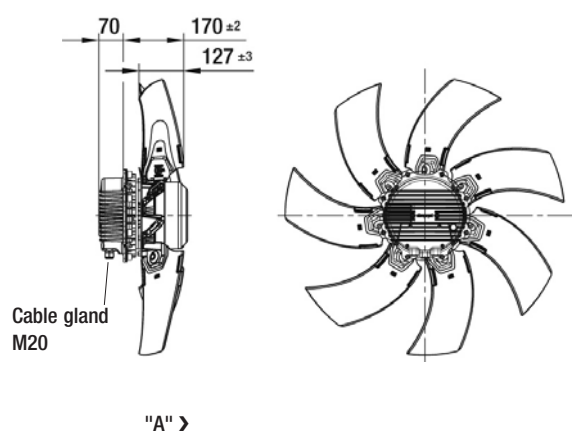
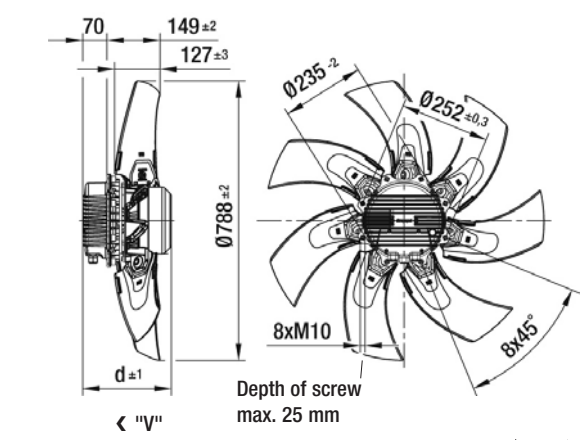
Nominal data		Characteristic	Voltage range	Frequency	Speed/rpm	Max. power input <sup>(1)</sup>	Max. current draw <sup>(1)</sup>	Max. back pressure	Perm. amb. temp.	Mass A3G..	Mass S3G..	Mass W3G...	
Type	Motor	3~ VAC	Hz	min <sup>-1</sup>	kW	A	Pa	°C	kg	kg	kg		
*3G 800	M3G150-FF	① 380-480	50/60	760	0,93	1,6	130	-25..+60	22,5	30,0	44,0	preliminary data!	

subject to alterations ① in operating point with maximum load (at 400 VAC)

## Characteristics (preliminary data!)



Selection		Cable exit	Direction of air flow	Direction of rotation	Dimensions		
Type	S/A/B	R/L			d		
*3G 800	S	"V"	R				219,5
		"A"	L				219,5
				A3G800-AF** -03	S3G800-BF** -03	W3G800-CF** -03	
				A3G800-AF** -04	---	---	



# EC axial fans integrated electronics

S-Range, Ø 800



- **Material:** stator and electronics housing made of die-cast aluminium, rotor made of sheet steel (black, KTL coated), impeller blades made of die-cast aluminium
- **Technical features:** control input 0-10 VDC / PWM, RS485 eBUS, alarm relay, integrated PID control, voltage supply for sensor, input for sensor 0-10 V respectively 4-20 mA, 0-10 V output for slave, PFC (passive), soft start, line undervoltage detection, phase failure detection, motor current limitation, over-temperature protected electronics and motor, locked-rotor protection
- **Type of protection:** IP 54 according to DIN VDE 0470, part 1 (EN 60 529) category 2
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST
- **Mounting position / condensate discharges:** norm is shaft horizontal or rotor down with 4 condensate discharges drilled into rotor; mounting position rotor on top on request

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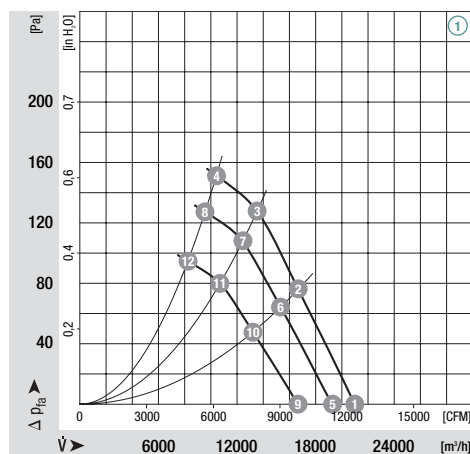
Nominal data		Characteristic	Voltage range	Frequency	Speed/rpm	Max. power input <sup>(1)</sup>	Max. current draw <sup>(1)</sup>	Max. back pressure	Perm. amb. temp.	Mass A3G..	Mass S3G..	Mass W3G...
Type	Motor	3~ VAC	Hz	min <sup>-1</sup>	kW	A	Pa	°C	kg	kg	kg	
*3G 800	M3G150-FF	①	200-240	50/60	860	1,40	4,8	150	-25..+60	23,0	30,5	44,5
	M3G150-FF	①	380-480	50/60	860	1,40	2,5	150	-25..+60	23,0	30,5	44,5




subject to alterations

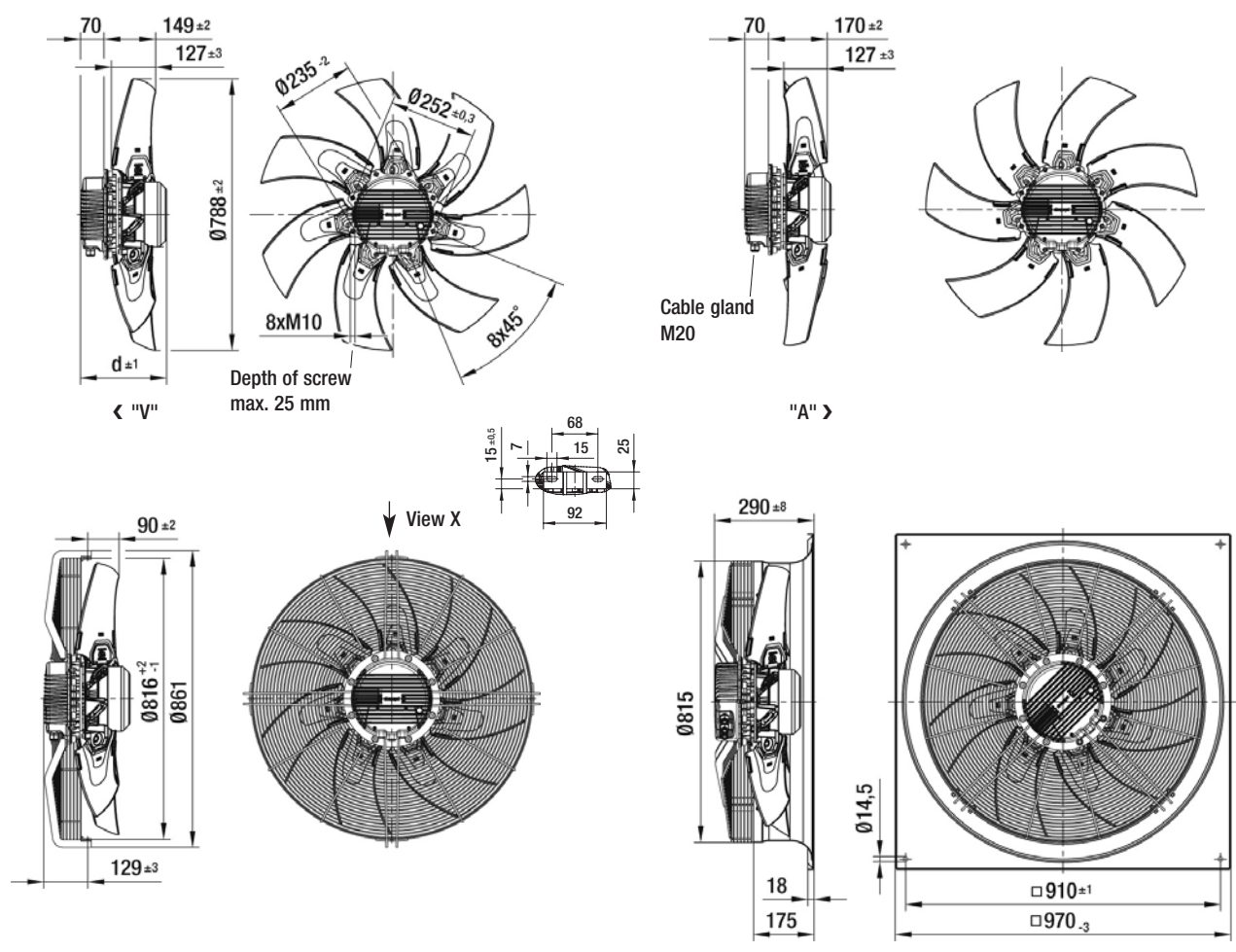
<sup>(1)</sup> in operating point with maximum load (at 400 resp. 200 VAC)

	n	P <sub>1</sub>	I <sup>(2)</sup>	Lp <sub>A</sub>	η <sub>HL</sub>		n	P <sub>1</sub>	I <sup>(2)</sup>	Lp <sub>A</sub>	η <sub>HL</sub>
	[min <sup>-1</sup> ]	[kW]	[A]	[dBA]	[%]		[min <sup>-1</sup> ]	[kW]	[A]	[dBA]	[%]
① ①	860	0,96	1,7	72	69	① ⑨	680	0,48	0,9	67	69
① ②	860	1,16	2,0	75	63	① ⑩	680	0,59	1,1	69	63
① ③	860	1,21	2,0	77	58	① ⑪	680	0,61	1,1	72	58
① ④	860	1,21	2,0	78	46	① ⑫	680	0,61	1,1	72	46
① ⑤	790	0,75	1,3	70	69	<sup>(2)</sup> Current draw at 400 VAC Current draw at 200 VAC twice as high					
① ⑥	790	0,91	1,6	73	63						
① ⑦	790	0,95	1,7	76	58						
① ⑧	790	0,95	1,7	76	46						

## Characteristics



Selection		Cable exit	Direction of air flow	Direction of rotation				Dimensions
Type	S/A/B	R/L	R/L					d
*3G 800	S	"V"	R	A3G800-AA06 -13	S3G800-BA06 -13	W3G800-CA06 -13		219,5
		"A"	L	A3G800-AA06 -14	---	---		219,5
	S	"V"	R	A3G800-AA02 -03	S3G800-BA02 -03	W3G800-CA02 -03		219,5
		"A"	L	A3G800-AA02 -04	---	---		219,5



# EC axial fans integrated electronics

S-Range, Ø 800



- **Material:** stator and electronics housing made of die-cast aluminium, rotor made of sheet steel (black, KTL coated), impeller blades made of die-cast aluminium
- **Technical features:** control input 0-10 VDC / PWM, RS485 ebmBUS, alarm relay, integrated PID control, voltage supply for sensor, input for sensor 0-10 V respectively 4-20 mA, 0-10 V output for slave, PFC (passive), soft start, line undervoltage detection, phase failure detection, motor current limitation, over-temperature protected electronics and motor, locked-rotor protection
- **Type of protection:** IP 54 according to DIN VDE 0470, part 1 (EN 60 529) category 2
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST
- **Mounting position / condensate discharges:** norm is shaft horizontal or rotor down with 4 condensate discharges drilled into rotor; mounting position rotor on top on request

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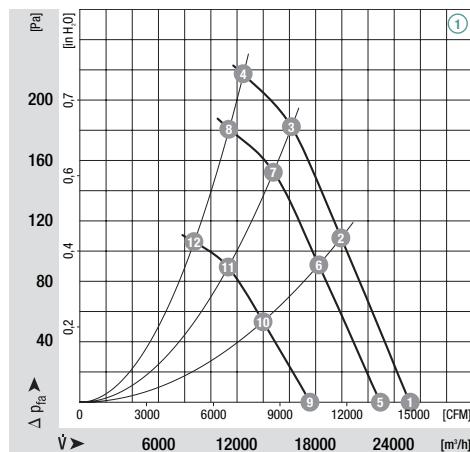
Nominal data		Characteristic	Voltage range	Frequency	Speed/rpm	Max. power input <sup>(1)</sup>	Max. current draw <sup>(1)</sup>	Max. back pressure	Perm. amb. temp.	Mass A3G..	Mass S3G..	Mass W3G...
Type	Motor	3~ VAC	Hz	min <sup>-1</sup>	kW	A	Pa	°C	kg	kg	kg	
*3G 800	M3G150-IF	①	200-240	50/60	1030	2,20	7,0	220	-25..+60	27,0	34,5	48,5
	M3G150-IF	①	380-480	50/60	1030	2,20	3,7	220	-25..+60	27,0	34,5	48,5




subject to alterations

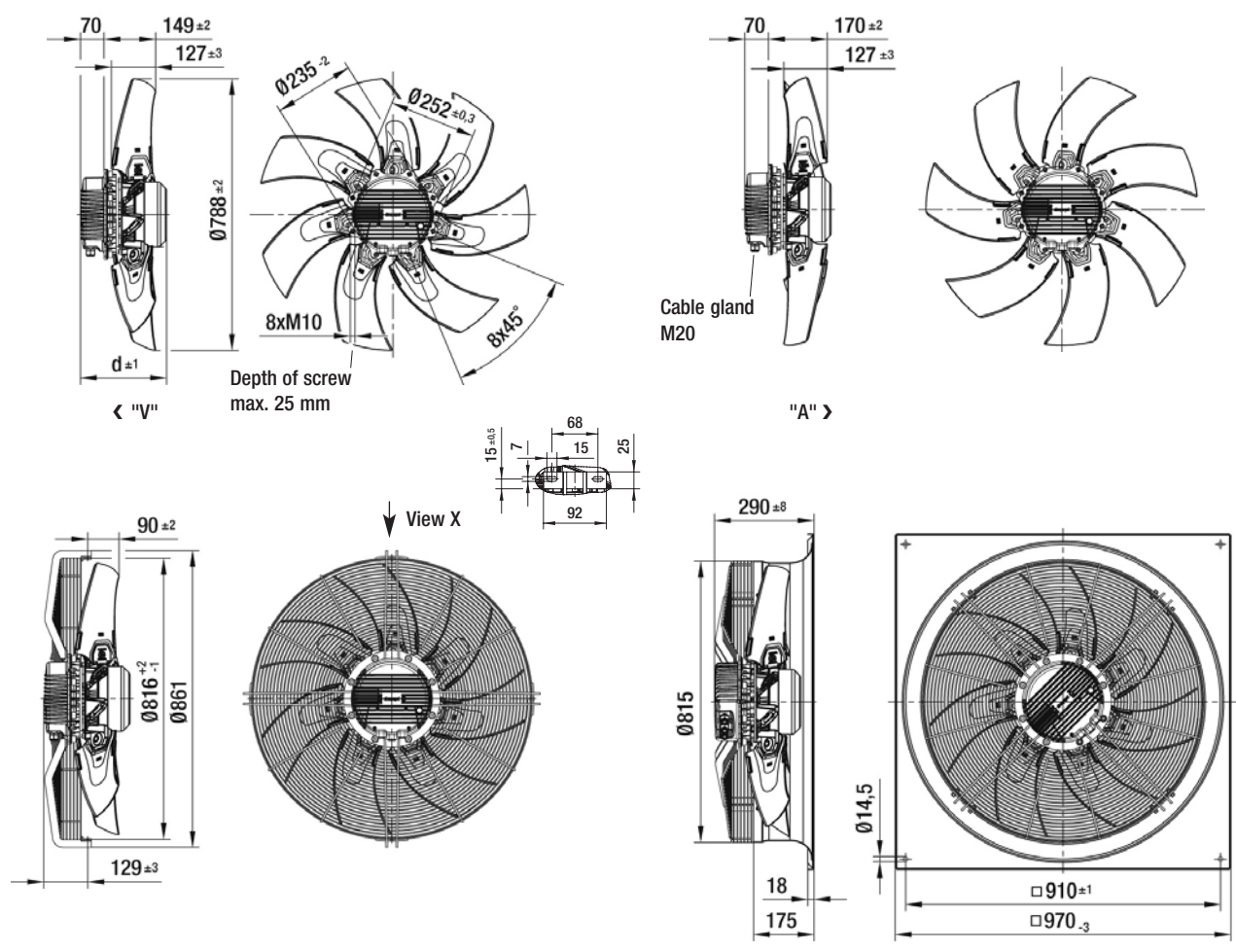
<sup>(1)</sup> in operating point with maximum load (at 400 resp. 200 VAC)

	n	P <sub>1</sub>	I <sup>(2)</sup>	Lp <sub>A</sub>	η <sub>HL</sub>		n	P <sub>1</sub>	I <sup>(2)</sup>	Lp <sub>A</sub>	η <sub>HL</sub>
	[min <sup>-1</sup> ]	[kW]	[A]	[dBA]	[%]		[min <sup>-1</sup> ]	[kW]	[A]	[dBA]	[%]
① ①	1030	1,64	2,6	78	69	① ⑨	720	0,57	1,1	68	69
① ②	1030	1,99	3,1	80	63	① ⑩	720	0,70	1,3	71	63
① ③	1030	2,08	3,3	83	58	① ⑪	720	0,73	1,3	73	58
① ④	1030	2,09	3,3	84	46	① ⑫	720	0,73	1,3	73	46
① ⑤	940	1,26	2,1	75	69	<sup>(2)</sup> Current draw at 400 VAC Current draw at 200 VAC twice as high					
① ⑥	940	1,53	2,5	77	63						
① ⑦	940	1,60	2,6	80	58						
① ⑧	940	1,60	2,6	80	46						

## Characteristics



Selection		Cable exit	Direction of air flow	Direction of rotation				Dimensions
Type	S/A/B	R/L	R/L					d
*3G 800	S	"V"	R	A3G800-AB08 -13	S3G800-BB08 -13	W3G800-CB08 -13		249,5
		"A"	L	A3G800-AB08 -14	---	---		249,5
	S	"V"	R	A3G800-AB01 -03	S3G800-BB01 -03	W3G800-CB01 -03		249,5
		"A"	L	A3G800-AB01 -04	---	---		249,5



# EC axial fans integrated electronics

S-Range, Ø 800



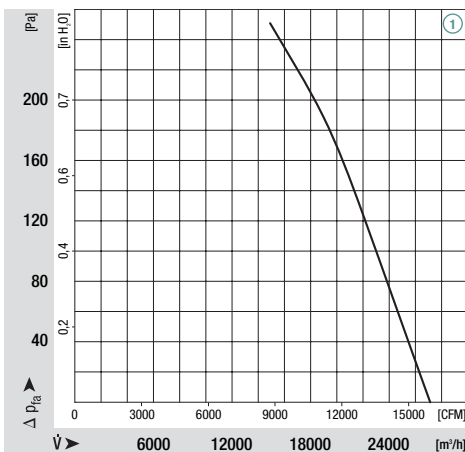
- **Material:** stator and electronics housing made of die-cast aluminium, rotor made of sheet steel (black, KTL coated), impeller blades made of die-cast aluminium
- **Technical features:** control input 0-10 VDC / PWM, RS485 ebmBUS, alarm relay, integrated PID control, voltage supply for sensor, input for sensor 0-10 V respectively 4-20 mA, 0-10 V output for slave, PFC (passive), soft start, line undervoltage detection, phase failure detection, motor current limitation, over-temperature protected electronics and motor, locked-rotor protection
- **Type of protection:** IP 54 according to DIN VDE 0470, part 1 (EN 60 529) category 2
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST
- **Mounting position / condensate discharges:** norm is shaft horizontal or rotor down with 4 condensate discharges drilled into rotor; mounting position rotor on top on request

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Nominal data		Characteristic	Voltage range	Frequency	Speed/rpm	Max. power input <sup>(1)</sup>	Max. current draw <sup>(1)</sup>	Max. back pressure	Perm. amb. temp.	Mass A3G..	Mass S3G..	Mass W3G...	
Type	Motor	3~ VAC	Hz	min <sup>-1</sup>	kW	A	Pa	°C	kg	kg	kg		
*3G 800	M3G150-NA	①	380-480	50/60	1110	2,79	4,6	250	-25..+60	31,5	39,0	53,0	preliminary data!

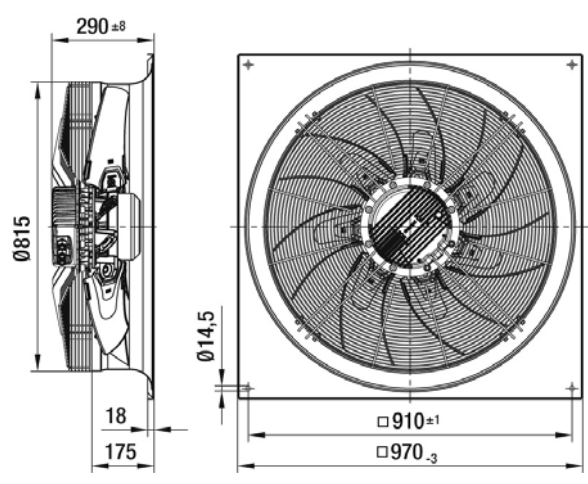
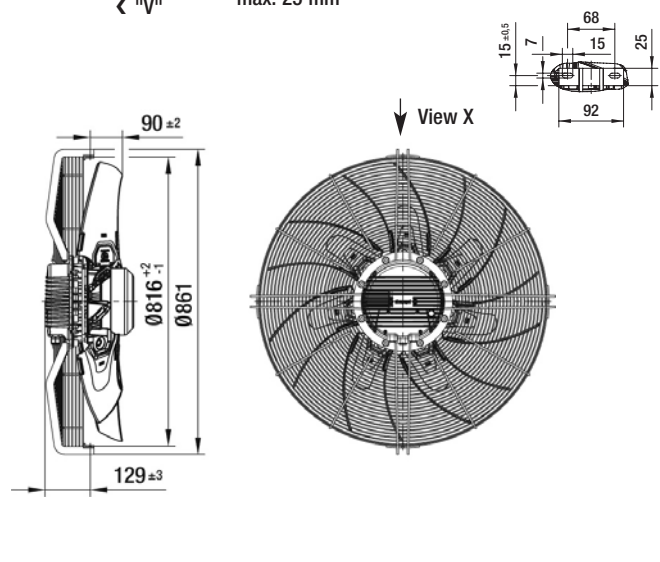
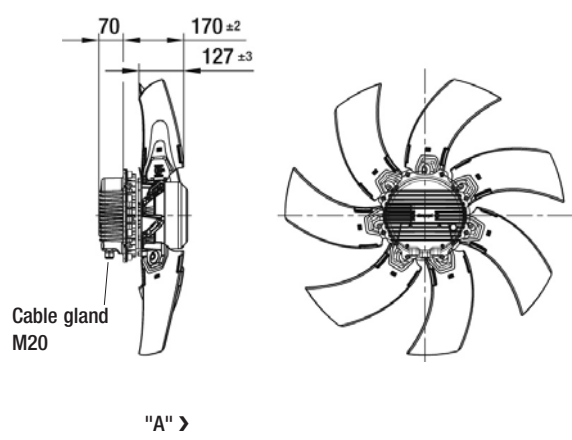
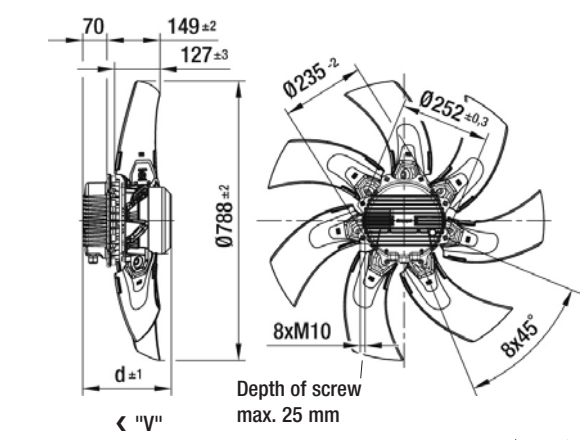
subject to alterations ① in operating point with maximum load (at 400 VAC)

## Characteristics (preliminary data!)



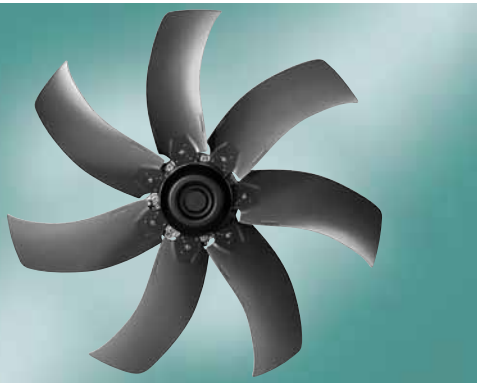


Selection		Cable exit	Direction of air flow	Direction of rotation				Dimensions
Type	S/A/B	R/L	R/L					d
*3G 800	S	"V"	R	A3G800-AE** -03	S3G800-BE** -03	W3G800-CE** -03	284,5	
		"A"	L	A3G800-AE** -04	---	---	284,5	



# EC axial fans integrated electronics

S-Range, Ø 910



- **Material:** stator and electronics housing made of die-cast aluminium, rotor made of sheet steel (black, KTL coated), impeller blades made of die-cast aluminium
- **Technical features:** control input 0-10 VDC / PWM, RS485 eBUS, alarm relay, integrated PID control, voltage supply for sensor, input for sensor 0-10 V respectively 4-20 mA, 0-10 V output for slave, PFC (passive), soft start, line undervoltage detection, phase failure detection, motor current limitation, over-temperature protected electronics and motor, locked-rotor protection
- **Type of protection:** IP 54 according to DIN VDE 0470, part 1 (EN 60 529) category 2
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST
- **Mounting position / condensate discharges:** norm is shaft horizontal or rotor down with 4 condensate discharges drilled into rotor; mounting position rotor on top on request

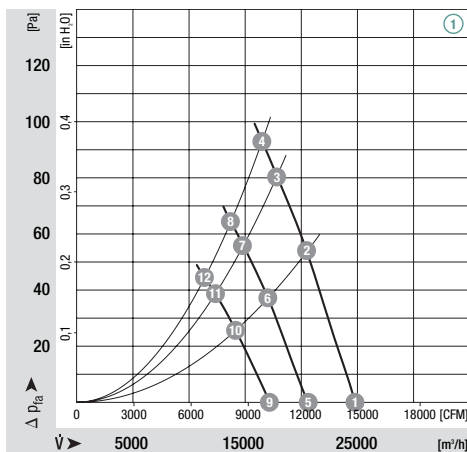
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Nominal data		Characteristic	Voltage range	Frequency	Speed/rpm	Max. power input <sup>(1)</sup>	Max. current draw <sup>(1)</sup>	Max. back pressure	Perm. amb. temp.	Mass A3G..	Mass S3G..	Mass W3G...
Type	Motor	3~ VAC	Hz	min <sup>-1</sup>	kW	A	Pa	°C	kg	kg	kg	
*3G 910	M3G150-FF	①	200-240	50/60	650	1,00	3,7	90	-25..+60	26,0	35,0	51,0
	M3G150-FF	②	380-480	50/60	620	0,92	1,6	85	-25..+60	25,5	34,5	50,5

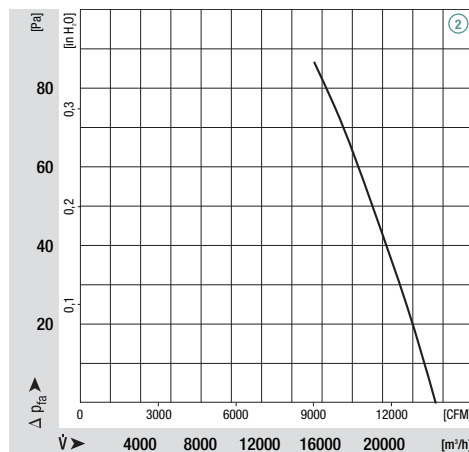
subject to alterations <sup>(1)</sup> in operating point with maximum load (at 400 resp. 200 VAC)




	n	P <sub>1</sub>	I <sup>(2)</sup>	Lp <sub>A</sub>	η <sub>HL</sub>		n	P <sub>1</sub>	I <sup>(2)</sup>	Lp <sub>A</sub>	η <sub>HL</sub>
	[min <sup>-1</sup> ]	[kW]	[A]	[dBA]	[%]		[min <sup>-1</sup> ]	[kW]	[A]	[dBA]	[%]
① ①	650	0,76	1,4	70	79	① ⑨	450	0,26	0,5	62	79
① ②	650	0,93	1,6	72	73	① ⑩	450	0,32	0,6	64	73
① ③	650	0,99	1,7	73	67	① ⑪	450	0,34	0,7	64	67
① ④	650	1,01	1,7	73	64	① ⑫	450	0,35	0,7	65	64
① ⑤	540	0,44	0,8	66	79	<sup>(2)</sup> Current draw at 400 VAC Current draw at 200 VAC twice as high					
① ⑥	540	0,53	1,0	68	73						
① ⑦	540	0,57	1,1	69	67						
① ⑧	540	0,58	1,1	69	64						

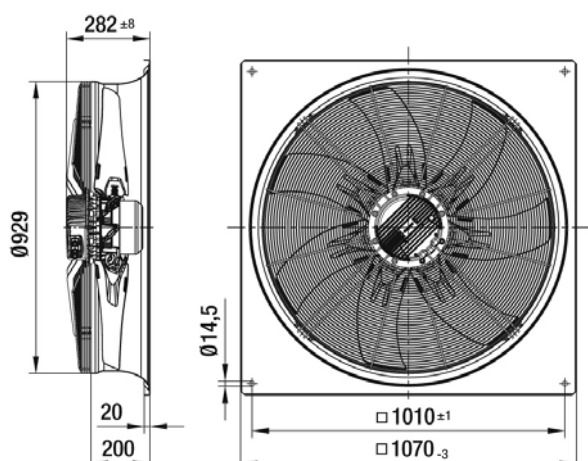
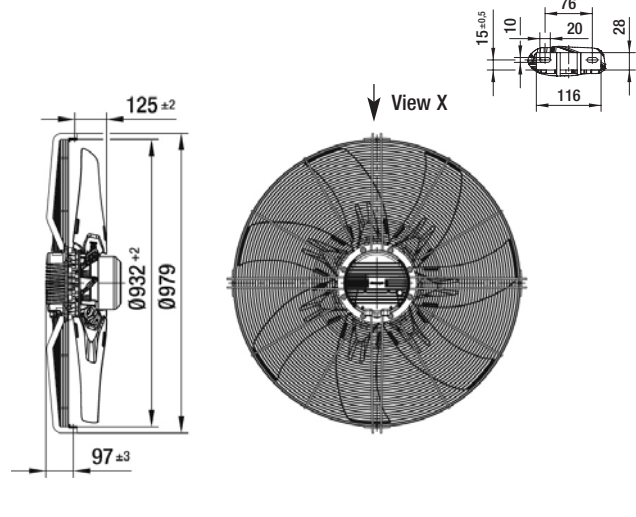
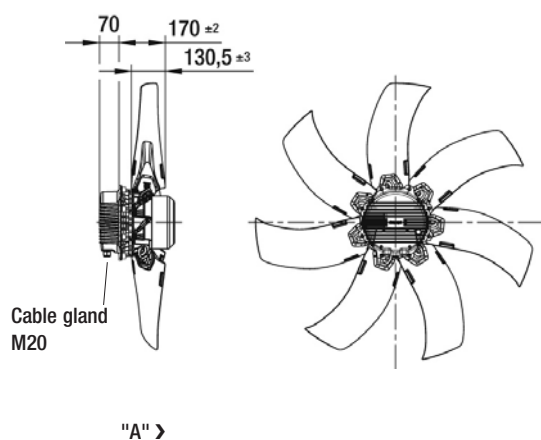
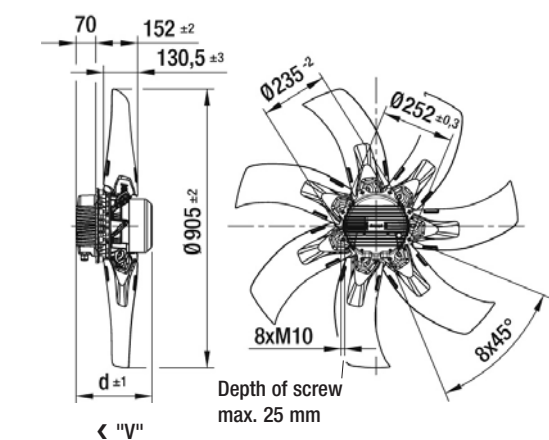
## Characteristics



## Characteristics (preliminary data!)

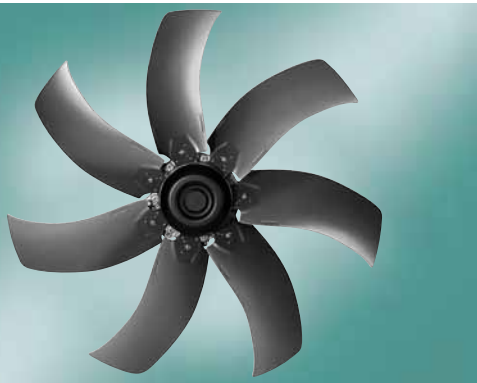


Selection	Cable exit	Direction of air flow	Direction of rotation				Dimensions
Type	S/A/B	R/L					d
*3G 910	S	"V"	R	A3G910-AC07 -13	S3G910-BC07 -13	W3G910-CC07 -13	219,5
		"A"	L	A3G910-AC07 -14	---	---	219,5
	S	"V"	R	A3G910-AF** -03	S3G910-BF** -03	W3G910-CF** -03	219,5
		"A"	L	A3G910-AF** -04	---	---	219,5



# EC axial fans integrated electronics

S-Range, Ø 910



- **Material:** stator and electronics housing made of die-cast aluminium, rotor made of sheet steel (black, KTL coated), impeller blades made of die-cast aluminium
- **Technical features:** control input 0-10 VDC / PWM, RS485 ebmBUS, alarm relay, integrated PID control, voltage supply for sensor, input for sensor 0-10 V respectively 4-20 mA, 0-10 V output for slave, PFC (passive), soft start, line undervoltage detection, phase failure detection, motor current limitation, over-temperature protected electronics and motor, locked-rotor protection
- **Type of protection:** IP 54 according to DIN VDE 0470, part 1 (EN 60 529) category 2
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST
- **Mounting position / condensate discharges:** norm is shaft horizontal or rotor down with 4 condensate discharges drilled into rotor; mounting position rotor on top on request

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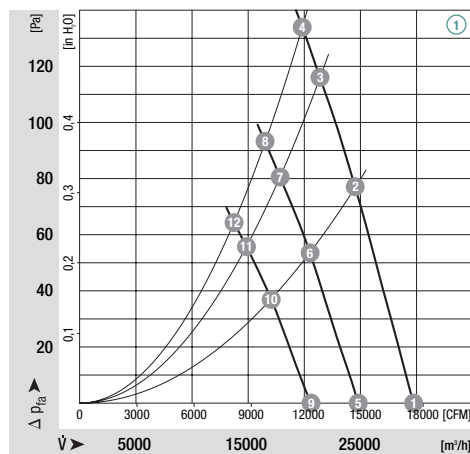
Nominal data		Characteristic	Voltage range	Frequency	Speed/rpm	Max. power input <sup>(1)</sup>	Max. current draw <sup>(1)</sup>	Max. back pressure	Perm. amb. temp.	Mass A3G..	Mass S3G..	Mass W3G...
Type	Motor	3~ VAC	Hz	min <sup>-1</sup>	kW	A	Pa	°C	kg	kg	kg	
*3G 910	M3G150-IF	①	200-240	50/60	780	1,70	5,9	130	-25..+60	30,0	39,0	55,0
	M3G150-IF	②	380-480	50/60	780	1,70	3,1	130	-25..+60	30,0	39,0	55,0




subject to alterations

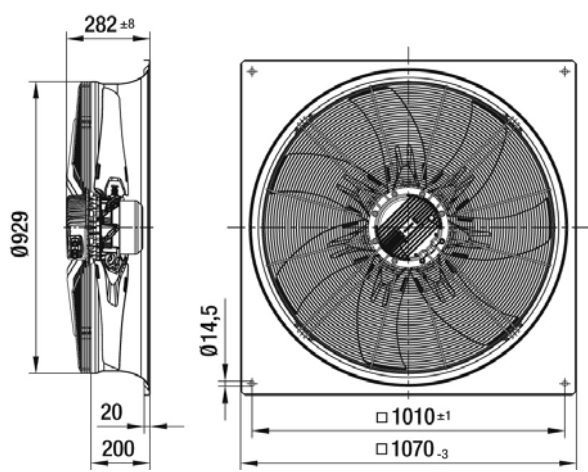
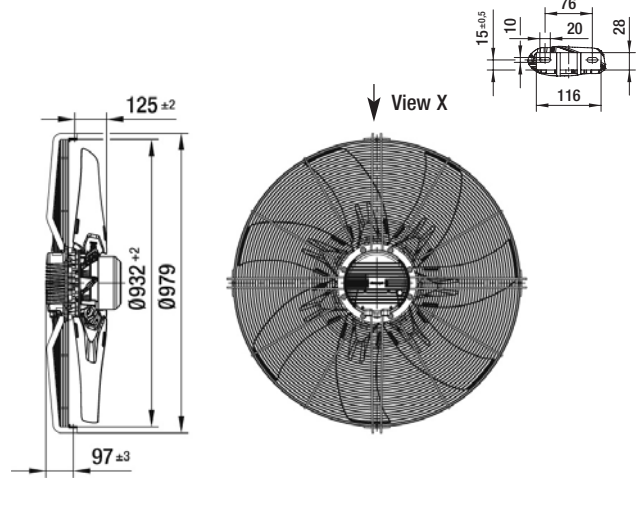
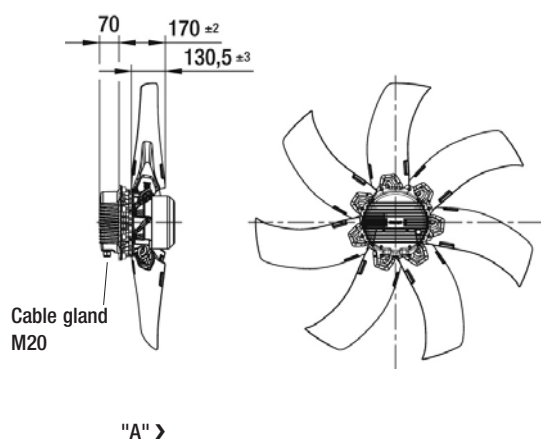
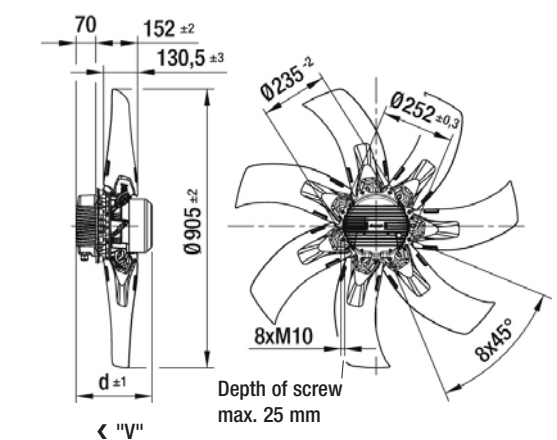
<sup>(1)</sup> in operating point with maximum load (at 400 resp. 200 VAC)

	n	P <sub>1</sub>	I <sup>(2)</sup>	Lp <sub>A</sub>	η <sub>HL</sub>		n	P <sub>1</sub>	I <sup>(2)</sup>	Lp <sub>A</sub>	η <sub>HL</sub>
	[min <sup>-1</sup> ]	[kW]	[A]	[dBA]	[%]		[min <sup>-1</sup> ]	[kW]	[A]	[dBA]	[%]
① ①	780	1,30	2,2	76	79	① ⑨	540	0,47	0,9	66	79
① ②	780	1,59	2,6	77	73	① ⑩	540	0,57	1,1	68	73
① ③	780	1,70	2,7	78	67	① ⑪	540	0,61	1,1	69	67
① ④	780	1,73	2,8	79	64	① ⑫	540	0,62	1,1	69	64
① ⑤	650	0,78	1,4	70	79	<sup>(2)</sup> Current draw at 400 VAC Current draw at 200 VAC twice as high					
① ⑥	650	0,95	1,6	72	73						
① ⑦	650	1,02	1,7	73	67						
① ⑧	650	1,03	1,8	73	64						

## Characteristics

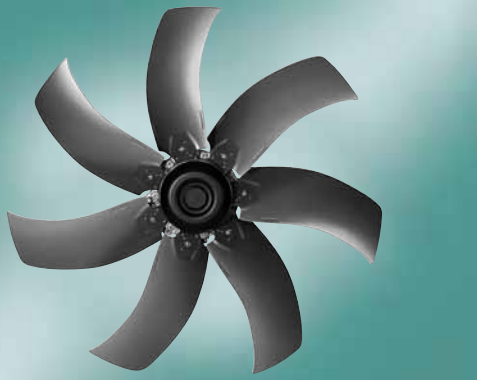


Selection		Cable exit	Direction of air flow	Direction of rotation				Dimensions
Type	S/A/B	R/L						d
*3G 910	S	"V"	R	A3G910-AD09 -13	S3G910-BD09 -13	W3G910-CD09 -13		249,5
		"A"	L	A3G910-AD09 -14	---	---		249,5
	S	"V"	R	A3G910-AD04 -03	S3G910-BD04 -03	W3G910-CD04 -03		249,5
		"A"	L	A3G910-AD04 -04	---	---		249,5



# EC axial fans integrated electronics

S-Range, Ø 910



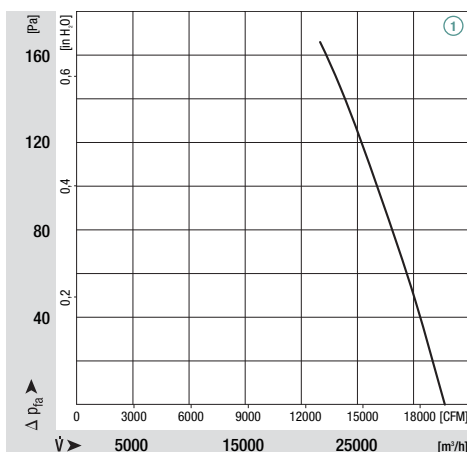
- **Material:** stator and electronics housing made of die-cast aluminium, rotor made of sheet steel (black, KTL coated), impeller blades made of die-cast aluminium
- **Technical features:** control input 0-10 VDC / PWM, RS485 ebmBUS, alarm relay, integrated PID control, voltage supply for sensor, input for sensor 0-10 V respectively 4-20 mA, 0-10 V output for slave, PFC (passive), soft start, line undervoltage detection, phase failure detection, motor current limitation, over-temperature protected electronics and motor, locked-rotor protection
- **Type of protection:** IP 54 according to DIN VDE 0470, part 1 (EN 60 529) category 2
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST
- **Mounting position / condensate discharges:** norm is shaft horizontal or rotor down with 4 condensate discharges drilled into rotor; mounting position rotor on top on request

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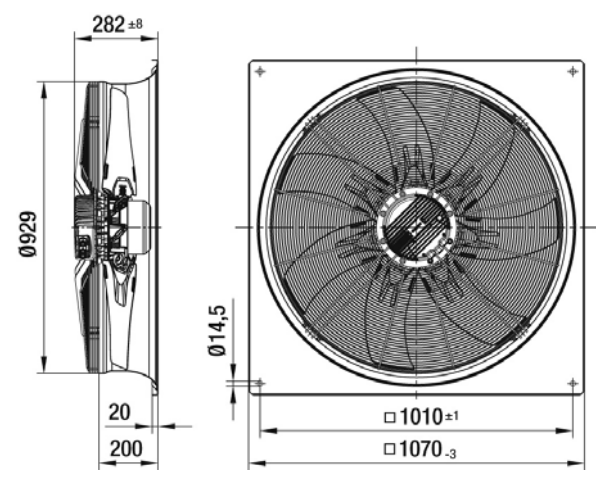
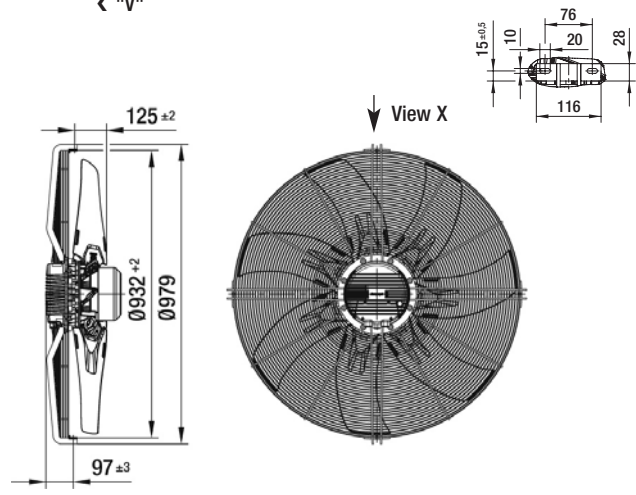
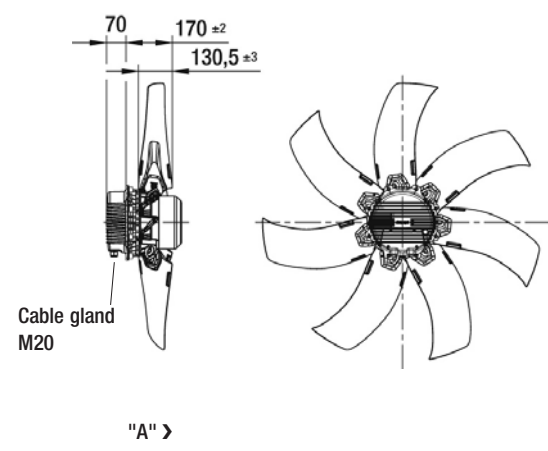
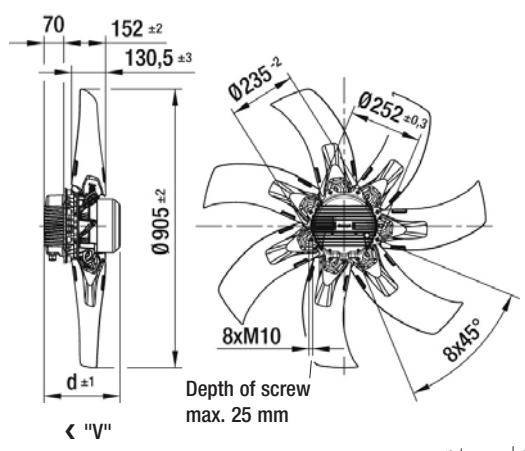
Nominal data		Characteristic	Voltage range	Frequency	Speed/rpm	Max. power input <sup>(1)</sup>	Max. current draw <sup>(1)</sup>	Max. back pressure	Perm. amb. temp.	Mass A3G..	Mass S3G..	Mass W3G...	
Type	Motor	3~ VAC	Hz	min <sup>-1</sup>	kW	A	Pa	°C	kg	kg	kg		
*3G 910	M3G150-NA	① 380-480	50/60	865	2,51	4,4	165	-25..+60	34,5	53,5	59,5	preliminary data!	

subject to alterations <sup>(1)</sup> in operating point with maximum load (at 400 VAC)

## Characteristics (preliminary data!)

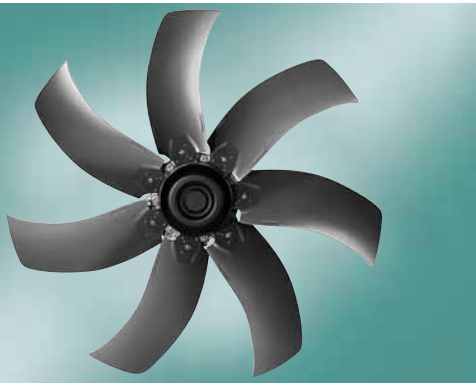


Selection	Cable exit	Direction of air flow	Direction of rotation	Dimensions			
Type	S/A/B	R/L		d			
*3G 910	S	"V"	R	A3G910-AE** -03	S3G910-BE** -03	W3G910-CE** -03	284,5
		"A"	L	A3G910-AE** -04	---	---	284,5



# EC axial fans integrated electronics

S-Range, Ø 990



- **Material:** stator and electronics housing made of die-cast aluminium, rotor made of sheet steel (black, KTL coated), impeller blades made of die-cast aluminium
- **Technical features:** control input 0-10 VDC / PWM, RS485 ebmBUS, alarm relay, integrated PID control, voltage supply for sensor, input for sensor 0-10 V respectively 4-20 mA, 0-10 V output for slave, PFC (passive), soft start, line undervoltage detection, phase failure detection, motor current limitation, over-temperature protected electronics and motor, locked-rotor protection
- **Type of protection:** IP 54 according to DIN VDE 0470, part 1 (EN 60 529) category 2
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST
- **Mounting position / condensate discharges:** norm is shaft horizontal or rotor down with 4 condensate discharges drilled into rotor; mounting position rotor on top on request

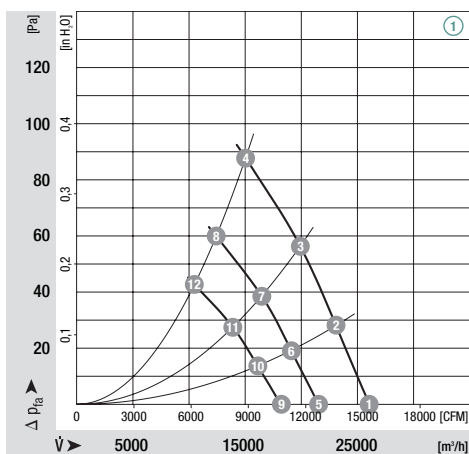
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Nominal data		Characteristic	Voltage range	Frequency	Speed/rpm	Max. power input <sup>(1)</sup>	Max. current draw <sup>(1)</sup>	Max. back pressure	Perm. amb. temp.	Mass A3G..	Mass S3G..	Mass W3G...
Type	Motor	3~ VAC	Hz	min <sup>-1</sup>	kW	A	Pa	°C	kg	kg	kg	
*3G 990	M3G150-FF	①	200-240	50/60	545	0,90	3,8	90	-25..+60	26,5	36,5	55,0
	M3G150-FF	②	380-480	50/60	545	0,90	1,9	90	-25..+60	26,0	36,0	54,5 preliminary data!

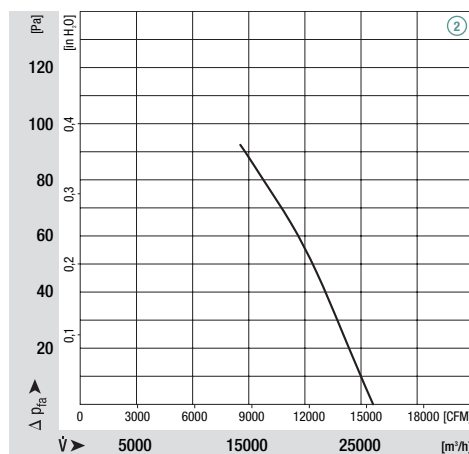
subject to alterations <sup>(1)</sup> in operating point with maximum load (at 400 resp. 200 VAC)

	n	P <sub>1</sub>	I	Lp <sub>A</sub>	η <sub>HL</sub>		n	P <sub>1</sub>	I	Lp <sub>A</sub>	η <sub>HL</sub>
	[min <sup>-1</sup> ]	[kW]	[A]	[dBA]	[%]		[min <sup>-1</sup> ]	[kW]	[A]	[dBA]	[%]
① ①	545	0,63	2,4	70	76	① ⑨	380	0,22	0,8	61	76
① ②	545	0,74	2,6	71	72	① ⑩	380	0,26	1,0	61	72
① ③	545	0,81	2,8	71	70	① ⑪	380	0,28	1,2	61	70
① ④	545	0,88	3,0	70	57	① ⑫	380	0,31	1,2	61	57
① ⑤	450	0,36	1,4	65	76						
① ⑥	450	0,42	1,6	66	72						
① ⑦	450	0,46	1,8	66	70						
① ⑧	450	0,50	1,8	65	57						




## Characteristics

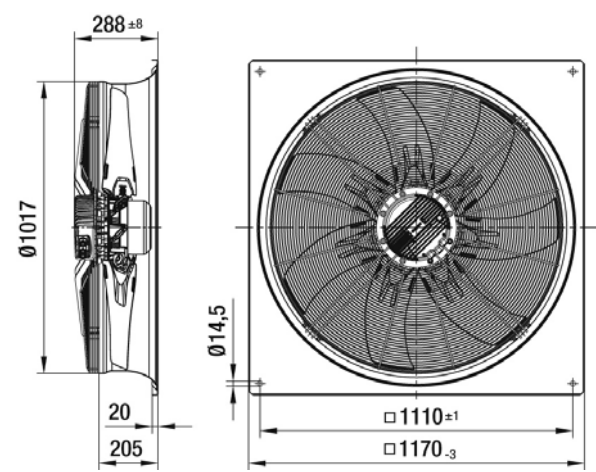
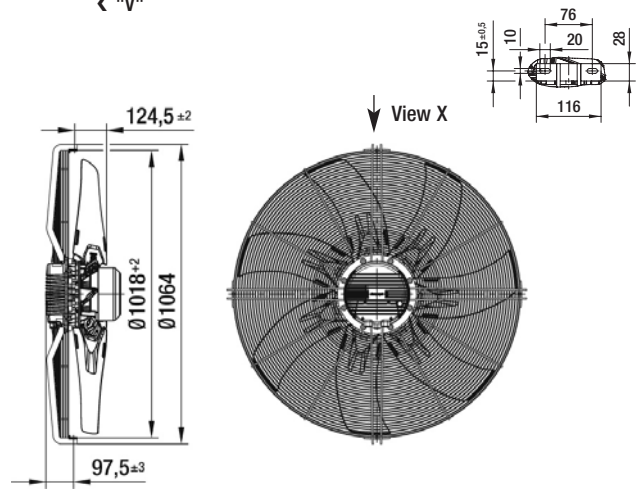
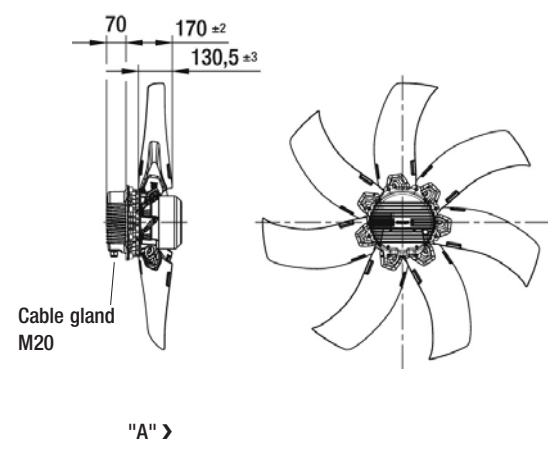
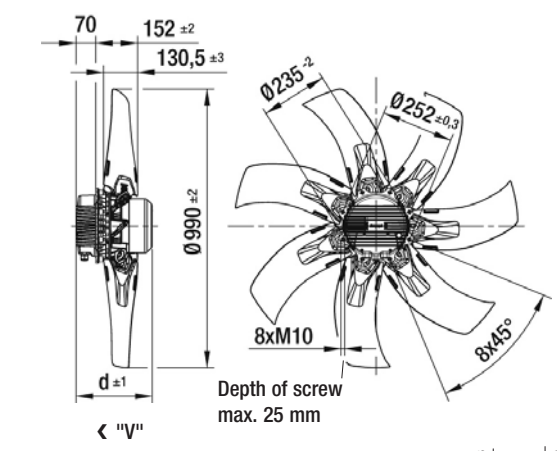


## Characteristics (preliminary data!)



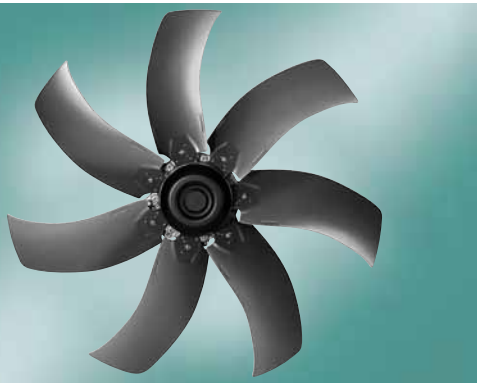


Selection		Cable exit	Direction of air flow	Direction of rotation				Dimensions
Type	S/A/B	R/L						d
*3G 990	S	"V"	R	A3G990-AC04 -13	S3G990-BC04 -13	W3G990-CC04 -13		219,5
		"A"	L	A3G990-AC04 -14	---	---		219,5
	S	"V"	R	A3G990-AF** -03	S3G990-BF** -03	W3G990-CF** -03		219,5
		"A"	L	A3G990-AF** -04	---	---		219,5



# EC axial fans integrated electronics

S-Range, Ø 990



- **Material:** stator and electronics housing made of die-cast aluminium, rotor made of sheet steel (black, KTL coated), impeller blades made of die-cast aluminium
- **Technical features:** control input 0-10 VDC / PWM, RS485 ebmBUS, alarm relay, integrated PID control, voltage supply for sensor, input for sensor 0-10 V respectively 4-20 mA, 0-10 V output for slave, PFC (passive), soft start, line undervoltage detection, phase failure detection, motor current limitation, over-temperature protected electronics and motor, locked-rotor protection
- **Type of protection:** IP 54 according to DIN VDE 0470, part 1 (EN 60 529) category 2
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST
- **Mounting position / condensate discharges:** norm is shaft horizontal or rotor down with 4 condensate discharges drilled into rotor; mounting position rotor on top on request

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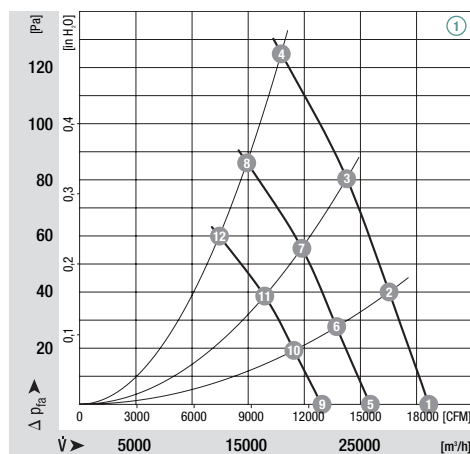
Nominal data		Characteristic	Voltage range	Frequency	Speed/rpm	Max. power input <sup>(1)</sup>	Max. current draw <sup>(1)</sup>	Max. back pressure	Perm. amb. temp.	Mass A3G...	Mass S3G...	Mass W3G...
Type	Motor	3~ VAC	Hz	min <sup>-1</sup>	kW	A	Pa	°C	kg	kg	kg	
*3G 990	M3G150-IF	①	200-240	50/60	650	1,50	4,8	120	-25..+60	30,5	40,5	59,0
	M3G150-IF	②	380-480	50/60	650	1,50	2,6	120	-25..+60	30,5	40,5	59,0




subject to alterations

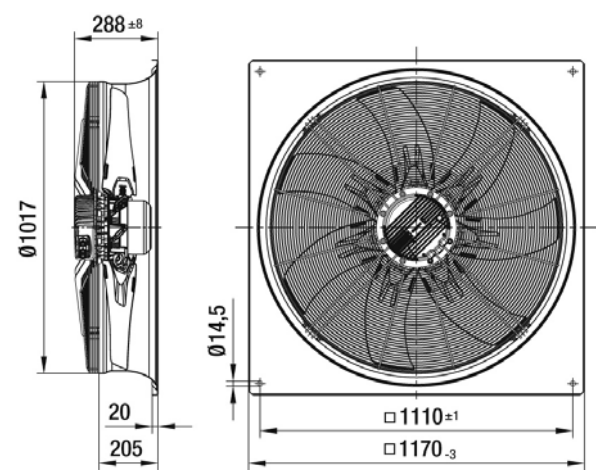
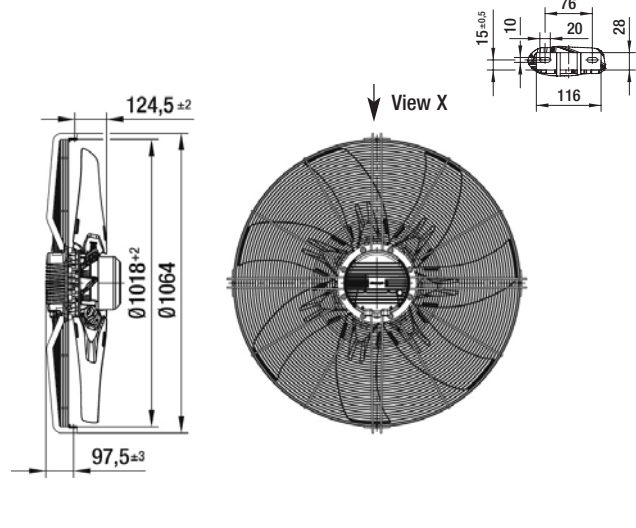
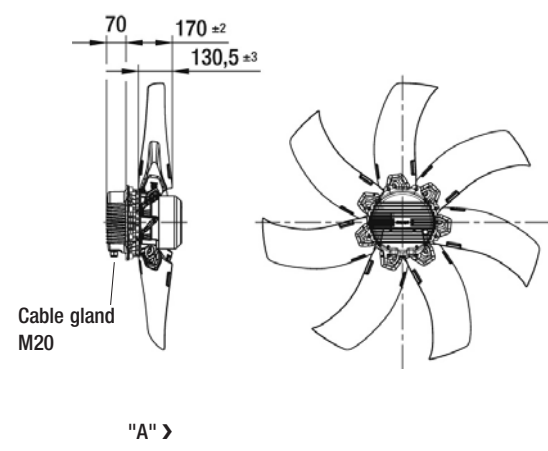
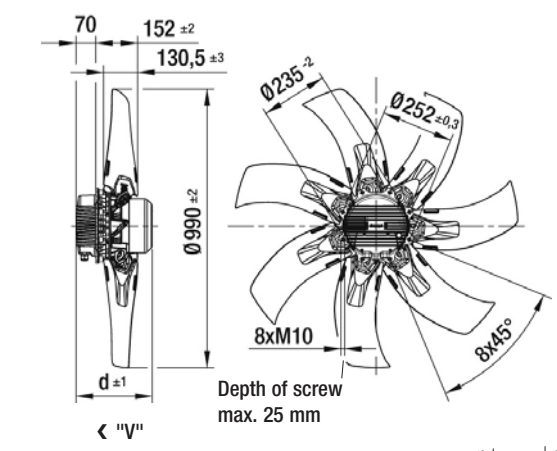
<sup>(1)</sup> in operating point with maximum load (at 400 resp. 200 VAC)

	n	P <sub>1</sub>	I <sup>(2)</sup>	Lp <sub>A</sub>	η <sub>HL</sub>		n	P <sub>1</sub>	I <sup>(2)</sup>	Lp <sub>A</sub>	η <sub>HL</sub>
	[min <sup>-1</sup> ]	[kW]	[A]	[dBA]	[%]		[min <sup>-1</sup> ]	[kW]	[A]	[dBA]	[%]
① ①	650	1,02	1,8	75	76	① ⑨	450	0,36	0,7	65	76
① ②	650	1,21	2,0	76	72	① ⑩	450	0,42	0,8	66	72
① ③	650	1,32	2,2	76	70	① ⑪	450	0,46	0,9	66	70
① ④	650	1,44	2,3	75	57	① ⑫	450	0,50	0,9	65	57
① ⑤	540	0,60	1,1	70	76	<sup>(2)</sup> Current draw at 400 VAC Current draw at 200 VAC twice as high					
① ⑥	540	0,71	1,3	71	72						
① ⑦	540	0,78	1,4	71	70						
① ⑧	540	0,84	1,5	70	57						

## Characteristics

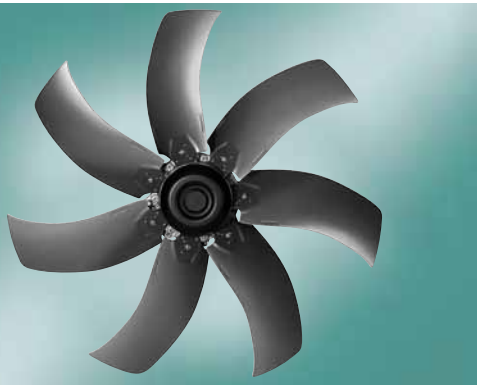


Selection		Cable exit	Direction of air flow	Direction of rotation				Dimensions
Type	S/A/B	R/L	R/L					d
*3G 990	S	"V"	R	A3G990-AD11 -13	S3G990-BD11 -13	W3G990-CD11 -13		249,5
		"A"	L	A3G990-AD11 -14	---	---		249,5
	S	"V"	R	A3G990-AD05 -03	S3G990-BD05 -03	W3G990-CD05 -03		249,5
		"A"	L	A3G990-AD05 -04	---	---		249,5



# EC axial fans integrated electronics

S-Range, Ø 990



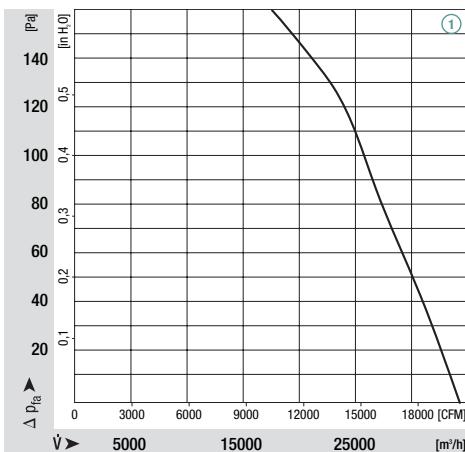
- **Material:** stator and electronics housing made of die-cast aluminium, rotor made of sheet steel (black, KTL coated), impeller blades made of die-cast aluminium
- **Technical features:** control input 0-10 VDC / PWM, RS485 ebmBUS, alarm relay, integrated PID control, voltage supply for sensor, input for sensor 0-10 V respectively 4-20 mA, 0-10 V output for slave, PFC (passive), soft start, line undervoltage detection, phase failure detection, motor current limitation, over-temperature protected electronics and motor, locked-rotor protection
- **Type of protection:** IP 54 according to DIN VDE 0470, part 1 (EN 60 529) category 2
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST
- **Mounting position / condensate discharges:** norm is shaft horizontal or rotor down with 4 condensate discharges drilled into rotor; mounting position rotor on top on request

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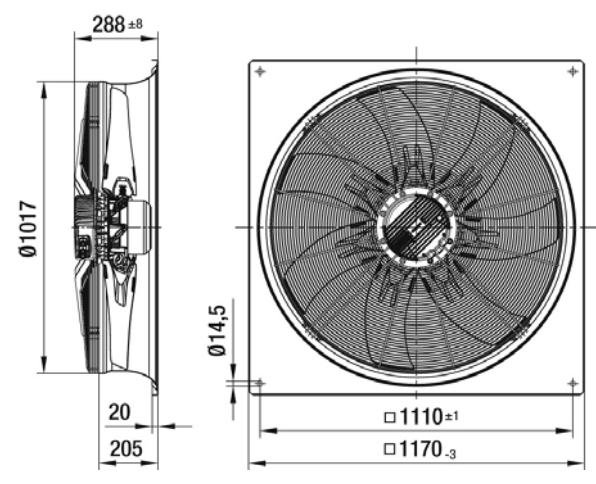
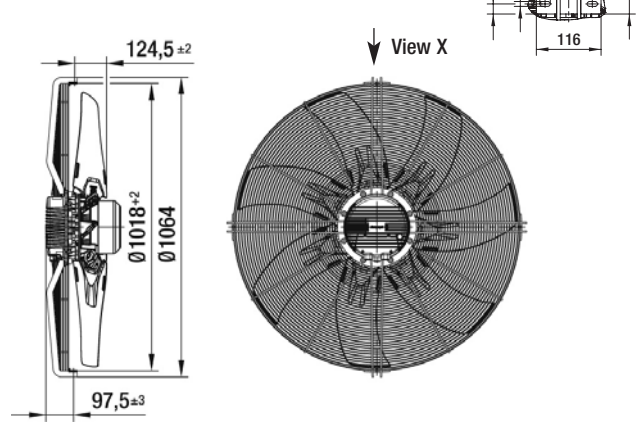
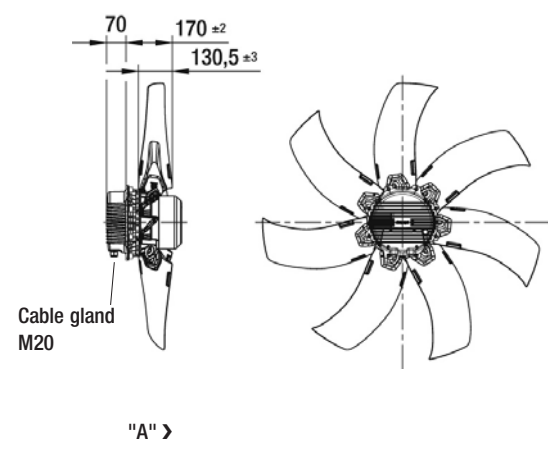
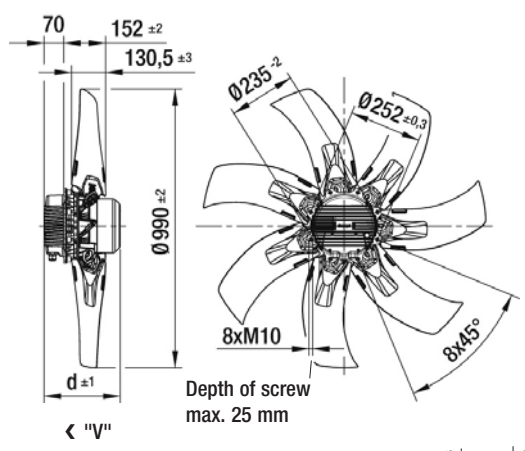
Nominal data		Characteristic	Voltage range	Frequency	Speed/rpm	Max. power input <sup>(1)</sup>	Max. current draw <sup>(1)</sup>	Max. back pressure	Perm. amb. temp.	Mass A3G..	Mass S3G..	Mass W3G...	
Type	Motor	3~ VAC	Hz	min <sup>-1</sup>	kW	A	Pa	°C	kg	kg	kg		
*3G 990	M3G150-NA	①	380-480	50/60	715	2,17	4,0	155	-25..+60	35,0	45,0	63,5	preliminary data!

subject to alterations ① in operating point with maximum load (at 400 VAC)

## Characteristics (preliminary data!)



Selection	Cable exit	Direction of air flow	Direction of rotation	Dimensions			
Type	S/A/B	R/L		d			
*3G 990	S	"V"	R	A3G990-AE** -03	S3G990-BE** -03	W3G990-CE** -03	284,5
		"A"	L	A3G990-AE** -04	---	---	284,5



# EC axial fans

K-Range, Ø 250



- **Material:** plastic
- **Direction of rotation:** direction of air flow "V" counter-clockwise, direction of air flow "A" clockwise
- **Technical features:** control input 0-10 VDC / PWM, tach output
- **Type of protection:** IP 42
- **Mounting position:** at will
- **Approvals:** UL, CSA
- **Characteristic:** determined at 48 VDC

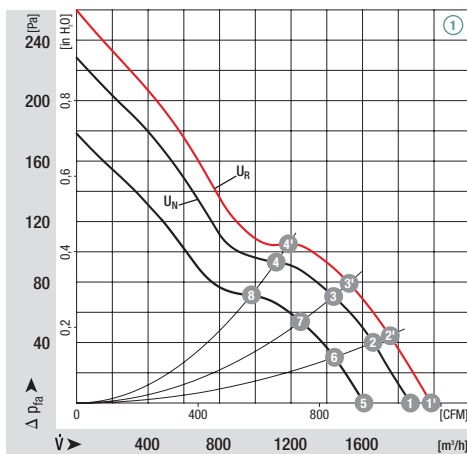
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Nominal data		Characteristic	Voltage		Voltage range	Air flow	Speed/rpm	Power input	Current draw	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor		VDC	VDC	m³/h	min⁻¹	W	A	dB(A)	Pa	°C	kg	
*1G 250	M1G074-BF	①	24	16-28	1815	2450	98	4,70	67	---	60	1,3	
	M1G074-BF	①	48	36-57	1870	2500	98	2,40	68	---	60	1,3	

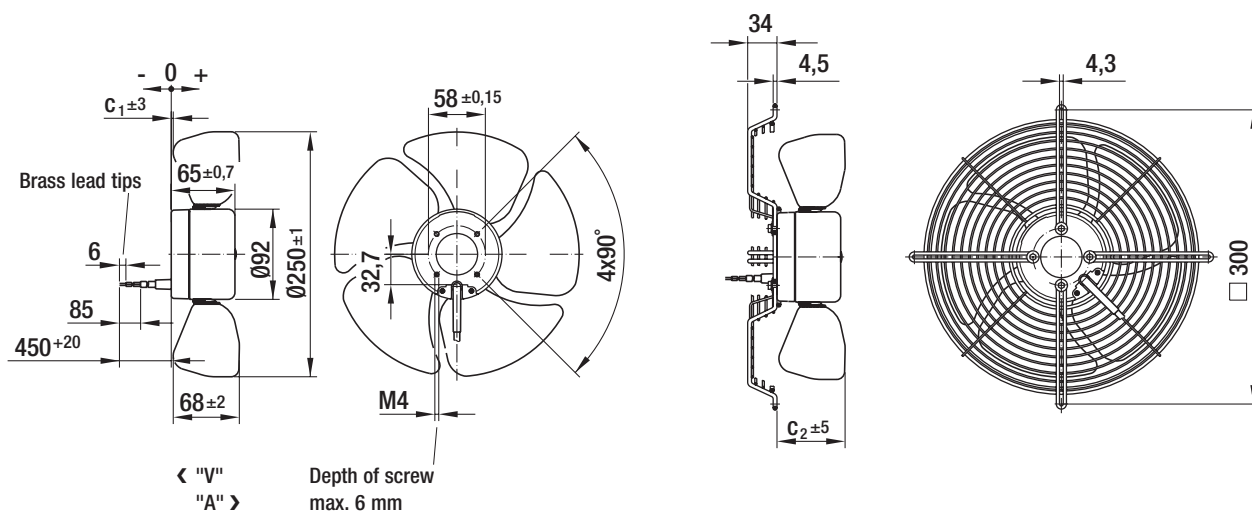
subject to alterations

	n [min⁻¹]	P <sub>1</sub> [W]	η <sub>HL</sub> [%]	Lp <sub>A</sub> [dBA]		n [min⁻¹]	P <sub>1</sub> [W]	η <sub>HL</sub> [%]	Lp <sub>A</sub> [dBA]
① ①	2650	119	---	69	① ⑤	2140	65	---	65
① ②	2550	121	66	65	① ⑥	2080	67	66	59
① ③	2470	123	66	62	① ⑦	2020	70	66	58
① ④	2470	124	59	62	① ⑧	2030	70	59	58
① ①	2500	98	---	68					
① ②	2390	99	66	64					
① ③	2320	100	66	61					
① ④	2310	100	59	60					

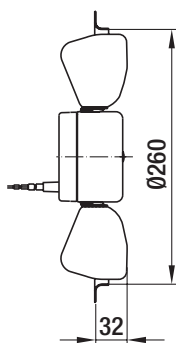
## Characteristics



Selection	Cable exit	Direction of air flow	Dimensions			
			Type	S/A/B	C <sub>1</sub>	C <sub>2</sub>
*1G 250	B	"V"	A1G250-AE07 -52	S1G250-EE07 -52	-9	59
		"A"	A1G250-AE07 -53	S1G250-EE07 -53	2	70
	B	"V"	A1G250-AE11 -52	S1G250-EE11 -52	-9	59
		"A"	A1G250-AE11 -53	S1G250-EE11 -53	2	70



Mounting configuration



# EC axial fans

K-Range, Ø 300



- **Material:** plastic
- **Direction of rotation:** direction of air flow "V" counter-clockwise, direction of air flow "A" clockwise
- **Technical features:** control input 0-10 VDC / PWM, tach output
- **Type of protection:** IP 42
- **Mounting position:** at will
- **Approvals:** UL, CSA
- **Characteristic:** determined at 48 VDC

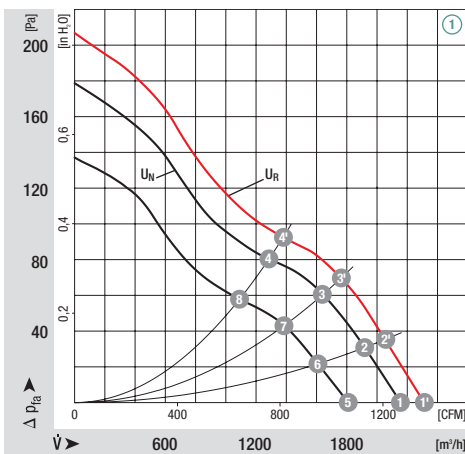
ebm-papst • Muldingen

Nominal data		Characteristic	Voltage	Voltage range	Air flow	Speed/rpm	Power input	Current draw	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor		VDC	VDC	m³/h	min⁻¹	W	A	dB(A)	Pa	°C	kg
*1G 300	M1G074-CF	①	24	16-28	2140	1820	76	3,50	66	---	60	1,7
	M1G074-CF	①	48	36-57	2160	1880	85	2,10	65	---	60	1,7

subject to alterations

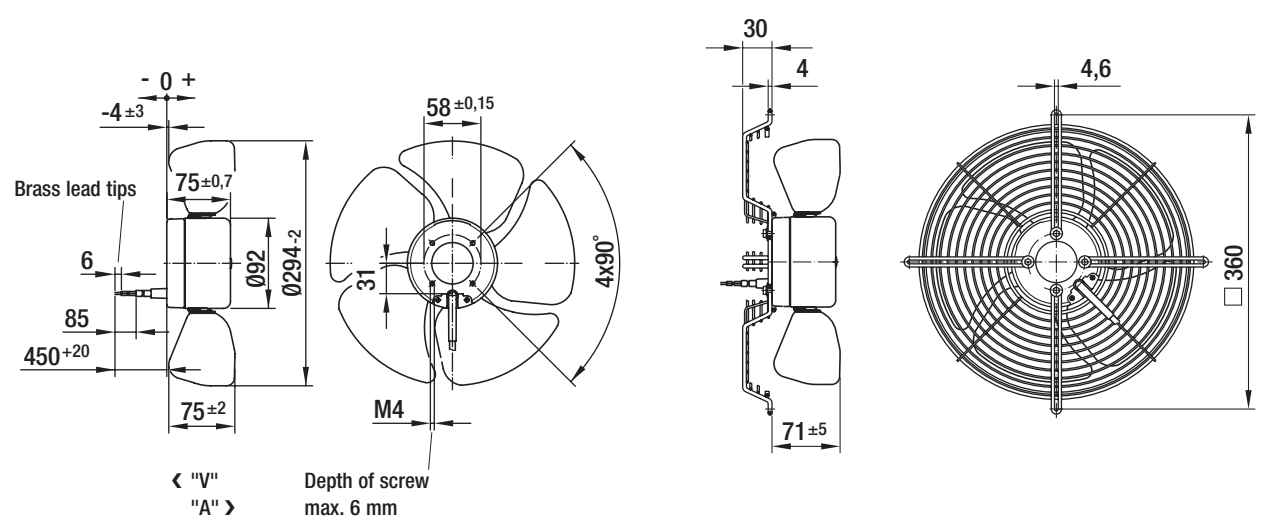
	n [min⁻¹]	P <sub>I</sub> [W]	η <sub>HL</sub> [%]	Lp <sub>A</sub> [dBA]		n [min⁻¹]	P <sub>I</sub> [W]	η <sub>HL</sub> [%]	Lp <sub>A</sub> [dBA]
① ①	2050	107	---	67	① ⑤	1550	50	---	60
① ②	1990	108	49	66	① ⑥	1520	52	49	61
① ③	1920	110	53	65	① ⑦	1490	55	53	60
① ④	1830	113	46	66	① ⑧	1440	58	46	61
① ①	1880	85	---	65					
① ②	1830	87	49	64					
① ③	1780	89	53	63					
① ④	1700	90	46	64					

## Characteristics

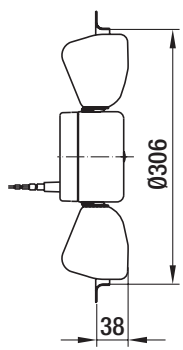




Selection	Cable exit	Direction of air flow		
Type	S/A/B			
*1G 300	B	"V"	A1G300-AH19 -52	S1G300-EH19 -52
		"A"	A1G300-AH19 -53	S1G300-EH19 -53
	B	"V"	A1G300-AH33 -52	S1G300-EH33 -52
		"A"	A1G300-AH33 -53	S1G300-EH33 -53



Mounting configuration



# EC axial fans

K-Range, Ø 350



- **Material:** plastic
- **Direction of rotation:** direction of air flow "V" counter-clockwise, direction of air flow "A" clockwise
- **Technical features:** control input 0-10 VDC / PWM, tach output
- **Type of protection:** IP 42
- **Mounting position:** at will
- **Approvals:** UL, CSA
- **Characteristic:** determined at 24 VDC

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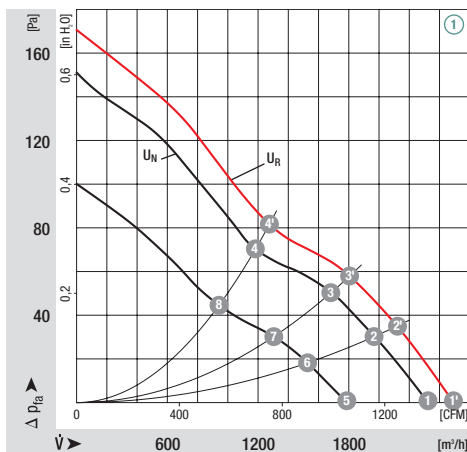
Nominal data		Characteristic	Voltage	Voltage range	Air flow	Speed/rpm	Power input	Current draw	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor	VDC	VDC	m³/h	min⁻¹	W	A	dB(A)	Pa	°C	kg	
*1G 350	M1G074-CF	①	24 <sup>(1)</sup>	16-28	2320	1350	82	3,80	63	---	60	1,9
	M1G074-CF	①	48	36-57	2410	1310	74	1,80	63	---	60	1,9

subject to alterations

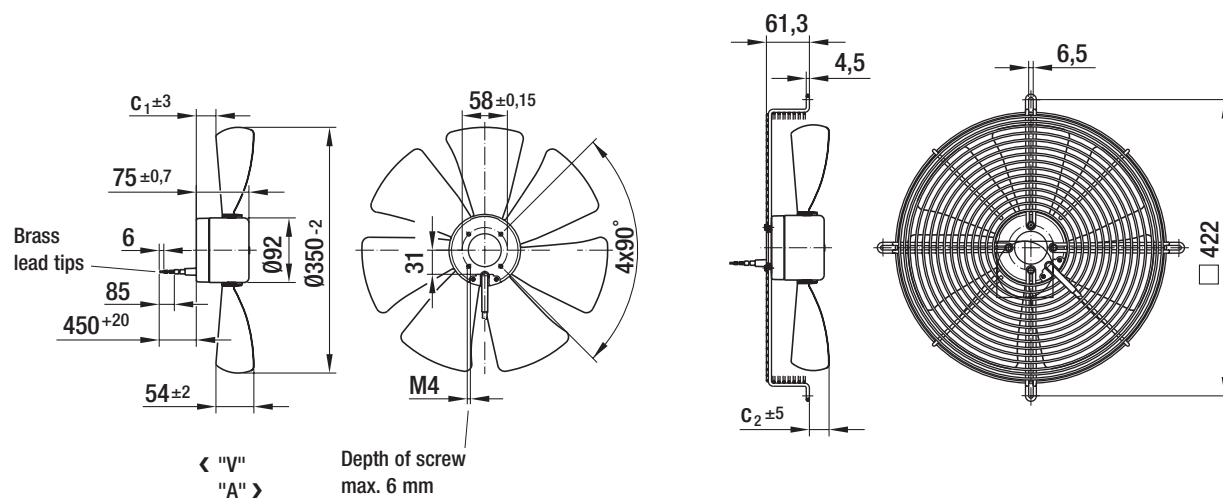
<sup>(1)</sup> established in flow direction "V"

	n [min⁻¹]	P <sub>I</sub> [W]	η <sub>HL</sub> [%]	Lp <sub>A</sub> [dBA]		n [min⁻¹]	P <sub>I</sub> [W]	η <sub>HL</sub> [%]	Lp <sub>A</sub> [dBA]
① ①	1460	99	---	65	① ⑤	1050	40	---	57
① ②	1390	102	43	66	① ⑥	1020	41	43	58
① ③	1360	104	47	66	① ⑦	1000	43	47	58
① ④	1340	105	38	67	① ⑧	990	43	38	59
① ①	1350	82	---	63					
① ②	1290	83	43	64					
① ③	1270	84	47	64					
① ④	1250	85	38	66					

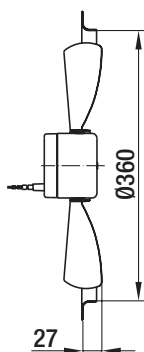
## Characteristics



Selection	Cable exit	Direction of air flow	Dimensions			
			Type	S/A/B	C <sub>1</sub>	C <sub>2</sub>
*1G 350	B	"V"	A1G350-AH39 -52	S1G350-EH39 -52	18	18
		"A"	A1G350-AH39 -53	S1G350-EH39 -53	28	28
	B	"V"	A1G350-AH41 -52	S1G350-EH41 -52	18	18
		"A"	A1G350-AH41 -53	S1G350-EH41 -53	28	28



Mounting configuration



# EC axial fans

K-Range, Ø 360



- **Material:** plastic
- **Direction of rotation:** counter-clockwise
- **Technical features:** control input 0-10 VDC / PWM, tach output
- **Type of protection:** IP 42
- **Mounting position:** at will
- **Approvals:** UL, CSA

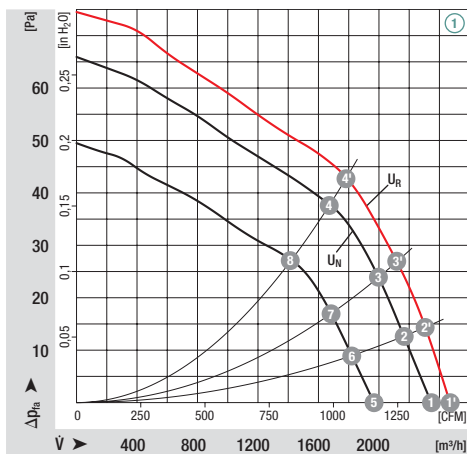
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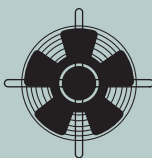
Nominal data		Characteristic	Voltage	Voltage range	Air flow	Speed/rpm	Power input	Current draw	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor	VDC	VDC	m³/h	min⁻¹	W	A	dB(A)	Pa	°C	kg	
*1G 360	M1G074-BF	①	48	36-57	2350	1000	65	1,60	51	---	60	1,4

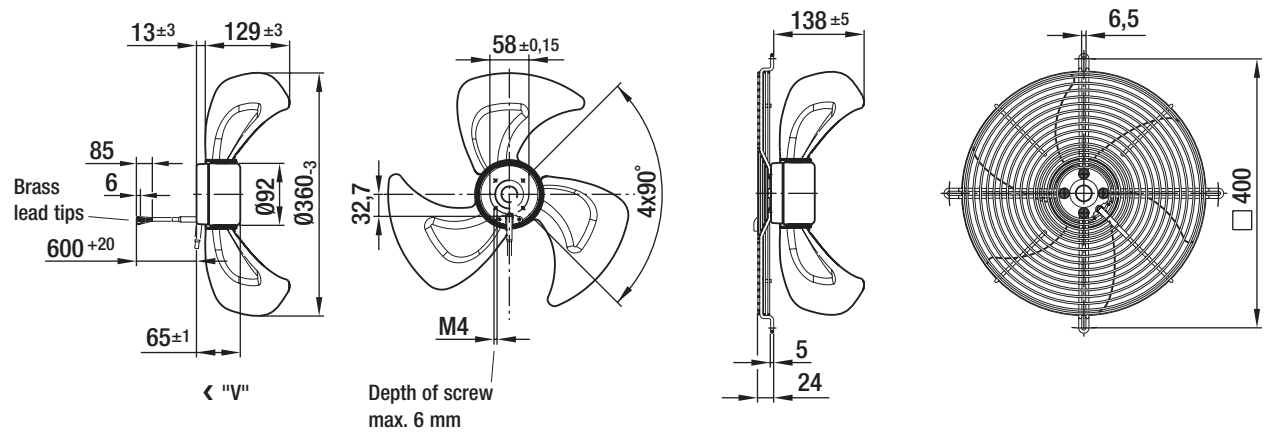
subject to alterations

	n [min⁻¹]	P <sub>i</sub> [W]	η <sub>HL</sub> [%]	Lp <sub>A</sub> [dBA]		n [min⁻¹]	P <sub>i</sub> [W]	η <sub>HL</sub> [%]	Lp <sub>A</sub> [dBA]
① ①	1050	85	---	52	① ⑤	825	42	---	46
① ②	1035	86	48	52	① ⑥	815	43	48	46
① ③	1025	87	56	53	① ⑦	805	44	56	48
① ④	1015	88	56	55	① ⑧	790	45	56	49
① ①	1000	65	---	51					
① ②	970	67	48	51					
① ③	955	67	56	52					
① ④	950	68	56	54					

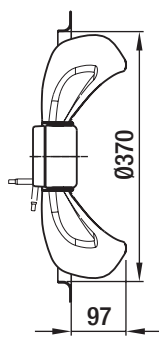
## Characteristics



Selection		Cable exit	Direction of air flow		
Type	S/A/B				
*1G 360	B	"V"		A1G360-AC93 -52	S1G360-AC93 -52



Mounting configuration



# EC axial fans

K-Range, Ø 360



- **Material:** plastic
- **Direction of rotation:** counter-clockwise
- **Technical features:** control input 0-10 VDC / PWM, tach output
- **Type of protection:** IP 42
- **Mounting position:** at will
- **Approvals:** UL, CSA

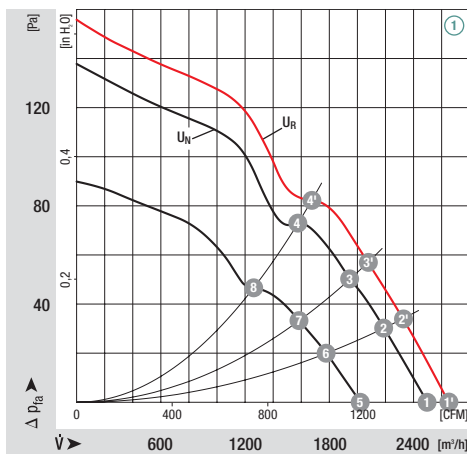
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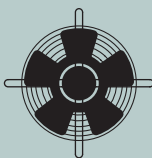
Nominal data		Characteristic	Voltage	Voltage range	Air flow	Speed/rpm	Power input	Current draw	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor	VDC	VDC	m³/h	min⁻¹	W	A	dB(A)	Pa	°C	kg	
*1G 360	M1G074-CF	①	24	16-28	2500	1410	105	5,00	58	---	60	1,8
	M1G074-CF	①	48	36-57	2500	1410	100	2,50	58	---	60	1,8

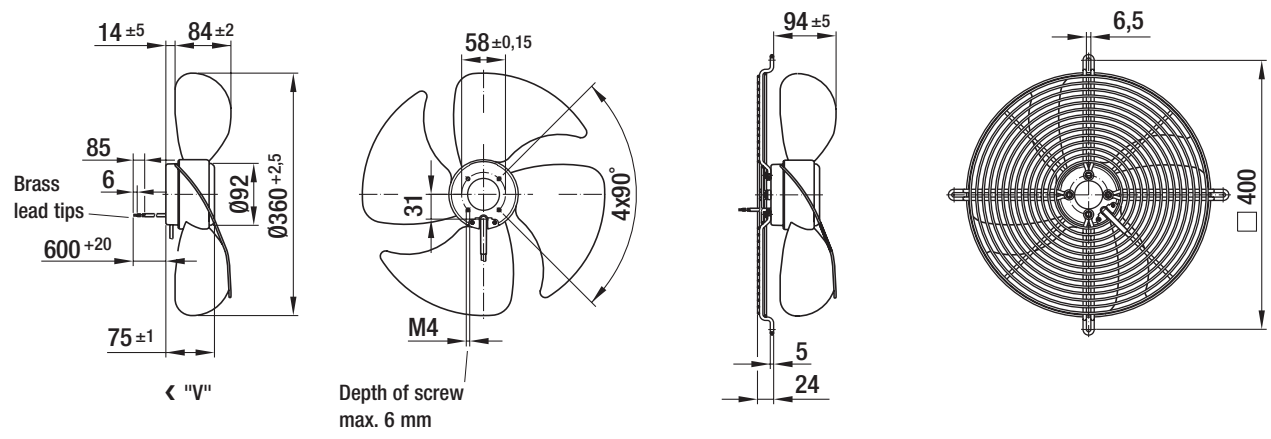
subject to alterations

	n [min⁻¹]	P <sub>I</sub> [W]	η <sub>HL</sub> [%]	Lp <sub>A</sub> [dBA]		n [min⁻¹]	P <sub>I</sub> [W]	η <sub>HL</sub> [%]	Lp <sub>A</sub> [dBA]
①	① 1500	128	---	61	①	⑤ 1120	56	---	55
①	② 1450	130	37	60	①	⑥ 1090	58	37	54
①	③ 1430	131	45	59	①	⑦ 1070	59	45	54
①	④ 1420	132	47	63	①	⑧ 1070	60	47	57
①	① 1410	105	---	58					
①	② 1360	106	37	57					
①	③ 1330	107	45	57					
①	④ 1330	108	47	61					

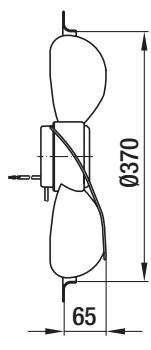
## Characteristics



Selection	Cable exit	Direction of air flow		
Type	S/A/B			
*1G 360	B	"V"	A1G360-AB19 -52	S1G360-BB19 -52
		"A"	---	---
	B	"V"	A1G360-AB33 -52	S1G360-BB33 -52
		"A"	---	---



Mounting configuration



# EC axial fans integrated electronics

K-Range, Ø 250



- **Material:** polyamide PA12
- **Direction of rotation:** counter-clockwise
- **Technical features:** control input 0-10 VDC / PWM, tach output, 10 V voltage output for potentiometer
- **Type of protection:** IP 44
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST are applied for

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## Nominal data<sup>(1)</sup>

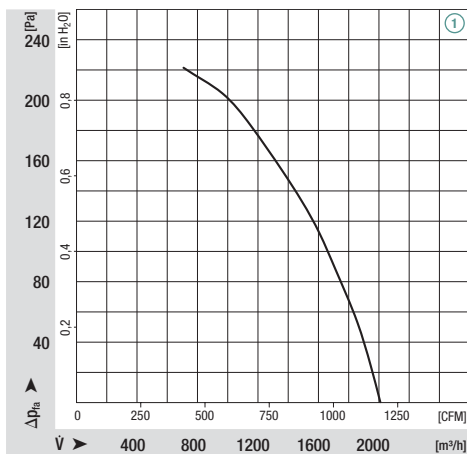
Type	Motor	Characteristic	Voltage range	Frequency	Air flow	Speed/rpm	Power input	Current draw	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
		VAC	Hz	m <sup>3</sup> /h	min <sup>-1</sup>	W	A	dB(A)	Pa	°C	kg	
*3G 250	M3G074-CF	①	200-277	50/60	2010	2790	125	0,90	69	220	-25..+60	2,3

subject to alterations

<sup>(1)</sup> at 230 VAC

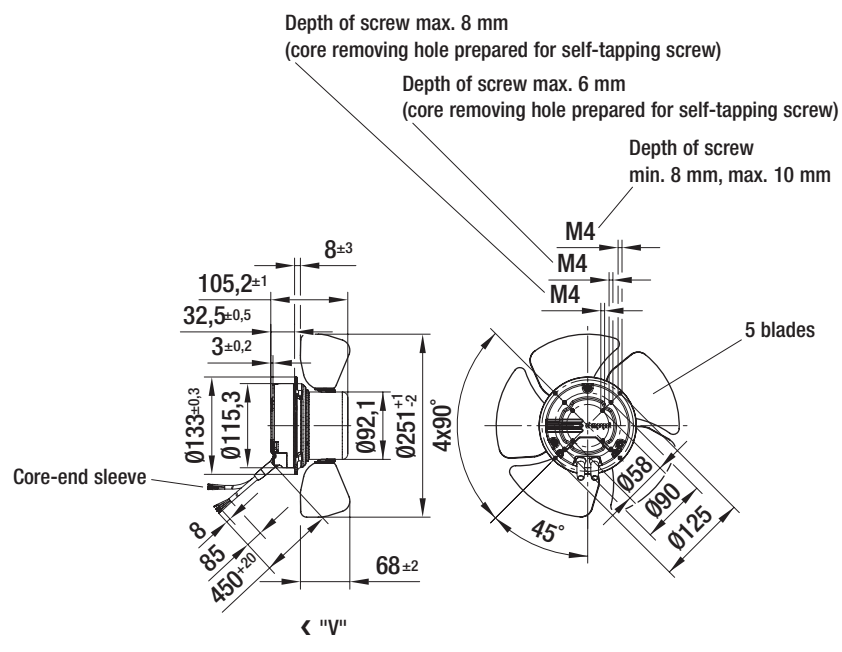
preliminary data!

## Characteristics (preliminary data!)





Selection		Cable exit	Direction of air flow
Type	S/A/B		
*3G 250	B	"V"	A3G250-AF** -01



# EC axial fans integrated electronics

K-Range, Ø 300



- **Material:** polyamide PA6
- **Direction of rotation:** counter-clockwise
- **Technical features:** control input 0-10 VDC / PWM, tach output, 10 V voltage output for potentiometer
- **Type of protection:** IP 44
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST are applied for

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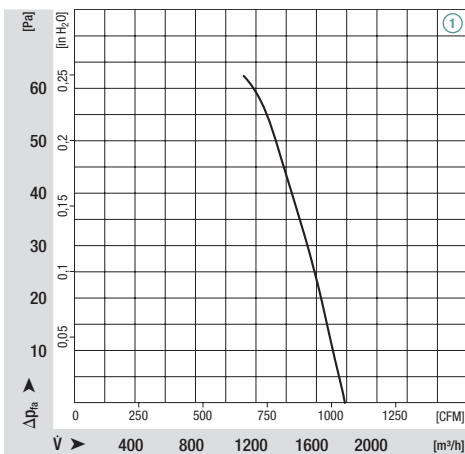
## Nominal data<sup>(1)</sup>

Type	Motor	Characteristic	Voltage range	Frequency	Air flow	Speed/rpm	Power input	Current draw	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass	
		VAC	Hz	m <sup>3</sup> /h	min <sup>-1</sup>	W	A	dB(A)	Pa	°C	kg		
*3G 300	M3G074-CF	①	200-277	50/60	1790	1615	55	0,40	61	60	-25..+60	2,5	preliminary data!

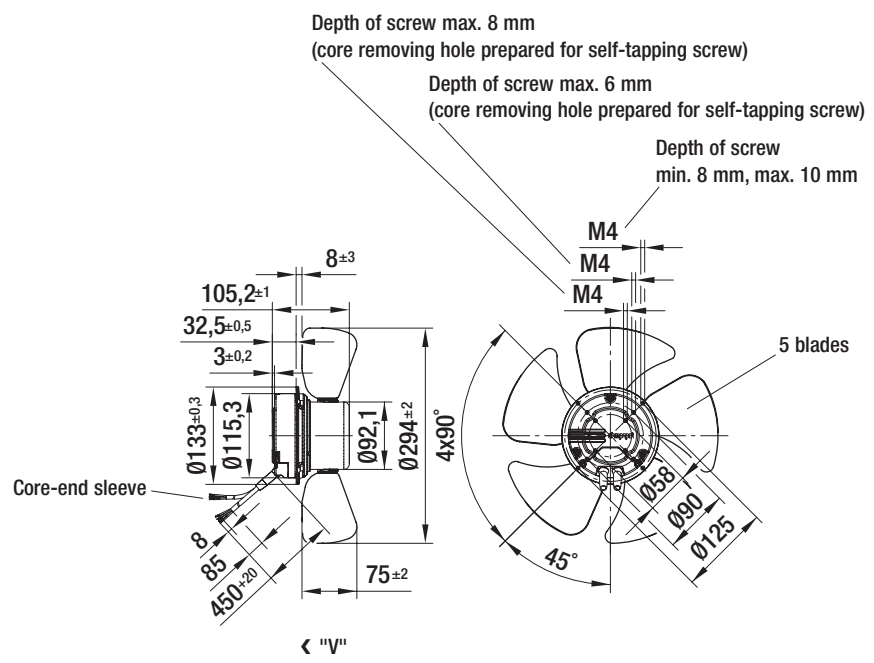
subject to alterations

<sup>(1)</sup> at 230 VAC

## Characteristics (preliminary data!)



Selection	Cable exit	Direction of air flow	
Type	S/A/B		
*3G 300	B	"V"	A3G300-AC** -01



# EC axial fans integrated electronics

K-Range, Ø 350



- **Material:** polyamide PA6
- **Direction of rotation:** counter-clockwise
- **Technical features:** control input 0-10 VDC / PWM, tach output, 10 V voltage output for potentiometer
- **Type of protection:** IP 44
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST are applied for

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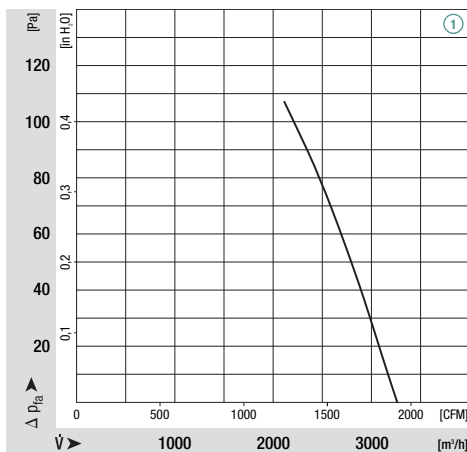
## Nominal data<sup>(1)</sup>

Type	Motor	Characteristic	Voltage range	Frequency	Air flow	Speed/rpm	Power input	Current draw	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass	
		VAC	Hz	m <sup>3</sup> /h	min <sup>-1</sup>	W	A	dB(A)	Pa	°C	kg		
*3G 350	M3G074-CF	①	200-277	50/60	3260	1700	130	0,90	63	105	-25..+60	2,7	preliminary data!

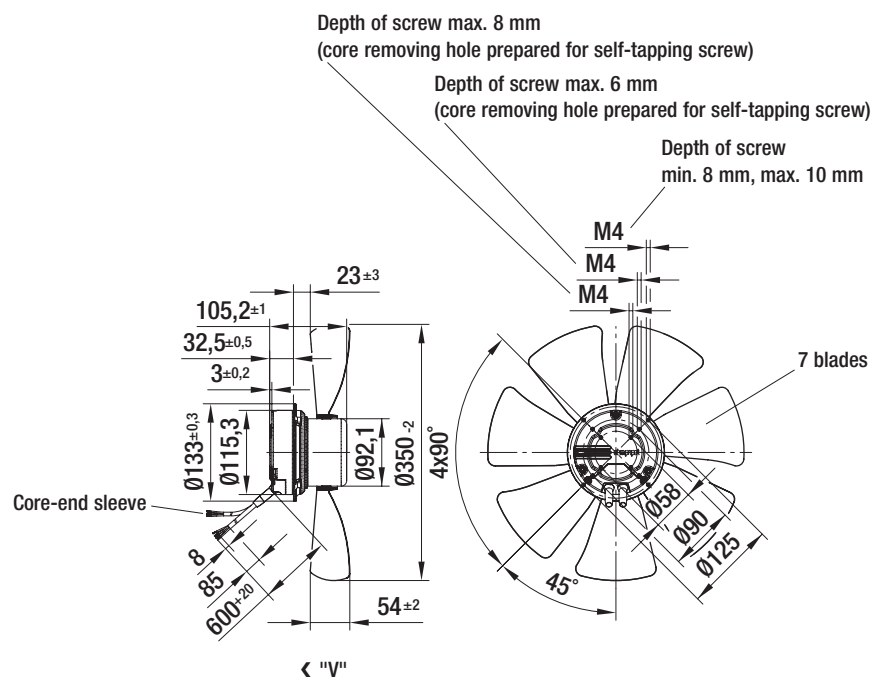
subject to alterations

<sup>(1)</sup> at 230 VAC

## Characteristics (preliminary data!)



Selection	Cable exit	Direction of air flow	
Type	S/A/B		
*3G 350	B	"V"	A3G350-AB** -01



# EC axial fans integrated electronics

K-Range, Ø 360



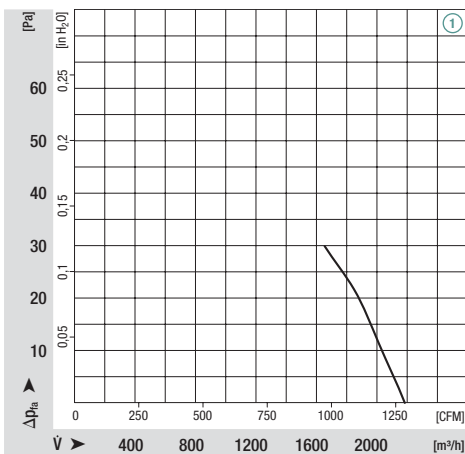
- **Material:** plastic
- **Direction of rotation:** counter-clockwise
- **Technical features:** control input 0-10 VDC / PWM, tach output, 10 V voltage output for potentiometer
- **Type of protection:** IP 44
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST are applied for

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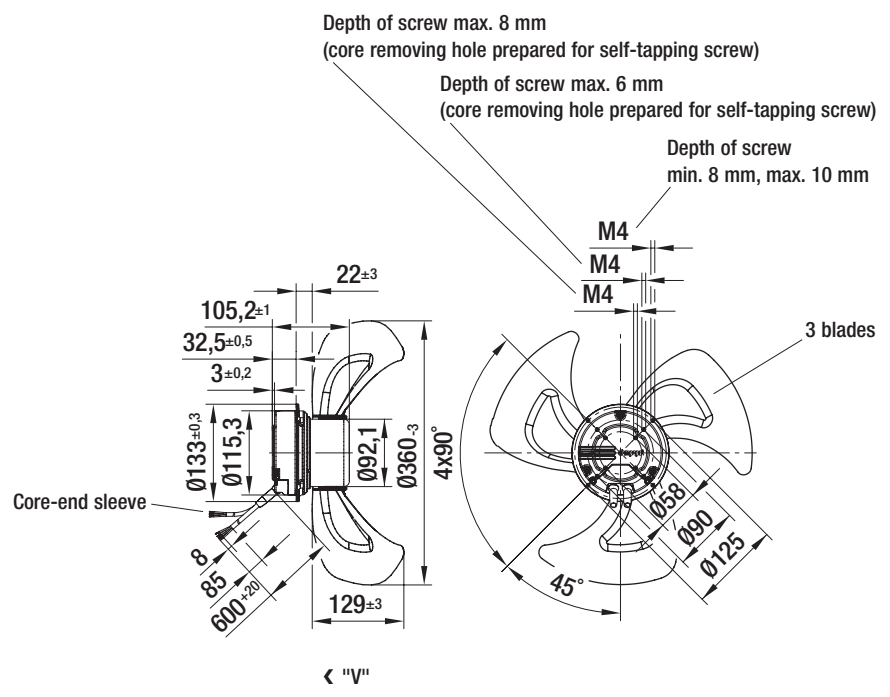
Nominal data <sup>(1)</sup>		Characteristic	Voltage range	Frequency	Air flow	Speed/rpm	Power input	Current draw	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor	VAC	Hz	m <sup>3</sup> /h	min <sup>-1</sup>	W	A	dB(A)	Pa	°C	kg	
*3G 360	M3G074-CF	① 200-277	50/60	2190	920	40	0,30	49	30	-25..+60	2,4	preliminary data!

subject to alterations ① at 230 VAC

## Characteristics (preliminary data!)



Selection	Cable exit	Direction of air flow	
Type	S/A/B		
*3G 360	B	"V"	A3G360-AB** -01



# EC axial fans integrated electronics

K-Range, Ø 360



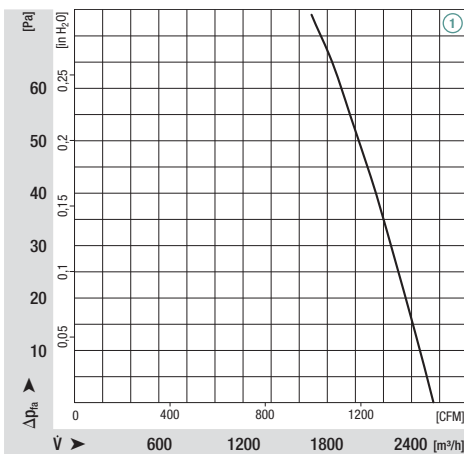
- **Material:** plastic
- **Direction of rotation:** counter-clockwise
- **Technical features:** control input 0-10 VDC / PWM, tach output, 10 V voltage output for potentiometer
- **Type of protection:** IP 44
- **Approvals:** UL, CSA, VDE, CE, CCC and GOST are applied for

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Nominal data <sup>(1)</sup>		Characteristic	Voltage range	Frequency	Air flow	Speed/rpm	Power input	Current draw	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass
Type	Motor	VAC	Hz	m <sup>3</sup> /h	min <sup>-1</sup>	W	A	dB(A)	Pa	°C	kg	
*3G 360	M3G074-CF	① 200-277	50/60	2560	1440	100	0,70	59	75	-25..+60	2,8	preliminary data!

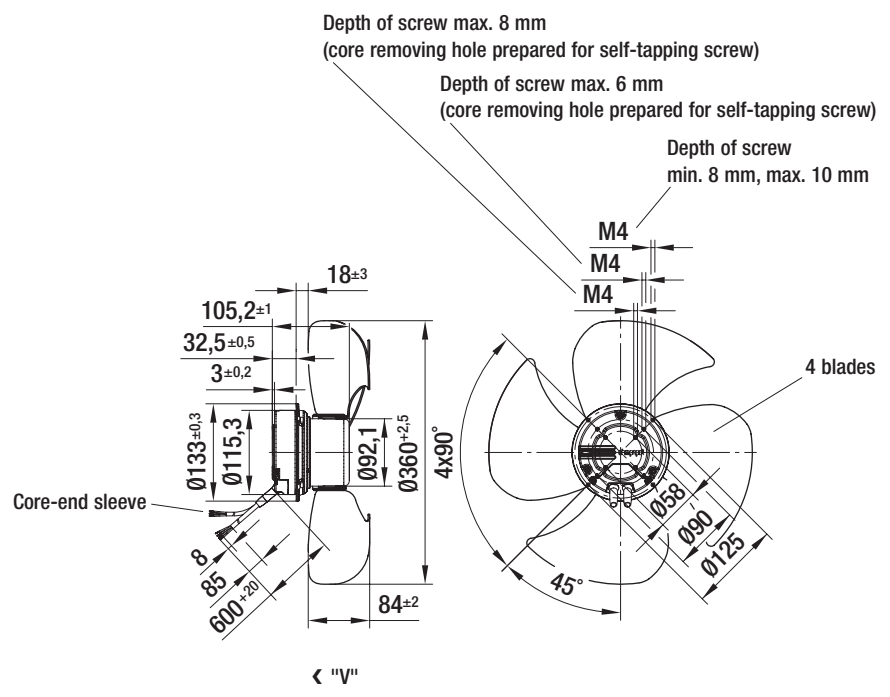
subject to alterations ① at 230 VAC


## Characteristics (preliminary data!)





Selection	Cable exit	Direction of air flow	
Type	S/A/B		
*3G 360	B	"V"	A3G360-AC** -01



Selection table		Standard	Multi-function	Frigo	Plug connection	UL and CSA
	 = available ex stock	p. 156	p. 158	p. 159	p. 160	p. 161
Foot measure	18 mm (height 48 mm)		●	●		
	26 mm (height 51 mm)	●	●		●	●
Mounting	A-side (3 x M4, Ø 71.4 mm)		●			
	B-side (3 x M4, Ø 71.4 mm)		●	●		
	Threaded bolts A-side (4 x M4)	●	●	●	●	●
Connection leads	Lead wire (3 x 0.5 mm <sup>2</sup> )	450 mm	1500 mm	1500 mm		
	Plug connection (3 x 0.5 mm <sup>2</sup> )				●	
	Lead wire UL (3 x AWG20)					450 mm



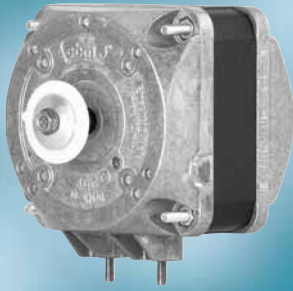
# Square shaded-pole motors (Q-motors)

Standard design	156
Multi-function design	158
Frigo design	159
Plug connection design	160
UL and CSA design	161
Characteristic curves	162



# Square shaded-pole motors

## Standard design



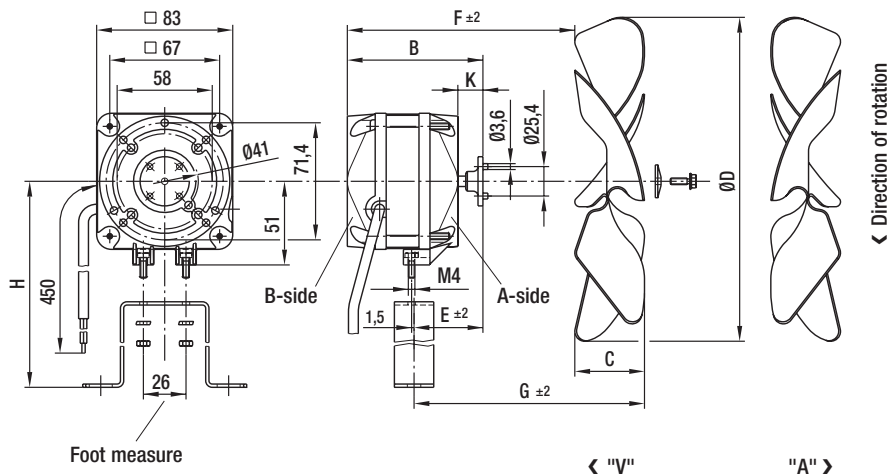
- **Direction of rotation:** counter-clockwise, seen on shaft
- **Type of protection:** IP 42
- **Insulation class:** "B"
- **Approvals:** VDE, CE
- **Characteristics:** see p. 162 ff.

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Nominal data	Combination: motor and axial impeller	Characteristic	Voltage	Frequency	Speed/rpm	Power output	Power input	Current draw	Perm. amb. temp.	Mass	Dimensions		
											B	E	K
Type			VAC	Hz	min <sup>-1</sup>	W	W	A	°C	kg			
M4Q045-BD01 -01	A	①	230	50	1300	5	29	0,19	-30..+40	0,9	76	42	15
		②	230	60	1550	5	26	0,17	-30..+40				
M4Q045-CA01 -01	B	③	230	50	1300	7	31	0,20	-30..+40	1,1	82	42	15
		④	230	60	1550	8	30	0,20	-30..+40				
M4Q045-CA03 -51	C	⑤	230	50	1300	10	36	0,25	-30..+40	1,2	82	42	15
		⑥	230	60	1550	9	34	0,22	-30..+40				
M4Q045-CF01 -01	D	⑦	230	50	1300	16	60	0,42	-30..+40	1,3	87	42	15
		⑧	230	60	1550	16	58	0,36	-30..+40				
M4Q045-DA01 -01 <sup>(1)</sup>	E	⑨	230	50	1300	18	70	0,48	-30..+40	1,6	93	54	15
		⑩	230	60	1550	18	62	0,42	-30..+40				
M4Q045-DA05 -01 <sup>(1)</sup>	F	⑪	230	50	1300	23	86	0,62	-30..+40	1,6	93	54	15
		⑫	230	60	1550	25	80	0,55	-30..+40				
M4Q045-EA01 -01 <sup>(1)</sup>	G	⑬	230	50	1300	25	90	0,62	-30..+40	2,0	103	59	16
		⑭	230	60	1550	26	80	0,55	-30..+40				
M4Q045-EF01 -01 <sup>(1)</sup>	H	⑮	230	50	1300	34	110	0,75	-30..+40	2,2	125	79	33
		⑯	230	60	1550	34	100	0,65	-30..+40				

subject to alterations

<sup>(1)</sup> mounting on both A- and B-side possible via mounting brackets



**Standard for all designs:**

- **Mounting:** The threaded bolt ends protruding on the A side can be used to mount guard grille and wall ring. The Q-motor may also be screwed into place via the mounting flanges (integrated in the end shields).
- **Mounting of axial impeller:** The impeller is locked onto the motor shaft via a plastic bracket with integrated carrier bolt and an M4 screw (M5 as of M4Q045-DA).
- **Performance data:** At 60 Hz, the pitch of the axial impeller blades has to be reduced by 6° each.
- **Direction of air flow:** There are suitable axial impellers available for both directions of air flow.
- **Bearings:** Self-aligning calotte sleeve bearings with a medium life time of of 30,000 operating hours with horizontal mounting position (preferred mounting position)

Axial impellers			Pitch 22° ± 1°30'				Pitch 28° ± 1°30'				Pitch 34° ± 1°30'			
Ø D	H	Dir. of air flow	F	G	C	m³/h <sup>(2)</sup>	F	G	C	m³/h <sup>(2)</sup>	F	G	C	m³/h <sup>(2)</sup>
154	90	"V" / "A"	61	56	27,5	60	56	59	32,0	100	54	62	37,0	140
172	103	"V" / "A"	58	57	31,0	120	55	59	36,0	180	53	63	42,0	230
200	123	"V" / "A"	58	58	32,0	190	55	60	37,5	300	---	---	---	---
200	123	"V" / "A"	65	58	32,0	190	62	60	37,5	300	59	64	45,0	400
230	123	"V" / "A"	64	62	35,0	500	---	---	---	---	---	---	---	---
230	123	"V" / "A"	64	62	35,0	500	60	65	43,0	630	52	68	50,0	820
254	135	"V" / "A"	64	62	37,0	580	---	---	---	---	---	---	---	---
254	135	"V" / "A"	70	62	37,0	580	65	66	45,0	840	---	---	---	---
254	135	"V" / "A"	76	74	37,0	580	72	78	45,0	840	67	80	52,0	1070
300	160	"V" / "A"	75	79	43,0	1000	---	---	---	---	---	---	---	---
300	160	"V" / "A"	75	79	43,0	1000	67	81	53,5	1400	---	---	---	---
300	160	"V" / "A"	86	84	43,0	1000	77	86	53,5	1400	---	---	---	---
300	160	"V" / "A"	108	104	43,0	1000	104	106	53,5	1400	95	112	61,0	1700

<sup>(2)</sup> determined at 20 Pa

# Square shaded-pole motors

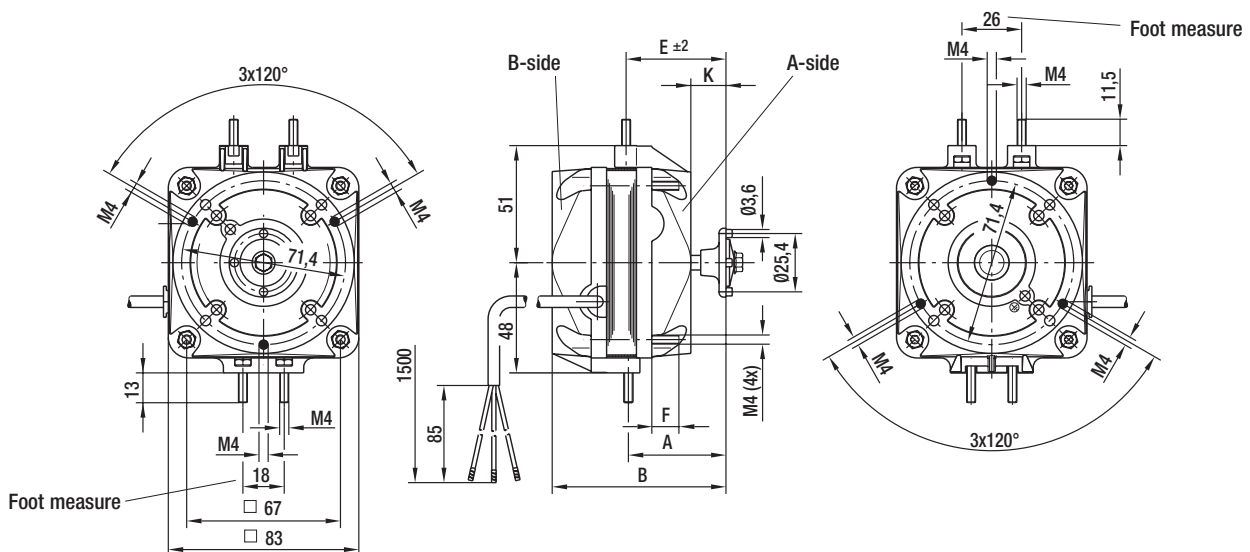
## Multi-function design



- **Mounting bosses:** different centre-lines are possible: 26 mm (51 mm high) or 18 mm (48 mm high)
  - **End shields:** captive M4 screws in the end shields are mounted on opposite sides in the flanges; knurled hex nuts are not included and will have to be ordered separately; end shields available for A and B side, threaded holes 3 x M4, bolt circle diameter 71.4 mm; mounting of guard grille and wall ring on A-side end shield
  - **Connection leads:** jacketed cable 3 x 0.5 mm<sup>2</sup> with brass lead tips
  - **Direction of rotation:** counter-clockwise, seen on shaft
  - **Type of protection:** IP 42
  - **Insulation class:** "B"
  - **Approvals:** VDE, CE
  - **Characteristics:** see p. 162 ff.
- ebm-papst • Muldingen

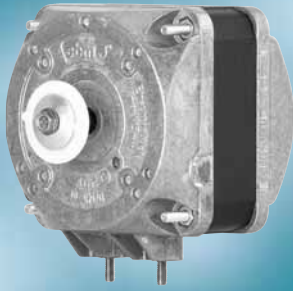
Nominal data		Combination: motor and axial impeller	Characteristic	Voltage	Frequency	Speed/rpm	Power output	Power input	Current draw	Perm. amb. temp.	Mass	Dimensions				
Type	p. 156											VAC	Hz	min <sup>-1</sup>	W	W
M4Q045-BD01 -75	A	①	230	50	1300	5	29	0,19	-30..+40	0,9	43	76	43,5	12	15,0	
		②	230	60	1550	5	26	0,17	-30..+40							
M4Q045-CA01 -75	B	③	230	50	1300	7	31	0,20	-30..+40	1,1	49	82	43,5	10	15,0	
		④	230	60	1550	8	30	0,20	-30..+40							
M4Q045-CA03 -75	C	⑤	230	50	1300	10	36	0,25	-30..+40	1,2	49	82	43,5	10	15,0	
		⑥	230	60	1550	9	34	0,22	-30..+40							
M4Q045-CF01 -75	D	⑦	230	50	1300	16	60	0,42	-30..+40	1,3	54	87	43,5	10	15,0	
		⑧	230	60	1550	16	58	0,36	-30..+40							
M4Q045-DA01 -75	E	⑨	230	50	1300	18	70	0,48	-30..+40	1,6	59	93	43,5	10	15,0	
		⑩	230	60	1550	18	62	0,42	-30..+40							
M4Q045-DA05 -75	F	⑪	230	50	1300	23	86	0,62	-30..+40	1,6	59	93	43,5	10	15,0	
		⑫	230	60	1550	25	80	0,55	-30..+40							
M4Q045-EA01 -75	G	⑬	230	50	1300	25	90	0,62	-30..+40	2,0	69	103	44,0	10	15,5	
		⑭	230	60	1550	26	80	0,55	-30..+40							
M4Q045-EF01 -75	H	⑮	230	50	1300	34	110	0,75	-30..+40	2,2	92	125	61,0	10	33,0	
		⑯	230	60	1550	34	100	0,65	-30..+40							

subject to alterations



# Square shaded-pole motors

Frigo design

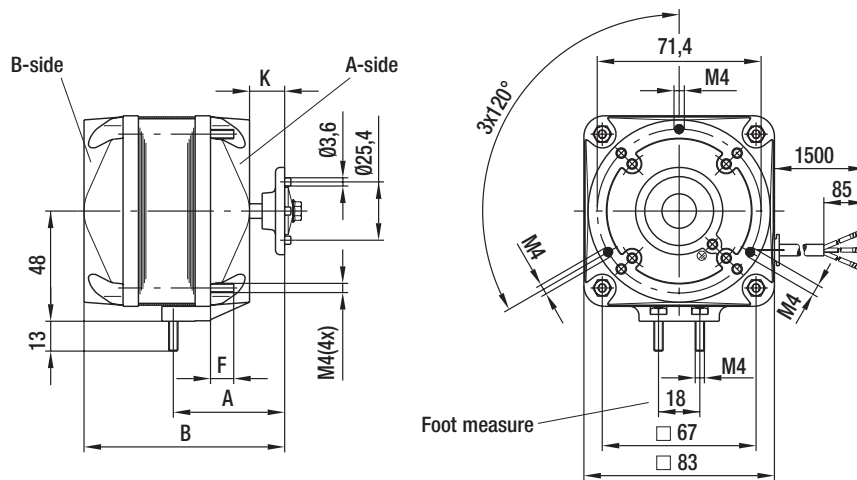


- **Description:** specially developed for the spare part business
- **Mounting bosses:** centre-line 18 mm (48 mm high)
- **End shields:** B-side, threaded holes 3 x M4, bolt circle diameter 71.4 mm; mounting of guard grille and wall ring on A-side end shield; knurled hex nuts M4 (2 pcs.) are loosely added;
- **Connection leads:** jacketed cable 3 x 0.5 mm<sup>2</sup> with brass lead tips
- **Direction of rotation:** counter-clockwise, seen on shaft
- **Type of protection:** IP 42
- **Insulation class:** "B"
- **Approvals:** VDE, CE
- **Characteristics:** see p. 162 ff.

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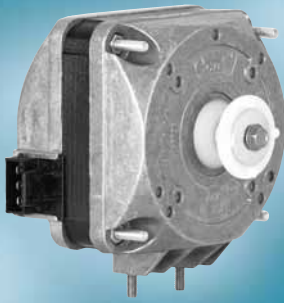
Nominal data	Combination: motor and axial impeller	Characteristic	Voltage	Frequency	Speed/rpm	Power output	Power input	Current draw	Perm. amb. temp.	Mass	Dimensions			
											Type	p. 156	VAC	Hz
M4Q045-BD01 -A4	A	① ②	230 230	50 60	1300 1550	5 5	29 26	0,19 0,17	-30..+40 -30..+40	0,9	48,5	76	12	15
M4Q045-CA01 -N4	B	③ ④	230 230	50 60	1300 1550	7 8	31 30	0,20 0,20	-30..+40 -30..+40	1,1	48,5	82	10	15
M4Q045-CA03 -A4	C	⑤ ⑥	230 230	50 60	1300 1550	10 9	36 34	0,25 0,22	-30..+40 -30..+40	1,2	48,5	82	10	15
M4Q045-CF01 -A4	D	⑦ ⑧	230 230	50 60	1300 1550	16 16	60 58	0,42 0,36	-30..+40 -30..+40	1,3	48,5	87	10	15
M4Q045-DA01 -A4	E	⑨ ⑩	230 230	50 60	1300 1550	18 18	70 62	0,48 0,42	-30..+40 -30..+40	1,6	48,5	93	10	15
M4Q045-DA05 -A4	F	⑪ ⑫	230 230	50 60	1300 1550	23 25	86 80	0,62 0,55	-30..+40 -30..+40	1,6	48,5	93	10	15
M4Q045-EA01 -A4	G	⑬ ⑭	230 230	50 60	1300 1550	25 26	90 80	0,62 0,55	-30..+40 -30..+40	2,0	49,0	103	10	16
M4Q045-EF01 -A4	H	⑮ ⑯	230 230	50 60	1300 1550	34 34	110 100	0,75 0,65	-30..+40 -30..+40	2,2	66,0	125	10	33

subject to alterations



# Square shaded-pole motors

## Plug connection design



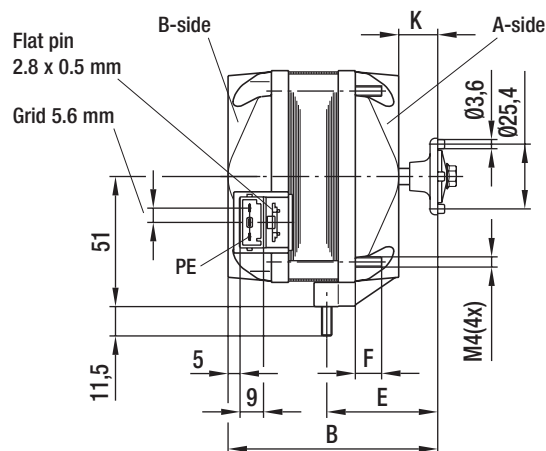
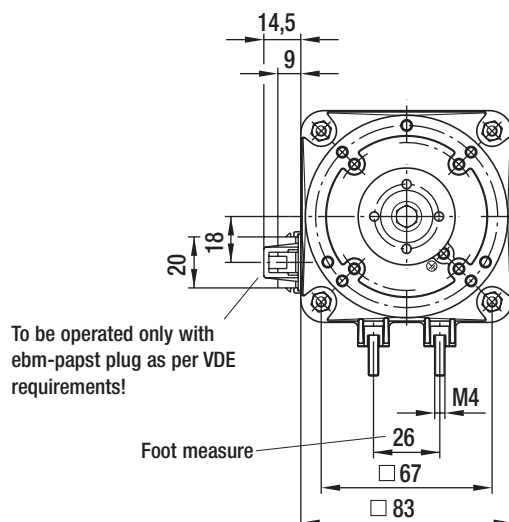
- **Connection leads:** plug connector grid 5.6 mm, flat pin 2.8 x 0.5 mm; (protruding on the end shield of the non-drive or B-side); connection lead available in cable length 420 mm up to 4970 mm
- **NB:** To be operated only with ebm-papst plug as per VDE requirements!
- **Direction of rotation:** counter-clockwise, seen on shaft
- **Type of protection:** IP 42
- **Insulation class:** "B"
- **Approvals:** VDE, CE
- **Characteristics:** see p. 162 ff.

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Nominal data	Combination: motor and axial impeller	Characteristic	Voltage	Frequency	Speed/rpm	Power output	Power input	Current draw	Perm. amb. temp.	Mass	Dimensions			
											Type	p. 156	VAC	Hz
M4Q045-BD01 -08	A	① ②	230 230	50 60	1300 1550	5 5	29 26	0,19 0,17	-30..+40 -30..+40	0,9	43,5	76	12	15
M4Q045-CA01 -08	B	③ ④	230 230	50 60	1300 1550	7 8	31 30	0,20 0,20	-30..+40 -30..+40	1,1	43,5	82	10	15
M4Q045-CA03 -08	C	⑤ ⑥	230 230	50 60	1300 1550	10 9	36 34	0,25 0,22	-30..+40 -30..+40	1,2	43,5	82	10	15
M4Q045-CF01 -08	D	⑦ ⑧	230 230	50 60	1300 1550	16 16	60 58	0,42 0,36	-30..+40 -30..+40	1,3	43,5	87	10	15
M4Q045-DA01 -52 <sup>(1)</sup>	E	⑨ ⑩	230 230	50 60	1300 1550	18 18	70 62	0,48 0,42	-30..+40 -30..+40	1,6	43,5	93	10	15
M4Q045-DA05 -52 <sup>(1)</sup>	F	⑪ ⑫	230 230	50 60	1300 1550	23 25	86 80	0,62 0,55	-30..+40 -30..+40	1,6	43,5	93	10	15
M4Q045-EA01 -52 <sup>(1)</sup>	G	⑬ ⑭	230 230	50 60	1300 1550	25 26	90 80	0,62 0,55	-30..+40 -30..+40	2,0	44,0	103	10	16
M4Q045-EF01 -52 <sup>(1)</sup>	H	⑮ ⑯	230 230	50 60	1300 1550	34 34	110 100	0,75 0,65	-30..+40 -30..+40	2,2	61,0	125	10	33

subject to alterations

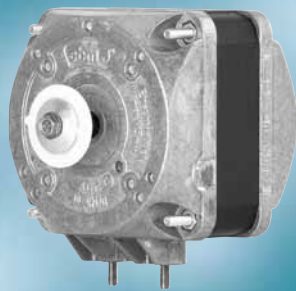
<sup>(1)</sup> mounting on both A- and B-side possible via mounting brackets





# Square shaded-pole motors

UL and CSA design



- **Description:** UL- and CSA-approved types; connection leads, thermal overload protectors and dynamo wires are UL- and CSA-approved components
- **Connection leads:** jacketed cable 3 x AWG20 with brass lead tips
- **Standards:** UL547 and UL1004, as well as CSA standards C22.2 no. 100 and C22.2 no. 77
- **Direction of rotation:** counter-clockwise, seen on shaft
- **Type of protection:** IP 42
- **Insulation class:** "B"
- **Approvals:** UL, CSA, CE
- **Characteristics:** see p. 162 ff.
- **Drawing:** see standard version on page 156

ebm-papst • Mulfingen

Nominal data		Combination: motor and axial impeller	Characteristic	Voltage	Frequency	Speed/rpm	Power output	Power input	Current draw	Perm. amb. temp.	Mass	Dimensions		
Type	p. 156											VAC	Hz	min <sup>-1</sup>
M4Q045-BD03 -04 <sup>(2)</sup>	A	①	115	50	1300	5	29	0,38	-30..+40	0,9	76	42	15	
		②	115	60	1550	5	26	0,35	-30..+40					
M4Q045-BD01 -04 <sup>(2)</sup>	A	①	230	50	1300	5	29	0,19	-30..+40	0,9	76	42	15	
		②	230	60	1550	5	26	0,17	-30..+40					
M4Q045-CA17 -04 <sup>(2)</sup>	B	③	115	50	1300	7	31	0,40	-30..+40	1,1	82	42	15	
		④	115	60	1550	8	30	0,40	-30..+40					
M4Q045-CA01 -04 <sup>(2)</sup>	B	③	230	50	1300	7	31	0,20	-30..+40	1,1	82	42	15	
		④	230	60	1550	8	30	0,20	-30..+40					
M4Q045-CA27 -04 <sup>(2)</sup>	C	⑤	115	50	1300	10	36	0,50	-30..+40	1,2	82	42	15	
		⑥	115	60	1550	9	34	0,45	-30..+40					
M4Q045-CA25 -04 <sup>(2)</sup>	C	⑤	230	50	1300	10	36	0,25	-30..+40	1,2	82	42	15	
		⑥	230	60	1550	9	34	0,22	-30..+40					
M4Q045-CF07 -04 <sup>(2)</sup>	D	⑦	115	50	1300	16	60	0,80	-30..+40	1,3	87	42	15	
		⑧	115	60	1550	16	58	0,74	-30..+40					
M4Q045-CF01 -04 <sup>(2)</sup>	D	⑦	230	50	1300	16	60	0,42	-30..+40	1,3	87	42	15	
		⑧	230	60	1550	16	58	0,36	-30..+40					
M4Q045-DA11 -04 <sup>(1)(3)</sup>	E	⑨	115	50	1300	18	70	0,98	-30..+40	1,6	93	54	15	
		⑩	115	60	1550	18	62	0,87	-30..+40					
M4Q045-DA01 -04 <sup>(1)(3)</sup>	E	⑨	230	50	1300	18	70	0,48	-30..+40	1,6	93	54	15	
		⑩	230	60	1550	18	62	0,42	-30..+40					
M4Q045-DA13 -04 <sup>(1)(3)</sup>	F	⑪	115	50	1300	23	86	1,25	-30..+40	1,6	93	54	15	
		⑫	115	60	1550	25	80	1,10	-30..+40					
M4Q045-DA05 -04 <sup>(1)(3)</sup>	F	⑪	230	50	1300	23	86	0,62	-30..+40	1,6	93	54	15	
		⑫	230	60	1550	25	80	0,55	-30..+40					
M4Q045-EA03 -04 <sup>(1)(3)</sup>	G	⑬	115	50	1300	25	90	1,25	-30..+40	2,0	103	59	16	
		⑭	115	60	1550	26	80	1,10	-30..+40					
M4Q045-EA01 -04 <sup>(1)(3)</sup>	G	⑬	230	50	1300	25	90	0,62	-30..+40	2,0	103	59	16	
		⑭	230	60	1550	26	80	0,55	-30..+40					
M4Q045-EF03 -04 <sup>(1)(3)</sup>	H	⑮	115	50	1300	34	110	1,50	-30..+40	2,2	125	79	33	
		⑯	115	60	1550	34	100	1,35	-30..+40					
M4Q045-EF01 -04 <sup>(1)(3)</sup>	H	⑮	230	50	1300	34	110	0,75	-30..+40	2,2	125	79	33	
		⑯	230	60	1550	34	100	0,65	-30..+40					

subject to alterations

<sup>(1)</sup> mounting on both A- and B-side possible via mounting brackets

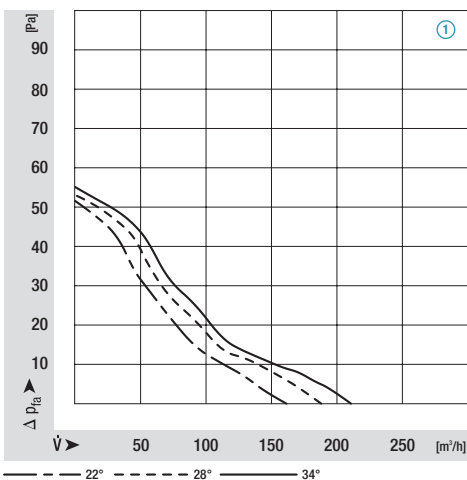
<sup>(2)</sup> File no. E 171165

<sup>(3)</sup> File no. E 76226

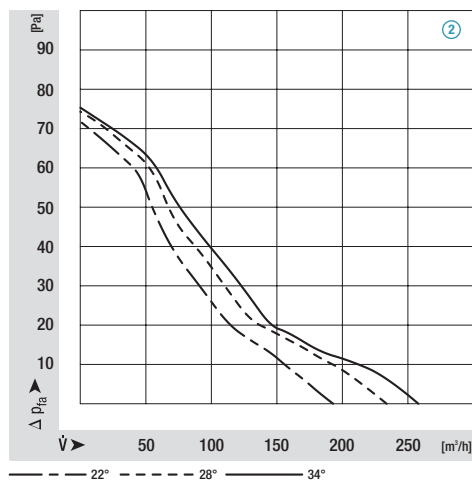
# Square shaded-pole motors

Characteristic curves (established with wall rings)

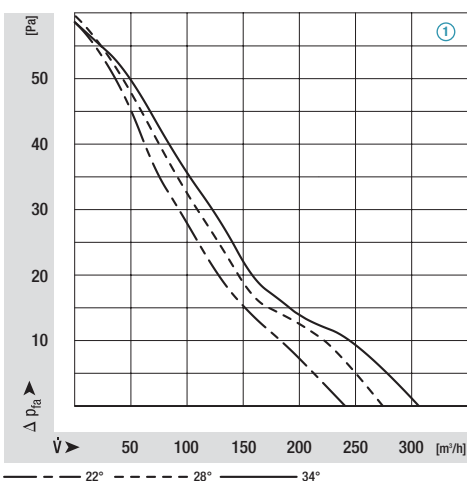
M4Q045-BD01-\*\*, Ø 154, 50 Hz



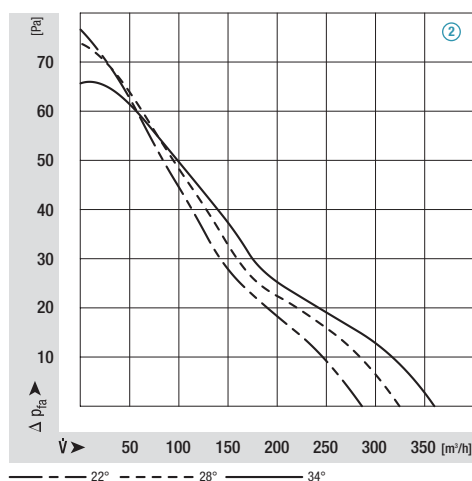
M4Q045-BD01-\*\*, Ø 154, 60 Hz



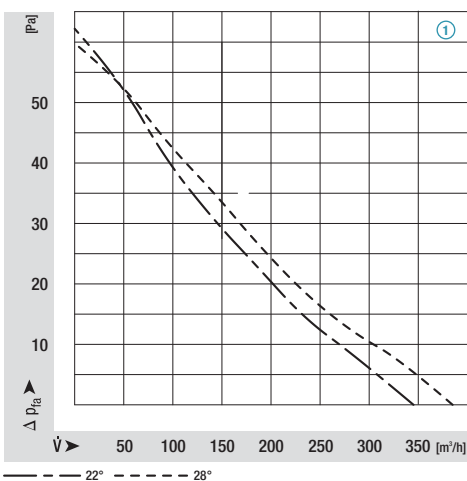
M4Q045-BD01-\*\*, Ø 172, 50 Hz



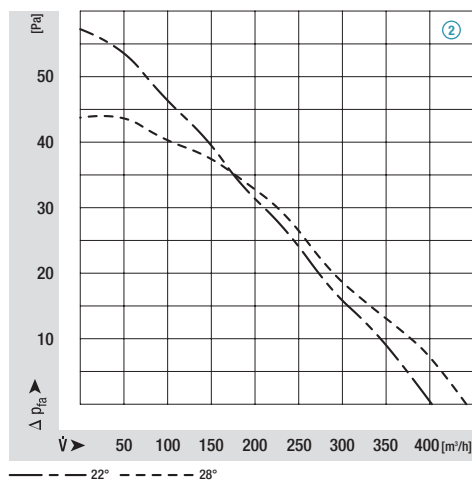
M4Q045-BD01-\*\*, Ø 172, 60 Hz



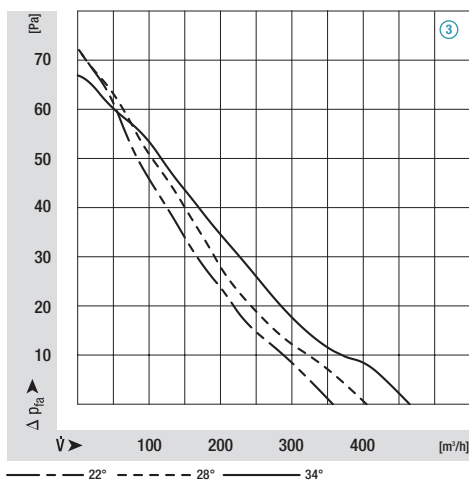
M4Q045-BD01-\*\*, Ø 200, 50 Hz



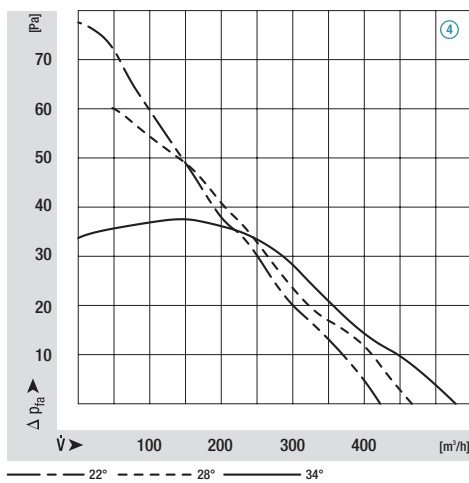
M4Q045-BD01-\*\*, Ø 200, 60 Hz



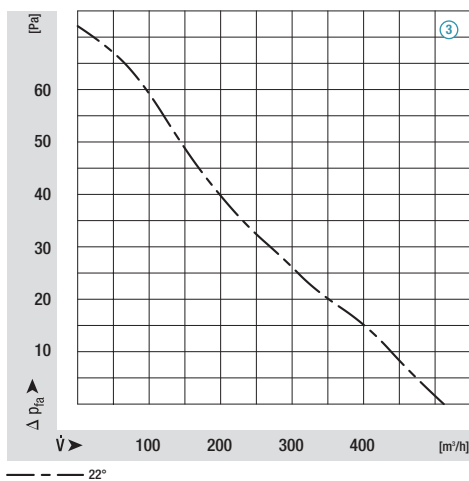
M4Q045-CA01-\*\*, Ø 200, 50 Hz



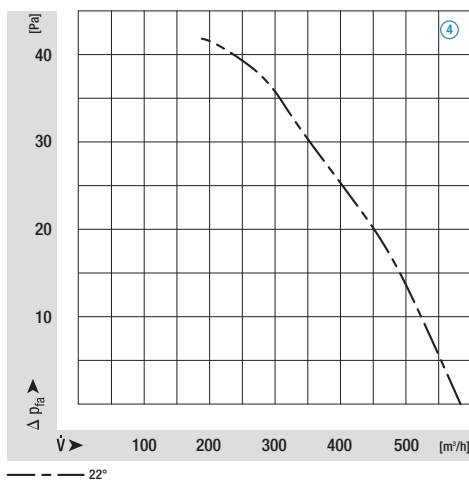
M4Q045-CA01-\*\*, Ø 200, 60 Hz



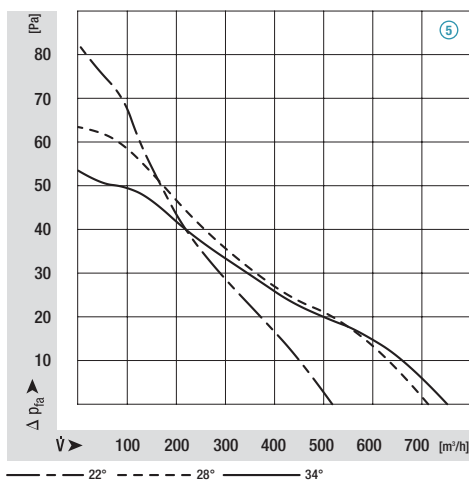
M4Q045-CA01-\*\*, Ø 230, 50 Hz



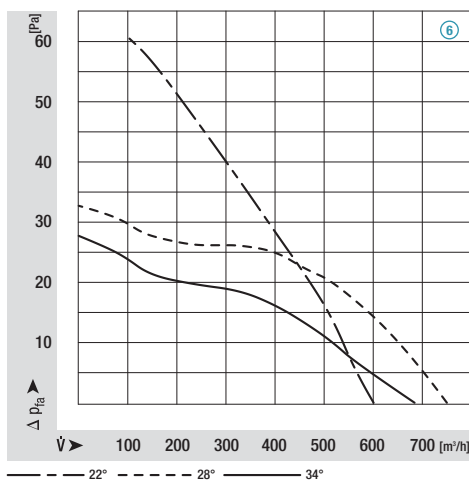
M4Q045-CA01-\*\*, Ø 230, 60 Hz



M4Q045-CA03-\*\*, Ø 230, 50 Hz



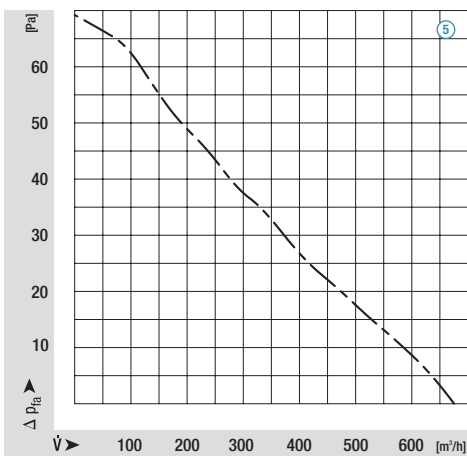
M4Q045-CA03-\*\*, Ø 230, 60 Hz



# Square shaded-pole motors

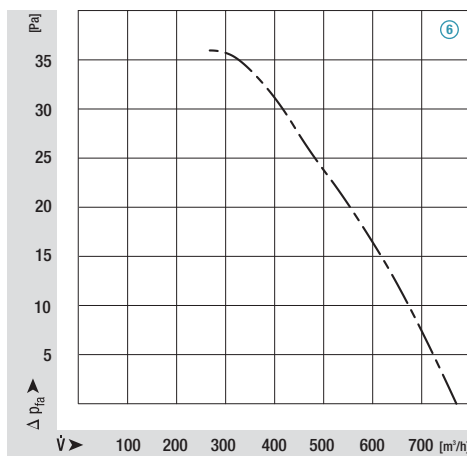
Characteristic curves ( established with wall rings)

M4Q045-CA03-\*\*, Ø 254, 50 Hz



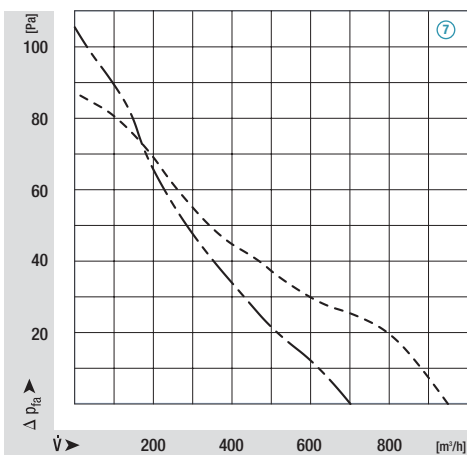
22°

M4Q045-CA03-\*\*, Ø 254, 60 Hz



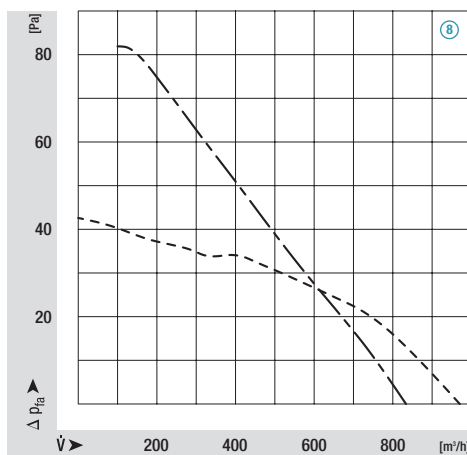
22°

M4Q045-CF01-\*\*, Ø 254, 50 Hz



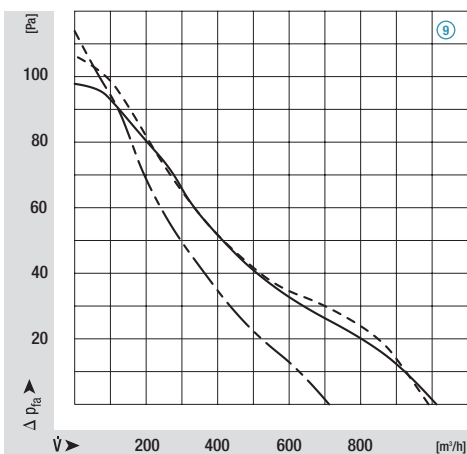
22° - - - - - 28°

M4Q045-CF01-\*\*, Ø 254, 60 Hz



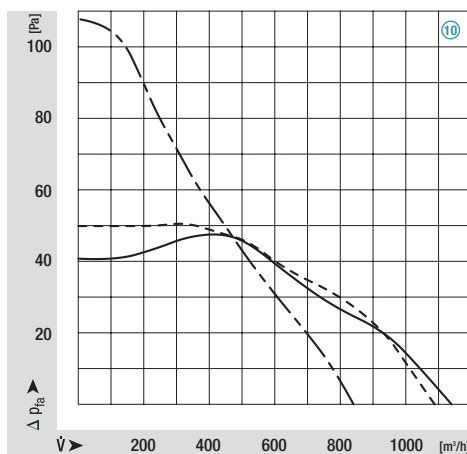
22° - - - - - 28°

M4Q045-DA01-\*\*, Ø 254, 50 Hz



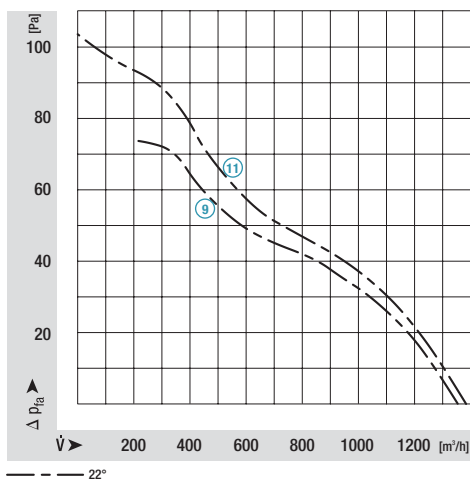
22° - - - - - 28° - - - - - 34°

M4Q045-DA01-\*\*, Ø 254, 60 Hz

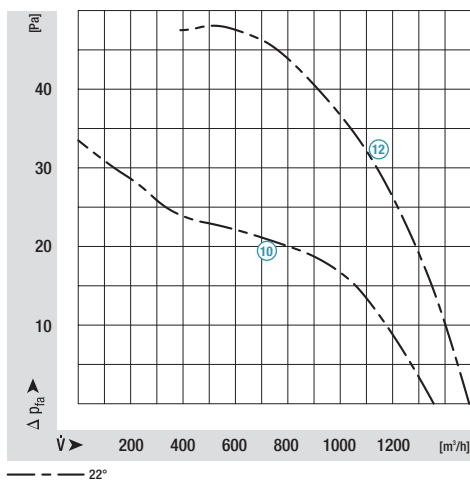


22° - - - - - 28° - - - - - 34°

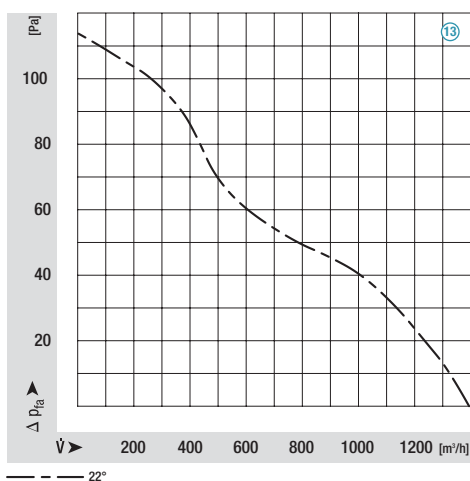
9 M4Q045-DA01-\*\*-\*\* / 11-DA05-\*\*-\*\*, Ø 300, 50 Hz



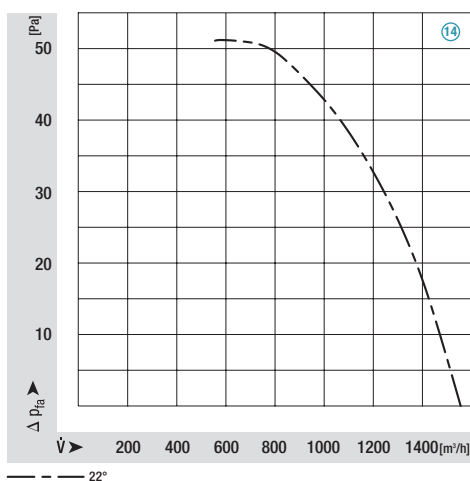
10 M4Q045-DA01-\*\*-\*\* / 12-DA05-\*\*-\*\*, Ø 300, 60 Hz



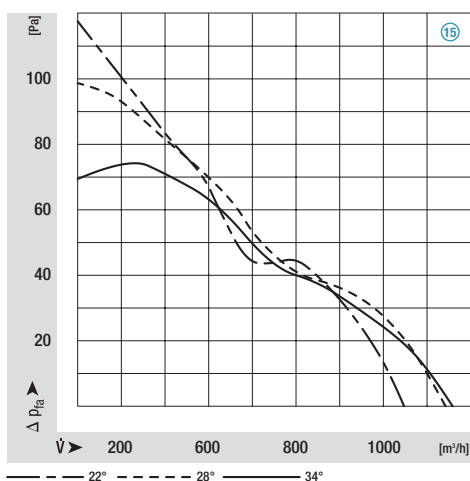
M4Q045-EA01-\*\*-\*\*, Ø 300, 50 Hz



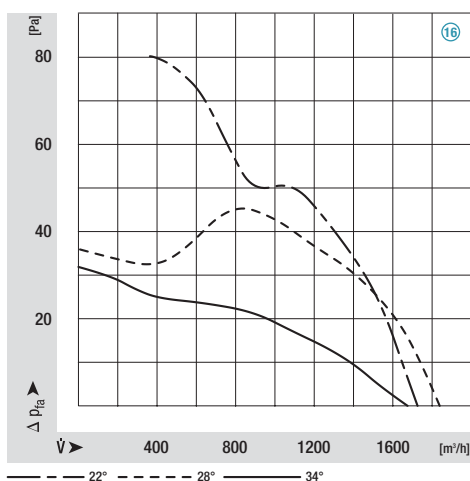
M4Q045-EA01-\*\*-\*\*, Ø 300, 60 Hz



M4Q045-EF01-\*\*-\*\*, Ø 300, 50 Hz



M4Q045-EF01-\*\*-\*\*, Ø 300, 60 Hz





# Energy-saving motors (ESM)

Energy-saving motors (ESM)	168
Energy-saving axial fans	170



# Energy-saving motors (ESM)



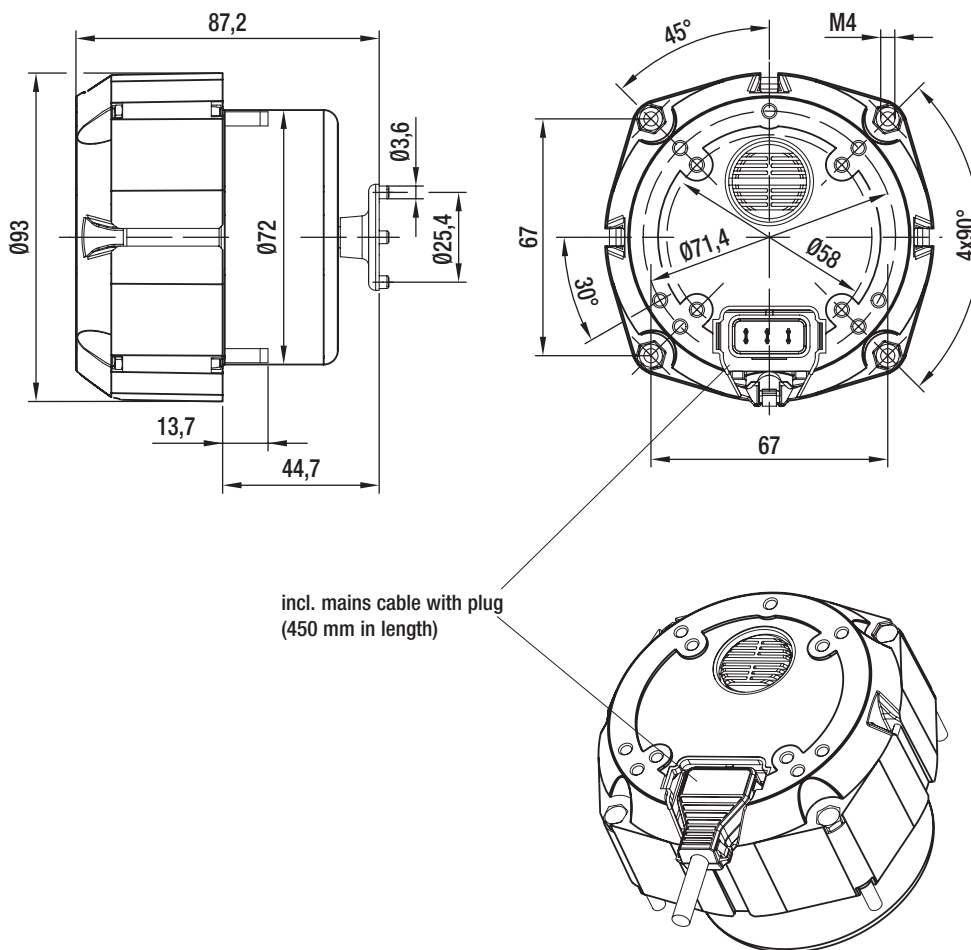
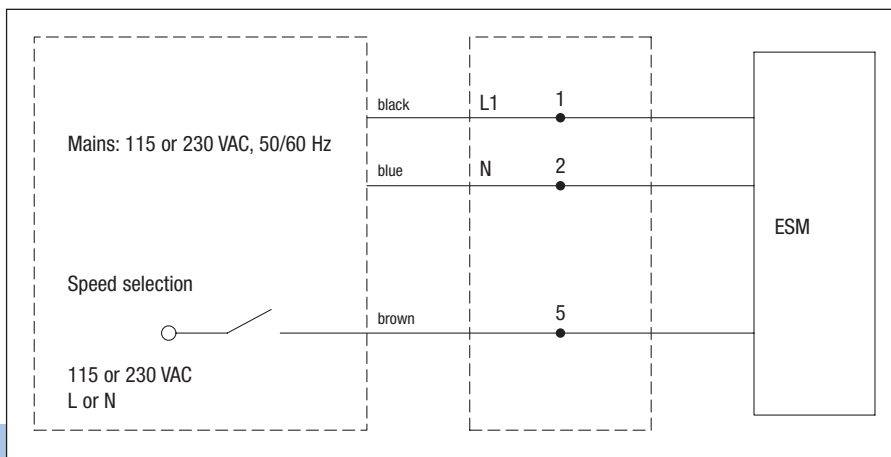
- **Impeller mounting:** The axial impeller and the plastic adapter with catching peg is fitted to the shaft via an M4 screw.
- **Direction of rotation:** counter-clockwise, seen on rotor
- **Speed selection:** open = high speed  
closed = low speed
- **Protection class:** 2
- **Type of protection:** IP 44
- **Motor protection:** via electronics
- **Approvals:** CE, VDE, UL

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Nominal data	Voltage	Frequency	Speed/rpm	Power output	Power input	Torque	Efficiency	Perm. amb. temp.	Mass
Type	VAC	Hz	min <sup>-1</sup>	W	W	Ncm	%	°C	kg
M1G055-BD91 -45	115	50/60	1400	6,2	9,5	4,2	65	-30..+50	0,9
M1G055-BD87 -25	230	50/60	1400	6,2	9,5	4,2	65	-30..+50	0,9

subject to alterations





# Energy-saving axial fans

Ø 200



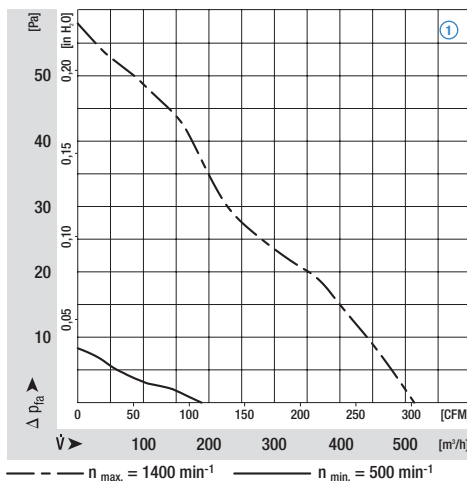
- **Material:** impeller made of sheet steel (coated in galvanic dipping varnish), wall ring made of plastic PP20TV
- **Direction of rotation:** counter-clockwise, seen on rotor
- **Speed:** 2 speeds can be set between  $n_{min}$  and  $n_{max}$
- **Protection class:** 2
- **Type of protection:** IP 44
- **Motor protection:** via electronics
- **Approvals:** CE, VDE, UL

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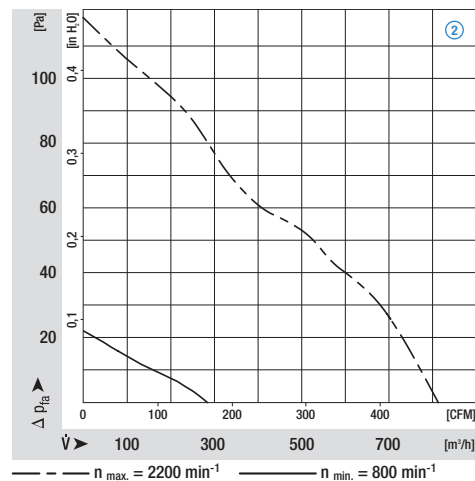
Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Sound pressure level	Max. back pressure	Perm. amb. temp.	Mass	Direction of air flow
Type	Motor	VAC	Hz	m <sup>3</sup> /h	min <sup>-1</sup>	W	A	dB(A)	Pa	°C	kg		
W1G200-EA91 -27	M1G055-BD	①	115	50/60	500	1400	7	0,12	42	---	-30..+50	1,0	"V"
W1G200-EA95 -47	M1G055-BD	②	115	50/60	800	2200	27	0,42	56	---	-30..+50	1,0	"V"
W1G200-EA87 -25	M1G055-BD	①	230	50/60	500	1400	7	0,06	42	---	-30..+50	1,0	"V"
W1G200-EA91 -45	M1G055-BD	②	230	50/60	800	2200	27	0,21	56	---	-30..+50	1,0	"V"

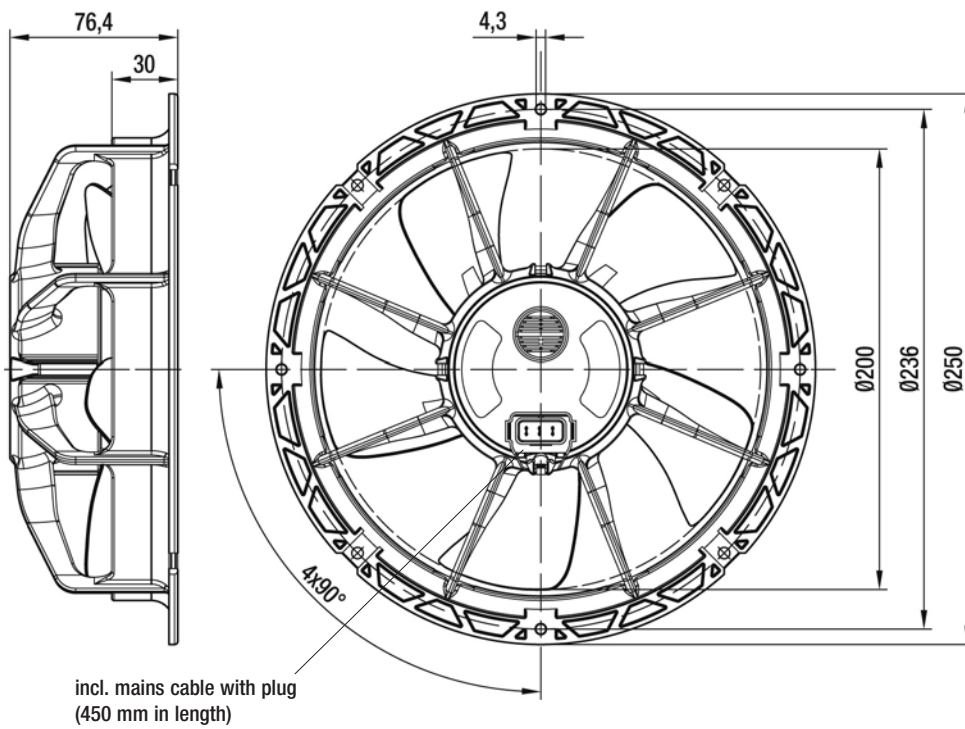
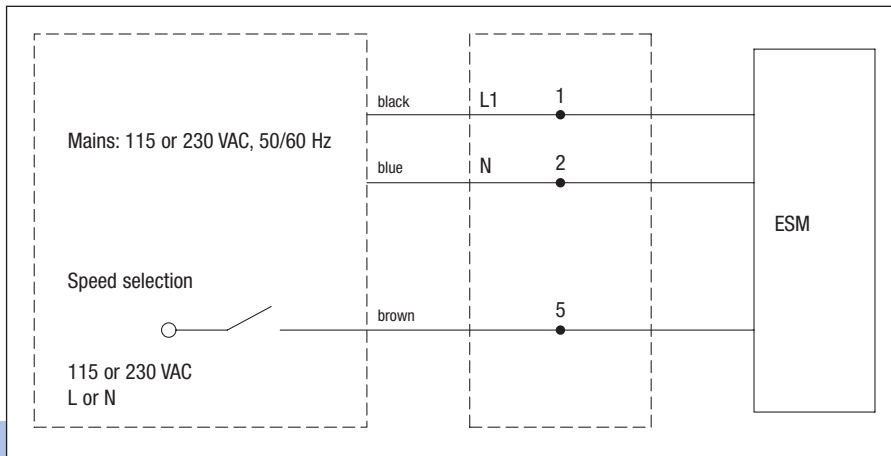
subject to alterations

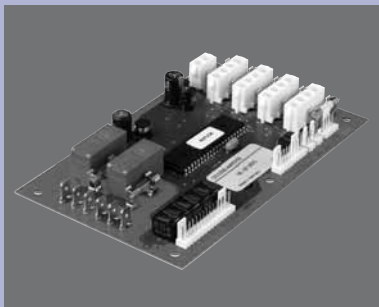
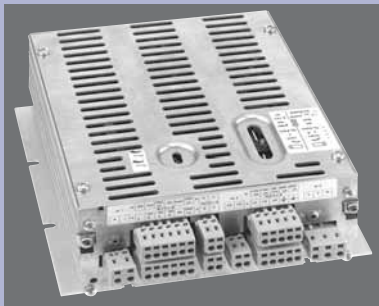
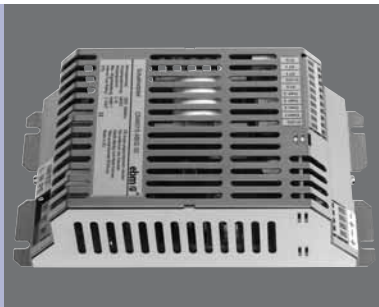
Characteristics (programmable)



Characteristics (programmable)

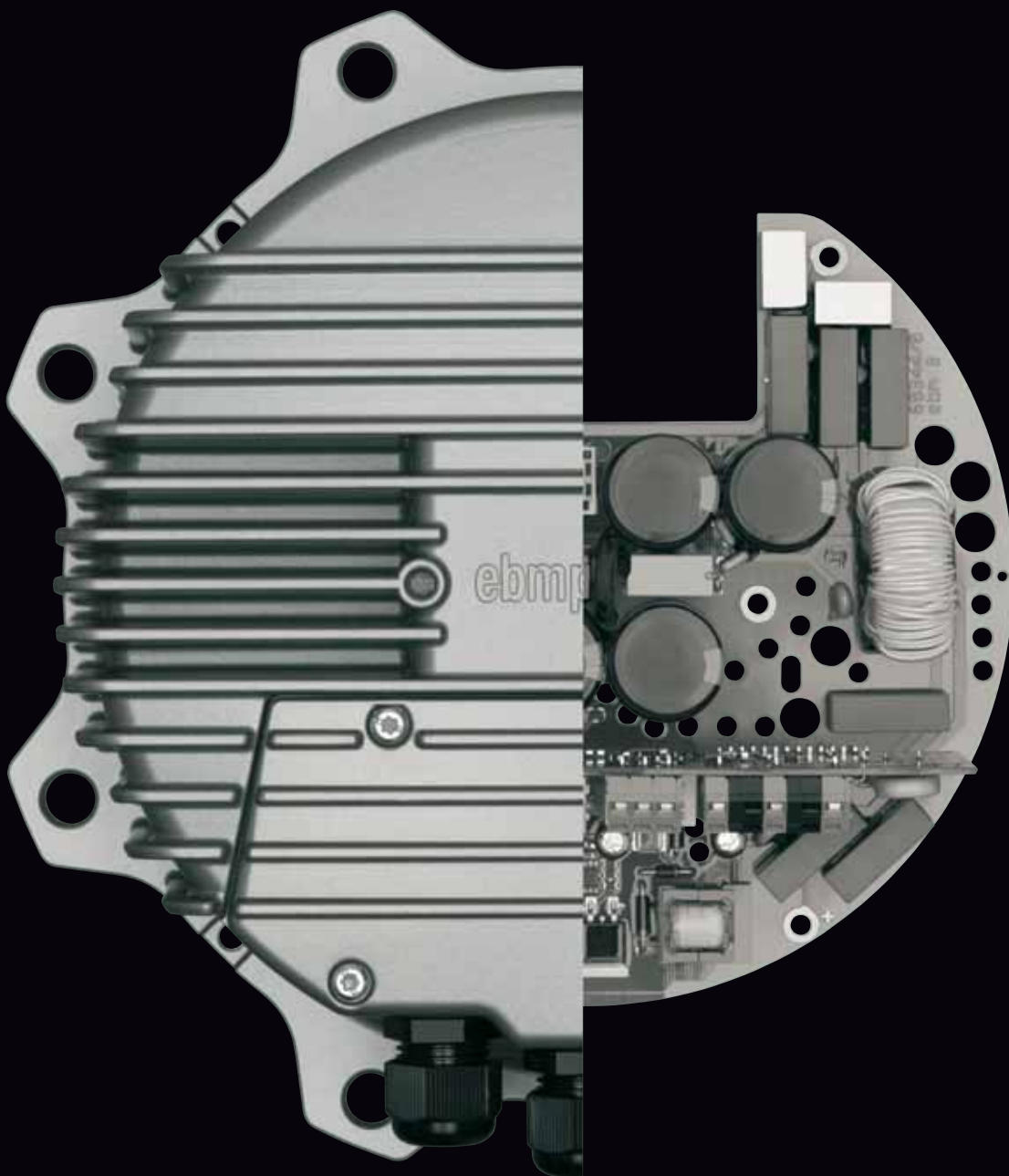


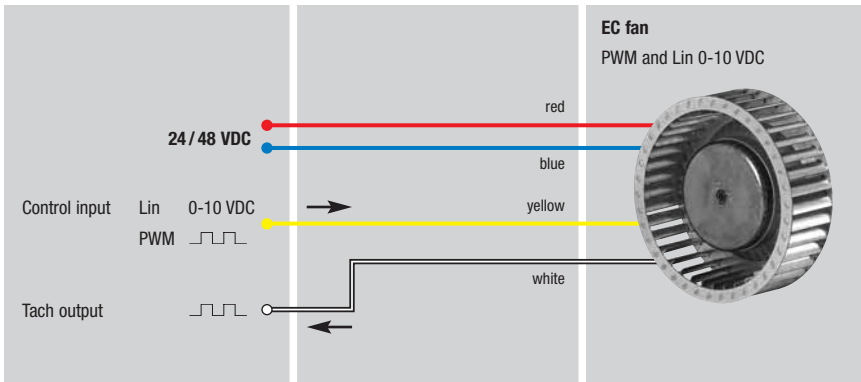




# EC-SYSTEMS

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Switch power supplies	176
External commutation electronics	184
Accessories	186
HMS controller	192





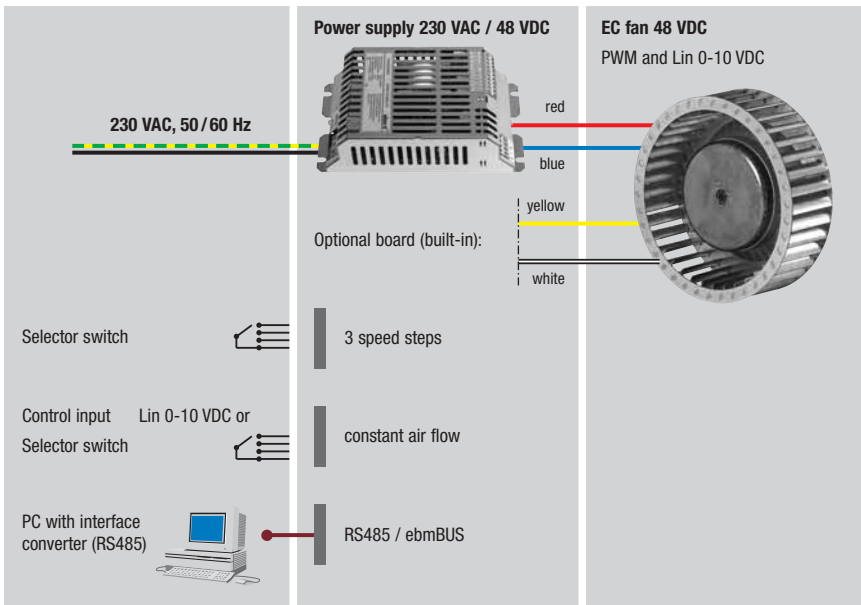
## EC fans 24 / 48 VDC with integrated commutation electronics

### Linear input:

< 1 VDC -> n=0  
1 VDC -> n<sub>min</sub>  
10 VDC -> n<sub>max</sub>

### PWM input:

< 10% PWM -> n=0  
10% PWM -> n<sub>min</sub>  
100% PWM -> n<sub>max</sub>



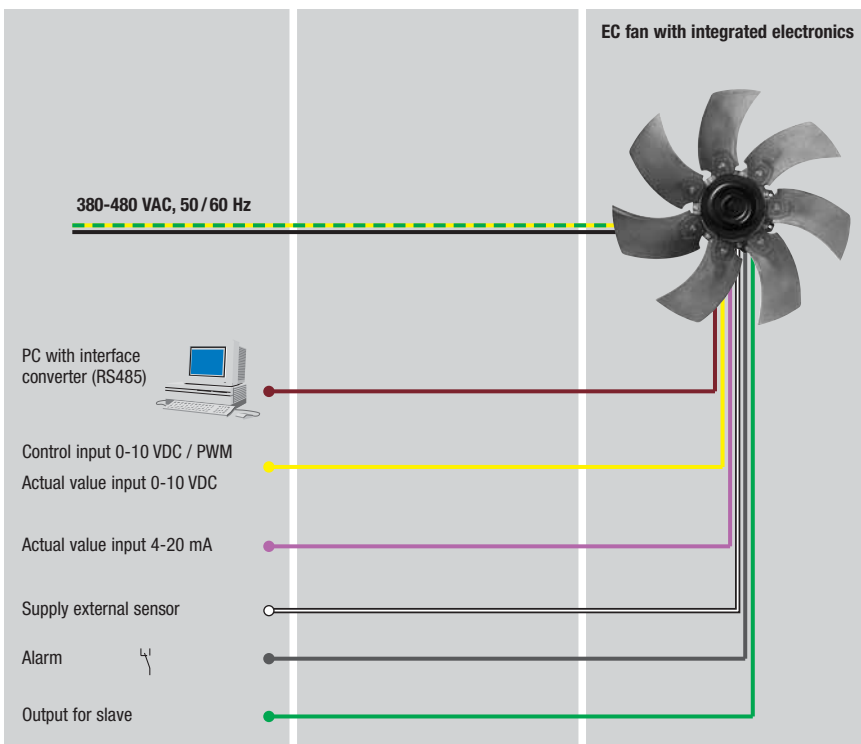
## EC fans 48 VDC with integrated commutation electronics

### Linear input:

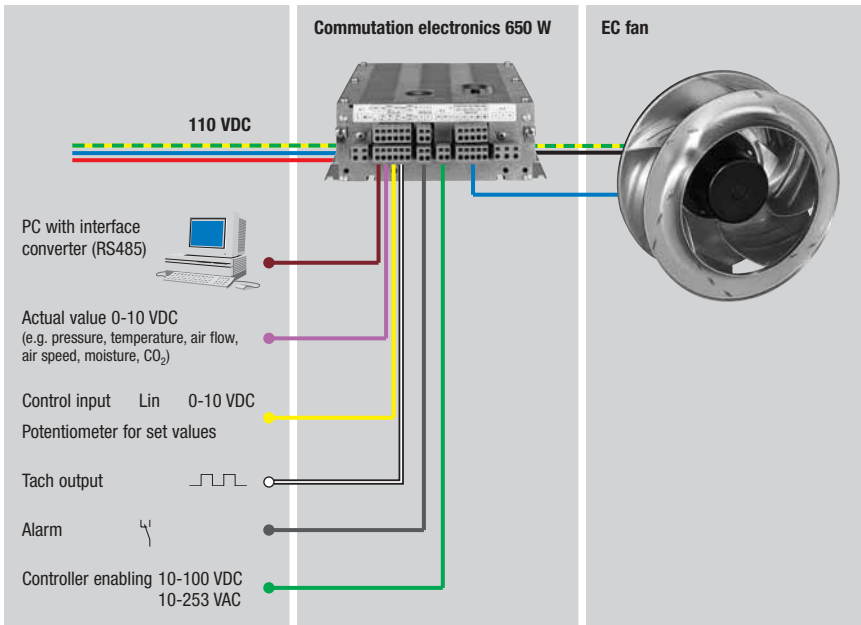
< 1 VDC -> n=0  
1 VDC -> n<sub>min</sub>  
10 VDC -> n<sub>max</sub>

### PWM input:

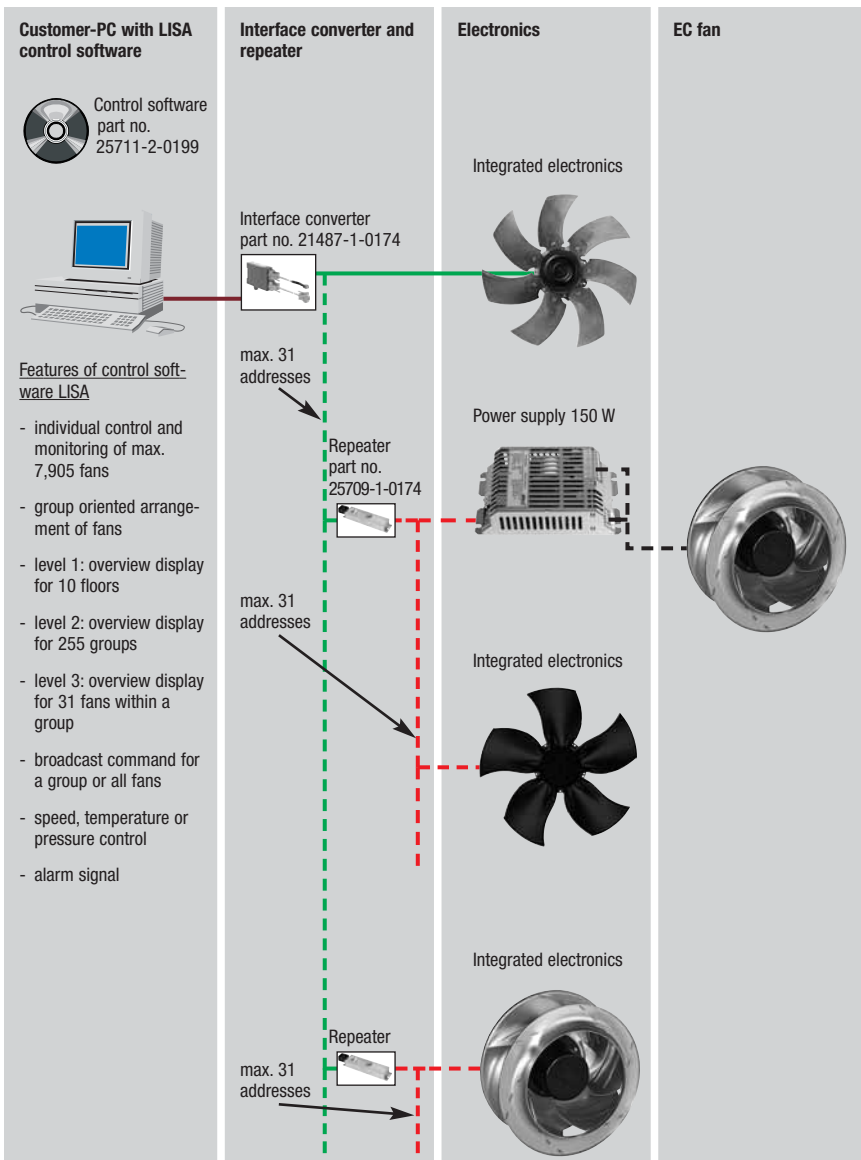
< 10% PWM -> n=0  
10% PWM -> n<sub>min</sub>  
100% PWM -> n<sub>max</sub>



## EC fans with integrated commutation electronics 380-480 VAC, 50/60 Hz mains operation



**EC fans with external commutation electronics 650 W, 110 VDC (rail technology)**



**EC-SYSTEMS: Networked EC fans with interface converter and repeater**

# Switch power supply with PFC, standard version, 48 VDC, 150 / 300 W

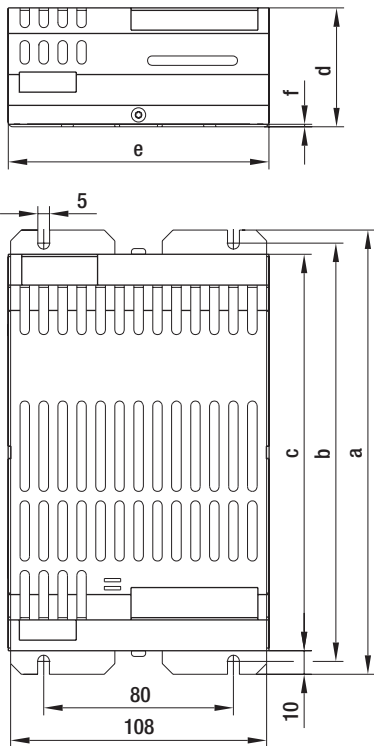


- **General remarks:** Switch power supply with an output power of 150 W / 300 W to supply 48 V EC motors from the 115 / 230 V mains. It is also possible to run several motors up to an overall power of 150 W / 300 W. Data on the 60 W switching power supply is available on request.
- **Function:** Supply of an electrically insulated direct voltage of 48 VDC at the output when connected to the 115 / 230 V mains. The power supply is sustainably short-circuit proof, open-circuit proof and protected against overheating. An integrated EMC filter guarantees RFI suppression of the unit according to EN 61000-3-2.
- **Legislation:** general design (EN50178); EMC, interference emissions (EN55011, class B); EMC, interference immunity (EN50082-2); EMC, harmonics (EN61000-3-2, class D)
- **Class / type of protection:** class of protection I / IP20 according to DIN EN 60529

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Nominal data	Voltage		Frequency	Output voltage	Output P <sub>1</sub> max.	Rated output current	Mass	Dimensions					
	VAC	Hz						VDC	W	A	kg	a	b
<b>CNW015-AB06 -01</b>	115	50/60	48	150	3,10	0,7	187	176	167	50	110	1	
<b>CNW015-AB02 -01</b>	230	50/60	48	150	3,10	0,7	187	176	167	50	110	1	
<b>CNW030-AC06 -01</b>	100-120	50/60	48	300	6,25	1,3	272	260	251	66	112	2	
<b>CNW030-AC02 -01</b>	200-277	50/60	48	300	6,25	1,3	272	260	251	66	112	2	

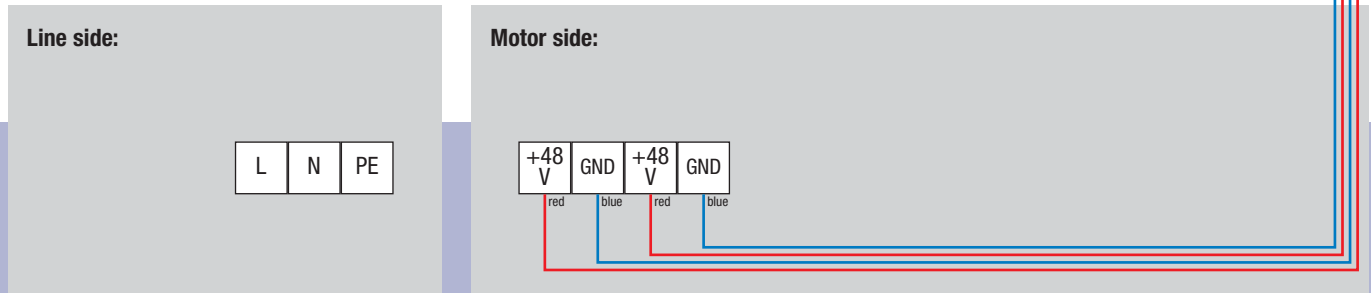
subject to alterations



- **Material:** housing made of stainless steel



- Electrical connection:



# Switch power supply with PFC, 3-step speed preselection, 48 VDC, 150 / 300 W

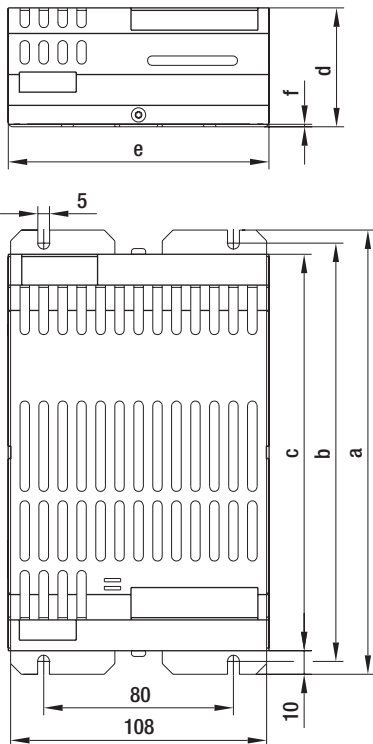


- **General remarks:** Switch power supply with an output power of 150 W / 300 W to supply 48 V EC motors from the 115 / 230 V mains. It is also possible to run several motors up to an overall power of 150 W / 300 W. Data on the 60 W switching power supply is available on request.
- **Function:** Supply of an electrically insulated direct voltage of 48 VDC at the output when connected to the 115 / 230 V mains. The power supply is sustainably short-circuit proof, open-circuit proof and protected against overheating. An integrated EMC filter guarantees RFI suppression of the unit according to EN 61000-3-2.
- **Legislation:** general design (EN50178); EMC, interference emissions (EN55011, class B); EMC, interference immunity (EN50082-2); EMC, harmonics (EN61000-3-2, class D)
- **Class / type of protection:** class of protection I / IP20 according to DIN EN 60529

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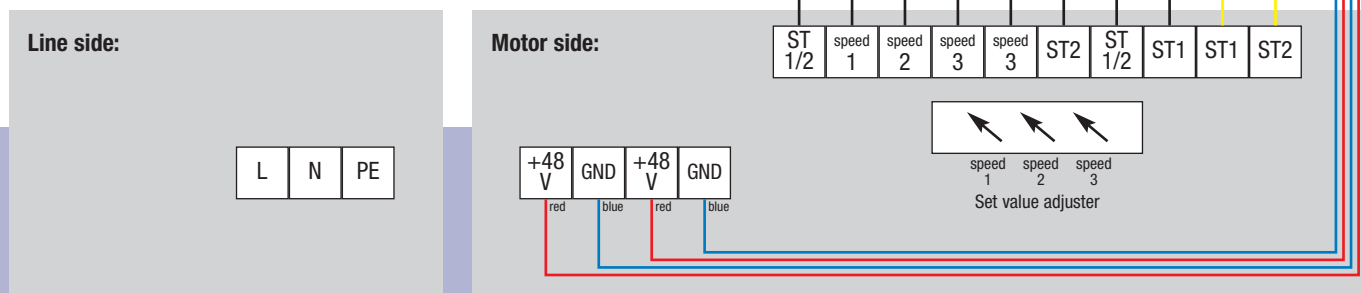
Nominal data	Voltage		Frequency	Output voltage	Output P <sub>1</sub> max.	Rated output current	Mass	Dimensions					
	VAC	Hz						VDC	W	A	kg	a	b
<b>CNW015-AB06 -02</b>	115	50/60	48	150	3,10	0,7	187	176	167	50	110	1	
<b>CNW015-AB02 -02</b>	230	50/60	48	150	3,10	0,7	187	176	167	50	110	1	
<b>CNW030-AC06 -02</b>	100-120	50/60	48	300	6,25	1,3	272	260	251	66	112	2	
<b>CNW030-AC02 -02</b>	200-277	50/60	48	300	6,25	1,3	272	260	251	66	112	2	

subject to alterations



- **Material:** housing made of stainless steel
- **Control board for 3-step speed preselection:** A control board for the setting of three speed steps of the fans is integrated. An external selection switch allows for the choice of one of the three speeds as set. A frost protection switch can be connected to switch off the fresh air fan. A moisture protection switch may be connected to set the exhaust air fan on maximum speed.

- Electrical connection:



# Switch power supply with PFC, constant air flow or pressure characteristic, 48 VDC, 150 / 300 W

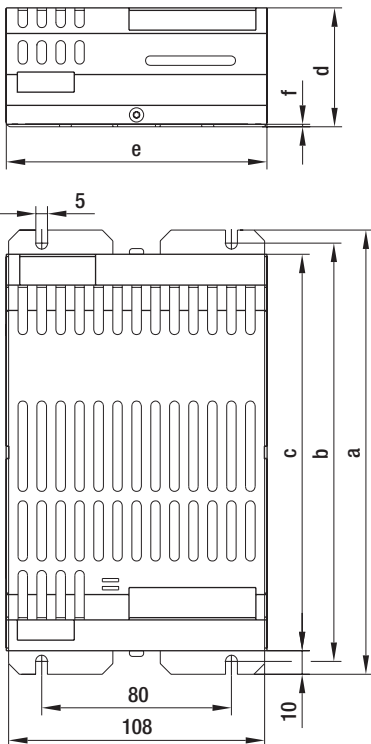


- **General remarks:** Switch power supply with an output power of 150 W / 300 W to supply 48 V EC motors from the 115 / 230 V mains. It is also possible to run several motors up to an overall power of 150 W / 300 W. Data on the 60 W switching power supply is available on request.
- **Function:** Supply of an electrically insulated direct voltage of 48 VDC at the output when connected to the 115 / 230 V mains. The power supply is sustainably short-circuit proof, open-circuit proof and protected against overheating. An integrated EMC filter guarantees RFI suppression of the unit according to EN 61000-3-2.
- **Legislation:** general design (EN50178); EMC, interference emissions (EN55011, class B); EMC, interference immunity (EN50082-2); EMC, harmonics (EN61000-3-2, class D)
- **Class / type of protection:** class of protection I / IP20 according to DIN EN 60529

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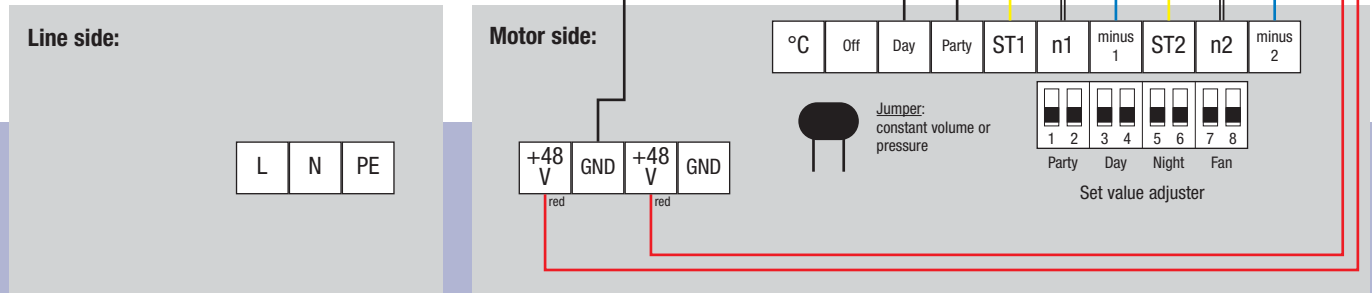
Nominal data	Voltage		Frequency	Output voltage	Output P <sub>1</sub> max.	Rated output current	Mass	Dimensions					
	VAC	Hz						VDC	W	A	kg	a	b
<b>CNW015-AB06 -13</b>	115	50/60	48	150	3,10	0,7	187	176	167	50	110	1	
<b>CNW015-AB02 -13</b>	230	50/60	48	150	3,10	0,7	187	176	167	50	110	1	
<b>CNW030-AC06 -13</b>	100-120	50/60	48	300	6,25	1,3	272	260	251	66	112	2	
<b>CNW030-AC02 -13</b>	200-277	50/60	48	300	6,25	1,3	272	260	251	66	112	2	

subject to alterations



- **Material:** housing made of stainless steel
- **Control board for constant air flow or pressure characteristic, 3-step type:** suitable for D1G133-DC17-52, G1G140-AW13-18 and G1G160-BD39-52

- Electrical connection:



# Switch power supply with PFC,

RS485 and ebmBUS, 48 VDC, 150 / 300 W

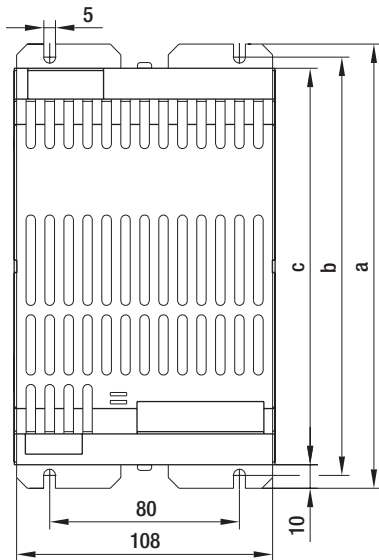
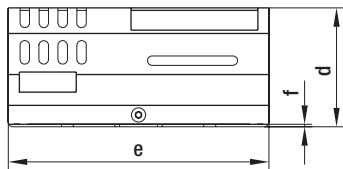


- **General remarks:** Switch power supply with an output power of 150 W / 300 W to supply 48 V EC motors from the 115 / 230 V mains. It is also possible to run several motors up to an overall power of 150 W / 300 W. Data on the 60 W switching power supply is available on request.
- **Function:** Supply of an electrically insulated direct voltage of 48 VDC at the output when connected to the 115 / 230 V mains. The power supply is sustainably short-circuit proof, open-circuit proof and protected against overheating. An integrated EMC filter guarantees RFI suppression of the unit according to EN 61000-3-2.
- **Legislation:** general design (EN50178); EMC, interference emissions (EN55011, class B); EMC, interference immunity (EN50082-2); EMC, harmonics (EN61000-3-2, class D)
- **Class / type of protection:** class of protection I / IP20 according to DIN EN 60529

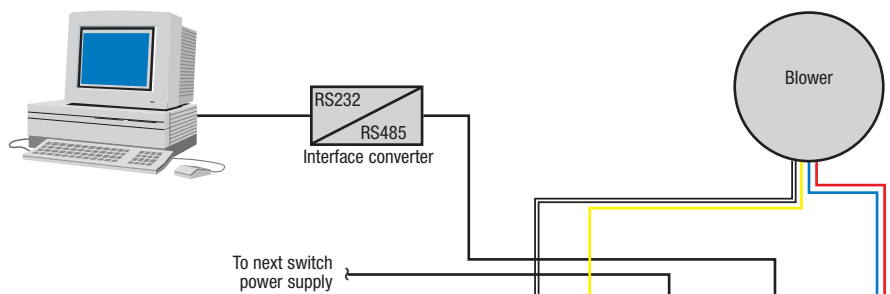
ebm-papst • Mulfingen

Nominal data	Voltage		Frequency	Output voltage	Output P <sub>1</sub> max.	Rated output current	Mass	Dimensions					
	VAC	Hz						VDC	W	A	kg	a	b
<b>CNW015-AB06 -05</b>	115	50/60	48	150	3,10	0,7	187	176	167	50	110	1	
<b>CNW015-AB02 -05</b>	230	50/60	48	150	3,10	0,7	187	176	167	50	110	1	
<b>CNW030-AC06 -05</b>	100-120	50/60	48	300	6,25	1,3	272	260	251	66	112	2	
<b>CNW030-AC02 -05</b>	200-277	50/60	48	300	6,25	1,3	272	260	251	66	112	2	

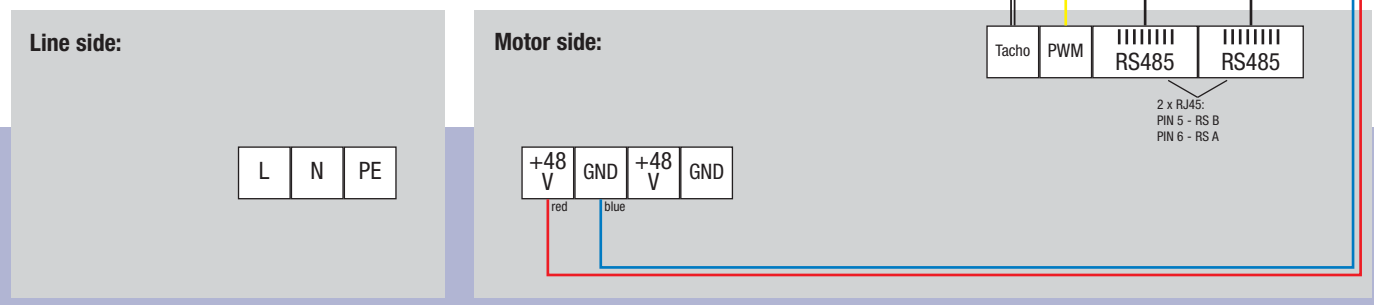
subject to alterations



- **Material:** housing made of stainless steel
- **Control board for RS485, ebmBUS and LISA functions**

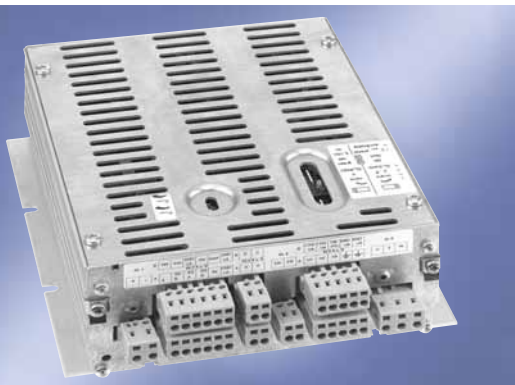


- Electrical connection:



# External commutation electronics

for rail technology, 110 VDC, 650 W

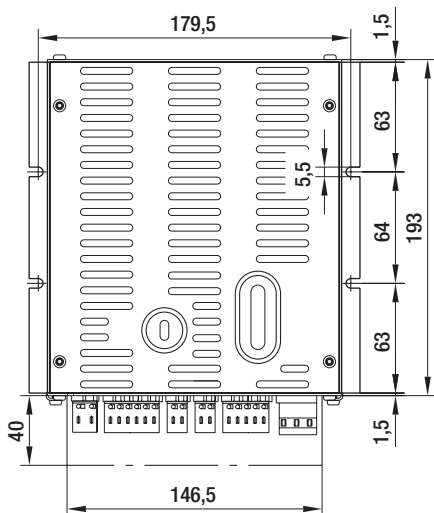
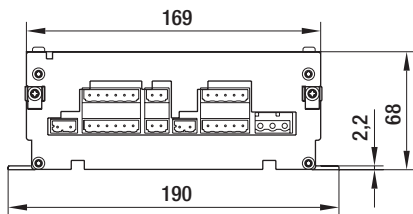


- **General remarks:** for EC motors / fans with three cores and without integrated commutation electronics
- **Function:** Commutation unit for three-core ebm EC motors up to a power input of 650 W. Various basic functions are integrated: open loop speed control, closed loop speed control, even an RS485 interface. In combination with sensors, all control tasks as required in air technology can be executed.
- **Legislation:** low voltage directive 73/23/EEC, VDE 0160/EN 50178, EMC directive 89/336/EEC and EN 61800-3, EN 61000-3, EN 50082-2
- **Class / type of protection:** class of protection I / IP20 according to DIN EN 60529

ebm-papst • Muldingen

Nominal data	Voltage	Power input $P_1$ max.	Current draw	Perm. amb. temp.	Mass
Type	VDC	W	A	°C	kg
CEG 485-HB50 -01	110	650	5,9	-25..+40	2,0

subject to alterations



## - Design:

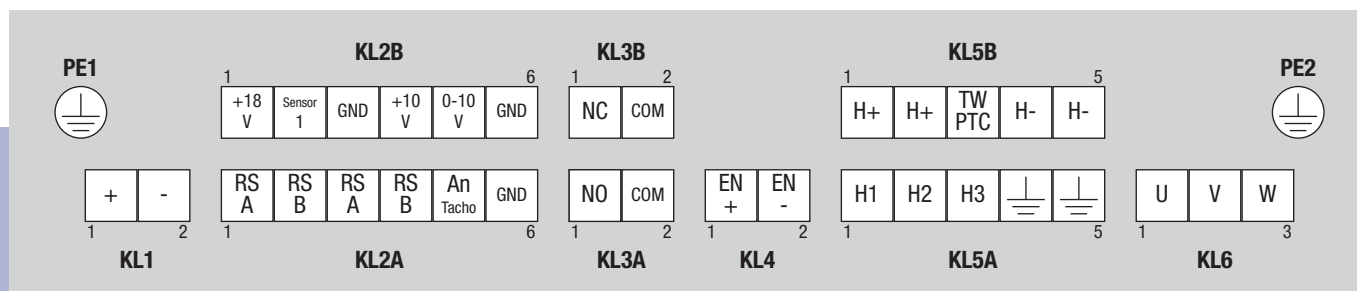
- motor output protected against short circuit phase to phase and conditionally phase to earth
- 0-10 V input ( $R_i$ : 100 k $\Omega$ )
- 0-10 V input ( $R_i$ : 100 k $\Omega$ ) for connection of external actual value input
- RS485 interface (ebmBUS)
- floating alarm contact 250 VAC / 5A, during alarm, relay is released (low-active)
- wide voltage input for external controller enabling via RESET function
- tach output
- LED for operation and alarm mode  
green: unit on  
red: alarm
- setting of minimum and maximum speeds via potentiometer
- operational modes (to be set via DIP-switch):  
closed loop speed control  
open loop speed control  
controlling external parameters
- direction of motor rotation reversible

## - Connectors for external electronics:

- KL1 2-pole connector; centerline 7.5; Co. Wago part no.: 231-202/026-000
- KL2A 6-pole connector; centerline 5; Co. Wago part no.: 231-106/026-000
- KL2B 6-pole connector; centerline 5; Co. Wago part no.: 231-106/026-000
- KL3A 2-pole connector; centerline 5; Co. Wago part no.: 231-102/026-000
- KL3B 2-pole connector; centerline 5; Co. Wago part no.: 231-102/026-000
- KL4 2-pole connector; centerline 5; Co. Wago part no.: 231-102/026-000
- KL5A 5-pole connector; centerline 5; Co. Wago part no.: 231-105/026-000
- KL5B 5-pole connector; centerline 5; Co. Wago part no.: 231-105/026-000
- KL6 3-pole connector; centerline 7.5; Co. Wago part no.: 731-603



- Electrical connection:



Connector	Signal	Pin No.	Assignment / function	Connector	Signal	Pin No.	Assignment / function
PE1			Ground connection	KL3A	NO	1	Relay contact for alarm, make for failure
PE2			Ground connection		COM	2	Relay contact for alarm
KL1	+	1	110 VDC	KL3B	NC	1	Relay contact for alarm, break for failure
	-	2	110 VDC		COM	2	Relay contact for alarm
KL2A	RS A	1	Interface connection RS A	KL4	EN +	1	Enable input via RESET function
	RS B	2	Interface connection RS B		EN -	2	Enable input via RESET function
	RS A	3	Interface connection RS A	KL5A	H1	1	Hall-sensor 1
	RS B	4	Interface connection RS B		H2	2	Hall-sensor 2
	An, Tacho	5	Tach output, open collector		H3	3	Hall-sensor 3
	GND	6	Reference KL2 (for KL2 only)		⊥	4	Shielding connection
KL2B	+18 V	1	+18 V (non-stabilised, +20 %, 20 mA) to supply external sensors		⊥	5	Shielding connection
	Sensor 1	2	Input for external sensor, Ri = 100 kΩ	KL5B	H+	1	Power supply for hall-sensors (+)
	GND	3	Reference KL2 (for KL2 only)		H+	2	Power supply for hall-sensors (+)
	+10 V	4	+10 V (stabilised +/- 3 %, 25 mA)		TW / PTC	3	Thermal switch or PTC connection
	0-10 V	5	Input for set value 0 - 10 V, Ri = 100 kΩ		H-	4	Power supply for hall-sensors (-)
	GND	6	Reference KL2 (for KL2 only)		H-	5	Power supply for hall-sensors (-)
				KL6	U	1	Motor winding U
					V	2	Motor winding V
					W	3	Motor winding W

# LISA control software for EC-SYSTEMS

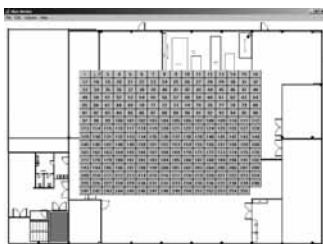


- **Version:** LISA 5.1
  - **Features:**
    - individual control and monitoring of max. 7,905 fans
    - group oriented arrangement of the fans
    - level 1: overview display for 10 floors
    - level 2: overview display for 255 groups within a floor
    - level 3: overview display for 31 fans within a group
    - broadcast command for a group or all fans
    - speed, temperature or pressure control
    - alarm signal
  - **Suitable for:** EC motors and electronics with ebmBUS
  - **System requirements:** Windows 2000 / XP
- ebm-papst • Mulfingen**

## Part no.

25711-2-0199

subject to alterations



# Hand-held control terminal

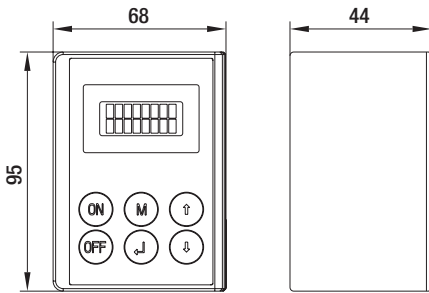


- **General remarks:** terminal to control networked fans and to set their parameters; RS485 (ebmBUS)
- **Class / type of protection:** class of protection III / IP20 according to DIN EN 60529
- **Display:** plain text LCD, 2x8 characters
- **Accumulator and charging electronics:** 2 x round cell R6 DIN 40863 NiMH 1,500 mAh, operating time approx. 40 hrs, standby time approx. 100 days, charging time max. 4 hrs.
- **Parts included in delivery:** hand-held control terminal, power supply and accumulator unit, BUS cable, 2 x round cell R6 NiMH 1,500 mAh

ebm-papst • Muldingen

Nominal data	Supply voltage power supply	Supply voltage	Perm. amb. temp.	Perm. storage temp.	Mass
Type	VAC	VDC	°C	°C	kg
CBC 000-AB01 -01	230	12	0..+45	-20..+65	0,4

subject to alterations



# RS485 repeater



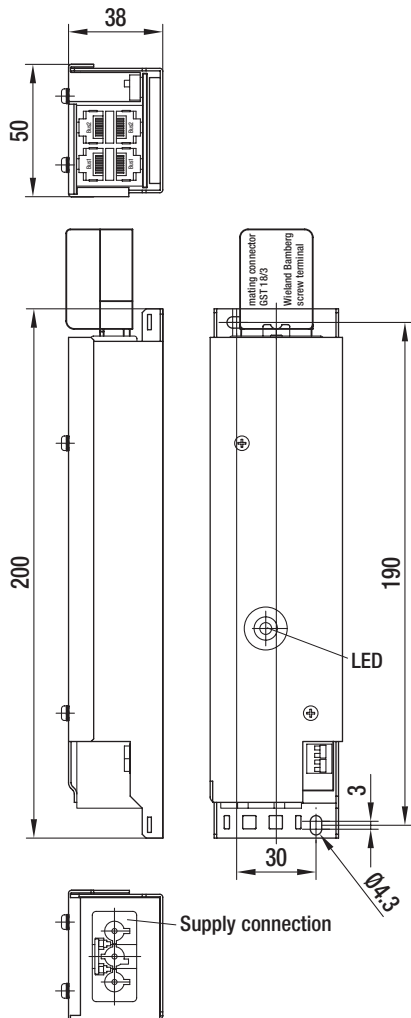
- **General remarks:** The physical RS485 repeater is used for the connection of two segments on RS485 basis. It can split a segment with network bus wires that are too long, or with too many nodes into two smaller, standardised units. A maximum of 31 nodes can be connected to the repeater.
- **Installation:** The repeater housing is mounted on the wall or in the cable duct with two screws (Ø 4 mm) or with cable ties.
- **Material:** housing made of galvanised sheet steel
- **Type of protection:** IP 20 according to DIN EN 60529

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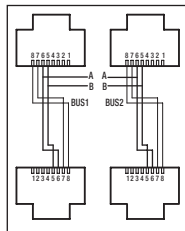
## Nominal data

Part no.	VAC	Hz	VA	°C	°C	kg
25709-1-0174	200-277	50/60	<3	0..+50	-20..+70	0,3

subject to alterations

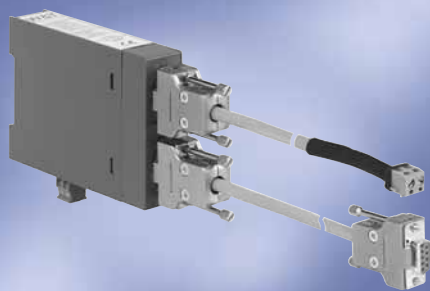


- **Type of transceiver:** 2 x ANSI standard RS485-transceiver
- **Galvanic insulation:** operating insulation 500 V between both channels
- **Network connection:** screw terminals
- **Mains connection:** Wieland connector GST 18/3 (forming part of delivery)
- **Pin configuration of network:**



Pin No.	Assignment / function
1 - 4	not assigned
5	connection RS485 line B
6	connection RS485 line A
7, 8	not assigned (each looped through within BUS1 and BUS2)

# Interface converter RS232 - RS485

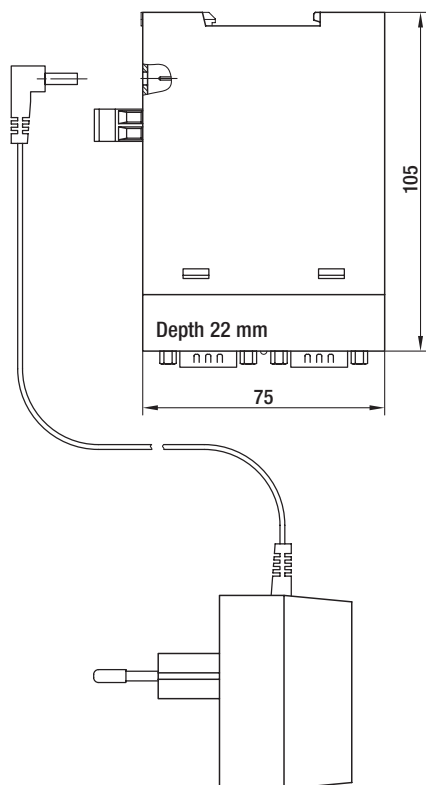


- **General remarks:** this interface converter permits bi-directional connection of RS232 devices (Laptop or PC) with ebmBUS devices (electronic commutation unit with RS485 interface)
- **Safety:** electrical insulation between the RS232 and RS485 side is provided
- **Material:** plastic housing for standard rail mounting according to DIN EN 50022-35
- **Status display:** via LEDs  
green: supply voltage o.k.  
red: data exchange
- **Operating mode:** RS485, 2-wire mode with echo and automatic control

ebm-papst • Muldingen

Nominal data	Supply voltage power supply	Supply voltage	Current draw- at no-load operation	Mass (incl. PS)
Part no.	VAC	VAC / VDC	mA	kg
21487-1-0174	230	12-24	150	0,4

subject to alterations



- **Galvanic insulation:** min. 1kV insulation voltage between RS232 and RS485 interfaces and between power supply and interfaces
- **Overvoltage protection:** varistors according to IEC 801-2, level 4
- **Parts included in delivery:** interface converter, AC power supply 230 VAC / 12 VDC, 500 mA, adaptor leads with 2 x 9-pole SUB-D sockets, adaptor leads with 9-pole SUB-D socket and screw terminal RS485

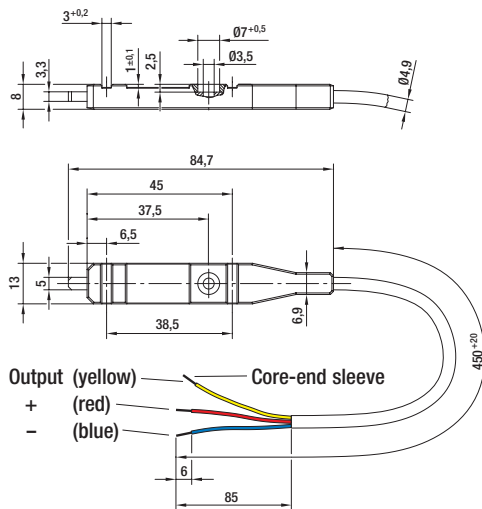
# Temperature control module



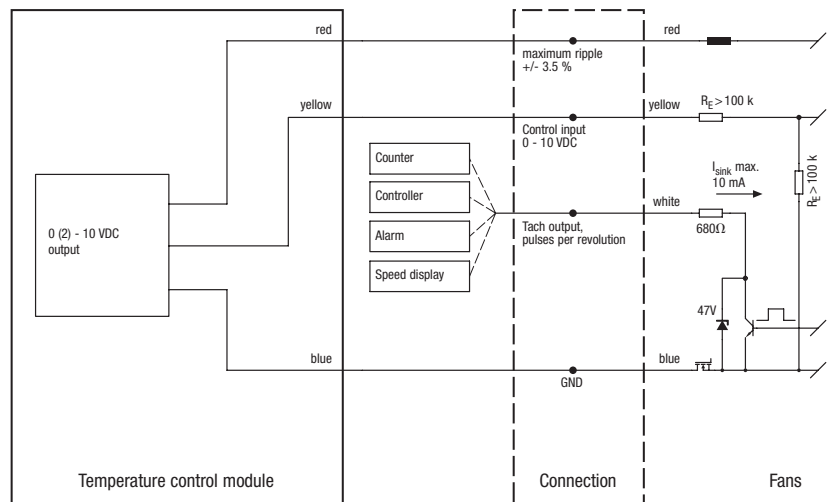
ebm-papst • Mulfingen

Nominal data	Voltage	Current draw	Output	Output impedance	Mass
Part no.	VDC	mA	VDC	kΩ	kg
50002-1-0174	18-60	10	2-10	6,8	0,02
50003-1-0174	18-60	10	0-10	6,8	0,02

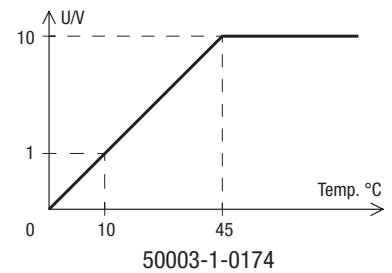
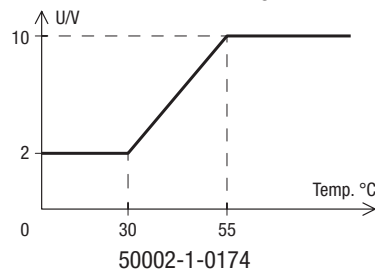
subject to alterations



## - Electrical connection:



## - Control function: Both designs have „cooling“ as control function



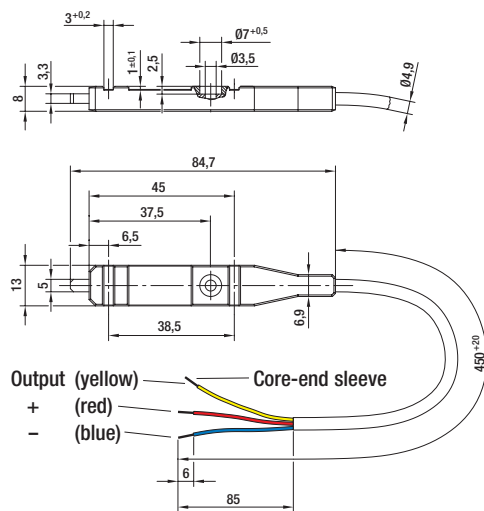
# Temperature sensor



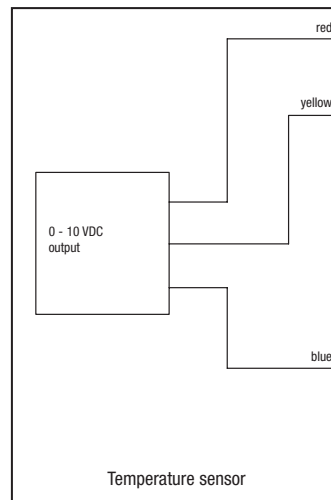
ebm-papst • Mulfingen

Nominal data	Voltage	Current draw	Output voltage	Output current	Output impedance	Mass
Part no.	VDC	mA	VDC	mA	kΩ	kg
50005-1-0174	15-30	10	0-10	1	1,1	0,02

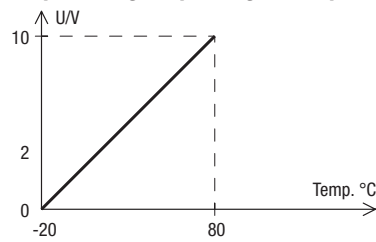
subject to alterations



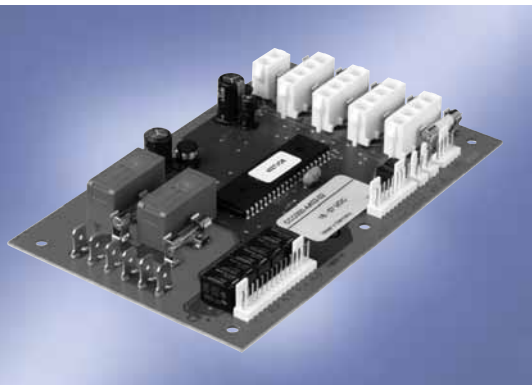
## - Electrical connection:



## - Output voltage depending on temperature:



# HMS controller



- **General remarks:** The HMS controller is governed by a micro processor and is specifically designed for Heat Management Systems (=HMS). This controller allows for an almost limitless programming variety as regards customer-specific fan speed / temperature profiles. Moreover, this controller offers a multitude of the most diverse alarm configurations. Our HMS controller has been specially designed and adjusted to the product range of ebm-papst in Mulfingen. Thus, any size of our fans or blowers can be used. The most diverse of applications needing temperature-dependent control are possible. Among these are applications in telecommunication and the IT industry, in refrigeration and air-conditioning as well as in specific industrial plants and systems.

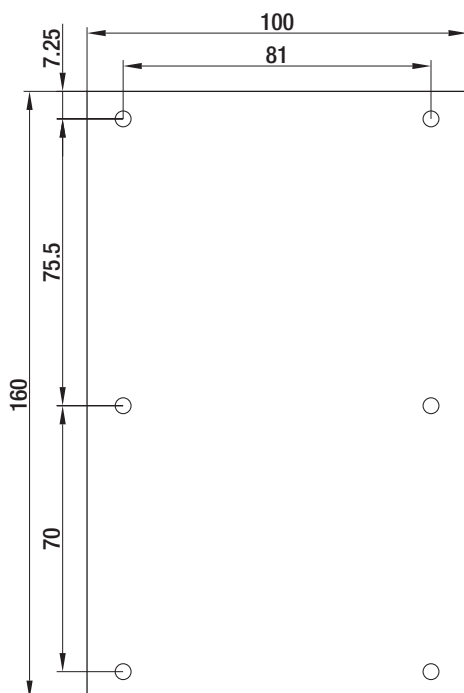
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Nominal data	Supply voltage	Power input <sup>(1)</sup> max.	Power input <sup>(2)</sup> max.	Current draw <sup>(1)</sup> max.	Perm. amb. temp.	Mass
Type	VDC	W	W	A	°C	kg
CCC 000-AA02 -02	16-57	10	130	0,175	-40..+70	0,15

subject to alterations

<sup>(1)</sup> without fans

<sup>(2)</sup> per fan at nominal voltage



## Features:

- 4 fan speed / temperature characteristics that can be programmed independent of each other
- 2 programmable no-frost relays for connection of 115 / 230 VAC heating devices
- 5 programmable alarm relays:
  - temperature alarm (over- / under-temperature)
  - fan good/bad alarm programming
  - temperature sensor alarm
  - programmable depending on signal inputs
- 4 programmable status outputs:
  - brought out as „open collector“ to connect optical or acoustic displays / alarms
  - each fan speed can be set individually
- 4 signal inputs for external switch
- connection of two independent temperature sensors (NTCs) possible
- RS232 interface galvanic insulated
- selective protection of each fan
- programming via Windows software (terminal programme)

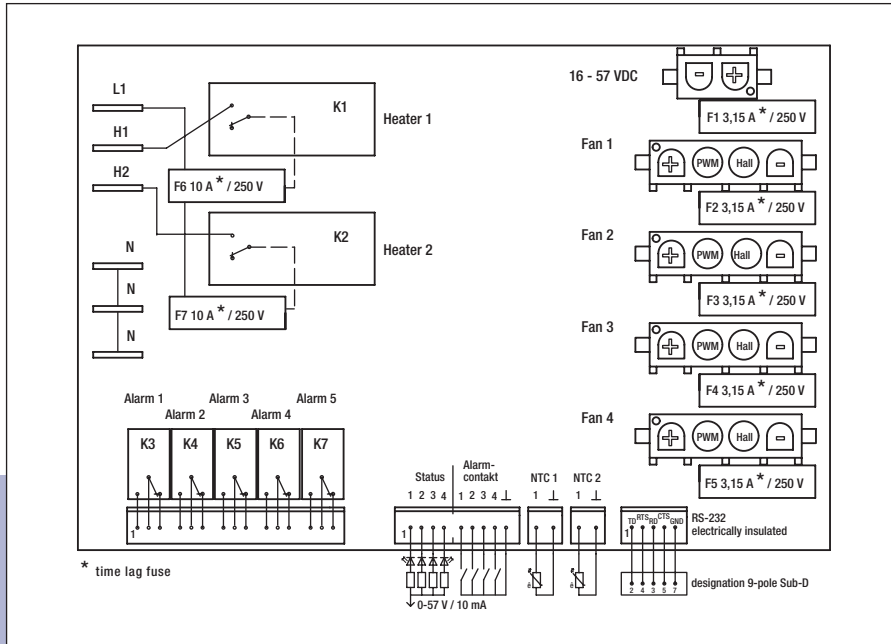
## Requirements:

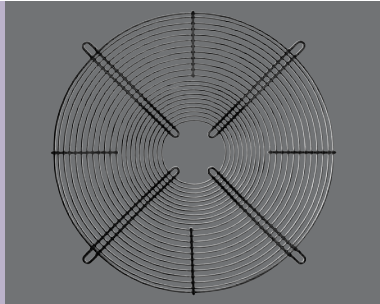
- supply voltage of HMS controller: 16 - 57 VDC
- fans with standard interface
  - 24 / 48 VDC fan voltage
  - PWM / linear control input (0 - 10 V)
  - open collector tach output
- NTC with  $R_{25} = 33 \text{ k}\Omega$  (EPCOS type M 891/33k/J)
- system requirements: Windows 9x / NT / 2000 / XP

- **Safety:** according to EN 60950

- **EMC / EMI:** interference immunity EN 61000, interference emission EN 50081-1

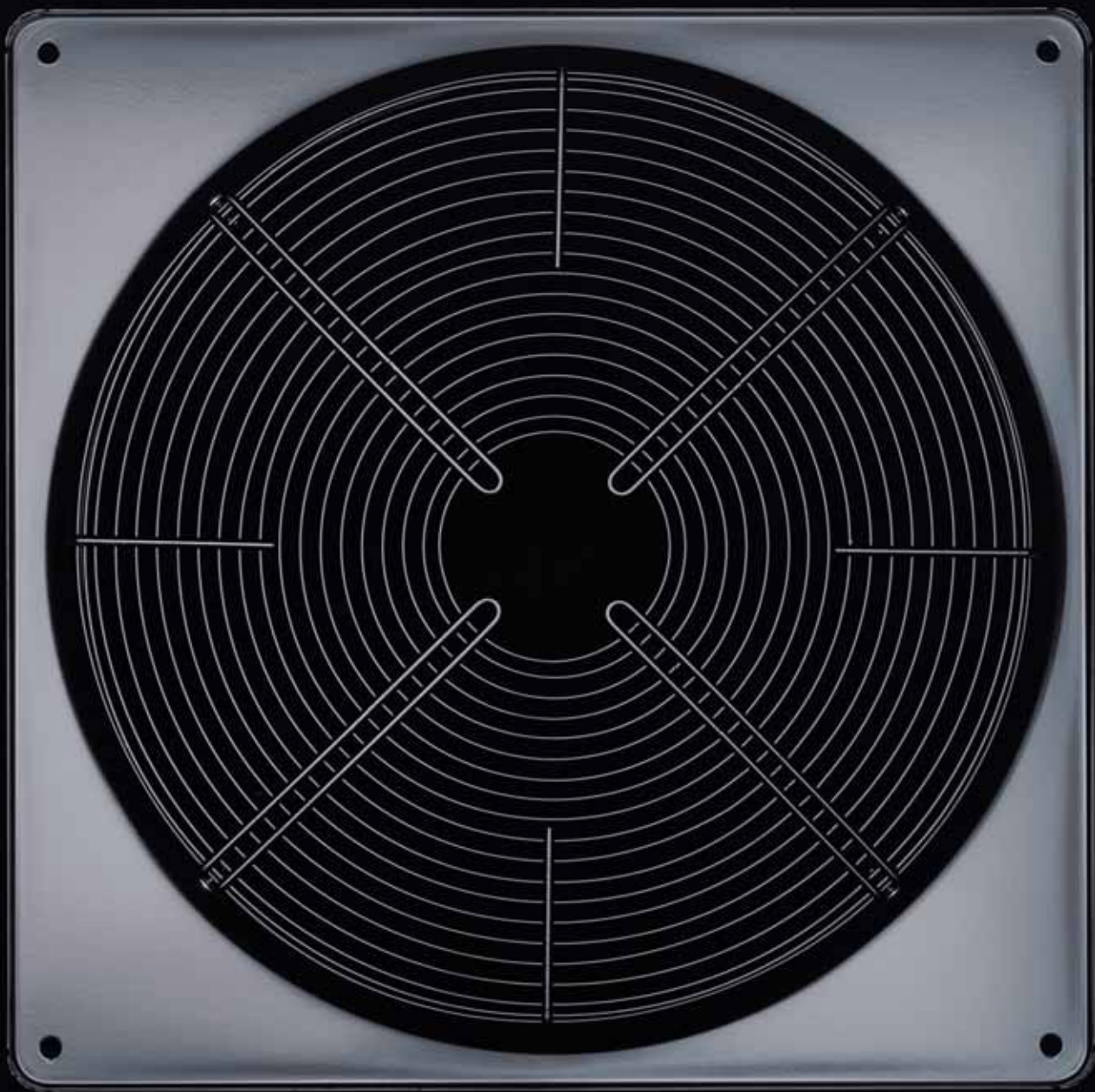




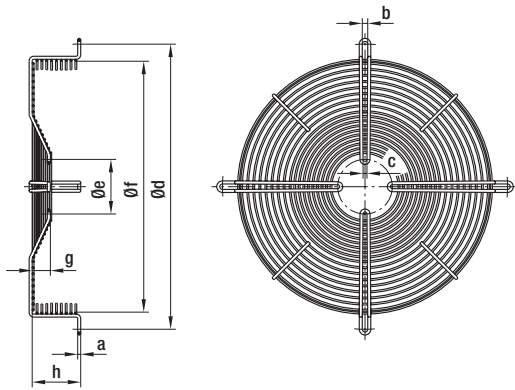


# Accessories

Guard grilles, streamers	196
Wall rings	206
Connection leads	208
Accessories for ESM and Q-motor	208
Capacitors, terminal boxes	214



# Accessories



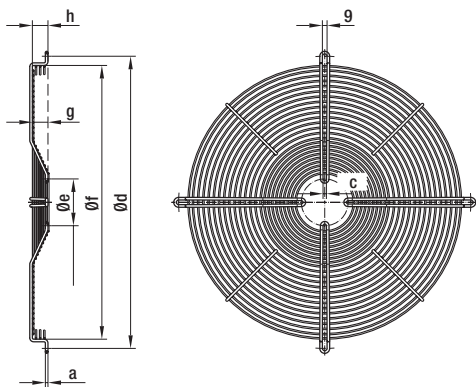
- **Material:** phosphatized steel wire, plastic coated in RAL no. 9005, black
- **Note:** Please consult your engineer for relevant part numbers of complete fans.

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## Basket guard grilles for S-Range axial fans

Part no.	Size	AC/EC	AC motor	EC motor	a	b	c	d	e	f	g	h
19110-2-4039	200	AC/EC	068	074	3,9	6,5	4,3	260	58	229,0	---	39
19111-2-4039	250	AC/EC	068	074	3,9	6,5	4,5	300	58	271,0	---	38
19112-2-4039	250	AC/EC	068	074	3,9	6,5	4,5	300	58	271,0	---	53
64555-2-4039	300	AC/EC	068	074	4,5	4,3	4,3	360	58	329,5	---	50
64556-2-4039	300	AC	068	---	4,5	4,3	4,3	360	58	329,5	26,0	50
64557-2-4039	300	AC	074	---	5,0	6,5	6,5	330	90	324,0	---	50
64558-2-4039	315	AC	068	---	4,5	6,5	4,5	375	58	336,5	30,0	80
64559-2-4039	330	AC	068	---	4,5	6,5	4,5	410	58	354,5	30,0	80
64560-2-4039	350	AC	074	---	5,0	6,5	6,5	422	90	380,0	30,0	80
64379-2-4039	400	AC/EC	074	084	5,0	9,0	6,5	470	90	420,0	30,0	80
64536-2-4039	420	AC/EC	074	084	5,0	9,0	6,5	502	90	458,0	30,0	80
64378-2-4039	450	AC/EC	074	084	5,0	9,0	6,5	522	90	482,0	30,0	80
25938-2-4039	450	AC	094	---	7,0	9,0	7,0	515	115	472,0	16,5	80

subject to alterations



- **Material:** phosphatized steel wire, plastic coated in RAL no. 9005, black

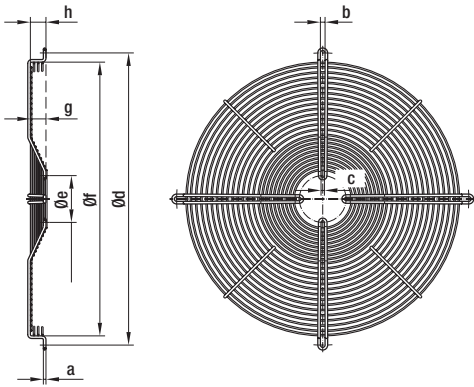
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## Basket guard grilles for S-Range axial fans (for mounting on square wall rings with long nozzle)

Part no.	Size	AC/EC	AC motor	EC motor	a	c	d	e	f	g	h
63978-2-4039	420 / 450	AC/EC	074	084	5	6,5	562	90	526	30,0	30,0
25950-2-4039	450	AC	094	---	7	7,0	560	115	523	16,5	38,0

subject to alterations

# Accessories



- **Material:** phosphatized steel wire, plastic coated in RAL no. 9005, black
- **Note:** Please consult your engineer for relevant part numbers of complete fans.

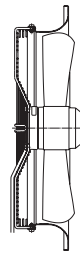
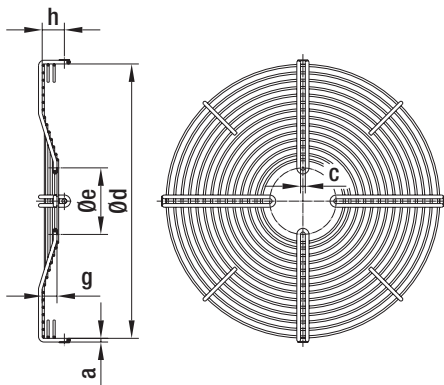
ebm-papst • Mulfingen

## Guard grilles for S-Range axial fans

Part no.	Size	AC/EC	AC motor	EC motor	a	b	c	d	e	f	g	h
18656-2-4039	200	AC	068	---	3,9	4,6	4,6	245	58	---	---	---
62622-2-4039	200	EC	---	074	3,9	4,6	4,6	245	58	---	---	---
09414-2-4039	250	AC	068	---	3,9	4,6	4,6	290	58	---	---	---
62623-2-4039	250	EC	---	074	3,9	4,6	4,6	290	58	---	---	---
09415-2-4039	300	AC	068	---	3,9	4,6	4,6	360	58	---	---	---
62624-2-4039	300	EC	---	074	3,9	4,6	4,6	360	58	---	---	---
72320-2-4039	300	AC	068	---	4,5	4,3	4,3	360	58	329	26,0	26,0
64052-2-4039	300	AC	074	---	5,0	6,5	6,5	360	90	---	---	---
64491-2-4039	315	AC	068	---	4,5	6,4	4,3	375	58	336	33,0	30,0
64490-2-4039	330	AC	068	---	4,5	6,4	4,3	410	58	371	30,0	30,0
64051-2-4039	350	AC	074	---	5,0	6,5	6,5	422	90	374	30,0	30,0
64538-2-4039	400 / 420	AC	074	084	5,0	9,0	6,5	502	90	452	30,0	30,0
64539-2-4039	450	AC	074	084	5,0	9,0	6,5	522	90	476	30,0	30,0
25950-2-4039	450	AC	094	---	7,0	9,0	7,0	560	115	517	16,5	38,0

subject to alterations

# Accessories



Possible mounting

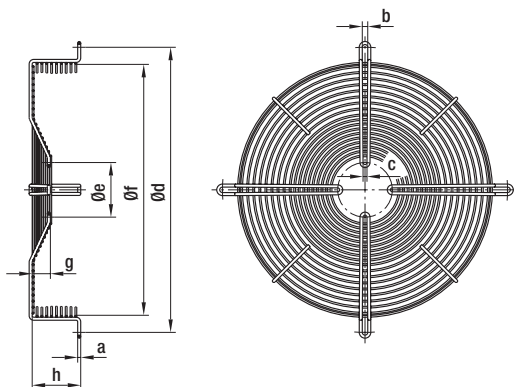
- **Material:** phosphatized steel wire, plastic coated in RAL no. 9005, black
- **Wall rings:** see page 207
- **Note:** Please consult your engineer for relevant part numbers of complete fans.

ebm-papst • Muldingen

## Guard grilles for S-Range axial fans (for mounting on the square wall ring with long nozzle, but directly on the nozzle side)

Part no.	Size	AC/EC	AC motor	EC motor	a	c	d	e	g	h
35802-2-4039	350	AC	074	---	5	6,5	371	90	20,0	30
35803-2-4039	400	AC	074 (4 poles)	---	5	6,5	413	90	---	16
35804-2-4039	400	AC/EC	074 (6 poles)	084	5	6,5	413	90	30,0	28
35805-2-4039	450	AC	074 (4 poles)	---	5	6,5	466	90	---	25
35806-2-4039	450	AC/EC	074 (6 poles)	084	5	6,5	466	90	20,0	30
26510-2-4039	450	AC	094	---	7	7,0	466	115	16,5	41

subject to alterations



- **Material:** phosphatized steel wire, plastic coated in RAL no. 9005, black
- **Note:** Please consult your engineer for relevant part numbers of complete fans.

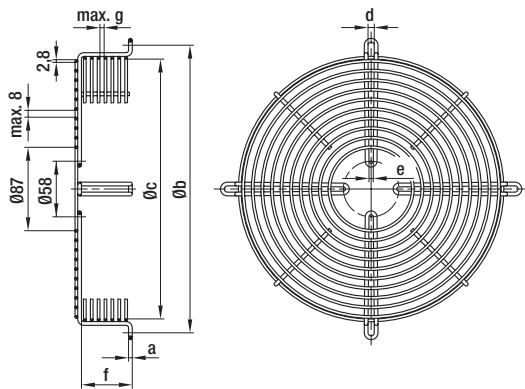
ebm-papst • Muldingen

## Basket guard grilles for K-Range axial fans

Part no.	Size	AC/EC	AC motor	EC motor	a	b	c	d	e	f	g	h
66024-2-4039	250	AC/EC	068	074	4,5	4,3	4,3	300	58	271	26	60
77709-2-4039	300	AC/EC	068	074	3,9	4,5	4,5	360	58	340	26	26
19115-2-4039	350	AC/EC	068	074	4,5	6,5	4,5	422	58	380	---	54
62229-2-4039	360	AC/EC	068	074	4,5	6,3	4,3	400	58	357	12	16
64378-2-4039	450	AC/EC	074	084	5,0	9,0	6,5	522	90	476	30	80
64539-2-4039	450	AC/EC	074	084	5,0	9,0	6,5	522	90	476	30	30

subject to alterations

# Accessories



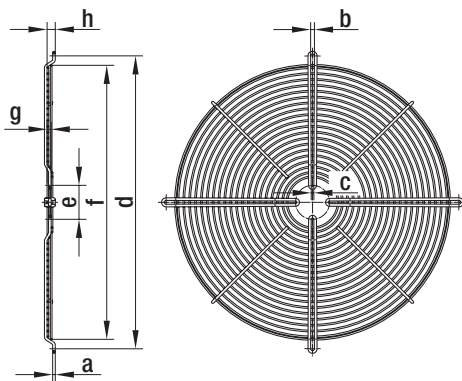
- **Material:** phosphatized steel wire, plastic coated in RAL no. 9005, black
- **Note:** Please consult your engineer for relevant part numbers of complete fans.

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## Basket guard grilles for A-Range axial fans

Part no.	Size	a	b	c	d	e	f	g
19110-2-4039	200	3,9	260	229	6,5	4,3	39	6
19111-2-4039	250	3,9	300	271	6,5	4,5	38	6
19112-2-4039	250	3,9	300	271	6,5	4,5	53	6
19113-2-4039	300	3,9	360	327	6,5	4,5	35	6
19114-2-4039	350	4,5	422	375	6,5	4,5	72	6
19115-2-4039	350	4,5	422	380	6,5	4,5	54	6
63406-2-4039	400	4,5	470	428	9,0	4,5	67	8

subject to alterations



- **Material:** phosphatized steel wire, plastic coated in RAL no. 9005, black
- **Note:** Please consult your engineer for relevant part numbers of complete fans.

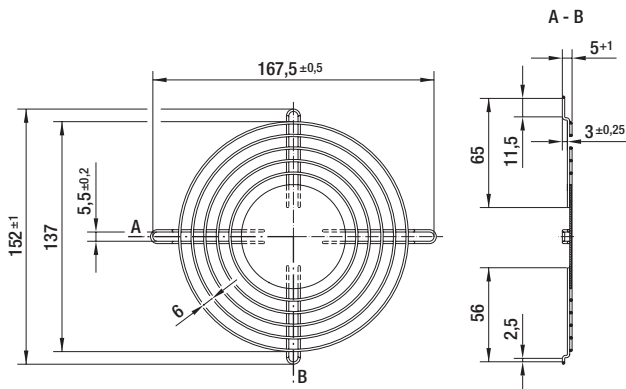
ebm-papst • Mulfingen

## Guard grilles for A-Range axial fans

Part no.	Size	a	b	c	d	e	f	g	h
18656-2-4039	200	3,9	4,6	4,6	245	58	195,0	---	---
09414-2-4039	250	3,9	4,6	4,6	290	58	247,0	---	---
09415-2-4039	300	3,9	4,6	4,6	360	58	300,0	---	---
19699-2-4039	315	4,5	6,3	4,3	375	58	327,0	---	3,5
69667-2-4039	350	4,5	6,5	4,5	422	58	387,0	---	6,5
19117-2-4039	400	4,5	6,3	4,3	500	58	467,5	7	14,0

subject to alterations

# Accessories



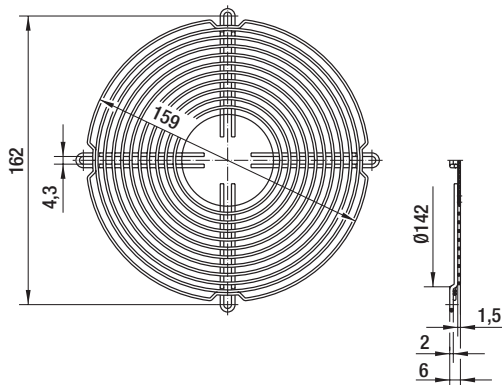
- **Material:** galvanised steel wire, chromatised in blue

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## Guard grille for axial fans

Part no.	Size
51019-2-4039	130

subject to alterations



- **Material:** galvanised steel wire, chromatised in blue (alternatively: nickel-plated)

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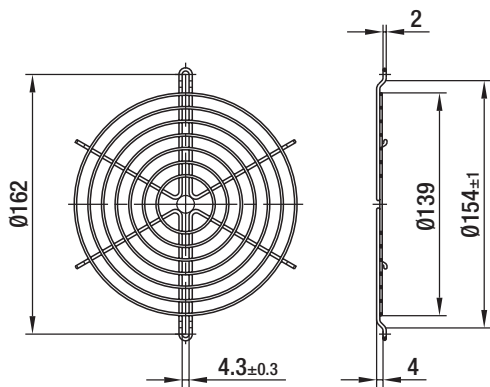
## Guard grille for axial fans (according to EN 294)

Part no.	Size
50952-2-4039	130 / 142 / 143

subject to alterations



# Accessories



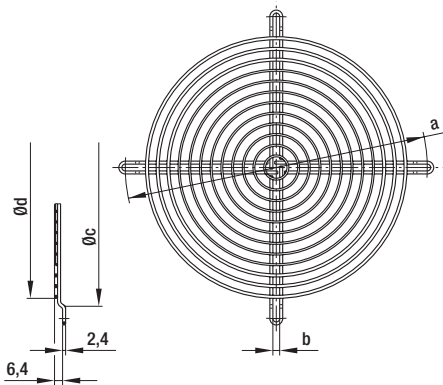
- **Material:** steel wire, <sup>(1)</sup>plastic coated, silvermetallic gloss or <sup>(2)</sup>galvanised, chromatised in blue

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## Guard grille for axial fans

Part no.	Size
03749-2-4039	142
04013-2-4039	143

subject to alterations



- **Material:** steel wire, plastic coated, silvermetallic gloss

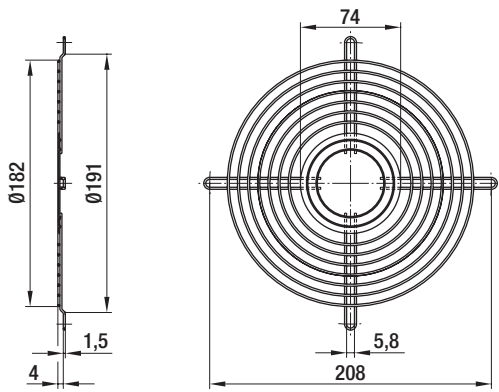
ebm-papst • Mulfingen

## Guard grille for axial fans

Part no.	Size	a	b	c	d
78128-2-4039	200	240	5,4	221,5	208
09418-2-4039	250	295	6,4	278,5	270

subject to alterations

# Accessories



- **Material:** galvanised steel wire, chromatised in blue (alternatively: nickel-plated)

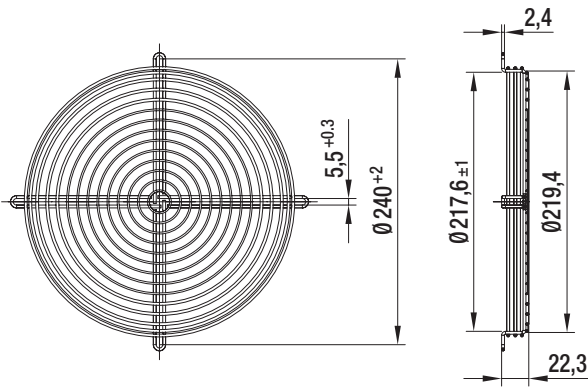
ebm-papst • Mulfingen

## Guard grilles for diagonal fans

Part no.	Size
26388-2-4039	180

subject to alterations

# Accessories



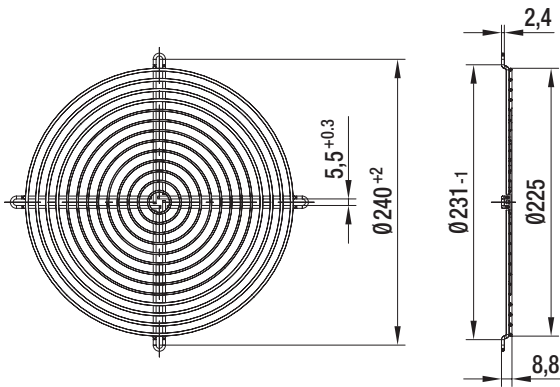
- **Material:** steel wire, plastic coated, silver-metallic gloss

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Guard grilles for diagonal fans (to be mounted on sucking side)

Part no.	Size
35139-2-4039	208

subject to alterations



- **Material:** galvanised steel wire, chromatised in blue

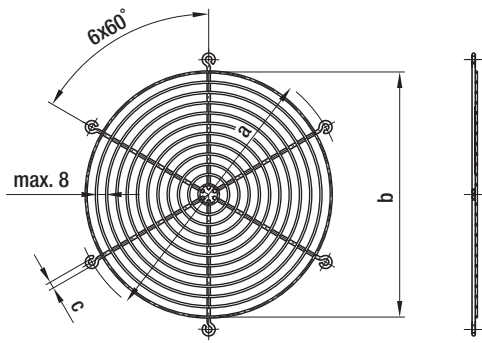
ebm-papst • Mulfingen

Guard grilles for diagonal fans (to be mounted on pressing side)

Part no.	Size
35138-2-4039	208

subject to alterations

# Accessories



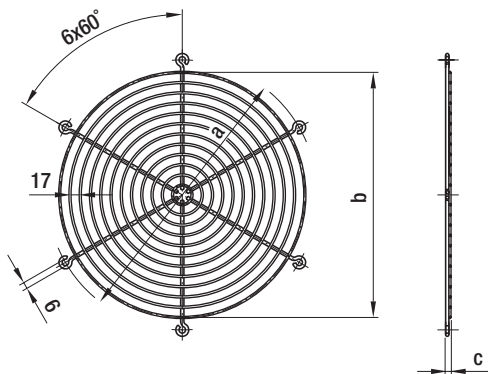
- **Material:** phosphatized steel wire, plastic coated in RAL no. 9005, black

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## Guard grilles (e.g. for axial fans)

Part no.	Size	a	b	c
09513-2-4039	200	250	227	6
09518-2-4039	250	295	265	7
09532-2-4039	300	380	323	9

subject to alterations



- **Material:** <sup>(1)</sup>galvanised steel wire or <sup>(2)</sup>phosphatized steel wire, plastic coated in RAL no. 9005, black

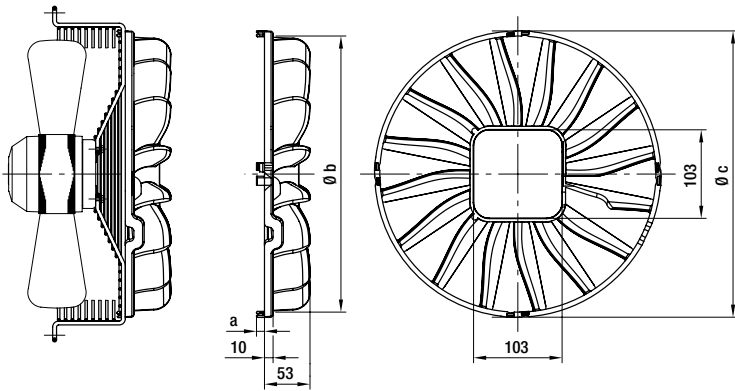
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## Guard grilles

Part no.	Size	a	b	c
65152-2-4039 <sup>(1)</sup>	250	250	172	5
53526-2-4039 <sup>(1)</sup>	280 / 310	290	210	10
54329-2-4039 <sup>(2)</sup>	355	328	286	10
54328-2-4039 <sup>(2)</sup>	400	366	286	10

subject to alterations

# Accessories



- **Material:** plastic PA6, 30GV (glass-fibre reinforced), black (according to UL 94 HB)

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## Streamers for axial fans

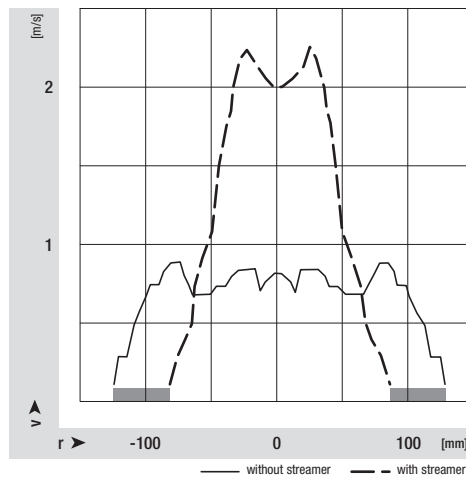
Part no.	Size	Standard type <sup>(1)</sup>	a	b	c	Thrust ranges
29550-2-2955	315	S4D 315-AP10 -30 S4E 315-AP18 -30 S6E 315-AP02 -30	10	321	333	
29552-2-2955	400	S4D 400-AP12 -03 S4E 400-AP02 -03 S6E 400-AP10 -30	10	401	413	
29553-2-2955	450	S4D 450-GA14 -01 S4E 450-GA09 -01	12	466	478	

subject to alterations

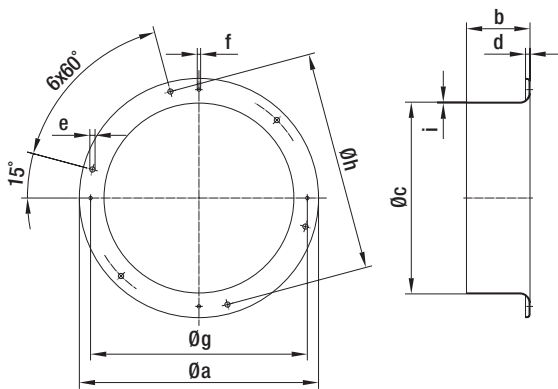
<sup>(1)</sup> possible mounting onto axial fans respectively other basket guard grilles on request

## Flow performance with and without streamer

The diagram compares velocity of flow (v) and cross-section of air discharge (r).



# Accessories



- **Material:** sheet steel, plastic coated in RAL no. 9005, black

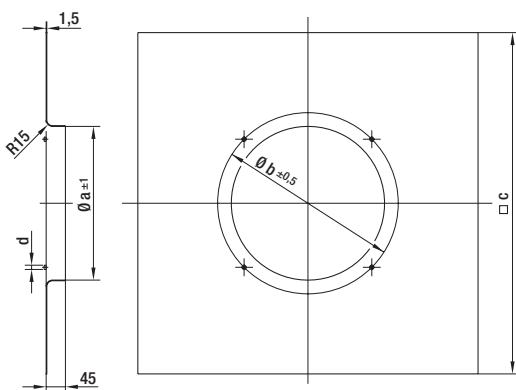
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## Wall rings with long nozzle for axial fans

Part no.	Size	a	b	c	d	e	f	g	h	i
18912-2-4037	200	280	80,0	202,5	5	7	4,5	245	250	1,25
64009-2-4037	250 (S-Range)	320	86,5	259,5	6	7	4,5	290	295	1,25
18910-2-4037	250 (A-Range)	320	85,0	256,5	6	7	4,5	290	295	1,25
18908-2-4037	300	397	80,0	326,0	11	9	M4	360	380	1,50
18902-2-4037	315	397	74,0	347,0	11	9	M6	374	380	1,50
18892-2-4037	330	440	80,0	369,0	11	9	M6	408	404	1,50
18900-2-4037	350	460	80,0	390,0	12	9	M6	422	442	1,50
18930-2-4037	400	528	96,0	419,0	12	9	M8	500	504	1,50
18929-2-4037	420	544	96,0	447,0	12	9	M8	500	520	1,50
64000-2-4037	450 <sup>(1)</sup>	607	100,0	465,0	14	11	M8	560	578	1,50

subject to alterations

<sup>(1)</sup> use guard grille 63978-2-4039 to mount the axial fan



- **Material:** galvanised sheet steel

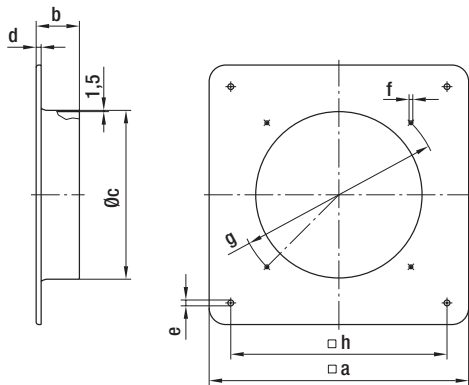
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## Square wall rings with short nozzle for S-Range axial fans

Part no.	Size	a	b	c	d
35222-2-4037	350	358	422	795	M6
35223-2-4037	400	400	468	840	M8
35224-2-4037	420	426	500	850	M8
35225-2-4037	450	452	515	850	M8

subject to alterations

# Accessories



- **Material:** sheet steel, plastic coated in RAL no. 9005, black

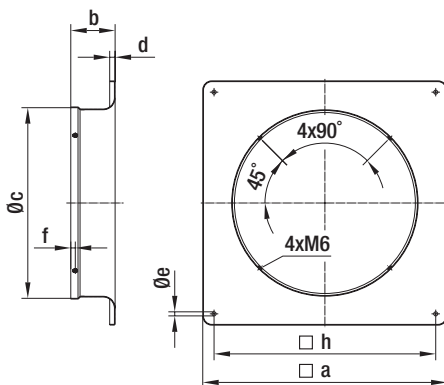
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## Square wall rings with long nozzle for axial fans

Part no.	Size	a	b	c	d	e	f	g	h
18918-2-4037	200	312	52,0	203	6	7	4,5	245	260
37701-2-4037	250 (S-Range)	370	56,0	260	6	7	4,5	290	320
18933-2-4037	250 (A-Range)	370	55,0	257	6	7	4,5	290	320
18924-2-4037	300	430	80,0	326	11	9	4,5	360	380
18903-2-4037	315	430	72,5	345	11	9	M6	375	380
18901-2-4037	350	485	80,0	388	12	9	M6	422	435
64005-2-4037	400	540	98,0	417	12	9	M8	500	490
64006-2-4037	420 <sup>(1)</sup>	576	94,0	439	14	11	M8	560	535
64007-2-4037	450 <sup>(1)</sup>	576	100,0	465	14	11	M8	560	535

subject to alterations

<sup>(1)</sup> use guard grille 63978-2-4039 to mount the axial fan



- **Material:** sheet steel, plastic coated in RAL no. 9005, black
- **Guard grilles:** see page 198

Possible mounting

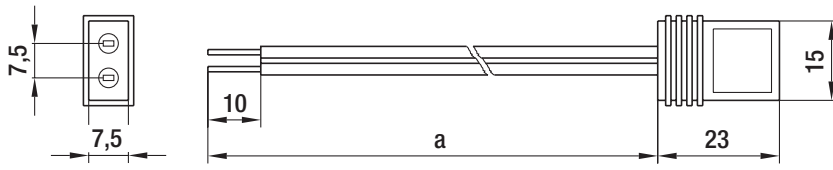
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## Square wall rings with long nozzle for S-Range axial fans (for mounting directly on the nozzle side)

Part no.	Size	a	b	c	d	e	f	h
64011-2-4037	350	485	80	367	12	9	10	435
64020-2-4037	400	540	98	409	12	9	10	490
64001-2-4037	450	576	100	463	14	11	10	535

subject to alterations

# Accessories



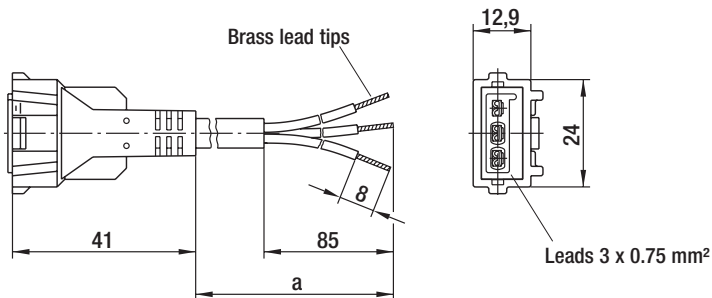
- Plug connection:  
2.8 x 0.5 mm

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## Lead connections for axial fans (with plug connector)

Part no.	Size	a
01434-4-6711	142/143	610
01477-4-6711	142/143	1000
01505-4-6711	142/143	2000

subject to alterations



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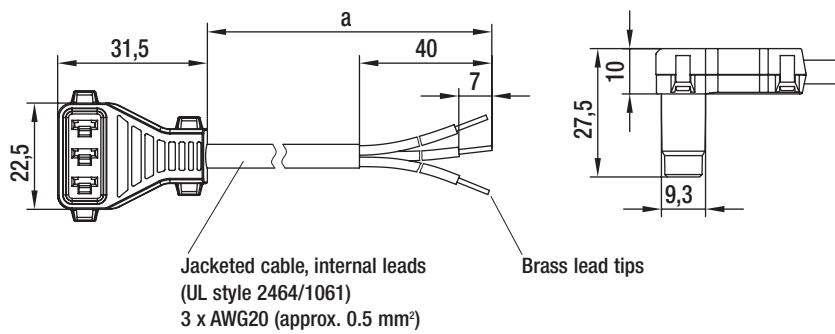
## Lead connections for Q-motors (plug connection design)

Part no.	a
79572-4-6711	420
79573-4-6711	970
79574-4-6711	1470
79575-4-6711	1970
79576-4-6711	2470
79577-4-6711	2970
79578-4-6711	3470
79579-4-6711	3970
79580-4-6711	4470
62402-4-6711	4970

subject to alterations



# Accessories



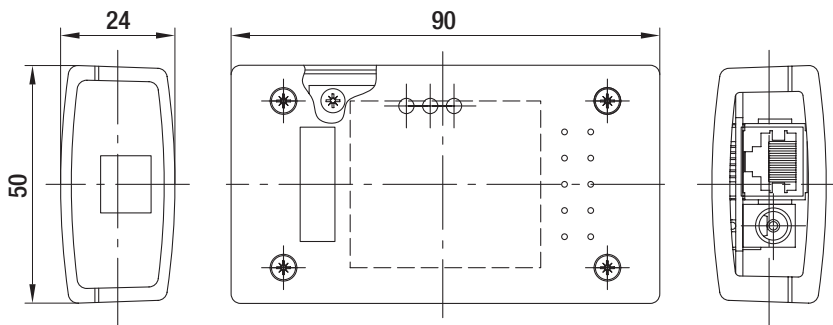
- **Version:**  
cable UL-conforming, plug sealed

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## Lead connections for energy-saving motors (ESM)

Part no.	a
10637-4-1040	450
10640-4-1040	600
10638-4-1040	1500
10639-4-1040	2000

subject to alterations



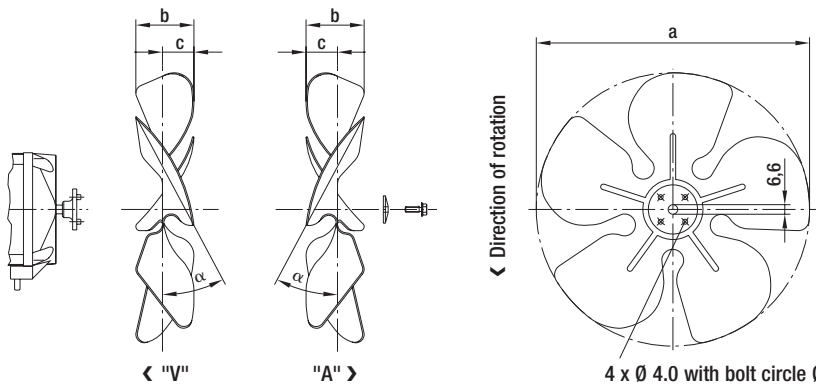
- **Description:** Programming device for setting of two possible speeds via USB port of your PC.
- **System requirements:**  
Windows 98/ME/2000 or XP
- **Included in the delivery:**  
programming device, plug-in supply unit, USB connection lead, motor connection lead
- **Protection class:** III
- **Type of protection:** IP 20

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Programming unit for ESM	Perm. amb. temp.	Perm. storage temp.
	°C	°C
Type	0...+45	-20...+65
CBC 000-AC02 -01	0...+45	-20...+65

subject to alterations

# Accessories



- **Material:** sheet aluminium

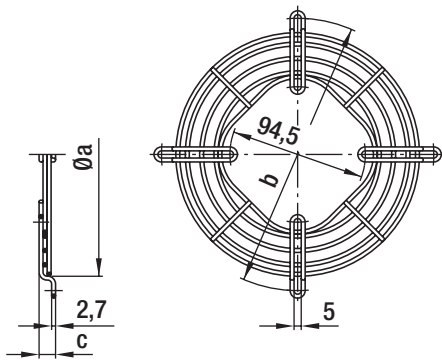
**ebm-papst · Mulfingen**

## Axial impeller for Q-motors

Part no. for dir. of air flow "V"	Part no. for dir. of air flow "A"	blade angle $\alpha$	a	b	c
73801-2-3634	73761-2-3634	$22^\circ \pm 1^\circ 30'$	154	27,5	14,0
73802-2-3634	73762-2-3634	$28^\circ \pm 1^\circ 30'$	154	32,0	16,0
73803-2-3634	73763-2-3634	$34^\circ \pm 1^\circ 30'$	154	37,0	18,0
73804-2-3634	73764-2-3634	$22^\circ \pm 1^\circ 30'$	172	31,0	14,5
73805-2-3634	73765-2-3634	$28^\circ \pm 1^\circ 30'$	172	36,0	17,0
73806-2-3634	73766-2-3634	$34^\circ \pm 1^\circ 30'$	172	42,0	21,0
73807-2-3634	73767-2-3634	$22^\circ \pm 1^\circ 30'$	200	32,0	15,5
73808-2-3634	73768-2-3634	$28^\circ \pm 1^\circ 30'$	200	37,5	18,0
73809-2-3634	73769-2-3634	$34^\circ \pm 1^\circ 30'$	200	45,0	22,0
73810-2-3634	73770-2-3634	$22^\circ \pm 1^\circ 30'$	230	35,0	17,5
73811-2-3634	73771-2-3634	$28^\circ \pm 1^\circ 30'$	230	43,0	21,5
73812-2-3634	73772-2-3634	$34^\circ \pm 1^\circ 30'$	230	50,0	24,0
73813-2-3634	73773-2-3634	$22^\circ \pm 1^\circ 30'$	254	37,0	19,0
73814-2-3634	73774-2-3634	$28^\circ \pm 1^\circ 30'$	254	45,0	23,5
73815-2-3634	73775-2-3634	$34^\circ \pm 1^\circ 30'$	254	52,0	26,0
73816-2-3634	73776-2-3634	$22^\circ \pm 1^\circ 30'$	300	43,0	21,5
73817-2-3634	73777-2-3634	$28^\circ \pm 1^\circ 30'$	300	53,5	26,5
73818-2-3634	73778-2-3634	$34^\circ \pm 1^\circ 30'$	300	61,0	30,0

subject to alterations

# Accessories



- **Material:** galvanised steel wire, chromatised in blue

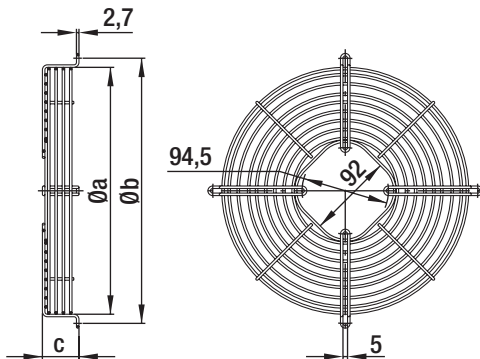
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## Guard grilles for Q-motors

Part no.	Size	max. blade angle $\alpha$ with "V"	max. blade angle $\alpha$ with "A"	a	b	c
50967-2-4039	154	34°	34°	170	190	11,5
50968-2-4039	172	34°	34°	188	208	11,5
50969-2-4039	200	34°	28°	214	236	11,5
50970-2-4039	230	28°	28°	246	266	17,5
50971-2-4039	254	28°	28°	270	290	17,5
50972-2-4039 <sup>(1)</sup>	300	---	22°	324	344	17,5

subject to alterations

<sup>(1)</sup> when using the M4Q045-EF, blade angles of up to 34° are possible



- **Material:** galvanised steel wire, chromatised in blue

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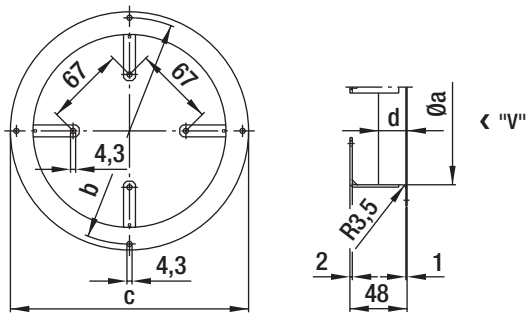
## Basket guard grilles for Q-motors

Part no.	Size	max. blade angle $\alpha$ with "V"	max. blade angle $\alpha$ with "A"	a	b	c
66309-2-4039	172	34°	34°	188	208	37,5
66310-2-4039	200	34°	28°	212	236	37,5
66311-2-4039	230	28°	28°	246	266	40,0
66312-2-4039	254	28°	28°	270	290	40,0
66313-2-4039 <sup>(1)</sup>	300	---	22°	324	344	46,8

subject to alterations

<sup>(1)</sup> when using the M4Q045-EF, blade angles of up to 34° are possible

# Accessories



- **Material:** sheet steel, plastic coated in RAL no. 7032, pebble-grey

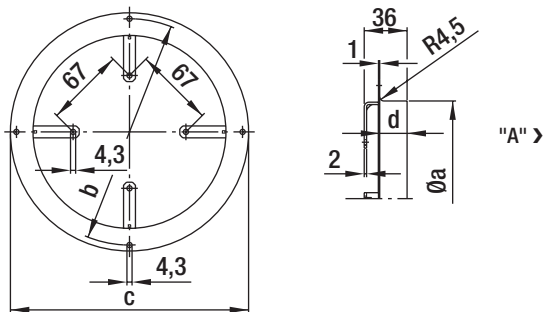
ebm-papst • Mulfingen

## Wall rings for Q-motors, direction of air flow "V"

Part no.	Size	max. blade angle $\alpha$	a	b	c	d
52542-2-4037	154	34°	164	190	200	24
52543-2-4037	172	34°	182	208	223	24
52544-2-4037	200	34°	210	236	246	24
52545-2-4037	230	28°	240	266	276	24
52546-2-4037	254	28°	264	290	300	24
52547-2-4037 <sup>(1)</sup>	300	22°	308	344	356	24

subject to alterations

<sup>(1)</sup> when using the M4Q045-EF, blade angles of up to 34° are possible



- **Material:** sheet steel, plastic coated in RAL no. 7032, pebble-grey

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## Wall rings for Q-motors, direction of air flow "A"

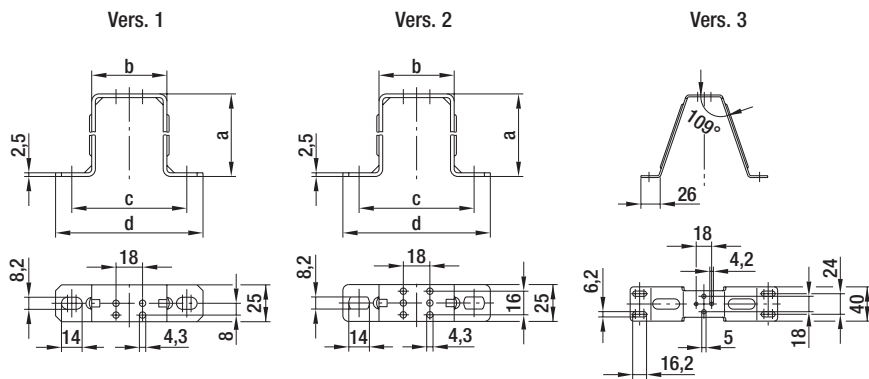
Part no.	Size	max. blade angle $\alpha$	a	b	c	d
52550-2-4037	154	34°	162	190	200	24
52551-2-4037	172	34°	180	208	223	24
52552-2-4037	200	28°	208	236	246	24
52553-2-4037	230	28°	238	266	276	24
52554-2-4037	254	28°	262	290	300	24
52555-2-4037 <sup>(1)</sup>	300	22°	308	344	356	29

subject to alterations

<sup>(1)</sup> when using the M4Q045-EF, blade angles of up to 34° are possible

# Accessories

General information  
AC axial  
EC axial  
Q-motor  
ESM  
EC-SYSTEMS  
Accessories  
Technology  
Contacts



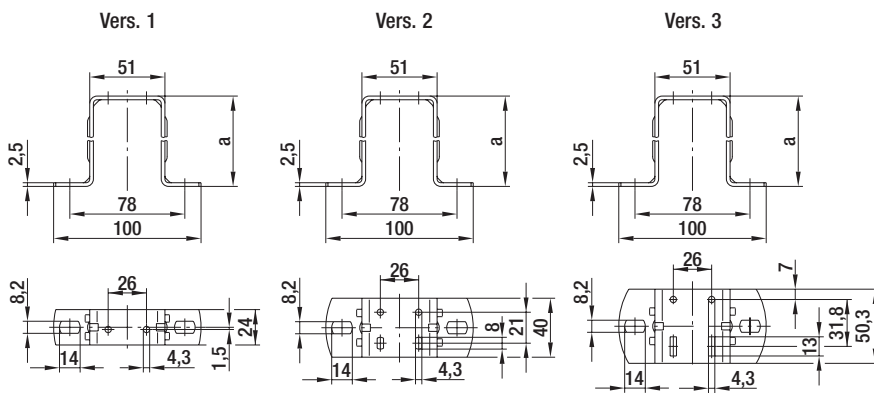
- **Material:** galvanised steel wire, chromatised in blue

ebm-papst • Mulfingen

Mounting brackets for Q-motors (foot measure 18 mm)

Part no.	Size	Vers.	a	b	c	d	Matching Q-motor
51025-2-4053	172	1	56,0	51	78	100	M4Q 045 -BD01-**
51028-2-4053	200	1	67,0	51	78	100	M4Q 045 -BD01-**, M4Q 045 -CA01-**
51026-2-4053	230	1	74,5	51	78	100	M4Q 045 -CA01-**, M4Q 045 -CA03-**
51027-2-4053	254	2	85,5	51	78	100	M4Q 045 -CA03-**, M4Q 045 -CF01-**, M4Q 045 -DA01-**
51014-2-4053	300	3	112,0	---	150	172	M4Q 045 -DA01-**, M4Q 045 -DA05-**, M4Q 045 -EA01-**, M4Q 045 -EF01-**

subject to alterations



- **Material:** galvanised steel wire, chromatised in blue

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Mounting brackets for Q-motors (foot measure 26 mm)

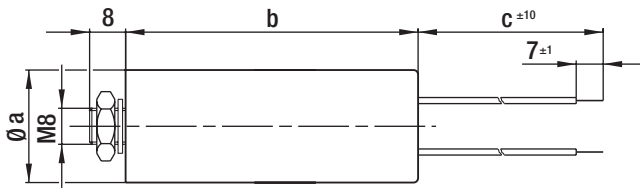
Part no.	Size	Vers.	a	Matching Q-motor
71881-2-4053	154	1	39	M4Q 045 -BD01-**
71882-2-4053	172	1	52	M4Q 045 -BD01-**
71883-2-4053	200 <sup>(1)</sup> , 230 <sup>(2)</sup>	1	72	M4Q 045 -BD01-**(1), M4Q 045 -CA01-**(1)(2), M4Q 045 -CA03-**(2)
71884-2-4053	254	1	84	M4Q 045 -CA03-**, M4Q 045 -CF01-**
71885-2-4053	254	2	84	M4Q 045 -DA01-**
71886-2-4053	300	2	109	M4Q 045 -DA01-**, M4Q 045 -DA05-**
71887-2-4053	300	3	109	M4Q 045 -EA01-**, M4Q 045 -EF01-**

subject to alterations

<sup>(1)</sup> size 200 fits M4Q045-BD01-\*\* and M4Q045-CA01-\*\*

<sup>(2)</sup> size 230 fits M4Q045-CA01-\*\* and M4Q045-CA03-\*\*

# Accessories



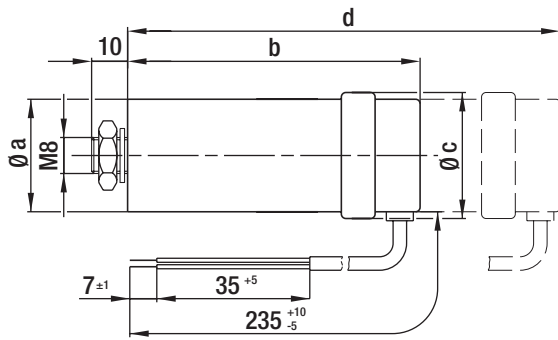
- **Material:** housing made of thermoplast
- **Connection lead:** multi-lead PVC cable 0.5 mm (16 x 0.2 mm<sup>2</sup> with brass lead tips)
- **Approval:** VDE according to DIN EN 60252 (VDE 0560/8)
- **Calculated life time:**  
400 V; -25..+85°C; 30,000 hrs; class A  
450 V; -25..+85°C; 10,000 hrs; class B

ebm-papst • Mulfingen

## MKP motor capacitors (without fuse)

Part no.	Capacity	a	b (max.)	c
02100-4-7320	1,0 µF	25-28	58	235
99282-4-7320	1,5 µF	25-28	58	235
99283-4-7320	2,0 µF	25-28	58	235
02103-4-7320	2,5 µF	25-28	58	235
68462-4-7320	3,0 µF	25-28	58	235
99284-4-7320	4,0 µF	28-32	58	235
02101-4-7320	5,0 µF	30-36	58	235
99285-4-7320	6,0 µF	30-36	70	235
66788-4-7320	7,0 µF	30-36	70	100
99286-4-7320	8,0 µF	35-40	72	235
99287-4-7320	10,0 µF	35-40	72	200
30457-4-7320	14,0 µF	40-45	92	150
50090-4-7320	16,0 µF	35-40	95	100
90034-4-7320	20,0 µF	40	95	235
90025-4-7320	25,0 µF	40	120	235

subject to alterations



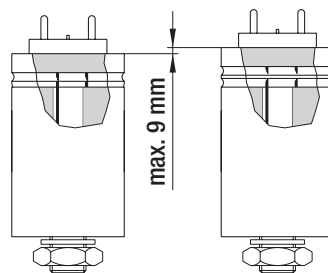
- **Material:** plastic cap, aluminium cup
- **Designation:** FPU or P2 according to IEC 252 (non-flammable, non-explosive, circuit-breaking)
- **Approval:** VDE according to DIN EN 60252 (VDE 0560/8)
- **Calculated life time:**  
 420 V; -25...+85°C; 30,000 hrs; class A  
 470 V; -25...+85°C; 10,000 hrs; class B  
 500 V; -25...+85°C; 3,000 hrs; class C

ebm-papst • Muldingen

## MKP motor capacitors FPU or P2 (with fuse)

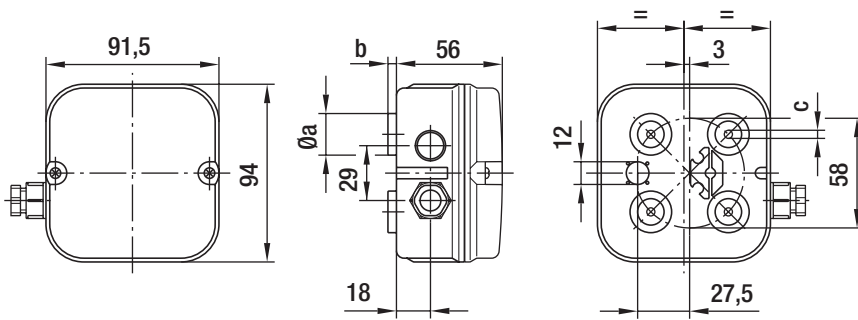
Part no.	Capacity	a	b (max.)	c	d (max.)
02151-4-7320	1,0 µF	25-30	77	28	92
02155-4-7320	1,5 µF	25	77	28	92
02156-4-7320	2,0 µF	25	77	28	92
02159-4-7320	2,5 µF	30	71	33	92
02160-4-7320	3,0 µF	30	71	33	92
02161-4-7320	4,0 µF	25-30	104	28	135
02162-4-7320	5,0 µF	25-30	104	28	113
02163-4-7320	6,0 µF	30	101	33	110
02164-4-7320	7,0 µF	30-35	101	33	110
02165-4-7320	8,0 µF	30-35	102	33	111
02166-4-7320	10,0 µF	35	96	38	110
90026-4-7320	14,0 µF	40	130	48	139
02168-4-7320	16,0 µF	40	96	44	130
02169-4-7320	20,0 µF	40	116	44	130
02170-4-7320	25,0 µF	40-45	116	48	130

subject to alterations



- **Pull-off protector:** The housing expands by max. 9mm. The protector responds to overload by the generated excess pressure snapping off the internal lead in a predetermined breaking point.
- **Mounting:** d is the overall dimension of the capacitor which has to be taken into account when mounting the part. The capacitor design, however, depends on the manufacturer. The expansion (9mm) is either added to dimension b, or it is already integrated in the capacitor.

# Accessories



- **Description:** Two-piece terminal box for AC motors of size 068 or 074, terminal strip with 4- or 7-pole. Suitable for installation of capacitor with 10 µF max.
- **Material:** ABS
- **Type of protection:** IP 54

ebm-papst • Mulfingen

## Terminal boxes

Part no.	AC motor	a	b	c
64442-1-7612	068 (4 poles)	22	5,0	4,3
64444-1-7612	068 (7 poles)	22	5,0	4,3
64443-1-7612	074 (4 poles)	12x14,5	10,5	5,5
64445-1-7612	074 (7 poles)	12x14,5	10,5	5,5

subject to alterations







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1963

# Technical parameters and 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.

#### Operating mode

If no other operating mode is specified on the product-specific data sheet, the operating mode is taken to be continuous operation (S1).

#### Insulation class

On principle, our products comply with insulation class I. Products with higher insulation class are especially marked in the product-specific data sheets.

#### Protection class

In general, our products comply with protection class I. Products with higher protection class are specially indicated in the product-specific data sheets.

#### Type of protection

The type of protection applying to each product (according to DIN EN 600034-5) depends on the mounting position and is listed together with the relevant mounting position in the product-specific data sheet.

#### Drilled condensate discharges / mounting position

The drilled condensate discharges are applied according to the relevant mounting position. If drilled condensate discharges are required, please specify the mounting position when ordering the product. Please make sure that the drilled condensate discharges are not obstructed or closed.

### 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  $L_{10}$  of the ball bearings can be taken as ca. 40,000 operating hours at an ambient temperature of 40 °C, yet this estimate can vary according to the actual ambient conditions.

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

### Thermal protection / motor protection

Most of the ebm-papst motors are protected in accordance with the relevant and appropriate directives. Depending on motor type and field of application, the following protective features are realised:

- Thermal overload protection (TOP), either in circuit or brought out
- PTC / NTC with electronic diagnosis
- Impedance protection
- Thermal overload protection (TOP) with electronic diagnosis
- Current limitation via electronics

With the TOP brought out, the customer has to make sure to connect a conventional trigger device for switching it off.

All fans with 1~ AC voltage are equipped with a TOP that is connected in the winding circuit.

Exceptions to this are indicated on the data sheets.

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



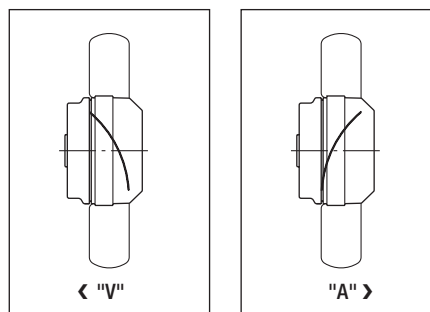
Measuring station

### Sound pressure level (SPL)

The specified sound pressure level is established in a room low in reflection and with reverberant floor as required in DIN EN 45635 part 1 or ISO 3745. The product under test is anti-vibration mounted and operated at nominal voltage, in the case of AC also at nominal frequency. The microphone is placed one meter away from the air intake. The measured values, however, cannot be taken as absolutes, as the specific application is always subject to factors of influence that the measuring lab cannot adequately reproduce.

### Direction of air flow

The direction of air flow is given as follows:



Direction of air flow "V"      Direction of air flow "A"

### System of units

All technical figures are given in SI units.



*Left: Climate cabinet  
Right: Salt spray test equipment*

### ■ 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 2-4
- vibration test at standstill according to DIN IEC 68, parts 2-4

#### **Shock load**

Shock load tests are carried out in compliance with

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

#### **Balancing quality**

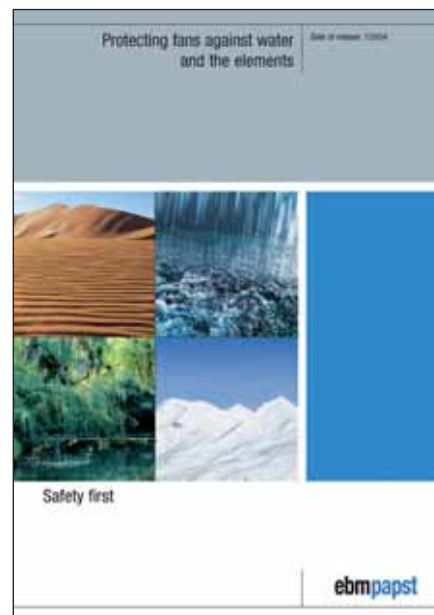
Testing the balancing quality is carried out in compliance with

- residual imbalance according to DIN ISO 1940
- standard balancing quality level G 6.3 (corresponding to 30 g x mm/kg)

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

For information on chemo-physical strain, please turn to our brochure „Protecting fans against water and the elements“:

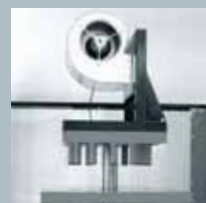


Part no. 37685-7-8811

*Left: Extended-time test room*

*Middle: Shock test*

*Right: Condensate water test*



## ■ 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

All the AC products described in here up to motor size 074 (inclusive) comply with the specifications in EN 60335-1. Special product groups are also tested and designed in keeping with the extended specifications in place for these product groups. With motors as of size 084, our products comply with the specifications as listed in EN 60034-1.

EC products comply with the standard relevant to the specific application.

### EMC

In general, our EC products comply with the following EMC standards:

- interference emission EN 61000-6-3
- interference immunity EN 61000-6-2
- harmonics EN 61000-3-2/3

Wherever other standards apply, this is indicated in the data sheets. Complying with the EMC standards has to be established on the final appliance, as different mounting situations can result in modified and changed EMC properties.

### 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.

For further and more detailed information on the specific approvals, simply turn to the data sheets of the respective products.

# Impellers



## Impellers made by ebm-papst

Like pumps and compressors, fans and blowers belong to the category of aerodynamic and fluid work machines.

A fan consists of an impeller, a drive motor and a housing for suspension and for guiding the air flow. The blades spaced along the circumference of the impeller are designed in such a way as to cause the flowing work medium to change direction, thus passing on pressure and speed energy.

## ebm-papst construction designs

Depending on the geometrical shape of the impeller, there are different construction designs, with their names taken from the main flow direction in the impeller.

The most important designs are:

- axial fans
- centrifugal fans with backward curved blades
- single or dual inlet centrifugal blowers with forward curved blades
- diagonal (mixed flow) fans (a cross between axial and centrifugal fans)

## Application-specific selection parameters

When selecting an application-specific fan or blower, the main parameters to be taken into account are these:

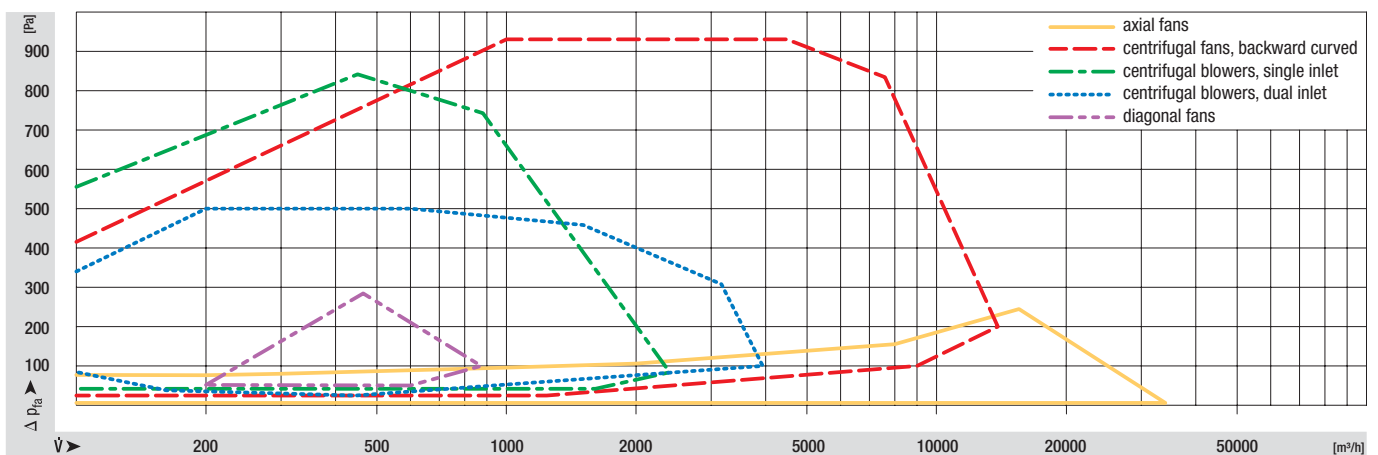
- air flow at given back pressure
- constructional design
- speed (rpm)
- impeller diameter
- ambient conditions governing suction and exhaust side

## Relevant fields of application of the various construction designs

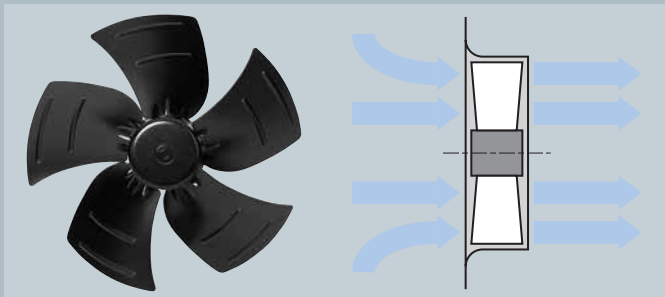
The different ebm-papst fan and blower designs correspond to the different fields of application:

- small back pressures: axial fans
- high back pressures: centrifugal fans with backward curved blades and single or dual inlet centrifugal blowers
- threshold between axial and centrifugal fans: diagonal fans

Characteristic curves of the various designs







Axial fans

**Operating range**

To the right of the "saddle" (right part of the air performance curve):

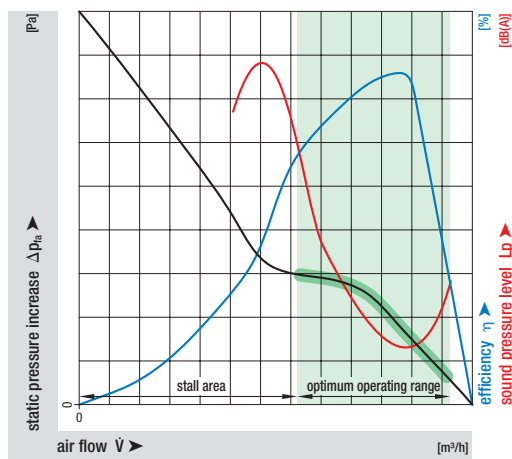
- maximum efficiency
- minimum noise

To the left of the "saddle" (left part of the air performance curve):

- stall area
- drop in efficiency
- soaring noise

The optimum operating range of the fan is shaded in green in the curve given here.

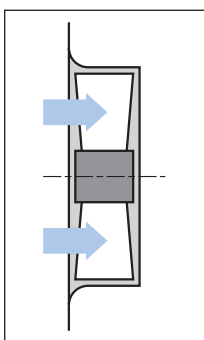
**Noise / efficiency curve**



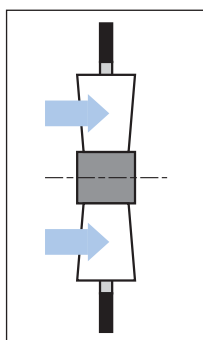
**Effects when mounted in wall ring or in the aperture**

Mounting the fan in a wall ring can significantly increase the air performance in the operating range.

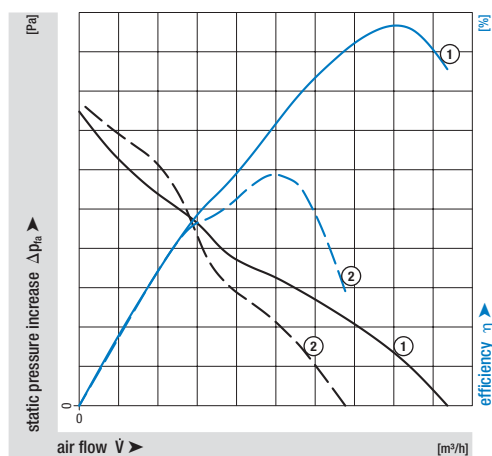
① Wall ring



② Aperture



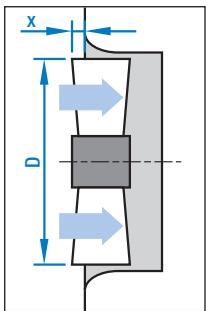
**Characteristics**



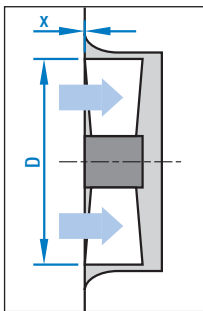
### Effects with axial position in the wall ring

Axial position in the wall ring influences air performance and efficiency.

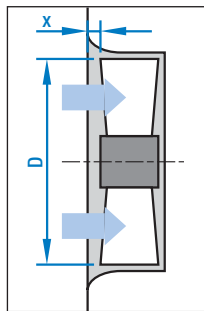
- ① Projecting on sucking side  
 $x / D = 7 \%$



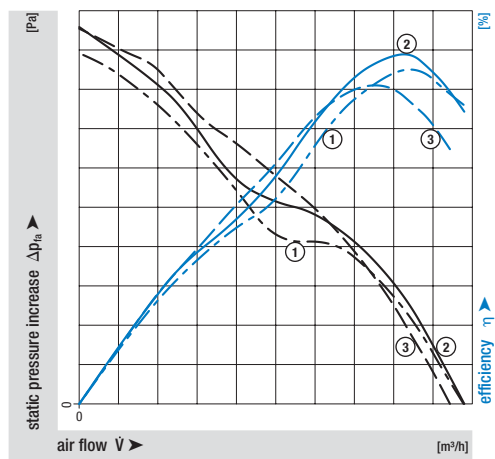
- ② Aligned on sucking side  
 $x / D = 0 \%$



- ③ Immersing on sucking side  
 $x / D = -7 \%$



### Characteristics

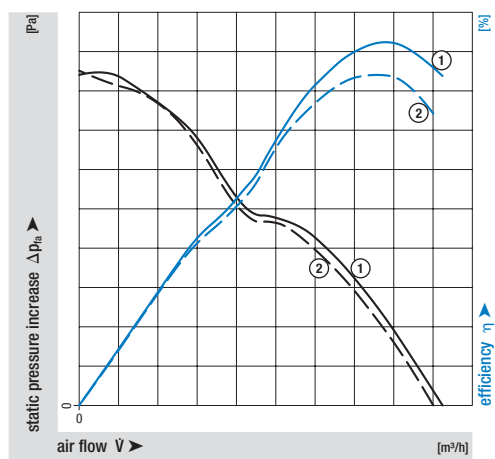


### Effects with guard grilles

Mounting a guard grille reduces the air performance of the axial fan.

- ① without guard grille  
 ② with guard grille

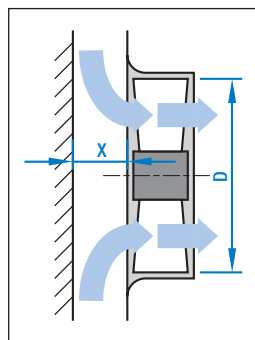
### Characteristics



### Effects of obstructions on the suction or exhaust side

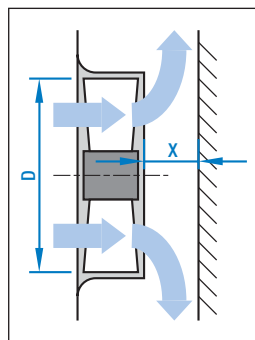
Disturbances or obstructions on the suction or pressure side reduce the air performance of the axial fan.

#### Obstructions on the suction side:



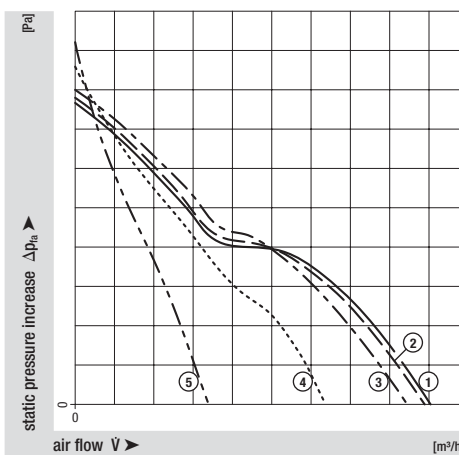
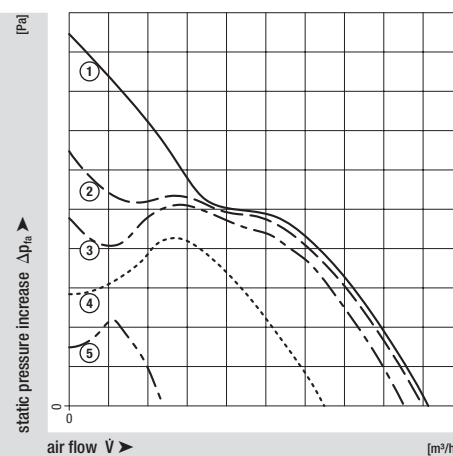
- ①  $x / D = \infty$
- ②  $x / D = 35 \%$
- ③  $x / D = 18 \%$
- ④  $x / D = 9 \%$
- ⑤  $x / D = 5 \%$

#### Obstructions on the exhaust side:



- ①  $x / D = \infty$
- ②  $x / D = 35 \%$
- ③  $x / D = 18 \%$
- ④  $x / D = 9 \%$
- ⑤  $x / D = 5 \%$

### Characteristics





## Centrifugal fans with backward curved blades

### Operating range

Middle part of the air performance curve:

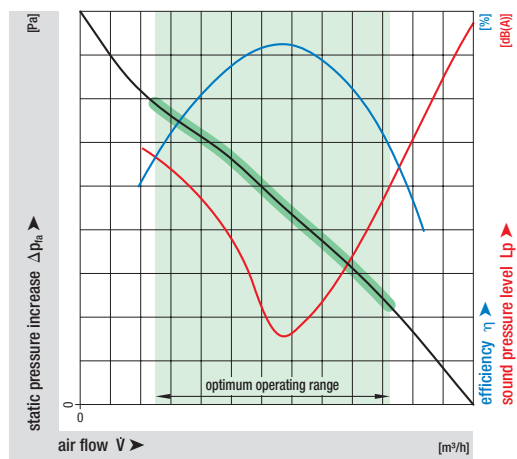
- maximum efficiency
- minimal noise

To the right and the left of the middle part of the air performance curve:

- reduced efficiency
- increase in noise

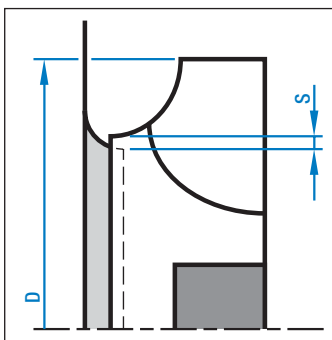
The optimum operating range of the fan is shaded in green in the curve given here.

### Noise / efficiency curve



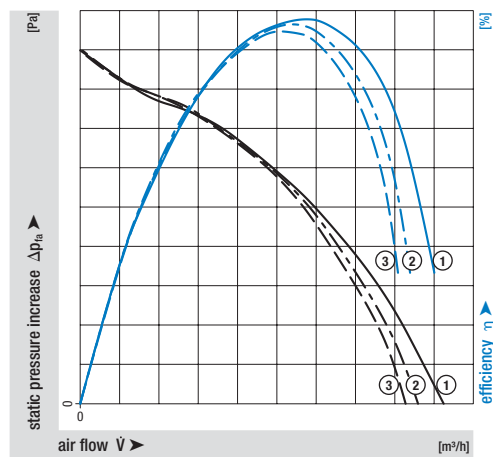
### Effects of nozzle gap dimension

The centrifugal air gap between inlet ring and impeller cover plate influences the air performance and efficiency of the centrifugal fan.



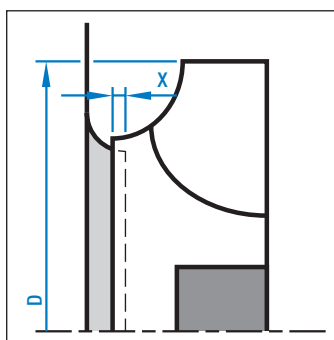
- ①  $s / D = 0.4 \%$
- ②  $s / D = 1.0 \%$
- ③  $s / D = 1.4 \%$

### Characteristics



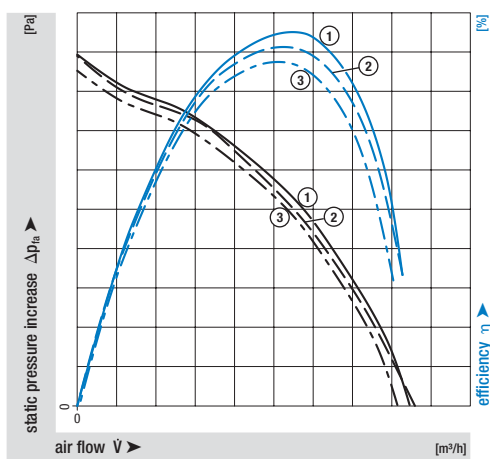
### Effects of overlapping dimension

The axial overlapping between inlet ring and impeller cover plate influences the air performance and efficiency of a centrifugal fan.



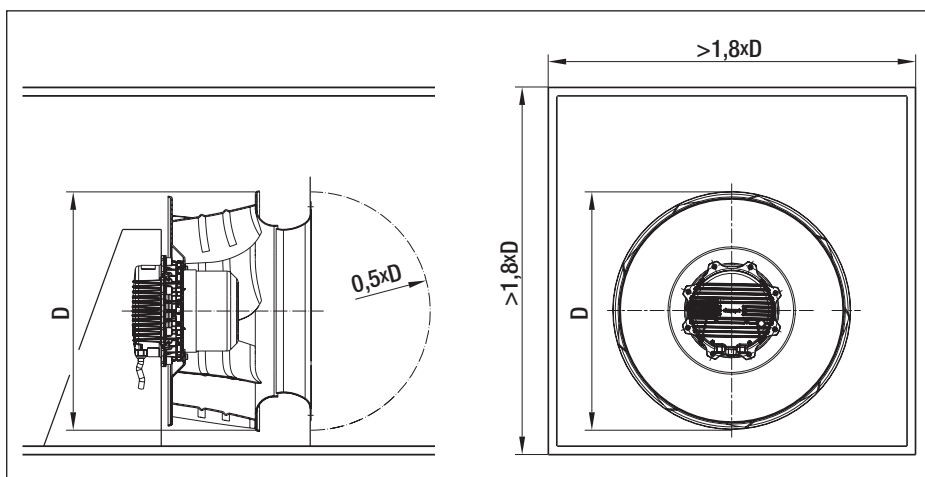
- ①  $x / D = 0.6 \%$
- ②  $x / D = 0$
- ③  $x / D = -0.8 \%$

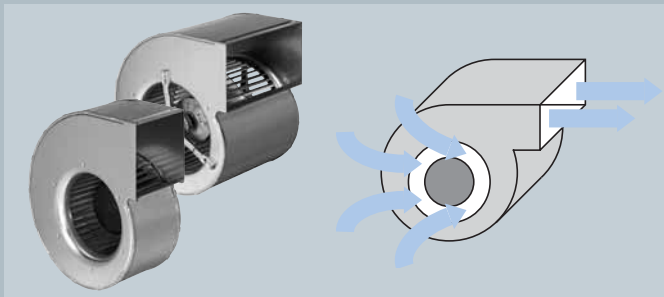
### Characteristics



### Mounting space

Distance to other components subject to diameter D.





Single or dual inlet centrifugal blowers with forward curved blades

The forward curved centrifugal impeller must always be operated inside a scroll housing.

A dual inlet centrifugal blower shows the same behaviour as two single inlet blowers operated in parallel: with size, speed and pressure being identical, double the air flow is achieved.

### Operating range

Middle part of air performance curve:

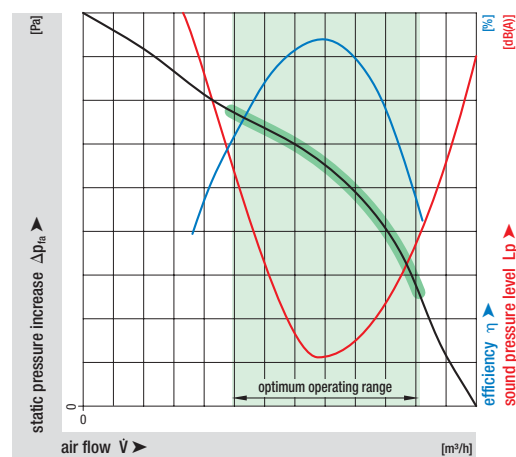
- maximum efficiency
- minimum noise
- higher performance density than with the backward curved centrifugal fan

To the right and left of the middle part of the air performance curve:

- reduced efficiency
- increasing noise

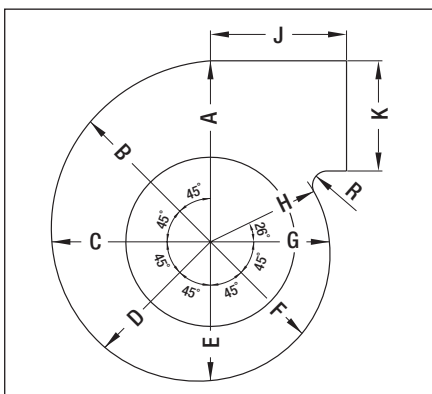
The optimal operative range of the blower is shaded in green in the curve given here.

Noise / efficiency curve



### Dimensioning of the scroll

The dimensions of a typical scroll can be calculated with the following formulae, subject to the impeller diameter D:



- A = 1.062 · D
- B = 0.992 · D
- C = 0.992 · D
- D = 0.853 · D
- E = 0.784 · D
- F = 0.715 · D
- G = 0.646 · D
- H = 0.612 · D
- J = 0.720 · D
- K = 0.689 · D
- R = 0.073 · D

Adjusting the dimensions to diminished mounting spaces is possible.

### Effects of diffusers

A diffuser mounted on the exhaust side with connected exhaust tunnel increases air performance and efficiency of the centrifugal blower.

① without diffuser

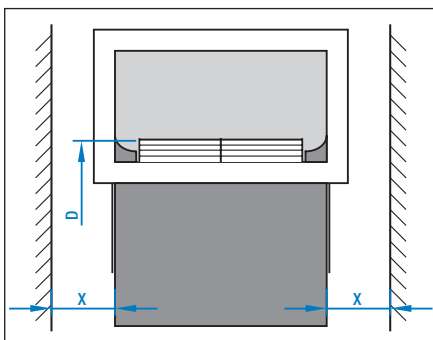


② with diffuser



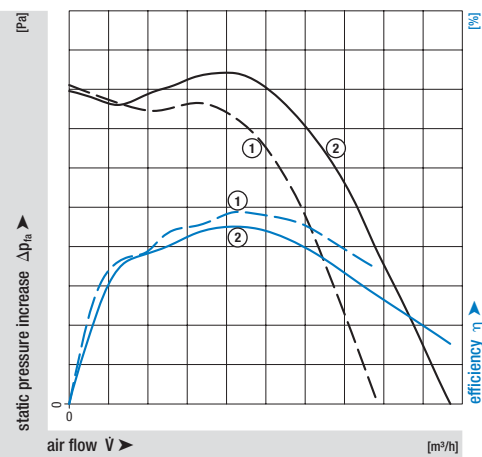
### Effects of obstructions on the intake side

Obstructions on the air intake side reduce the air performance of the centrifugal blower.

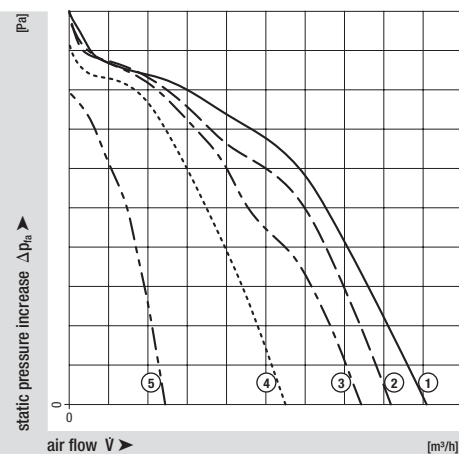


- ①  $x / D = \infty$
- ②  $x / D = 30 \%$
- ③  $x / D = 23 \%$
- ④  $x / D = 15 \%$
- ⑤  $x / D = 7.5 \%$

### Characteristics



### Characteristics





Diagonal fans (axial design)

### Operating range

Directly to the right of the "saddle" (right part of the air performance curve):

- maximum efficiency
- minimal noise

To the left of the "saddle" (left part of the air performance curve):

- stall area
- drop in efficiency
- soaring noise

The saddle of the diagonal/mixed flow fan is slightly higher than that of the axial fan. This means that the technical ratings in the optimal operating range are better than those of the axial fan.

The optimum operating range of the fan is shaded in green in the curve given here.

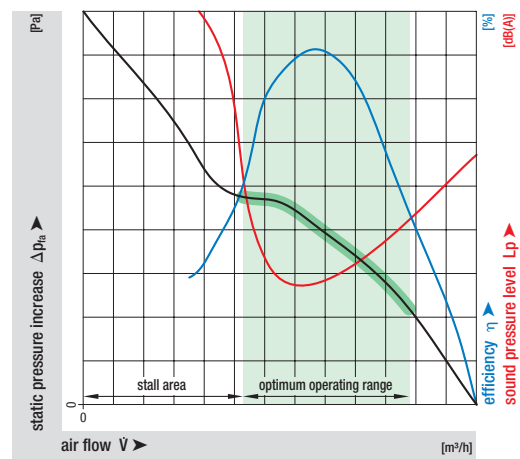
### Mounting information

The conical housing (part of delivery) makes sure the necessary gap dimension is kept.

### Effects

The effects of the diagonal/mixed flow fan are similar to those listed for the axial fan (pp. 225-227).

Noise / efficiency curve





## Dimensioning / change in speed

### Influence of speed $n$

A change in speed influences:

- Air flow  $\dot{V}$

$$\dot{V} \sim n$$

- Static pressure increase  $\Delta p_{fa}$

$$\Delta p_{fa} \sim n^2$$

- Requirement of energy  $P_1$

$$P_1 \sim n^3$$

### Influence of impeller diameter $D$

A change in impeller diameter influences:

- Air flow  $\dot{V}$

$$\dot{V} \sim D^3$$

- Static pressure increase  $\Delta p_{fa}$

$$\Delta p_{fa} \sim D^2$$

- Requirement of energy  $P_1$

$$P_1 \sim D^5$$

### Influence of width of air discharge $b$ (only for centrifugal impellers)

A change in width of the air discharge influences, in approximation:

- Air flow  $\dot{V}$

$$\dot{V} \sim b$$

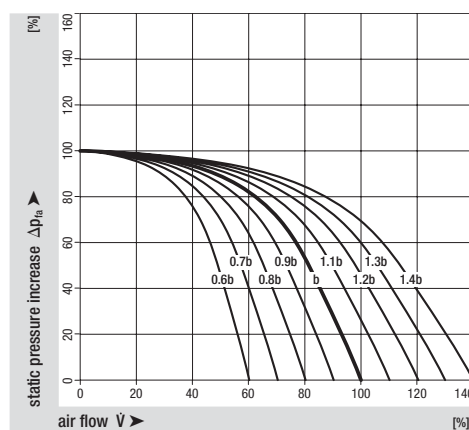
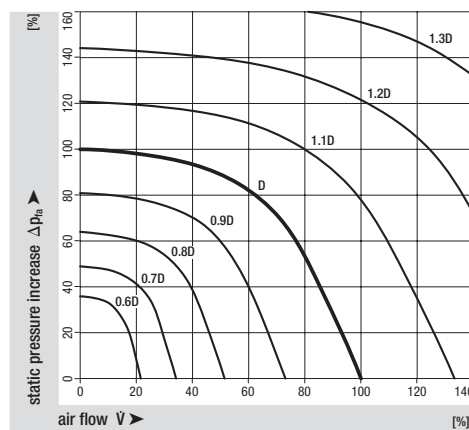
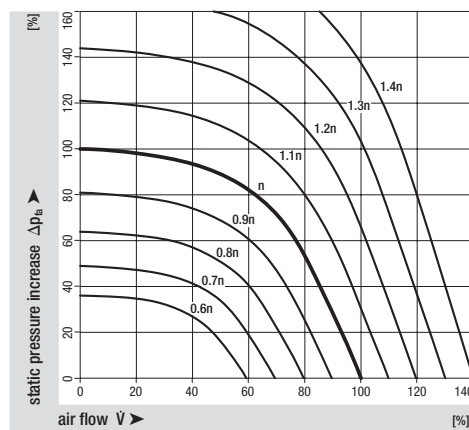
- Static pressure increase  $\Delta p_{fa}$

$$\Delta p_{fa} = \text{const}$$

- Requirement of energy  $P_1$

$$P_1 \sim b$$

Characteristics



# Motors



## Motors made by ebm-papst

In AC and EC technology, ebm-papst relies on the proven external-rotor motor principle, with the rotor turning around the stator within. Advantages of the ebm-papst external-rotor principle are:

- space saving design due to integrated bearings and direct installation inside the impeller
- lower load and more precise balancing of the bearing due to the fixed connection of all rotating elements
- prolonged service life due to the motor-impeller unit placed right within the air flow

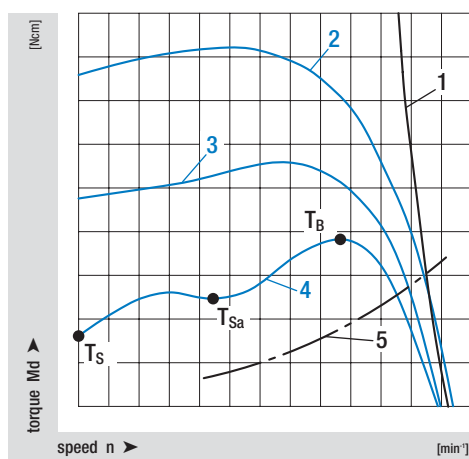
The ebm-papst motors achieve very good results in efficiency and acoustic behaviour when used in EC technology.

Features	AC motors			EC motors	
	Shaded-pole motor	Single-phase capacitor motor	3-phase motor	Single-core motor	3-core motor
1~ AC voltage connector	Yes	Yes	Limited use (Steinmetz circuit)	Yes	Yes
3~ AC voltage connector	No	No	Yes	No	Yes
DC voltage connector	No	No	No	Yes	Yes
Design of circuit diagram - Stator -					
Rotor principle	Squirrel cage	Squirrel cage	Squirrel cage	Magnetic rotor	Magnetic rotor
Efficiency	Low	Medium	Good	Excellent	Excellent
Continuous speed setting integrated	No	No	No	Yes	Yes
Noise behaviors	Medium	Good	Excellent	Medium	Excellent

## AC motors

AC motors (induction motors) are based in their function on the principle of the asynchronous rotation of stator rotating field and rotor.

### Torque characteristics of the motor types



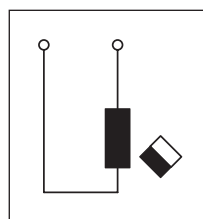
#### Key:

1 - EC motor	5 - System characteristic
2 - 3-phase motor	$T_S$ - Starting torque
3 - Single-phase motor	$T_{Sa}$ - Saddle torque
4 - Shaded-pole motor	$T_B$ - Breakdown torque

### Shaded-pole motor

Each pole of the motor is divided electro-magnetically into a main and auxiliary pole (split) via a cage winding in order to generate a starting torque.

At ebm-papst, shaded-pole motors are available as 2- or 4-pole symmetrical external rotor designs.

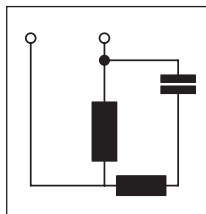


#### Advantages:

- extremely robust motor design due to cast squirrel cage rotor and stable bearing system
- cost-efficient motor
- extremely easy to connect
- long service life

### Single-phase capacitor motor

Two cores (main winding MW and auxiliary winding AW) generate the rotating field of the single-phase capacitor motor via a capacitor connected in series to form an auxiliary winding.

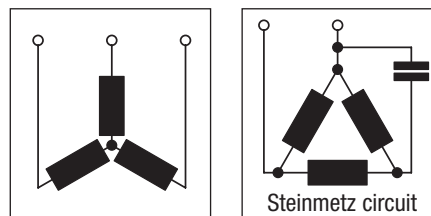


#### Advantages:

- extremely robust motor design due to cast squirrel cage rotor and stable bearing system
- diverse options for setting speed
- efficiency between 30 % and 75 % (depending on motor size)
- long service life
- good vibration and noise behaviour

### 3-phase motor

The three motor cores are offset by 120° and generate a circular rotating field when connected to the 3-phase mains.



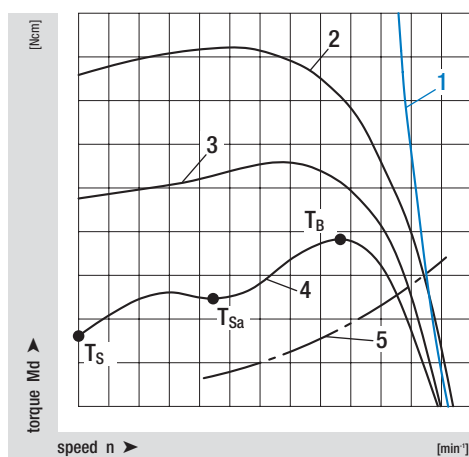
#### Advantages:

- extremely robust motor design due to cast squirrel cage rotor and stable bearing system
- very good vibration and noise behaviour
- efficiency between 40 % and 80 % (depending on the motor size)
- long service life

## EC motors

EC motors are based in their function on the principle of the synchronous rotation of stator rotating field and rotor.

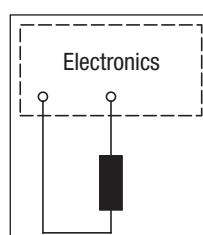
### Torque characteristics of motor types



#### Key:

1 - EC motor	5 - System characteristic
2 - 3-phase motor	$T_S$ - Starting torque
3 - Single-phase motor	$T_{Sa}$ - Saddle torque
4 - Shaded-pole motor	$T_B$ - Breakdown torque

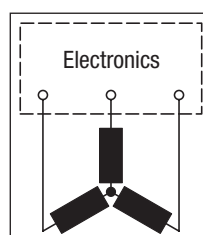
### Single-core motor



#### Advantages:

- integrated speed setting
- efficiency between 50 % and 80 % (depending on the motor size)
- long service life

### 3-core motor



#### Advantages:

- integrated speed setting
- good efficiency between 60 % and 90 % (depending on the motor size)
- long service life
- very good vibration and noise behaviour even in controlled operation
- can be used as drive motor

# Control technology



## Open and closed loop control using ebm-papst technology

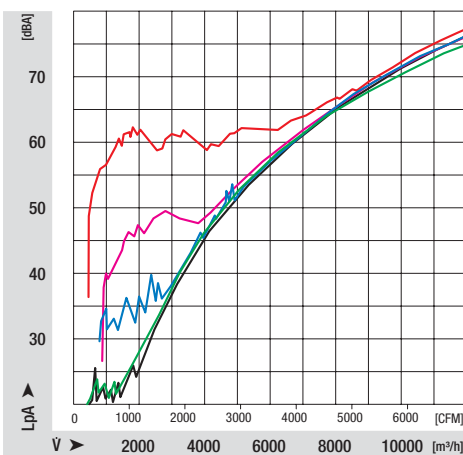
Depending on the field of application, fan speed has to be adjusted. In AC technology, the speed setting option can result in an increase in installation expenditure and, typically, a less favourable noise performance and an increase in power input. Here, ebm-papst EC technology is a more eco-friendly and cost-efficient alternative.

The EC motor with integrated commutation electronics offers high efficiency across the entire speed range and optimal acoustic performance at minimal installation expenditure.

Features	AC							EC commutating electronics		
	Series resistance	Transformer	Speed stepping	Phase-angle control	Phase-angle control with sine filter	Frequency inverter	Frequency inverter with sine filter	integrated	integrated with switch power supply	external
Installation	+	-	+	-	-	-	-	++	-	-
Noise behaviors	+	++	-	--	-	-	+	++	+	+
Power input	--	-	-	-	-	+	+	++	+	+
Service life	+	+	-	-	+	-	+	+	+	+

+ = positive ++ = very positive - = negative -- = very negative

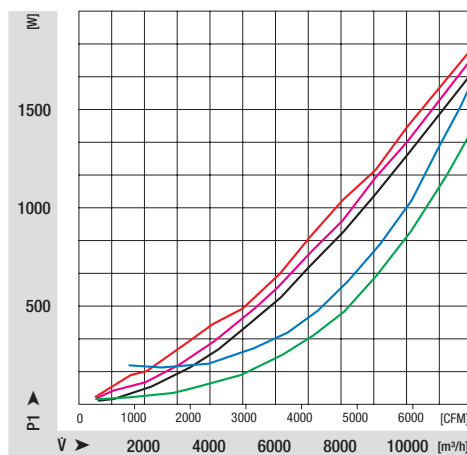
Acoustic performance of controlled AC / EC motors



**Key:**

- ebm-papst EC controls
- Frequency inverter with sine filter
- Phase-angle control without sine filter
- Phase-angle control with sine filter
- Transformer

Power input of controlled AC / EC motors

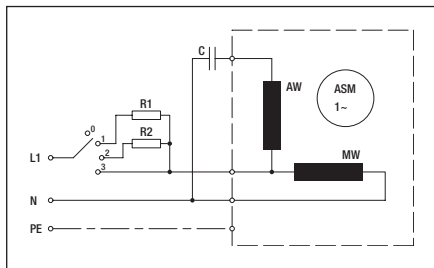


**Key:**

- ebm-papst EC controls
- Frequency inverter with sine filter
- Phase-angle control without sine filter
- Phase-angle control with sine filter
- Transformer

## Speed setting with AC motors

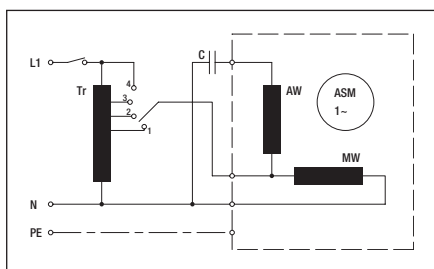
Speed setting helps to optimise power input and the flow noise as requested.



### Series resistance

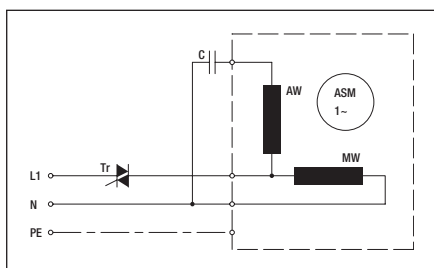
- fixed speed steps
- speed setting via change in motor voltage
- cost-efficient
- small capacities

Note: Capacitors respectively chokes reduce the loss capacity.



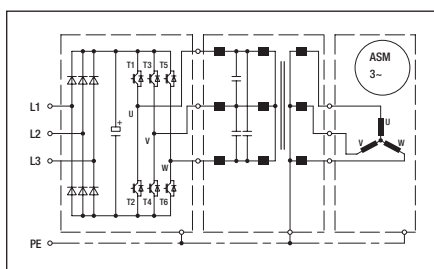
### Transformer

- fixed speed steps
- speed setting via change in motor voltage



### Phase-angle control

- continuous speed setting
- speed setting via change in motor voltage
- cost-efficient
- acoustic performance has to be reviewed in the application



### Frequency inverter with sine filter

- continuous speed setting
- speed setting via change in frequency of rotating field
- high efficiency

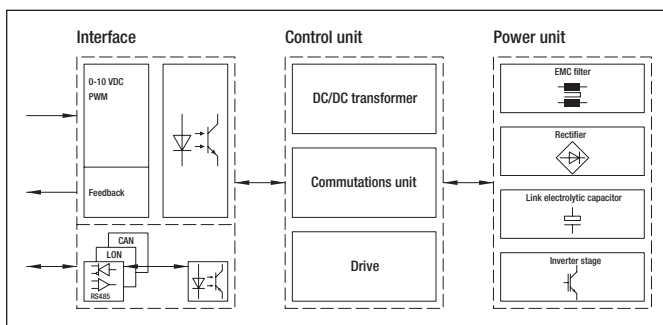
Note: An all-pole sine filter (phase-phase and phase-earth) has to be used.

## Speed setting with EC motors

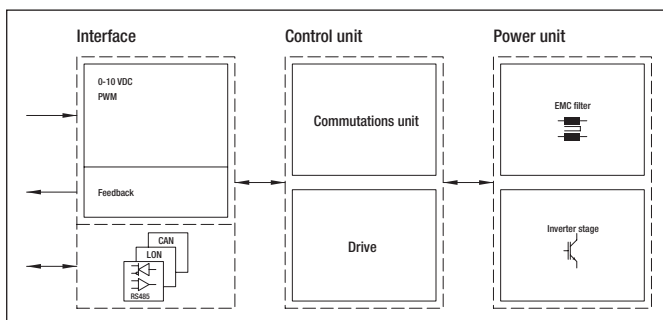
The speed of EC motors is set via commutation electronics. Via electronic circuits and depending on the rotor position, this commutation switches the motor currents on and off.

### Principle of AC-fed commutation electronics

(with electrically isolated interface)



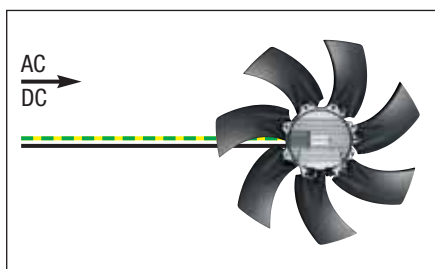
### Principle of DC-fed commutation electronics



### Typical features of the ebm-papst commutation electronics:

- input for analogue and digital signals
- open and closed loop control as well as monitoring of the motor
- integrated EMC filter
- high efficiency throughout the entire speed range
- speed setting via linear set value (0-10 VDC) or PWM signal
- low-noise operation across the entire speed range
- minimal extra costs for additional functions (open/closed loop control)
- optional BUS interface

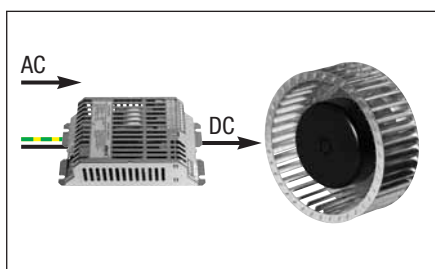




#### Integrated commutation electronics

- compact unit
- easy to install
- low installation expenditure
- can be operated all over the world

Note: motors with 12-72 VDC supply voltage have to be fed via electrically isolated supply unit.



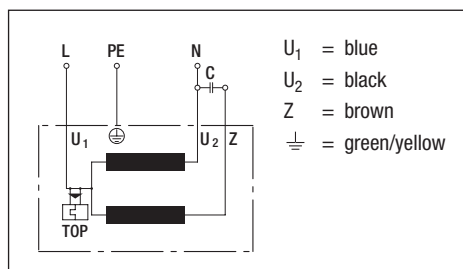
#### Integrated commutation electronics with switch power supply

- protective (extra) low voltage 24 / 48 VDC allows use in applications with exacting safety specifications, such as in medical engineering

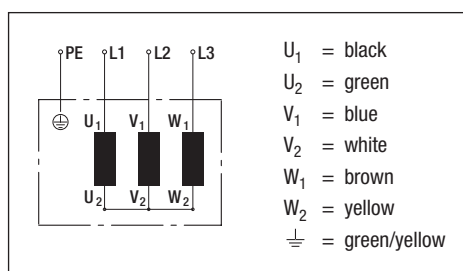
Note: Switch power supply is not inclusive but has to be ordered as accessory.

## Electrical connections AC

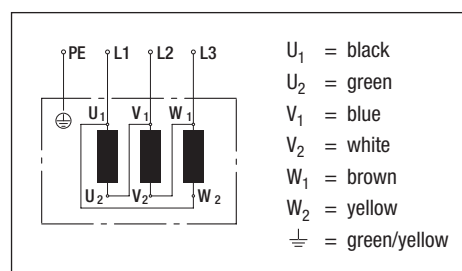
### Single-phase capacitor motor



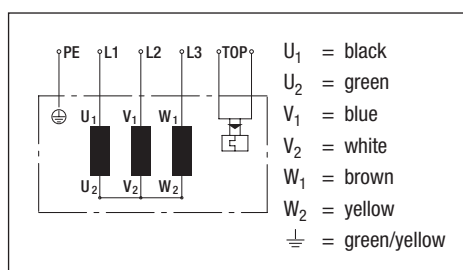
### 3-phase motor in star connection



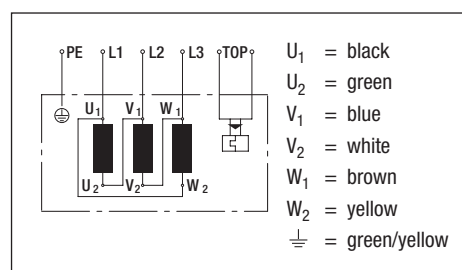
### 3-phase motor in delta connection



### 3-phase motor with T.O.P. in star connection



### 3-phase motor with T.O.P. in delta connection



## Electrical connections EC

### EC motors (voltage 24 / 48 VDC)

Line	Signal	Colour	Assignment / function	Line	Signal	Colour	Assignment / function
1	+	red	maximum ripple $\pm 3.5\%$	1	Tacho	white	Tach output: pulses per revolution
	GND	blue	GND		0-10 V / PWM	yellow	Control input

### EC motors (size 055 / 074, line-fed)

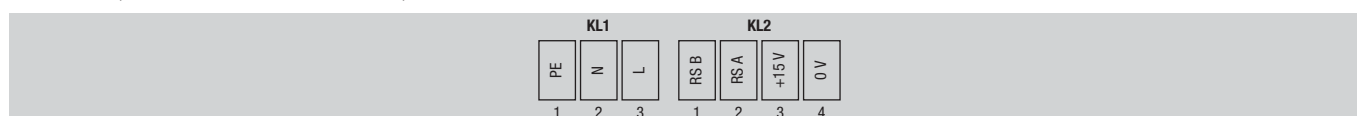
Line	Signal	Colour	Assignment / function	Line	Signal	Colour	Assignment / function
1	L	brown	Mains 50/60 Hz, phase	2	+10 V	red	Voltage output +10 V max. 1.1 mA
	N	blue	Mains 50/60 Hz, neutral		0-10 V / PWM	yellow	Control input
	PE	green/yellow	Protective earth		GND	blue	GND
					Tacho	white	Tach output: pulses per revolution

### EC motors (size 084, line-fed)

Line	Signal	Colour	Assignment / function	Line	Signal	Colour	Assignment / function
1	L	black	Mains 50/60 Hz, phase	2	NC	white1	Alarm relay, normally closed
	N	blue	Mains 50/60 Hz, neutral		COM	white2	Alarm relay, COMMON
	PE	green/yellow	Protective earth		+10 V	red	Voltage output +10 V max. 1.1 mA
					0-10 V / PWM	yellow	Control input
					GND	blue	GND

## Electrical connections EC

### EC motors (size 084 with ebmBUS, line-fed)



Connector	Signal	Pin No.	Assignment / function
KL1	PE	1	Protective earth
	N	2	Mains 50/60 Hz, neutral
	L	3	Mains 50/60 Hz, phase

Connector	Signal	Pin No.	Assignment / function
KL2	RS B	1	RS485 interface for ebmBUS; RS B
	RS A	2	RS485 interface for ebmBUS; RS A
	+15 V	3	Operation: +15 V; Alarm: 0 V
	0 V	4	Operation: 0 V; Alarm: +15 V

### EC motors (size 112 / 150, line-fed)



Connector	Signal	Pin No.	Assignment / function
PE	PE	---	Protective earth
KL1	L3	1	Mains; L3
	L2	2	Mains; L2
	L1	3	Mains; L1
KL2	NC	1	Alarm relay, normally closed
	COM	2	Alarm relay, COMMON
	NO	3	Alarm relay, normally open

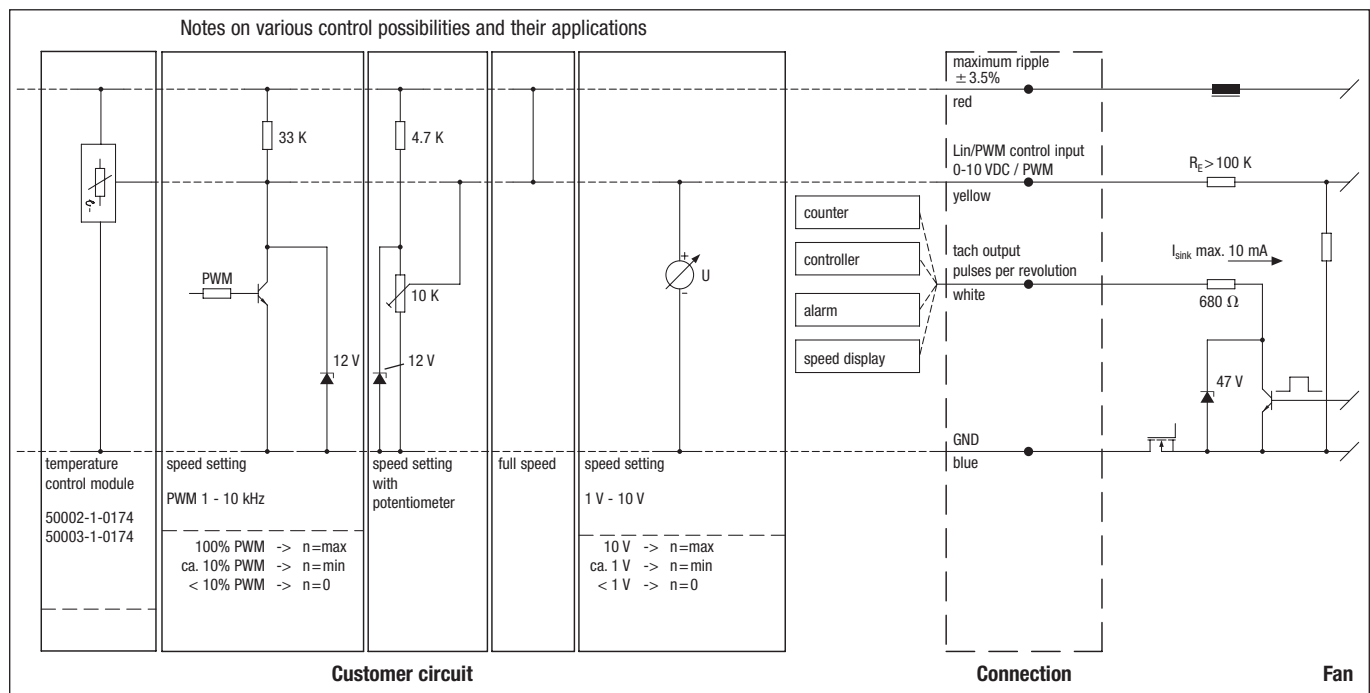
Connector	Signal	Pin No.	Assignment / function
KL3	OUT	1	Master output 0-10 V max. 3 mA
	GND	2	GND
	0-10 V / PWM	3	Control / Actual value input
	+10 V	4	Supply for external potentiometer 10 mA
	+20 V	5	Supply for external sensor 50 mA
	4-20 mA	6	Control / Actual value input
	0-10 V / PWM	7	Control / Actual value input
	GND	8	GND
	RSB	9	RS485 interface for ebmBUS; RS B
	RSA	10	RS485 interface for ebmBUS; RS A
	RSB	11	RS485 interface for ebmBUS; RS B
	RSA	12	RS485 interface for ebmBUS; RS A

## Helpful information for your application

### Pulses per revolution with EC motors with linear / PWM control input and tach output

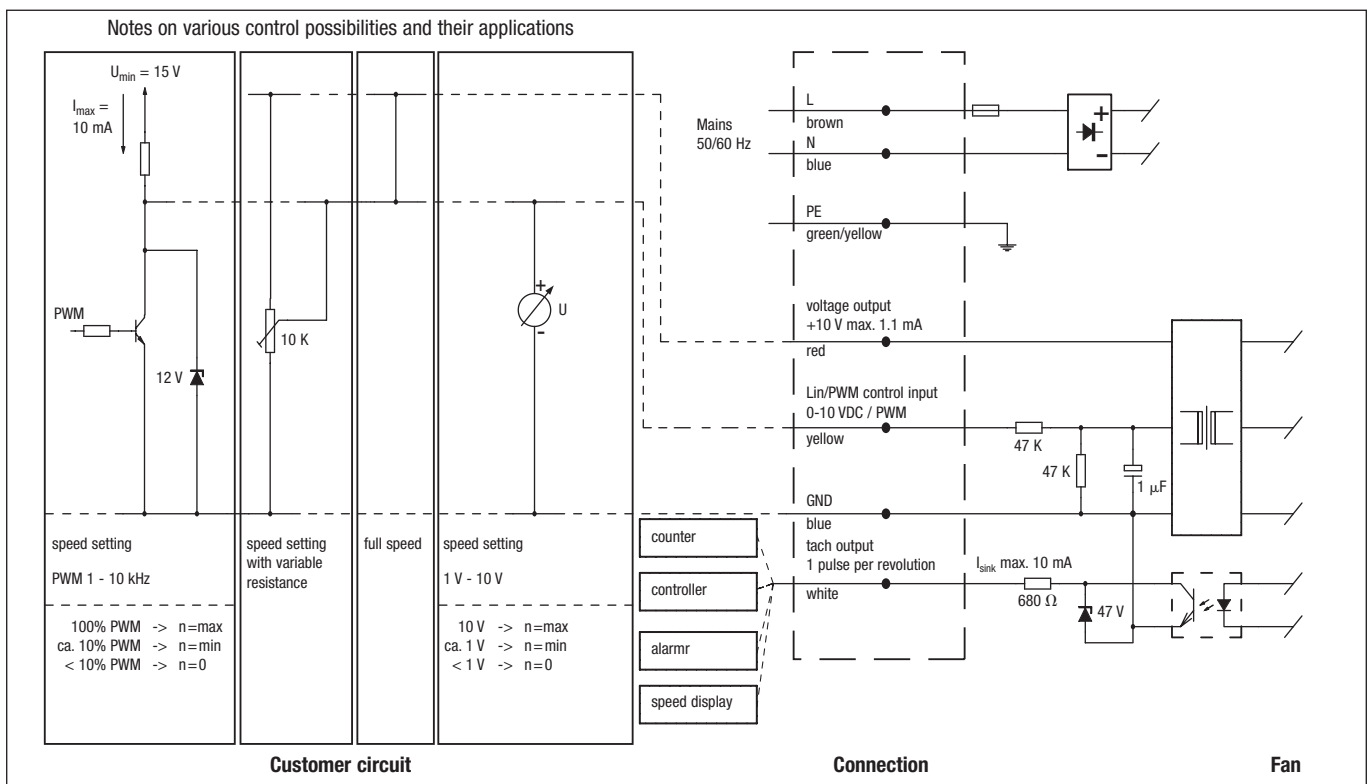
Motor	Voltages				Tach output pulses per revolution
	24 VDC	48 VDC	230 VAC	200-277 VAC	
M1G045	X	X			2
M1G055	X	X			2
M3G055			X		1
M1G074	X	X			3
M3G074				X	1
M3G084	X	X			3

### EC motors (voltage 24 / 48 VDC)

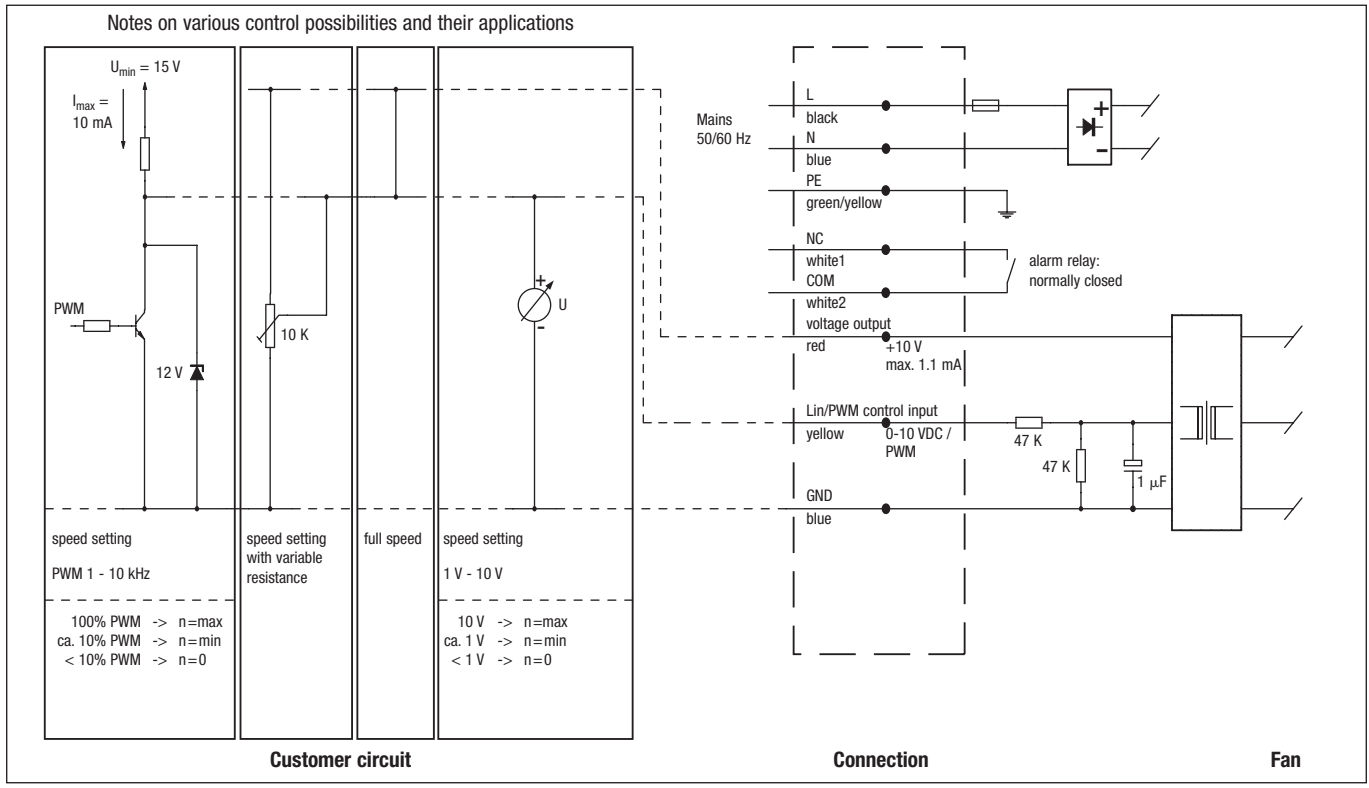






## Helpful information for your application

### EC motors (size 055 / 074, line-fed)



**EC motors (size 084, line-fed)**



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

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